Research Article

Community Characteristics Influencing Flood Recovery. A Case of Sipepa and Jimila Wards in Tsholotsho District, Zimbabwe during the 2016 to 2017 Floods

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Abstract

Tsholotsho is one of the districts in Zimbabwe that is prone to flood hazards particularly Sipepa and Jimila areas during the 2016 to 2017 rainfall season. The district falls under Agro-ecological region five and it is generally flat and dominated by poorly drained Kalahari sand soils. The study sought to assess the community characteristics influencing flood recovery in Sipepa and Jimila wards in Tsholotsho. With the climate variability obtaining in Tsholotsho, the frequency of flooding is increasing. These floods have seen people losing lives, livestock, crops, infrastructure, and property. The community characteristics are clustered around five asset groups that are physical, economic, environmental, social, and human. There are indications that the affected fail to recover after flood disasters. The overarching objective of the study, therefore, was to examine community characteristics influencing recovery from the effects of floods at Sipepa and Jimila wards in Tsholotsho district. The study sought to interrogate flood recovery initiatives implemented, determinants of coping levels, institutional frameworks underpinning recovery as well as ways through which resilience to flooding can be enhanced. Through the case study design, respondents were randomly and purposively selected. Data was collected using a questionnaire, key informant interviews, focus group discussion. A case study design was used where Sipepa and Jimila wards were used as the case. Key findings were that the community characteristics influencing recovery are human health and well-being, disability, age, level of education, bridging capital, livelihood forms, and community cohesion, level of economic activity and employment, household and community bases, location of homesteads, community skills and capacity. There is, therefore, a need for communities to adhere to the building codes and diversify their livelihood options. In terms of governance, policies need to be operationalized and have robust monitoring systems of feedback to the relevant bodies.

Keywords: Community, Flood, Recovery, Vulnerability, Resilience

INTRODUCTION

The frequency and intensity of disasters have been increasing over the years around the world and many lives have been lost, property, infrastructure destroyed and some economies adversely affected (Madamombe EK, et al., 2004, GFDRR, et al., 2014, Gremli R, Keller B, Sepp T and Szonyi M, et al., 2014). The impacts of these disasters have been felt by both the developing and developed countries (Bahudur AI, et al., 2010). Floods are the most frequent of the natural hazards globally (40%) followed by tropical hurricanes (20%), earthquakes (15%), and drought (15%) (Elizondo D, et al., 2015, Clinton W, et al., 2006 Cutter S, et al., 2010). The recovery of the affected communities in both the developed and developing countries depends on the characteristics of those communities taking into cognizant the assets of the communities, their capacities, quality of resources, and access to external resources Community Resilience Project Team 2000.

Flood events and impacts have arguably been unprecedented and have affected the lives of hundreds of millions of people across the world. (Anderson MB, and Woodrow P J, et al., 1998 Barraket J, Keast R, Newton C J, Walters K and James E, et al., 2013 Braun V, and Clarke

V, et al., 2006). After a disaster hits a community, many governments, institutions, and aid organizations become involved in the recovery process, often with the stated goal of returning the community to its pre-disaster form Matiki GDC, et al.,2005 in recent years, this goal has evolved into an approach, termed, "bouncing forward" which builds on vulnerability research and the theory that the post-disaster context offers a window of opportunity for disaster risk reduction and improved re-development UNISDR 2015. The recovery of communities hinges on the community characteristics which comprise the capital assets IFRC 2008.

