

Trapped in Vulnerability: Post-Lapindo Disaster Relocation and Challenge of Achieving SDGs 8 on Decent Work and Growth

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ABSTRACT

Keywords:

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This study examines the socioeconomic impacts of the Lapindo mudflow disaster, which occurred in 2006 and caused the loss of homes, agricultural land, and livelihoods in Sidoarjo Regency. In response, the government implemented relocation and compensation policies under Presidential Regulation Number 14 of 2007. However, the extent to which these policies have supported the long-term economic sustainability of affected residents remains uncertain. This study aims to evaluate the socioeconomic conditions of Lapindo mudflow victims living in the Renojoyo Housing Complex, the primary relocation site for affected communities. The study employed a qualitative approach using field observations, in-depth interviews, and a literature review. Data were collected from three key informants: two residents and one neighborhood association (RW) leader. The findings show that most residents experienced declining incomes, lost permanent employment, and shifted to the informal sector, particularly daily labor and small-scale businesses. Limited access to skills training, the small number of local MSMEs, and dependence on government assistance have contributed to new forms of economic vulnerability. The novelty of this study lies in proposing an integrated post-disaster economic recovery framework that combines macro- and micro-level strategies, including targeted capital assistance, training based on local potential, and stronger community-government coordination. This framework promotes participatory relocation and supports the achievement of SDGs 8 through inclusive and sustainable economic recovery.

INTRODUCTION

In a globalized world, all cities around the world are highly vulnerable to the impacts of disasters caused by both nature and humans. Based on the Republic of Indonesia Law Number 24 of 2007 concerning disaster management, it is stated that a disaster is an event or series of events that threaten the lives and livelihoods of the community caused by natural factors and/or non-natural factors as well as human factors, resulting in human casualties, environmental damage, loss of property, and impacts that in certain circumstances can hinder national development. In connection with the problem of disaster events. The Lapindo hot mudflow incident is a disaster case that occurred in 2006 in Sidoarjo Regency, East Java Province, caused by drilling by Pt. Lapindo Brantas Inc. until it has become a hot issue at the national and even international levels. The Lapindo mudflow has submerged an area of more than 6.5 km², including factories, agricultural land, and the Surabaya- Gempol toll road (McMichael, 2009). Based on Presidential Regulation No. According to Presidential Regulation No. 14 of 2007, the initial impact of the Lapindo mudflow included 17 villages across three sub-districts in Sidoarjo Regency, East Java, marking the start of the disaster (Presidential Regulation No. 14/2007). The latest data in 2021 shows that the number of physically affected villages

has decreased to 11, still spread across three sub-districts (Central Statistics Agency, 2021). This difference in the number of villages reflects changing conditions and updates to disaster impact data during the period by authorized regional agencies.

The problem of the Lapindo mudflow disaster in Sidoarjo by PT Lapindo Brantas not only reflects physical and economic damage, but also reveals a systemic failure in disaster management that should be oriented to the needs of victims. The impact of the mudflow that began in May 2006 involved more than 8,200 displaced residents, damaged 1,683 houses, destroyed 200 hectares of agricultural land, and economic losses due to this disaster were estimated to reach Rp3 trillion (BPS Kab. Sidoarjo, 2007). In response to the disaster, the government established the Sidoarjo Mudflow Management Agency (BPLS) through Presidential Decree Number 14 of 2007 and launched the PNPM Mandiri program to improve the welfare of affected communities through social, environmental, and productive economic activities. However, the implementation of this policy still received criticism because it was considered to have not prioritized the role of the government in focusing on the needs of victims. Presidential Regulation No. 14 of 2007 was issued to resolve the problem and the regulations governing the socio-economic problems of Lapindo mudflow victims were actually considered to be more beneficial to PT Lapindo Brantas Inc compared to the requirement of the presidential regulation to protect the people who were victims of the effects of the eruption, thus pushing them into a situation of serious economic vulnerability.

