



Taking Children's Voices in Disaster Risk Reduction a Step Forward

Chipo Mudavanhu¹ · Siambalala Benard Manyena² · Andrew E. Collins³ ·
Paradzayi Bongo¹ · Emmanuel Mavhura¹ · Desmond Manatsa¹

Published online: 5 September 2015

© The Author(s) 2015. This article is published with open access at Springerlink.com

Abstract Disaster risk reduction (DRR) continues to gain momentum globally and locally, but there is a notable void in the DRR literature on the role of children in community-level disaster risk management in Zimbabwe. Children are among the most vulnerable groups when disasters occur, yet their voices in disaster risk reduction are rarely heard. Using a qualitative methodology, this article examines the extent to which children are involved in disaster risk reduction in Muzarabani District, Zimbabwe. Despite evidence of the potential positive impact that children can have on DRR, their involvement in risk reduction planning in Zimbabwe is negligible. To achieve greater resilience to disasters requires that children's voices are heard and recognized as central to improved disaster risk reduction.

Keywords Children's vulnerability · Disaster risk reduction · Flood hazard · Zimbabwe

1 Introduction

Disasters threaten the lives, rights, and needs of millions of children around the world. Children's rights become difficult to safeguard when communities and governments do

not fully appreciate the threats that disasters represent to their children's future (Seballos et al. 2010). In developing countries, children represent the largest segment of the population and are often the first victims of natural disasters (Martin 2010). About 66 million children are affected by disasters every year in the world (Nikku 2012), and in 2011 alone about 100 million children were affected by disasters (Bild and Ibrahim 2013). Climate change impacts are also projected to increase the number of children affected by disasters (Seballos et al. 2010). Thus, children form the largest segment of populations affected by disasters (Fothergill 1996; Gordon et al. 1999; Anderson 2000; Ariyabandu 2000; Enarson 2000; De Waal et al. 2003; Jabry 2005; Koger 2006; UNICEF 2006). During disasters children are often faced with devastating impacts such as lack of food, shelter, social support, and health care (Babugura 2008), which lead to increased vulnerability (UNICEF 2006).

Children's specific vulnerabilities have been highlighted by recent catastrophic events. For example, an earthquake in Pakistan occurred in October 2005, where over 16,000 children died in schools that collapsed (ADPC 2007). Three million children were affected by the 2001 Gujarat earthquake in India (UNCRD 2009). In February 2006 a landslide occurred in the Philippines on the Leyte Island, where more than 200 school children were buried alive (ADPC 2007; Peek 2008). In 2008, floods in Nepal affected 67 schools and 23,000 students (Dennison and Keim 2009).

Although children are often the most affected population group, globally their voices, experiences, perceptions about disasters, and role in the disaster risk reduction (DRR) process are relatively absent in the hazard/risk literature (MacDonald et al. 2012); yet children can, and in many instances do, contribute significantly in reducing disaster impacts. Their voices have not been given equivalent

✉ Chipo Mudavanhu
chipomuzenda@gmail.com

¹ Department of Geography, Faculty of Science, Bindura University of Science Education (BUSE), Bindura 1020, Zimbabwe

² Humanitarian and Conflict Response Institute, University of Manchester, Manchester M13 9PL, UK

³ Disaster and Development Centre, School of Applied Sciences, Northumbria University, Newcastle upon Tyne NE1 8ST, UK

weight and influence compared to the voices of adults. Children are rarely given the opportunity to express their concerns and experiences with disasters (Babugura 2008). Therefore, the purpose of this study is to explore children's vulnerabilities and their role in DRR so as to give them a voice. The article begins by exploring some of the literature and debates around children and disasters in relation to the effects of disasters on children and involvement of children in DRR. We then present a study area in Zimbabwe to illustrate the disaster context under which children live. After outlining our research methodology, we present our research results. Finally, we conclude by reflecting on the extent to which the study answered the research question and reflects more general conditions.

2 Children and Disasters

Both flood and drought disasters affect large parts of southern Africa (Zavis 2004; UNOCHA 2007; UN 2007). Although droughts are common in the region, the current decade has seen floods of unprecedented magnitude in Zimbabwe, which have resulted in devastating socio-economic impacts. Floods have claimed numerous lives and have caused significant property damage. For example, in 2000 cyclone-induced floods claimed 700 lives, left more than 500,000 people homeless, and caused USD 1 billion in infrastructural damage in Zimbabwe and Mozambique (Wamukonya and Rukato 2001). In such cases, because of their unique physiological, psychological, and developmental attributes, children tend to suffer disproportionately when disasters harm the physical spaces where they live, learn, and play (Peek 2008).

The United Nations International Strategy for Disaster Reduction (UNISDR 2004) defines vulnerability as a set of conditions and processes resulting from physical, social, environmental, and economic factors that increase the susceptibility of children towards the impacts of hazards. Simply stated, vulnerability means the potential for loss. Thus children have the capacity to be wounded (Turner II et al. 2003; Füssel 2007) because of their age and developmental attributes. Children's vulnerabilities (Table 1) can therefore be classified into psychological, physical, and educational (Peek 2008).

Whilst children can be physically vulnerable to flood disasters their vulnerability includes psychological factors that can be influenced by loss of family members, material loss, exposure to disaster, low levels of social support, and displacement. Involvement or threat of disasters can interfere with their daily living, particularly through children's reaction that can cause significant distress (La Greca et al. 2002). Children are more likely to be killed or injured than adults, and are generally more susceptible to health

disorders, diseases, and malnutrition (Lawler and Patel 2012) because of poor diet, age, and unsafe environments. Floods may force children to miss or drop out of school as a result of destruction of schools or to help families recover from events (Babugura 2008; Baez et al. 2010; Lawler and Patel 2012). Girls are said to account for the majority of children taken out of school (Babugura 2008) suggesting the impact of disasters differs across genders of children.

Knowledge of children's vulnerability helps in trying to build theories and models that explain human experiences in disasters (Anderson 2005) because, without a sustained focus on children, their special needs may be neglected (Peek 2008). Research that addresses the vulnerabilities of children during disasters in Zimbabwe is also very limited. Literature is limited to children's vulnerabilities in terms of food security and malnutrition (Schipper 2006; Skinner 2006; UNICEF 2007a, 2007b; Wolff 2007), ignoring other needs, such as protection from abuse and harm, education, and the right to participate in matters that affect their lives, health, and well-being (Jabry 2005; Babugura 2008).

3 Children and Disaster Risk Reduction

Children can contribute to personal and community resilience (Southasiadisaster.net 2014). Despite the risks, children frequently demonstrate resilience in the face of extreme adversity (Jones 2008; Lopez et al. 2012). Their vulnerability can be reduced and resilience enhanced when they have access to resources and information, are encouraged to participate in disaster preparedness and response activities, and can access personal and communal support (Peek 2008). Children have the capacity to communicate effectively to the wider community and their involvement in DRR would ensure their safety (Plan International 2010). Given the chance to participate in DRR, they can contribute greatly before, during, and after disaster events (Table 2).

