



Factors Impacting Participatory Post-Disaster Relocation and Housing Reconstruction: The Case of Tsholotsho District, Zimbabwe

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Abstract

Relocation is not typically considered the best planning option for post-disaster reconstruction and rehabilitation, but it may be necessary if the site has suffered severe damage or is at imminent risk. There is a growing recognition that strong community participation is necessary in the post-disaster relocation decision-making process since relocation can have detrimental effects on a community's livelihood, cultural system, and way of life, among others. However, the realization of this still needs to be improved. As of yet, few studies have examined a comprehensive account of meaningful community engagement in post-disaster relocation and reconstruction, particularly in developing countries. This study investigated what factors influenced local communities' participation in post-disaster relocation and reconstruction works after the 2017 Cyclone Dineo flood disaster in the Tsholotsho District of Zimbabwe. Qualitative research methods such as face-to-face interviews, observations, and focus groups were used to collect qualitative data from a purposive sample of 25 community members and 6 stakeholders. This empirical investigation showed that despite the fact that the relocation project was conceived as a community-centered project, there was no meaningful community engagement, due to the absence of a participatory framework or planning guidelines for stakeholder engagement, as well as the lack of political willingness among government officials. The study concluded that the lack of community involvement led to local communities abandoning the reconstruction sites because relocation projects failed to accommodate the cultural beliefs, place attachments, and livelihood concerns of local communities. This study suggested that it is imperative to enhance the awareness of government officials and other stakeholders about the importance of community participation for the effective implementation of post-disaster relocation works. Meaningful community participation can also provide avenues for incorporating local needs and concerns, cultural beliefs, and alternative and sustainable livelihood restoration, which are essential for effective reconstruction after disasters. This research aimed to enrich the academic discourse by providing valuable insights into the intricacies of post-disaster recovery initiatives in the country.

Keywords Community rehabilitation · Housing reconstruction · Participatory relocation · Zimbabwe

1 Introduction

Reconstruction and rehabilitation following a disaster are critical for building disaster-resilient communities. Community relocation and rehabilitation not only means moving and providing the disaster victims with land or housing

infrastructure but also helping to rebuild displaced lives by minimizing their vulnerabilities (Palagi and Javernick-Will 2020). A successful rehabilitation and reconstruction project should minimize vulnerabilities through sustainable reconstruction and relocating disaster-affected communities on time, and be cost-effective. It is also important to ensure that the newly constructed built environment meets the cultural and social needs of the local communities, enhancing their livelihood opportunities and ensuring their ownership of the project. The sociocultural dimension of reconstruction, as well as the livelihood concerns of the disaster-affected communities, call for meaningful participation of local communities in the decision-making process of disaster recovery and reconstruction.

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Effective community engagement becomes more critical and complex when in situ development is not viable, but the affected communities need to be relocated to reduce the exposure to disaster risks at the present site. Meaningful community participation is essential, as the relocation directly impacts their livelihoods and way of life. However, the participatory process is often considered expensive in terms of time and resources, for example, delaying reconstruction, coming with the organizational and operational costs of consensus building, and so on. Nevertheless, studies across different countries indicate that even after the newly constructed sites are disaster-resistant, completed in a timely manner, and aesthetically pleasing, local communities have rejected them (Samaddar and Okada 2006; Ganapati and Ganapati 2008). A key reason for this is a lack of local community participation in the reconstruction process, resulting in an inability to capture the local needs, cultural practices, habits, and livelihood concerns.

Recent research into post-disaster recovery, reconstruction, and rehabilitation has strongly advocated for the participation of all and various stakeholders, especially the inclusion of disaster-affected communities (Chandrasekhar 2012; Sadiqi et al. 2016; Samaddar et al. 2017; Hamideh and Rongerude 2019; Hamideh 2020; Ngulube et al. 2023). The World Bank provides a framework with crucial recommendations to be followed by authorities in case relocation cannot be avoided, such as using a plan that clearly defines how livelihoods are to be restored and involving communities in decision making (Jha et al. 2010), thus emphasizing the need for community involvement in reconstruction and rehabilitation.

Regardless of the urgent call for the inclusion of communities, the effective participation of local communities still remains elusive in post-disaster reconstruction (Samaddar et al. 2017). Irrespective of the culture and development, local communities are still treated as victims rather than equal partners, thus leading to many failed relocation and housing reconstruction projects (Omidvar et al. 2011; Sadiqi et al. 2012). However, only a few studies have systematically examined the comprehensive factors accountable for meaningful community engagement in post-disaster reconstruction and rehabilitation projects, especially in developing countries like Zimbabwe.

A majority of studies examined what factors contribute to the success of post-disaster reconstruction and rehabilitation (Thurairajah 2008; Ophiyandri et al. 2010; Ophiyandri et al. 2015; Shafique 2016). But these studies rarely examined how, why, and to what extent communities participate in the rehabilitation process. As such, it is important to recognize that successful community engagement does not necessarily equate to a successful post-disaster reconstruction project and vice versa. The dynamics of community participation in reconstruction projects are critical in both cases—first,

where meaningful participation is recognized, success remains uncertain due to a lack of understanding of what works for participation, how, and why (Samaddar et al. 2022); in another example, community engagement is not recognized, but a project fails after spending a lot of money and resources due to the lack of community involvement in the decision-making process. It is critical to carry out a comprehensive study of community participation to demonstrate systematically to decision makers and policymakers how inadequate community participation impacted a project and how future projects could benefit from those lessons. A lack of models, frameworks, and approaches exists in the disaster management discourse examining the process and outcomes of community participation in decision making (Samaddar et al. 2015).

In the last decade, Zimbabwe and other developing countries have been affected by climate change-induced disasters such as tropical cyclones, and governments have resorted to the relocation and provision of recovery housing for the disaster-affected communities. While governments are trying to reduce future disaster risk, many reconstruction and rehabilitation policies and projects have been ineffective as communities have failed to own and be part of the projects. Reasons for the non-involvement of communities in any reconstruction and rehabilitation process may vary based on the geographical location, disaster type, and sociocultural dynamics, among many other factors; hence, reasons cannot be generalized. Due to this, it is not easy to replicate the results for different areas.

This study investigated the factors that affected participatory relocation and housing reconstruction after 2017 Cyclone Dineo in Zimbabwe. An empirical investigation was carried out in the cyclone-affected area of Tsholotsho District. This case study area was chosen because after the 2017 disaster, the government embarked on a massive reconstruction and rehabilitation project, which was later abandoned by the intended beneficiaries. Hence, it is imperative to present the results so that policymakers and relevant authorities can know what made the reconstruction unsuccessful and, in the future, embrace participatory approaches to build back better after disasters.

2 Community Participation in Post-Disaster Relocation and Reconstruction: Reality and Myth

Building Back Better (BBB) advocates psychological and social recovery of local communities in addition to structural measures for recovery and reconstruction after disasters. Therefore, the need for community involvement in post-disaster relocation and housing rehabilitation is widely recognized (Maly 2017; Mannakkara et al. 2018; Dube et al.

2021). Literature from around the world has demonstrated how community participation can play a crucial role in the effective recovery and relocation process following a disaster. Community participation in relocation and housing reconstruction allows affected communities to assess and reflect on their critical needs while identifying the potential risk of settling in areas regarded as high risk (Ichsan 2011). Engagement in disaster risk reduction operations such as relocations and housing rehabilitation can make people more aware of and interested in actions to reduce future disaster risks (Hamideh 2020; Ngulube et al. 2023). After the October 2010 Mt. Merapi volcanic disaster in Indonesia, the affected communities actively engaged in disaster recovery and future preparedness. Experiencing the disaster firsthand and witnessing the losses heightened their awareness of the dangers of residing near the volcano's crater (Trigunarsyah et al. 2015; Iuchi and Mutter 2020). Consequently, disasters can encourage communities to get involved in recovery and rebuilding programs, thereby supporting the build back better initiative.

