

Economic Empowerment in Rural Java: From Unproductive Ex-Mining Site to Productive Ecological Market

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Abstract: This study aims to explore the economic empowerment activities in the Argowijil Ecological Market with the mission of environmental restoration. To get comprehensive results, this study used a qualitative method and data collection through in-depth interviews, literature review, and observation. The authors used empowerment theory by Zimmerman as an analytical tool for this research. The results showed that: *first*, the economic empowerment in the Argowijil Ecological Market is an accumulation results of both the empowering processes and empowered outcomes from activities at the individual, organizational, and community levels. *Second*, all empowerment activities to restore the ex-mining site can be realized because all stakeholders involved are willing to take a role. They work together to save the environment by transforming it into an ecological market for improving the socio-economic welfare of the community, village and the surrounding areas.

Keywords: empowerment, economic welfare, ex-miningsite, ecological market

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Introduction

Indonesia is one of the countries in the Asia-Pacific region with a great diversity of natural resources. It is also the world's fourth most populous country after China, India and the United States. The abundance of natural and human resources is certainly a blessing; but without good management, the future generation may be impacted as there is always a risk for a disaster. For this reason, in utilizing existing resources, the government and related stakeholders need to work together to balance the availability of natural resources and human needs. There are many examples around the world where the balance of nature is often damaged by human activities for the sake of meeting economic needs and obtaining profits— one of which is mining activities. Mining activities (legally or illegally) whether in a small, medium, or large scale, have a negative impact on the environment and the people who live in the nearby areas (Octastefani et al., 2018). We understand very well that mining is important for the local and global economic activities, but (post)-mining activities have caused significant and serious degradation to the ecosystems and natural landscapes.

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From Sumatera, Java, Borneo, Sulawesi, Maluku, to Papua, there are many traces of environmental damage occurring in almost all ex-mining areas in Indonesia (Lumbanrau, 2021). Some of the negative impacts of mining activities include: (1) increasing the potential and threat of natural disasters; (2) increasing forest destruction and loss of flora and fauna habitat; (3) increasing environmental pollutions (water, air, and land) due to the mining waste; (4) reducing the quality of human health; and many other negative impacts (Ross, 2019), (Ariansyah, 2016), (Kurniawan & Surono, 2013). These negative impacts are certainly very dangerous to the environment and human life (Haeruddin et al., 2022). It is even worse when the ex-mining land site area is abandoned by both the mining company and the community for years without any further handling for reclamation efforts after it can no longer be exploited for economic value (Rahmawan, 2020); (Putrawiyanta, 2020). The low realization of post-mining reclamation also causes high state losses due to environmental damage (Subarudi et al., 2018). It even leaves a bad ending for the surrounding community as thousands of abandoned mining pits have claimed dozens of human lives due to the absence of signs posted by the company and little supervision from the local government. The loss of human lives is certainly a very serious form of carelessness which undermines the importance of prioritizing human safety. Companies, local governments, and the central government often blame each other and shift responsibility when dealing with the unfortunate legacy of the abandoned mining areas (Komnasham, 2021).

Such a condition was experienced by the Gari Village in Wonosari District, Gunungkidul Regency, where a former smallholder limestone mining area was left without any further reclamation efforts. However, the Indonesian Ministry of Environment and Forestry, through the Directorate General of Pollution Control and Environmental Damage (hereinafter referred to as PPKL which stands for *Pengendalian Pencemaran dan Kerusakan Lingkungan*) initiated to design an Ecological Market Program. This initiative program is designed by integrating environmental management for the restoration of ex-mining land sites with traditional market management for increasing the village economic income and community welfare (MENLHK, 2017).

On April 18, 2017, this ecological market was officially inaugurated under the name of Argowijil Ecological Market. The Argowijil Ecological Market is the first ecological market established in Indonesia which also serves as a pilot project for the Ecological Market Program for other areas in Indonesia (The Government of Yogyakarta Special Region, 2017). In 2022, the Argowijil Ecological Market entered its fifth year. The involvement of the rural communities in managing this ecological market will make an important contribution to market economic activities and practice the essence of ecology. Based on this background, this paper will focus on exploring the economic empowerment activities at the Argowijil Ecological Market with the mission of environmental restoration.

