

# Disaster legislation: a critical review of the Civil Protection Act of Zimbabwe

Emmanuel Mavhura<sup>1</sup>

Received: 3 January 2015 / Accepted: 17 September 2015 / Published online: 30 September 2015  
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**Abstract** Human suffering has increased in recent years as a result of increased frequency and intensity of disasters. The disaster impacts are expected to rise in the coming years due to increased vulnerability to natural hazards. Admittedly, human risk to natural hazards cannot be eliminated completely, but it can be reduced through systematic disaster risk reduction (DRR) approaches that can be scientifically applied for minimising vulnerability and building resilience in nations through multi-sectoral and multi-dimensional measures. Using the Hyogo Framework for Action 2005–2015 Priority 1, this paper analysed the current disaster legislation in Zimbabwe: the Civil Protection Act of 1989 (Chapter 10:06) to identify its strengths and limitations in building community resilience to disasters. A textual analysis approach was employed together with key informant interviews with senior public officials on all levels of government, non-governmental organisations and the academia engaged in DRR. The study found out that the Act falls short of building national and community resilience to disasters. Some of the key weaknesses of the Act include: inactive community participation in DRR, unavailability of dedicated and adequate resources to implement DRR programmes, centralisation of power and resources, and the focus on ‘natural’ hazards rather than on vulnerability and resilience. As such, there is need for its revision to align it with international best practices in disaster legislations.

**Keywords** Civil Protection Act · Disasters · Hazards · Zimbabwe

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✉ Emmanuel Mavhura  
edmavhura@gmail.com

<sup>1</sup> Department of Geography, Bindura University of Science Education, Private Bag 1020, Bindura, Zimbabwe

## 1 Introduction

A significant number of disasters have been witnessed between 2000 and 2014 worldwide. The occurrence of such disasters shows that many communities in both developed and developing nations are vulnerable to natural hazards. For instance, the 2004 floods in Bangladesh (Shimi et al. 2010), the 2004 Indian Ocean Tsunami (Said et al. 2011), the 2004 floods in metropolitan areas of China (Shi et al. 2005), the 2011 veld fires in Tlokwe, South Africa (Wiggill 2013), the 2007 mega fires of California, USA (Madininos and Vassiliadis 2011), the Sydney bush fires (Solangaarachchi et al. 2012) and the 2005 Hurricane Katrina in the USA (Moe 2010) are evidence of increased vulnerability to natural hazards worldwide. These disasters have resulted in the death of thousands of people, with more thousands being made homeless, while the material destructions have been enormous. Ahmed (2013) argues that the natural disasters have caused more damage to life and property than many major wars. On the other hand, technological disasters and disease outbreaks are rising as well. The impact of all these disasters may be partly blamed on weak legislative frameworks in assigning clear mandates and responsibilities to different actors or institutions in those countries affected (Manyena et al. 2013).

Zimbabwe is one of the African countries most prone to hydro-meteorological hazards and disasters. It is located in Southern Africa, covering 390 757 km<sup>2</sup> at an altitude of 900–1500 m. It has a population of 13 061 239 (ZimStat 2012). The Government of Zimbabwe (GoZ) enacted the Civil Protection Act (Chapter 10:06) in 1989 (hereby referred to as the Act) which guides all disaster risk reduction (DRR) activities in the country (Government of Zimbabwe 1989). The Act has existed for more than twenty-five years now. Nevertheless, there has been no systematic evaluation as to whether the Act is still an effective law in terms of DRR or otherwise. This study fills this gap by critically analysing the Civil Protection Act (Chapter 10:06) of Zimbabwe. The question is: To what extent is the Civil Protection Act addressing DRR efforts in Zimbabwe? In addressing this question, this paper critically reviews the Act, to identify its strengths and limitations and to suggest recommendations for consideration. Therefore, a desk study approach was employed, together with ten key informant interviews with senior public officials on all levels of government, non-governmental organisations (NGOs) and the academia engaged in DRR.

After the introductory section, the paper then presents a literature review in which some key critiques are highlighted and the theoretical framework used in the study is discussed. Next, an examination of the disaster risk profile of Zimbabwe which justifies the need for a disaster legislation that is relevant to DRR is done. Further, the disaster legislative framework in Zimbabwe is presented, followed by the research methodology. Section 6 will present a critical analysis of the Act, and then, its discussion will follow. Finally, the paper concludes that the Civil Protection Act of Zimbabwe falls short in building resilience to disasters and, therefore, needs to be aligned with the Hyogo Framework for Action 2005–2015 (HFA).

## 2 Disaster risk reduction and legislations

Disasters occur when a community's capacities to manage the effects of a natural hazard are overwhelmed (UN/ISDR 2008). Thus, the impact of a disaster depends not only on the magnitude of the hazard event, but also on the degree to which the community is exposed to the hazard and is ill-prepared to cope with it (Kusenbach et al. 2010; Armaş and Gavriş

2013). While the natural hazards generally cannot be controlled, the risks of disasters can be substantially reduced through specific actions which are supported by effective legislations (Birkmann and Teichman 2010; Islam and Chik 2011; UN/ISDR 2008).

DRR refers to the ‘practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events’ (UNISDR 2009b:4). DRR faces two major challenges. First, major hazard events are usually rare for any particular community, and in such situations, the local citizen demand for investment in disaster mitigation and preparedness is often minimal (Kolen and Helsloot 2014). Second, most of the burden for disaster recovery assistance is shouldered by central governments which have weak legislations. These challenges adversely affect the effectiveness of both pre- and post-DRR measures used by communities at risk.

However, disaster research has evolved from three major paradigms, namely the hazard paradigm of the 1930s, the vulnerability paradigm and the current resilience paradigm (Manyena 2012). From the 1930s through the 1960s, disaster thinking was dominated by the hazard paradigm. During that period, hazards were disasters *per se*, as such they were not preventable (Manyena et al. 2013). As a result, disaster legislations were based on technical solutions such as the construction of levees and flood defence, to help communities cope with flood disasters. However, as disasters continued to increase in frequency, intensity and impact, the effectiveness of the hazard paradigm became questionable, including its relevance in informing disaster legislative frameworks. From the 1970s, researchers began to find ample evidence that natural hazards had varying impacts on different social groups. As a result, numerous frameworks and conceptual models were developed to advance the vulnerability theory, practice, policy and legal applications (Adger 2006; Cutter et al. 2008; Turner et al. 2003; Wisner et al. 2004). This led to a shift in thinking and behaviour to the vulnerability paradigm.

