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Assessing the Effectiveness of Coping Mechnisms Among the Vulnerable Communities Post Disasters: A Case Study of Kanyama Compound

[1] Catherine Mupepa, [2] Davies Siwila

[1] School of Humanities, Information and Communications University, Lusaka, Zambia
[2] Department of Business, Information and Communication University, Lusaka, Zambia

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Corresponding Author: **Catherine Mupepa**

Abstract

This study investigated the effectiveness of post-disaster coping mechanisms among vulnerable households in Kanyama Compound, Lusaka, Zambia. A mixed-methods case study design was employed, with data collected from 150 households via structured questionnaires. Analysis using descriptive statistics and chi-square tests revealed a heavy reliance on informal coping strategies, including seeking help from relatives or friends (74.7%) and external aid from NGOs or government (70.0%). However, these mechanisms were largely ineffective and often erosive, with 80.7% of households reporting negative long-term consequences, primarily increased debt (47.9%) and loss of assets (43.0%). Chi-square analysis found no statistically significant association between the type of coping mechanism used and the respondent's gender (χ^2=2.35, df=3, p=0.503), nor between perceived effectiveness and the education level of the household head (χ^2=2.28, df=4, p=0.685), indicating uniformly challenging outcomes across demographic segments within this highly vulnerable context. Institutional support, while received by 65.3% of households, was predominantly short-term relief (86.7% received food aid) with minimal livelihood support (28.6%). The analysis showed no significant relationship between the receipt of institutional support and household income group (χ^2=1.62, df=2, p=0.446), suggesting issues of either equitable distribution or uniform inadequacy. Finally, the type of disaster experienced (flood, fire, or disease) showed no significant association with recovery success (χ^2=3.89, df=2, p=0.143), underscoring that underlying socio-economic vulnerabilities, rather than the specific hazard, are the primary determinants of poor recovery outcomes. The study concludes that the current system of household coping and institutional response in Kanyama is structured for immediate survival but systematically undermines long-term resilience. Recommendations are provided for a paradigm shift towards anticipatory action, investment in sustainable livelihoods, and pro-poor infrastructure to break the cycle of vulnerability.

Keywords: Coping Mechanisms, Disaster Recovery, Vulnerability, Institutional Support, Chi-Square Analysis, Community Resilience, Kanyama Compound, Zambia

1. Introduction

The increasing frequency and intensity of disasters, both natural and human-induced, present a profound global challenge, exacerbated by climate change, rapid urbanization, and entrenched socio-economic inequalities (IPCC, 2022) [23]. The burden of these disasters falls disproportionately on vulnerable populations in low- and middle-income countries, particularly those residing in peri-urban informal settlements (Satterthwaite, Dodman, & Bicknell, 2018) [32]. These areas are characterized by a confluence of risk factors: inadequate infrastructure, limited access to basic services, insecure land tenure, and weak institutional support systems, which collectively amplify their susceptibility to hazards and hinder their capacity to recover (Douglas *et al*., 2008) [14].

In Zambia, the rapid growth of cities like Lusaka has outpaced the development of planned infrastructure, leading to the proliferation of high-density, informal settlements known as "compounds." Kanyama Compound is one of the largest and most densely populated of these, serving as a stark example of urban vulnerability. As per the 2022 Census, Kanyama is home to approximately 370,000 residents, with an estimated 78,995 households (ZamStats, 2022). The compound is plagued by widespread poverty, substandard housing, poor sanitation, limited access to clean water, and high unemployment, relying predominantly on informal economic activities (Chileshe, 2019) [8]. These pre-existing conditions create a landscape of chronic

vulnerability, which is acutely activated by recurring disasters, most notably seasonal flooding, but also fires and disease outbreaks such as cholera (Mwila, 2018) [31].

Confronted with these shocks, households in Kanyama are not passive victims; they actively employ a range of coping mechanisms to ensure their immediate survival and initiate recovery. These strategies span from informal social support and livelihood adjustments to reliance on external aid from government and non-governmental organizations (NGOs) (Simukanga, Phiri, & Banda, 2022). However, the critical question remains: how effective are these coping mechanisms in promoting sustainable recovery and building long-term resilience? Existing literature suggests that in similar contexts, many coping strategies, while providing short-term relief, can be maladaptive, eroding household assets, increasing debt, and trapping communities in cycles of poverty (Dabla-Norris & Gündüz, 2014; Genoni, 2012) [13, 19]. Furthermore, the institutional support designed to aid recovery is often fragmented, top-down, and focused on immediate relief, failing to address the root causes of vulnerability or support long-term adaptive capacities (Gaillard & Mercer, 2013) [17].