Nineteen years after the Lapindo mudflow disaster, the impact of the Lapindo mudflow disaster has not been fully resolved, and victims who have been relocated and received compensation still feel the impact on meeting their living needs, especially in their economic sector. Data from the Central Statistics Agency (BPS) of Sidoarjo Regency shows that the level of economic vulnerability in the affected area is still relatively high compared to other areas. Several previous studies also indicate a gap between the assistance provided and the real needs of the affected community. The environmental conditions of settlements after the Lapindo mudflow disaster are currently quite concerning. Handling other impacts felt by the community, such as economic problems due to the loss of agricultural land and community livelihoods, certainly still requires serious attention from various parties. Post-disaster assistance that is incentives in the initial stage for disaster victims is usually abundant during the emergency response period after a disaster. However, after that phase ended, the community was forced to struggle on their own to resume their lives as before (Bahransyaf, in Ekawati, 2020:41-53).

The government and relevant parties have launched various economic recovery programs in response to restoring the lives of affected communities, including financial compensation, skills training, and economic empowerment programs. In Indonesia, this commitment is enshrined in Presidential Regulation No. 59 of 2017, which regulates the achievement of the Sustainable Development Goals (SDGs) through the National Action Plan for Disaster Risk Reduction (RAN-PRB). Sustainable Development Goals SDGs comprise 17 goals and 169 targets expected to be achieved by 2030, including Goal 8:

Promote inclusive and sustainable economic growth, full and productive employment, and decent work for all (Presidential Regulation 59/2017). The SDGs have been integrated into the National Medium-Term Development Plan (RPJMN) as a national commitment to improving community welfare, sustainable urban development, and environmental risk mitigation.

In the context of this article, research on the economic vulnerability and challenges in achieving SDGs 8 among displaced communities following the Lapindo mudflow disaster is urgent. The socio-economic conditions of the victims of the Lapindo mudflow disaster in Renojoyo Housing Complex indicate that increasing capacity, skills and developing sustainable productive businesses are key factors to ensure success in achieving SDGs 8 and ensuring success in integrating decent and sustainable work as part of the post-disaster recovery process. The study aims to answer existing problems, namely: what is the strategy of the victims of the Lapindo mudflow disaster in adapting to the post-relocation environment? and What are the challenges faced by the victims of the Lapindo mudflow disaster in improving their standard of living and achieving decent work after relocation in accordance with SDGs 8?

RESEARCH METHOD

This research uses a qualitative approach with a case study method to explore in depth the dynamics of socio-economic vulnerability, challenges and sustainable livelihood recovery strategies experienced by relocated residents after the Lapindo mud disaster. Given the complexity of the social and economic issues that arise, a qualitative approach with a case study design was used (Creswell, 2014). As stated by Creswell (2014:4), *"Qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem"*. The case study design was chosen to obtain an intense description and in accordance with the characteristics of the research question which is "how / why" and contemporary field phenomena, especially the community affected by the Lapindo mudflow disaster. The case study method is appropriate for investigating contemporary phenomena in real-life contexts, especially when researchers have little control over the events under study (Yin, 2018).

- Location and Time of Research

The research location is Renojoyo Housing Complex, KedungSolo Village, Porong, Sidoarjo, East Java. The area is a relocation area from Renokenongo Village which was the first village affected by the Lapindo mudflow in 2006. This location was chosen because all residents of Renojoyo Housing Complex are directly affected by the Lapindo mudflow disaster and experienced collective relocation, so it is considered representative to understand the adaptation process, challenges and post-disaster recovery strategies. The research was conducted for 2 intensive days in mid-2024.

- Data Sources and Research Participants

The data sources in this study are primary data and secondary data. Primary data is in the form of observations and interviews with participants. In addition, secondary data in the form of review results from previous literature studies and written documents. Participants were selected using snowball sampling technique, which is a method of tracing participants through recommendations from initial participants who have in-depth knowledge related to the phenomenon under study (Creswell, 2012). The research participants included two residents and an RW who plays a role in socio-economic issues and knows the dynamics of restoring the livelihoods of relocation residents. The research participants are Lapindo mud disaster victims from Renokenongo village who were relocated to Renojoyo Housing Complex.