The resilience paradigm emerged in the 2000s from the lessons learned from the implementation of the International Decade for Natural Disaster Reduction (IDNDR) which extended from 1990 to 1999. This paradigm was then made popular by the United Nations International Strategy for Disaster Reduction (UNISDR) which in 2005 adopted the Hyogo Framework for Action 2005–2015 (HFA): Building the Resilience of National and Communities to Disasters (ISDR 2005). The HFA set out concrete measures to make nations more resilient to disasters. It became the key instrument for ensuring that DRR becomes a national and local priority with a strong institutional basis. It is therefore imperative that the analysis of the Civil Protection Act (Chapter 10.06) of Zimbabwe be guided by the HFA. Specifically, it is the first priority of the HFA which informs this paper because it is more relevant to disaster legislations, compared with the other four priorities (Table 1) (ISDR 2005; UNISDR 2009a). There are four tenets of the HFA Priority 1 I consider to be the basis for this analysis as effective disaster legislation. These include (1) the existence of DRR institutional mechanisms (national platforms) with designated responsibilities, (2) decentralisation of responsibilities and resources, (3) availability of dedicated and adequate resources to implement DRR and (4) community participation in DRR (UN/ISDR 2008).

The use of HFA framework as a tool of analysis is based on the fact that it is an internationally agreed instrument for implementing DRR with the overarching goal of building resilience of nations and communities to disasters (UNISDR 2009a). The HFA is also used in this study because it has been well received and adopted to facilitate comprehensive analysis of how countries implement various DRR activities and programmes

**Table 1** HFA priorities for action

Priority	Action
1. Governance	Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation
2. Risk assessment	Identify, assess and monitor risks and enhance early warning
3. Knowledge and education	This entails using knowledge, innovation and education to build a culture of safety and resilience at all levels
4. Risk management and vulnerability reduction	Reduce the underlying risk factors
5. Disaster preparedness and response	Strengthen disaster preparedness for effective response at all levels

Source ISDR (2005), Jones et al. (2010)

(Jones et al. 2014). Therefore, the HFA symbolises a strong commitment of the international community to engage in a well-defined, results-oriented plan of action to reduce risk to hazards. The expected outcome of the HFA is a substantial reduction in disaster losses, in terms of human lives and in the social, economic and environmental assets of communities and countries (Jones et al. 2010). To achieve this, governments must design policy and legislative frameworks for DRR which enable communities to manage risks associated with disasters.

### 3 Disaster risk profile of Zimbabwe

Although by world standards, Zimbabwe cannot be regarded as a highly disaster prone country in terms of deaths and injuries caused, the cost of the disasters that have affected the country in terms of property destruction, social and economic losses, has been significant (Ministry of Local Government 2009). The cost can increase unless effective measures are taken to deal with such emergencies and disasters.

Basically, the hazards Zimbabwe experiences are classified into hydro-meteorological, geological, biological and technological. Zimbabwe's complex climatic and varied geological conditions result in virtually every type of known hazard. Some of the natural hazards are seasonal and regional, but the human-made hazards occur at anytime and anywhere in the country. This section will however be limited to the most common hazards affecting the country, namely hydro-meteorological (droughts and floods), geological (earthquakes and landslides), biological (gastro-intestinal tract infections) and technological (road traffic accidents). The occurrence of these hazards calls for effective disaster legislation so as to reduce their impact.

Drought is the most common hazard and accounted for six out of ten top major natural disasters between 1982 and 2011 (Table 2). In Zimbabwe, drought is linked to the warm El-Nino-Southern Oscillation (ENSO) in the Pacific Ocean, which has been worsening since the 1980s (Gumbo 2006; Stringer et al. 2009). It occurs almost every 2 years. The most drought-prone areas are those found in agro-ecological regions IV and V and include provinces of Masvingo, Matabeleland North and Matabeleland South (Mutasa 2010; Nyakudya and Stroosnijder 2011).

In terms of impact, droughts have resulted in loss of water for agricultural production, industrial and domestic uses; loss of livestock and vegetation; and growth of toxic algal blooms

**Table 2** Top 10 natural disasters in Zimbabwe, 1982–2011 (CRED 2012)

Disaster	Year	Number of people affected
Drought	2001	6,000,000
Drought	1991	5,000,000
Drought	2007	2,100,000
Drought	2010	1,680,000
Drought	1982	700,000
Epidemic	1996	500,000
Flood	2000	266,000
Epidemic	2008	98,349
Drought	1998	55,000
Flood	2001	30,000

on depleted dams, rivers and lakes (Bird and Shepherd 2003). For example, the 1991/1992 drought was so devastating that about 60 % of cereals and 50 % of livestock were lost nationwide (Bird and Shepherd 2003). The loss in crop and livestock production resulted in a high risk of low nutritional status among many poor households in the country. The 2001 drought affected over 6,000,000 Zimbabweans, most of whom were children, the elderly and HIV and AIDS patients (Mavhura et al. 2015; Department of Civil Protection 2012). The disaster was triggered by climate variability and change but made worse by poverty, increasing water demand in cities, and poor soil and water management. As a result, droughts pose a serious challenge to Zimbabwe's agriculture-based economy which is rainfall dependent (Nyakudya and Stroosnijder 2011). Furthermore, droughts cause ecological changes such as *inter alia*, growth in scrubs, increased desertification and degradation of pastures.

Furthermore, floods are common in Zimbabwe and have been officially recorded over the last 100 years. They are caused either by intense precipitation, tropical cyclones from the Indian Ocean or by dam failure (Mavhura et al. 2013; IFRCRCs 2013). Although many tropical cyclones form in the Indian Ocean, only a few of them cross the Mozambican channel to affect Zimbabwe. Since 2000, only two tropical cyclones have affected Zimbabwe, *i.e.* Cyclone Eline in 2000 and Cyclone Japhet in 2003. Cyclone Eline induced floods in northern Lowveld of Zimbabwe that left 120 people dead, over 250,000 people affected, and approximately US\$7.5 million in economic losses (Shumba 2005). Floods cause great damage to houses, crops, critical facilities, electricity supply lines and food stocks (Mabaso and Manyena 2015). Economic activities are disrupted, thereby creating financial stress on the already poor people. The major flood-prone areas in Zimbabwe are Muzarabani, Middle Sabi, Tsholotsho, Malipati, Chikwalakwala and Tuli-Shashe (Ministry of Local Government 2009).