Involving communities affected by disasters in recovery planning is crucial for empowering them in decision making, particularly concerning issues like relocation and housing reconstruction (Ngulube et al. 2023). In many cases, even the most marginalized individuals in society can contribute to decisions regarding rebuilding their homes or public facilities. In a study conducted in India after the 2001 Gujarat Earthquake in Bittu Village revealed that the village committee—comprising representatives from all caste groups, village leaders, and the village engineer—collectively decided on the reconstruction efforts without regard to social standing (Samaddar et al. 2017).

Past research has shown that engaging the end-user in recovery projects promotes a sense of ownership among the project beneficiaries (Samaddar et al. 2015). A more decentralized strategy for recovery and reconstruction also empowers local populations and results in higher satisfaction with the results (Davidson et al. 2007; Lyons 2009; Kitagawa and Samaddar 2022).

However, since relocation and reconstruction are complex and dynamic processes, engaging communities is not unilateral. Studies have also demonstrated that community involvement in relocation and rehabilitation is significantly low, which hinders effective post-disaster reconstruction. Significant challenges exist regarding how to engage local communities, when to engage them, and the expected outcomes of their participation in the reconstruction process. Past studies have indicated that the failure of numerous reconstruction projects, particularly in housing, can be attributed to the lack of community participation. Projects lacking active engagement with the affected communities are more likely to encounter difficulties (Sadiqi et al. 2016). Government authorities and planners

often adopt a centralized, top-down approach in post-disaster reconstruction, relocating and rebuilding houses without substantial community involvement or consultation in the planning and execution phases. This tendency has led to the failure of relocation and housing reconstruction projects (Trigunarsyah et al. 2015).

Neglecting the needs of affected communities has been identified in previous research as a factor contributing to the failure of relocation and housing reconstruction. Various case studies provide ample evidence to support this observation. Following the 2008 Wenchuan Earthquake in China, for example, the government took charge of the reconstruction efforts and achieved various successes. However, the failure to incorporate the needs and perspectives of the communities led to an insufficient involvement of all stakeholders (Guo 2012). Similarly, in the aftermath of the 2010 Chilean earthquake, the reconstruction process fell short of integrating the views of local communities, resulting in dissatisfaction and the abandonment of reconstruction projects by beneficiaries (Boano and García 2011). The 2016 Samarakanda landslide in Sri Lanka further illustrates the consequences of limited community participation in post-disaster reconstruction planning. The lack of cooperation between authorities and affected communities led to relocation without addressing community needs and failed to achieve the intended outcomes. This prompted the communities to return to their original homes, leaving the relocation housing abandoned (Sangasumana 2018).

Several studies have identified numerous adverse effects resulting from a lack of community participation in the relocation and housing reconstruction process. These impacts encompass issues related to house design, sluggish legal transfer procedures, delayed deed issuance, substandard housing standards, inadequate monetary compensation, concentration of power in authorities rather than delegating responsibility to victims, and improper housing locations (Buckle et al. 2002; Steinberg 2007; Ruwanpura 2009). Hence, the outcome, be it success or failure, of a relocation and housing program rests entirely with the active involvement of the end-user. Success in the relocation and housing reconstruction process is contingent upon considering critical variables. Zaman (2002) highlighted several factors frequently cited as causes for the failure of resettlement projects, including insufficient consultation and participation of affected populations, a lack of adequate baseline data, subpar relocation planning, budgetary shortfalls for timely compensation, a dearth of technical expertise, inadequate institutional capacity, and a weak monitoring program.

This study sought to investigate the factors that influenced community involvement in the relocation and housing reconstruction process following the impact of 2017 Cyclone Dineo in Zimbabwe. The objective was to understand why

and how the community was or was not actively engaged in the process of relocating and rebuilding homes after the cyclone. The subsequent sections deal with the examination of the 2017 floods in Tsholotsho District, including details on the reconstruction and rehabilitation plan, the methodology employed in the study, and the presentation of the study's findings.

3 The 2017 Tsholotsho Floods and the Post-Disaster Reconstruction and Rehabilitation

In 2017, Cyclone Dineo had a significant impact on Zimbabwe, transforming into a tropical depression on 16 February and triggering substantial precipitation in the southwestern region of the country. This resulted in both riverine and flash flooding, leading to widespread devastation of livelihoods and properties (Relief Web 2017). Tsholotsho District bore the brunt of the disaster, particularly with the Gwaai River breaching its banks, flooding homes and public infrastructure and causing substantial harm to both property and livelihoods. The floods displaced 859 individuals, including 460 children (IFRC 2017). Several wards in Tsholotsho District—Siphepha, Jimila, Mapili, Mbamba, Mahlosi, Mahlaba, Mbanyana, and Tamuhla—were severely affected, experiencing flooding due to the overflowing of the Gwaai River and its tributaries (Relief Web 2017). These same areas had previously faced flooding in 2001 and 2013. The impact was extensive, with an estimated 2600 houses destroyed, 126 fatalities, and 128 injuries attributed to the cyclone's unpredictable weather conditions (IFRC 2017). Additionally, all public buildings in the affected areas were obliterated, residents lost their possessions, and livestock and crops were swept away.

In response to the cyclone-induced floods, the Zimbabwean government promptly declared a national emergency, invoking the provisions of the Constitution of Zimbabwe outlined in the Civil Protection Act (chapter 10:06¹). According to this legislation, the Department of Civil Protection (DCP) was activated to coordinate the establishment of a reconstruction and rehabilitation plan. The Department of Civil Protection (Fig. 1), operates as a state agency involving ministries, state departments, and private and non-governmental sectors. Its activities are primarily focused on disaster risk reduction (DRR) and community development. In accordance with the Act, each province and district in the country has a mandate to safeguard the lives and properties of their citizens. The Department of Civil Protection plays a

crucial role in offering support and guidance to both the state and communities in managing emergencies and disasters. It also extends assistance to provinces that may face challenges in coping during such critical situations (Mavhura 2016).

As part of the reconstruction and rehabilitation plan, the government, in conjunction with the DCP stakeholders, called for the relocation and provision of housing infrastructure for the affected communities. This was to be a government-driven approach. Communities in low-lying areas along the Gwaai banks had to be relocated to the villages of Tshino and Sawudweni. The government stipulated that 319 post-disaster houses—143 in Tshino and 176 in Sawudweni—were to be constructed (Fig. 2) within a time frame of two years (Chronicle 2017). The relocation and housing reconstruction project was estimated to cost USD 189 million, and the government was set to partner with external governments and nongovernmental organizations to raise the funds needed to complete the project (IFRC 2017).

The government and the DCP called for a citizen-centered recovery approach as communities were to be the primary beneficiaries of the reconstruction projects. Though the DCP called for community involvement, no clear guidelines were provided on how the communities were to participate. The framework used by the DCP (see Fig. 1) limited the decision-making process to government officials, DCP members, local governments, district administrators' offices, nongovernmental organizations, and local leadership (chiefs). The framework hierarchy does not include community members as key stakeholders in DRR initiatives.