Recovery as a 'window of opportunity' argued that it does not simply mean cleaning up and putting a community back on its feet, but instead requires long-term rehabilitation processes Tobin G, et al., 1999. In this context, recovery provides opportunities to make physical and social changes that reduce the risk of vulnerability to future disasters (Yarnal B, et al., 2007, Ferguson M, and Murray J, et al., 2009, Jessamy, and Turner, et al.,1999). Equally agreed that reconstruction following a disaster can be considered as a 'window of opportunity for rebuilding livelihoods and for the planning and reconstruction of socio-economic structures, in a way that will reduce vulnerability and build community resilience against future disasters. According to recovery provides an opportunity to bring about change and improvement leading to better networking in the various organizations involved in disaster risk management strategies(Birkman J, et al., 2006, Shaw HJ, et al., 2006). Considered that the concerted effort of all stakeholders in a community, including neighbors, relatives, and NGOs, as well as government authorities involved in the reconstruction process, offers development opportunities to reduce vulnerability and promote community wellbeing. The recovery process, especially during the rehabilitation stage offers an opportunity not only to improve livelihoods but to build resilience as well. (Leslie A, et al., 2006, Mendel G, et al., 2006, Hellegatte S, et al., 2014 Harworth B, and Bruce E, et al., 2015).

In each extreme rainfall season in Tsholotsho district, communities have suffered the same destructive effects. The indications are that these communities are left stranded failing to recover. (Chikoto G, and Sadiq A, et al., 2012). The effects of the flood disasters and the recovery efforts are all driven by the infrastructure and services, economic opportunities, natural resources, and organization of the community IFRC, 2008. There is, therefore, a need to examine the community characteristics of these communities that have influenced their recovery efforts. This study, therefore, seeks to evaluate community characteristics influencing recovery through the interpretive constructionism philosophy.

In recent years, poor communities have had to bear the brunt of the hazards, Tsholotsho district in Matabeleland North Province of Zimbabwe, which is the study area for this research, has over the years experienced more frequent floods. Recovery of communities after serious floods in Zimbabwe has been linked to a lack of preparedness for disasters and community characteristics have not been explored (Nheta D, et al., 2003). There is much that can be done to protect vulnerable communities against floods Klein N, et al., 2007. The institutional aspects have seen the range of different approaches to disaster reduction, from scientific and high-tech to community-managed with local resources. (Kvale S, et al., 1996, Adger N, et al., 2000, Lloyd-Jones, and Tony, et al., 2007 Atsumi T, and Goltz JD, et al., 2014). In recent years, this goal has evolved into an approach, termed, "build back better", which builds on vulnerability research and the theory that the post-disaster context offers a window of opportunity for disaster risk reduction and improved re-development UNISDR 2015.

According to Bahadur, *et al.,* 2010, the community characteristics are clustered around five asset groups that are physical, economic, environmental, social, and human. Access to external resources that are beyond the immediate control of the community also cements the role of the community characteristics in influencing recovery to flood disasters. (Twigg J, et al., 2009). There is, therefore, a need to explore the community characteristics that influence the bouncing back of affected communities in Sipepa and Jimila wards in Tsholotsho district.

In Tsholotsho district, extreme rainfall events were recorded for the rainfall seasons of 1973/1974 to 2016/2017 period indicated that during extreme rainfall events Gwayi River bursts its banks washing away houses, fields, and roads in the Sipepa and Jimila communal lands World Meteorological Organization 2007, ZINWA 2008 Tsholotsho District Civil Protection Committee Report, 2017. Recovery has remained a serious challenge for these communities. Although floods in Tsholotsho district dates back to 1973, the characteristics of communities influencing recovery remain unclear. In all extreme rainfall events, the Sipepa and Jimila wards in Tsholotsho are seriously affected every year and anecdotal evidence indicates a failure to recover. In the 2016 to 2017 flood one hundred and seventy-seven (177) families were left homeless when their huts and houses were swept away yet in 2013/2014 sixty-nine (69) houses were destroyed Tsholotsho District Civil Protection Committee Report, 2017. In 2016/2017 rainfall season eight hundred and fifty-nine (859) people were displaced, three hundred and fifty (350) hectares submerged in water and six hundred and forty-nine (649) livestock lost whilst in 2013/2014 whilst 600 people were displaced, one hundred and twelve (112) hectares destroyed and two hundred and eleven (211) livestock were lost Tsholotsho District Civil Protection Committee Report, 2017.

Objectives of the study

- To examine flood recovery initiatives implemented by the Sipepa and Jimila communities.

- To determine what makes the Sipepa and Jimila

communities respond differently to flood disasters.

