

Zakat Utilization For Post-Disaster Housing Recovery: Evidence From Cianjur Using Bi-Was Index

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Abstract

The utilization of zakat funds plays a strategic role in post-disaster recovery, particularly in providing adequate housing and basic facilities. This study aims to analyze the effectiveness of zakat fund utilization by LAZISMU in housing, sanitation, and clean water programs in Cianjur after the 2022 earthquake. Using a qualitative descriptive approach, data were collected through in-depth interviews, observation, and documentation. The findings reveal that zakat funds significantly improved housing quality through the RTLH program and enhanced access to sanitation and clean water. The BI-WAS index shows substantial improvement in water and sanitation dimensions after program implementation, indicating high effectiveness in improving beneficiaries' welfare. This study highlights the importance of integrating zakat into formal disaster management strategies and emphasizes a holistic recovery approach covering housing, sanitation, and health.

Keywords: *zakat funds; post-disaster recovery; housing; BI-WAS index; community welfare*

1. INTRODUCTION

The effective utilization of zakat funds is crucial for poverty alleviation and community empowerment. Zakat institutions, such as BAZNAS and LAZISMU, play a pivotal role in managing these funds to ensure they reach the intended beneficiaries, known as mustahik. Research indicates that zakat distribution can be optimized through targeted programs that empower recipients, such as providing capital for small businesses in agriculture and trade, which significantly enhances community welfare (Hidayat & Mawardi, 2022; Maisyarah, 2024; Zulkifli, 2022). Furthermore, transparency and



accountability in zakat management are essential to build trust among muzakki (zakat payers), which can lead to increased contributions (Baidhowi, 2023; Mokodenseho, 2024; Nasution, 2023). Innovative approaches, including digital fundraising and blockchain technology, have also been suggested to improve the efficiency and effectiveness of zakat fund management (Hasan & Kamiluddin, 2021; Millatina et al., 2022; Nazeri, 2023). Ultimately, the goal is to transform mustahik into muzakki, thereby fostering a sustainable cycle of giving and economic empowerment (Furqani et al., 2018; Hidayat & Mawardi, 2022).

The utilization of zakat funds in post-disaster housing is a critical area for enhancing community resilience and recovery. Zakat, as a form of Islamic philanthropy, can be strategically deployed to support disaster-affected populations by providing immediate relief and facilitating long-term housing solutions. Research indicates that zakat can effectively address the needs of disaster victims, particularly when integrated with local government efforts and community organizations (Suprayitno et al., 2023; Vegirawati, 2023). For instance, zakat institutions like LAZIZMU have demonstrated success in implementing housing programs that cater to the basic needs of affected individuals, thereby promoting sustainable recovery (Suprayitno et al., 2023). The strategic use of zakat in post-disaster contexts not only aids immediate recovery but also contributes to the long-term economic empowerment of affected communities (Alwi, 2023; Irwan & AWWALUNNISA, 2022).

Zakat can be effectively allocated to support the reconstruction of housing for disaster-affected populations, ensuring that the new structures are not only functional but also culturally appropriate and sustainable. Studies indicate that post-disaster housing initiatives often face challenges related to community participation and the adequacy of designs that meet the needs of survivors (Biswas, 2019; Tsai et al., 2021).

In Cianjur, employing the WAS (Welfare Assessment Score) index can help assess the effectiveness of zakat fund utilization in housing reconstruction. This index can evaluate various dimensions of welfare, including safety, satisfaction, and community integration, which are crucial for long-term recovery (Kamel, 2012). Furthermore, integrating community feedback into the design and implementation of housing projects can foster a sense of ownership among residents, thereby enhancing the overall success of the reconstruction efforts (Shahzad et al., 2022).

The strategic use of zakat in post-disaster housing not only addresses immediate shelter needs but also contributes to the broader goal of sustainable

community development and resilience against future disasters (Bilau et al., 2018; Li, 2023).