- Data Collection Instruments and Procedures

The main instrument in this research is the researcher himself, as emphasized by Creswell (2013: 45) that the researcher is the primary instrument for data collection and analysis. Data collection was carried out through several procedures, namely: semi-structured interviews with affected residents to explore their experiences, environmental observations were also carried out to see firsthand the physical conditions, livelihood conditions of Lapindo mud disaster victims and supporting infrastructure in the relocation area. In strengthening the data, researchers conducted photo documentation and conducted a policy review through the study of official documents such as Presidential Regulation No. 14 of 2007 on the Establishment of BPLS, Presidential Regulation No. 33 of 2013 on the Social and Economic Settlement of Lapindo Mudflow Presidential Regulation No. 59 of 2017 on SDGs, data from the Central Bureau of Statistics (2021) Central Bureau of Statistics of Sidoarjo Regency (2007) as well as secondary data from national and international academic publications.

- Data Analysis Techniques

Data was analyzed using thematic analysis techniques according to the Miles and Huberman (2014) model which includes three stages, namely: Data reduction as a process of selecting, summarizing and compiling relevant data from interviews and observations. After that, Data presentation is carried out in narrative form and conclusions are drawn to compile interpretations of the data analysis that has been carried out on the findings

obtained. Data validity was maintained through triangulation techniques and sources, namely comparing the results of interviews with observations and written documents or document reviews. Research ethics were maintained by explaining the purpose of the research to each participant, obtaining informed consent, and ensuring the confidentiality of participants identity and personal information.

RESULTS AND DISCUSSION

The aftermath of the Lapindo mud disaster in 2006 due to drilling by Pt Lapindo Brantas Inc resulted in changes to the social and geographical structure of the surrounding community. One of them is the emergence of highly organized community associations. The character of these associations is built on solidarity and common interests in fighting for common goals. One of these associations is Pagarekontrak, which later became Pagar Korlap. This association is a victim of Renokenongo Village, which prefers cash and carry and social resettlement because it does not want to be separated from its old neighbors.

Renokenongo village was one of the affected areas and the first village to be submerged in mud in the Porong sub-district of Sidoarjo Regency. Even its existence on the world map has disappeared because it was submerged by Lapindo mud (Septiani, 2017). Many houses, public facilities and livelihoods (farmland, livestock, ponds) were lost due to the Lapindo mudflow disaster. This finding is reinforced through a Google Maps search (Figure 1), which shows that the former Renokenongo village area is still a vast expanse of mud with no trace of settlements.



Figure 1: View of the area affected by Lapindo mudflow through Google Maps
Source: Google Maps (accessed July 22, 2025)

PT Lapindo Brantas Inc, as the party responsible for the disaster, provided compensation for the amount of land drowned by Lapindo mud, and recommended a relocation program in the middle of the city due to the submergence of Lapindo mud. Residents were then relocated in refugee camps until finally relocated in a new place.

Renojoyo residential area is one of the relocation areas for Lapindo mudflow victims, particularly from Renokenongo village. Residents who chose to live here bought around 10 hectares of land which was then divided into several lots and built houses on the land independently. This is in line with research conducted by (Auliya, Idris, & Agus, 2023). However, the relocation area still faces ownership legality issues. Most residents only have a land sale and purchase deed as proof of ownership, but do not yet have a Building Construction Permit (IMB) due to the illegal status of the land. However, land disputes have prevented owners from obtaining home ownership certificates. As a result, about 300 households in Renojoyo have been unable to certify their homes (Dalimunthe,

2024;106). More than a decade after the relocation, the population of the Renojoyo Housing Complex continues to grow. According to 2010 data, the residents of the relocation area consisted of 390 families (KK) with a population of 1,410. Meanwhile, 2022 data shows that number has increased to 407 families with a total population of 1,586 (Auliya, Idris, & Agus, 2023).

Table 1. Renojoyo Housing Population Data in 2022					
Number	RT	Number of Inhabitants	Number of Families	Man	Woman
1	01	472	114	236	236
2	02	383	107	192	191
3	03	278	68	141	137
4	04	453	118	245	208
Total		1586	407	814	772

Figure 2. Table of Population Data for Renojoyo Housing Complex in 2022
Source: Renojoyo Housing Population Data in 2022 (2022)

The growth of population data is further strengthened by data from Kedungsolo Village in Sidoarjo Regency BPS data in the last few years from 2016 to 2020 the number of villagers in Kedungsolo has increased, from 4,302 people to 5,175 people (Sidoarjo Regency Central Bureau of Statistics, 2021). One of the areas in KedungSolo Village experienced an increase in the number of residents from Renojoyo Housing Complex.