Reviews of children's participation in DRR have shown that they yield positive outcomes (Lopez et al. 2012). Back et al. (2009) carried out a study in Mozambique and found that children have developed a greater knowledge of risks and how to minimize it through their participation in DRR activities. A similar study by Nikku et al. (2006) showed that through incorporation of children's participation in disaster preparedness, rescue, rehabilitation, and relief phases, a community's ownership and sustainability of DRR programs can be enhanced. In the Philippines children worked together with adults to restore degraded mangrove ecosystems, resulting in livelihood gains, protection of spawning grounds for fisheries, biodiversity gains, disaster protection from typhoon winds and storm surges, adaptation to climate change impacts, and the

Table 1 Children's vulnerabilities

	Type of vulnerability	Factors influencing vulnerability
Psychological vulnerability	Depression	Loss of family members Material loss Exposure to disaster Low level of social support Displacement
Physical vulnerability	Injury Illness and disease Malnutrition	Living in poor communities in hazard prone area Living in/going to school in substandard structures Being young (age) Poor diet Unsafe environment
Educational vulnerability	Missed school Poor academic performance Delayed progress Failure to complete education	Destruction of school buildings Loss of vital records Increased work demand

Source Adapted from Peek (2008)

Table 2 The contribution of children in the disaster management cycle

Preparedness	Response	Recovery
Disaster drills	Warning others	Effective coping strategies such as writing and drawing
Risk mapping	Risk communication	Peer counselling
Evacuation planning	Translation of disaster materials	Aid collection/distribution
Home hazards adjustments	Evacuation assistance	Planning and rebuilding efforts
Search and rescue training	Physical protection	Caring for other children
Formal and informal hazard education		Participating in paid labor
Risk communication	Search and rescue	Assisting with household chores

Source Peek (2008)

removal of atmospheric greenhouse gases that cause climate change (Tanner et al. 2009). In another report, children used their risk mapping and vulnerability assessments to persuade school officials and community planners to relocate their school, previously situated in a high-risk landslide zone, to a safer area (UNICEF 2011). Save the Children (2002) also reported that children have been involved in community-based management of water resources in the Zambezi Valley of Zimbabwe. The research by Save the Children indicated that when children are recognized as active participants in DRR activities they can strengthen community resilience. But in spite of children taking on adult responsibilities and becoming involved in some DRR activities, they are rarely consulted in the design of disaster management policies and programs (Manyena et al. 2008; Nikku 2012).

Children's participation is also in line with the international commitments towards child rights such as the United Nations Convention on the Rights of the Child (UNCRC)

(UN 1989) and the Declaration of the Rights of the Child (DRC) (UNHCHR 1959). The right of children to participate in DRR is embedded in the UNCRC of 1989. The UNCRC focuses on protection, provision, and participation. Protection and provision are addressed by legislation, but participation as stated in Article 12 of the UNCRC is often forgotten (Sarkar and Mendoza 2005). A participatory role is less supported (Archard 1993) than the engagement of older demographic cohorts because the role of children is understood differently among countries (Lister 2007). Active involvement with children is least developed and most questioned because of its ability to undermine adult authority (Lundy 2007). Article 12 (UN 1989, p. 4) states that "State parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child." Article 12 thus allows considerable scope for interpretation of when

children, individually and collectively, possess sufficiently mature capabilities to interact productively with adults.

Mitchell et al. (2008) state that current research views children as passive victims with no role to play in communicating risks, participating in decision-making processes, or preventing disasters. There seems to be no model that singles out the potential role of children as resources in DRR (Twigg 2004; Ronan and Johnston 2005). Participation rights in DRR can be viewed as aspirational and not yet fully realized (Alderson 2008). Of even more concern is the lack of empirical evidence to support involvement of children in Zimbabwe. Thus, children's capacities to communicate risks and take direct action to reduce risks have been neglected (Haynes and Tanner 2013).

4 Framework for Understanding Children's Participation in DRR

Recognition of a strong argument for the need to involve children in DRR has gained momentum following the adoption of the UNCRC (UN 1989) in which governments agreed to ensure that all stakeholders understand their duties in relation to upholding children's rights (Welty and Lundy 2013). There is a lack of children involvement, and evidence to support it, in spite of the presence of these guidelines. Many countries view children's participation rights as aspirational and not yet fully realized (Alderson 2008) and are struggling to integrate the idea in practice, creating a gap between the rhetoric and the reality. In trying to close the gap, Lundy (2007) developed a Voice Model as a new way to conceptualize Article 12 of UNCRC. According to Lundy (2007, p. 933) the Voice Model focuses on (1) Space: given the opportunity to express a view; (2) Voice: facilitated to express their views; (3) Audience: listened to; and (4) Influence: point of view acted upon.

For children to express their views freely, the model suggests the need to create an opportunity for children to be involved (space) and ensure that they are helped to express their views (voice) (Welty and Lundy 2013). In this article, we consider specifically a child's right to express a view, which is the first step in conceptualizing Article 12. Figure 1 illustrates how we have adapted this model to analyze the ways in which children's voices can be heard in DRR. The model shows the relationship between (1) space and voice, and (2) audience and influence. The first stage is to ensure that children have a right to express their views and then have the views given due weight (Lundy 2007).

The use of this model in this article is appropriate for several reasons. The model clearly shows how children's voices can be facilitated in all issues that affect their lives. It also shows the link of Article 12 with other relevant

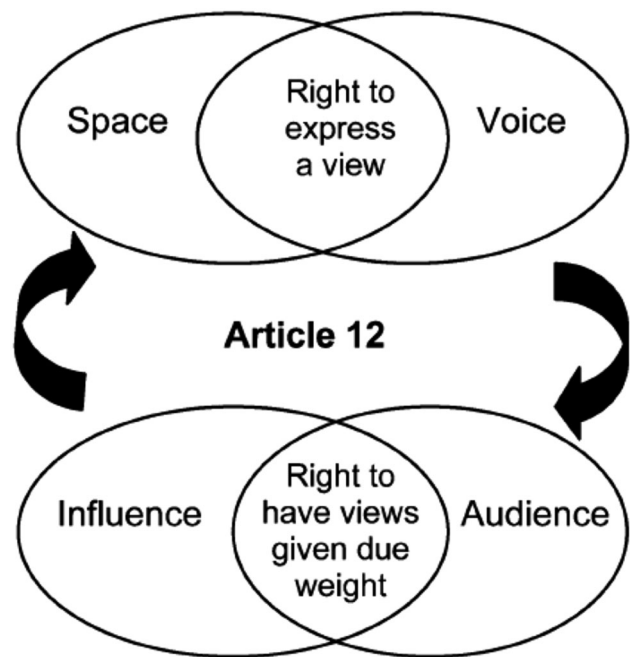


Fig. 1 The voice model. Source adapted from Lundy (2007, p. 932)

articles in the realization of a child's right to participate. These understandings are important in assessing whether or not children's voices are being heard and suggest ways of ensuring that children's views are considered in DRR. The model proposes ways in which children's views can be heard, which is the main focus of this study.

5 Overview of Disaster Risks in Zimbabwe

Zimbabwe is a disaster-prone country suffering particularly from the devastating effects of droughts, floods, veld fires, epidemics such as cholera and malaria, and the HIV/AIDS pandemic (Table 3). Muzarabani is one of the most vulnerable areas exposed to these hazards. The term "Muzarabani" is a local name that means floodplain or an area that is frequently flooded. The area suffers from disasters triggered by weather-related hazards such as droughts and floods and epidemics such as cholera and malaria. Although year-to-year droughts have been experienced especially in the last decade, the current decade has seen floods of unprecedented magnitudes. Perennial flooding is the leading cause of losses from natural hazards and is responsible for a greater number of damaging events in Muzarabani. Changes in environmental conditions (precipitation, changes in a river's course) have worsened the situation in the area.

Although Muzarabani receives infrequent heavy rainfall, it is also subject to seasonal droughts. Droughts are becoming more frequent and the dependence on natural

Table 3 Common disasters and their impacts in Muzarabani, Zimbabwe

Disaster	Impacts
Floods	Loss of human lives, loss of livestock, crop destruction, damage to school infrastructure, houses, and road networks, high school absenteeism, dropouts, participation in paid labor, loss of livelihoods
Drought	Hunger, loss of livestock, and malnutrition
Malaria	Loss of human life especially children
Cholera	Loss of human life
Veld fires	Loss of vegetation and pastures for livestock, increased soil erosion, destruction of communication lines such as telephone lines
HIV/AIDS	Increased number of orphans, loss of active population, loss of production time caring for the sick

**Fig. 2** The footbridge over Nzou-Mvunda River. Photograph by C. Mudavanhu, February 2013

resources and rain-fed agriculture makes the area highly vulnerable to the erratic rainfall. These climate extremes (floods and droughts) contribute to outbreak of cholera and malaria through increased breeding sites and high temperatures (malaria) and contamination of safe water (cholera). Cross-border trading due to food insecurity ensures the wider spread of disease and contaminated food between Zimbabwe and Mozambique.