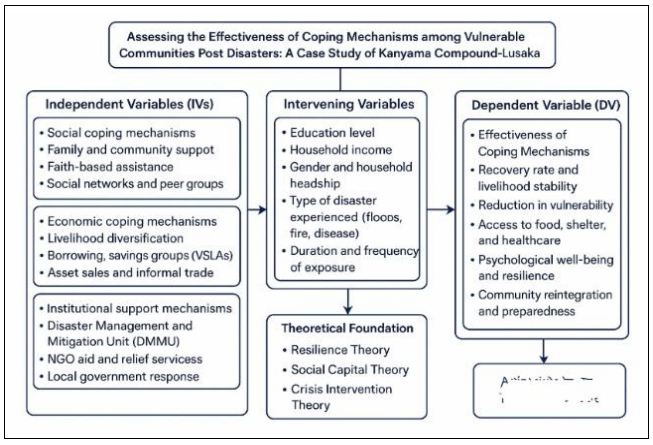
This study, therefore, seeks to fill a critical knowledge gap by conducting a systematic, empirical assessment of the effectiveness of post-disaster coping mechanisms in Kanyama Compound. It moves beyond simply cataloguing strategies to critically evaluate their outcomes and their interaction with formal institutional support. The research is guided by the following specific.

Objectives:

1. To identify the coping mechanisms employed by vulnerable populations in Kanyama post-disasters.
2. To assess the effectiveness of these post-disaster coping mechanisms in promoting recovery.
3. To evaluate institutional support systems for community post-disaster recovery.

The findings are expected to provide evidence-based insights for policymakers, disaster management practitioners, and NGOs, informing the design of more inclusive, effective, and sustainable interventions that leverage local capacities while addressing systemic vulnerabilities.

2. Conceptual Framework



The conceptual framework illustrates how different coping mechanisms influence recovery outcomes among vulnerable communities in Kanyama after disasters. On the left, the independent variables represent the main coping strategies: social, economic, psychological, and institutional. These include community support, livelihood diversification, and institutional interventions such as those from the DMMU and NGOs. At the centre, intervening variables like education, income, gender, and disaster type affect how these coping strategy's function. These variables determine the capacity of individuals and households to respond and recover. On the right, the dependent variable reflects the overall effectiveness of coping mechanisms. Indicators such as recovery rate, reduced vulnerability, access to essentials, and psychological well-being measure this effectiveness. The theoretical foundation—Resilience Theory, Social Capital Theory, and Crisis Intervention Theory—links all components, explaining how adaptation, social networks, and timely interventions shape community resilience and sustainable recovery.

2.1 Conceptualizing Coping Mechanisms and Disaster Recovery

Coping mechanisms in the context of disasters refer to the cognitive and behavioural efforts made by individuals, households, and communities to manage specific external and internal demands that are appraised as taxing or exceeding their resources (Lazarus & Folkman, 1984) [25]. In practical terms, these are the strategies employed to mitigate the impacts of a shock, ensure basic survival, and initiate the process of recovery. Almazan, Cruz, and Alam (2020) [2] categorize these strategies into problem-focused (addressing the cause of stress, e.g., repairing a home), emotion-focused (managing emotional distress, e.g., prayer), and avoidant (disengaging from the stressor, e.g., substance abuse).

From a livelihood's perspective, Ellis (2000) [15] defines coping mechanisms as short-term responses to an immediate decline in access to food or income, which may involve activating social networks, depleting assets, or diversifying income sources. These strategies exist on a spectrum from positive/adaptive to negative/maladaptive. Adaptive strategies help households recover without compromising their future livelihood security, while maladaptive strategies provide immediate relief at the cost of long-term well-being, often deepening vulnerability (Birkmann *et al*., 2013) [7]. For instance, selling productive assets like livestock or taking children out of school generates immediate cash but undermines future income potential and human capital development (Hoddinott, 2006) [22].

2.2 Global and Regional Evidence on Coping Strategies

Globally, research in peri-urban and informal settlements highlights the paramount importance of social capital and informal networks as primary coping resources. In the favelas of Brazil, community-based organizations and dense social networks have been instrumental in distributing food and providing support during crises, often filling voids left by absent state services (Almeida *et al*., 2020) [3]. Similarly, in peri-urban Delhi, migrants rely heavily on kinship and place-of-origin networks for access to housing, credit, and employment, especially after disruptive events (Bhan, 2019) [6]. In Southeast Asia, traditional practices of mutual aid are vital. In the Philippines, the spirit of *bayanihan* (community unity) facilitates collective action for cleanup and rebuilding after typhoons (Gaillard & Mercer, 2013) [17], while in Vietnam, households in flood-prone areas adapt by elevating homes on stilts, a blend of indigenous knowledge and practical problem-solving (Tran & Shaw, 2007).

However, the reliance on informal strategies is often a symptom of institutional failure. A World Bank (2019) study notes that peri-urban residents globally face systemic barriers such as land tenure insecurity and exclusion from municipal services, which forces them to depend on often unsustainable coping mechanisms. The effectiveness of these strategies is further compromised by their erosive nature. Studies following disasters in Haiti and Bangladesh show that distress sales of assets and high-interest borrowing are common but lead to long-term impoverishment, creating a "poverty trap" where households never fully recover their pre-disaster asset base (Le Dé, Garcia, & Glémarec, 2013; Mallick & Rahman, 2013) [26, 27].