This increase in population occurred due to natural growth, such as births in the neighborhood of residents who have settled, as well as limited migration from the extended families of Lapindo mudflow victims who want to live nearby. However, this growth has not been accompanied by an improved quality of life. Most residents still face challenges related to land ownership, limited access to public facilities, and difficulties in obtaining permanent employment. These conditions further exacerbate the level of economic vulnerability experienced by the community.

In 2010, after post-relocation in Renojoyo Housing Complex, many residents did not work and only relied on compensation money to fulfill their daily needs. Therefore, economic vulnerability had already occurred in the early post-relocation period, which made it difficult to implement sustainable livelihoods. Many residents are permanently unemployed due to the loss of their livelihoods, as well as the loss of access to jobs, previous socio-economic networks and adequate supporting infrastructure as a result of the Lapindo mud disaster. Although compensation paid by PT Lapindo Brantas Inc has been implemented with some compensation amounts paid. However, the economic condition of the community declined after about 10 years until now and many residents turned to small businesses and worked as factory workers, farm labors, drivers, entrepreneurs, craftsmen, and manual labors with uncertain income.

Region	District	Origin of the Village	Number of Families	Number of Inhabitants	Man	Woman	General Livelihood
Renojoyo	Kedungampel Porong	Renokenongo Mindi Glagaharum	9532	1980	915	1065	Factory and farm labour, driver, entrepreneur, handyman/craftsman

Figure 3. Table Employment data of Renojoyo Resident after relocation

Source: Appendix 2. Resettlement profile (*Mud inhalation: Resilience and trauma in Porong communities affected by the Lapindo Mud Disaster, East Java, Indonesia Dalimunthe, K.L (2024).*

- **Strategic responses to the economic needs of Lapindo Mudflow victims**

Population data for 2022 in Renojoyo Housing Complex shows that the number of families with dependents ranges from 1 to 8 people. These dependents usually consist of a father, mother, grandparents, and several children. This causes the economic needs of Lapindo mudflow victims to be different, as well as employment and income. Each resident has different access to resources to sustain their lives after relocation. According to Coleman (1990:5), in rational choice theory, "*Actors in social systems have different amounts and types of resources and operate under different constraints. These differences affect their choices and, consequently, the outcomes they achieve*". Consequently, this leads to different outcomes. Residents affected by the Lapindo mud disaster, as actors, are expected to utilize the resources at their disposal to achieve sustainable goals (in this case, strategies to meet economic needs after the Lapindo mud disaster). In the end, by utilizing existing resources and applying various strategies to meet economic needs, some of the strategies used by Lapindo mudflow victims include changing professions, multiple income patterns, improving the quality of human resources, effective financial management, and strengthening social networks.



Figure 4. MSMEs Business of a Resident of the Renojoyo Housing Complex
Source: Field documentation, 2024.

Some residents carry out a change of profession strategy to overcome economic problems due to the impact of the disaster by utilizing the compensation as business

capital and trading. This is also reinforced by the results of an interview with informant Y as the Head of RW in Renojoyo Housing Complex *"In Renojoyo Housing Complex, there are residents who are successful and can manage their finances after relocation by establishing MSMEs, some of the residents there also work in the MSME"*. However, there are still relatively few MSMEs and shops in the Renojoyo Housing Complex area so that the employment opportunities opened from MSMEs and shops around the area are still small and cannot cover all Renojoyo housing residents who want to work. Not a few residents lost their agricultural land because it was submerged in mud, while their age was getting older. This makes them forced to work as manual laborers with uncertain income, so they are forced to change professions to overcome economic difficulties.

Residents of Lapindo mud disaster victims after being relocated in Renojoyo housing Complex also carry out a dual livelihood pattern strategy. Such as doing other jobs besides the main job or by mobilizing labor in the family such as fathers, mothers, and children to do work or work to earn income. This dual livelihood pattern is considered effective for increasing income because family income increases with other family members who also work (Anggraini et al., 2020). This is also reinforced by the results of researcher observations that there are many mothers in Renojoyo Housing Complex who work to help ease the burden on their husbands. Such as working as a tailor, opening a shop / store, shopkeeper, MSMEs employee, onion peeling laborer, and others. Although with minimal rewards or income this must be done by all residents of Lapindo mud disaster victims in Renojoyo Housing so that they can get out of the problem of economic vulnerability after the Lapindo mudflow. The sustainable livelihoods framework emphasizes the important link between livelihood activities and income generation as fundamental to household resilience and well-being, highlighting income as a key determinant of sustaining livelihoods (Yusriah Amaliah et al, 2025). In addition, residents also look for side jobs by renting out rice fields to others, construction workers and others.