Though the government had a clear objective of protecting the victims from future disasters by relocating them and providing new housing infrastructure, the project failed to achieve its primary aim to some extent. Most of the constructed houses in Tshino and Sawudweni have been left abandoned by the disaster victims who were relocated to those resettlement sites. As a result, most beneficiaries have returned to their old settlement sites, abandoning the relocation housing (Fig. 3).

In 2014, the government conducted relocations before and after the Tokwe-Mukosi flood disaster. A study done by a human rights organization in 2015 indicated that the relocations were marked with numerous challenges, especially for the communities in the affected areas surrounding the Tokwe-Mukosi Dam, such as lack of community consultation on their decision to relocate or not, and issues regarding compensation, leading to a less successful relocation project because of numerous clashes with authorities, leading to the return of communities to their previous settlements.

To assess the success of a relocation and housing reconstruction project, an important indicator is the utilization of housing facilities and no return of communities to at-risk areas. Although earlier studies have identified

¹ Civil Protection Act: Chapter 10:06. <https://www.jsc.org.zw/upload/Acts/2001/1006updated.pdf>

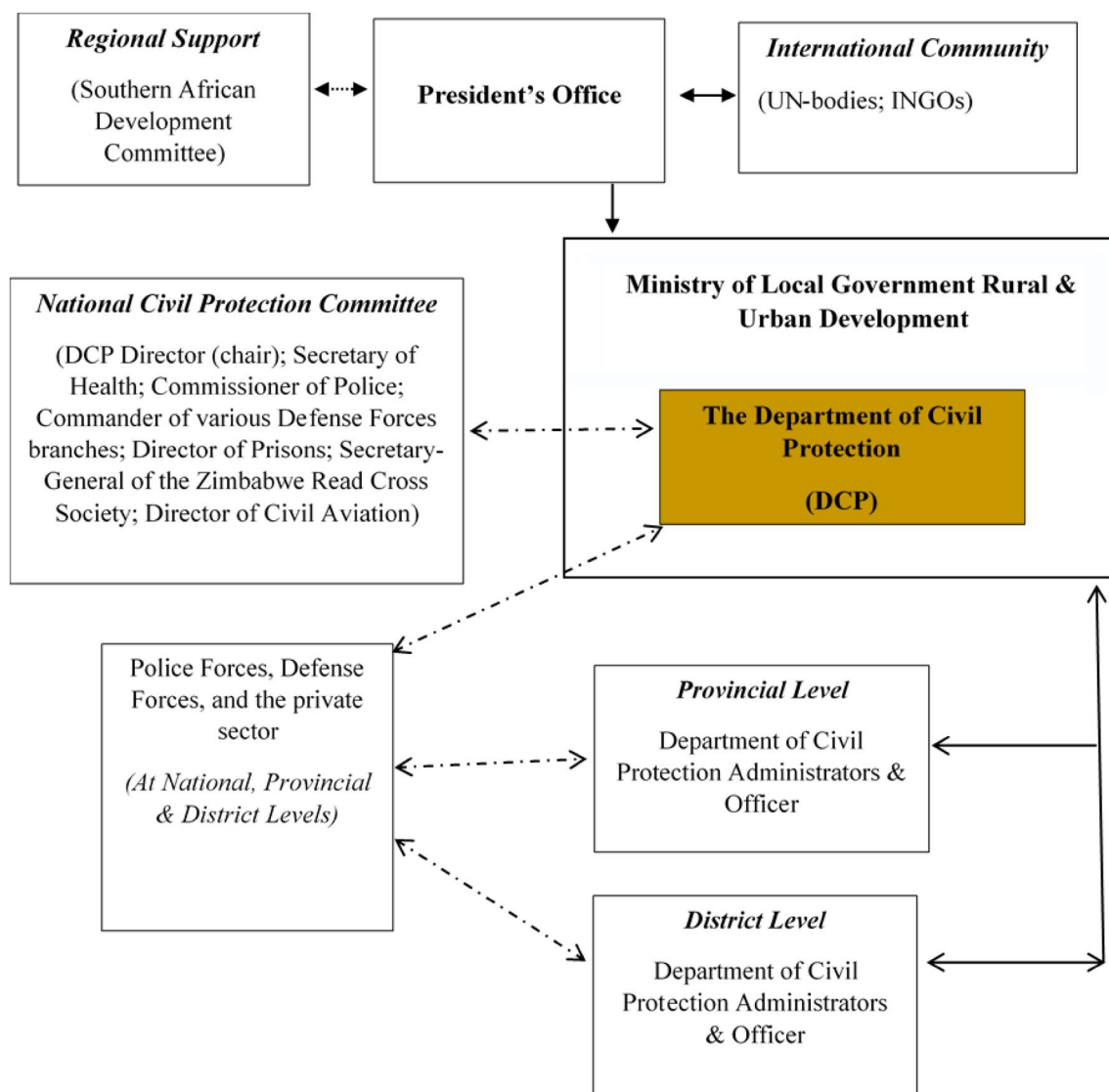


Fig. 1 Structure of Zimbabwe's civil protection framework. *Source* Adapted from Chikoto et al. (2012)

reasons behind the success and failure of post-disaster resettlement and housing reconstruction in different regions around the globe, each community is complex and contextual with elements that might differ from another, making the reasons antithetical. Hence the key contribution of our study would be to present the factors that might have affected the achievement of a participatory post-disaster relocation and housing reconstruction in Tsholotsho, based on the communities' local context, and to suggest necessary recommendations for future post-disaster relocation and housing reconstruction.

4 Description of the Study Area

The study was carried out in Tsholotsho District (Fig. 4), which is one of the seven districts in Matabeleland North Province in Zimbabwe. The district is about 114 km north-west of Bulawayo Metropolitan City and shares boundaries with Umguza, Lupane, Hwange, and Bulilima Districts. Although the district comprises 22 wards, the study focused on Ward 6 paying particular attention to Tshino and Sawudweni, which became the post-disaster relocation and housing reconstruction sites after the 2017 floods.

The region is susceptible to cyclone-induced flooding due to Zimbabwe's location in the pathway of cyclones from Mozambique and the Indian Ocean. Tsholotsho District, situated at the confluence of two major rivers, Gwaai and Amanzamyama, faces heightened risk (Dube



Fig. 2 House design of reconstruction housing in Tshino (left) and Sawudweni (right) in Tsholotsho District, Zimbabwe. Photographs by N.K. Ngulube, 16 September 2022



Fig. 3 Abandoned house in Sawudweni, Tsholotsho District, Zimbabwe. Photograph by N.K. Ngulube, 16 September 2022

et al. 2018). Agriculture and stream bank cultivation are the main livelihood sources for Tsholotsho households in this semiarid, low-rainfall area. While the Gwaai River banks provide fertile soil, this has also increased vulnerability to cyclone-induced flooding. Notable events occurred in 2000, 2001, 2013, 2014, and 2017 (Dube et al. 2018).

Unlike metropolitan cities in Zimbabwe, which are run by a Mayor, Tsholotsho is considered a rural district. Under the Rural District Council Act Chapter 29:13,² the administration of the district lies with the District Administrator (DA), who acts as a representative of the Ministry of Local Government and the Chief, who holds a traditional customary position that is hereditary and serves

as a traditional representative of the community but owes his allegiance to the head of the country.

Tsholotsho is considered a political battleground in Zimbabwe due to two significant political events that marked a pivotal shift in the region's politics. The first was the 1983–1987 Gukurahundi Genocide, which was a series of massacres carried out by the Zimbabwe government against the Ndebele ethnic group perceived as supporting political opposition. Led by the then Prime Minister Robert Mugabe's fifth brigade, it resulted in the killing of an estimated 20,000 Ndebele civilians (Gusha 2019) and this has since created tension between the Ndebele ethnic group and the government. The second was the Tsholotsho Declaration of 2005, when there was an attempt to topple former President Robert Mugabe from power by members of the ruling party Zanu Pf and the then Member of Parliament of Tsholotsho, Professor Jonathan Moyo, a prominent figure in Tsholotsho.