Lazismu, an independent institution within Muhammadiyah, has been instrumental in providing relief to communities affected by disasters, particularly the devastating earthquake that struck Cianjur in November 2022. In response to the widespread damage to homes and infrastructure, Lazismu has undertaken initiatives to construct decent housing for affected residents. However, the lack of adequate sanitation facilities poses a significant health risk to the community. This study aims to explore the integrated implementation of housing, sanitation, and clean water projects in Cianjur, funded by zakat through Lazismu. By examining the impact of these initiatives, the research seeks to understand how they can contribute to alleviating extreme poverty in the affected areas and improve the overall quality of life for the residents of Cianjur.

2. METHODS

This study employs a qualitative approach with a descriptive design to analyze the utilization of zakat funds in post-disaster housing recovery in Cianjur. The research was conducted in three sub-districts, namely Kadupandak, Pagelaran, and Pasir Kuda.

The data used in this study consist of primary and secondary data. Primary data were obtained through in-depth interviews with LAZISMU managers and beneficiaries of housing assistance. Informants were selected using a purposive sampling technique, with criteria including disaster victims who received housing assistance. Secondary data were collected from reports, documents, and relevant literature.

The population of this study consists of all mustahiq, defined as individuals eligible to receive zakat, who received post-disaster housing assistance. A purposive sampling technique was employed to ensure that the selected sample adequately represents the population.

Data analysis was conducted inductively through the stages of data reduction, data display, and conclusion drawing. In addition, this study also integrates analysis using the BI-WAS index to assess changes in welfare conditions before and after the program, particularly in the dimensions of housing, sanitation, and clean water. The results of the analysis were then interpreted by comparing field findings with relevant literature to obtain a comprehensive understanding of the effectiveness of zakat fund utilization in supporting post-disaster recovery.

3. RESULT AND FINDINGS ANALYSIS

Zakat Fund Allocation for Housing Quality Improvement

zakat funds are not exclusively allocated for activities directly related to zakat, sadaqah, and infaq; they also encompass additional social funds contributed by Muhammadiyah members and the general public. These funds are utilized for various purposes, including the construction of Muhammadiyah mosques, support for educational institutions, and assistance for non-certified teachers in Muhammadiyah schools. However, providing adequate housing for disaster victims, particularly those affected by the 2022 Cianjur earthquake, is a high priority. These individuals are deemed eligible to receive zakat to enhance their housing conditions and overall quality of life (Mardalis, 2023).

Lazismu, specifically the Bogor and Cianjur branches, has been entrusted with utilizing zakat funds to deliver comprehensive assistance for the reconstruction of homes damaged by the Cianjur earthquake. This assistance includes constructing new homes and repairing existing structures, adhering to the standards outlined in Law No. 1 of 2011 on Housing and Settlement Areas. This ensures that beneficiaries receive homes with appropriate dimensions, access to clean water, durable roofing and walls, and adequate sanitation facilities (Hakim & Setyaningsih, 2022).

The Unfit for Human Habitation (Rumah Tidak Layak Huni or RTLH) program, which focuses on improving substandard housing, has criteria and requirements aligned with national regulations. To identify eligible beneficiaries, data on extreme poverty is obtained from the National Population and Family Planning Agency (BKKBN), utilizing a household income pyramid (Fakhri et al., 2023). This research involved conducting interviews with various informants to gather information about the provision of assistance to victims of the Cianjur disaster, including the distribution of aid and the construction of new homes (Effendi, 2023; Widodo, 2023).

The results of interviews with informants from the sub-districts of Kadupandak, Pagelaran, and Pasir Kuda indicate that the housing assistance provided played a crucial role in the recovery process of affected communities. An informant from Kadupandak emphasized that the assistance was essential, as they had lost their homes and urgently needed proper housing, especially for their children.

In Pagelaran, informants expressed deep gratitude for the housing support provided by LAZISMU. Although the houses were relatively modest in size, they were considered sufficient to meet the needs of their families. The

informants also acknowledged that their limited financial resources after the disaster made it impossible for them to rebuild their homes independently. Additionally, a sense of social hope emerged, as some informants expressed their desire to reunite and live again alongside neighbors who were still residing in temporary shelters.