The authors use the empowerment theory by (Zimmerman, 2000) as an analytical tool. Zimmerman provides a theoretical framework for analyzing based on the processes (empowering) and the outcomes (empowered) across three analysis levels, namely: individual, organizational, and community. Each level of analysis is inherently connected to each other by the larger social and political environment. Therefore, the people have the opportunity to be active in improving their individual lives, organizations, and communities. Furthermore, before discussing the economic empowerment activities at the Argowijil Ecological Market, the authors conducted a mapping analysis of related previous studies. Based on the literature review, there are

only three previous studies related to the Argowijil Ecological Market. The first one is by (Latifah & Krisdyatmiko, 2019) in her bachelor's thesis discussing the capacity of Village-Owned Enterprises (hereinafter referred to as BUMDesa which stands for *Badan Usaha Milik Desa*) in managing the Argowijil Ecological Market. The second study is by (Krisdyatmiko & Latifah, 2019a) which measures the community satisfaction index of the Argowijil Ecological Market, and the third study is by (Octastefani et al., 2018), which discusses the ecological market as a direction for developing institutional governance of BUMDesa. None of the previous studies specifically discusses the economic empowerment of the Argowijil Ecological Market using empowerment theory. Thus, it can be concluded that this research is relatively new because the previous studies on the Argowijil Ecological Market focused on the BUMDesa and the Community Satisfaction Index, whereas this research will explore it from a different perspective, namely in terms of empowerment. Thus, the results of this study are expected to contribute to the novelty of research and be relevant to the community needs.

Method

This study used a qualitative method with data collection through observations, in-depth interviews, and literature review. The observations, which required authors' participation, had been done since 2017 because the authors were also directly involved in the empowerment activities. Furthermore, the authors conducted a literature review on secondary data sources such as journals, books, online newspapers, official government websites, and YouTube channels that can be accessed by the public. The authors also searched online data by determining several main keywords both in English and Indonesian, such as: Mount Wijil, Argowijil, Argowijil Market, Argowijil Ecological Market, Ecological Market, Gari Village, community empowerment, community mining, and environmental sustainability.

The authors also conducted in-depth interviews with key informants. The authors recognized the significance of in-depth interviews in strengthening the results of literature review. The in-depth interview is a method of producing knowledge of human situations which provides a unique access to the lived world of the subjects, who in their own words describe their activities, experiences, and opinions (Brinkmann & Kvale, 2018). Semi-structured interviews were used on seven key informants via online WhatsApp Call, namely: a member of the BUMDesa Mardi Gemi management, a member of the Argowijil Ecological Market management, one villager, two sellers, and two market customers. The in-depth interviews were conducted online because there was a restriction on people's mobility during the COVID-19 pandemic in 2020. Furthermore, in the process of writing this manuscript, the authors also had opportunities to conduct direct interviews with relevant key informants when the Argowijil Ecological Market was allowed to reopen as the Government had relaxed the rules for restricting social mobility in 2021. Furthermore, all data collected was analyzed using the interactive data analysis method which consists of four stages, namely data collection, data reduction, data display, and drawing conclusions (Miles et al., 2019).

Result and Discussion

Post-mining Landscape Overview

Humans are the leading actors in causing environmental damage. Therefore, all stakeholders involved must be responsible to fix this situation. In reality, human-caused mining activities are often more destructive to the environment (Wm et al., 2022), and

take longer time to recover than the damage caused by natural disaster. Due to post-mining activities caused serious environmental impact, so the efforts to restore ex-mining land sites have become public attention and a hot topic to discuss considering that there are indeed many mining sites that are left unproductive. There are various efforts to restore ex-mining land sites to become productive land, starting from revegetating local plants, planting vegetables and fruit trees that can invite other animals to help spread new seeds, and using the site as an expansion of agricultural area (Dariah et al., 2010). Although the natural landscape will not be as rejuvenated as before, it is hoped that these efforts can restore the former mining site to some extent (Woodbury & Arbainsyah, 2020).