5 Methodology and Data Collection

The study employed a qualitative data collection method, given its interpretive nature. It was crucial to use the qualitative approach because participation, especially in post-disaster recovery efforts, is very complex. It requires an in-depth understanding of the area under study and its social-ecological and political dimensions, given their ability to explain social realities. The qualitative research method is acknowledged for providing comprehensive information, which has been overshadowed by quantitative and structured types of data collection (Samaddar et al. 2017). Taking into consideration the sociocultural conditions of the study area, where a majority of the respondents have low education qualifications, it was also crucial to use the qualitative

² Rural District Council Act Chapter 29:13. <https://www.jsc.org.zw/upload/Acts/2017/2913updated.pdf>

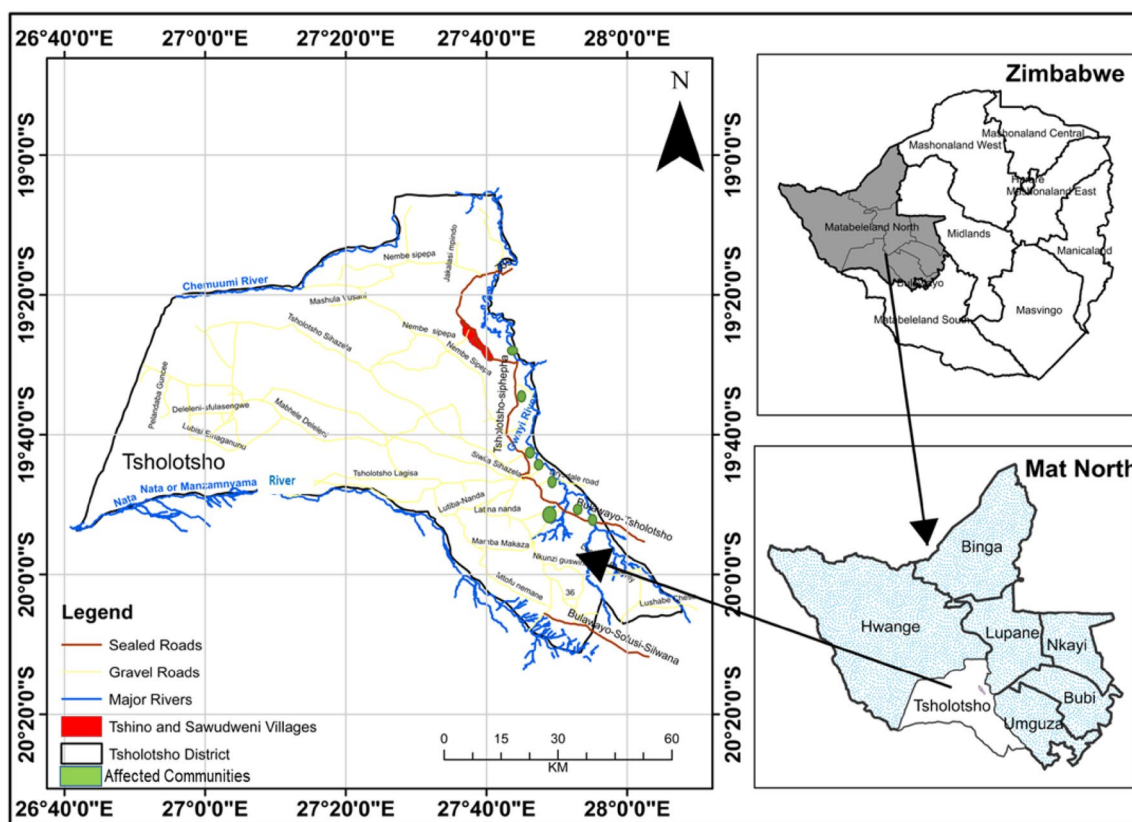


Fig. 4 Map showing the location of Tsholotsho District, Zimbabwe

method so as to be able to interact with the respondents, clarify unclear questions, and explain the intended questions in the case where respondents could not understand the question, as compared to quantitative methods where respondents are unable to get clarification on the question requirements. Due to time and resource constraints, the qualitative methodology was particularly suitable as this avoided the need to select a large sample size, which would have been potentially difficult to manage under the limited time frame for the data collection.

The research used three qualitative data collection techniques: face-to-face interviews, a focus group discussion, and observations. Due to the political context of Zimbabwe and the study area, permission to work in the study area was required from the Provincial Office of the President and Cabinet, the Tsholotsho District Administrator's Office, the security official office, and the village heads before starting the survey process. A brief explanation of the survey's purpose in the study sites and justification for the research's significance was given. Upon getting permission to collect data, the survey was conducted in September 2022, with the help of a local community member who was well aware of the study community's social and cultural norms.

First, 25 face-to-face interviews were conducted with local community members in the Tshino and Sawudweni resettlement sites. The study used purposive sampling, targeting the newly resettled households that were relocated due to the 2017 floods and were beneficiaries of the relocation housing reconstruction scheme. To ensure that the information acquired truly represented the voices of the entire population, women, the elderly, and youth were given an equal opportunity to take part in the interviews. Also, respondents could take part regardless of their social position in the community and religion. To get in-depth information about the recovery and rehabilitation process, we asked the participants to share their experiences during the recovery period, the nature of their participation, and the challenges they encountered in effectively participating, which has made residents abandon the new settlements. To validate the community members' responses, six stakeholders were interviewed, including the District Administrator and officials from the Provincial Office, Rural District Council, Zimbabwe Republic Police, Agritex and Plan International, who are standing committee members of the Department of Civil Protection in Tsholotsho District.

After the face-to-face interviews, a focus group discussion was conducted. A formal call for the meeting was

Table 1 Demographic profile of the respondents (n = 25) in the Tsholotsho District, Zimbabwe study area

Demographic factor	Category	Frequency	Percentage (%)
Gender	Male	2	8
	Female	23	92
Age	Less than 30	2	8
	30–45	9	36
	46–55	8	32
	56–65	4	16
	More than 65	2	8
Education	Primary level	14	56
	Secondary and high school	7	28
	College and university degrees	4	16
Occupation	Farmers	11	44
	Government workers	5	20
	Self-employed	7	28
	Unemployed	2	8

made with the help of a community volunteer who shared the meeting details with other villagers. Due to time restrictions, one focus group discussion was held in Sawudweni, bringing together residents from both resettlement sites. The focus group meeting was limited to community members only but was open to villagers regardless of gender, age, and social status, and 28 participants took part. The focus group discussion was necessary to capture the collective views of the community members and their feelings on the relocation and rehabilitation project. Participants were asked to share their experiences during the disaster and post-disaster stage, paying particular attention to the events that took place with regard to the nature of their participation. They were also asked about how they perceived the processes and outcomes that would entail a potentially participatory post-disaster reconstruction and relocation and rehabilitation project. Data collection was supplemented by observation techniques to validate the information acquired during the interviews and the focus group meeting, such as taking photographs of the resettlement sites and drafting brief field notes. Utilizing the observation method enabled onsite collection of first-hand information regarding the condition of the new settlement sites and the residents' adoption of reconstruction.