Moreover, two types of geological hazards affect Zimbabwe: earthquakes and landslides. Zimbabwe lies over the southern tip of the Great East African Rift Valley system. The south-east (Save-Limpopo basin) and the north-west (Deka fault zone, mid-Zambezi basin) areas of the country are covered by Karroo sediments which make up 15 % of the country's surface (Ministry of Local Government 2009; OCHA 2011). Therefore, there are two earthquake hazard zones in the country: the area along Zimbabwe's south-eastern border with Mozambique and the Deka fault in the mid-Zambezi basin. The rest of the country is part of the continental shield with little seismic activity. On the other hand, landslides usually occur as secondary effects of heavy storms or earthquakes. During the rainy season, landslides are a threat to human settlements and infrastructure situated in mountainous areas.

Biological disasters originate from biological vectors including exposure to pathogenic micro-organisms, toxins and bioactive substances. In Zimbabwe, there is a growing exposure to gastro-intestinal tract infections (GTIs) (cholera, diarrhoea and typhoid) as a result of inadequate provision of safe water, poor sanitation, personal hygiene practices and lack of resources to sustain awareness campaigns, particularly in urban areas (WHO 2009; OCHA 2011). Zimbabwe has experienced cholera outbreaks since 1975 which generally occurred on a 5- to 10-year cycle. Since 1998, cholera outbreaks have been reported every year and the epidemic is no longer restricted to previously known cholera risk areas. The unprecedented cholera outbreak in 2008/2009 resulted in about 100,000 cases and 4000 deaths being reported (Government of Zimbabwe 2013; WHO 2009). It was the most severe on record and went beyond Zimbabwe's response capacity. With most of the underlying and infrastructural challenges that caused the 2008/2009 cholera outbreak having not been addressed, the risk of GTIs remains high (Department of Civil Protection 2012). This risk is also compounded by social gatherings such as weddings, funerals, religious and traditional ceremonies and practices.

On the other hand, while the risk to rail, water and aviation accidents is relatively low, road traffic accidents have become a cause for concern in Zimbabwe. Table 3 below shows a general increase in the number of total accidents reported, number of people injured and killed from 2008 to 2012 (ZTSC 2013).

Traffic accidents are likely to continue rising due to the deteriorating road infrastructure, increase in the number of vehicles including those in transit to neighbouring countries, non-deterrent fines for road traffic offences, lack of age limit for public transport drivers, absence of a law that makes it mandatory for passengers in public and private vehicles to wear seat belts, high admissible alcohol content for drivers and lack of road markings, signs and traffic-controlling lights.

Therefore, the disaster risk profile of Zimbabwe just described above shows a general increase in both frequency and impacts of natural and human-induced hazards. This situation requires effective disaster legislations which will reduce the negative impacts of disasters in the country. The following section will analyse the evolution disaster legislative framework in Zimbabwe.

#### 4 Disaster legislative framework in Zimbabwe

Before Zimbabwe's Independence in 1980, the management of disaster risks was referred to as civil defence. After independence, DRR issues continued to be administered through the Civil Defence Act of 1982. Yet, the civil defence concept was designed to serve the values, interests and preferences of a minority white population during the liberation war.

**Table 3** Road traffic accidents statistics: 2008–2012 (ZTSC 2013)

Year	Total accidents reported	Total number of people killed	Total number of people injured
2008	16,904	1149	10,427
2009	20,553	1576	12,354
2010	26,841	1796	14,336
2011	30,985	2001	15,305
2012	29,423	1987	14,527

It adopted a command-and-control model derived from a militaristic system, which largely is a top-down model of disaster response with more clarity of responsibility at the national level than at local levels (Manyena et al. 2013).

However, the DRR approach in Zimbabwe has evolved from civil defence to civil protection, leading to the enactment of the Civil Protection Act (Chapter 10:06) in 1989 (Government of Zimbabwe 1989). The Act was later revised in 1992 and 2001 (Government of Zimbabwe 1989). It establishes a civil protection organisation (CPO) and provides for the operation of civil protection services in times of disasters. The CPO is a national platform made up of line ministries/departments, state enterprises, private sector and NGOs whose regular activities are related to DRR and community development (Ministry of Local Government 2009). The Act directs every province and district to have responsibility for the protection and preservation of the lives and property for their citizens. It also provides for the establishment of a fund, known as National Civil Protection Fund to finance the civil protection activities (Government of Zimbabwe 1989). The responsibility for the administration and implementation of the Act lies with the Department of Civil Protection (DCP), which falls under the Ministry of Local Government Public Works and National Housing (MLGPWNH). The role of DCP is to provide guidance and support to the state and downwards, in developing their capacity in dealing with emergencies and disasters, and to provide physical assistance to districts or provinces that fail to cope during an emergency.

To discharge its functions, the DCP is supported by the National Civil Protection Coordination Committee (NCPCC), consisting primarily of the Secretary for the Ministry of Health, Commissioner of Police, military commanders, Zimbabwe Red Cross Society, Director of Prisons, Director of Civil Aviation and the Fire Brigade. The NCPCC can appoint subcommittees, whose membership is not clear in the Act. However, in practice, the subcommittee members are drawn from government line ministries, quasi-governmental bodies and NGOs. These include the national power utility known as Zimbabwe Electricity Supply Authority (ZESA) and Zimbabwe National Water Authority (ZINWA). United Nations (UN) agencies such as United Nations Development Programme (UNDP), United Nations Children's Emergency Fund (UNICEF), United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) and International Organisation for Migration (IOM), and NGOs such as Zimbabwe Red Cross Society, Save the Children, Oxfam GB and World Vision are also members of the NCPCC.

## 5 Methodology

The methodology employed in this study was twofold. First, a textual analysis of the Civil Protection Act (Chapter 10:06) governing DRR in Zimbabwe was conducted to determine the extent to which the Act addresses DRR agenda in Zimbabwe. This involved studying the Act to identify its strengths and weaknesses in building community resilience to disasters. In particular, the analysis focused on the four tenets of the first priority of the HFA: (1) the existence of DRR institutional mechanisms (national platforms) with designated responsibilities, (2) decentralisation of responsibilities and resources for DRR, (3) availability of dedicated and adequate resources to implement DRR agenda and (4) community participation in DRR (UN/ISDR 2008). Second, ten qualitative interviews were conducted between June and September 2014 with senior public officials at all levels of government, NGOs and the academia engaged in DRR. The interview questions explored

the ways in which the Act addresses the DRR agenda by focusing on the four tenets of the first priority of the HFA. Therefore, the critique of the Act was benchmarked against the tenets of the first priority of the HFA.

## 6 Civil Protection Act of 1989 (Chapter 10:06)

In this section, the Civil Protection Act, Number 5 of 1989 (Chapter 10:06) is critically analysed. However, an overview of the Act is first provided below, followed by its detailed analysis.