Similarly, informants in Pasir Kuda conveyed very positive responses toward the assistance received. They stated that the houses provided were adequate, as they included essential facilities such as bedrooms, beds, mattresses, clean water, a kitchen, and washing areas. The informants highlighted that without such assistance, they would have been forced to seek shelter in inadequate places such as gardens or overcrowded temporary housing. Furthermore, the role of volunteers was highly appreciated, as they provided both technical and emotional support during the recovery process, particularly in the early stages when victims were still coping with trauma.

Based on the responses from multiple informants across three sub-districts, it is evident that the recipients of the livable housing assistance program were highly satisfied with the support provided by LAZISMU.

Several informants also expressed gratitude for the additional support received to repair their damaged homes. This assistance proved invaluable, as many were unable to afford such repairs on their own. The informants highlighted the significant impact of these efforts, which enabled them to rebuild their lives and regain a sense of normalcy.

The assistance provided by LAZISMU, including the construction of new homes and the repair of damaged structures, has had a profound positive impact on the lives of disaster victims. Data collected from multiple informants across the three sub-districts (Kadupandak, Pagelaran, and Pasir Kuda) revealed that beneficiaries of the livable housing assistance program were generally satisfied with the support provided by LAZISMU.

Additionally, several informants who received assistance to repair their damaged homes expressed gratitude for the support provided by LAZISMU. They noted that without this financial assistance, they would have been unable to afford the necessary repairs. Many shared stories of how the program enabled them to rebuild their homes and regain a sense of normalcy, despite the challenges they faced. For instance, some informants stated that the assistance from LAZISMU enabled them to repair their damaged homes and improve their living conditions, allowing them to continue residing in their own houses. The financial support provided was considered highly meaningful, particularly for families whose homes had suffered severe

damage. In addition, the guidance and assistance from volunteers throughout the repair process helped increase the beneficiaries' sense of security and confidence

The responses from informants in the Kadupandak, Pagelaran, and Pasir Kuda sub-districts provide valuable insights into the impact of LAZISMU's livable housing assistance program. A common theme among the informants was deep gratitude for the assistance received. They acknowledged that the program was crucial in helping them rebuild their lives after experiencing significant loss and displacement due to natural disasters.

The program has not only addressed immediate housing needs but has also had a profound impact on the overall well-being of beneficiaries. By providing safe and secure housing, LAZISMU has contributed to improving the physical and mental health of individuals and families. The program has also played a role in strengthening community resilience by enabling people to rebuild their lives and recover from adversity.

In conclusion, the analysis of informant responses highlights the positive impact of LAZISMU's livable housing assistance program. By providing essential housing support, the program has empowered beneficiaries to overcome challenges and build a better future. While the majority of beneficiaries expressed gratitude for the livable housing assistance program, a small number indicated that the impact was limited. This may be attributed to factors such as a lack of clear information about the program, insufficient outreach efforts, and the ongoing trauma experienced by some disaster victims.

The transformation of uninhabitable houses into livable homes, along with the provision of sanitation and clean water, is particularly significant in areas affected by floods and landslides in the three sub-districts. These disasters often leave communities in a state of extreme poverty, disrupting access to essential facilities like housing, clean water, and sanitation.

Inadequate access to basic facilities, such as clean water and sanitation, can lead to significant health issues, including diarrhea and fever, as well as security concerns and a diminished quality of life. These challenges are particularly pronounced for individuals reliant on agriculture, as they hinder their ability to engage in productive activities (Armah et al., 2018). The disparities in access to improved water and sanitation facilities between rural and urban populations exacerbate these issues, with urban households generally having better access (Bartram et al., 2014).

The lack of adequate sanitation facilities can affect educational outcomes, particularly for girls, who may avoid school due to inadequate privacy and hygiene (Tania et al., 2015). In regions where sanitation services are lacking, such as informal settlements, residents face numerous challenges that limit their ability to meet basic sanitation needs (Chumo, 2023). This situation is compounded by the fact that many healthcare facilities also suffer from inadequate water and sanitation services, which further impacts public health outcomes (Bijelović et al., 2021; Paunovic & Jovanović, 2022).