Large volumes of raw data were obtained during the data collection period and analyzed to get valuable and usable information. Most of the data were collected through audio recordings and field notes, and photographs were used to capture the observations of the study site. Data were translated from the Ndebele language of the research participants and transcribed into English for easy analysis.

Qualitative research entails venturing into the personal domains and spheres of research participants and needs to follow the required research ethics to increase the participation of respondents and the response rate. Ethical

considerations can promote the achievement of the research objectives and cooperation from participants (Chaminuka and Dube 2017). Permission to conduct the study had to be obtained from the provincial and district offices, security officials and village heads. The research aims and objectives were clearly explained to all the participants, who gave oral consent. At the beginning of the interviews, the participants were given detailed information concerning the confidentiality and anonymity of the responses they would offer and the voluntariness of their participation in the study.

6 Findings and Discussion

This section presents the results of the study. The results are shown in accordance with the objectives that guided the study, and a discussion of the findings is linked to findings from previous studies.

6.1 Demographic Characteristics of the Respondents

The demographic profile of the respondents who participated in the face-to-face interviews is provided in Table 1. The respondents' gender was unevenly distributed, with 92% female and 8% male. The study indicated that more women than men were found at the study site, and respondents argued that many of the men had returned to the old location where they were relocated from. Furthermore, 56% of the respondents had primary-level education, 28% had acquired secondary and high school qualifications, while only 16% had college and university qualifications. Even though most of the respondents had a low education level, which is one typical characteristic

of the study area, the respondents' responses were not affected by this as they recalled their lived experiences.

6.2 Non-consultation of Residents

The study revealed that there was non-consultation of residents during the post-disaster relocation and housing reconstruction decision making. For example, 24 out of 25 (96%) respondents indicated that they were not consulted on numerous relocation and housing reconstruction issues, such as the desire to be relocated, relocation site selection, house design, and preferred structure to be built. The respondents indicated dissatisfaction with not having a voice or ability to choose their desired type of reconstruction. Some respondents had this to say:

I cannot say because I just saw them coming to help us, but we never gave any opinions because we were never asked.

This was supported by another respondent who said:

They never came to consult us; they only came to tell us that they had found a place where we were going to be moved. The government was the one which decided on the relocation site; we didn't have the chance to have a say on it.

The sentiments from the residents indicated that they were somewhat informed (treated as victims) rather than treated as equal stakeholders in the relocation and housing reconstruction program. Key stakeholders in the official civil protection framework also corroborated the notion of non-consultation of community members during the reconstruction planning process, citing issues of the process having the potential to be time-consuming. One key stakeholder noted that:

I don't remember having any discussions with the residents. Yeah, as the CPU [Civil Protection Unit], we saw it fit that since houses constructed on that side were continually being destroyed by floods, we saw it better and fit to Build Back Better and build something better for them on higher ground. So if we start discussing with the community after the disaster, it would take a long time because they would actually start arguing and maybe even suggest rebuilding those houses where there was a disaster, so we didn't want to involve them.

Therefore, from an interpretive point of view, there were indications of low levels of participation, which are manipulation and therapy, where the intended beneficiaries have little or no influence over the planning and decision-making process as stipulated by Arnstein's ladder of citizen

participation (Arnstein 1969). The respondents who were interviewed generally admitted to having little knowledge about their opportunities to be involved in the decision-making process with the government and nongovernmental stakeholders. Evaluating their sentiments revealed that the non-involvement of communities created a gap between the needs of the local people and the needs of the authorities. The lack of a voice of the communities made them feel not part of the reconstruction but rather dictated to. Scholars such as Ward et al. (2008), Ganapati and Ganapati (2008), Méheux et al. (2010), Roosli et al. (2018), Shafique and Warren (2018), Hamideh (2020), and Imperiale and Vanclay (2020) highlighted that non-consultation of residents in reconstruction planning has to some extent been the reason for communities' resistance to taking ownership of reconstruction projects and in some areas has led to the failure of those projects, which might have been a contributing factor to the non-acceptance of relocation housing by the intended beneficiaries. Samaddar and colleagues (Samaddar, Yokomatsu, et al. 2015; Samaddar, Okada, et al. 2017) indicated that communities should be consulted and involved in decision making to ensure that decisions are universally accepted, and communities learn from their past mistakes, thus building resilience.

6.3 Failure to Consider Livelihoods

Rehabilitation of livelihoods after disaster events is critical to sustainable recovery. The primary livelihood source in Tsholotsho is agriculture (growing crops and cattle rearing). The residents in the district mainly depend on stream bank cultivation along the Gwaai River for survival. They indicated that livelihood restoration was not considered during the relocation and housing reconstruction decision making. Two respondents had this to say:

The thing that they just told us was that here we don't have land for agriculture, so the government didn't consider how we were going to revive our way of sustaining ourselves. When they saw people going back, that's when they came back and said we are able to go and practice our livestock rearing and crop growing there.

Another respondent had this to say:

I think not considering peoples' jobs and way of living. They did not consider that people were into farming when they decided to move us, which is why people are abandoning these houses and returning to their native land.

All the respondents interviewed expressed the same thought, and observations also showed that the land and soil types were not suitable for the growing of crops, as shown



Fig. 5 The resettlement area in Sawudweni, Tsholotsho District, Zimbabwe is dry, and the soil is not suitable for agriculture. Photographs by N.K. Ngulube, 17 September 2022

in Fig. 5—the photos were taken in Sawudweni, one of the relocation sites.

Of the respondents interviewed, 92% were women, and they indicated that the men had returned to their former residential homes, which are regarded as high-risk areas, so they could continue with their agricultural activities. The women were at the new relocation site because there were school-going children in the school in Tshino. There was no school in the old location since the floods destroyed it.

Similar situations were found by Nyoni et al. (2019) in a study done three years after the Tsholotsho floods; the respondents indicated that the government had not done anything to restore their livelihoods and they were suffering. The World Bank stipulates that for a post-disaster relocation program to succeed, the relocation plan should define how communities ought to restore their livelihoods at the new site (Jha et al. 2010). Other scholars have discussed the failure to consider livelihood restoration as one of the major reasons that lead to the failure of post-disaster relocation projects. The respondents indicated that at the new resettlement site, they could not continue with their livelihood activities, citing three major reasons: (1) The residential compound is small for agricultural activities; (2) the area where the relocation sites are situated is not suitable for cultivation because the soil type is not suitable and is dry; and (3) residents were not allowed to bring their livestock to the new site, and they were supposed to leave them back at their native land near the Gwaai River. The failure to consider livelihood restoration has had negative consequences, as the respondents indicated that this has been the main reason that has prompted people to abandon the new relocation sites and reconstructed houses

and return to their native land so that they can continue with their agricultural activities. According to Madushani et al. (2019), loss of livelihood hinders the process of recovery and rehabilitation and causes discontent among those affected. Failure to consider livelihood restoration has also been attested to in previous studies. It is critical to consider how communities ought to recover their way of life, as most depend on their livelihoods for survival.

6.4 Politicization of Projects

Tsholotsho District is a very politically sensitive area due to the Gukurahundi Genocide of 1983–1987 and the 2005 Tsholotsho Declaration. The post-disaster relocation and housing reconstruction project in Tsholotsho was government-sponsored, and based on historical evidence from previous government-sponsored projects in the study area and other areas around the country, they tend to be politicized by government officials and the main political party. The respondents indicated a low interest in participating in politically influenced relocation and housing reconstruction projects for numerous reasons. A respondent stated that:

Politics makes people not participate in projects. The government associates projects with the ruling party, and people here don't like the ruling party, so they won't take part in anything brought by the government.