In the African context, coping mechanisms are shaped by a unique blend of poverty, strong communal ties, and specific environmental challenges. Across Sub-Saharan Africa, common strategies include temporary migration, reduction of food consumption, sale of livestock and other assets, and reliance on community-based savings groups (Antwi-Agyei, Dougill, & Stringer, 2023 [4]; Uwayisenga, Nkundimana, & Niyongabo, 2024). In Ethiopia, traditional communal labor systems like *debo* are activated for post-disaster reconstruction, reinforcing social cohesion while addressing physical needs (Gebremichael, 2015) [18]. Faith-based organizations also play a critical role, often mobilizing faster than government agencies to provide spiritual, material, and psychosocial support (Clarke & Jennings, 2008) [11]. In Nairobi's Kibera informal settlement, savings and loan associations known as *chamas* provide a crucial financial buffer during emergencies, demonstrating how localized financial instruments enhance community resilience (Mutisya & Yarime, 2011) [30].

In Zambia, studies specific to Kanyama and similar compounds reveal a repertoire of localized coping strategies. These include reactive measures such as building makeshift barriers with sandbags, temporarily relocating to relatives in less-affected areas, and unblocking drainage channels (Simukanga *et al*., 2022; ZVAC, 2023). Residents also engage in modifying their informal businesses to operate in flood conditions. While these actions demonstrate significant local ingenuity and resilience, their sustainability is questionable. Research indicates that these strategies often fail to prevent repeated losses and can divert scarce resources from long-term investments (Chitonge & Mfune, 2015) [10].

2.3 The Role and Limitations of Institutional Support

Formal institutions, both governmental and non-governmental, are critical actors in the post-disaster landscape. The Sendai Framework for Disaster Risk Reduction (2015-2030) emphasizes the need for strengthened disaster risk governance, including community participation and the integration of mental health and psychosocial support (MHPSS) into response plans (UNDRR, 2015). In high-capacity contexts like Japan and the United States, agencies such as FEMA provide structured, albeit sometimes slow, relief and long-term recovery programs (Aldrich, 2012 [1]; Smith & McCarty, 2020).

In contrast, institutional responses in many African countries, including Zambia, are often hampered by limited financial and technical capacity, poor coordination, and political challenges (Manyena, 2006) [28]. The Zambian government's primary disaster response agency, the Disaster Management and Mitigation Unit (DMMU), operates under the Disaster Management Act of 2010. While its mandate is comprehensive, its operational focus has historically been on the distribution of short-term relief items like food, temporary shelter, and medical supplies (GRZ, 2015, 2020) [20, 21]. This approach, while vital for saving lives, has been criticized for its reactive nature and limited investment in long-term recovery and resilience-building, such as livelihood restoration or psychological support (Munsaka, 2018) [29].

NGOs, both international and local, play an indispensable role in bridging these gaps. Organizations like the Zambia Red Cross Society (ZRCS) and World Vision are often more agile and deeply embedded in communities, providing not only immediate relief but also engaging in disaster preparedness and risk reduction programs (ZRCS, 2021). However, NGO interventions can be project-based, fragmented, and dependent on fluctuating donor priorities, leading to a lack of sustainability and potential duplication of efforts (Chileshe, 2020) [9]. A critical disconnect often exists between these external interventions and the indigenous coping knowledge of the communities they aim to serve, which can disempower locals and lead to less effective outcomes (Gaillard & Mercer, 2013) [17].

2.4 Theoretical Framework: Applying Resilience Theory

This study is grounded in Resilience Theory, which provides a robust conceptual lens for understanding how social-ecological systems, including communities, respond to disturbances (Folke, 2006) [16]. Moving beyond a simplistic "bounce-back" conception, contemporary resilience thinking distinguishes between different capacities (Béné, Wood, Newsham, & Davies, 2012; Manyena, 2006) [5, 28]:

- **Absorptive Capacity-** The ability of a system to withstand shocks using pre-existing resources and structures. This is exemplified by coping strategies that buffer the immediate impact, such as using savings or relying on social networks for temporary shelter.
- **Adaptive Capacity-**The ability of actors in the system to make proactive adjustments, learn, and reorganize in response to experienced or anticipated changes. Examples include diversifying livelihoods, adopting new flood-resistant building techniques, or forming community disaster committees.
- **Transformative Capacity-** The ability to fundamentally alter the system's structure when the current state is untenable. This involves addressing root causes of vulnerability, such as advocating for and investing in pro-poor urban planning, secure land tenure, and equitable governance.

Resilience Theory is particularly relevant for this study as it allows for a nuanced analysis of the coping mechanisms in Kanyama. It frames them not as isolated actions but as indicators of the community's broader resilience capacities. The theory helps to explain why some strategies, while effective for absorption, may be insufficient or even detrimental for adaptation and transformation. It also provides a framework for critiquing institutional support, evaluating whether it merely bolsters absorptive capacity or genuinely enhances the community's adaptive and transformative potential to break the cycle of disaster and vulnerability.

