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Examining the Effectiveness of Decentralized Disaster Management Funds in Enhancing Local Flood Resilience: A Case Study of Lusaka City

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Abstract

This study examines the effectiveness of decentralized disaster management funds in enhancing local flood preparedness and resilience in Zambia, with a focus on communities frequently exposed to seasonal flooding. Guided by the Disaster Risk Reduction Framework, the study was anchored on three objectives: (i) to evaluate the effectiveness of decentralized funds in flood preparedness and response, (ii) to assess the influence of such funds on community participation and resilience-building, and (iii) to analyze the challenges affecting their utilization in strengthening local flood resilience. A mixed-methods design was adopted, combining quantitative surveys with 120 respondents from flood-prone districts and qualitative interviews with 10 officials from the Disaster Management and Mitigation Unit (DMMU), local government officers, and community leaders. Quantitative data were analyzed using Stata and Excel for frequencies, percentages, and regression outputs, while qualitative data were thematically analyzed. Findings revealed that while decentralized disaster funds improved early warning systems, emergency shelters, and provision of relief, gaps in timeliness and adequacy of fund disbursement constrained full effectiveness. Community participation was found to be moderately strong, with 57% of respondents acknowledging involvement in disaster planning, though challenges of limited awareness and weak accountability mechanisms were noted. Major obstacles included delayed fund release, political interference, inadequate monitoring, and resource shortages. The study concludes that decentralized disaster management funds play a significant role in strengthening community resilience, but their potential is undermined by systemic inefficiencies and governance-related challenges. It recommends strengthening accountability structures, ensuring timely and sufficient funding, enhancing local participation through inclusive decision-making, and building capacity in community-based disaster risk reduction to maximize the impact of decentralized funds in Zambia.

Keywords: Decentralization, Disaster Management Funds, Flood Preparedness, Community Resilience, Zambia, Disaster Risk Reduction, Governance

1. Introduction

The global landscape of disaster risk management has shifted significantly toward decentralized approaches, driven by the recognition that local communities possess vital knowledge and are the first to respond in crisis situations. Empowering these communities with authority and resources has thus become central to modern disaster risk reduction (DRR). The United Nations Office for Disaster Risk Reduction (UNDRR) emphasizes that local investment in DRR not only saves lives but also fosters sustainable development, reinforcing the importance of community-level engagement and financial autonomy in building resilience.

Across Africa, decentralization has emerged as a crucial pillar of effective disaster governance. The Sendai Framework for Disaster Risk Reduction (2015–2030) advocates strengthening local governance systems and ensuring that risk reduction measures are community-driven. Similarly, the African Union's Agenda 2063 underscores the need for resilient societies capable of managing climate variability and extreme events. Countries such as Kenya and Namibia have successfully localized disaster management policies, demonstrating that empowering sub-national structures enhances preparedness, accountability, and adaptive capacity at the community level.

In Zambia, recurring floods—particularly in urban areas like Lusaka—highlight the country's growing vulnerability to climate-

induced disasters. Rapid urbanization, poor drainage systems, and inadequate infrastructure have intensified flood risks. Recognizing these challenges, Zambia has adopted several reforms to strengthen resilience. The National Disaster Management Policy (2015) explicitly promotes the decentralization of disaster management to district and local authorities. The policy aims to enhance community preparedness, facilitate resource mobilization, and foster sustainable development among vulnerable populations.

However, despite these advancements, the effective use of decentralized disaster management funds remains problematic. Studies reveal persistent issues such as limited financial resources, weak institutional capacity, political interference, and low community participation. Local authorities often lack technical expertise and logistical support, impeding the efficient allocation and monitoring of funds. Moreover, decision-making processes sometimes exclude affected communities, reducing local ownership and accountability. These shortcomings mirror findings across sub-Saharan Africa, where decentralization without adequate capacity-building or fiscal autonomy often leads to fragmented and ineffective implementation.

In Lusaka, flood risk is particularly acute in informal settlements such as Kanyama and Chibolya, where inadequate infrastructure and poor waste management exacerbate exposure. Research shows that community participation is critical to improving preparedness and response. When residents are involved in flood management planning—through early warning systems, training, and local drainage maintenance—the results are more sustainable and inclusive. Community-based disaster management (CBDM) approaches have proven especially effective in reducing flood-related losses by integrating indigenous knowledge with formal risk governance mechanisms.

In conclusion, while Zambia has made notable progress in decentralizing disaster management functions, significant gaps remain in ensuring that these efforts translate into tangible flood resilience at the local level. Evaluating the allocation and utilization of decentralized disaster management funds in Lusaka provides an opportunity to identify operational bottlenecks and best practices. Strengthening institutional accountability, enhancing technical capacity, and deepening community participation are essential for transforming decentralization into an effective vehicle for urban resilience and sustainable disaster governance in Zambia and beyond.

1.1 Objective

1.1.1 General Objective

To examine the effectiveness of decentralized disaster management funds in enhancing local flood resilience: a case study of Lusaka city.

1.1.2 Specific Objectives

1. To assess the effectiveness of decentralized disaster management funds in improving preparedness and response to floods in Lusaka City.
2. To determine the influence of decentralized disaster management funds on community participation and resilience-building in flood-prone areas of Lusaka City.
3. To identify the key challenges faced in the utilization of decentralized disaster management funds for enhancing local flood resilience in Lusaka City.

1.2 Theoretical Framework

1.2.1 Decentralization Theory

This study is guided by the Decentralization Theory, particularly the Fiscal Decentralization Model, which emphasizes the transfer of financial resources and decision-making authority from central government to lower levels of governance to enhance efficiency, accountability, and responsiveness (Oates, 1999) [17]. The theory posits that local governments are better positioned to understand the specific needs and vulnerabilities of their communities, making them more effective in allocating resources for disaster preparedness and resilience-building. In the context of disaster management, fiscal decentralization suggests that when funds are managed at the local level, communities can respond more swiftly and appropriately to disasters such as floods (Smoke, 2015). Applying this theory to Lusaka City, the decentralized disaster management funds are expected to empower local authorities and communities by strengthening flood preparedness mechanisms, fostering community participation, and addressing local vulnerabilities in a targeted manner. However, challenges such as limited capacity, weak accountability, and poor coordination may undermine the theoretical benefits of decentralization (Faguet, 2014). This framework therefore provides the lens through which the study examines the effectiveness of decentralized funds, the extent of community participation in resilience-building, and the challenges faced in fund utilization. By anchoring the study in Decentralization Theory, the research situates the problem within a broader governance and public finance perspective, allowing for critical analysis of whether decentralization truly enhances flood resilience at the community level.

2. Literature Review

2.1 Effectiveness of Decentralized Disaster Management Funds in Flood Preparedness and Response

The effectiveness of decentralized disaster management funds in promoting local flood resilience varies widely across global and regional contexts, shaped by governance capacity, fiscal autonomy, and institutional coordination. While decentralization theoretically enables localized responses and quicker fund mobilization, practical outcomes often depend on the depth of administrative devolution, transparency, and stakeholder participation.

Globally, countries such as the Philippines, Nepal, Pakistan, Bangladesh, and the United States illustrate contrasting experiences. In the Philippines, localized funds have supported community-based flood preparedness and rapid response, yet their full impact is constrained by limited fiscal transfers and governance inconsistencies. Studies note that administrative decentralization has not been matched by sufficient fiscal autonomy, creating uneven capacities among local government units (De la Torre, 2023; Distor, 2025) [9, 10]. Political patronage and poor coordination sometimes fragment disaster management efforts, though anticipatory action programs have shown success when coupled with civil society partnerships (Tozier de la Poterie, 2021) [24]. Similarly, Nepal's decentralized approach allows for context-specific flood mitigation, but insufficient technical capacity and overlapping authority between government tiers restrict timely action (Butt *et al*., 2014; OPML, 2011) [8, 18]. These findings underscore the need for

fiscal clarity and institutional strengthening to translate local autonomy into effective flood resilience.

