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Review of disaster response strategies for sustainable development in the wake of flood risks in Zimbabwe's rural-urban settlements

Tirivangasi Happy Mathew¹, Nyahunda Louis² & Thembinkosi E Mabila¹

¹Department of Research Administration and Development, University of Limpopo,

²Unit of Institutional Change and Social Justice University of the Free State, Bloemfontein, South Africa

mathewtirivangasi@gmail.com

Abstract. This paper aims to review the disaster response strategies implemented by the Government of Zimbabwe to mitigate the effects of floods in between 2016 and 2019. The daunting impacts of climate change are manifesting through floods, hurricanes, heat waves and drought in Sub Saharan Africa. As such, Zimbabwe is on record of falling victim to floods caused by torrential rains. Floods that struck Zimbabwe had calamitous consequences recorded where hundreds of people died, thousands displaced, infrastructure was destroyed, and people left vulnerable to diseases. Despite the country's participation in international and regional conventions that recognizes climate change impacts and the need to develop modest disaster preparedness and recovery plans, Zimbabwe has been crawling to proactively formulate and implement disaster recovery mechanisms. As such, the country has been ravaged by floods unprepared where reactive disaster response strategies would be ignited. Having said that, this paper examined how the Government of Zimbabwe responded to the unusual occurrences of flash floods in both rural and urban settlements. The empirical analysis is based largely on data from databases such as the national surveys and literature. This paper argues that there is a robust need for the country to invest in disaster risk and recovery plans and disaster early warning systems where communities are not ambushed by gruelling occurrence of floods and its associated risks.

Keywords. Disaster, Flood risk, Rural settlements, Urban settlements, Climate change, Zimbabwe

1. Introduction

The effects of climate change related disasters are continuously being felt in Sub-Saharan Africa. This is evidenced by the recent occurrences of floods in areas, which were not normally synonymous with this kind of hazards. Various scholars acknowledge that floods are now a major environmental risk around the world (Deen 2015; Talbot et al., 2018; Alferi et al. 2016). Zbigniew et al. (2014), defined floods as the accumulation of an area by unexpected rise in levels of water, and this can be caused by continuous rainfall duration; the rise dam water levels, resulting in spillages or the overflow of rivers. Floods can become a risk when they have placed human life, property, and livelihoods in danger. The United Nations International Strategy for Disaster Risk Reduction (UNI-SDRR) (2004) asserts that an event can only be

regarded as a risk when there is a serious disruption to the functioning of a community involving widespread human, material, economic or environmental losses and impacts, which exceed the ability of the affected community to cope using its own resources (UN-ISDR, 2009). In most cases, floods leave human settlements being more vulnerable and unable to cope. On that note, floods pose danger to both rural and urban settlements.

In Zimbabwe, places like Muzarabani and Tokwe Mukosi are areas, which were known to be perennial floods risk areas. As supported by ISDR (2002), floods in Zimbabwe usually affected the northern and southern provinces. However, because of climate change several provinces in Zimbabwe were affected by floods between 2016 and 2017. Regrettably, both urban and rural areas were equally affected during the mentioned period. The newly affected areas included Midlands, Matabeleland South, Masvingo, Mashonaland West, Mashonaland East, Manicaland and Harare (Davies, 2017a). The UN Office for the Coordination of Humanitarian Affairs (OCHA) concedes that Matabeleland North is worst affected area (Davies, 2017a). Contemporary floods in Zimbabwe were attributed to Tropical Cyclone Dineo, and they come after the country has been affected by La Niña. The country experienced higher levels of temperature that have surpassed all previous years. Tropical Cyclone Dineo worsened the situation in February 2017 (Davies, 2017a).

Scholars such as (Smith, Panziera, & Beven, 2014; Watts et al., 2015; Nyahunda & Tirivangasi, 2021) have indicated that the frequency and severity of floods are increasing in many global regions due to land development and processes of climate change, which are set to increase the intensity of rainfall. Several studies reveal that changes in temperature is more likely to be the driver of changes in precipitation and extreme hydrological hazards (IPCC, 2013). It is difficult to distinguish variability and changes in climate-related hazards from the impacts of long-term climate change. Climate change can impact both the intensity and frequency of hazards and the vulnerability of communities to disasters (IPCC, 2013; Nyahunda & Tirivangasi, 2019). Ntajal, Lamptey, Mahamadou and Nyarko (2017) indicated that new evidence also suggests that climate change is likely to change the nature of many types of hazards, not only their intensities, but also the duration and their magnitudes. Considering this evidence, it is important to take note of the effects of climate change related disasters such as floods.