To some extent, the politicization of the relocation and housing reconstruction project leads to disunity and



Fig. 6 Typical traditional rural homestead in Zimbabwe. *Source* Photograph by Scheub (ca 1967–1968)

non-participation of residents, thus affecting the effectiveness of a participatory approach. It also emerged that when the government entirely pushes projects, the recipients tend to have little or no space to voice their concerns as the government will be fully concentrating on achieving their set agenda to dictate the relocation of affected communities. This leads recipients of post-disaster reconstruction projects to not identify with the projects as they tend to feel that they are not theirs but initiatives that are forced on them. This discovery is significant, as there is a dearth of prior research that explores the correlation between the political alignment of reconstruction projects at the national or local level and the communities' inclination to participate. The identified link between political affiliations and community engagement in reconstruction efforts represents a novel contribution to the existing academic literature.

6.5 Cultural Beliefs of Communities

The failure by the government to consider and take the cultural beliefs of the communities into account was another compounding factor in the failure of the post-disaster relocation and housing reconstruction program. As also noted by the respondents, people who reside in rural areas in Zimbabwe are very traditional and deeply rooted culturally, and the government officials, through their reconstruction plan, failed to foresee that this would play a huge role in the failure or success of the program. The respondents indicated that relocation was not part of their community's culture and tradition, as they could not abandon their ancestral land and relocate to a new area. One respondent had this to say:

I guess the reason was a failure to consider people's needs. First, older people in our community are so cultural that they don't believe in being moved from their ancestral lands to a new area; they have deep connections with the land and what's there so they would risk staying next to the river because of it, many of their past relations stayed there they never moved, so if people's needs and culture is not considered it will fail.

Another respondent further emphasized:

If they really understand the communities and their culture, they would know that relocation or moving from our native homes is not part of us. We have graves of our relatives which we can't just abandon them.

The respondents also felt that the housing reconstruction plan in Tshino and Sawudweni did not meet the residents' needs as the government's housing structure was viewed as culturally inappropriate. It is a single main building with two bedrooms, a living room, and a separate kitchen. A typical Zimbabwean rural homestead setup, however, consists of several buildings in one compound (Fig. 6), all serving different purposes, as people do not sleep in the same house for cultural reasons. One respondent stated that:

This house structure is not culturally appropriate for us; how do they expect the father-in-law and daughter-in-law to sleep in rooms which are next to each other? [...] The design does not suit our family and culture needs. They should have asked to also have a say on the house design.

The respondents thought that in the cultural context, it was inappropriate for a house to be constructed and not strengthened culturally, as this can lead to recipients not having any attachment to the house or the resettlement site. A majority of the respondents shared the sentiment that this is among the reasons why a majority of the newly constructed relocation houses are standing abandoned in Tshino and Sawudweni, as people do not culturally identify with them. One respondent had this to say:

It is important because they should know that in our culture, everyone should have a say in the building of their houses because we have to strengthen them according to our culture, so they didn't do that, that is why a lot of people don't have a connection with these houses.

The findings of our study indicated that in the African cultural context, cultural symbols such as graves of ancestors and relatives need to be protected and preserved as they have a strong cultural meaning, and abandoning them is believed to lead to misfortunes and calamities. The respondents indicated that some flood victims who were relocated returned to the old site as they needed to be closer to those cultural symbols. Similar findings have also been observed in other developing communities. Previous research has shown that affected communities either refuse to accept homes or abandon them after they have been occupied since the physical provisions and designs do not meet their fundamental or cultural needs (Sadiqi et al. 2012). A lack of practical understanding and cultural awareness in the Maldives in the aftermath of the 2004 Indian Ocean Tsunami, for example, was a significant challenge that negatively impacted the participation of affected communities, mainly where community needs assessments were conducted by external organizations that had no knowledge of the cultural context and makeup of the affected community, leading to the failure of the housing reconstruction (Sadiqi et al. 2011).

6.6 Sense of Place/Place Attachment

Sense of place or place attachment was another factor contributing to the failure of post-disaster relocation and housing reconstruction in Tsholotsho. Some respondents indicated that it was difficult for many flood victims to abandon their homes along the Gwaai River and move to the new relocation sites in Tshino and Sawudweni because the former location was considered their native and ancestral land. They argued that they are emotionally, physically, and culturally attached to their native land because it has familiar surroundings even though they are aware of the risk staying there poses. During the focus group discussion, the

respondents listed many things with which they identified the old location, including fertile land, trees, traditional rain dancing sites, and the graves of their relatives. One respondent had this to say:

Trying to detach the people from their native land is a problem; it's the land of their forefathers; that's the only place they know, and they relate with a lot of things there, so just coming up and saying you have to move will be difficult for them to accept, and they will never fully move from there.

This view was corroborated by another respondent who indicated that:

I can say that is our ancestral land; people have invested a lot in the old site and have even buried their loved ones there. Now, in African culture, we respect the dead, so the graves of our relatives are at the old site. We believe they should not be left alone in an old homestead. We need to connect with our dead relatives, and there are shrines in the old area where we perform our traditional rites; hence, it becomes a challenge to do that in the new site, so many felt the need to be there due to attachments there.

Based on their arguments, it became clear that place attachment was linked to the communities' cultural beliefs, especially concerning the presence of ancestral graves, which makes it challenging to relocate communities, especially elderly communities. Hence, through observations during interactions with locals, this was a stumbling block towards effectively relocating communities from at-risk areas because it would be impossible to move the things the locals identify with, which impacts their risk perception. Similar findings have been presented in previous studies, where place attachment has been a major barrier to community relocation from high-hazard risk areas. A study by Sherry et al. (2018) indicated that the Rolwaling Sherpa community's strong attachment to their valley in Nepal demonstrated high levels of social, economic, and environmental impacts on the community, shaping their overall decision not to relocate. Due to cultural and religious attachments to the area, many participants perceived themselves to be safe and protected in spite of living close to a potentially most dangerous glacial lake. Xu et al. (2017) also revealed that place identity and dependence negatively impact people's willingness to relocate after a disaster, making it nearly impossible to attain participatory relocation.

6.7 Delay in Project Completion

Failure to complete housing reconstruction in Tshino and Sawudweni was identified as another factor impacting participatory relocation and housing reconstruction in

the district. The respondents were of the opinion that the government's failure to complete the houses for the beneficiaries within the stipulated time frame had resulted in numerous residents returning to the old location. The respondents felt that they could not wait forever for the completion of the resettlement housing, hence the need to go back to their native land to continue with their lives as the temporary evacuation shelters were closed upon distribution of the second batch of houses while many houses were still outstanding. One respondent indicated:

When the government moved us when I was young I think they said the houses would be finished in two years but, five years later, they haven't finished, what do they think about those people whom they promised houses to? So those people have decided to go back to their native land because they cannot wait forever.

Similar sentiments were also shared by another respondent who emphasized that:

What I am not satisfied with is that it's been many years after the disaster, and houses still haven't been completed; there are still some houses that are outstanding, and they are saying nothing about it.

However, our study further established from some government officials, key stakeholders, and newspaper articles that the major reason for the failure to complete the housing reconstruction in the relocation sites in a timely manner was due to the shortage of adequate resources. The Zimbabwe government primarily depended on donor resources, funding from nongovernmental organizations, and assistance from external governments. From the authors' interpretive point of view, the government was ill-prepared to tackle such a massive project without set and adequate funds to start and complete the project within the specified time frame. These findings are consistent with a study by Samaddar et al. (2015) on evaluating the outcomes of an effective participatory disaster management program in Ghana, where it was also noted that if a project is completed within the stipulated time frame, this will make it possible for communities to see tangible project results. Achieving set project objectives within the designated time frame leads to effective public participation. The respondents argued that it would be impossible for those people who had returned to Gwaai due to not receiving the promised houses to come back to the new relocation site once the outstanding houses are completed, as there is no longer a set time frame given by the responsible authorities.