Bangladesh represents a more advanced case, where well-structured local governance through Union Disaster Management Committees (UDMCs) and sustained donor engagement have enhanced flood preparedness and reduced economic losses (VLIZ, 2023; World Bank, 2025 [37]). Nonetheless, bureaucratic delays and inequitable fund allocation remain challenges to scalability. In contrast, Pakistan demonstrates how weak oversight and political instability hinder the benefits of decentralization, with misallocated funds and limited local accountability reducing preparedness (Scott & Tarazona, 2011) [23]. Yet, pockets of success exist where community participation and local leadership align with transparent fund management. The **United States**, benefiting from mature fiscal decentralization, enables state and municipal governments to invest substantially in resilience infrastructure and preparedness programs. However, disparities in local fiscal capacity still lead to uneven resilience outcomes, stressing the need for vertical coordination and equitable funding (Congressional Research Service, 2021; Wachtendorf & Kendra, 2005).

Across these international examples, key themes emerge. Decentralized funding improves flood management where financial autonomy is matched by institutional capacity and accountability. Community participation and inclusive governance amplify local ownership and sustainability. Yet, political interference, bureaucratic bottlenecks, and inequitable resource distribution remain pervasive constraints. Scholars emphasize that effective decentralization requires transparent financial systems, multi-level coordination, and integration with broader climate adaptation and insurance mechanisms.

In African contexts, the Republic of Congo, Nigeria, Sudan, Chad, and Guinea demonstrate similar patterns. Despite decentralization policies, fiscal constraints, weak institutions, and fragmented authority limit fund effectiveness. In the Republic of Congo and Chad, overlapping mandates and delayed fund disbursement hinder proactive flood preparedness (AfRP Bulletin, 2025). Nigeria faces recurrent floods aggravated by irregular fund transfers, inadequate early-warning systems, and coordination inefficiencies between federal and local governments (UNDP, 2021). Sudan and Chad further illustrate how political instability undermines decentralized financing, leaving rural communities underprepared (African Union Commission, 2020). Guinea, while making strides in community-level resilience planning, struggles with administrative inefficiencies and lack of fiscal transparency (PreventionWeb, 2025). These cases reveal that many decentralization efforts exist mainly in policy documents rather than in practice, constrained by limited local expertise and inconsistent funding.

Research across Africa highlights that sustainable flood resilience requires predictable fiscal transfers, strong accountability, and participatory governance. Transparent financial management systems and integrated climate financing mechanisms can improve both fund utilization and community trust. There remains, however, a paucity of longitudinal evidence assessing how decentralized funds influence long-term resilience outcomes, especially regarding the integration of innovative financial instruments such as climate insurance and public-private partnerships.

Within Zambia, decentralized disaster management funds present a promising but underutilized framework for flood preparedness. Guided by the Disaster Management Act (2010) and the National Disaster Management Policy (2015), Zambia devolved responsibilities to district-level Disaster Management and Mitigation Units (DMMUs). However, local fiscal autonomy remains weak, as funds are inconsistently released and often redirected toward short-term relief rather than proactive risk reduction (Zambia National Progress Report, 2020; UNDRR, 2021). The Constituency Development Fund (CDF), intended to support disaster response, lacks clear prioritization for disaster risk reduction (CADRI, 2024; African Climate Wire, 2024). Limited staffing, especially in rural districts, constrains implementation capacity. Institutional fragmentation between the national DMMU and local governments further weakens coordination.

Recent digital governance innovations, supported by the African Risk Capacity and international donors, have improved fund tracking and transparency (African Risk Capacity, 2025; Prevention Web, 2025). Yet, the dominance of reactive spending and bureaucratic procurement processes continue to delay timely interventions. Zambia's overall fiscal structure still prioritizes emergency response over long-term flood mitigation infrastructure and urban drainage development (GiZ, 2023; UNDRR, 2020). Nonetheless, programs such as the Devolution Support Program and the Disaster Management Consultative Forum demonstrate policy momentum toward inclusive governance, capacity development, and community participation (Afidep, 2025 [3]; World Bank, 2024).

Overall, Zambia's experience underscores that legal frameworks alone are insufficient. Effective decentralization requires predictable financing, institutional coordination, capacity building, and public accountability. Strengthening local governance mechanisms, embedding disaster risk reduction into broader climate adaptation strategies, and leveraging digital systems for transparency are vital for improving fund effectiveness. With sustained reform and community engagement, decentralized disaster management funds can evolve from reactive emergency tools into proactive instruments for building enduring local flood resilience.

2.2 Influence of Decentralized Disaster Management Funds on Community Participation and Resilience-Building

Decentralized disaster management funds have emerged as crucial instruments in global disaster risk governance, emphasizing the transfer of financial decision-making and management responsibilities to local authorities and communities. This approach promotes localized, context-specific responses while empowering grassroots actors who best understand their vulnerabilities. Global experiences reveal both the promise and pitfalls of decentralization, contingent on governance capacity, accountability, and sustained community engagement.

In Asia, countries such as the Philippines and Nepal exemplify successful models where devolved disaster funds strengthened local flood resilience through community-driven planning, hazard mapping, and participatory budgeting (World Bank, 2020 [33]; UNDP, 2016). These mechanisms enhanced local ownership and culturally responsive disaster strategies. However, disparities in

technical capacity and fiscal management hinder uniform implementation. Similarly, Indonesia's decentralized system integrates participatory budgeting and district-level resilience programs, while Pakistan's fragmented governance and opaque funding mechanisms limit community participation (PMC, 2022). Japan's hybrid, multi-level governance model—combining decentralization with strong national coordination illustrates how technical and institutional maturity can amplify local resilience, though its replication in developing contexts remains challenging (World Bank, 2020) [33].

Latin American experiences, notably in Mexico and Chile, highlight that transparent fund management and inclusive participatory mechanisms improve local accountability and flood preparedness (World Bank, 2020 [33]; UNDRR, 2016). Yet political will and fiscal disparities continue to shape outcomes. The U.S. federal system further demonstrates how decentralized finance, when integrated with intergovernmental coordination, can strengthen adaptive capacity, although socio-economic inequalities still restrict equitable participation. Collectively, global lessons affirm that decentralization must be embedded within transparent, accountable, and inclusive governance systems to avoid reproducing inequities in resilience outcomes.

In Africa, decentralization is a growing cornerstone of disaster risk reduction under the Sendai Framework and Agenda 2063. Countries such as Kenya, Ghana, Nigeria, and South Africa have made progress in embedding local disaster funds within broader governance reforms (UNDP, 2017; UNDRR, 2025 [29]). Kenya's devolved county structures have improved local flood preparedness, while Ghana's participatory budgeting promotes transparency and local empowerment. However, uneven administrative capacity, political patronage, and limited monitoring undermine progress. Nigeria's experience reveals that institutional strength and intergovernmental coordination determine whether decentralized funds translate into effective flood resilience. South Africa's cooperative governance model demonstrates inclusivity yet struggles with inequalities that restrict vulnerable groups' access to resources.

In Zambia, decentralization of disaster management funds has gained prominence through the Zambia Devolution Support Program (ZDSP) and the Local Government Equalization Fund (LGEF), designed to enhance fiscal autonomy and promote localized resilience (World Bank, 2025) [37]. The Disaster Management and Mitigation Unit (DMMU) and district disaster committees foster community participation through early warning systems and localized mitigation programs. However, challenges persist—weak institutional capacity, delayed fund disbursement, and limited technical expertise hinder effective utilization (Parliament Committee Report, 2024). Despite supportive policy frameworks, gaps in coordination and inclusivity persist, particularly for marginalized groups.

Overall, decentralized disaster management funds embody a transformative step toward community-centered flood resilience. Their success depends not only on devolving resources but also on strengthening institutional capacity, ensuring transparency, promoting gender and social inclusion, and integrating disaster finance with broader climate adaptation and development frameworks. Zambia's experience, echoing regional and global lessons, underscores that decentralization must evolve beyond fiscal transfers into a comprehensive governance approach that empowers communities, enhances accountability, and sustains resilience against climate-related disasters.