The effects of floods are a major reason why there is a need to develop resilience measures to counter the impact. Research studies reveal that most people affected by natural disasters are the poorest members of the society (Little et al., 2007). The effects of floods include loss of human life, human settlement displacements, livelihoods, destruction of property; loss of livestock, crops, and the increase in health risk (Fox, 2003). Furthermore, Deen (2015) comment that floods also destabilise agricultural systems by destroying harvest, contaminating water bodies, causing loss of livestock, irrigation systems as well as increasing the occurrences of both human and animal diseases. In Zimbabwe, Mutsaka (2017) notes that floods left an approximately, 246 people dead and 2,000 homeless since December 2016. The Southern African country witnessed a loss of infrastructure, for instance bridges and roads were swept away and some communities were cut off from the surrounding areas which are very pertinent to their livelihood, social capital, and access to business. Consequently, the government of Zimbabwe was left looking for millions of dollars from donors to cover the cost incurred.

2. Floods and health hazards

Alderman, Turner and Tong (2012) asserts that floods pose health hazards to human life, causing diseases such as gastroenteritis, and water quality issues. Furthermore, other

scholars observe that floods like any another natural hazard results in the occurrence of mental health problems such as anxiety, depression and post-traumatic stress disorder in the aftermath (Ahern et al. 2005; Stanke, Murray et al. 2012; Fernandez et al. 2015). Moreover, various research studies have revealed that mental stressors of floods result from factors such as flood duration, the economic challenges faced by the floods victims after the floods; social problems which are faced by the community members and the high emotional labour involved (Fordham & Ketteridge, 1995; Tapsell et al., 2002; Whittle et al., 2012). Stephenson, Vaganay, Cameron and Joseph (2014) note that stress, anxiety and depression due to flooding were identified in both urban and rural studies, these emanates from the loses encountered from the floods for instance, property damage, income loss and the cost of starting up again. Floods pose a threat to human life, this can be a consequence, of the following health related factors: inadequate foodstuffs and drugs for the affected people, lack of blankets, clothing for the affected families and have the danger of contracting pneumonia and acute respiratory infections. In Zimbabwe, about 246 people have died, 128 people injured. Civil Protection Zimbabwe say that at least 115 people have died in floods in the country since October 2016 (Davies, 2017a).

3. **Floods and food security**

During floods and in the aftermath of floods, food insecurity is an imminent problem is faced by the communities. Carter, Little, Mogue & Negatu (2007) reveal that floods damage agricultural systems by contaminating water bodies, destroying irrigation systems and other infrastructure, causing loss of harvest or livestock, and increasing susceptibility to human and livestock diseases. The effects of floods on agricultural systems result into huge loses in farm yields, harvest, and the abilities of those communities to resume operations quickly (Fox 2003). In that regard, households which rely on these agricultural systems are greatly affected. Floods spell a disaster for farmers and agricultural dependents, livestock and agricultural harvest serves as an important source of income (Kristjanson et al., 2004; Randolph et al., 2007; Tirivangasi, 2018).

The year 2017 saw Zimbabwe, experiencing floods after two successful seasons of droughts. Heavy rains destroyed crops in Zimbabwe, threatening its food staple, maize, and its cash crop, tobacco. The head of the commercial farmers' union noted that leaching took its toll on the crops and there was false ripening of the tobacco crop. The Zimbabwean government had set a target of achieving 2 million Metric Tonnes of the crops under a special programme (Parliament of Zimbabwe, 2017) but heavy rains made the vision to be difficult to achieve. This was against the expectations of people; the appearance of heavy rains was bringing promises of a good harvest for instance in the Manicaland province. Floods in this case presented a new challenge for example, famers could not get their crops to the market. This poses a challenge to the community members who need access to agricultural produce. Moreover, farmers who produce fruit or fresh fruit, had already produce for market, but could not get there produce it to the market since roads were washed away. One farmer summarised and stated:

“There are no roads. They were washed away by the heavy rains,” said Liberty Kuhudzai, a farmer in Chipendeke, about 70 kilometres south of the city of Mutare. We have potatoes which are ready for the market, but we cannot take them. And soon, the maize and other crops will be ready for the market too,” he told the Thomson Reuters Foundation” (Mambondiyani 2017:1).