Addressing these deficiencies is crucial for improving overall health and productivity in affected communities. Investments in infrastructure, particularly in rural areas, are necessary to ensure that individuals can engage in productive activities without the burden of health-related issues stemming from inadequate access to basic facilities (Abdullahi & Yusoff, 2019).

To address the issue of extreme poverty, the Indonesian government has implemented Presidential Instruction No. 4 of 2022, which outlines several strategic policies aimed at alleviating poverty through community empowerment and social protection programs. This instruction emphasizes the importance of integrating various approaches, including economic assistance, education, and health services, to create a comprehensive framework for poverty alleviation (Amofa et al., 2022; Didi, 2024).

Research indicates that community empowerment programs can lead to positive outcomes in poverty alleviation, although their effectiveness may vary based on local contexts and implementation strategies (Didi, 2024). Additionally, the focus on productive inclusion through social protection programs has gained attention globally, aligning with Sustainable Development Goal 1, which aims to end extreme poverty by 2030 (Amofa et al., 2022). In Indonesia, the government has also prioritized regional autonomy and local governance to enhance the effectiveness of poverty reduction efforts (Bahasoan et al., 2023).

Integration of social protection measures, such as the Program Keluarga Harapan (PKH), has been instrumental in providing conditional cash transfers to poor families, thereby improving their access to essential services (Resina et al., 2023). The government's commitment to achieving zero extreme poverty by 2024 reflects a strategic approach to addressing the multifaceted nature of poverty in Indonesia (Sumadi, 2023).

Implementation of Presidential Instruction No. 4 of 2022 represents a significant step toward a more coordinated and effective response to extreme poverty in Indonesia, leveraging community empowerment, social

protection, and regional governance to foster sustainable development (Santi, 2023).

According to the chairman of LAZISMU West Java Regional Office, the implementation of the livable housing assistance program was carried out through several integrated stages. The process began with data collection and eligibility assessment, in which LAZISMU collaborated with regional governments and the Ministry of Public Works and Public Housing to collect and validate data on potential beneficiaries, aiming to identify individuals and families who had been severely affected by the disaster and were eligible to receive assistance.

Following this stage, the program implementation was conducted by allocating funds to construct 200 housing units across three sub-districts. These funds were derived from zakat, infaq, sadaqah, and other community contributions, and were utilized for purchasing building materials as well as hiring construction workers to build new houses and improve existing ones. Furthermore, monitoring and evaluation were carried out periodically to oversee the progress of the program and to ensure that the funds were utilized effectively and efficiently. The results of these evaluations were then documented and reported to the affected communities as a form of transparency and accountability. By following these stages, LAZISMU aimed to provide timely and effective assistance to those in need, ultimately improving their living conditions and fostering community resilience.

LAZISMU, in collaboration with its regional and local branches in Cianjur Regency and Bogor City, implemented a direct assistance program aimed at supporting communities affected by natural disasters. This initiative embodies a sense of solidarity and mutual aid among Indonesian citizens, particularly Muslims. The program focused on the socio-economic recovery of disaster-stricken communities in three sub-districts of Cianjur Regency. This involved providing physical assistance, such as constructing basic housing units, as well as offering educational support to help residents understand the importance of maintaining healthy and sanitary living conditions. By providing financial assistance for home repairs and reconstruction, LAZISMU aimed to enable residents to return to their homes and rebuild their lives.

In addition to providing physical assistance, LAZISMU has emphasized the importance of psychological support for disaster-affected communities. Informational campaigns were conducted to alleviate concerns regarding aftershocks and to promote hygiene practices, which are crucial for maintaining health in the aftermath of a disaster. These efforts aim to enhance

the overall well-being of affected individuals and families, recognizing that psychological resilience is as vital as physical recovery (Mulyo, 2023; Saputra et al., 2022).

Research indicates that psychological support can significantly improve the coping mechanisms of disaster survivors, enabling them to engage more effectively in recovery efforts (Yusrawati et al., 2022). By addressing both physical and mental health needs, LAZISMU's approach aligns with best practices in disaster response, which advocate for a holistic view of recovery that includes emotional and psychological dimensions (Pratama & Yuni, 2020). Furthermore, the integration of community engagement in these campaigns fosters a sense of solidarity and support among residents, which is essential for rebuilding trust and social cohesion (Nauli et al., 2022).