3. Methodology

3.1 Research Design

This research employed a convergent parallel mixed-methods design within a case study framework. The case study approach was selected as it is ideal for investigating a contemporary phenomenon (post-disaster coping) in-depth within its real-life context (Kanyama Compound), especially when the boundaries between the phenomenon and context are not clearly evident (Yin, 2018). The mixed-methods approach was chosen to harness the strengths of both quantitative and qualitative paradigms. The quantitative component provided breadth, generalizability, and the ability to identify statistical patterns across a sample, while the qualitative component provided depth, context, and a nuanced understanding of the lived experiences behind the numbers (Creswell & Plano Clark, 2017) [12].

3.2 Study Area and Target Population

The study was conducted in Kanyama Compound, Lusaka. As established, it is a high-density informal settlement with a population of approximately 370,000 people (ZamStats, 2022). The target population for this study was specifically defined as the 700 households that were officially registered as affected by the major flood disaster of 2023 in Kanyama, according to records from the Disaster Management and Mitigation Unit (DMMU, 2023). This purposive delimitation ensured that the study focused on individuals with direct and recent experience of a major disaster, thereby enhancing the validity of the data on coping mechanisms. The unit of analysis was the household, with the respondent being either the household head or an adult member (18 years or older) capable of speaking on behalf of the household.

3.3 Sampling Design and Sample Size

A systematic random sampling technique was used to select participants from the sampling frame of 700 affected households. This method ensured that every household had an equal probability of being selected, thereby minimizing selection bias and enhancing the representativeness of the sample (Kothari, 2004) [24]. A sample size of 150 households was determined. This sample size is considered robust for descriptive and basic inferential analysis in social science research and is logistically feasible within the constraints of a study of this nature.

3.4 Data Collection and Analysis

The primary instrument for quantitative data collection was a structured questionnaire, which was pre-tested and refined before full-scale administration. The questionnaire was divided into sections: (A) Socio-demographic profile, (B) Disaster exposure and impact, (C) Coping mechanisms and their effectiveness, and (D) Institutional and community support systems.

Quantitative data from the 150 completed questionnaires were coded, entered, and cleaned using Microsoft Excel. The data were then imported into the Statistical Package for the Social Sciences (SPSS version 26) for analysis. Data analysis proceeded in two stages:

1. **Descriptive Statistics-** Frequencies, percentages, means, and standard deviations were calculated to summarize the socio-demographic characteristics of the sample and to describe the patterns of disaster exposure, coping mechanisms, and institutional support. These results are presented in tables and figures.
2. **Inferential Statistics-** Chi-square tests of independence were conducted to examine potential relationships between key categorical variables. Specifically, tests were run to determine if there were significant associations between: (i) the type of coping mechanism and the respondent's gender; (ii) the perceived effectiveness of coping and the education level of the household head; (iii) the receipt of institutional support and household income group; and (iv) the type of disaster experienced and self-reported recovery success. A p-value of less than 0.05 was considered statistically significant.

Rigorous ethical protocols were followed throughout the research, including obtaining informed consent, ensuring anonymity and confidentiality, and minimizing psychological harm to participants by sensitively approaching questions about traumatic experiences.

4. Findings and Analysis

4.1 Socio-Demographic Profile and Disaster Exposure

The study successfully collected data from all 150 targeted households, achieving a 100% response rate. The socio-demographic profile of the respondents, detailed in Table 1, paints a clear picture of a community facing significant socio-economic challenges. The gender distribution was relatively balanced. A large majority (70.0%) of respondents were within the economically active age bracket of 18-45 years. However, the marital status data shows a high proportion of divorced, separated, and widowed individuals (44.0%), which often correlates with a higher prevalence of vulnerable, single-headed households. The educational attainment was notably low, with 62.0% having no formal schooling or only primary-level education. Economically, the community is heavily dependent on the precarious informal sector, with 60.0% of households relying on small business/trading and casual labour. Only 12.7% had formal employment, underscoring the lack of stable income and social protection.

Table 1: Socio-Demographic Profile of Respondents (N=150)

Variable	Category	Frequency	Percentage (%)
Gender	Male	58	38.7
	Female	52	34.7
Age	Prefer not to say	40	26.6
	18-30 years	49	32.7
	31-45 years	56	37.3
	46-60 years	31	20.7
	60 and above	14	9.3
Marital Status	Single	26	17.3
	Married	33	22.0
	Widowed	25	16.7
	Divorced	41	27.3
	Separated	25	16.7
Education Level	No formal schooling	49	32.7
	Primary	44	29.3
	Secondary	36	24.0
	Tertiary	21	14.0
Household Income Source	Small Business/Trading	54	36.0
	Casual Labour	36	24.0
	Formal Employment	19	12.7
	Remittances	18	12.0
	Farming	14	9.3
	Other	9	6.0

The data reveals significant vulnerabilities: low formal education (62% had no formal schooling or only primary education), a high dependence on precarious informal livelihoods (60% in small business and casual labour), and a high prevalence of divorced and widowed individuals (44%), which often correlates with single, female-headed households facing compounded challenges.