Floods in Muzarabani are often associated with other hazards such as cholera, diarrhoea, food insecurity, and malaria. Malaria and diarrhoeal disease outbreaks affected over 1000 families during the 2007 flood event (ZRCs 2007, 2008a, 2008b). Susceptibility is increased through socioeconomic impoverishment caused by the environmental extremes. Cyclone-induced floods in 2000 claimed the lives of 700 people and left more than 500,000 people homeless and caused over USD 1 billion of infrastructural damage in Zimbabwe and Mozambique (Wamukonya and Rukato 2001). Shumba (2000) reported that the 2000 flood

event claimed more than 100 lives, left more than 300,000 homeless and more than 70,000 hectares of agricultural land and thousands of tons of stored food were destroyed. The Nzou-Mvunda and the two Hoya bridges (upstream and downstream) were washed away as a result of the 2007 flood event (UNOCHA 2007). To access schools, clinics, and other services, with the help of community leaders and World Vision Zimbabwe using local resources, the community constructed a footbridge (Fig. 2) to link the schools and the health center with the community, to help children cross to schools in case of a flood.

The extreme climatic conditions (floods and droughts) create a fragile economy characterized by hunger and famine. Most farming activities in Muzarabani are located along river banks and on adjoining floodplains. The community has preferred to take the risk of farming in the flood zone to improve food security, but this location makes farmers more vulnerable to flood disasters. The community view flood disasters as an advantage because they tend to attract donors. During every disaster period, nongovernmental organizations assist local farm communities with basic food items, clothing, and blankets. Development projects were also initiated so that communities can recover from flood impacts. This has also created such a donor syndrome in the community that some people do not want to be relocated because they expect to benefit from donor aid when the next flood occurs. Apart from attracting donors, floods bring fertile soils suitable for maize production. Households grow food crops on the floodplain during the dry season based on the residual soil moisture from flooding (locally known as *mudzedze*). *Mudzedze* land is said to provide yields that are two to three times greater than the yields from their large scale farms. But floodplain cultivation has the disadvantage of contributing to heavy siltation of rivers and dams downstream, and leads to increased flooding downstream.

Most households reside along river banks so that they can benefit from fertile soils after a flood event as well as for easy access to water sources. Generally people who are poor live in traditional circular huts made of pole and roofed with thatch, and few people live in modern homes. Literacy levels are low, with high rates of school dropout and absenteeism. Children must cross rivers to school where bridges were destroyed and never repaired after Cyclone Eline in 2000. Children provide significant household labor in the area and are viewed as economic assets. Some children are also employed outside their home as domestic help and shepherds by the time they become 14 years old. These extramural workers usually receive very low salaries for this work (USD 25 per month). Most girls receive only a primary level education, and this contributes to early marriages in the area and low literacy levels.

6 Methodology

This article provides insight into the role of children in DRR in Muzarabani in northeast Zimbabwe (Fig. 3). It explicitly explores the challenges faced by children in the event of a disaster. The intention of the study is to use a qualitative research approach to explore the implications of building community resilience through the incorporation of youth into the DRR process.

Semistructured interviews, focus group discussions, key informant interviews, and participant observations were used to assess the effects of disasters upon children as well as the involvement and contribution of children in DRR activities. School-based research was conducted in three primary schools and one secondary school in Chadereka Ward in Muzarabani. This approach was selected because it provides a good representative sample of children of various ages. The sample respondents comprised of 40 school children in Muzarabani in three age bands: 8–11; 12–15; and 16–18 years (Table 4). The 0–7 age group was left out because early primary school students were too young to answer some of the questions. Semistructured interviews were conducted with children from the four schools in the study area (Fig. 3).

Studies that involve children require ethical approval in order to protect their rights and privacy and minimize potential risks (Denzin and Lincoln 2005). As a result all ethical issues surrounding children respondents were observed. Before the start of the project the researchers explained the purpose of the study. The research aim and objectives were clearly explained to all the participants. Children were asked for their consent orally. Consent was also sought from the children's parents and guardians. Children were given the consent forms that they gave to their parents to sign. Signed consent forms were collected before the interviews. Since this was a school-based research, permission was also sought from the headmasters of all the schools involved, Councillor, and Chief. The District Education Officer was informed about the project. Children were told that there were no wrong or right answers but they were supposed to give their views and opinions about the topic. The research procedures were clearly communicated to children and their concerns were also listened to. All participants were advised of their rights to withdraw or refuse to participate in the research at any stage. Anonymity and confidentiality were assured to all participants within the limits of the law. To minimize adult influence all the interviews were carried out at the schools but away from the teachers. This was a school-based research therefore all semistructured interviews and focus group discussions took place at the two schools. The main aim of the study was for children to describe their

perceptions and experiences of disasters. They were also asked to rank the disasters that affect them. Questions on the effects of disasters and children's roles were asked during the interviews. Children were also asked to describe their role in the community and in DRR activities. Each individual interview took an average of 45 min.

A total of 10 key informant interviews were performed: 2 with school administrators (the headmasters of a primary and a secondary school); 2 with parents; 2 involved officers of nongovernmental organizations; and one each with a ward councillor, a chief, a nursing sister employed by the Ministry of Health, and a district administrator. The two parents who were interviewed were the chairpersons of the school development committee (SDC), one from the secondary school and the other from the primary school. These parents were chosen as key informants because they represent school children in the communities and parents at school. Key informant interviews were used to describe the ways in which children are involved in DRR activities from an informed point of view. Questions like: "Whenever you have DRR meetings do you include children representatives;" "Do you discuss disaster issues with children;" "Do you consider children's views in planning any DRR activities" were asked by the interviewer. The interviews also described the role of children in their local society. Interviews with key informants were held at places convenient to each interviewee, and each interview took about 45 min.

A focus group discussion (8–10 students) was accomplished in each of the four schools. School A had 9 participants (4 girls and 5 boys) with an average age of 12.7. One girl who participated in the interview did not turn up for the discussion. School B had 8 participants with average age of 12.5 and gender balance. Two of the children who participated in the interviews were absent from school during the focus group discussion. School C had 8 participants (4 boys and 4 girls) with average age of 13.1 and 2 interviewees refused to participate in the focus group discussions. School D was a secondary school and had 10 participants (5 boys and 5 girls) with average age of 16.8. The issue of separating the children by gender was not considered since all were mixed schools. The focus group discussions were held at each school where it was easy to gather children of different age groups and gender. Focus group discussions allowed the researcher to collect information from children drawn from different areas. It also allowed children to speak out without the influence of parents, since most of the issues addressed parental decisions on children's involvement in DRR. The local Shona language was used since the interviewees were very fluent in it.

Interviews explored the effects of disasters, the role of children, and the level at which local children are involved