### 6.1 Overview of Civil Protection Act of 1989 (Chapter 10:06)

On 1 August 1989, the Civil Protection Act (Chapter 10:06) was created to establish a CPO and provide for the operation of civil protection services in times of disasters. The Act replaced the Civil Defence Act of 1982. It also provided for the establishment of a national fund to finance civil protection operation in the country (Government of Zimbabwe 1989). This Act consists of 10 parts and 44 sections. Part I is a preliminary section that provides the title, and the interpretation of various terms used in the Act, while Part II outlines the functions of the director of civil protection. The third part deals with the NCPCC, its structure, purpose and its functional procedures. Part IV of the Act establishes planning committees of the CPO, remuneration and expenses of members of the planning committees as well as civil protection plans.

The provincial civil protection organisation is outlined in Part V of the Act. This part also provides for provincial civil protection officers, their assistants and functions, appointment of committees and delegation of powers by provincial civil protection officers. Part VI narrates the civil protection areas (districts, wards, villages) which may be established by the responsible minister in civil protection provinces for the purpose of this Act. This part further spells out area civil protection officers, their functions and assistants, appointment of committees and delegation of powers by area civil protection officers as well as the work of volunteers in civil protection matters.

The general powers of civil protection officers are provided in Part VII of the Act, while Part VIII explains the procedure of the declaration of a state of disaster in the country. The declaration is done by the way of a statutory instrument after which the responsible minister shall communicate such a declaration to parliament on the day it next sits. Part IX provides for the creation of a national civil protection fund, how it is raised, its objectives and application. The limits on expenditure from the fund are also provided in this part. The last part of the Act (Part X) provides for the general powers and duties of the responsible minister during disasters. It also outlines miscellaneous items such as how expenses incurred by the state during a disaster may be recovered; indemnity of the minister, civil protection officers, volunteers and any persons assigned duties by a civil protection officer.

### 6.2 Analysis of the Civil Protection Act, Number 5 of 1989 (Chapter 10:06)

The point of departure in this analysis is the title of the Act itself: Civil Protection Act. The term ‘civil protection’ in Zimbabwe is a common umbrella term that covers the risks posed by natural, technological, biological and human-induced hazards/disasters (Government of Zimbabwe 1989). However, this term is limited in addressing all aspects of the disaster



management cycle. As a result, terms such as resilience, vulnerability, mitigation, contingency plans and DRR are not appearing in all the 44 sections and numerous subsections of the Act. Yet such terms are essential in building national and community resilience to disasters. One of the interviewees echoed ‘those terms (referring to resilience and vulnerability) don’t appear in the Act. Therefore, DRR focus is neither on reducing vulnerability nor on building resilience to disasters’. The disaster management cycle involves the pre-DRR phase (prediction, warning, preparedness, mitigation and prevention) and post-disaster recovery activities (relief, rehabilitation, recovery, reconstruction and development) (Coetzee and van Niekerk 2012). Therefore, the approach of DRR is expected to entail proactive engagement in all phases of the disaster management cycle with the aim of improving the safety, security and economic stability of a country that is vulnerable to disasters. In this case, all the ten key informants admitted that the concept of civil protection as used in this Act is limited to the service provided for the purpose of guarding against any actual or potential disaster. ‘The concept (referring to civil protection) suggests that the Act comes into action when either a disaster has struck or the occurrence of it is imminent’, reported another interviewee. In this way, the Act reinforces ex-post-DRR approaches against ex-ante approaches to disasters. As a result, some of the activities which should reduce vulnerability and enhance resilience to disasters are unlikely to be executed during the operationalisation of the Act.

As provided for by the Act, the MLGPWNH is charged with the DRR issues in the country (Government of Zimbabwe 1989). As such, the DCP has been established in this ministry. The DCP is responsible for policy making, coordination and supervision of institutions for DRR at national level. It controls all the functions essential for effective disaster prevention, preparedness, response and recovery through legislative and regulatory arrangements within which communities and various agencies operate; provision of the police force, fire, ambulance, emergency and medical services; and all agencies which provide DRR service to the nation. Eight out of the ten interviewees agreed that DRR interventions in Zimbabwe remain extremely top-down. ‘Key decisions or policies are taken at the higher levels and enforced downwards following the hierarchy’, said a key informant who works in an NGO. During an emergency, however, a crisis committee can be initiated at the provincial or district level to handle the situation pending further instruction from national level. But the inability to take DRR initiatives at the local level where there are limited financial and material resources has a huge impact on disaster victims. This is more serious in situations where disaster victims have to wait for a long time for resources from the national level.

One of the functions of the director of DCP as provided in Part II, Section 3, subsection 2(a) is the establishment of CPOs in civil protection provinces and areas (Government of Zimbabwe 1989). Subsection 2(b) empowers the director to control and direct personnel, materials and services for the purpose of civil protection. This clearly suggests a top-down management of the civil protection in the country, with more emphasis on disaster response than on risk prevention and mitigation. The top-down arrangement is reinforced once more under Section 18 of Part VI of the Act that provides for the functions of the civil protection officers and their assistants. Subsections 1(a) and 1(c) says that the civil protection officers and their assistants shall command and give orders with respect to civil protection (Government of Zimbabwe 1989). There is nowhere in the Act where community participation in DRR is facilitated, yet DRR requires considerable decentralisation of both powers and resources (human, financial and material) to local levels. In practice, DRR in Zimbabwe has remained a preserve for the technocrats at national level, with little, if any, involvement of local communities.

Another weakness of the Act is found within the composition of the CPO and NCPCC. The two are heavily militarised in all their structures from national to district level. This is enshrined in Subsection 2 of Part III, Section 4 which says that the CPO and NCPCC shall consist of the Commissioner of Police, the commanders of the various branches of the defence forces (i.e. Zimbabwe National Army and Air Force of Zimbabwe) and the Director of Prisons, among others. The heavy military presence in these organisations is in contrast to the Act's claim that the management of disasters has evolved from civil defence to civil protection. All the interviewees agreed that the military presence in the CPO and NCPCC leads to a commandeering style of operation. This is reinforced under Part VII of the Act, Section 23, Subsection 1 where the civil protection officers are empowered to control or take possession of land or property whatsoever for the purpose of dealing with a disaster (Government of Zimbabwe 1989). Therefore, questions are raised if this commandeering style could work effectively at community level where villagers are expected to take a leading role in building their own resilience against disasters.