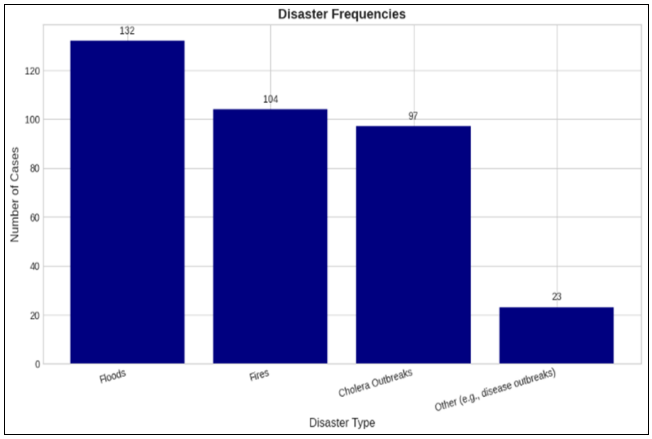


Fig 1: Types of Disasters Experienced by Households (N=150)

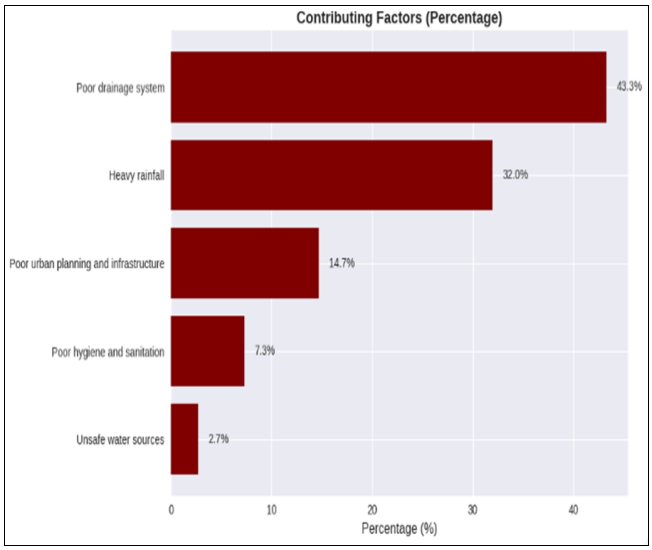


Fig 2: Perceived Factors Contributing to Disasters (Ranked 1st)

The impacts of these disasters were severe and multi-dimensional, affecting housing, health, economics, and psychology. As detailed in Table 2, the most devastating impacts reported were the destruction of houses (30.0%), loss of income or livelihood (23.3%), and injury or illness of a household member (21.3%). These findings align with the concept of compound vulnerability, where a single shock triggers a cascade of negative consequences across different aspects of life.

Table 2: Most Devastating Impacts of Disasters on Households (N=150)

Impact	Frequency	Percentage (%)
House destroyed	45	30.0
Loss of income/livelihood	35	23.3
Injury or illness of a member	32	21.3
Loss of property/assets	28	18.7
Severe psychological stress	10	6.7

4.2 Specific Objective One: Identification of Coping Mechanisms

In response to these severe impacts, households in Kanyama activated a diverse portfolio of coping strategies. The most commonly employed mechanisms are summarized in Figure 3. The data reveals a heavy reliance on social capital and external aid. Seeking help from relatives or friends was the most prevalent strategy (74.7%), highlighting the critical role of informal support networks. This was closely followed by receiving aid from NGOs or the government (70.0%). However, a significant number of households also engaged in clearly erosive strategies: 59.3% used up their savings, and 54.7% sold assets to generate immediate cash. This combination of social reliance and asset depletion indicates that informal networks are often a first resort, but when stretched thin, households are forced into strategies that compromise their future security.

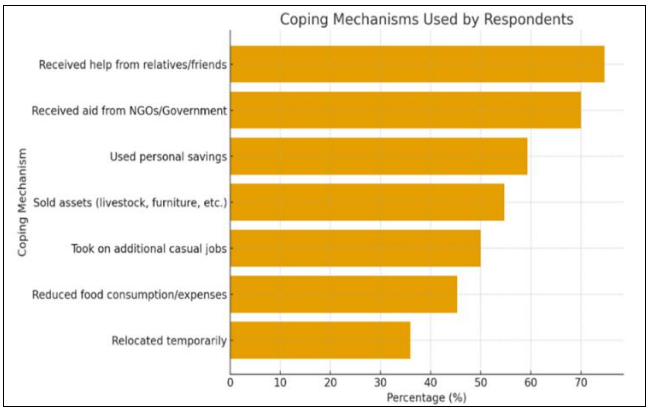


Fig 3: Coping Mechanisms Employed by Households (N=150)

The duration for which households relied on their primary coping mechanism, shown in Figure 4, further illustrates the protracted nature of the recovery crisis. While 34.0% relied on coping strategies for 1-3 months, a substantial 30.0% were still dependent on them for over six months. This prolonged dependence signals a failure to achieve a stable recovery in a timely manner, leaving households in a prolonged state of vulnerability.