The research results from the meteorological services Department reveal that by January 2017 the country had received normal rains. However, by February the southern parts of the country ie. Masvingo, Midlands and the Matabeleland Provinces were affected by the cyclone Dineo, this results in flooding and destruction of crops and infrastructure (Famine Early

Warning System Network (2017). Consequently, this affected the countries food security. The justified the predictions by Zimbabwe Vulnerability Assessment Committee's rural livelihoods Assessment estimated 42 percent (4,1 million people) in rural areas were going to be food insecure. The trends of floods continued to gather momentum in Zimbabwe, Mozambique, and Zambia in 2019 with cyclone Idai taking a huge toll. Besheer (2019) pointed out that it resulted in 5,3 million people in Zimbabwe, with 270,000 people requiring assistance. This research can reveal that when the floods occurred, farmers in Zimbabwe had crops like potatoes, groundnuts, maize, and various vegetables on the ground which they rely on for food and livelihoods. These products are taken to urban areas to supply the urban market hence, sustaining the food security of the urban population. The occurrence of the unusual floods posed great disruption in this system. Therefore, this posed the danger of food insecurity, which becomes complex to both rural and urban citizens. The

4. Floods and displacement of people in Zimbabwe's rural-urban population

In the recent years, widely due to climate change induced disasters, Zimbabwe's rural-urban population has suffered from waves of cyclones with cyclone Idai being a recent occurrence in Mozambique and eastern province of Zimbabwe in 2019. The areas were hit with high winds and heavy rain in the districts of Chimanimani, Chipinge, Buhera, Nyanga, Makoni, Mutare Rural, Bikita, Masvingo and Gutu which caused riverine and flash flooding, as well as landslides, causing significant loss of life, injury and displacement (United Nations Office for the Coordination of Humanitarian Affairs, 2019). A lot of human livelihoods were affected with 270,000 people across these districts were affected ie. in places such as Chipinge and Chimanimani districts. The floods disaster resulted in 299 death and the government of Zimbabwe stated that approximately 329 missing. Moreover, 4000 households were displaced (United Nations Office for the Coordination of Humanitarian Affairs, 2019). The individuals who were displaced were accommodated in other households which were not affected, this triggered the need for food and medical supplies for both caretakers and vulnerable population.

This research can reveal that places where floods have occurred, may not be suitable for the habitation of people. This can result in the temporary evacuation from affected areas in order to prevent mortality, injuries, avoid adverse health impacts associated with living in a flooded or damp home (Zahari & Ariffin, 2013; Braun & Abheuer, 2011; Mavhura et al., 2013). Various research studies have revealed that floods events can alter community members' sense of place in relation to the home, community, and local area (Tapsell & Tunstall, 2008; Carroll, Morbey, Balogh & Araoz, 2009), and this destroyed social cohesion or fibre, that keeps families and communities together. In the aftermath of Zimbabwean floods, the then Minister of Local Government, Public Works and National House, Saviour Kasukuwere noted that an approximately 1,985 were made homeless by flooding in the country from October 2016 to February 2017. The minister noted that over 2,500 homes have been damaged since October and some communities are still cut off by the floods. This was a result of roads, hospitals and schools that were heavily affected. The Districts of Mberengwa, Insiza and Lupane suffered major road damage. Some communities were not reachable since they were cut off from the rest of the world.

The Trust Organisation in Africa (2017) reveal that 859 people in Tsholotsho district were evacuated on February 16, 2017, due to floods experienced in that area. Furthermore, 50 people in Mberengwa District were evacuated on 20 February 2017 and a bridge was destroyed in Umzingwane. Important to note is the fact that all the affected areas are rural areas. Even though a greater parentage of affected areas are rural settings, floods had also impacted on urban settlements, for instance, some houses in Bulawayo's high-density

suburbs were flooded after heavy rains pounded the city for over 12 hours (Mlotshwa, 2017). In the low-lying areas of the city, floods left some houses partially flooded (Mlotshwa, 2017). In some instances, residents reported that they lost property which include electrical and other household goods. In Bulawayo, some of the heavily affected areas include: Cowdray Park, Richmond area, Emganwini, Nketa 7 and Nkulumane suburbs. Further, in Luveve and parts of Queenspark, the storm only affected electrical connections, causing blackouts, with residents having to go for almost 24 hours without electrical power (Mlotshwa, 2017).