The presence of the Argowijil Ecological Market also keeps a history. Septian Nurmansah as the Director of BUMDesa Mardi Gemi, in his official YouTube channel said that the name Argowijil has a very meaningful significance. In Javanese, 'Argo' refers to 'mountain', while 'wijil' refers to the original name of the mountain in the area, Mount Wijil. Hence, 'Argowijil' essentially means 'Mount Wijil'. This choice of the name for the ecological market aims to remind the residents of Gari Village and the next generation of the loss of a limestone mountain called Mount Wijil due to the mining activities (Nurmansah, 2021).

Initially, the ecological market land site was part of the Mount Wijil area where many plants and shade trees thrived. The mining activities began in some parts of the area in 1976 when the local community were building a small mosque and needed the limestone for construction purposes. However, the limestone mining did not stop even after the village mosque construction was completed, and further increased over time along with the number of local miners who made the site their main source of livelihood. The local miners sold the limestone to customers from outside the village. However, the massive mining was getting out of control because of the large number of illegal miners. The beautiful landscape and cool air of the Mount Wijil area with towering trees had then become a deserted and arid former mining area that was dominated by white limestone and uneven mining basins as the water resources eventually dried up. The environmental damage caused by these mining activities made the Gari Village Government stop all mining activities in 2010 as a precaution against the impact of more severe environmental damage in the future. Unfortunately, after the mining activities were stopped, the ex-mining area was left abandoned and became unproductive land that was overgrown with shrubs.

After 6 years as an unproductive ex-mining site, in 2017 the location was finally restored into a productive ecological market site. The establishment of Argowijil Ecological Market aims to restore ex-mining land to be productive again and become a medium for educating as well as growing public awareness in maintaining the sustainable environment. In addition, this ecological market also brings fresh air and hope to the villagers because this market is able to move the economy and generate economic activities for the residents, while also reviving local traditions and culture that deserve to be preserved and maintained. More importantly, today, the sights around the market not only have a beautiful natural panorama, but also look greener and cooler because around the Argowijil Ecological Market area are planted with lots of trees. The growth of these trees can improve the quality of natural balance and create a new ecosystem.

Each Level of Empowerment Activities

Empowerment is one approach in socio-economic development that helps people gain control over their own lives in a central role. Therefore, the empowering process and empowered outcomes are from, by, and for the people so that they will be independent in improving their lives and solving their own problems. By using Zimmerman's empowerment theory, the authors analyze each level of economic empowerment activities at Argowijil Ecological Market.

1. Empowering and Empowered at the Individual Level

At the individual level of analysis, the empowering processes can help the individual to engage and learn in decision-making skills. This can be seen from how the Argowijil Ecological Market provides a space for village communities to be involved in it. The village governments, BUMDesa manager, market managers, and sellers all learn together over the years to manage ecological markets and realize substantial ecological meaning in the market activities. All stakeholders involved must understand the meaning of establishing an ecological market so that they can achieve the same goal in the future. For this reason, the internalization of ecological concepts and practice in Argowijil Ecological Market becomes a characteristic and a special point of attraction for customers.

Empowerment activities in the Argowijil Ecological Market are carried out with an emphasis on market sellers. Naturally, market sellers have a central role in the economic activities. For this reason, in the first year of Argowijil Ecological Market, the village government together with the management of the BUMDesa made efforts to empower the village communities, especially those who were former coal miners (Octastefani et al., 2018). Ex-miners who were interested in the economic empowerment activities individually registered to the program to become sellers. Moreover, there were many housewives who applied to be sellers in the market as a form of effort to be actively involved in the economic activities.