2.3 Challenges in the Utilization of Decentralized Disaster Management Funds for Enhancing Local Flood Resilience

The global landscape of disaster risk management has undergone a significant transformation in recent years, with a pronounced shift towards decentralized approaches. This change arises from the recognition that local communities possess invaluable knowledge and are often the first responders in disaster situations. Empowering local entities with authority and resources to manage disaster risks has become a cornerstone of contemporary disaster risk reduction strategies. The United Nations Office for Disaster Risk Reduction (UNDRR) emphasizes that investing in disaster risk reduction not only saves lives but also establishes a foundation for sustainable prosperity, highlighting the critical importance of local-level engagement and resource allocation in building resilience.

In Africa, the decentralization of disaster management holds particular relevance. The Sendai Framework for Disaster Risk Reduction, adopted in 2015, advocates for strengthening disaster risk governance with a clear emphasis on localizing disaster reduction efforts. This approach aligns with the African Union's Agenda 2063, which calls for enhanced resilience to climate variability and extreme events. Studies indicate that countries such as Kenya and Namibia have made notable progress in interpreting and implementing these frameworks, resulting in improved local governance and community participation in disaster risk management.

Zambia, located in Southern Africa, continues to face recurrent flood risks, especially in urban areas like Lusaka. The nation's vulnerability is compounded by rapid urbanization, inadequate infrastructure, and climate change. In response, Zambia has pursued major policy reforms to bolster disaster resilience. The National Disaster Management Policy of 2015 emphasizes the decentralization of disaster management functions to local authorities, aiming to promote sustainable development and improve resilience among vulnerable communities. Despite these policy efforts, challenges remain regarding the effective use of decentralized disaster management funds. A systematic review of disaster management and mitigation in Zambia identifies persistent issues such as inadequate funding, limited capacity at local levels, and insufficient community participation in decision-making processes. These constraints point to the need for a comprehensive assessment of how decentralized funds are allocated and used to strengthen local flood resilience.

In Lusaka, informal settlements are particularly exposed to flooding due to poor drainage systems and inadequate infrastructure. Strengthening community participation in disaster risk management is essential for enhancing resilience. Research demonstrates that community involvement in flood resilience initiatives results in more effective preparedness and response mechanisms. Community-driven disaster management approaches have improved early warning systems and mitigated flood-related damages in several regions.

In conclusion, while Zambia has made meaningful progress in decentralizing disaster management functions, the actual

effectiveness of these initiatives in boosting local flood resilience remains a key concern. Examining the allocation and utilization of decentralized disaster management funds in Lusaka provides valuable insights into best practices and areas for improvement. Such an evaluation is vital to developing more resilient communities, ensuring that decentralization translates into tangible protection and adaptive capacity for vulnerable populations across Zambia and beyond.

2.4 Literature Gap

Although decentralized disaster management funds (DDMFs) have gained recognition as vital instruments for enhancing local resilience to flooding in Zambia, significant gaps remain in both scholarship and practice. Existing studies on disaster risk management in Zambia largely focus on the roles of the Disaster Management and Mitigation Unit (DMMU) and donor interventions but provide limited empirical insights into how decentralized funds are actually utilized at local level (Musonda, 2019; UNDRR, 2021). While some research highlights challenges of governance, corruption, and political interference, there is scant evidence on the specific causal link between the allocation and use of DDMFs and measurable improvements in preparedness, response, or community resilience. Moreover, much of the literature is descriptive, concentrating on flood impacts rather than interrogating fund accountability and transparency mechanisms (Mweetwa & Chanda, 2020). Comparative provincial or district-level analyses remain underdeveloped, leaving knowledge gaps on whether fund utilization varies across localities with different socio-economic and institutional contexts. Another major gap is the absence of longitudinal studies that trace how DDMFs have been used over time, especially in recurrent flood-prone areas. Furthermore, the perspectives of marginalized communities such as those in peri-urban settlements or rural floodplains—are underrepresented, yet these groups are often the most vulnerable to mismanagement of disaster resources (Phiri, 2022). At the policy level, limited integration of resilience financing into long-term development planning also points to a gap between short-term relief and sustainable flood adaptation strategies. This study therefore seeks to bridge these gaps by critically examining the effectiveness, challenges, and community-level implications of decentralized disaster management funds in Lusaka City, thereby contributing to the discourse on disaster risk governance in Zambia.

3. Research Methods

The study adopts a mixed-method approach, integrating both quantitative and qualitative research techniques to gain a comprehensive understanding of how decentralized disaster management funds influence flood resilience in Lusaka. The quantitative strand involves the use of structured questionnaires to collect measurable data on preparedness, response, and perceptions of community participation in flood-prone areas. The qualitative strand utilizes semi-structured interviews with key stakeholders such as local council officials, Disaster Management and Mitigation Unit (DMMU) staff, and community leaders to provide deeper insights into challenges and fund utilization practices. According to Creswell and Plano Clark (2018), mixed-methods designs enhance validity through triangulation, as statistical patterns are reinforced by lived experiences and narratives.

3.1 Target Population

As Saunders, Lewis, and Thornhill (2009) define, a population encompasses the entire group relevant to a research problem. For this study, the target population includes residents of flood-prone communities in Lusaka City, local government officials involved in disaster fund management, and representatives from the DMMU. Community members are included as primary beneficiaries of decentralized disaster funds, while officials and leaders provide administrative and policy perspectives on fund allocation and effectiveness.

3.2 Sampling Design

A stratified random sampling technique will be employed for the quantitative survey to ensure proportional representation of residents from various flood-prone wards across Lusaka City. For the qualitative component, purposive sampling will be used to select key informants such as DMMU officials, ward councilors, and community-based organization leaders. Purposive sampling is appropriate for capturing in-depth experiences from individuals directly involved in fund allocation and disaster response (Etikan, Musa & Alkassim, 2016).

3.3 Sample Size Determination

Sample size refers to the number of items to be selected from the population to constitute the sample, indicating how many units should be surveyed and interviewed (Kumar, 2005). To determine the sample size of the population, the Taro Yameni formula was used as follows.

Where:

- N= Population of the study (120)
- n= Sample size
- e= Level of significance (0.05), corresponding to a 95% confidence level

Substituting the values into the formula:

$$n = \frac{120}{1 + 120(0.05)^2}$$

$$n = \frac{120}{1 + 120(0.0025)}$$

$$n = \frac{120}{1 + 0.3}$$

$$n = \frac{120}{1.3}$$

$$n \approx 92.3$$

Therefore, the calculated sample size was 133 respondents. However, due to logistical limitations such as time, accessibility, and financial constraints, the study practically involved 100 residents from flood prone areas. This number still represented a significant proportion of the population, providing sufficient data for meaningful statistical analysis and interpretation.

Additionally, two key informants, the Ward Agricultural Officer and a representative from the Disaster Management and Mitigation Unit (DMMU) were purposively selected to

provide expert insights and contextual understanding of drought resilience measures in the area.

Thus, the total sample size for the study was 120 respondents this sample was considered adequate to ensure both representativeness and data reliability in examining the effectiveness of decentralized disaster management funds in enhancing local flood resilience in Lusaka city.

3.4 Data collection methods

Two primary methods were used to collect data:

3.4.1 Questionnaires (Survey)

Structured questionnaires were administered to collect quantitative data on crop viability, food security, and the perceived effects of drought. The questions included closed-ended and scaled items, which allowed for statistical analysis of trends and relationships.

3.4.2 Interviews (Interview Guide)

Semi-structured interviews were conducted with a subset of farmers to gather qualitative data. These interviews provided insight into personal experiences, challenges, and adaptation strategies used by farmers in response to drought conditions. Open-ended questions elicited detailed responses and uncovered underlying themes.

3.5 Data Analysis

3.5.1 Qualitative analysis

The data collected through both questionnaires and interviews were analyzed using a mixed-methods approach, aligning with the study's research design. Quantitative data from structured questionnaires were processed using Stata and Microsoft Excel. Descriptive statistics including frequencies, percentages, means, and standard deviations were calculated to summarize respondent characteristics and views. Stata was also used to perform cross-tabulations and explore relationships between variables, while Excel facilitated the creation of tables, charts, and graphs for clear visual presentation of findings.