Ultimately, LAZISMU's comprehensive strategy not only addresses immediate needs but also lays the groundwork for long-term recovery and resilience in the face of future challenges (Athief, 2023; Handayani, 2023). To ensure equitable distribution of assistance, specific criteria were established to determine eligibility for livable housing. These criteria were based on factors such as the severity of damage to homes, the level of need, and the socioeconomic status of the affected families. Only a limited number of disaster-affected residents in the three sub-districts of Cianjur Regency were eligible to receive livable housing assistance due to the extensive area affected and the availability of resources. To determine eligibility, specific criteria were applied, including:

Table 1. LAZISMU Livable Home Assistance Criteria

No	House Condition	Assistance Type	Additional Information
1	Destroyed	House Not Inhabitable	House
2	Crushed by trees	Repair Fund	House
3	Destroyed by the flood current	Repair Fund	House
4	Moderately damaged	Repair Fund	Renovation costs
5	Damaged paint and walls	Repair Fund	Renovation costs
6	Broken roof tiles and destroyed	Repair Fund	Renovation costs
7	Broken doors, glass, and cracked walls	Repair Fund	House
8	House floors destroyed and damaged	Repair Fund	Renovation costs

9	House with damaged toilets	Repair Fund	Renovation costs
10	Damaged rooms, living room, and kitchen	Repair Fund	Renovation costs

Data is processed independently.

Beneficiaries of the livable housing assistance program implemented by LAZISMU are determined based on several specific criteria. These criteria include the condition of the house, whether it has been completely destroyed due to the disaster or is still feasible for repair. In addition, prospective beneficiaries are required to provide valid identification documents as proof of residency, along with a family card to verify household composition.

Furthermore, beneficiaries must possess an eligibility certificate issued by the relevant authorities to confirm their qualification for the program. For those receiving home renovation assistance, proof of land ownership is also required, which may include a land certificate or an official statement issued by the village administration. These criteria are established to ensure that the assistance is accurately targeted and aligned with the actual needs and conditions of the mustahiq.

The implementation of LAZISMU's livable housing assistance program in Cianjur Regency was a collaborative effort between LAZISMU, the Indonesian Ministry of Social Affairs, and MDMC. Funding for the program was provided by various sources, including LAZISMU, MDMC, and international donors such as Charity Malaysia.

The program focused on two main areas, Construction of New Homes is involved building new homes for those who had lost their homes entirely. Home Renovation is involved repairing and renovating damaged homes for those who wished to remain in their existing homes.

The distribution of aid, including food, clothing, and medical supplies, was carefully managed to ensure that the needs of the affected communities were met. Additionally, efforts were made to provide psychological support and education on hygiene and sanitation.

Despite challenges such as limited resources and the scale of the disaster, the implementation of the program was largely successful. The dedicated efforts of LAZISMU, MDMC, and other organizations, along with the support of volunteers and donors, enabled the program to make a significant impact on the lives of affected individuals and families.

Access to Sanitation and Clean Water in Post-Disaster Cianjur

The Cianjur earthquake significantly impacted sanitation and clean water access for affected communities. Following the disaster, many water supply facilities were damaged, leading to a critical shortage of clean water, which is essential for maintaining public health and hygiene (GUSDINI, 2023). The destruction of infrastructure not only compromised water access but also exacerbated health risks, as inadequate sanitation can lead to outbreaks of waterborne diseases (GUSDINI, 2023).

In response to these challenges, various organizations, including LAZISMU, have initiated programs aimed at restoring clean water access and improving sanitation facilities in the affected areas. These efforts are crucial for preventing health issues such as diarrhea and other illnesses that can arise from contaminated water sources (GUSDINI, 2023). Furthermore, the integration of psychosocial support initiatives alongside physical recovery efforts has been emphasized, recognizing that mental well-being is closely linked to physical health outcomes in disaster contexts (Dewi, 2023; Jatnika, 2023).