Floods in Tsholotsho, Zimbabwe, February 2017

Source: (Davies, 2017b:1)

In Harare, the capital city of Zimbabwe, an approximately 2,579 houses have been damaged by the heavy rain and flooding. Davies (2017c) noted that in Old St Mary's suburb of Harare, nine houses collapsed and a further 2,500 were at risk of collapsing. Furthermore, in a more similar situation in Mabvuku, around 500 old houses were also at the risk of collapsing. The European Civil Protection and Humanitarian Aid Operations (ECHO) reported that around 2,000 houses had been damaged by floods in the cities of Harare (Harare province) and in Chitungwiza (Mashonaland East province). Moreover, Flooding forced around 30 families to evacuate homes near Marimba River in Budiriro, a western suburb of Harare, on Friday 13 January 2017 (Davies 2017c).

5. Floods as a threat to Socio-economic progression

Floods have bad impact on the economy of communities affected in both rural-urban settlements. They pose a threat to the livelihoods of communities involved. These impacts are spread throughout the economy, and may include human losses and damage to premises, equipment, vehicles, and inventories. The indirect effects include fluctuation of stock market, property values will be affected, disruption of business activities for instance, physical damage

to merchandise, interrupted transportation of deliveries and prevented customer and employee access to the business (Stephenson et al. 2014). During floods, all people will shift their attention towards on how to avoid losses. Furthermore, the infrastructure disruptions, electric power, fuel transportation and telecommunications force, the bursting of sewers, the contamination of water, the wash away of roads, will force businesses to close (Alesch et al., 2001; Asgary, Anjum & Azimi, 2012). The effects of floods mentioned above may all result in the closure of businesses. Stephenson et al. (2014) noted that because of floods, for instance, damage to road infrastructure preventing people from reaching their workplace or dealing with the damage of floods to their property, it resulted in the loss of income (Zahari & Ariffin, 2013; Boon, 2014). This scenario affects community members' sources of income in both rural and urban areas.

Research can reveal that Small and Medium Enterprises (SMEs) are usually the most affected due to their lack of ability to absorb risk and the impact of natural disasters. In most cases, these businesses are based at one location, and they are unable to spread and transfer their risk. (McClure, 2000). Furthermore, small businesses in developing countries have the higher probability to be in disaster risk areas and remain vulnerable and they have no human and financial resources develop necessary knowledge that can ensure their survival in the floods' aftermath (Lindell & Perry 1998). Floods have a huge effect on rural areas, high density suburbs and small towns where they are many small and medium size businesses. Stephenson et al. (2014) note that business owners in urban area are affected by floods in the same way as the homeowners who live in rural areas (Hoggart et al. 2014). In India, the effect of floods affects severely trade and service enterprises, followed by manufacturing and production setups. Floods can result in longer closure of some businesses and some, will collapse and will not be able to restart again in the post floods situation (Asgary, Anjum & Azimi, 2012). The recovery of these businesses depends on the insurance, working and reserve capital available which can ensure that the businesses can rebuild after floods. Consequently, floods severely impacted the livelihoods and household incomes of the communities in the affected districts.

The SMEs contribute immensely to the economy of developing countries, hence, the disruption in businesses will affect the economy. Moreover, in the absence, of government support, many businesses will face problem in terms of resiliency and coping with disaster situations. Other businesses are affected by their location, for instance, rural vs urban businesses, those which are based in urban may acquire loans unlike those which are based in rural areas. In rural areas, agriculture-based businesses are affected more since they depend on the produce to be functional. Firstly, floods destroy the harvest and damage roads and bridges which will prevent farmers to accessing markets; Secondly, traders won't access farm produce which will entirely bring agribusiness to a standstill; Thirdly, animal husbandry business is also affected as animals die the increase as well in diseases.

6. Theoretical framework of the study

The authors of this paper adopted Sustainable Livelihood Approach (SLA). SLA work as a framework that help us to understand the complexities of a disaster as well as a set of principles to guide the action to address and overcome the problem. Chambers and Conway (1991: 1) define sustainable livelihoods as follow:

A livelihood comprises people, their capabilities, and their means of living, including food, income, and assets. Tangible assets are resources and stores, and intangible assets are claims and access. A livelihood is environmentally sustainable when it maintains and enhances the local and global assets on which livelihoods depend and has net beneficial effects on other

livelihoods. A livelihood is socially sustainable which can cope with and recover from stress and shocks and provide for future generations. (Chambers & Conway, 1991:1).