- To determine the institutional framework necessary to support and strengthen recovery initiatives in Tsholotsho.

- To establish how community ability can be enhanced to improve resilience to flooding in Tsholotsho.

General description of the study area

The study was conducted in Tsholotsho district, one of the seven districts in Matebeleland North province in Zimbabwe to the northwestern part of Zimbabwe. It is about 114km west of Bulawayo borders with Lupane to the north, Umguza to the east, Hwange to the northwest and Bulilimangwe to the south. Part of Tsholotsho district drains into the Gwayi River and the other part drains into Manzamnyama River. Gwayi River is part of an international river basin, the Zambezi and it also forms one of the seven catchments in Zimbabwe. There is a communal tenure system in Tsholotsho. Most of the land is used for agriculture. Land use in the area of study includes settlement, croplands, grazing, and woodland. Agriculture is the main source of livelihood in Tsholotsho. Tsholotsho district has a population of 119 681 with a population density of 16persons/km^2.

Tsholotsho is home to three ethnic groups these being Ndebele (96%), Kalanga (3%) and San (1%). Tsholotsho district is prone to flash floods which can be attributed to poor drainage and the fact that the land is fairly flat. Wards such as Sipepa, Jimila, and Mbiriya are highly prone to these flash floods. In Sipepa and Jimila wards it is the areas that are along the Gwayi river that are mostly affected by floods this is compounded by the fact that people are cultivating along fertile flood plains. Tsholotsho district has a relatively extensive road network system. Most of the roads are however unusable due to the extensive Kalahari sands covering the district (Pawarangira R, et al., 2008). (Figure1)

MATERIALS AND METHODS

The Saunders Onion Model primarily informs this research. According to most researchers design a piece of research to respond to a question or solve a problem Saunders, Lewis P, and Thornhill A, et al., 2012. Therefore the researcher used the Saunders Onion model to develop the research design to highlight research philosophy, study population, sampling techniques, data collection techniques, and data analysis techniques. The ontological framework informing this research process is the interpretive constructionism philosophy (Babbie E, et al., 2010). The philosophy helped to examine the differences and nuances in the respondent's understanding of flooding in Sipepa and Jimila wards. The approach made it easier to understand issues on the characteristics of communities that influence recovery to flooding and the issues that were raised by those interviewed or observed.

The research targeted two hundred and three (203) households in village 5 in Sipepa ward, one hundred and ninety-seven (197) households in village 1, and one hundred and eighty-six (186) households in Jimila ward. These were the most affected wards in Tsholotsho. Also targeted for semi-structured interviews was the Chief Executive Officer for Tsholotsho Rural District Council, District Administrator, Agritex, EMA, District Medical Officer, the Chief, Headman, Zimbabwe National Army, Zimbabwe Republic Police, Non-Governmental Organizations that is Plan International, World Vision and Welt Hunger Hilfe (German Agro-Action) as these are key during the recovery phase after a flood disaster.

This study used the Raosoft software package to determine the sample size from the study population. Using the Raosoft calculator with a confidence level of 95%, confidence interval of 5%, and population proportion of 50%, Two hundred and eighty-six (286) flood victims were obtained for Sipepa
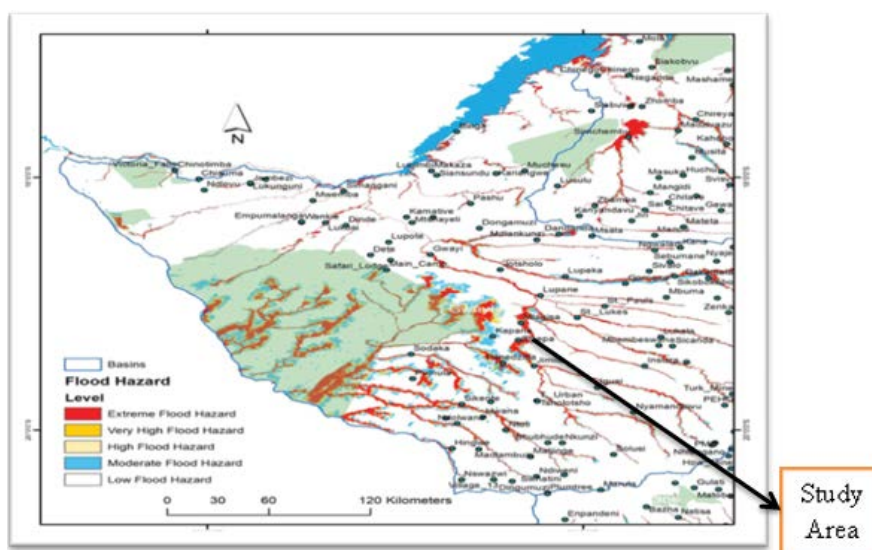