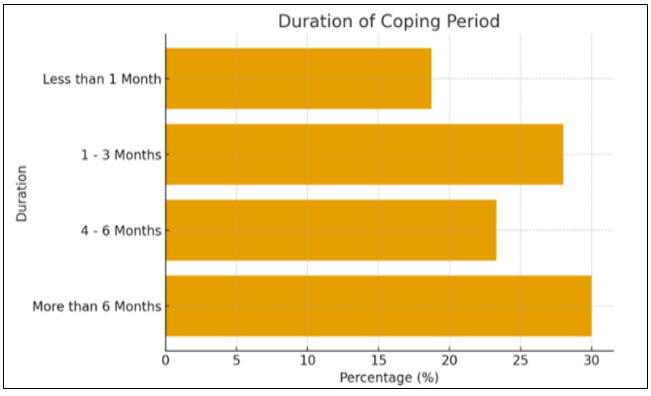


Fig 4: Duration of Reliance on Primary Coping Mechanisms

4.3 Specific Objective Two: Assessing the Effectiveness of Coping Mechanisms

The data on the effectiveness of these coping strategies presents a sobering picture. A striking 80.7% (121 out of 150) of households reported that their coping strategies

resulted in negative long-term consequences for their household. The nature of these negative impacts, detailed in Figure 5, underscores the erosive cycle described in the literature. Increased debt was the most common outcome (47.9%), followed closely by the loss of assets (43.0%). This directly reflects the use of strategies like borrowing and asset sales, which provide short-term liquidity at the cost of long-term financial health and productive capacity.

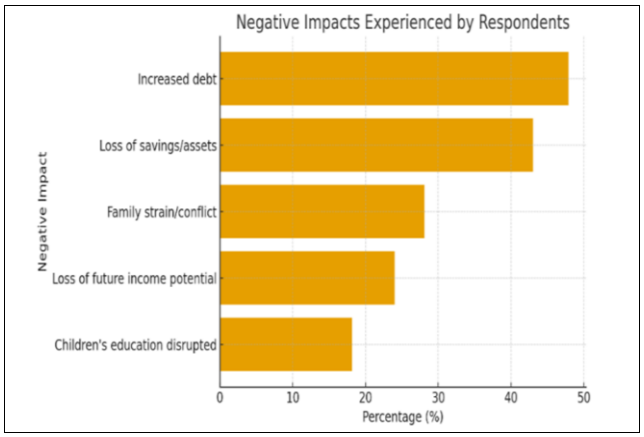


Fig 5: Negative Long-Term Impacts of Coping Strategies (N=121)

The most compelling evidence of ineffective recovery is the dramatic shift in households' perceived economic situation, as captured in Table 3. Before the disaster, 48.0% of households described their situation as "Stable." After the disaster and the subsequent application of coping strategies, this figure plummeted to 29.3%. Conversely, the proportion of households classifying themselves as "Struggling" surged from 36.7% to 59.3%. This decline demonstrates that the process of coping itself, rather than leading to recovery, systematically undermined the economic foundation of a majority of households.

Table 3: Perceived Household Economic Situation Before and After Disaster

Economic Situation	Before Disaster Frequency (%)	After Disaster & Coping Frequency (%)
Struggling	55 (36.7)	89 (59.3)
Stable	72 (48.0)	44 (29.3)
Improving	23 (15.3)	17 (11.3)

When asked what resources or knowledge would make them more resilient to future disasters (Table 4), respondents' answers pointed towards a need for more structural and sustainable support. Better drainage infrastructure (26.0%) was the most desired resource, followed by government financial aid or loans (21.7%) and savings plans or financial literacy training (18.0%). This indicates a community awareness that their current coping toolkit is insufficient and that transformative change is needed.

Table 4: Desired Resources for Future Resilience (N=150)

Desired Resource/Strategy	Frequency	Percentage (%)
Better drainage infrastructure	78	26.0
Government financial aid/loans	65	21.7
Savings plan/financial literacy	54	18.0
Early warning systems	48	16.0
Disaster preparedness training	45	15.0
Stronger community support networks	10	3.3

Inferential Statistical Analysis

A Chi-square test of independence was performed to examine the relationship between the type of primary coping mechanism used and the gender of the respondent. The result was not statistically significant, χ^2 (3, N=150) = 2.35, p = 0.503. This suggests that in the context of Kanyama's pervasive poverty, the choice of coping strategy is not strongly gendered; men and women face similar constraints and resort to a similar repertoire of responses.