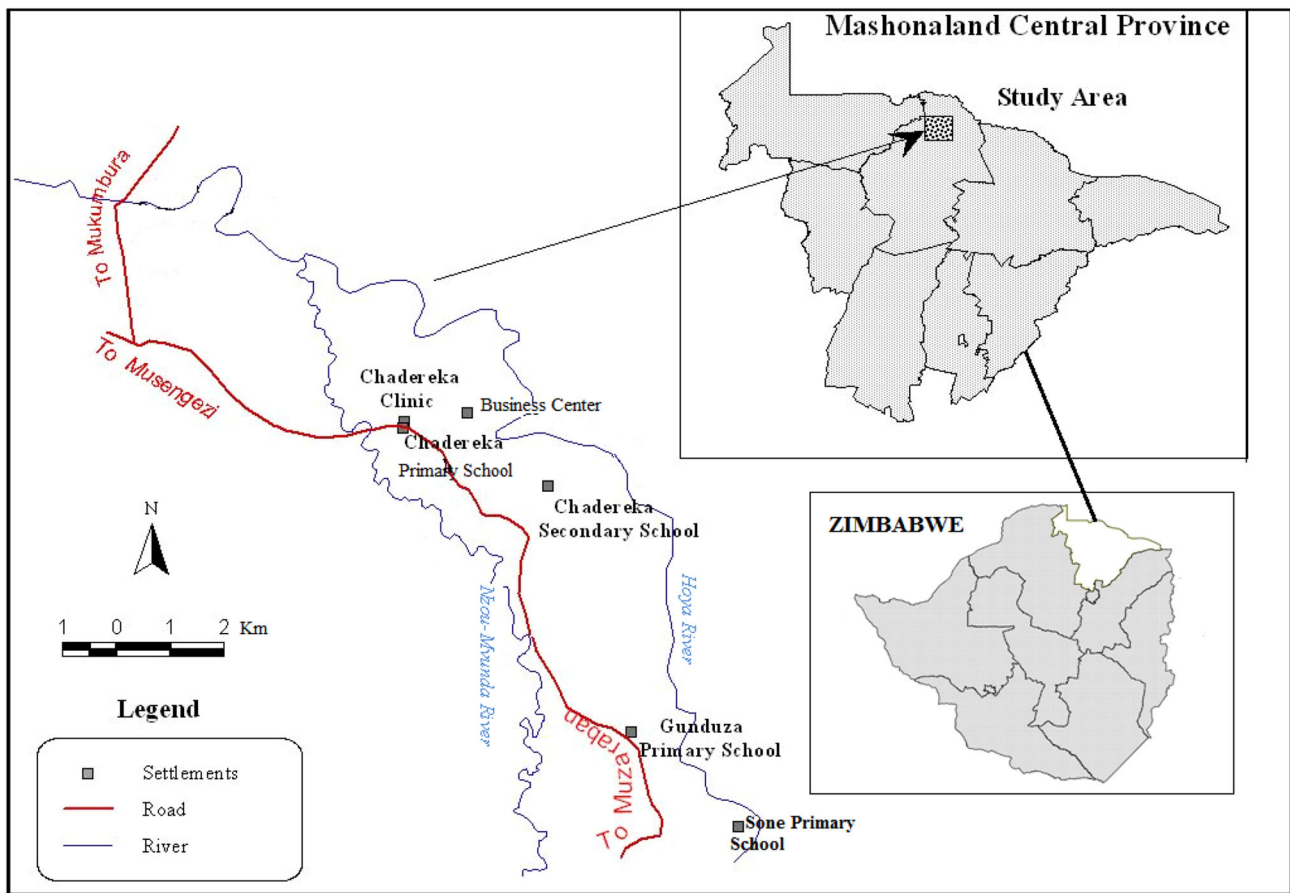


Fig. 3 Map of Chadereka Ward 1, Muzarabani. Source Chingombe et al. (2015)

Table 4 Sampling distribution

School	8–11 years	12–15 years	16–18 years	Total
A	7	3	0	10
B	5	5	0	10
C	6	4	0	10
D	0	3	7	10
Total	18	15	7	40

in risk reduction. Focus group interviews explored children’s perception of risk and the impact of disasters. Children discussed the questions, helping each other with the answers. At times they reminded each other about details. Children also managed to ask each other additional questions, which were recorded to provide supplemental data. Focus group discussions are good venues for children because they are more relaxed with friends and not isolated one-on-one with an adult researcher (Eder and Fingerson 2003; Einarsdóttir 2007). The interview questions were semistructured to resemble conversations rather than interviews per se. The discussions were carried out over a period of 1 h.

Permission was sought from the head teachers of all the four schools, the ward councillor, and class teachers. The district education officer was informed about the project. Consent was also sought from children and their parents, and the research was explained to the children. It was emphasized that there were no wrong or right answers, but rather it was stressed that children were expected to give their views and opinions about a topic. The research procedures were clearly communicated to children and their concerns were also respected.

Fieldwork was undertaken between 2011 and 2013 and assessed the impacts of disasters and involvement of children in DRR activities. The following questions were addressed by the study: (1) what are the effects of disasters on the lives of children? (2) what is the role of children in DRR activities? and (3) are children’s views taken into consideration in DRR planning?

Research team members took notes during the individual interviews with other two note takers specifically designated for the focus group discussions. All these notes were later transcribed, representing the participants’ own words and the interviewer’s descriptions and observations

of the situation in the study area. The quotations in this paper are therefore translations from Shona into English with minimal distortions because the lead author is a native Shona speaker.

7 Findings

The article identifies children's disaster experiences, their potential roles, and how they are involved in DRR. This section presents an overview of children's experiences and vulnerabilities together with a summary of the way they are involved in DRR activities in Muzarabani, Zimbabwe.

7.1 Children's Disaster Experience

Children are more vulnerable to natural hazards because they are more likely to be killed or injured during disasters than adults (Lawler and Patel 2012). About 75 % of children who participated in the study have seen their houses and school infrastructure collapse, have lost their livelihoods, and have suffered either from malaria, cholera, dysentery, or diarrhoea due to flooding. Children described their experiences during floods as a time when houses collapse, rivers overflow, bridges are swept away, roads become slippery and unusable, animals drown, there is an outbreak of disease, and food becomes scarce at the same time contaminated water is widespread. About 80 % of the children had tried to cross flooded rivers, missed school, and experienced separation from parents during flooding. The sight of collapsed houses and schools was disturbing for children and served as a reminder of past danger and something that is likely to happen repeatedly.

Floods expose children to multiple health risks. Malaria and cholera are a health menace in flood zones, and the menace becomes aggravated for families with a low socioeconomic status (UNICEF 2009; Ochola 2009). Clinical records indicate that most disaster-related deaths are caused by water-borne diseases, although precise figures could not be accessed. Cholera is reported to be the most widespread illness causing loss of life. The second most common disease is malaria, which has claimed the lives of many children in the area. About 65 % of people affected by flood-related sickness were children. Disastrous floods threaten the lives of children in Muzarabani because malaria outbreaks are associated with disruption of domestic water supply and stagnant water, which creates breeding habitats for mosquitoes.

Social and psychological stress is also noted among the children in Muzarabani. Children interviewed said that their parents sometimes are preoccupied with looking for food, repairing institutional buildings, and reestablishing their home to such an extent that they run the risk of

“neglecting” their children's social and psychological needs. Disaster recovery activities involving infrastructure become a priority over all other concerns, causing children to be worried, stressed, and sometimes afraid. The same was observed by La Greca et al. (2002) and Babugura (2008), who noted that children can show reactions following exposure to disasters that can interfere with their daily lives and can cause stress, frustration, fear, and worry. The needs of children exposed to a disaster go far beyond physical survival. Children who experience emotional distress during and after disaster emerge with fears of separation from their family, worry about the loss of educational opportunities, experience unfamiliar tensions and pressures within the household, endure a lack of emotional support at the family level, and become burdened with increased workloads. Although many children experience fear and emotional insecurity as they develop, most adults are not aware of the extent of their children's struggles (Babugura 2008), because most children are not proactive in discussing issues with parents and family adults. Adults also do not often ask their children about their feelings or emotions; they assume that their children are “fine” or will “adapt” to the difficult circumstances that accompany disasters (Babugura 2008).

A common theme in children's responses was the presence of food insecurity. Children and adults interviewed reported cases of reduced food intake during and after a disaster due to a loss of livelihood and subsistence crops. This can increase the incidence of malnutrition among children. The negative impact of flood and drought on livelihoods has forced some (20 %) children to drop out of school. These children quit school due to an inability to pay school fees both because the community's cash and subsistence crops are destroyed by flood and many adults must look for employment elsewhere in order to raise income for the family. Student dropouts frequently invest their labor in replacing absentee adults. This emergency coping strategy is an intensification of normal practice, since at least 75 % of the children in Muzarabani have helped parents to produce food with their labor by the age of 16. Thus disasters force children to miss or drop out of school to help families recover from the adverse impacts of disasters (Babugura 2008; Baez et al. 2010; Lawler and Patel 2012). Girls appear to account for the highest number of dropouts and absentees. Girls normally leave school as early as 14 years of age because of cultural expectations such as marriage, and are often given in marriage during disaster situations for family security. Young girls are expected to fetch water, help with household chores, and look after their younger siblings. As a result of engaging in these “adult” duties, most girls end up marrying by the time they reach 14 years. This practice of early marriage has worsened due to a lack of resources to cope with the

impacts of floods and the need for school fees. When a young girl is given in marriage, the family receives a bride price in the form of cattle, money, and remittances, which could cushion them during crisis.