Figure 1: Flood-prone areas in the Gwayi Catchment.

ward and this sample is too big. Also, through the Raosoft Calculator, three hundred and eight (308) flood victims with a confidence level of 95%, a confidence interval of 5%, and a population proportion of 50% were obtained in Jimila ward. However, due to large samples obtained through the use of the Raosoft calculator, the 15% sample of the target population will be chosen so that the sample size will not be too small or too large to generate reliable information. This is because this sample size is above the minimum for a representative sample size. The researcher chose a 15% sample for convenience purposes to avoid a bigger sample that would be difficult to use considering the geographical spread of the study area. Therefore, using the 15% sample, in village 5 of Sipepa ward which had two hundred and three (203) households, thirty (30) respondents were chosen. In Jimila ward where village 1 had one hundred and ninety-seven (197) households and village 3 with one hundred and eighty-six (186) households, a 15% resulted in a total of fifty-eight (58) respondents being chosen for the two villages with thirty (30) chosen in village 1 and twenty-eight (28) chosen in village 3. A total of eighty-eight respondents were chosen for this research.

The researcher used a questionnaire that had both open-ended and closed questions to capture all different views of the respondents on community characteristics influencing recovery. On open-ended questions, the respondent formulated his or her answer and on closed questions, the respondent selected an answer from a given number of options (Leedy PD, and Ormrod JE, et al., 2010). In Sipepa and Jimila wards, a total of eighty-eight (88) questionnaires were administered in the two wards. Thirty (30) questionnaires were administered in village 5 of Sipepa ward, thirty (30) questionnaires were also administered in Village 1 of Jimila ward, and twenty-eight (28) in village 3 of Jimila ward. All the household questionnaires were administered to the household heads in both wards.

The in-depth interview was used to gather information face to face from the key informants. Telephone interviews were also carried out. These were largely done with the officials from different government departments and civil society organizations and environmental experts because their telephone numbers were easily found at the office of the District Administrator of Tsholotsho and were used during emergency disasters. A total of twelve (12) key informants were interviewed by the researcher.

Focus Group Discussion (FGD) was also used to collect data. In Sipepa ward, one (1) FGDs was held and one (1) in Jimila ward. The FGDs were held to capture views concerning the community characteristics influencing recovery after the floods. Focus group discussion was undertaken with the community members and institutional structures such as the village heads and ward civil protection committee members. Each Focus group had twelve (12) members with a total of twenty-four (24) members in two wards. The researcher took into consideration the issues of age,

sex, and religion. This strategy ensured cross-fertilization of information. The selection of participants in the discussions was also based on a 50:50 gender composition to ensure that individual characteristics of both men and women were captured.

Data Analysis was aimed at answering the research questions and helping determine the trends and relationships. This refers to the description of the data from a particular sample, hence the conclusion will only refer to the sample. The descriptive analysis summarized data and describe sample characteristics. Data was then summarized, organized, and presented in form of narrative text, graphs, and tables.