Section 2 of Part IV of the Act provides for the preparation of civil protection plans for the civil protection provinces and areas. The expression 'civil protection plans' is vague as it does not really communicate its nature and purpose. 'It can be misinterpreted and, thus leads to inaction on DRR' said another key informant when he was explaining about 'civil protection plan' in the Act. Some people might think that the plans refer to, development plans with elements which address DRR, while others might think of emergency/contingency plans prepared in anticipation of hazards or disasters or something else. However, a critical analysis at the section does not review any idea of the two. On the one hand, development plans are not the core business of the CPO but of local authorities. On the other hand, major issues of contingency plans such as potential hazards, financial and material resources are not mentioned in this section. In any case, both development and emergency plans are best developed at grassroots level, whereas the plans of this Act are designed at national level and subject to ministerial approval as spelt out at subsection 5 of Section 11 (Government of Zimbabwe, 1989).

The declaration of a state of disaster provided for under Part VIII, Section 27 of the Act emphasises bureaucratic procedures. This is because the Head of State is the only person who can declare a state of disaster after having received recommendations from the responsible minister. The responsible minister can only recommend the declaration of a state of disaster after having received such a proposal in writing from the director of DCP. For the director of DCP to propose a state of disaster declaration to the minister, he/she has to be furnished enough information from the Provincial Administrator of the concerned province who again should have first received such information from the District Administrator of the district at risk. This process can take more than a week after the disaster has struck as witnessed during the Tokwe–Mukosi flood disaster of February 2014. That state of disaster was declared 10 days after inundation of households in the dam basin (Mavhura et al. 2014). This indicates the need to decentralise the declaration of a state of disaster to local authorities as they are better placed in areas where the disasters happen.

Part IX, Section 29 of the Act suggests the establishment of a national civil protection fund which shall be administered by the responsible minister. However, there is no mention of such funds at the provincial and district levels where local authorities are expected to react to disasters first before they call for external assistance. Furthermore, there are no guidelines with regard to the amount of funds that would be reserved in the annual budget for the DRR activities at national level. On the other hand, while the creation of this fund is necessary, it remains controlled by the responsible minister. As a result, most local authorities are inadequately funded and the promotion of research and

training into matters related to vulnerability and capacity assessments, early warning systems and preparedness are marginalised if not totally left out at the local level.

Finally, the Act (Section 41) indemnifies the responsible minister, civil protection officers and volunteers in respect of any loss or injury caused by or in the course of civil protection duties. It therefore means that all officials are protected from any legal action and accountability for their acts. This provision may lead to ‘milking’ of resources, inefficiencies and malpractices during the civil protection operations in times of disasters in the country. Having analysed the Act, the following section will discuss the findings in line with the four tenets of the first priority of the HFA.

## 7 Discussion

The critical analysis of the current act governing DRR in Zimbabwe, the Civil Protection Act (Chapter 10:06) Number 5 of 1989 has reviewed several overlapping weaknesses which pose difficulties for the Zimbabwean government to realise DRR goals of the HFA. It also has certain strengths which enable the implementation of DRR programmes in the country. In the subsections below, I will discuss the findings in line with the four tenets of the first priority of the HFA outlined in the methodology section: (1) the existence of DRR institutional mechanisms (national platforms) with designated responsibilities, (2) decentralisation of responsibilities and resources, (3) availability of dedicated and adequate resources to implement DRR and (4) community participation in DRR.

### 7.1 Existence of DRR institutional mechanisms with designated responsibilities

The Act has established a national, multi-sectoral platform, the CPO where the NCPCC is embedded. This platform is a nationally owned and led mechanism which facilitates the integration of DRR into development policies, priorities and plans. It engages stakeholders in a dialogue about DRR, and this helps in building a national consensus on the need and priorities for disaster reduction (UN/ISDR 2008). This dialogue can also enhance awareness of hazard risk reduction measures, empower vulnerable populations, and can also promote action by local governments, private entities, women and community groups and NGOs, through information sharing (UN/ISDR 2008).

The CPO and NCPCC platform is made up of line ministries including the armed forces, police and fire brigade, UN agencies, statutory bodies, the academia, private sector and NGOs whose regular activities are related to DRR and community development (Ministry of Local Government 2009). The role of this platform is very clear: to provide advice and coordination of national DRR efforts as well as making recommendations to the DCP on risk reduction. The platform also provides meteorological and hydrological updates and forecasts, updates on crop and livestock situations, disease outbreaks and related preparedness measures, and updates on road traffic accidents, among others. All the interviewees agreed that this platform was functioning very well at national level. However, half of them expressed ignorance of the existence of such a platform at provincial and local level in all the ten provinces of the country. This is despite the fact the NCPCC is said to be replicated at the provincial and district level (Ministry of Local Government 2009). This, therefore, means that the Zimbabwean government is likely to face challenges in building community resilience to disasters at grassroots level. The composition of the CPO makes it

difficult for communities at risk to proactively participate in DRR. It is heavily militarised with members of the defence forces, thus leading to a commanding style of operations during disaster events. Such a style tends to sideline community participation which is very crucial in building their resilience to disasters (Jones et al. 2014).

As a national policy framework for DRR in Zimbabwe, the Act sets out the operationalisation of the civil protection issues. However, it defines a disaster as any natural hazard, major accident, destruction, pollution, scarcity of essential supplies, and disruption of essential services, influx of refugees, plague or epidemic of disease which threatens the life or well-being of the people (Government of Zimbabwe 1989). This definition shows a hazard paradigm in which hazards were regarded as disasters *per se* (Manyena 2012). It does not include aspects of human vulnerability and resilience to hazards. However, since the promulgation of the Act in 1989, with two minor amendments in 1999 and 2001, the global context for DRR has drastically advanced from the hazard paradigm, through the vulnerability to the resilience paradigm (Manyena 2012). First, the vulnerability paradigm conceptualises a disaster as an intersection of two opposing forces: those generating vulnerability on the one side and the physical exposure to the hazard on the other. Therefore, disaster risk is a function of a complex intersection of hazard and vulnerability (Rafiq and Blaschke 2012). Second, the resilience paradigm, despite being a hotly contested concept (Skerratt 2013; Wilson 2013), emphasises the capacity of a system, community or society potentially exposed to hazards to adapt by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. Hence, the vulnerability and resilience paradigms attempt to address the importance of community participation. They direct communities affected by disasters to take control of DRR processes and outcomes. Therefore, legislations that encapsulate community involvement would enable local communities to challenge policies and ideologies, governance, power relations and human right abuses that are responsible for generating vulnerability (Manyena et al. 2013). Despite these advances, Zimbabwe's disaster legislative framework remains skewed towards the hazard paradigm. Understandably, the country's attention has been on the socio-economic collapse which characterised the period from 2000 to 2010 (Mushongah and Scoones 2012). Consequently, due to non-prioritisation, the disaster legislative framework has not been revised to consider vulnerability reduction, i.e. reducing the susceptibility of the community to disasters (Plummer et al. 2013), neither has the framework been revised to consider community resilience, which is the ability of the community to resist, absorb, accommodate and recover from the effects of a disaster (Skerratt 2013). Therefore, Zimbabwe lacks a strong institutional basis for DRR, particularly at provincial and district levels. This suggests that the responsibilities for DRR are accorded more weight at the national than subnational levels.