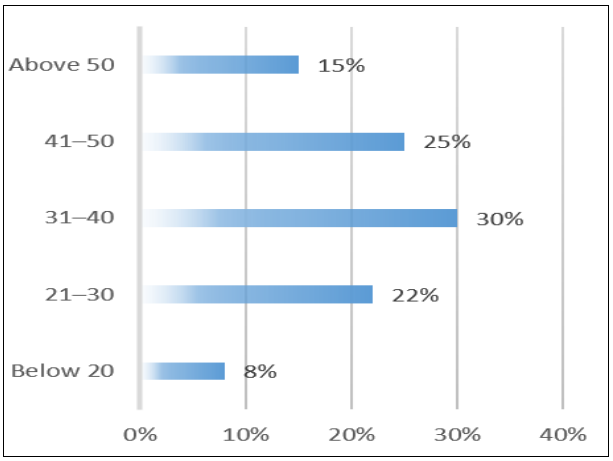
Qualitative data from interviews were analyzed thematically, following a systematic process of coding, categorization, and theme development. This enabled the identification of recurring patterns, experiences, and adaptation strategies among residents. The thematic analysis allowed for contextual insights that complemented the quantitative results, providing a holistic understanding of drought impacts, household food security, and the effectiveness of locally adopted adaptation strategies.

By combining quantitative and qualitative analyses, the study ensured triangulation, enhancing the reliability and depth of the findings. Quantitative results quantified the prevalence and distribution of key phenomena, while qualitative insights explained underlying reasons, perceptions, and adaptive behaviors.

4. Findings and Results

4.1 Demographic Information

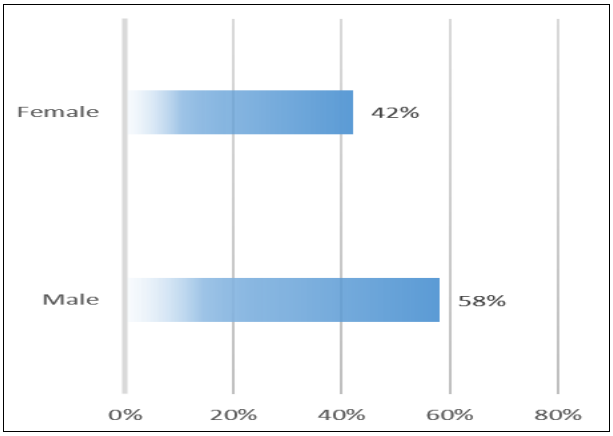
4.1.1 Age of Respondents



Source: Researcher 2025

The results indicate that the majority of respondents fall within the active working age groups, with 30% between 31–40 years and 25% between 41–50 years. This shows that disaster management and resilience-building in Lusaka are primarily driven by individuals in their most productive years. Young respondents (21–30) also make up 22%, suggesting that youth are increasingly becoming part of resilience efforts. Only 8% are below 20, indicating limited involvement of very young people, while 15% are above 50, showing that older individuals still contribute their knowledge and experience. Therefore, it is evident that Lusaka has a balanced mix of young energy and mature expertise in disaster management, though greater inclusion of youths could strengthen future resilience.

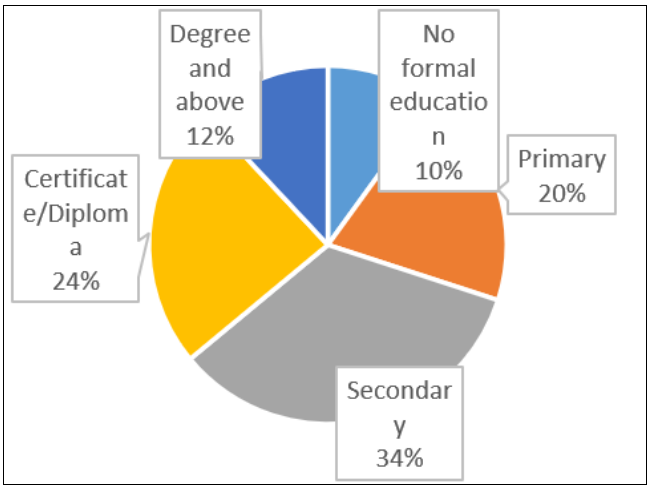
4.1.2 Sex of Respondents



Source: Researcher 2025

The findings show that men (58%) dominate participation in disaster management activities, while women represent 42%. This highlights a gender gap, though women's involvement is still notable. The presence of nearly half female participation demonstrates growing inclusiveness in resilience activities, especially since women are often more vulnerable to disaster impacts. Therefore, it is evident that encouraging more female participation could lead to more comprehensive community preparedness, as women bring unique perspectives in managing household and community risks.

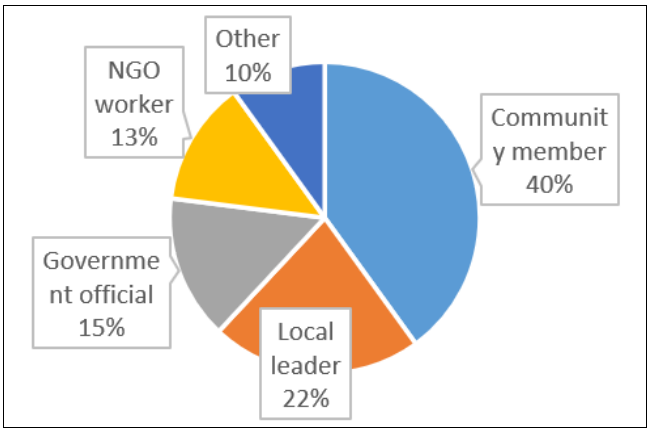
4.1.3 Level of Education



Source: Researcher 2025

The results show that most respondents (34%) have attained secondary education, while 24% hold certificates or diplomas, and 12% possess a degree or higher. This indicates that over two-thirds of participants have at least secondary education, meaning they are relatively literate and capable of understanding disaster risk information. However, 30% (those with no formal or only primary education) may face challenges in fully engaging with technical disaster management strategies. Therefore, it is evident that while the education base is fairly strong, awareness campaigns and training must be tailored to ensure inclusivity for those with lower literacy levels.

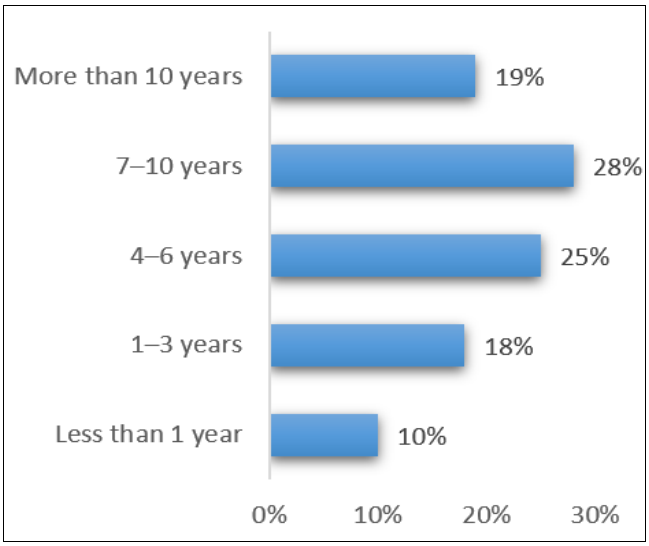
4.1.4 Role in Disaster Management



Source: Researcher 2025

The majority of respondents (40%) are community members, followed by local leaders (22%). This suggests that community-driven participation is at the core of disaster management in Lusaka. Government officials and NGOs together make up 28%, reflecting institutional involvement but also underscoring the importance of grassroots-level engagement. Therefore, it is evident that strengthening the collaboration between formal institutions and community actors could lead to more effective flood resilience strategies.