7 Conclusion

For decades, disasters have led to relocating communities from high-risk areas and providing housing infrastructure for the affected communities in new relocation sites. Numerous scholars have called for participatory approaches that put communities at the center of these relocation and housing reconstruction projects to prevent the return of communities to at-risk places. However, even though this has been long advocated, attaining a participatory approach, in reality, remains elusive, especially in the context of developing countries like Zimbabwe.

Therefore, this study has endeavored to examine the factors that make some post-disaster relocation and housing reconstruction projects less successful. Post-disaster reconstruction works in Tsholotsho District, Zimbabwe, were the subject of our empirical investigation. After 2017 Cyclone Dineo, the government reconstruction initiatives called for a citizen-centered approach but never provided a baseline framework on how communities would be engaged or their participation level. As a result, the relocation site remains a ghost town since numerous beneficiaries decided to abandon the housing infrastructure provided in the relocation area and returned to their native land, which is regarded at high risk. The study's findings identified several reasons for this, which included non-consultation of residents in decision making, failure to consider livelihood restoration, cultural dimensions of the community, and delay in project completion. Participatory recovery can be achieved when a community is consulted about the type of recovery they want and how communities ought to restore their livelihoods when deciding to relocate them to some extent. Governments and other relevant stakeholders must understand the affected communities' cultural makeup and dimensions. Failure to understand this can be pivotal in abandoning relocation and housing reconstruction projects.

It is important to acknowledge the potential limitations of this study. The study used some information not documented in official documents. Still, it used information attained from the residents because the main objective was to try and capture their perspective of the particular research context based on their lived experiences during the relocation and housing reconstruction. Another limitation is that the present study used a qualitative research approach to collect and analyze data, which could include potential biases as the data used was more descriptive. Finally, in the translation of the respondents' responses from Ndebele to English the first author could have inadvertently included own interpretation of the information.

Nonetheless, with the above findings and conclusions on the factors that affected the post-disaster relocation and housing reconstruction project in Tshino and Sawudweni

in Tsholotsho District, three main recommendations can be offered:

- The central government, the Department of Civil Protection, and local authorities should consider involving the local communities in the relocation and decision-making process and recovery planning and include their views in the plans, as the communities are the primary beneficiaries of post-disaster recovery and reconstruction projects.
- It is necessary to consider how communities will revive their livelihoods when planning for post-disaster relocation in the new resettlement sites so that new settlements are not abandoned.
- Decision makers should understand and be well aware of the affected community's traditions, culture, and norms when considering post-disaster relocation and housing reconstruction. The minutiae hold substantial significance particularly evidenced in this study that underscores the importance of seemingly small details.

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References

- Arnstein, S.R. 1969. A ladder of citizen participation. *Journal of the American Planning Association* 35(4): 216–224.
- Boano, C., and M. García. 2011. Lost in translation? The challenges of an equitable post-disaster reconstruction process: Lessons from Chile. *Environmental Hazards* 10(3): 293–309.
- Buckle, P., G. Marsh, and S. Smale. 2002. Reframing risk, hazards, disasters and daily life. *International Journal of Mass Emergencies and Disasters* 20(3): 309–324.
- Chaminuka, N., and E. Dube. 2017. Urban agriculture as a food security strategy for urban dwellers: A case study of Mkoba residents in the city of Gweru, Zimbabwe. *PEOPLE: International Journal of Social Sciences* 3(2): 26–45.
- Chandrasekhar, D. 2012. Digging deeper: Participation and non-participation in post-disaster community recovery. *Community Development* 43(5): 614–629.
- Chikoto, G.L., S. Sadiq, and A. Akeem. 2012. Zimbabwe's emergency management system: A promising development. In *Comparative emergency management: Understanding disaster policies, organizations, and initiatives from around the world*, ed. D.A. McEntire, 1–20. Washington, DC: FEMA.
- Chronicle. 2017. Relocation of Tsholotsho flood victims starts. *Chronicle*, 15 June 2017. www.chronicle.co.zw/relocation-of-tsholotsho-flood-victims-starts/. Accessed 12 Oct 2022.
- Davidson, C.H., C. Johnson, G. Lizarralde, N. Dikmen, and A. Sliwinski. 2007. Truths and myths about community participation in post-disaster housing projects. *Habitat International* 31(1): 100–115.
- Dube, E., O. Mtapuri, and J. Matunhu. 2018. Managing flood disasters on the built environment in the rural communities of Zimbabwe: Lessons learnt. *Jamba: Journal of Disaster Risk Studies* 10(1): Article 542.
- Dube, E., G. Wedawatta, and K. Ginige. 2021. Building-back-better in post-disaster recovery: Lessons learnt from Cyclone Idai-induced floods in Zimbabwe. *International Journal of Disaster Risk Science* 12(5): 700–712.
- Ganapati, N.E., and S. Ganapati. 2008. Enabling participatory planning after disasters. *Journal of the American Planning Association* 75(1): 41–59.
- Guo, Y. 2012. Urban resilience in post-disaster reconstruction: Towards a resilient development in Sichuan, China. *International Journal of Disaster Risk Science* 3(1): 45–55.
- Gusha, I. 2019. Memories of Gukurahundi massacre and the challenge of reconciliation. *Studia Historiae Ecclesiasticae* 45(1): 1–14.
- Hamideh, S. 2020. Opportunities and challenges of public participation in post-disaster recovery planning: Lessons from Galveston, TX. *Natural Hazards Review*. [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.00003](https://doi.org/10.1061/(ASCE)NH.1527-6996.00003).
- Hamideh, S., and J. Rongerude. 2019. Social vulnerability and participation in disaster recovery decisions: Public housing in Galveston after Hurricane Ike. *Natural Hazards* 93(5): 1629–1648.
- Ichsan, I. 2011. Community participation in post-tsunami redevelopment in ACEH: The process and community members' perceptions and preferences. Graduate theses and dissertations retrieved from <https://scholarworks.uark.edu/etd/190>. Accessed 18 Sept 2023.
- IFRC (International Federation of Red Cross). 2017. Emergency Plan of Action Final Report Zimbabwe : Floods. <https://reliefweb.int/report/zimbabwe/zimbabwe-floods-emergency-plan-action-final-report-dref-operation-mdrzw012>. Accessed 2 Oct 2022.
- Imperiale, A.J., and F. Vanclay. 2020. Top-down reconstruction and the failure to “build back better” resilient communities after disaster: Lessons from the 2009 L'Aquila Italy Earthquake. *Disaster Prevention and Management: An International Journal* 29(4): 541–555.
- Iuchi, K., and J. Mutter. 2020. Governing community relocation after major disasters: An analysis of three different approaches and its outcomes in Asia. *Progress in Disaster Science* 6: Article 100071.
- Jha, A.K., J.D. Barenstein, P.M. Phelps, D. Pittet, and S. Sena. 2010. *Safer homes, stronger communities: A handbook for reconstructing after natural disasters*. Washington, DC: World Bank. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2010/01/27/000334955_20100127044847/Rendered/PDF/528390PUB0safe101Official0Use0Only1.pdf. Accessed 18 Sept 2023.
- Kitagawa, K., and S. Samaddar. 2022. Widening participation in community-based disaster risk reduction and climate change adaptation in Japan. *UCL Open: Environment Preprint*.
- Lyons, M. 2009. Building back better: The large-scale impact of small-scale approaches to reconstruction. *World Development* 37(2): 385–398.