SLA emerged from the concept of sustainable livelihoods (Gaillard, Maceda, Stasiak, Le Berre & Espaldon, 2009). It has been widely used by Non-Governmental Organisations (NGOs) to foster development both in urban and rural settings (Chambers & Conway, 1991; Scoones 1998; Devereux 2001). It has then been expanded to the understanding and resolution of armed conflicts (Longley & Maxwell 2003). The concept has been applied in the studies examining people's vulnerability in the face of natural hazards and the assessment of post-disaster reconstruction (Gaillard et al., 2009; Kelman & Mather, 2008).

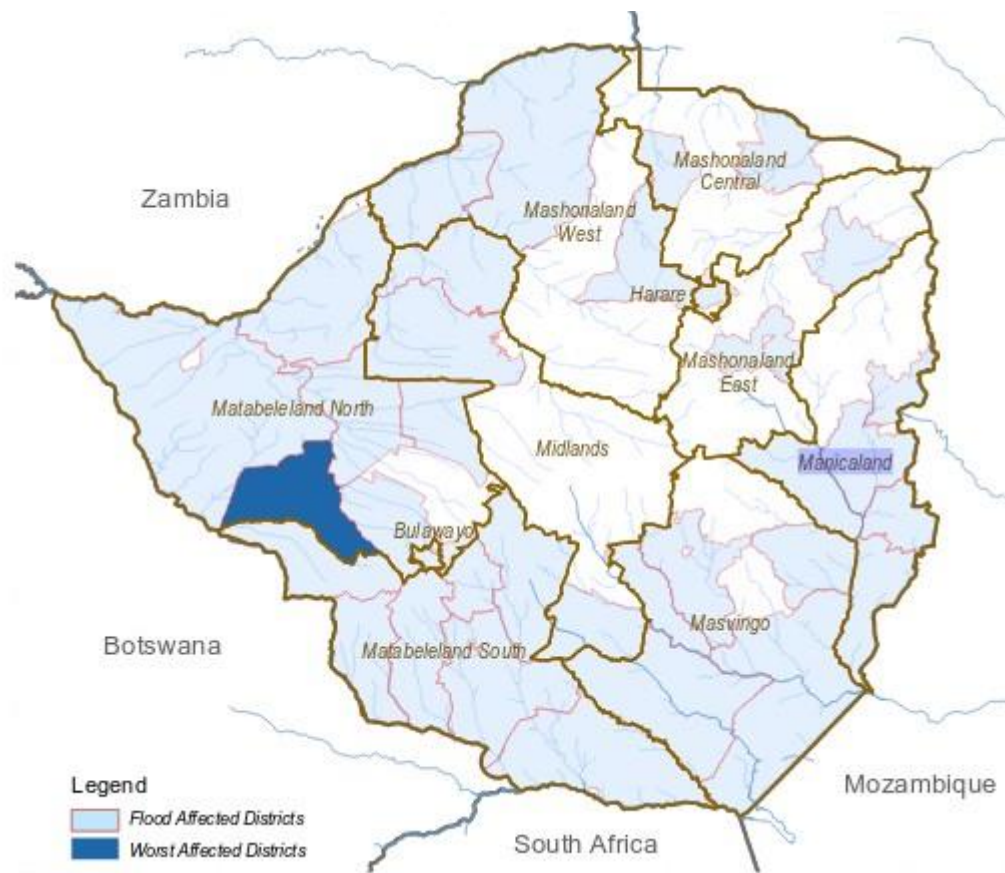
In their argument, Kelman and Mather (2008) highlighted three pillars in which SLA helps communities. Firstly, SLA helps in managing vulnerability and risk; maximising community benefits sustainability; managing crisis and managing reconstruction and resettlement. In addition, Kelman and Mather (2008), notes that the first step in the application of SLA is managing vulnerability and risk, this is whereby responsible agencies should start by understanding, communicating, and managing vulnerability and risk along with local perceptions of vulnerability and risk beyond immediate threats to life. This include looking at the immediate dangers of the disaster to human life as well as properties, infrastructure, livestock, crops, and the immediate threat to food security. This is what should be in the mind of planners as they encounter disasters.

The second application of the SLA to natural disasters is maximising the benefits to communities of the environment during this period, while decreasing vulnerability. This is a period of assessment, where policy makers can work on understanding how vulnerable communities are in such situations. This would remove the conflicting situations, for instance, the cases where people are forced to relocate. The third application of the SLA to floods is managing crises. This is where areas affected must look at the measures in place, which deal with emergence situations. In most cases, unpreparedness, lack of funds and support from the international community and the national government may result in grave consequences. Therefore, there is need to look at stakeholders who can help compact, prevent natural disasters from happening.