4.1.5 Years of Experience in Disaster Management



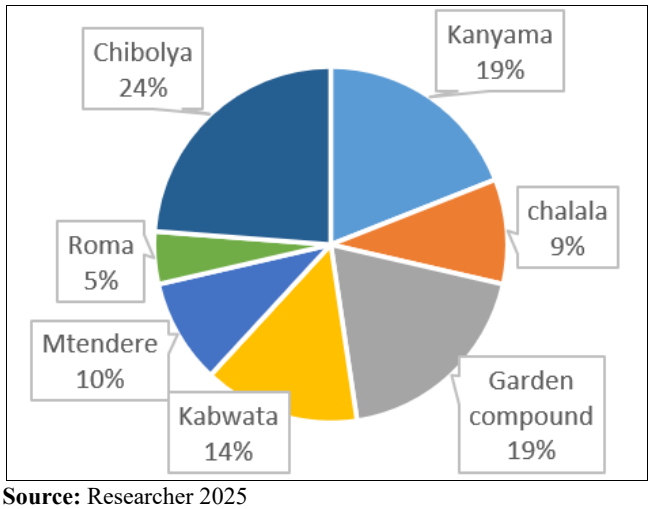
Source: Researcher 2025

Fig 1: Years of Experience in Disaster Management

The findings reveal that 72% of respondents have over 4 years of experience in disaster management, with the largest group (28%) having 7–10 years. This reflects a well-developed base of knowledge and experience within the community and institutions. Only 10% have less than 1 year, indicating that disaster management activities have been established for some time in Lusaka. Therefore, it is evident that the presence of long-term experience enhances preparedness and provides a foundation for building stronger community resilience to floods.

4.1.6 Which part of Lusaka City do you reside in, and how does this affect your experience with floods?

The following are the common responses that were provided. The pie chart shows residencies of the respondents.

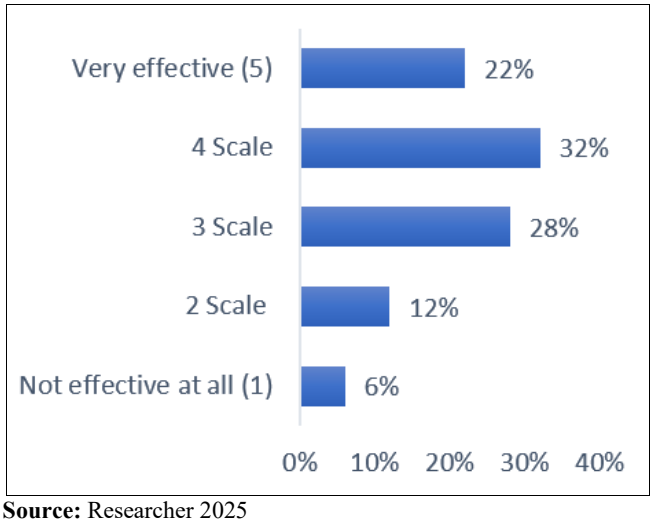


Source: Researcher 2025

Response 1: "I live in Kanyama, and flooding is a yearly problem here. Even a small rain makes the drainage overflow."
Response 2: "I stay in Chalala. Flooding is not too bad here, but we still get waterlogging in low-lying streets."
Response 3: "Garden Compound is my area, and it is badly hit because the drains are blocked most of the time."
Response 4: "I am from Kabwata. The experience is moderate floods happen but they are manageable compared to other areas."
Response 5: "Mtendere has challenges with drainage, so floods affect us, especially those living in rented houses near streams."
Response 6: "I am based in Roma. Floods are rare here, but we sometimes host relatives from affected areas."
Response 7: "Chibolya is where I stay and every rainy season houses get submerged."
In summary, Responses highlight that flood vulnerability in Lusaka varies significantly by location. Residents in Kanyama, Garden, and Chibolya reported severe and recurring flooding due to poor drainage and low-lying terrain. In contrast, areas like Roma and Chalala experience milder effects, with floods manifesting as temporary waterlogging rather than destruction. Communities such as Kabwata experience manageable levels of flooding, while residents in less-affected zones often provide support to those in high-risk areas. One respondent skipped this question, reflecting normal variations in survey participation. Overall, the data shows a clear geographical inequality in flood exposure, with informal settlements and poorly drained neighborhoods being the most vulnerable.

4.2 Effectiveness of Decentralized Disaster Management Funds

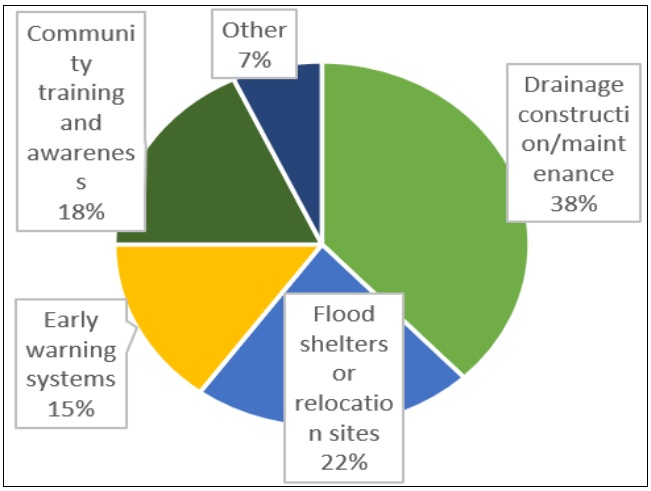
4.2.1 How would you rate the effectiveness of decentralized disaster management funds in improving preparedness and response to floods in Lusaka City?



Source: Researcher 2025

The findings show that 54% of respondents (32% + 22%) rated decentralized disaster management funds as either effective or very effective in improving preparedness and response to floods. Meanwhile, 28% gave a moderate rating (3) suggesting that although the funds have had an impact, there remain gaps in efficiency and reach. On the other hand, 18% of respondents felt that the funds were either not effective at all or only slightly effective. This demonstrates that while progress has been made, perceptions of effectiveness are uneven, possibly due to variations in fund utilization across different communities. Therefore, it is evident that although decentralized funds are contributing positively, issues of consistency, equitable distribution, and transparency must be addressed to ensure that all communities feel adequately supported.

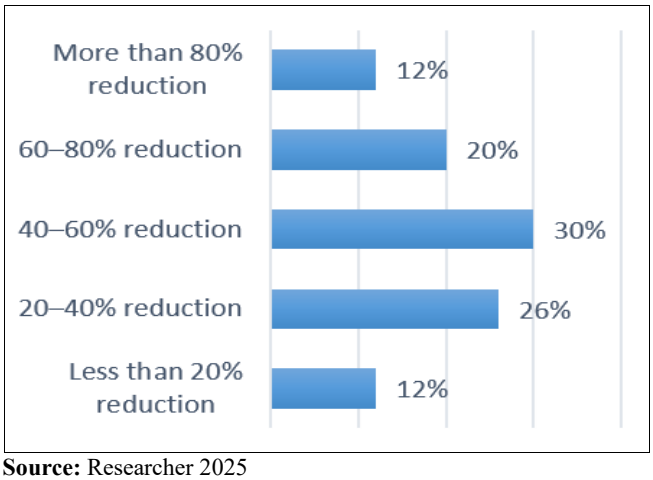
4.2.2 Which initiatives/projects have been supported by decentralized funds to enhance flood resilience?



Source: Researcher 2025

The most common initiative funded was drainage construction and maintenance (38%), highlighting its importance in reducing urban flooding in Lusaka. This shows that infrastructural improvements remain the backbone of resilience strategies. Flood shelters (22%) and training/awareness programs (18%) were also notable, though their relatively smaller share suggests that non-infrastructural approaches have received less attention. Early warning systems received only 15%, yet timely information is critical in saving lives. Therefore, it is evident that decentralized funds are largely infrastructure-focused, which is essential, but a balanced approach that invests more in early warnings and awareness campaigns could significantly improve preparedness and response outcomes.