RESULTS

Demographic characteristics of the respondents

The in-depth interview respondents revealed that age plays a significant role in recovery activities. The elderly were portrayed to be facing challenges in contributing to the revival or improvement of community infrastructures like roads and schools. Thus Jimila which had the majority of the respondents being the elderly, could not recover as quickly as Sipepa ward. The in-depth interview respondents also indicated that the children and the elderly slowly manage to return to their normal life after the flood disasters. These are the newly married and those that had their parents deceased. Similarly, concurs with the situation obtaining in Jimila ward as he asserts that disaster vulnerability is seen among the elderly individuals in nursing facilities during and in the aftermath of a disaster.

This study revealed that more females are household heads both in Sipepa and Jimila wards, as they are widowed, divorced or their husbands are in neighboring South Africa, Botswana, or Bulawayo. The In-depth interview respondents concurred by indicating that females mostly participate in all recovery activities that are done in their areas with the high possibility that there are few males as many are leaving in neighboring South Africa and they only come back home visiting once or twice a year. In flood recovery, these women are faced with serious challenges as they resort to employing a man to assist them in the reconstruction and rehabilitation of the damaged structures. The families that have women being household heads, often lose their livestock during flood disasters as they are forced to move to the holding camps with their children leaving behind their livestock and all their belongings. They, therefore, lose their livestock to floods and theft. In-depth discussion indicated that males are more capacitated to cope with a flood due to the fact they could remain in the flooded area taking care of their belongings. There was an indication from the Focus Group Discussion that the majority of the male-headed households have better-coping strategies with flood disasters also concur with the findings of this study as they indicate that women confront unique challenges when facing disasters Maureen Fordham, W. E. Lovekamp, DSK

Thomas and BD Philips, et al., 2010.

In a Focus Group Discussion, the respondents indicated that the widowed, divorced, and single are more vulnerable and in terms of flood recovery, they face serious challenges. The widowed, divorced and single women had numerous problems in carrying out the flood recovery initiatives as compared to their married especially when it came to the revival of the destroyed structures. Sipepa ward which had the majority being married was portrayed to be better off as they can share the responsibilities in flood recovery IFRC ANNUAL REPORT, 2015. Concurs that the married couples recover more effectively as the gender roles are shared equally between the couple.

The flood victims who had secondary education and above also continually improved their housing structures after the flood disasters. Those with primary education and those who never went to the school indicated that they did not improve their housing structures after flood disasters as they perceived floods to be part of them and they said there was no need to build stronger expensive structures that will be destroyed by floods. The questionnaire respondents who never went to school had no understanding of the recovery issues and they had no initiatives that they did to be able to become resilient to flood hazards. This shows education plays a critical role in enhancing knowledge and understanding of flood recovery links the level of education of the community members to their income levels UNDP 2017.

The respondents who had more than twenty-six (26) years living in Sipepa area had managed to build houses that can withstand flood disasters. The losses suffered by those respondents who had many years living in the area were minimal.

The main drivers that have made people resident in the area for quite a long time include cultural issues which make people have an attachment to the area. The availability of pastures and fertile agricultural soils along the Gwayi River also made the people reside in the area for a long time. The availability of underground water in areas that are along Gwayi River also made people stay longer in the area. However, on the contrary linked flood recovery of the affected communities to access to external resources through connections, information, services, and natural resources despite the period of residence in the same area IFRC, 2016. The health status of the respondents was also key in this study. The effects of chronic illnesses suffered by the respondents were also examined. The health status of the respondents was classified into two categories that is the healthy and those suffering from chronic illnesses. (Figure 2)

The majority of the respondents in Sipepa ward disclosed that they were healthy, with fewer people suffering from chronic illnesses. In Jimila ward the majority of the respondents were suffering from chronic illnesses.
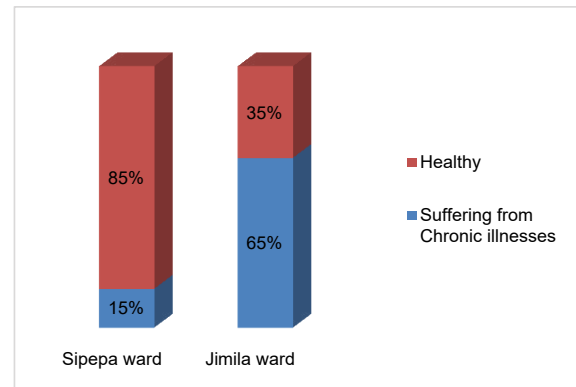

Figure 2: Health status of the respondents.