Furthermore, no significant relationship was found between the perceived effectiveness of coping mechanisms (whether they led to negative long-term impacts) and the education level of the household head, χ^2 (4, N=150) = 2.28, p = 0.685. This indicates that formal education, often touted as a key to resilience, did not substantially insulate households from the erosive effects of disaster coping in this specific high-vulnerability context.

4.4. Specific Objective Three: Evaluation of Institutional Support Systems

The study found that institutional frameworks for early warning were partially functional but ultimately inadequate. While 52.0% of households (78 out of 150) reported receiving some form of early warning before a disaster (Table 5), the utility of these warnings was severely limited. As shown in Figure 6, only 23.1% found the warnings "Very Useful." The majority (43.6%) found them only "Slightly Useful," with common explanations being that the warnings were too generic, provided insufficient lead time, or, most critically, that households lacked the resources (e.g., money for transport, a safe place to go) to act on them effectively.

Table 8: Recommended Government Action (N=150)

Recommended Action	Frequency	Percentage (%)
Improve drainage infrastructure	89	59.3
Provide direct financial aid/loans	65	43.3
Improve early warning systems	52	34.7
Enforce urban planning/building codes	48	32.0
Provide disaster preparedness training	35	23.3

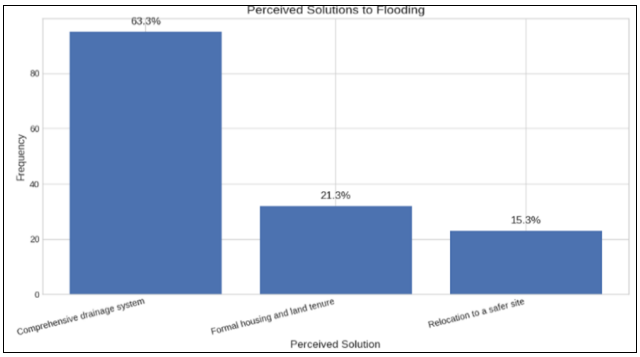


Fig 10: Perceived Permanent Solution to Recurring Disasters (N=150)

Statistical Analysis

A Chi-square test found no significant association between the receipt of institutional support and the household's income group, χ^2(2, N=150) = 1.62, p = 0.446. This suggests that aid was not systematically biased towards richer or poorer households within this vulnerable population. However, this "equity" in distribution also implies a uniform inadequacy—the support system failed to differentially

target those in greatest need or to provide the type of support that would catalyze recovery for any income group.

Finally, and perhaps most profoundly, the type of disaster experienced (flood, fire, or disease) showed no significant association with the household's self-reported recovery success, $\chi^2(2, N=150) = 3.89$, $p = 0.143$. This result powerfully underscores that it is not the specific *hazard* that determines outcomes, but the underlying *vulnerability* of the community. Whether the shock was water, fire, or disease, the pre-existing conditions of poverty, poor infrastructure, and limited coping resources led to similarly poor recovery results.

5. Discussion

The findings from Kanyama Compound present a powerful and coherent narrative of a community engaged in a constant, draining struggle for recovery, where the very act of surviving a disaster systematically depletes the capacity to withstand the next one. This discussion interprets these findings through the lens of Resilience Theory and the existing literature to elucidate the dynamics of this vulnerability cycle.

The identification of coping mechanisms reveals a community with strong *absorptive capacity*. The high reliance on social networks (74.7%) and external aid (70.0%) is a rational and effective short-term strategy to buffer the immediate shock, consistent with global evidence on the primacy of social capital in informal settlements (Aldrich, 2012; Bhan, 2019) [1, 6]. However, the high prevalence of erosive strategies like savings depletion (59.3%) and asset sales (54.7%) signals that this absorptive capacity is being stretched to its breaking point. Households are not just using their "shock absorbers"; they are cannibalizing the core components of their future livelihood—their financial and physical capital. This finding directly echoes the work of Dabla-Norris and Gündüz (2014) [13], who warned that such coping techniques obstruct capital accumulation and trap households in poverty.

The assessment of effectiveness confirms this erosive cycle. The fact that 80.7% of households reported negative long-term consequences, primarily increased debt and asset loss, is a stark indictment of the maladaptive nature of the current coping portfolio. The most telling evidence is the significant deterioration in self-assessed economic well-being (Table 3). This decline demonstrates that the process of coping is not a neutral recovery tool but an actively detrimental one. From a resilience perspective, the community possesses the capacity to *absorb* the shock, but it lacks the *adaptive capacity* to reorganize and recover without compromising its future prospects (Béné *et al*., 2012) [5]. The strategies are about endurance, not evolution.