4.2.3 Estimated impact of decentralized disaster management funds on flood-related losses (past 5 years)

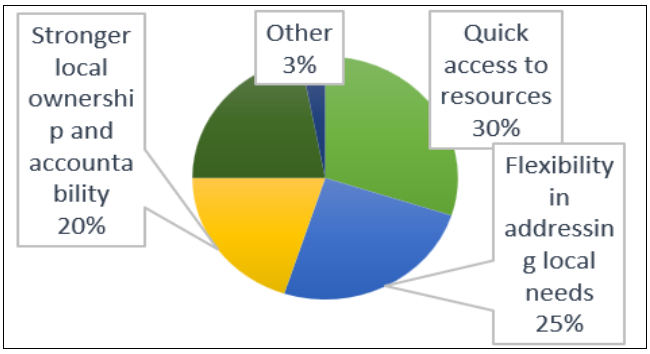


Source: Researcher 2025

The majority of respondents (50%) reported that decentralized funds reduced flood-related losses by between

40–80%, which is a strong indicator of tangible positive outcomes. However, 38% estimated the reduction at 20–40%, while 12% reported minimal reductions of less than 20%. Only 12% believed that losses were reduced by more than 80%. This wide variation reflects differences in how effectively funds were deployed across different areas of Lusaka. Communities with better infrastructure and preparedness projects likely experienced greater reductions, while underserved areas saw limited benefits. Therefore, it is evident that while decentralized funds are making a noticeable impact, a more equitable and consistent distribution of resources is needed to maximize benefits for all flood-prone communities.

4.2.4 Key benefits of decentralized disaster management funds

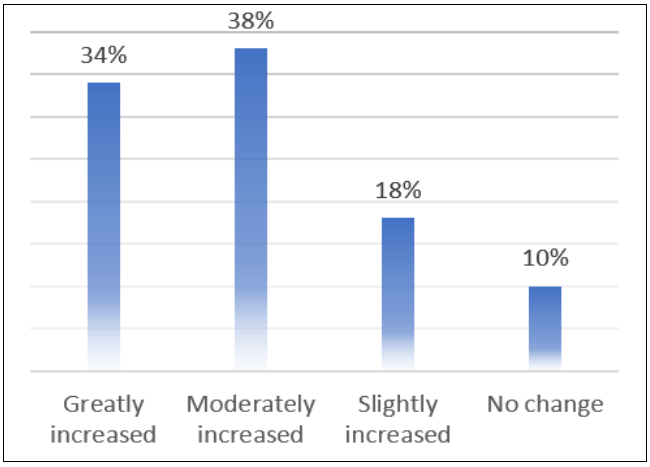


Source: Researcher 2025

The top-ranked benefit is quick access to resources (30%), which highlights that decentralization has shortened bureaucratic delays and enabled communities to act faster. Flexibility in addressing local needs (25%) and improved preparedness (22%) also stand out, underscoring that localized management allows for tailored solutions. Stronger local ownership (20%) suggests that communities feel more involved in decision-making, though this remains an area that could be further enhanced. Therefore, it is evident that decentralization has shifted disaster management toward being more responsive and people-centered, though sustained accountability and capacity-building will be crucial in ensuring long-term resilience.

4.3 Community Participation and Resilience-Building

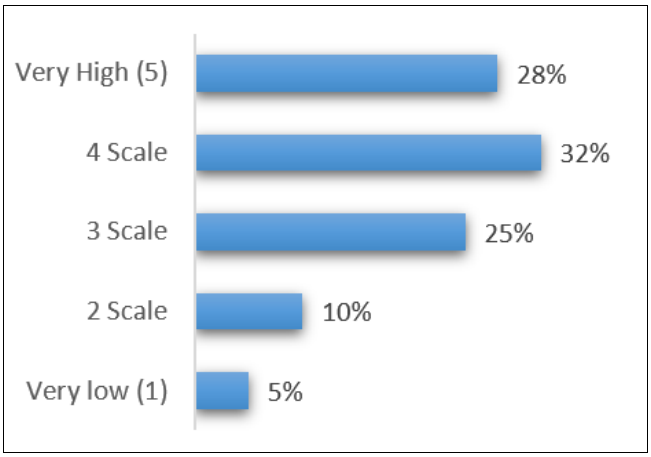
4.3.1 Influence of funds on community participation in resilience-building



Source: Researcher 2025

The majority of respondents (72%) reported that decentralized funds either greatly or moderately increased community participation in resilience-building activities. This shows that when resources are closer to the people, communities feel more empowered to take part in decision-making and implementation. However, 18% indicated only a slight increase, and 10% reported no change, suggesting that some communities still struggle with participation barriers such as lack of information, leadership gaps, or low motivation. Therefore, it is evident that decentralized funds are fostering greater community involvement overall, but efforts must be strengthened to reach marginalized groups and ensure inclusivity in resilience-building processes.

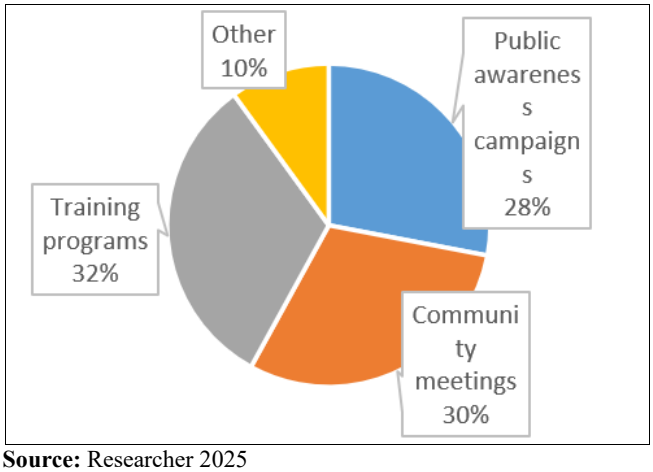
4.3.2 Level of community engagement in flood risk reduction



Source: Researcher 2025

A total of 60% of respondents rated engagement as either high (4) or very high (5), showing strong participation in flood risk reduction initiatives. However, 40% rated engagement between very low and moderate, which indicates that while some communities are deeply involved, others remain on the periphery of disaster risk management. This uneven participation may be linked to differences in awareness campaigns, leadership effectiveness, and accessibility of funds. Therefore, it is evident that while community engagement is on an upward trajectory, consistent strategies are needed to maintain enthusiasm and extend active participation to all localities, particularly those that currently remain passive.

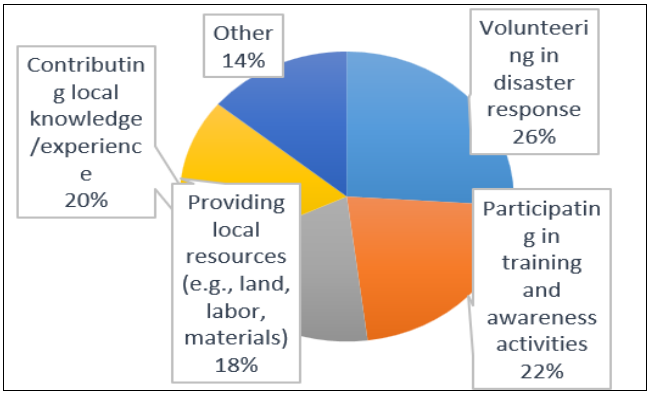
4.3.3 Strategies used to promote participation



Source: Researcher 2025

Training programs (32%) were identified as the most widely used strategy, followed closely by community meetings (30%) and awareness campaigns (28%). This indicates that a mix of capacity-building and information-sharing approaches has been employed to engage communities. The smaller share of "Other" (10%) suggests that while additional strategies exist, they are not as prominent. The balance across these categories demonstrates that decentralized funds support multiple participation avenues, catering to both formal and informal community structures. Therefore, it is evident that participatory strategies are well diversified, but their effectiveness depends on the consistency and quality of delivery. Sustained investment in training, combined with culturally sensitive awareness campaigns, could further strengthen participation.