- Madushani, S., J. Upeshika, and E.M.K.S. Ekanayaka. 2019. An evaluation of success and failures in disaster induced resettlement program: A case study of resettlement sites in Galle. In *Proceedings of 10th Annual Research Symposium-2019*, Colombo, Sri Lanka, December 2019.
- Maly, E. 2017. Rethinking “build back better” in housing reconstruction: A proposal for “people-centred housing recovery”. *IOP Conference Series: Earth and Environmental Science* 56. <https://doi.org/10.1088/1755-1315/56/1/012025>.
- Mannakkara, S., S. Wilkinson, and R. Potangaroa. 2018. *Resilient post disaster recovery through building back better*. New York: Routledge.
- Mavhura, E. 2016. Disaster legislation: A critical review of the Civil Protection Act of Zimbabwe. *Natural Hazards* 80(1): 605–621.
- Méheux, K., D. Dominey-Howes, and K. Lloyd. 2010. Operational challenges to community participation in post-disaster damage assessments: Observations from Fiji. *Disasters* 34(4): 1102–1122.
- Ngulube, N.K., H. Tatano, and S. Samaddar. 2023. Community insights: Citizen participation in Kamaishi Unosumai decade-long recovery from the Great East Japan Earthquake. *International Journal of Disaster Risk Science* 14(6): 886–897.
- Nyoni, C., B.B. Muzembi, M. Mhlanga, D. Mureriwa, F. Jaji, and M. Muzire. 2019. Tsholotsho flood survivors: Three years after the disaster caused by Cyclone Dineo. *The Fountain – Journal of Interdisciplinary Studies* 33(1): 30–44.
- Omidvar, B., H. Zafari, and M. Khakpour. 2011. Evaluation of public participation in reconstruction of Bam, Iran, after the 2003 Earthquake. *Natural Hazards* 59(3): 1397–1412.
- Ophiyandri, T., R. Amaratunga, and C. Pathirage. 2010. Community based post disaster housing reconstruction: Indonesian perspective. In *Proceeding of CIB World Congress 2010*, 10–13 May 2010, Salford, UK.
- Ophiyandri, T., D. Amaratunga, C. Pathirage, and K. Keraminiyage. 2015. Critical success factors for community-based post-disaster housing reconstruction projects in the pre-construction stage in Indonesia. *International Journal of Disaster Resilience in the Built Environment* 6(1): 102–116.
- Palagi, S., and A. Javernick-Will. 2020. Discrepancies between post-disaster relocation policy and implementation in the Philippines. *Journal of Management in Engineering* 36(4): 1–29.
- Relief Web. 2017. Cyclone Dineo pounds Zimbabwe's southern regions. Report. <https://reliefweb.int/report/zimbabwe/cyclone-dineo-pounds-zimbabwes-southern-regions>. Accessed 12 Dec 2022.
- Roosli, R., J. Nordin, and G. O'Brien. 2018. The evaluation of community participation in post-disaster housing reconstruction projects in Malaysia. *Procedia Engineering* 212: 667–674.
- Ruwanpura, K.N. 2009. Putting houses in place: Rebuilding communities in post-tsunami Sri Lanka. *Disasters* 33(3): 436–456.
- Sadiqi, Z., V. Coffey, and B. Trigunaryah. 2011. Post-disaster housing reconstruction: Challenges for effective community participation. In *Proceedings of the International Conference on Building Resilience (ICBR 2011)*, 20–22 July 2011, Sri Lanka.
- Sadiqi, Z., V. Coffey, and B. Trigunaryah. 2012. Rebuilding housing after a disaster: Factors for failure. In *Proceedings of 8th Annual International Conference of the International Institute for Infrastructure, Renewal and Reconstruction (IIIRR)*, 24–26 August 2012, Kumamoto University, Kumamoto, Japan, 292–300.
- Sadiqi, Z., B. Trigunaryah, and V. Coffey. 2016. A framework for community participation in post-disaster housing reconstruction projects: A case of Afghanistan. *International Journal of Project Management* 35(5): 900–912.
- Samaddar, S., and N. Okada. 2006. Participatory approach for post-earthquake reconstruction in the villages of Kachh, Gujarat, India. *Annals of Disaster Prevention Research Institute, Kyoto University*, No. 49B: 197–205.
- Samaddar, S., N. Okada, J. Choi, and H. Tatano. 2017. What constitutes successful participatory disaster risk management? Insights from post-earthquake reconstruction work in rural Gujarat, India. *Natural Hazards* 85(1): 111–138.
- Samaddar, S., H. Si, X. Jiang, J. Choi, and H. Tatano. 2022. How participatory is participatory flood risk mapping? Voices from the flood prone Dharavi slum in Mumbai. *International Journal of Disaster Risk Science* 13(2): 230–248.
- Samaddar, S., M. Yokomatsu, F. Dayour, M. Oteng-Ababio, T. Dzivenu, M. Adams, and H. Ishikawa. 2015. Evaluating effective public participation in disaster management and climate change adaptation: Insights from Northern Ghana through a user-based approach. *Risk, Hazards & Crisis in Public Policy* 6(1): 117–143.
- Sangasumana, P. 2018. Post disaster relocation issues: A case study of Samasarakanda Landslide in Sri Lanka. *European Scientific Journal* 14(32): Article 1.
- Scheub, H. ca 1967–1968. Ndebele Zimbabwe homestead. <https://search.library.wisc.edu/digital/AFNKVKOPLZQARX84>. Accessed 13 Oct 2022.
- Shafique, K. 2016. Success of post-natural disaster reconstruction projects: Significance of community perspective. *International Journal of Business Management* 11(9): Article 69.
- Shafique, K., and C.M.J. Warren. 2018. Empowerment and legitimization of effected communities in post-disaster reconstruction. *Procedia Engineering* 212: 1171–1178.
- Sherry, J., A. Curtis, E. Mendham, and E. Toman. 2018. Cultural landscapes at risk: Exploring the meaning of place in a sacred valley of Nepal. *Global Environmental Change* 52: 190–200.
- Steinberg, F. 2007. Housing reconstruction and rehabilitation in Aceh and Nias, Indonesia—Rebuilding lives. *Habitat International* 31(1): 100–115.
- Thurairajah, N. 2008. Post disaster reconstruction as an opportunity for development: Women's perspective. In *Proceedings of CIB W89 International Conference on Building Education and Research (BEAR)*, 11–15 February 2008, Sri Lanka. <http://eprints.hud.ac.uk/id/eprint/22603/>. Accessed 12 Sept 2023.
- Trigunaryah, B., Z. Sadiqi, and V. Coffey. 2015. Community participation in post-disaster reconstruction. *Proceedings of the Institution of Civil Engineers – Municipal Engineer*, 169(3): 173–186.
- Ward, J., J.S Becker, and D. Johnston. 2008. Community participation in recovery planning: A case study from the 1998 Ohura Flood. GNS Science Report 2008. Auckland, New Zealand: GNS Science.
- Xu, D., L. Peng, S. Liu, C. Su, and X. Wang. 2017. Influences of sense of place on farming households' relocation willingness in areas threatened by geological disasters: Evidence from China. *International Journal of Disaster Risk Science* 8(1): 16–32.
- Zaman, M. 2002. Relocation and development in Indonesia. *Journal of Contemporary Asia* 32(2): 255–266.