During the post-relocation period, there were many teenagers and adults who were unemployed due to the impact of the relocation. Residents use the compensation money to fulfill their daily needs while unemployed. This is strengthened by the statement of Informant X that *"For the problem of compensation and relocation assistance from Lapindo, it is clear that there is no problem, but we have experienced a significant decline due to the effects of the relocation, which reveals that the vulnerability and economic difficulties experienced by the community after relocation due to the Lapindo Mud disaster are caused by several interrelated factors."*

Another strategy used by residents is improving the capacity and skills of their human resources to increase income. During their relocation to the Renojoyo Housing Complex, residents participated in skills training or courses conducted between 2010 and 2013 by the Lapindo Mudflow Mitigation Agency (BPLS). These courses included sewing, beauty, and other skills. However, the follow-up to this training was unclear, and residents lacked capital and interest in continuing the training as a source of income.

Regarding training, Resource Person Z, a resident affected by the Lapindo mudflow disaster, expressed his hope that stakeholders would. *"We also hope for regular training and job vacancy programs from the local and village governments for residents affected by the Lapindo mudflow to help them with their economic needs, given the extent of poverty in this housing complex."* *"If possible, there could be more training, such as sewing or something else, so that the poor residents of the Renojoyo housing complex can acquire specific skills,"* he added. Skills training and financial assistance available at the village level are still difficult for many residents to access.

Therefore, the central government, regional governments, and village stakeholders must also optimize their roles to maximize skills training programs that have been ineffective so far, so that they can encourage a sustainable economic recovery process for residents affected by the Lapindo mudflow disaster in the Renojoyo Housing Complex. This is important in the context of the vulnerability experienced by residents after relocation and is a crucial part of overcoming the challenges of achieving Sustainable Development Goal 8 (SDG 8) on decent work and inclusive and sustainable economic growth. By strengthening capacity empowerment and job opportunities, it is hoped that residents can escape the trap of post-disaster economic vulnerability and improve their quality of life sustainably.

- **Challenges Faced by Resident Renojoyo Housing Complex of the Lapindo Mudflow Disaster in Improving Their Standard of Living and Achieving Decent Work After Relocation in Accordance with SDGs 8**

Sustainable Development Goal (SDG) 8 emphasizes the importance of inclusive and sustainable economic growth and the creation of productive and decent employment for all (UNDP, 2015). However, for residents affected by the Lapindo mudflow disaster, achieving SDG 8 faces various obstacles. The labor market's absorption capacity in several industries in the relocation area is very limited after many businesses decreased production or closed down. This condition is also exacerbated by minimal government support for new job creation, resulting in a significant increase in unemployment and causing economic and social instability. Limited income conditions force many residents to rely on bank loans to meet daily needs, resulting in ballooning debt and further burdening their economic burden. Unstable economic conditions and difficult access to work actually widen the gap of social inequality and hinder the improvement of their independent standard of living. This is reinforced by the findings of Muharram et al. (2023) which shows that poverty has a direct influence on slow development growth in Sidoarjo Regency, including in areas affected by the Lapindo mud disaster. Inequality in post-relocation economic distribution is also a factor that exacerbates the stagnation of socio-economic development of affected communities.

In the last decade, although Renojoyo Housing Complex residents have relied on compensation funds as a source of fulfillment, they have continued to seek livelihood

opportunities through various strategies based on their resources. Given the lack and difficulty of employment opportunities in the affected areas, this effort presents a major challenge in escaping economic vulnerability.