Sipepa ward, therefore, had few people who developed complications during the flood disasters. The healthy managed to recover quickly and adequately compared to those suffering from chronic illnesses also shares the same sentiments that human health and well-being, individual knowledge, and awareness are central to the ability of households individually and collectively to be able to prepare, prevent, respond and recover from shocks and stresses (Twigg J, et al., 2009). The common chronic illnesses among the respondents were sugar diabetes, hypertension, heart problems, and skin cancers. The respondents suffering from different chronic illnesses also indicated that flood recovery efforts were derailed by their illnesses as they had to look for medical assistance and at times they have to buy medication. Therefore, these indicated that they are overwhelmed when they are hit by flood disasters.

Disability status was categorized into five that is those without a disability, partially blind, deaf and dumb, paralyzed, and those who lost limbs. In both Sipepa and Jimila wards, the majority of the respondents indicated that they had no disability. Those with a disability in the two wards were few. However, Jimila ward had more respondents who were either partially blind or deaf and dumb or paralyzed or had lost a limb as compared to Jimila ward. Those that were disabled, had serious challenges in the recovery phase. The disabled had difficulties in taking care of their families through food, clothes, and shelter provision during recovery. The interview also revealed that these disabilities are also a hindrance in recovery efforts especially when reconstruction and rehabilitation are being done. However disagrees with the notion disability is a hindrance to recovery efforts by indicating that disability is not inability, therefore in recovery, the disabled recovery in their way different from those that do not have any disability IFRC, 2011.

Understanding of the flood recovery concept

The majority of the total respondents of the household interviews indicated that they had less understanding of the concept of flood recovery. Only a few flood victims, had a general understanding of the flood recovery concept. These were drawn from the respondents who had secondary

education and above. The respondents who understood the flood recovery concept said it was rehabilitation and reconstruction of the damaged infrastructure during the flood disasters. From a Focus Group Discussion, it emerged that majority of the flood victims did not understand the concept of flood recovery. Key informants understood the concept of flood recovery but they indicated that little is being done by the Sipepa and Jimila communities as a result of the lack of a policy that specifically looks at recovery of the affected communities. Thus the Tsholotsho District Civil Protection Committee referred to flood recovery as "life after the floods".

Livelihood sources

The livelihood sources for the Sipepa and Jimila communities include dryland cropping, livestock farming, remittances, vending, formal employment, and informal employment. The majority of the respondents in both Sipepa and Jimila wards indicated that their main source of livelihood is dryland cropping and livestock farming. A considerable number of respondents also relied on remittances and vending as their source of livelihood in both wards. Formal and informal employment as a source of livelihood for both Sipepa and Jimila wards is so insignificant. Household interviews and key informant interviews revealed that the areas along the Gwayi River are fertile and due to flooding even when there are dry phases, the communities usually harvest something. The main crops that are grown in the area are maize, millet, and legumes. The area has good pastures for cattle and it's also dominated by acacia tree species that are good for goat breeding.

Dryland cropping is the major source of livelihood for the Sipepa and Jimila communities, it being the major affected source of livelihood means flood recovery is also affected as the households relied on grain in rolling out its recovery activities. Those households that were sustained by formal employment means their recovery efforts are least affected hence they can bounce back after flood disasters.

Flood recovery activities

The respondents indicated that during flood recovery, resuscitation of the destroyed houses is done. Rehabilitation and reconstruction of homesteads is an individual effort according to the findings from discussions. The respondents also indicated that most of the effort is channeled towards the recovery of their household. Less effort is put into rehabilitating the community infrastructure as the community members concentrate on their household recovery. The destroyed roads by flood disasters receive less attention from the community members. The abandoned Mahlaba Primary school also received less attention from the community members during flood recovery.