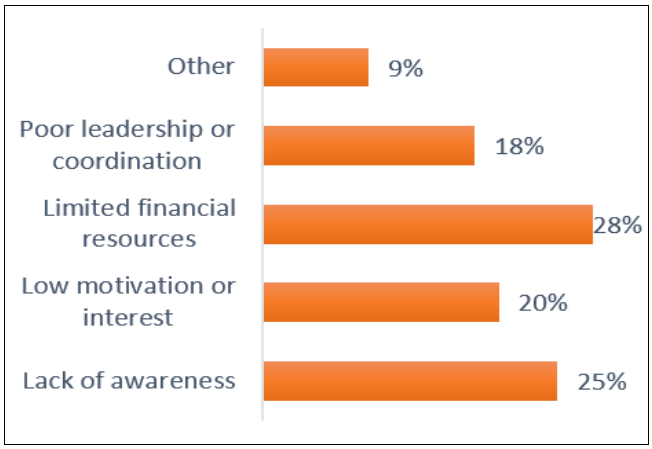
4.3.4 Ways community members contribute to resilience-building



Source: Researcher 2025

Volunteering (26%) emerged as the leading form of contribution, reflecting the willingness of communities to take ownership of local resilience efforts. Participation in training (22%) and sharing local knowledge (20%) also ranked highly, highlighting the importance of human capital in disaster preparedness. The contribution of physical resources (18%) shows material support, though slightly lower, perhaps due to economic limitations. The 14% under "Other" implies that some contributions, such as informal community organizing, are not fully captured in structured programs. Therefore, it is evident that community contributions are multifaceted, and by recognizing both tangible and intangible inputs, decentralized funds can maximize local strengths to improve flood resilience.

4.3.5 Key challenges in promoting participation



Source: Researcher 2025

The leading challenge identified is limited financial resources (28%), showing that while communities are willing to participate, economic constraints hinder their ability to sustain involvement. Lack of awareness (25%) and low motivation (20%) also emerged as barriers, suggesting that communication strategies and engagement incentives need strengthening. Poor leadership or coordination (18%) reflects governance issues that undermine trust and participation. Therefore, it is evident that while decentralized funds enhance opportunities for community involvement, effective participation requires addressing both structural (funding, leadership) and social (awareness, motivation) challenges. Strengthening leadership accountability and ensuring inclusive, well-funded programs can significantly improve resilience outcomes.

4.3.6 How can community participation in flood resilience be strengthened?

The following are the common responses that were provided.

Response 1: "By increasing awareness through schools and churches."

Response 2: "Providing small incentives for volunteers could encourage participation."

Response 3: "More training and workshops at community level would help."

Response 4: "Government should involve communities in planning, not just implementation."

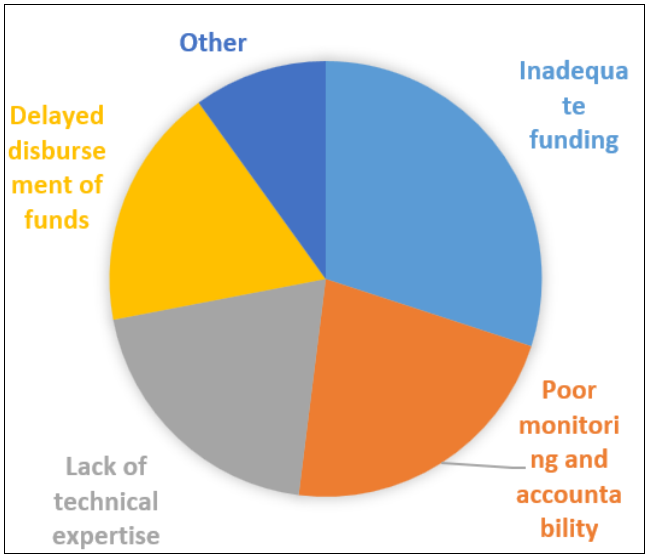
Response 5: "Strengthen neighborhood committees to coordinate efforts."

Response 6: "Give communities access to funds directly for small projects."

In summary, suggestions for strengthening participation focused on awareness creation, training, incentives, and inclusive planning. Respondents stressed the need for community committees and direct access to funds, which would give people both responsibility and resources to act. These recommendations imply that successful resilience-building is not only financial but also social, requiring trust, participation, and a sense of shared responsibility.

4.4 Challenges and Adaptation Strategies

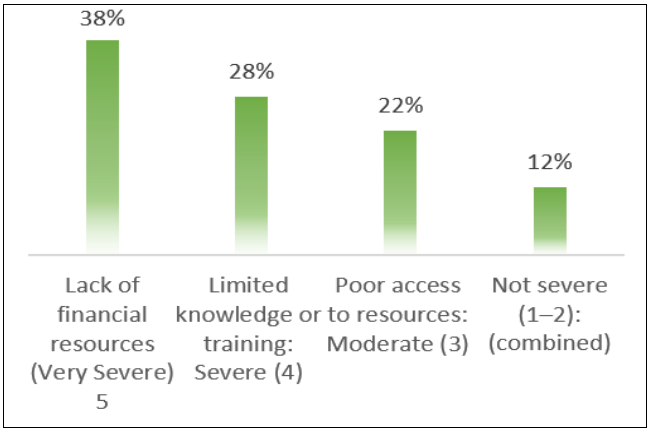
4.4.1 Major challenges in using decentralized funds effectively (mark any that applies)



Source: Researcher 2025

Inadequate funding (30%) stands out as the most pressing challenge, reflecting the reality that without sufficient resources, even the best-structured systems cannot deliver effective flood preparedness and response. Poor monitoring and accountability (22%) suggests governance weaknesses, where funds may not always be used as intended. The lack of technical expertise (20%) points to skills gaps in disaster management planning, while delayed disbursements (18%) highlight bureaucratic inefficiencies that undermine timely response during floods. Therefore, it is evident that challenges facing decentralized funds are both financial and institutional. Addressing these requires increasing budget allocations, strengthening transparency systems, and providing continuous technical training at local government levels.

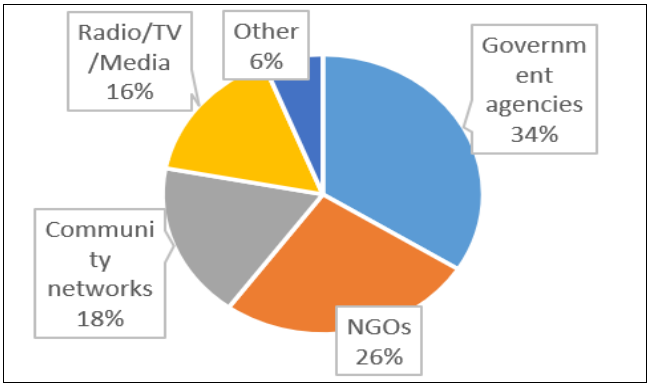
4.4.2 Rate the severity of the following challenges



Source: Researcher 2025

The most severe challenge, as rated by 38% of respondents, is the lack of financial resources. This aligns with earlier findings that inadequate funding remains the greatest obstacle to effective fund utilization. Limited knowledge and training (28%) is also a serious issue, suggesting that even when funds are available, communities and local officials may lack the technical capacity to deploy them effectively. Poor access to resources (22%) being rated as moderate highlights logistical and infrastructural barriers, particularly in urban informal settlements that are hardest hit by floods. Therefore, it is evident that decentralized funds require both financial strengthening and parallel capacity-building to ensure effective utilization. Without these dual interventions, fund deployment risks being inefficient or misdirected.

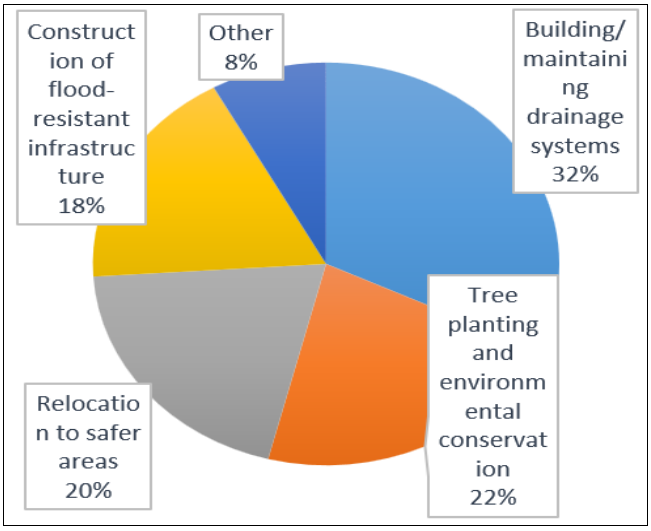
4.4.3 How do you access information on flood adaptation strategies?