The inferential statistics further deepen this analysis. The lack of significant association between gender and coping type, or education and effectiveness, suggests a "flattening" effect of extreme vulnerability. When every household is struggling with profound poverty and systemic marginalization, demographic differentiators become less predictive of outcomes. The playing field of vulnerability is tragically level. The most powerful inferential finding—that disaster type does not affect recovery success—forcefully shifts the blame from environmental hazards to socio-political failures. It underscores the central tenet of vulnerability theory: that disasters are not natural but are the product of social processes that create unsafe conditions (Wisner, Blaikie, Cannon, & Davis, 2004). In Kanyama, the real disaster is the chronic condition of infrastructural neglect and economic precarity; the flood, fire, or disease is merely the trigger.

The evaluation of institutional support reveals a system that, despite good intentions, reinforces rather than breaks this cycle. The provision of early warnings without the means to act upon them is an exercise in frustration, not risk reduction. More critically, the institutional response is overwhelmingly skewed towards bolstering *absorptive capacity* through food aid (86.7%). While life-saving, this does nothing to build the *adaptive capacity* (e.g., through livelihood support) or *transformative capacity* (e.g., through infrastructure investment) needed for long-term resilience. This creates a dependency loop where communities become proficient at surviving with external help but are never empowered to graduate from it. This misalignment between institutional action and community need is a classic problem in disaster management, often stemming from top-down planning that fails to consult local populations on their actual priorities (Gaillard & Mercer, 2013) [17]. The community's own clear recommendations for drainage and financial support (Table 8, Figure 10) stand in sharp contrast to the relief items they actually receive.

In conclusion, the post-disaster system in Kanyama is a perfectly structured machine for managing vulnerability, but not for ending it. The interplay between household-level erosive coping and institutionally-driven short-term relief creates a "resilience trap." The system is designed to help the community *endure* disasters but provides no pathway for them to *evolve* into a state of reduced risk. Each cycle of disaster and response leaves households poorer, more indebted, and more dependent, thereby ensuring that the next shock will have even more devastating consequences.

6. Conclusion and Recommendations

6.1 Conclusion

This study set out to assess the effectiveness of coping mechanisms in Kanyama Compound. The evidence leads to an unequivocal conclusion: the entire post-disaster ecology—comprising the coping strategies of vulnerable households and the support provided by formal institutions—is fundamentally architected for immediate survival at the direct expense of sustainable recovery and long-term resilience. Households in Kanyama demonstrate remarkable ingenuity and solidarity in their coping efforts, but these are ultimately defensive, erosive actions that deplete their economic and social assets. Concurrently, the institutional response system, while providing critical humanitarian relief, operates with a profound misalignment, addressing the symptoms of vulnerability (immediate hunger, shelter needs) while neglecting its root causes (livelihood insecurity, poor infrastructure). The result is a self-perpetuating cycle of disaster and dependency, a "resilience trap" that systematically undermines the very foundations of community well-being. The vulnerability of Kanyama is not a passive condition but is actively reproduced by the interplay of maladaptive coping and well-intentioned but shortsighted external interventions.

6.2 Recommendations

To break this cycle, a fundamental paradigm shift is required—from managing crises to building transformative

resilience. The following recommendations are targeted at key stakeholders.

A. For Government and Policy Makers:

1. **Shift from Reactive Relief to Anticipatory Action:** Integrate early warning with early action by establishing a pre-positioned contingency fund. Forecasts of heavy rainfall should automatically trigger unconditional cash transfers to at-risk households, enabling them to protect assets and evacuate pre-emptively without resorting to debt or distress sales.
2. **Prioritize Investment in Pro-Poor Urban Infrastructure:** Earmark a specific, substantial portion of the national and municipal development budget for co-designed upgrading of Kanyama's infrastructure. This must include sustainable drainage systems, paved roads, and potable water access. Concurrently, pursue policies for land tenure regularization to provide security and incentivize household investment in resilient housing.
3. **Develop an Integrated, Shock-Responsive Social Protection System:** Strengthen and scale up programs like the Social Cash Transfer to be more flexible and scalable. In the event of a disaster, these systems can be rapidly expanded to provide a predictable financial buffer, protecting household consumption and preventing erosive coping.

B. For Non-Governmental Organizations (NGOs) and Aid Agencies:

1. **Move Beyond Fragmented, Project-Based Aid:** NGOs operating in Kanyama should form a consortium to develop and implement a unified, multi-year Resilience Building Strategy for the compound. This strategy should clearly define a transition from emergency relief to recovery and long-term development, avoiding duplication and ensuring all interventions contribute to a common goal.
2. **Champion Livelihoods and Asset-Building Programs:** Systematically phase out prolonged general food distribution in favor of programs that restore and enhance economic capabilities. This includes cash-for-work programs for public goods creation, grants or loans for small business recovery, vocational training in disaster-resistant trades, and support for community savings and loan associations (VSLAs).

C. For Community-Level Action and Future Research:

1. **Strengthen Community-Led Disaster Risk Management:** Local authorities and NGOs should facilitate the formal establishment and training of Ward Disaster Management Committees in Kanyama. These committees, with equitable representation, should lead community-based risk mapping, develop local contingency plans, and act as a liaison with external responders.

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