All schools in Muzarabani are vulnerable to flooding, although the level of vulnerability differs. The schools were built by local people using local resources with no building codes, which makes them more prone to damage and collapse, and poses a serious risk to the children who spend most of their daytime at school. School buildings are made from brick and cement, but 80 % of them had cracked walls and two out of the four structures at one of the primary schools had their roofs blown off. The roofs were not repaired during the data collection period about 3 months after the disaster. This has forced some children to miss school as a result of destruction of school infrastructure because they had no classrooms to have their lessons during the rainy season. Cracked walls made children feel afraid and insecure. Fear, insecurity, and a general high alert during flood season has reduced attention to learning and contributed to poor performance among children (Amer 2007; Okuom et al. 2012). Floods are also blamed for loss of learning hours as teachers have failed to cover the school syllabus. An incomplete education has adversely affected student performance in national examinations. This flood damage scenario has produced a vulnerable child with a wrecked home, a flooded route to school, and water-damaged classrooms and books if he/she arrives.

Floods also damaged or destroyed vital student records and material such as birth certificates and books. Without a birth certificate a child is not allowed to sit for national examinations in Zimbabwe. Missing national examinations can have lasting effects on a child's educational development. One child echoed:

My birth certificate was washed away during floods and [I was] not allowed to register for national examinations. My parents can't afford to get me another copy. I'm going to school, but I will not write the final examinations without it. I can't get a national identity card without a birth certificate. (16 year old boy)

Although children are more vulnerable because of their unique attributes they have the potential to contribute to DRR. Though it would be impossible to protect them from all effects of disasters, involving them would increase their resilience and ability to handle disaster stress. Children have the capacity to communicate effectively on risk and risk reduction to the wider community but do not fully participate in DRR activities.

Adults and other stakeholders seem to be aware of challenges faced by children but little has been done to

reduce the effects among children. Children need protection provided by adults but sometimes it is difficult for adults to assist if there is no communication. There is therefore also a need to know children's position regarding risk management as part of their involvement in the DRR process.

7.2 Children's Participation in Disaster Risk Reduction

Children can and do play a part in the disaster management cycle (Lopez et al. 2012). They help their families and communities to identify risky and nonrisky areas based on their understanding of the local environment. Children show a high level of awareness of their local environment and about ways to reduce flood impacts. Children from both secondary and primary schools produced risk maps that show flooded and nonflooded areas. They can also identify safe zones in case of an emergency. Thus children's risk knowledge can provide important inputs for DRR efforts (Back et al. 2009), and can help to identify solutions to natural disaster problems (Lawler and Patel 2012).

Reports have shown that children can make significant contributions to reducing risk (Mitchell et al. 2008) and strengthening community resilience. Children take part in most community activities, including household chores, when they are as young as 7 years old. Girls fetch water and firewood, cook, and clean the yard. Boys herd cattle, hunt, and collect wild fruits for sale. Children miss school in order to help their parents in farming activities and participate in paid labor to raise family income. Older children take younger siblings to and from school, help them to cross rivers, and warn them about some of the impacts of flooding such as drowning.

When children get access to disaster information, they can assist in risk awareness. Children can interpret and relay messages to communities (Lopez et al. 2012). All school children act as risk communicators in Muzarabani. Children distribute disaster-related materials, such as pamphlets and flyers, to educate the community. This was confirmed by adult participants in this study, who indicate that they normally get risk information from their school-age children. Thus schools were a major source of hazard information and education for all generations in Muzarabani. Children have assisted the Ministry of Health and Child Care to distribute the chlorine tablets during cholera outbreak in Zimbabwe. This was confirmed by the parent who said that:

Our children help to disseminate information to the community. I remember during the 2008 cholera outbreak, we got the messages through the school

Table 5 Conceptualization of Article 12 in Muzarabani

Factor	Assessment question	Yes	No	Not sure	Total
Space	Do you seek children's views?	–	10	–	10
	Do you provide space for children to express themselves?	–	10	–	10
	Have you taken any steps to ensure that children affected by disasters participate?	–	10	–	10
Voice	Do children have the disaster information they need in order to enable them to form a view?	7	2	1	10
	Have children been given options as to how they might choose to express their views?	–	10	–	10
Audience	Do children communicate their views?	3	6	1	10
	Is there a process for children to communicate their views?	–	10	–	10
Influence	Were the children's views considered by those with the power to effect change?	–	8	2	10
	Are there any processes in place to ensure that children's views inform decisions that affect children?	–	7	3	10
	Have children been informed of the ways in which their opinion may impact decisions?	–	10	–	10
	Have the children been provided with feedback explaining the reasons for decisions taken?	–	10	–	10

children. They brought the pamphlets on how to prevent cholera and the chlorine tablets for water treatment. (SDC, Chairperson)

Children also have been involved in food aid distribution. They provide labor in off-loading food stuffs and assist their parents to carry the food home. Some also have participated in food for work programs that concentrated on gully reclamation and road maintenance, among other projects.

Although children seem to be involved in part of the community activities, this study noted that the community does not do much during disasters. The community has become more dependent on external assistance, and more reluctant to prepare for or to mitigate disaster situations. The Chief, Councillor, and the parents interviewed blamed this on the lack of resources and widespread poverty in the community. They also highlighted that most of the external assistance provided was for survival purposes immediately after a disaster, such as the provision of tents, fresh water, maize/corn meal, cooking oil, blankets, and clothing. This type of immediate response aid is essential, but does not attempt to increase people's capacity for resilience or create a "culture of safety" (Martin 2010). A focus on immediate, short-term aid also makes children's long-term participation in DRR difficult to realize.

Despite the many risks faced by children and their readily acknowledged limited roles in society, disaster outcomes often represent children as passive victims in need of rescue by outsiders (Jabry 2005; Babugura 2008). Yet children can demonstrate resilience in the face of disaster (Lopez et al. 2012). Children in Muzarabani want to be engaged. The children say that they want to help their adult family members to reduce disaster impacts. Seven out of the 40 children who were interviewed indicated their wish to convince their parents to relocate to the adjacent uplands, while 22 of the 40 wanted to educate the community on the role played by stream bank cultivation and

deforestation in causing flooding. Children felt that since they were actively involved in farming and provide most of the labor in household activities they could also contribute in reducing the disaster impacts. The children believed that their active involvement in DRR activities would help to reduce community risk to natural hazards.

Although children indicated their willingness to be involved in DRR activities, Cockburn (2005) argues that their involvement is limited to having their opinions being considered but it is adults who make the final decision of what is in a child's best interest. In this research adults were interviewed to assess whether they promote children's participation in DRR. The assessment was based on Lundy's (2007) model of conceptualizing Article 12 of the UNCRC. Ten key informant interviews were held to assess whether stakeholders give children the opportunity to express a view; facilitate children to express their views; listen to the children, or act upon children's view point. The results of the interviews are summarized in Table 5.

Seven out of the 10 participants acknowledged that children have the disaster information that they gained from past experience at school and home whilst 3 out of 10 agreed that children communicate their views. However, all the other responses indicated limited voice, space, audience, and influence of children in DRR. Adults proved that they rarely seek children's views and do not provide space for children to participate. There were no structures in place or steps taken to ensure that children affected by disasters participate in DRR activities. Despite the information that children had about disaster, there was no evidence of the provision of options from which children might choose to express their views or participate in DRR.

Children in Muzarabani demonstrate that they do not have a say in decision making even in issues that affect their lives such as DRR. Interviews with children note that they were often not listened to, taken seriously, or respected, rarely allowing children to speak out even on

issues that matter and affect their childhood development. Adults had all the power and had a tendency to announce what they want the children to do without any consultation. Thus children's participation suffers from tokenism (Manyena et al. 2008). Decision making in all issues is the domain of parents. One girl said:

I do what my parents say I should do. If they say I shouldn't go to school I will do so. I have also realized that most of the time when there is a lot of work to be done at home my parents will tell me not to go to school especially during winter cropping season. (14 year old girl)

Although children are sometimes assigned and informed depending on their age, they are neither involved nor invited into the decision-making process. Children have very limited space in which to voice their concerns. In Binga, Zimbabwe children claimed that adults do not understand and do not give them space to be heard (Manyena et al. 2008), which also is the case in Muzarabani. Participation of children in community meetings was not a common practice in the study area. Children and adults rarely prepare for emergencies together and parents do not invite children to the places where they discuss DRR issues. Adults view the involvement of children as not beneficial, yet children could suggest ways and means of enhancing their participation in DRR activities (Manyena et al. 2008). Children claimed that they could assist with ideas to reduce the vulnerability of households to flood disasters. The physical absence of children from meeting sites is a strong indication that their views are not considered in the DRR process.