Considering that most of the new sellers did not have the skills yet in selling their products and serving customers, the village government together with the BUMDesa managers also facilitated training activities, especially to build a sense of control. This is important to ensure that the sellers become empowered individuals who play the main role in the market activity. Whereas in the past they went to the mining area to collect limestone, now they go to the ecological market to sell a variety of traditional specialties using environmentally friendly ingredients and offering various types of necessities. The market is able to empower a lot of human resources in the Gari Village by allowing them to be involved in productive economic activities.

In addition, empowering processes also increase the opportunity for individuals in managing resources. The sellers also made an agreement about the types of product they offer to ensure that all sellers can meet the needs of the customers, as well as on the layout arrangement of the stalls. As empowered individuals, they have a critical awareness of one's environment. In addition, the empowering process forces individuals to work with others. They learn to adapt to new situations and manage their resources to ensure that the exchange of goods and services in the ecological market can run smoothly. The sellers as agents of change are expected to work with others. By working with others as a part of the empowering process, the individuals, organizations, and communities can complement each other's strengths and weaknesses over time and become one team in working to ensure the success of the market activities.

The realization of the ecological meaning in this empowerment activity can be seen from the participatory behavior of sellers. The sellers use environmentally friendly materials to serve traditional food in the Argowijil Ecological Market. Food sellers offer a variety of traditional food which may be very difficult to find in modern markets today, such as *soto lenthok*, *botok*, *gatot*, *tiwul*, *cenil*, *jenang*, *cendol dawet*, *tempe bungkil*, and others. Many customers like these traditional foods because these foods have a good taste and also reminds them of their memories in the past. While in serving these traditional foods, the sellers also greatly minimize the use of plastic and other materials that can pollute the environment as an effort to reduce the waste. The sellers choose to use eco-friendly containers such as: banana leaves, teak leaves, woven bamboo (*beseke*), rattan plates, clay plates, and coconut shells that can be reused. These eco-friendly containers are very easy to find and available in nature around their houses. This experience certainly gives a distinct impression to the visiting customers. The sellers hope that the practice of using eco-friendly containers in the market can also be adapted by the customers when they return to their homes.

Meanwhile, other sellers provide basic necessities, clothes, kitchen utensils, toys, and various other necessities are also trying to reduce the use of plastic shopping bags. They do not hesitate to offer environmentally friendly shopping bags to customers as part of the education efforts as the use of plastic shopping bags can give a negative impact on the environment. Interestingly, after frequent shopping in this ecological market, some customers have become accustomed to carrying their reusable shopping bags instead of using plastic shopping bags. It should be noted that plastic waste takes up to 500 years to decompose in landfills, further leading to environmental damages and pollution (air, water, and land). The dangers of plastic waste for the environment continue to be echoed in this ecological market and getting more attention from many people. The education efforts continue to be practiced until now in market activities to generate empowered people who have a sense of control, critical awareness of their environment and are willing to actively participate in the efforts to preserve their environment.

2. Empowering and Empowered at the Organizational Level

At the organizational level of analysis, the empowering process is carried out by providing opportunities for the community to be actively involved in the decision-making process. This can be seen from the involvement of the community, especially market sellers who were also involved in the preparation of Standard Operating Procedure (SOP). The SOP allows the market operation to run effectively and can bridge the aspirations of the community. The ecological market can also serve as a social space for the public as well as a medium for community empowerment to increase social and economic welfare. Through empowerment, not only economic activities are developed, but so are social aspects. One of the social aspects that can be developed through empowerment activities is the social capital. Moreover, the village community is used to getting along in harmony, helping each other, working together, and having a sense of belonging in carrying out their daily activities.

In addition, the Directorate General of PPKL is also institutionally empowering the people with shared responsibilities and shared leadership. Shared responsibilities are carried out by the Directorate General of PPKL by involving cooperation partners such as the Department of Social Development and Welfare, Faculty of Social and Political Sciences, Universitas Gadjah Mada, and the Institute for Research and Empowerment (IRE), to offer a substantial validity (Krisdyatmiko & Latifah, 2019). The empowered

outcome is that the cooperation can help create and strengthen the community's network with other organizations in managing the ecological market.