Source: Researcher 2025

Government agencies (34%) remain the primary source of information on flood adaptation strategies, reflecting their central role in coordinating disaster preparedness. NGOs (26%) also play a significant role, often bridging gaps where government communication is weak. Community networks (18%) and radio/TV (16%) contribute moderately, though their relatively lower share may indicate limited coverage or insufficient localized messaging. The 6% under "Other" suggests that some communities rely on informal channels such as religious leaders or social media. Therefore, it is evident that while official channels dominate, a more diversified communication strategy is required. Leveraging community networks and mass media could strengthen awareness, especially in reaching vulnerable households with limited access to formal institutions.

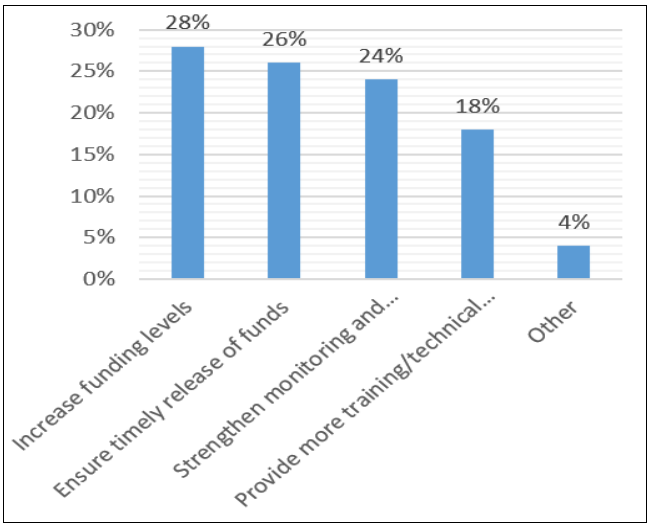
4.4.4 Which adaptation strategies have been most effective in reducing flood impacts?



Source: Researcher 2025

Drainage maintenance (32%) is viewed as the most effective adaptation strategy, highlighting the critical importance of urban infrastructure in minimizing flood damage. Tree planting and environmental conservation (22%) reflects growing recognition of ecosystem-based solutions for disaster resilience. Relocation (20%) remains relevant, though often challenging due to socio-economic barriers, while flood-resistant infrastructure (18%) shows that engineering interventions also play a role, albeit less widespread due to cost constraints. Therefore, it is evident that the most impactful strategies are those that combine structural solutions (drainage, infrastructure) with environmental and social interventions. A balanced mix ensures that both immediate and long-term resilience needs are met.

4.4.5 How can decentralized funds be improved to support flood adaptation strategies?



Source: Researcher 2025

Respondents emphasized that the greatest improvement needed is increased funding levels (28%), followed closely by ensuring timely disbursement (26%). These responses reaffirm earlier findings that insufficient and delayed financing are the key bottlenecks. Strengthening monitoring and accountability (24%) is also highlighted, pointing to concerns about transparency and possible mismanagement. Meanwhile, 18% stressed the need for technical support, recognizing that financial improvements must be complemented by skills development. Therefore, it is evident that reforms to decentralized funds must be twofold: (i) boosting both the quantity and timeliness of financial flows, and (ii) improving governance and technical systems that guide their use. Without these adjustments, flood resilience efforts will remain reactive rather than proactive.

4.5 Discussion of Results

The synthesis integrates both quantitative and qualitative insights on the Effectiveness of Decentralized Disaster Management Funds in Supporting Flood Response and Resilience in Lusaka City, presented through five key themes.

Theme 1: Geographical Exposure and Household Vulnerability

Flood exposure in Lusaka City is spatially uneven, with settlements like Kanyama, Garden, and Chibolya facing severe vulnerability due to poor drainage and unplanned urbanization. Respondents in Roma and Chalala reported minimal flooding, confirming that risk is concentrated in informal settlements (UN-Habitat, 2021; Lusaka City Council, 2022). Poverty and weak zoning enforcement exacerbate exposure (Douglas *et al*., 2008; Musonda & Munsaka, 2023). Thus, vulnerability in Lusaka reflects both socio-economic and governance failures, highlighting the need for targeted spatial interventions.

Theme 2: Effectiveness of Decentralized Disaster Management Funds

Findings show that decentralized funds moderately enhance local flood response, enabling quicker relief delivery and community-level coordination (Chanda, 2020; Mwape, 2022). However, respondents cited delayed disbursements, inadequate funding, and corruption, undermining impact. Reports of late or spoiled relief mirror challenges noted by Sikaundi & Banda (2021). Consistent with the World Bank (2020) [33], the funds' effectiveness depends on transparency, timely release, and inclusive oversight mechanisms.

Theme 3: Community Participation and Resilience Building

Community involvement in flood management remains low, constrained by limited awareness, resources, and poor coordination (Mulenga, 2019; Nyambe & Hachileka, 2020). Nevertheless, respondents valued education, training, and incentives as motivators for engagement. Effective resilience building requires participatory governance (Arnstein, 1969) [6] and community-based disaster risk management (UNDRR, 2022) [27]. Empowering communities as decision-makers rather than passive beneficiaries is vital for sustainable resilience.

Theme 4: Challenges in Implementation and Governance

Despite decentralization, weak governance, delayed funding, and politicization persist. Respondents cited corruption and partisan fund allocation as major barriers, consistent with Transparency International Zambia (2022) [25]. The Zambia Disaster Management Policy Review (2021) similarly identifies capacity gaps at district levels. As Chikozho (2019) argues, decentralization succeeds only when supported by institutional competence and political will—both of which remain inconsistent in Lusaka.

Theme 5: Strategic Adaptation and Policy Implications

Respondents proposed timely fund release, improved drainage, relocation from high-risk areas, and stronger transparency measures. These align with UNDP (2021) and IFRC (2023) recommendations on integrating structural and community-based solutions. The inclusion of environmental restoration and early warning systems aligns with Sendai Framework (UNDRR, 2015) priorities. Ultimately, flood management success depends on collaboration between government, civil society, and residents, ensuring that decentralized funds strengthen not fragment urban resilience and equity.

5. Conclusion

This study evaluated the effectiveness of decentralized disaster management funds in enhancing flood resilience in Lusaka City, focusing on their effectiveness, community participation, and associated challenges. Findings indicated that these funds have moderately improved local preparedness through initiatives such as drainage maintenance, construction of flood shelters, and community awareness programs. Decentralization has enhanced flexibility, enabling quicker responses to localized flood risks, aligning with resilience and decentralization principles.

Community participation proved essential in strengthening social resilience. Through awareness campaigns, training sessions, and voluntary engagement, communities developed a greater sense of ownership and contributed indigenous knowledge to disaster preparedness efforts.

Despite these gains, the study identified persistent constraints, including inadequate funding, delayed disbursement, poor accountability, and limited technical capacity at the local level. Such institutional weaknesses restrict the full potential of decentralized funds, forcing communities to rely on temporary adaptation measures.

In conclusion, decentralized disaster management funds play a pivotal role in improving local flood response and resilience in Lusaka City. However, realizing their long-term impact requires strengthened financial allocation, timely fund release, transparent governance, and enhanced capacity-building to ensure effective and sustainable flood risk management.

6. Acknowledgement

First and foremost, I would like to express my sincere gratitude to God Almighty for His divine guidance, strength, and grace that enabled me to complete this research. I extend heartfelt thanks to the Information and Communications University and the School of Humanities and Business Studies for providing the academic environment and resources necessary to pursue this work. My deepest appreciation goes to my supervisor, for their invaluable guidance, constructive feedback, and unwavering support throughout the research process. Finally, I acknowledge my extended family and all those who supported me in one way or another. Your words of encouragement and acts of kindness have been truly appreciated.

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