In responding to this, the government and local government as well as village-level stakeholders must be optimal in helping to meet the economic needs of residents with the effectiveness of various programs that have been carried out by stakeholders so that people can get out of economic vulnerability. The local Rw and Rt always strive and coordinate with the KedungSolo village office as the closest stakeholder regarding programs and assistance that can be obtained by former Lapindo mud victims in Renojoyo housing. This is strengthened by the statement of Informant X as the head of the local RW who argued that *"It already exists, such as food security assistance from stakeholders in the form of some kind of cultivation management has been implemented to us but the impact has not been significant"*. This statement indicates that the community in Renojoyo Housing Complex has been able to take advantage of all the resources and programs that have been implemented and provided by stakeholders but still in a limited way in supporting their sustainable livelihoods.

Therefore, with various challenges and expectations from the Renojoyo Housing Complex community, the role of the government and local government as well as village-level stakeholders must be strengthened not only limited to the distribution of cash assistance or basic needs, but also through improving the quality and sustainability of empowerment programs, such as job skills training in accordance with local potential. However, limited capital and low community literacy regarding access to government programs have hindered their participation in the economic development process. As a result, many residents have experienced economic stagnation, which has resulted in widening social inequalities and the inability to improve their living standards independently. The impact of this economic downturn is not only felt at the household level, but also puts pressure on the regional economic system. Local governments are faced with serious challenges due to the declining number of productive economic actors, thus slowing down the process of long-term economic recovery. One consequence of these conditions is the increasing dependence of citizens on loans from financial institutions, such as banks and cooperatives, to fulfill basic needs. This dependence has led to a ballooning household debt burden and increased economic pressure on the community.

The economic imbalances created by the relocation process also have the potential to create areas with high levels of social vulnerability. Areas with structural poverty and weak social infrastructure tend to be breeding grounds for crime. Rising unemployment, school dropouts, and loss of livelihoods increase the likelihood of marginalized groups being driven to crime as a survival strategy. This situation further complicates the achievement of SDG 8, which emphasizes the creation of decent, productive jobs, and inclusive and sustainable economic growth.

In response to this situation, the government and all stakeholders are required to develop a comprehensive strategy through sustainable economic recovery programs, community empowerment, and providing access to new employment opportunities. Optimizing policies and programs, as well as cross-sector synergy, is crucial to ensure that the socio-economic recovery process for the Renojoyo Housing community can take place comprehensively and sustainably. This is crucial for addressing the various structural challenges following the Lapindo mudflow disaster and ensuring the achievement of SDG 8 in the Renojoyo Housing Complex area.

CONCLUSION

The policy of relocating residents affected by the Lapindo mudflow to the Renojoyo Housing Complex, as mandated by Presidential Regulation No. 14 of 2007 on the Sidoarjo Mudflow Management Agency (BPLS), is a strategic long-term effort to restore the lives of communities who lost their homes due to the disaster. The results of this study emphasize that the relocation policy cannot be viewed merely as a physical relocation, but must be integrated into a holistic approach in order to address the comprehensive needs for social, economic, and psychological recovery.

Through a comprehensive review of field findings, this study revealed that the majority of residents affected by the Lapindo mudflow disaster still face profound economic vulnerability, loss of livelihoods, difficulty adapting to the new environment, and psychological distress. These findings indicate that the relocation implementation has not fully addressed the community's basic needs. This situation suggests that the relocation implementation has not been fully effective in addressing the fundamental challenges hindering the achievement of SDG 8 on decent work and inclusive and sustainable economic growth.

On the other hand, some residents have managed to survive and adapt independently by utilizing existing resources and developing sustainable livelihoods, thus driving economic growth in the Renojoyo residential area, albeit on a limited scale. To bridge this gap, integrated policy interventions are needed at two levels: (1) macro policies, including the formation of an independent evaluation team, the provision of targeted capital assistance, skills training based on local potential, and facilitation of small-scale industry development; and (2) micro policies, through strengthening coordination between neighborhood units (RT/RW), village governments, and relevant institutions in the implementation of the village food security and Sustainable Food Yard (P2L) programs.

Thus, this conclusion reaffirms the importance of relocation that is not only administrative, but also participatory and oriented towards community empowerment. Only with this approach can relocation become an instrument of just and sustainable

recovery, and be able to enable residents to strive to escape their economic vulnerability and rebuild the socio-economic foundations of the Renojoyo Housing Complex residents in a more independent, sustainable and resilient manner.

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