Three materials were used for the construction of houses in Sipepa and Jimila wards. These materials were cement, pole and dagga, and stones. The majority of the respondents in

Sipepa at Tamuhla village indicated that they had houses constructed using cement although they had some of their huts constructed with pole and dagga. A considerable number of respondents also indicated that their structures were built using poles and dagga. In Jimila ward, the majority of the respondents had their structures mainly built using poles and dagga. However, a considerable number also had structures constructed using cement. Those respondents who had structures built using stones were so insignificant in both Sipepa and Jimila wards. The differences in material used to construct houses, therefore, made the response of Sipepa and Jimila wards to be different.

The location of homesteads from Gwayi River also had a bearing on the differences of responding to floods between the Sipepa and Jimila wards. The majority of the respondents in Jimila had their homesteads located less than a kilometer from Gwayi River. This made this community be at high risk. In Sipepa ward, there were fewer homesteads located near Gwayi River as the majority was located after approximately four kilometers. From the in-depth interviews, it also emerged that the level of inundation was high in the fields and homesteads that are closer to the Gwayi River flood plain. It also emerged that the level of inundation decreased with the distance from Gwayi River. Where the level of inundation was high and the structures were constructed using pole and dagga, coping was difficult. Therefore the losses that were suffered in these areas were so high. The areas that had low inundation levels were able to cope with the flood disasters.

Stakeholder involvement in flood recovery

The majority of the flood victims felt that the government of Zimbabwe had no role that it was playing in flood recovery processes. They cited that government is only visible during the response phase when the areas are hit by floods. However, only a few respondents acknowledged that the government of Zimbabwe played a paramount role in flood recovery processes citing the construction of houses at Sawudweni and Tshino relocation sites for the 2017 / 2018 rainfall season flood victims. The majority of the household interviews respondents listed NGOs which include World Vision Zimbabwe, Plan Zimbabwe, Welt Hunger Hilfe (German Agro Action), International Red Cross, International Organisation of Migration (IOM), Organisation of Rural Associations for Progress (ORAP), Medicine San Frontiers (Doctors without borders) (MSF), Childline Zimbabwe and United Nations Agencies. The least number of the respondents mentioned that they were assisted by the Government of Zimbabwe, Church Organisations, individuals, and private companies like Econet Wireless.

The assistance rendered to the flood victims by different organizations was classified as either short-term or long-term. The majority of the total respondents concentrated on the short-term interventions by different institutions. These short-term interventions included the provision of

food for example by Plan Zimbabwe, World Vision, and ORAP. Another short-term intervention was the provision of clothes and blankets by different NGOs, Churches organizations, private companies, and individuals. Medical assistance was also offered to the flood victims by NGOs like Medicine San Frontiers and the International Red Cross as well as the government of Zimbabwe.

Understanding of the legal and institutional framework guiding flood recovery

The majority of the respondents were not aware of legislation that guides flood recovery processes. Therefore the respondents were not in a position to indicate the significance of the disaster management legislation in enhancing the flood recovery processes. Only a few respondents were aware of the existence of the Civil Protection Act but they were not able to indicate its contributions to flood recovery efforts. The respondents who were aware of the legislation were not able to identify the weaknesses and strengths of the Civil Protection Act and gaps that are presented by the Act. The key informants indicated that there is a void created by the Civil Protection Act at local levels as those that handle the disaster management issues, have their day-to-day mandate. Therefore the legislative piece available did not help the communities to recover.

The District Civil Protection Committee members indicated that they had made an initiative through the assistance of Plan International to form local civil protection committees at the ward level. She further highlighted that the committees were trained and they only needed to be revived. She however admitted that the committees were dormant concurs by further pointing out that local management committees should have the capacity to challenge and lobby external agencies on DRR plans, priorities, actions that may have an impact on recovery. Further stresses the inclusion or representation of vulnerable groups in community decision-making and management of DRR. However, this is not the case with the Sipepa and Jimila local management committees (Daniel Maxwell, Girum Tadesse, Mary Mukwavi, Shimelis Hailu, Wolde Gebreal Zewold, and Abraha Gebrekiros Africa, et al., 2009).