The community also builds a wide network to promote the ecological market, especially to the people outside the Gari Village and Gunungkidul Regency. BUMDesa managers expand their network with various communities and often receive comparative study visits from other regions. To expand the outreach of networking, BUMDesa managers and the market management who possess digital literacy skills also take advantage of various social media platforms to promote and give updates on various market activities. Recognition of this ecological market means that there is an opportunity to increase the number of customers as well as the income of market sellers.

Argowijil Ecological Market also has a strategic location in this village because it is close to residential areas. People can buy their basic needs in this market and no longer need to go far away. Interestingly, this ecological market does not only function as a market, but also can accommodate other community activities, ranging from communal aerobics, practicing traditional dance, *ngabuburit* (waiting for breaking the fast during Ramadan), village food culinary festivals, art exhibitions, plant exhibitions, and so on. The village government, BUMDesa managers and village youth organizations also routinely hold the Gari Art Festival every year (except during the COVID-19 pandemic) as an event to introduce and display various potentials in the Gari Village in an attractive, innovative, and creative exhibit. This event also serves as a benchmark for the success of the community and government in developing the Gari Village as well as becoming a source of pride in Gari Village. The uniqueness of this ecological market activity is also often aired by local and national television stations. This show certainly provides a very significant contribution and benefit because this ecological market becomes more quickly known and favored by the public. The customers who visit this ecological market are even more diverse because they come from various regions.

Meanwhile, shared leadership is carried out by establishing the village government and BUMDesa management as the leading actors and extension of the Directorate General of PPKL in the village. For this reason, from an institutional perspective, the Argowijil Ecological Market is designated as one of the business units and village assets of BUMDesa. The purpose of this institutionalization is to maintain the sustainability of market activities so that they can be managed together to improve the welfare of the community. The empowered outcome can be seen in how the institutional governance can help the market become well organized collectively and provide an opportunity for all stakeholders to maximize their resources and join forces to create a dynamic system to achieve the same goal.

3. Empowering and Empowered at the Community Level

At the community empowerment level of analysis, the empowering process is carried out by providing access to resources to open up opportunities for village communities to be involved as empowered persons. The community empowerment begins with education on waste management, as it does not only communicate the importance of keeping the environment clean but can also have a positive impact in improving the economy (Rozalena, 2020). This can be seen from several activities in the market that involve the residents' participatory skills, such as processing organic and non-organic waste. Market sellers and customers can also learn at the 'Compost House' to practice how to sort and process organic and non-organic waste. The application of the 3R system (Reduce, Reuse, Recycle) is certainly one of the efforts to create a clean and healthy environment through waste management (Helmi et al., 2018). In the

ecological market, sellers and customers are taught and accustomed to sorting their waste into the organic or non-organic waste bin. In some corners, garbage bins have been provided with different colors to distinguish the contents of each waste. The seller and customers can sort the waste first before putting it into each color of the garbage bin.

The organic waste that has been collected will be processed and used as a mixture for making organic fertilizers, while non-organic waste that can be recycled will be reused as a material that has more economic value. Meanwhile, for non-organic waste that cannot be recycled and reused will be disposed of in a landfill. Sustainable waste management in practices, from sorting to processing waste, are important because nationally, based on data from the Indonesian Ministry of Environment and Forestry in 2020, waste from traditional markets still ranks the second highest at 16.4%, after household waste at 37.3% (Eticon, 2021). The large amount of waste from traditional markets activities must be minimized with wise efforts. So, the wise effort that can be made in the Argowijil Ecological Market is to practice 3R. In practice, the waste management with 3R not only gives benefits to the environment sustainability but also increases the economic value of the waste as well as contribute to economic welfare. With Compost House, the market seller and customers already have a good mindset and awareness in practicing 3R.