## 7.2 Community participation in DRR

The current Act covers mainly emergency and disaster response, and recovery programmes. Community participation in DRR programmes is limited, if not excluded, in this disaster legislation. In addition, there are no guidelines for stakeholder involvement at grassroots level, especially the multi-sectoral interventions. Although local authorities are important DRR players in their jurisdictional areas (Bang 2014), this Act is silent about their role in performing this function. Furthermore, the Act does not give room for the involvement of traditional leaderships in the prevention and mitigation of disasters. Yet these institutions are important players in these respects (Manyena 2014; Marashe 2014).

### 7.3 Availability of dedicated and adequate resources to implement DRR

The absence of reserved funds at provincial and district level is a huge setback to all efforts meant to reduce disaster risks in the country. At grassroots level, local authorities are expected to react to disasters first before they call for external assistance (Alexander 2010). However, these institutions are incapacitated financially. As such, they tend to wait for central government and NGO assistance in times of disasters. This reinforces the reactive mode to emergencies instead of building resilience of communities to disasters. This makes the integration of early warning into emergency management planning very limited. Even the national civil protection fund which is handled by the DCP is inadequate for the civil protection operations in the country. Furthermore, the absence of guidelines with regard to amount of funds that are reserved from the annual budget at the national level further compounds the shortage of funds. On the other hand, while the creation of this fund is necessary, it remains controlled by the responsible minister (Government of Zimbabwe 1989). As a result, the promotion of research and training into matters related to vulnerability and capacity assessments, early warning systems and preparedness are marginalised if not totally left out at local level.

### 7.4 Decentralisation of responsibilities and resources

The Act has centralised power and responsibility on the DCP. Yet devolution of power, competences, responsibilities and resources which include human and financial resources, from central government to local authorities, is critical for a country to enhance community resilience to disasters (van Niekerk 2014; Bang 2014). This will allow communities at risk to benefit from the decisions which are taken at local levels. Actually, decentralisation of authority is a precondition towards building disaster resilient communities (Manyena 2006). Practically, all disasters are ‘local affairs’ because the local area is always the theatre of response operations (Alexander 2010). There are many advantages of decentralising authority, responsibilities and resources for DRR to local authorities: it is relatively cost-effective for local authorities to incorporate local information of time and place into public policies; local authorities engage the citizens with DRR activities and link their concerns with government priorities; local authorities become downwardly accountable to resource users; local authorities strengthen their own institutional capacities and implement practical DRR actions by themselves; and the dynamic pressures generating vulnerability to disasters are better addressed by local authorities when they provide public infrastructure, service and economic development to the areas at risk (Andersson 2006; Bang 2013).

Although Zimbabwe has been championing decentralisation since the 1980s (Manyena 2006), DRR has remained a preserve of the technocrats, without the involvement of local communities. The Act has established four technical committees at national level within the CPO. These are the Food Supplies and Food Security subcommittee, the Health, Nutrition and Welfare subcommittee, the Search, Rescue and Security subcommittee and the International Cooperation Assistance subcommittee. The four committees are replicated at the provincial and district level. The creation of these subcommittees has led to duplication of work at three tiers: national, provincial and district. These committees may create bureaucratic delays when dealing with emergencies and may lead to inefficiencies and ‘milking’ of resources in the civil protection organisation. Therefore, it is not cost-effective to have all these committees because they are paid salaries and/or allowances for the work they do. Furthermore, there are marked variations in the representations of these committees at the three tiers as some institutions making the four subcommittees remain centralised and, even among those that are

decentralised, the low grades of staff working at provincial and district levels affect the manner in which they are represented (Ministry of Local Government 2009), yet communities at risk are not being involved in the management of the potential hazards they face.

There are no meaningful decentralised DRR responsibilities and resources in Zimbabwe. On the one hand, the MLGPWNH controls the legislative and policy framework within which local authorities operate. Functionally, it is supposed to provide an enabling environment for local authorities, but in practice, the ministry has been playing a controlling and directive role in local government (Zimbabwe Institute 2005). On the other hand, the centralisation of power is also evident in the process and procedures for declaring a state of disaster. The Act is explicit that the Head of State is the only one who declares a state of disaster in the country after receiving recommendations of such from the responsible minister. This leads to delays in the response to disasters while people are suffering. Conversely, in South Africa, the declaration of a state of disaster is made by the provincial premier, or at district level (van Niekerk 2014). This has resulted in quick responses to emergencies. Another limitation linked to the centralisation of power is that the arrangement disempowers local authorities and leads to avoidance of responsibilities.

In view of the above limitations of the Act, it could be argued that the Civil Protection Act (Chapter 10:06) fails to provide an effective DRR law for Zimbabwe. It falls short of building national and community resilience to disasters as provided for by the key tenets of the HFA Priority 1. The Act focuses on reactive, instead of proactive, measures (Ahmed 2013). The inadequacy of the Act has been glaringly evidenced by failure to plan and devise a framework for flood prediction, ability to forecast floods with a reasonable degree of certitude in flood-prone areas, use of modern tools of early warning flood possibilities that could minimise losses of livestock and property and prevent damage to infrastructure (Mavhura et al. 2013, 2014).

## 8 Recommendations

Based on the preceding critical analysis of the Civil Protection Act (Chapter 10:06) of Zimbabwe, five recommendations regarding the Act can be made:

- There is need to de-militarise the CPO and the NCPCC and allow for pro-active community participation in DRR issues.
- The Act should allow local communities to challenge DRR policies, governance and ideologies that are responsible for generation of vulnerabilities to disasters.
- Local authorities and traditional leaderships should be institutionalised in the Act so that they play a pro-active role in DRR.
- The Act should incorporate specific guidelines of the amount of funds that are reserved from the annual budgets of both the country and local authorities.
- There is need for devolution of power, competences, responsibilities and resources from central government to local authorities.