The fourth application of the SLA to natural disasters is managing reconstruction or resettlement after a volcanic crisis. They are two alternatives either adopting an all-hazards and all-vulnerabilities approach or opting for resettlement. An all hazard and all-vulnerabilities approach results on the victims living near the affected area. However, some would move to adopt a resettlement measure where people are removed from affected areas to environments which are not prone to hazards.

7. Area of study: A reflection of Zimbabwe's case

This study looked much on areas affected by floods in Zimbabwe between 2016 and 2017. These places are found in both rural and urban areas. The following provinces were affected by floods: Matabeleland North, Matabeleland South, Bulawayo, Masvingo, Harare, Manicaland and Parts of Mashonaland East. These areas experienced flash floods, which were not a usual occurrence until 2016/17 season. These floods resulted in 1985 homeless people, 5 affected health institutions, 74 affected schools, 2579 homesteads damaged, 246 fatalities and 70 dams breached. The areas affected is reflected below:



Map of flooded areas of Zimbabwe, March 2017. Source: OCHA, 2017

8. Prevention of the damage of floods: Government reaction

In this scope, the researchers review efforts which were undertaken by the government of Zimbabwe to cope with the aftermath of floods and some shortfalls.

8.1 Raising funds through International Community

The government of Zimbabwe appealed to the international community for more funds to deal with the damage caused by the floods. This was after an assessment was carried out by the two Ministries involved. The former Transport and Infrastructural Development Minister Joram Gumbo stated that his ministry worked with the Ministry of Local Government, Public Works, and National Housing to rehabilitate bad or dangerous roads in both urban and rural areas throughout the country. The government of Zimbabwe needed an approximately \$100 million to rebuild bridges and the road networks. The call by the government for aid was an important response, which fast track, both the government of Zimbabwe's coping with the flood's aftermath. The government is the primary actor on the ground, however, multi-stakeholder response to floods increases the chances of all affected, getting flood relief. This would also steer the involvement of local and international NGOs; these would reach to areas where the government has no reach.

8.2 Tackled misappropriate allocation of housing stands

The government realised that some of the houses which were affected in Urban Harare were in areas which were not supposed to be housed people. These were swamp areas which are on the risk of being flooded by a river due to the closeness to the riverbank. They are issues

of corrupt property dealers who take advantage of desperate residents in need of houses in the expensive Harare surroundings. The government responded by setting investigators to see what led people to be allocated houses in such areas. The former Minister of Local Government, Public Works and National Housing highlighted that:

“Harare City Council is investigating circumstances that led to the allocation of residential stands 50metres from Marimba River in Budiro 5 Extension next to Marange Shopping Complex following the flooding of several properties in the area due to heavy rains.

“The investigations will ascertain the authenticity of the layout plan and whether the affected stands are within the approved plan. The city would also want to urge people allocated residential land to only occupy it when they have been given occupation certificates. “The stands were allocated to Common Vision a housing cooperative several years back.” (Davies, 2017d:1).

This was an appropriate action taken by the government since this sought to address wrong allocation of housing stands. In this situation, houses which are built close to the river are more vulnerable to floods and the after floods effects. This includes susceptibility to disease, and they also endure high property loses. The identification of the problem in this case would stir the process of resettlement. In Harare, the affluent suburb like Borrowdale was identified to be at major risk of floods. Therefore, the Civil Protection Unit helped to prevent the loss of life and minimise the damage by spreading helpful information. The CPU spoke to the residents and warned them to be on high alert, since they were in danger of spillages from the two dams located near the residential location. The director of CPU described the gravity when she stated

“There is a two-storey building constructed just 20 metres from the dam and several other stands allocated along the stream. These houses are obstruction the natural course of water, contributing to flooding in the area” (Chipunza, 2017:1).

The CPU advised the residents to vacate the area to higher ground to avoid loss of property and the endangerment to their lives. Further, motorists were advised to travel during the day at a safe speed. Furthermore, parents were advised to accompany their children to and from school as well as monitor them during play times (Chipunza, 2017).

8.3 Forced relocation

Davies (2017e) noted the comments by the Human Rights Watch, the organisation claimed that the Zimbabwean government used force and restricted the humanitarian aid to relocate an approximately 20,000 flood victims on tiny land plots where the government had plans to establish a sugar cane plantation. In the aftermath of floods, the army relocated 3,300 families to Chingwizi Camp on Nuanetsi Ranch. Relocated families received assistance from the United Nations and other humanitarian agencies. The conditions on the camp were reportedly to be very poor. Davies (2017e) stated that when the flood victims had to be relocated to the tiny plots proposed by the government, the authorities started to deny them food assistance. Their access was limited to access to water and toilets and barred or diverted aid donations intended for their assistance. In April 2014, the then Local Government Minister Ignatius Chombo, declared publicly saying “food assistance will only be given to those families who agree to move to their permanent plots.” The camp housing the flood victims did not last, the government closed it, along with its health clinic and a school.