Resilience of communities to flood hazards

The findings of this study indicated that the majority of the households were not resilient to flood effects. Only a few respondents had managed to build stronger structures using cement that made them suffer minimal losses. On the other hand, resilient communities must be able to demonstrate the ability to buffer the event, self-organize themselves before, during, and after, and adapt and learn from the event. Residents who had lived for many years in Sipepa and Jimila wards had a strong sense of belonging but were however not confident about the capabilities and organizational ability of their institutions in improving levels of resilience and well-developed social networks. This is the

case of the residents of the Sipepa and Jimila communities who had been resident in those areas for a long time, they claim to have been used to the menace of flooding despite the losses they incur during flood events. Thus they are not even considering relocation.

All the key informant interviewees indicated that the relocation of flood victims was the best option for effective flood recovery. They were citing the Sawudweni and Tshino relocation sites as the best. However, the village heads indicated that all those who were relocated from the flood-prone areas after the 2017 / 2018 floods had not moved their livestock and their fields remained in the old area. Therefore these were now having two homes. There is a high possibility that when the area is hit by floods in near future, the same people will be affected immensely.

CONCLUSION

The flood recovery initiatives implemented by Sipepa and Jimila communities were explored in this study. This research also managed to determine what makes the Sipepa and Jimila communities respond differently to flood disasters. The institutional framework that is necessary to support and strengthen recovery initiatives in Tsholotsho was also unraveled. The ways of enhancing community ability to improve resilience to flooding were also proffered in this study. Sipepa and Jimila communities respond differently to flooding as a result of the difference in the material used for constructing houses, differences in the location of communities, and differences in demographic characteristics.

The livelihood sources for Sipepa and Jimila wards are dryland cropping, livestock farming, remittances, vending, informal and formal employment. The main recovery initiatives that are done in Sipepa and Jimila wards include resuscitation of the destroyed infrastructure, as well as the establishment of local management committees although these have been dormant. The current structure of the Department of Civil Protection poses a serious challenge for the recovery processes. The structure ends with the District Civil Protection committee and districts such as Tsholotsho have made strides in establishing local management committees through the assistance of Plan International.

The current legislation (Civil Protection Act) being used in Zimbabwe for disaster management has several loopholes. The Civil Protection Act has no recovery component and it takes a reactive approach yet recovery processes require a proactive approach. Although Zimbabwe is a signatory of the Sendai Framework for Disaster Risk Reduction, there is a lack of alignment of the legislation to the framework for effective recovery after disasters.

There are several community characteristics influencing flood recovery in Sipepa and Jimila wards. These characteristics are human health and well-being, education level access to resources, livelihood form, community

cohesion, and household and community asset bases, location of the community as well as community capacity and skills. The major livelihood sources for Sipepa and Jimila community is dryland cropping and livestock farming. The major recovery activity done is the resuscitation of destroyed infrastructure. The Sipepa and Jimila communities do not consider relocation as the best option to deal with flood hazards. The local disaster management committees are lying dormant not aware of their roles and responsibilities. There is, therefore, a need for fully devolved DRR structures to facilitate community participation.

RECOMMENDATIONS

With the above conclusions on community characteristics influencing flood recovery in Sipepa and Jimila wards of Tsholotsho, the following recommendations are being proffered;

- Local authorities, central government, and stakeholders should embrace Flood Early Warning Systems as a planning and decision-making tool. Communities also need to adopt water harvesting techniques, such that the flood water can later be used for agricultural purposes especially in winter since the area is dry.

- There is a need to encourage and work with women to establish and strengthen village savings and lendings so that women can help each other to recover after the flood disasters.

- In terms of governance, policies need to be operationalized and have robust monitoring systems of feedback to the relevant bodies. Institutions that are mandated with disaster management need to be resourced. There is a need for the department of civil protection to decentralize and have officers as lower as district level for effective management and coordination of disaster management efforts.

- There is a need to establish or strengthen local disaster management committees. These committees should be trained and resourced to effectively contribute to recovery processes.

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