## 9 Conclusion

Like many other countries, Zimbabwe has enacted disaster legislations which are meant to protect its citizens from disasters. However, the current legislation, the Civil Protection Act (Chapter 10:06), falls short of building national and community resilience to disasters as

provided for by the key tenets of the HFA Priority 1. Some of the key weaknesses of the Act include: inactive community participation in DRR, unavailability of dedicated and adequate resources to implement DRR programmes, centralisation of power and resources, and the focus on ‘natural’ hazards rather than on vulnerability and resilience. As such, there is need for its revision to align it with international best practices in disaster legislations.

## References

- Adger WN (2006) Vulnerability. *Glob Environ Change*, 16(3), pp. 268–281. <http://linkinghub.elsevier.com/retrieve/pii/S0959378006000422>. Accessed 7 Nov 2013
- Ahmed Z (2013) Disaster risks and disaster management policies and practices in Pakistan: a critical analysis of Disaster Management Act 2010 of Pakistan. *Int J Disaster Risk Reduct*, 4, pp. 15–20. <http://linkinghub.elsevier.com/retrieve/pii/S2212420913000186>. Accessed 7 Jan 2014
- Alexander D (2010) The L’ Aquila earthquake of 6 April 2009 and Italian government policy on disaster response. *J Nat Resour Policy Res* 2(4):325–342
- Andersson K (2006) Understanding decentralized forest governance: an application of the institutional analysis and development framework. *Sustain Sci Pract Policy* 2(1):25–35
- Armaş I, Gavriş A (2013) Social vulnerability assessment using spatial multi-criteria analysis (SEVI model) and the Social Vulnerability Index (SoVI model)—a case study for Bucharest, Romania. *Nat Hazards Earth Syst Sci*, 13(6), pp. 1481–1499. <http://www.nat-hazards-earth-syst-sci.net/13/1481/2013/>. Accessed 12 Nov 2013
- Bang HN (2013) Governance of disaster risk reduction in Cameroon: the need to empower local government. *Jambá: J Disaster Risk Stud*, 5(2), pp. 1–10. <http://jamba.org.za/index.php/jamba/article/view/77>. Accessed 1 Dec 2013
- Bang HN (2014) General overview of the disaster management framework in Cameroon. *Disasters* 38(3):562–586
- Bird K, Shepherd A (2003) Livelihoods and chronic poverty in semi-arid Zimbabwe. *World Dev*, 31(3), pp. 591–610. <http://linkinghub.elsevier.com/retrieve/pii/S0305750X02002206>. Accessed 1 Dec 2013
- Birkmann J, Teichman K (2010) Integrating disaster risk reduction and climate change adaptation: key challenges—scales, knowledge, and norms. *Sustain Sci*, 5(2), pp. 171–184. <http://link.springer.com/10.1007/s11625-010-0108-y>. Accessed 1 Dec 2013
- Coetzee C, van Niekerk D (2012) Tracking the evolution of the disaster management cycle: a general system theory approach. *Jambá: J Disaster Risk Stud*, 4(1), pp. 1–9. <http://jamba.org.za/index.php/jamba/article/view/54>. Accessed 1 Dec 2013
- Cutter SL, Barnes BM, Burton C, Evans E, Tate E, Webb J (2008) A place-based model for understanding community resilience to natural disasters. *Glob Environ Change*, 18(4):598–606. <http://linkinghub.elsevier.com/retrieve/pii/S0959378008000666>. Accessed 7 Nov 2013
- Department of Civil Protection (2012) Zimbabwe national contingency plan: 2012–2013, Harare
- Government of Zimbabwe (1989) Civil Protection Act Chapter 10:06. Government of Zimbabwe, Zimbabwe
- Government of Zimbabwe (2013) Ministry of Health and Child Care weekly report on epidemic-prone diseases, deaths and public health event: week No. 1 of 2013, Harare
- Gumbo D. (2006) Working together to respond to climate change: Zimbabwe country case study on domestic policy frameworks for adaptation in the water sector, Harare
- IFRCRCS (2013) DREF final report Zimbabwe: Floods, Harare
- International Strategy for Disaster Risk Reduction (ISDR) (2005) Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters. Kobe, Hyogo
- Islam SMT, Chik Z (2011) Disaster in Bangladesh and management with advanced information system. *Disaster Prev Manag*, 20(5), pp. 521–530. <http://www.emeraldinsight.com/10.1108/09653561111178952>. Accessed 1 Dec 2013
- Jones L, Jaspars S, Pavanello S, Ludi E, Slater R, Arnall A, Grist N, Mtisi S (2010) Responding to a changing climate: exploring how disaster risk reduction, social protection and livelihoods approaches promote features of adaptive capacity responding to a changing climate, London
- Jones S, Owen KJ, Manyena B, Aryal K (2014) Governance struggles and policy processes in disaster risk reduction: a case study from Nepal. *Geoforum*, 57, pp. 78–90. <http://dx.doi.org/10.1016/j.geoforum.2014.07.011>