Informational campaigns promoting hygiene practices have also been implemented to educate the community on maintaining health standards during the recovery phase. Such initiatives are vital for fostering resilience and ensuring that communities can effectively manage their health in the aftermath of the disaster (Royo et al., 2022). Overall, addressing both the physical and psychological needs of the affected population is essential for a comprehensive recovery strategy post-Cianjur earthquake.

The BI-WAS index can be effectively analyzed using data from LAZISMU's Rumah Tidak Layak Huni (RTLH) quality improvement program. This program aims to enhance the living conditions of mustahik by ensuring that the houses provided meet quality standards and align with the expectations of the beneficiaries. While it is acknowledged that not all mustahik receive their fair share of assistance, the program has had a significant overall impact on improving housing conditions, making them more suitable for habitation (Ismowati & Subhan, 2019).

The implementation of quality improvement strategies in the RTLH program reflects a commitment to addressing the needs of the community. By focusing on the quality of housing, LAZISMU not only fulfills its obligation to provide adequate shelter but also contributes to the broader goal of poverty alleviation. The positive changes observed in the living conditions of

beneficiaries indicate that the program is effective in transforming substandard housing into safe and livable environments (Zulkarnain & Farkhani, 2021).

Furthermore, the program's success can be attributed to its systematic approach to quality management, which includes regular assessments and feedback mechanisms to ensure that the needs of mustahik are met (Mardalis, 2023). This aligns with the principles of Total Quality Management, which emphasize continuous improvement and stakeholder engagement in the quality enhancement process (Jami & Muharam, 2022). Overall, the RTLH program serves as a model for how targeted interventions can lead to meaningful improvements in the quality of life for vulnerable populations.

The aspect that is the main reference in assessing impacts and changes occurs in improvements to sanitation and clean water facilities. Specifically, the BI-WAS instrument that is measured is clean water facilities and toilet facilities with the formula below:

Water facility dimensions (IFA)= $D_{11} \times V_{11} \times 5 + D_{11} \times V_{11} \times 5 + D_{11} \times V_{11} \times 5$. So with this equation, the results of the BI-WAS analysis before the serviced housing program existed were:

Table 2. BI-WAS Dimensions of Water Facilities Before Program Intervention

Dimension	Variable	D	V	Scale	Result
Water Facilities	Access to water	0.27	0.32	2	0.1728
	Availability of water sources	0.27	0.36	1	0.0972
	Water fit for consumption	0.27	0.30	1	0.0864
Total Weight				1	0.3564

Tables are processed independently.

The BI-WAS assessment highlights the pre-intervention condition of water facilities in terms of access, availability, and quality. These dimensions are critical for understanding the baseline situation and prioritizing improvements.

The first variable, Access to Water, measures how easily residents can obtain water. With a result of 0.1728, this score reflects moderate difficulty in accessing water sources. While some residents might have access, the supply

is likely inconsistent or insufficient to meet daily needs, particularly in areas affected by disasters.

Availability of Water Sources scored significantly lower, with a result of 0.0972. This indicates a severe scarcity of reliable water sources, highlighting a critical gap in the region's water infrastructure. Without an adequate number of sources, even basic water needs cannot be consistently met, placing communities at high risk of water shortages.

The third variable, Water Fit for Consumption, also scored poorly at 0.0864, underscoring a serious concern about water quality. This suggests that even when water is accessible, it may not be safe for drinking or other household uses, potentially exposing residents to health risks.

The overall BI-WAS score of 0.3564 paints a concerning picture of water facilities before intervention. The low score reflects significant challenges in all three dimensions, with the greatest issues lying in the availability and safety of water. These findings emphasize the urgent need for intervention to improve water infrastructure, increase the number of water sources, and ensure water quality.

To address these challenges effectively, interventions should prioritize improving both the quantity and quality of water sources. This would involve not only building new infrastructure but also rehabilitating existing facilities to ensure they meet health and safety standards. By doing so, the program can make substantial progress in enhancing the water facilities and improving the overall well-being of affected communities.