Furthermore, other empowerment activities are planting and cultivating endemic plants such as: Pule Trees and Joho Trees. In one of the interviews with the villagers, they said the following: "In the past, the Mount Wijil area was overgrown with Pule Trees and Joho Trees. Due to mining activities, the trees were constantly cut down. Now, there is only a limited number of these trees left. These trees are very difficult to find. So, we need to plant this tree." Based on this interview, these trees were planted around the market area, not only as a shade for the environment but also to remind people about these trees. In recent years, the rapid mining exploitation has resulted in many trees being cut down. The loss of these trees has broken the chain of life. The amount of oxygen supply is decreasing while the level of air pollution tends to increase. Likewise, the amount of water supply in the ground is decreasing so the local people who live around the mining area have difficulty in obtaining clean water to meet their daily needs. Considering the important role of these trees in maintaining environmental stability, so Pule Trees and Joho Trees were replanted as reforestation efforts.

In Javanese, the name of the tree "Pule" stands for *Pusating Lelaku*, while "Joho" stands for *Joyoning Kahono*, both meanings referring to "the center for activities." The BUMDesa managers and sellers believe that the names not only give an identity to a place, but also contain hope and prayer that the market can improve the community's economy. They believe that in the future, the market can also thrive and grow like a tree as well as become the center of the community's socio-economic activities. Interestingly, the name trees are also used to name of the space along the two sides of the Argowijil Ecological Market building, which consists of stalls. The right side of the building is called Pule, whereas the left side is called Joho. Based on this condition, the economic activities and environmentally friendly activities in the Argowijil Ecological Market are continuously integrated and complement each other. This uniqueness will distinguish it from other markets in general.

Moreover, the Argowijil Ecological Market also receives high appreciation from the public and customers because it can maintain its existence. We understand that due to the development of the digital era and the proliferation of modern markets as well as

online marketplaces, many traditional markets are eventually closed down due to the continuously decreasing number of customers. However, the Argowijil Ecological Market was able to maintain its socio-economic activities consistently and sustainably (except when COVID-19 and due to the government's social mobility restriction policy). With a clean and green environment, as well as the friendliness of the sellers, customers feel comfortable and always want to come back to the ecological market, hence the existence of the Argowijil Ecological Market can be maintained to nowadays. It is not surprising that the circulation of money in the ecological market can generate up to IDR 30 to 40 million (NTD 60.000 – 80.000). The community's economic independence can be achieved if the community is able to maximize their potential resources (Puspita et al., 2021). Ultimately, the market shows an extraordinary achievement because not only does it contribute to economic empowerment, but also provides another multiplier effect for the development progress of the village economy and the surrounding area.

Conclusion

The analysis on the empowerment activities shows that although each level of analysis is discussed separately, in reality they are connected to each other as part of the economic activities of the Argowijil Ecological Market. This can be seen from the individual, organizational, and community empowerment that mutually support each other. As a productive ecological market that has been established for more than five years, economic empowerment activities both in the empowering processes and the empowered outcomes at the individual, organizational, and community levels have been successfully carried out in a sustainable manner. At the individual level of analysis, the empowered person has a good sense of control, critical awareness, and participatory behavior in practicing ecological meaning in the market economic activities. At the organizational level of analysis, the empowered organization can be seen from all stakeholders involved to manage the Argowijil Ecological Market through the institution of BUMDesa, which allows them to effectively manage market activities, build and expand networks, and influence policy decisions. At the community level of analysis, the empowered communities have well-connected organizations and participatory skills to improve their community life both in economic and environmental activities through the Argowijil Ecological Market. All of these empowerment activities (individual, organizational, and community) to restore the ex-mining site can be realized because all stakeholders involved are willing to play a role. They work together to save the environment by transforming the abandoned and damaged site into an environmentally friendly market which improves the socio-economic welfare of the community, village and the surrounding areas. The economic empowerment activities at Argowijil Ecological Market serve as a successful example which can further be adapted to the other communities, especially for those who live in unproductive ex-mining areas.

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