This is an isolated situation where the government had an option for the community members, yet the floods victims preferred to stay in flood hazard areas. The community members felt the plots were too small to sustain their families with basic kitchen gardens, that they had been promised five hectares, and they argued that they are forced to grow sugarcane, which they had no experience of cultivating. In this case, it would represent poor coping by the

community members in the flood aftermath. However, the then provincial affairs Minister for Masvingo, Kudakwashe Bhasikiti, revealed to the Human Rights Watch in August 2014 in an interview that the flood victims would eventually benefit from the ethanol project. The former minister stated that families growing sugar cane would help the project achieve profitability more quickly than if they were permitted to grow crops of their choices. This method, although it would benefit the community members, it violated the human rights of the flood victims. This research revealed that post-flood era, the flood victim would have psychological mental health problems. Therefore, to impose forced relocation, it did not help flood victims but rather worsened their coping and rehabilitation.

8.4 Lack of a proper disaster management institutional framework

Pawaringira (2008) note that, the only national policy for disaster management in Zimbabwe stipulates that every citizen of the country should be mitigating the effects of floods. The government of Zimbabwe initiates hazard reduction measures through different ministries, with local administration taking the responsibility for implementing and maintaining its effectiveness (Madamombe, 2004). The system uses existing government, private and non-governmental organizations whose regular activities contain elements of prevention and community development, and stakeholders participate in flood management at the local level (Madamombe 2004). The financial Gazette Zimbabwe (2017) can establish that the Zimbabweans were vulnerable due to lack of preparedness. The country deals with national disasters through the Civil Protection Unit (CPU). This unit was developed under the Civil Defence Act which was enacted in 1982; the department has operated under the of the Act since then. In 1989 it was amended to Civil Protection Act. The Civil Protection Act is the one that ensures the establishment of CPU. The department is housed under the ministry of local governance, and the minister is assisted in administering the Civil Protection Act and its policy by a chain of administrative levels from national to district level (CPD, 2006). The CPU focuses is on hazards like drought, floods, epidemics, transportation accidents, fires, and environmental degradation (Pawadyira, 2004).

This research can establish that when the floods occurred in Zimbabwe, the Civil Protection Unit (CPU) was not ready. Financial Gazette Zimbabwe (2017) noted that there was no proper disaster management institutional framework which empowers the CPU to function efficiently. The department could not help the victims due to lack of funding, shortage of manpower and resources. The 2016 and 2017 floods were not the first floods Zimbabwe has encountered, some of the areas like Mbire and Muzarabani have been affected by floods on annual bases. At this point the government of Zimbabwe was supposed to have developed a mechanism of how to deal with the situation. The failure to draw lessons from that experience is a clear reflection of the dysfunction of CPU. The CPU depends on the Air force of Zimbabwe to airlift people from affected areas. However, this is not an efficient way to deal with disaster. Scores of villagers in Mbire District were left stranded on an island for days without evacuation and only survived when the water level subsided. Further, in Mashonaland West province, six people were stuck for two days as the Air Force failed to dispatch its helicopters due to bad weather. The director of CPU had this to say:

"We have asked for US\$3,4 million but so far, we have received only US\$50 000 which we have immediately used to dispatch our rapid assessment teams to the worst affected areas in Mashonaland West and Central provinces which proves our sincere commitment. The question is why are we always taken by surprise when the floods hit," (Davies, 2017:1).

The department has no resources to deal with the disasters when they occur. In contrast to South Africa which has a Disaster Management Act, a law which capacitate it to fight

disasters such as floods. The lack of such institutional framework makes Zimbabwe to be vulnerable to disasters. The enactment of such a law will ensure that CPU receives a budget on annual basis which allows it to plan for future disasters.

Furthermore, Gonye (2014) notes that under the Civil Protection Act, the country uses a top-down approach in relation to disaster management. It is only the president who has the authority to declare a catastrophic event a national disaster. This process delays the response of other actors in responding to the disaster and the conditions of the affected would have worsened by the time help arrives. The top-down approach poses problems in this case where CPU depend on the army resources like vehicles and airplanes. The army may feel that they are not obliged to Act with the necessary speed without authorization by the army commanders, hence critically delaying response to disaster (Chikoto, 2004). The army may not understand how critical the disaster is due to lack of knowledge or they will be waiting until the president has declared the event to be a national disaster.