Table 3. BI-WAS Dimensions of Water Facilities After Program Intervention

Variable	D	V	Scale	Result
1. Access to water	0.27	0.32	2	0.2592
2. Availability of water sources	0.27	0.36	1	0.486
3. Water fit for consumption	0.27	0.30	1	0.432
Total Weight			1	1.1772

Tables are processed independently.

$$\text{IFA01} = \frac{\text{IFA1} + \text{IFA2} + \text{IFA3}}{5}$$

The formula for calculating **IFA01** represents an integrated assessment of three key factors (IFA1, IFA2, and IFA3) related to the water facilities' performance. These factors could measure different aspects of the program's impact, such as accessibility, availability, and water quality improvements.

The sum of these three factors is then divided by 5, which likely serves as a normalization or scaling factor to ensure consistency and comparability across different metrics.

This approach allows for a composite score that reflects the overall effectiveness of the intervention. By integrating multiple dimensions into a single value, decision-makers can evaluate the program's success more holistically and identify areas that may require further improvement. The use of this formula ensures that no single dimension disproportionately influences the final score, providing a balanced assessment of the intervention's impact on water facilities.

The index value after the intervention increased significantly with an interpretation value for water facilities of 0.2534, so the increase in the index value for the clean water supply program had a good impact in conditions affected by floods and landslides in Cianjur for the mustahik or beneficiaries.

In the sanitation dimension, it is different from the provision and access to clean water for residents affected by disasters. This can be compared between the clean water and sanitation facilities owned by residents affected by the disaster before there was program intervention in the sample population. LAZISMU BI-WAS Index on clean water facilities based on program interventions.

Table 4. BI-WAS Index for Sanitation Facilities Before Intervention

Variable	D	V	Scale	Result
1. Availability of good and adequate sanitation (bathrooms, latrines, and toilets at home)	0.24	0.25	1	0.06
2. Good and adequate sanitation ratio (in schools, public places, and places of worship)	0.24	0.21	2	0.1008
3. Availability of a septic tank around the house	0.24	0.22	1	0.0528
4. Availability of hand washing facilities	0.24	0.16	1	0.0384
5. Availability of soap for washing hands	0.24	0.16	2	0.0768
Total Weight			1	0.2688

Tables are processed independently.

The BI-WAS score for sanitation facilities before the intervention indicates several critical areas for improvement. Key deficits are found in hand washing facilities and the availability of sanitation infrastructure, both

at home and in public spaces. With a total score of 0.2688, this emphasizes the need for urgent intervention to improve sanitation access and hygiene practices.

The table indicates that the BI-WAS index prior to program intervention stood at 0.2688. This score, derived from the flood- and landslide-affected areas in three sub-districts of Cianjur, reflects suboptimal conditions for BI-WAS indicators. Consequently, program intervention is essential to improve these indicators. Following intervention, the facilities provided by LAZISMU to mustahik were significantly enhanced, yielding a post-intervention BI-WAS score of 0.5424. This improvement demonstrates a positive impact, as a higher BI-WAS value corresponds to better and more adequate facilities for the mustahik.

4. CONCLUSION

This study concludes that the utilization of zakat funds through the livable housing program implemented by LAZISMU in Cianjur Regency has been effective in supporting post-disaster recovery, particularly in improving housing quality and access to sanitation and clean water for affected communities. This effectiveness is evidenced by the significant increase in the BI-WAS index following program intervention, indicating improved welfare conditions among beneficiaries. In addition to physical improvements, the program also contributed to psychological recovery and social stability within the community. Therefore, the integration of zakat funds into disaster recovery initiatives not only addresses immediate basic needs but also supports sustainable improvements in the overall quality of life of disaster-affected populations.

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AUTHORS' CONTRIBUTIONS:

Author 1 contributed to conceptualization, original draft writing, and formulation of research objectives and ideas. Author 2 was responsible for data collection, data curation, and methodology development. Author 3 contributed to formal analysis, interpretation of results, and validation of research findings. Author 4 and 5 supervised the research process, reviewed and edited the manuscript, and contributed to the refinement of the overall research framework.

CONFLICT OF INTERESTS:

We state that there are no known conflicts of interest linked with this publication, and that there has been no significant financial assistance for this work that could have influenced its outcome.

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