- Kolen B, Helsloot I (2014) Decision-making and evacuation planning for flood risk management in the Netherlands. *Disaster* 38(3):610–635
- Kusenbach M, Simms AEJL, Tobin AEGA (2010) Disaster vulnerability and evacuation readiness: coastal mobile home residents in Florida. *Nat Hazards* 52:79–95
- Mabaso E, Manyena B (2015) Contingency planning in southern Africa: events rather than processes? *Jamba: J Disaster Risk Stud*, 5(1):1–8
- Maditinos Z, Vassiliadis C (2011) Mega fires: can they be managed effectively? *Disaster Prev Manag*, 20(1), pp. 41–52. <http://www.emeraldinsight.com/10.1108/09653561111111072>. Accessed 1 Dec 2013
- Manyena SB (2006) Rural local authorities and disaster resilience in Zimbabwe. *Disaster Prev Manag*, 15(5), pp. 810–820. <http://www.emeraldinsight.com/10.1108/09653560610712757>. Accessed 1 Dec 2013
- Manyena SB (2012) Disaster and development paradigms: too close for comfort? *Dev Policy Rev* 30(3):327–345
- Manyena B (2014) Disaster resilience: a question of “multiple faces” and “multiple spaces”? *Int J Disaster Risk Reduct*, pp. 1–9
- Manyena SB, Mavhura E, Muzenda C, Mabaso E (2013) Disaster risk reduction legislations: Is there a move from events to processes? *Glob Environ Change*, 23(6):1786–1794. <http://linkinghub.elsevier.com/retrieve/pii/S0959378013001337>. Accessed 13 Dec 2013
- Marashe J (2014) The African traditional religious landscape: an examination of the role of traditional leaders in the fight against HIV and AIDS in Chipinge, Zimbabwe. *Verbum Eccles* 35(1):1–8
- Mavhura E, Manyena SB, Collins AE, Manatsa D (2013) Indigenous knowledge, coping strategies and resilience to floods in Muzarabani, Zimbabwe. *Int J Disaster Risk Reduct* 5:38–48
- Mavhura E, Collins AE, Bongo PP (2014) Vulnerability to river flooding and relocation readiness: the case of floodplain residents in Zimbabwe. ANDROID doctoral school in disaster resilience: 4th international conference on building community resilience. Media City, Manchester, ANDROID Disaster Resilience Network, pp. 161–171
- Mavhura E, Manatsa D, Mushore T (2015) Adaptation to drought in arid and semi-arid environments: case of the Zambezi valley, Zimbabwe. *Jamba: J Disaster Risk Stud*, 7, pp. 1–7
- Ministry of Local Government Z (2009) Disaster management: a resource book for educational institutions in Zimbabwe. In: Megan A (ed) Harare: Civil Protection Organisation of Zimbabwe
- Moe TL (2010) Cleanup after Katrina: an analysis on policy, process, priorities, problems, and politics. *Disaster Prev Manag* 19(3): 314–332. <http://www.emeraldinsight.com/10.1108/09653561011052493>. Accessed 1 Dec 2013
- Mushongah J, Scoones I (2012) Livelihood change in rural Zimbabwe over 20 years livelihood change in rural Zimbabwe over. *J Dev Stud* 48(9):1241–1257
- Mutasa M (2010) Zimbabwe’s drought conundrum: vulnerability and coping in Buhera and Chikomba districts. Norwegian University of Life Sciences
- Nyakudya IW, Stroosnijder L (2011) Water management options based on rainfall analysis for rainfed maize (*Zea mays* L.) production in Rushinga district, Zimbabwe. *Agric Water Manag* 98(10): 1649–1659. <http://linkinghub.elsevier.com/retrieve/pii/S0378377411001338>. Accessed 10 Jan 2014
- OCHA (2011) Inter-agency national contingency plan Zimbabwe, UN/OCHA Zimbabwe, Harare
- Plummer R, de Grobois D, Armitage D, de Loe RC (2013) An integrative assessment of water vulnerability in first nation communities in Southern Ontario, Canada. *Glob Environ Change* 23(4): 749–763. <http://linkinghub.elsevier.com/retrieve/pii/S0959378013000526>
- Rafiq L, Blaschke T (2012) Disaster risk and vulnerability in Pakistan at a district level. *Geomat Nat Hazards Risk* 3:324–341
- Said AM, Ahmadun F, Mahmud AR Abas F (2011) Community preparedness for tsunami disaster: a case study. *Disaster Prev Manag* 20(3): 266–280. <http://www.emeraldinsight.com/10.1108/09653561111141718>. Accessed 16 Nov 2013
- Shi P, Ge Y, Yuan Y, Guo W (2005) Integrated risk management of flood disasters in metropolitan areas of China. *Int J Water Resour Dev* 21(4): 613–627. <http://www.tandfonline.com/doi/abs/10.1080/07900620500258455>. Accessed 1 Dec 2013
- Shimi AC, Parvin GA, Biswas C, Shaw R (2010) Impact and adaptation to flood: a focus on water supply, sanitation and health problems of rural community in Bangladesh. *Disaster Prev Manag* 19(3): 298–313. <http://www.emeraldinsight.com/10.1108/09653561011052484>. Accessed 18 Nov 2013
- Shumba O (2005) Capacity needs assessment for disaster risk management in SADC region: Republic of Zimbabwe, Harare
- Skerratt S (2013) Enhancing the analysis of rural community resilience: evidence from community land ownership. *J Rural Stud* 31(0): 36–46. <http://www.sciencedirect.com/science/article/pii/S0743016713000120>



- Solangaarachchi D, Griffin AL, Doherty MD (2012) Social vulnerability in the context of bushfire risk at the urban-bush interface in Sydney: a case study of the Blue Mountains and Ku-ring-gai local council areas. *Nat Hazards* 64(2): 1873–1898. <http://link.springer.com/10.1007/s11069-012-0334-y>. Accessed 28 Nov 2013
- Stringer LC, Dyer JC, Reed MS, Dougill AJ, Twyman C, Mkwambisi D (2009) Adaptations to climate change, drought and desertification: local insights to enhance policy in southern Africa. *Environ Sci Policy* 12(7): 748–765. <http://linkinghub.elsevier.com/retrieve/pii/S1462901109000604>. Accessed 6 Nov 2013
- Turner BL, Kasperson RE, Matson PA, McCarthy JJ, Corell RW, Lindsey C, Noelle E, Kasperson JX, Luers A, Polsky C, Pulsipher A, Schiller A (2003) A framework for vulnerability analysis in sustainability science. *Proc Natl Acad Sci USA* 100(14): 8074–8079. <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=166184&tool=pmcentrez&rendertype=abstract>
- UN/ISDR (2008) Indicators of progress: guidance on measuring the reduction of disaster risks and the implementation of the Hyogo framework for action, Geneva
- UNISDR (2009a) Reducing disaster risks through science: issues and actions, the full report of the ISDR scientific and technical committee 2009, Geneva
- UNISDR (2009b) UNISDR terminology on disaster risk reduction, Geneva
- van Niekerk D (2014) A critical analysis of the South African disaster management act and policy framework. *Disasters* 38(4):858–877
- WHO (2009) Cholera in Zimbabwe: epidemiological bulleting No. 27, Week 24 (7–13 June, 2009), Harare
- Wiggill MN (2013) Communication management during the veld fires of 23 August 2011 in the Tlokwe local municipality: a cautionary tale. *Jamba: J Disaster Risk Stud* 5(2): 1–9. <http://www.jamba.org.za/index.php/jamba/article/view/85>. Accessed 1 Dec 2013
- Wilson GA (2013) Community resilience, policy corridors and the policy challenge. *Land Use Policy* 31(0): 298–310. <http://www.sciencedirect.com/science/article/pii/S0264837712001354>
- Wisner B, Blakie P, Cannon T, Davis I (2004) At risk: natural hazards, people's vulnerability and disasters, 2nd edn. Routledge, London
- Zimbabwe Institute (2005) Local government: policy review. Cape Town
- ZimStat (2012) Zimbabwe population census report, 2012, Harare
- ZTSC (2013) Road traffic accidents. Zimbabwe Traffic Safety Council, Harare