Assessing how Article 12 of the UNCRC is conceptualized help in this article to explore the major barriers to children's participation in DRR. Research has shown that there are a number of barriers to effective participation (Franklin and Sloper 2009). With agencies pretending to address children's needs, very few had effective experience in including children in the full participation process (Martin 2010). The right to participation is complex and there are many factors that affect the realization of such rights (Bae 2010), making the commitment and support of adults for children's participation low, as summarized in Table 5.

The commitment and support of parents for children's participation is also low among the participants. When adults were asked their reasons for not encouraging children to participate, most of them indicated that it is an adult's duty to shield and protect children from hazardous events. Some adults believe that involving children in DRR issues will put them under pressure. They are also afraid of robbing children of a valued developmental stage of free growth (Percy-smith and Thomas 2010; Lopez et al. 2012).

They assert that disaster experiences are traumatic and may cause death or injuries. They fear that if they allow their children to participate in preparedness, response, and recovery activities, they may cause more harm than good to their children. As a result, parents are reluctant to encourage their children to become involved.

Poor perceptions about the role of children in DRR were also common among the adult participants. Adults tend not to trust children's views (Protacio-de Castro et al. 2007; Lopez et al. 2012). They question children's motivation and activities if done without parental guidance. This results in a parental conviction that they alone are responsible for giving orders and that the role of children is to receive and carry out those directives. Giving children the right to decide for themselves threatens adult authority (Protacio-de Castro et al. 2007). Parents fear losing control over their children when the children become more confident and assertive. These negative adult perceptions almost invariably mean that children often are not invited or given space in DRR planning and decision making (Campbell et al. 2009).

Adults act as a barrier to children's participation (Davies and Artaraz 2009; Lopez et al. 2012). Children confirm that adults normally do not respect them. The children are seen by adults as not serious, ignorant, and inexperienced. The Zimbabwean tradition even has a term for adults who are not serious or productive—*pwere* meaning “childishness.” This term implies that children's behavior is never serious or productive, and this disregards children's potential for societal contributions (Fanelli et al. 2007). Noting the constraining aspects of adults' role, children said that adults usually tell children to stay quiet when adults are talking and never to interrupt discussions. This leaves the children unheard, although they are often visible in the community.

Cultural factors also hinder participation by children in DRR. Different cultures have different ways of relating with children, and not all cultures favor a proactive role for children (Couch and Francis 2006). Children are traditionally regarded as having a lower social status than adults and their participation is viewed as challenging existing power dynamics, which portray children as obedient, passive, and unquestioning (Fanelli et al. 2007). This limits the opportunities for children to be heard in DRR. The idea that children are able to express their views freely is unusual and unnecessary in poor and marginalized communities. “The ‘African way’ of relating to children is characterized by a hierarchy in which the adult legitimately occupies a much higher status and children's participation is seen as un-African” (Naker 2007, p. 147). Children's participation is also viewed as unimportant because children must respect adults by doing what they are told to do without questioning, with parents doing whatever they

want with and for their children (Protacio-de Castro et al. 2007). Adult respondents believe that listening to children's views is western oriented and listening to children may create social ills in the future.

On the other hand, children can form a barrier in their own right that blocks being heard. Children may have fixed perceptions about adults (Franklin and Sloper 2005), and may not participate because they lack confidence, verbal fluency, and experience (Hill et al. 2004). Interviews with children suggest that although many children had good relationships with their parents, they would not want their opinions to be known to their parents even on issues that affect children. They felt that if they become actively involved in decision making they may upset their parents; such children are often afraid of being disowned. A similar study by Manyena et al. (2008) indicates that attempts to make decisions may stimulate opposition to adults' decision, which in turn may cause children emotional punishment and/or physical harm. Children felt that it was also not "proper" for them to attend the meetings with adults. Children opt to have their own meetings after which a representative would then pass a collective message to the adults. One child said:

I don't think it's proper to argue or suggest anything during meetings with parents. As children we are supposed to listen to our elders and take orders. The best procedure is to have someone in the adults' meetings representing us. (17 year old boy)

Children's right to express their views in decision making is ignored in Zimbabwean policy making and politics as it is in many other parts of the world. As a result it is difficult to apply a systematic approach to children's participation in DRR without a policy commitment to do so and a real shift in cultural values. The majority of Muzarabani children are not aware of their rights, such as a right to education, health, information, and participation.

Some of the attitudinal factors hindering children's participation comes from confusion and uncertainty about precisely what children's participation means (Bessell 2007). The concept of children's participation is poorly understood, and the complex nature of the participation of children makes it difficult to define (Protacio-de Castro et al. 2007). The major challenge is in identifying what children's participation exactly means and the requirements for it to be fulfilled (Skivenes and Strandbu 2006). Different scholars regard participation differently where some view it as an end in itself while others view it as a means to an end. Martin (2010) views children's participation as a right in itself and a means to ensuring children's protection, survival, and development. This has raised questions among the stakeholders on what exactly do children require for their participation to be effective and their voices to be

heard in times of crisis. The lack of a clear definition may also mean that countries have to come up with their own definitions of participation and their own way of interpreting the UNCRC Article 12. This variability in interpretation and implementation makes Article 12 the most controversial provisions of the UNCRC (Lundy 2007).

With these factors working against the rights of children to express their views in DRR, children in our survey note that they would appreciate being asked for their opinion before decisions are made, especially on issues that are of interest to them (Babugura 2008). The children feel that with adult support they can express their views freely.

8 Conclusion

Despite the duties performed by children in the community, "not having a say" is the most important concern raised by children. Children's views are not being sought and they are rarely consulted and their opinions are not taken on board. Generally there are no DRR activities specifically for children. There are no spaces for children to talk about disaster related issues in the area and their collective voice is not heard in any DRR activities. The main adult assumption is that children have not experienced enough to have much to share with adults. Adults believe that helping children is best achieved through the provision of basic needs whether in times of crisis or not. The well-being of children is assumed to be the responsibility of parents and therefore is not considered in DRR planning. Yet children's practical and creative ideas and their unique knowledge and experiences of their local environment can provide important input to DRR efforts (Back et al. 2009; Lopez et al. 2012). When children are integrated into decision making, vulnerability is reduced and resilience to disasters is enhanced. If children have access to resources and information, are encouraged to participate in DRR activities, and can have access to personal and communal support, resilience and mitigation improve (Peek 2008).

Based on this study, we recommend a number of measures so children's voices can be heard in DRR in Zimbabwe. Since the provision of space is the prerequisite for children's meaningful participation, the government and local community can act together with nongovernmental organizations to make sure that: (1) children's views are sought; (2) there is safe space for children to express their views freely; and (3) there are necessary steps taken to ensure that all children affected by disasters take part in DRR. In this case, all the stakeholders need to make sure that the children affected by disasters are asked for their views on the issues that affect them and have a chance to say how they would want to be involved in order to reduce

disaster impacts on their lives. Children need to be asked about their willingness to participate; they should not be ignored or forced, but they should be encouraged to engage. There is also a need to make sure that their views will be heard. Children's views can be heard when children have access to information about events that affect them, and are given the opportunity to express their viewpoint.