9. Conclusion

This research can reveal that floods have effects on both rural-urban settlements. It should also be noted that flood risk is complex and dynamic as it includes hazards, exposure, and vulnerability. Floods leave all the affected people with losses of income, health effects, dislocation, threat to food security and the government loses lots of money. The researchers noted that Zimbabwe is more vulnerable due to its unpreparedness. Disaster risk in urban areas is usually a consequence of developmental problems, for instance, lack of basic infrastructure, poor urban and land use planning. These are some of the factors that increase vulnerability of communities to natural disasters. The best coping strategies need both the government and the individual people to be involved as clearly stated in the recommendations.

Maximisation of Social Capital

The researchers recommend and emphasise the importance of social networks and social capital as the best coping method. This way, recovery can be achieved without or with minimum assistance from the government. Various research studies in flood disaster areas have identified the role of individuals and community members as the most important factor in responding to floods. Community resilience is particularly important in developing countries, where neighbours and relatives are an essential source of both emotional and physical support during flood events (Adger, 2003; Twigger-Ross, Coates, Deeming, Orr, Ramsden & Stafford, 2011).

Disaster management financial budget

The study revealed the lack of financial budget to help in limiting the effects of floods to different communities. The availability of money will help in buying blankets, food, emergency vehicles or aeroplanes to transport the victims of floods. Moreover, the extra budget would help in helping affected small and medium enterprises (SMEs), this will help communities to copy over the loses accumulated. The funds in rural areas will help the government to assist with farming inputs for affected farmers as well as build roads. The building of new roads will ensure that both farmers and communities will be able to access the markets. The income level of a household is closely linked to coping strategies. Studies reveal that household with high income or savings can readily help themselves during a flood event and as such are less vulnerable to flood impacts (Green, Veen, Wierstra, & Penning-Rowell, 1994; Mavhura, Manyena, Collins & Manatsa, 2013).

Increased access to education

Education plays a key role as a coping strategy in flood prone areas. Mavhura, Manyena, Collins and Manatsa (2013), notes that education level is important in the dissemination of information and its use among the affected communities. In flood prone areas, people's response to floods depends on their understanding of the message. Further, when there is higher illiteracy, it limits the ability of an individual to capture information and flood warnings, hence, increasing the population's vulnerability to flood risk.

Index insurance

The Zimbabwean government can introduce index insurance. This is an innovation that triggers payouts based on the meteorological index correlated with agricultural losses (Vermeulen, Aggarwal, Ainslie, Angelone, Campbell, Challinor, Hansen, Ingram, Jarvis, Kristjanson & Lau, 2012), for instance, when there is projected low rainfall or water stress rather than observed losses. Index insurance when applied objectively, it can overcome problems with adverse hazard. This can also help farmers and those who operate business within the areas with impending disaster. Index insurance, is a good initiative which can be modelled to suit different agricultural systems, build capacity in private sector as well as build better indices for areas where meteorological data is not available. The index insurance has been successfully implemented in countries such as India and Mexico (Vermeulen et al., 2012).

Traditional leadership and the Zunde ramambo rural food safety net: An Afrocentric approach

In the wake of natural disasters, in the rural areas, the government can rely on the traditional leaders to provide leadership. The centralised delegation of power by the government, it is important to transfer the power to the local leadership, scholars, note that nation and provincial task forces are disconnected from the lived experiences of the affected (displaced) people's realities. In most instances the humanitarian assistance offered is overseen as universally applicable in all cases whenever floods occur. However, this world view must shift to be context based. That takes understanding the history of the place and its people. A world view of a people is created from their experiences within their environment. Environment determines culture and our culture determines our consciousness, and our consciousness informs our world view. It is our world view which informs the questions and how we arrive at the answers about our world problems. Moving away from the generalised approach to finding solution in the post flood situation, the researchers advance the concept of *Zunde ramambo*. According to Mushishi (2010:133) refers to "to a tribal practice where all people under one chief take turns to till portions of the chief's field as a way of preparing crops whose harvest would be used in times of drought". This practice can only be administered by traditional leaders and helps to provide rural food safety net in the aftermath of a flood. This practice helps, as food insecurity becomes a serious need for both the care givers and the vulnerable population.

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