The expression of children's views also depends on their ability to form that view and should not be based on arbitrary age criteria, cultural background, and/or socioeconomic status. Stakeholders can achieve this through the provision of enough time to understand children's views, issues, and perceptions, and can make available child-friendly information on community-based DRR so children can act responsibly. Laws should be implemented with legal support to encourage children to express their views freely. To facilitate children's participation, the government, working together with organizations that deal with children such as UNICEF and Save the Children, can educate the public on the importance of children's participation in DRR. The education sector can also consider mainstreaming DRR in the education curriculum, which could be formal or informal. Parents can also provide the emotional and intellectual resources needed for children to express their views freely.

Listening to children does not mean that their opinions should be automatically endorsed; but it does imply inclusion and an ability to influence decisions. Children are different from adults and engaging children may encounter uneven participation motivation as well as adult opposition. Since these children are under the custodianship of the adults, the family and community context in which they live can present barriers for their engagement. Some children may show interest whereas others are unsure and may lack support from adults to participate (Shaw 2006). Children might find it difficult to work on their own and clearly need a supporting environment. In addition, Peek (2008) has noted that children's knowledge of risk and disasters differs across cultures, physical and social environments, and family structures. As a result not all children have the same strengths or abilities. There is need for age- and culturally-appropriate activities for greater involvement of children. There is also need for further research on how children's views can be given due weight by those who make decisions and how children can influence policy if their participation is to be meaningful.

Open Access This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

References

- ADPC (Asian Disaster Preparedness Centre). 2007. Child focused disaster risk reduction, module 6: Community disaster risk reduction implementation. 16th Community Based Disaster Risk Management Course, Bangkok.
- Alderson, P. 2008. *Young children's rights: Exploring beliefs, principles and practice*, 2nd edn. London: Jessica Kingsley.
- Amer, A.H. 2007. *Responses to traumatized children*. Basingstoke, Hampshire: Palgrave Macmillan.
- Anderson, W.A. 2000. Women and children facing disaster. In *Managing disaster risk in emerging economies*, ed. A. Kreimer and M. Arnold, 85–90. Washington, DC: The World Bank.
- Anderson, W.A. 2005. Bringing children into focus on the social science disaster research agenda. *International Journal of Mass Emergencies and Disasters* 23(3): 159–175.
- Archard, D. 1993. *Children: Rights and childhood*. London: Routledge.
- Ariyabandu, M.M. 2000. Impact of hazards on women and children's situation in South Asia. Paper presented at Reaching Women and Children in Disasters. Miami: Florida International University.
- Babugura, A.A. 2008. Vulnerability of children and youth in drought disasters: A case study of Botswana. *Children, Youth and Environments* 18(1): 126–157.
- Back, E., C. Cameron, and T. Tanner. 2009. Children and disaster risk reduction: Taking stock and moving forward. http://www.ipcc-wg2.gov/nj-lite_download.php?id_7038. Accessed 15 Sept 2011.
- Bae, B. 2010. Realizing children's right to participation in early childhood settings: Some critical issues in a Norwegian context. *Early Years: An International Research Journal* 30(3): 205–218.
- Baez, J.E., A. de la Fuente, and I. Santos. 2010. Do natural disasters affect human capital? An assessment based on existing empirical evidence. IZA Discussion Papers 5164, Institute for the Study of Labor (IZA). <http://www.ftp.iza.org/dp5164.pdf>. Accessed 10 Sept 2011.
- Bessell, S. 2007. Adults attitudes towards children's participation in the philippines. Policy and governance program discussion paper 07-05. Crawford School of Economics and Government, The Australian National University. <http://www.crawford.anu.edu.au>. Accessed 15 July 2012.
- Bild, E., and M. Ibrahim. 2013. *Towards the resilient future children want: A review of progress in achieving the Children's Charter for Disaster Risk Reduction*. World Vision Milton Keynes. http://www.preventionweb.net/files/globalplatform/519dd2cbc89bbTowards_the_resilient_future_2013_lowres.pdf. Accessed 18 Oct 2013.
- Campbell, C., A. Gibbs, S. Maimane, Y. Nair, and Z. Sibiyi. 2009. Youth participation in the fight against AIDS in South Africa: From policy to practice. *Journal of Youth Studies* 12(1): 93–109.
- Chingombe, W., E. Pedzisai, D. Manatsa, G. Mukwada, and P. Taru. 2015. A participatory approach in GIS data collection for flood risk management, Muzarabani District, Zimbabwe. *Arabian Journal of Geosciences* 8: 1029–1040.
- Cockburn, T. 2005. Children's participation in social policy: Inclusion, chimera or authenticity? *Social Policy and Society* 4(2): 109–119.
- Couch, J., and S. Francis. 2006. Participation for all? Searching for marginalized voices: The case for including refugee young people. *Children, Youth and the Environment* 16(2): 272–290.
- Davies, S., and K. Artaraz. 2009. Towards an understanding of factors influencing early years professionals' practice of consultation with young children. *Children & Society* 23(1): 57–69.
- Dennison, L., and M. Keim. 2009. Flooding and the health consequences. <http://archive.student.bmj.com/issues/09/03/education>. Accessed 9 Mar 2014.

- Denzin, N.K., and Y.S. Lincoln. 2005. Introduction: The discipline and practice of qualitative research. *The Sage handbook of qualitative research*. Thousand Oaks, CA: Sage.
- De Waal, A., S. Taffesse, and L. Carruth. 2003. Child Survival during the 2002–2003 drought in Ethiopia. *Global Public Health* 1(2): 125–132.
- Eder, D., and L. Fingerson. 2003. Interviewing children and adolescents. *European Early Childhood Education Research Journal* 15(2): 33–55.
- Einarsdóttir, J. 2007. Research with children: Methodological and ethical challenges. *European Early Childhood Education Research Journal* 15(2): 197–211.
- Enarson, E. 2000. Women and children in disasters. Geneva: International Labour Organization.
- Fanelli, C.W., R. Musarandega, and L. Chawanda. 2007. Child participation in Zimbabwe's National Action Plan for orphans and other vulnerable children: Progress, challenges, and possibilities. *Children, Youth and Environments* 17(3): 122–145.
- Fothergill, A. 1996. Gender, risk, and disaster. *International Journal of Mass Emergencies and Disaster* 14(1): 33–56.
- Franklin, A., and P. Sloper. 2005. Listening and responding? Children's participation in health care within England. *International Journal of Children's Rights* 13(1): 11–29.
- Franklin, A., and P. Sloper. 2009. Supporting the participation of disabled children and young people in decision-making. *Children and Society* 23(1): 3–15.
- Füssel, H.M. 2007. Vulnerability: A generally applicable conceptual framework for climate change research. *Global Environmental Change* 17(2): 155–167.
- Gordon, N., C. Maida, and N. Farberow. 1999. *Children and disasters*. Philadelphia: Taylor and Francis.
- Haynes, K., and Tanner T.M. 2013. Empowering young people and strengthening resilience: Youth-centred participatory video as a tool for climate change adaptation and disaster risk reduction. In *Children's Geographies*. New York: Taylor and Francis.
- Hill, M., J. Davis, A. Prout and K. Tisdall. 2004. Moving the participation agenda forward. *Children and Society* 18(2): 77–96.
- Jabry, A. (ed.). 2005. *After the cameras have gone: Children in disasters*. London: Plan International.
- Jones, L. 2008. Responding to the needs of children in crisis. *International Review of Psychiatry* 20: 291–303.
- Koger, D. 2006. *Children and disasters. Part 1 ages and stages. extension bulletin*. East Lansing: Michigan State University.
- La Greca, A.M., W.K. Silverman, E.M. Vernberg, and M.C. Roberts. 2002. *Helping children cope with disasters and terrorism*. Washington, DC: American Psychological Association.
- Lawler, J., and M. Patel. 2012. Exploring children's vulnerability to climate change and their role in advancing climate change adaptation in East Asia and the Pacific. *Environmental Development* 3: 123–136.
- Lister, R. 2007. Why citizenship: Where, when and how citizenship? *Theoretical Inquiries in Law* 8(2): 693–718.
- Lopez, Y., J. Hayden, K. Cologon, and F. Hadley. 2012. Child participation and disaster risk reduction. *International Journal of Early Years Education* 20(3): 300–308.
- Lundy, L. 2007. Voice' is not enough: Conceptualising Article 12 of the United Nations Convention on the Rights of the Child. *British Educational Research Journal* 33(6): 927–942.
- MacDonald, J.P., S.L. Harper, A.C. Willox, and V.L. Edge. 2012. A necessary voice: Climate change and lived experiences of youth in Rigolet, Nunatsiavut, Canada. *Global Environmental Change* 23 (1): 360–371.
- Manyena, S.B., M. Fordham, and A. Collins. 2008. Disaster resilience and children: Managing food security in Binga District in Zimbabwe. *Children, Youth and Environments* 18(1): 303–331.
- Martin, M. 2010. Child participation in disaster risk reduction: The case of flood affected children in Bangladesh. *Third World Quarterly* 31(8): 1357–1375.
- Mitchell, T., K. Haynes, N. Hall, W. Choong, and K. Oven. 2008. The roles of children and youth in communicating disaster risk. *Children, Youth and Environments* 18(1): 225–279.
- Naker, D. 2007. From rhetoric to practice: Bridging the gap between what we believe and what we do. *Children, Youth and Environments* 17(3): 146–158.
- Nikku, B.R. 2012. Children's rights in disasters: Concerns for social work: Insights from South Asia and possible lessons for Africa. *International Social Work* 56(1): 51–66.
- Nikku B.R., S. Nepali, K. Ravi, and S. Ahmed. 2006. *Child rights perspective in response to natural disasters in South Asia: A retrospective study*. Save the Children Sweden, Regional Office for South and Central Asia, Nepal.
- Ochola, S.O. 2009. *Integrated flood hazard, vulnerability and risk assessment in Nyando River catchment, Kenya: Options for landuse planning*. Heidelberg: Deutsche Nationalbibliothek.
- Okuom, H.A., E.M.W. Simatwa, O.A. Maureen, and K.M. Wichenje. 2012. Assessment of factors that contribute to repetition and dropout of pupils in primary schools in flood prone areas of Nyando District, Kenya: An analytical study. *Educational Research* 3(2): 190–201.
- Peek, L. 2008. Children and disasters: Understanding vulnerability, developing capacities, and promoting resilience: An introduction. *Children, Youth and Environments* 18(1): 1–29.
- Percy-smith, B., and N. Thomas. 2010. *A handbook of children and young people's participation*. New York: Taylor and Francis.
- Plan International. 2010. Child centred disaster risk reduction: Building resilience through participation, lessons from Plan International UK. <http://www.plan-uk.org>. Accessed 10 Aug 2013.
- Protacio-de Castro, E.P., A.Z.V. Camacho, F.A.G. Balanon, M.G. Ong, and J.A. Yacat. 2007. Walking the road together: Issues and challenges in facilitating children's participation in the Philippines. *Children, Youth and Environments* 17(1): 105–122.
- Ronan, K.R., and D.M. Johnston. 2005. *Promoting community resilience in disasters: The role for schools, youth, and families*. New York: Springer.
- Sarkar, J., and B. Mendoza. 2005. Bolivia's children's parliament: Bringing participation to the national stage. *Children, Youth and Environments* 15(2): 227–244.
- Save the Children. 2002. If we were consulted... An evaluation report on the community based water and sanitation project in the Zambezi valley. Harare: Save the Children (UK).
- Schipper, L. 2006. Disaster risk, climate change and international development: Scope for and challenges to integration. *Disasters* 30(1): 19–38.
- Seballos, F., T. Tanner, M. Tarazona, and J. Gallegos. 2010. *Children and disasters: Understanding impact and enabling agency*. Brighton: Institute of Development Studies.
- Shaw, R. 2006. Critical issues of community based flood mitigation: Examples from Bangladesh and Vietnam. *Science & Culture Special Issue* 72: 1–2.
- Shumba, O. 2000. An assessment of NGO disaster mitigation and preparedness activities in Zimbabwe: Country survey. Harare: Southern Alliance for Indigenous Resources.
- Skinner, D. 2006. Towards a definition of orphaned and vulnerable children. *AIDS and Behavior* 10(6): 619–626.
- Skivenes, M. and A. Strandbu. 2006. A child perspective and children's participation. *Children, Youth and Environments* 16(2):10–27.
- Southasiadisaster.net. 2014. Towards a resilient future: Children and disasters special issue No. 104. <http://www.reliefweb.int/.../towards-resilient-future-children-and-disasters-southasiadisasters>. Accessed 15 Dec 2014.
- Tanner, T., M. Garcia, J. Lazcano, F. Molina, G. Molina, G. Rodriguez, and F. Seballos. 2009. Children's participation in

- community-based disaster risk reduction and adaptation to climate change. *Participatory Learning and Action* 60: 54–64.
- Turner II, B.L., R.E. Kasperson, P.A. Matson, J.J. McCarthy, R.W. Corell, L. Christensen, N. Eckley, J.X. Kasperson, et al. 2003. Framework for Vulnerability Analysis in Sustainability Science. *Proceedings of the National Academy of Sciences of the United States of America* 100(14): 8074–8079.
- Twigg, J. 2004. *Disaster risk reduction: Mitigation and preparedness in development and emergency programming*. London: Overseas Development Institute.
- UN (United Nations). 1989. *United Nations convention on the rights of the child*. Geneva: United Nations.
- UN (United Nations). 2007. *Impact of drought on Southern Africa*. Gaborone: United Nations.
- UNCRD (United Nations Centre for Regional Development). 2009. Reducing vulnerability of school children to earthquakes: A project of school earthquake safety initiative (SESI). http://www.preventionweb.net/files/2951_SESIOutcomeallfinal.pdf. Accessed 22 Oct 2011.
- UNHCHR (United Nations High Commissioner for Human Rights). 1959. Declaration of the right of the child. <http://www.unhcr.ch/html/menu3/b/25.htm>. Accessed 11 Nov 2012.
- UNICEF (United Nations Children's Fund). 2006. *Child alert: Horn of Africa. A report on the impact of drought on children*. New York: UNICEF.
- UNICEF (United Nations Children's Fund). 2007a. *Children and AIDS: A stocktaking report*. New York: UNICEF, UNAIDS and World Health Organization.
- UNICEF (United Nations Children's Fund). 2007b. *Annual report 2006*. New York: UNICEF.
- UNICEF (United Nations Children's Fund). 2009. Floods devastate Agadez region of northern Niger with lingering effects. http://www.unicef.org/infobycountry/niger_51221.html. Accessed 22 Oct 2011.
- UNICEF (United Nations Children's Fund). 2011. Children's vulnerability to climate change and disaster impacts in East Asia and the Pacific. <http://www.unicef.org/eapro>. Accessed 16 May 2013.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2004. *Living with risk*. Geneva: United Nations.
- UNOCHA (United Nations Office for the Coordination of Humanitarian Affairs). 2007. *Southern Africa: Floods*. OCHA Situation Report No. 1. New York: UNOCHA.
- Wamukonya, N., and H. Rukato. 2001. Climate change implications for Southern Africa: A gendered perspective. International Network on Gender and Sustainable Energy. <http://www.energia.org>. Accessed 14 May 2013.
- Welty, E., and L. Lundy. 2013. Listening and empowering: Children in science communication: A Children's rights-based approach to involving children in decision making studies. *Journal of Science Communication* 12(3): C02.
- Wolff, R. 2007. Southern Africa: Food shortages force sisters to survive on corn. Maseru: World Vision Southern Africa Livelihood Emergency Response (SALER).
- Zavis, A. 2004. Serious drought threatens Southern Africa. <http://www.worldrevolution.org/article/1107>. Accessed 16 Sept 2013.
- ZRCS (Zimbabwe Red Cross Society). 2007. *Zimbabwe: Muzarabani floods*. Harare, Zimbabwe Red Cross Society.
- ZRCS (Zimbabwe Red Cross Society). 2008a. Zimbabwe appeal no. MAAZW001 report 2006–2007. Harare: Zimbabwe Red Cross Society.
- ZRCS (Zimbabwe Red Cross Society). 2008b. Southern Africa floods emergence appeal no. MDR63001. 18 January 2008. Harare: Zimbabwe Red Cross Society.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.