



# The Sendai Framework for Disaster Risk Reduction and Persons with Disabilities

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Published online: 13 June 2015

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**Abstract** In this paper, the Sendai Framework for Disaster Risk Reduction 2015–2030 (SFDRR) is evaluated with respect to its ramifications for persons with disabilities. In the SFDRR, persons with disabilities were referenced either directly or indirectly as part of the preamble, the guiding principles, the priorities for action, and the role of stakeholders. In addition, the 2015 World Conference on Disaster Risk Reduction, during which the SFDRR was adopted, incorporated explicit recommendations toward a disability-accessible and inclusive environment not evident in previous disaster risk reduction conferences. The infusion of disability-related terms and concepts such as accessibility, inclusion, and universal design throughout the SFDRR document was significant. These concepts, which have their origin in disability studies, are used in the SFDRR document to refer to the needs of all in disaster, not only to people with disabilities. These disability-related concepts will now serve the field of disaster risk reduction as important overarching disaster-related principles. The authors conclude that the SFDRR has firmly established people with disabilities and their advocacy organizations as legitimate stakeholders and actors in the design and implementation of international disaster risk reduction policies.

**Keywords** Disabilities · International policy · Sendai framework for disaster risk reduction · World conference on disaster risk reduction

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## 1 Introduction

The World Report on Disabilities (World Health Organization and World Bank 2011) estimates that 15 % of the global population experience disabling conditions. Recent events have brought worldwide attention to the experiences of people with disabilities during disaster. In the aftermath of Hurricane Katrina in 2005, elderly individuals drowned in their wheelchairs and beds inside St. Rita's Nursing Home as floodwaters rose around them. In the Great East Japan Earthquake and Tsunami of 2011, the death rate for people with disabilities was more than double that for the entire population (Hisamatsu 2013) and emergency evacuation shelters did not appropriately respond to the functional needs of people with disabilities and the frail elderly (Tatsuki 2012). The Indian Ocean Tsunami of 2004 disproportionately affected persons with disabilities—for example, half of the 145 children with disabilities enrolled in schools overseen by the Indonesian Society for the Care for Children with Disabilities were killed during the disaster (Center for International Rehabilitation 2005). In Haiti, an estimated 1 million people with disabilities were affected during the 2010 earthquake and falling buildings and other hazards caused spinal cord injuries and amputations that created new disabilities. International relief organizations, including the International Federation of Red Cross and Red Crescent Societies (2007, p. 90) recognize that individuals with disabilities are “ignored or excluded at all levels of disaster preparedness, mitigation and intervention.”

Empirical research on the effects of disaster on people with disabilities, though sparse, confirms that individuals with disabilities are at higher risk for death (Aldrich and Benson 2008), injury (Wisner 2002), loss of property (van Willigen et al. 2002), difficulties during sheltering (Twigg

et al. 2011), vulnerability post-disaster (Phibbs et al. 2015), and require more intensive disaster case management (Stough et al. 2010). During wartime or conflicts, people with disabilities have also been found to be more likely to be exposed to aggression (Ayazi et al. 2013) and tend to be overlooked in disaster registration systems (Ito 2014). Overlapping demographic and social factors such as higher poverty rates, lower employment rates, societal stigmatization, poor housing construction, and secondary health conditions additionally place people with disabilities at risk during disaster. The United Nations (UNISDR 2015c, p. 1) points out that people with disabilities are disproportionately affected “due to a range of factors including exclusion from decision-making processes, often poor living conditions, inadequate infrastructure, income inequality or undiversified sources of income, and limited access to basic services, especially education and information.” Together these individual, environmental, and societal elements interact to produce negative outcomes for many people with disabilities experiencing disaster.

Vulnerable populations, including people with disabilities, have context-specific needs in disaster that should be taken into consideration in emergency planning (UNISDR 2015c). Buildings, for example, are usually designed so that during disasters people are required to use stairs, manually open doors, or exit through windows (Christensen et al. 2007), making evacuation difficult for people with mobility impairments. A recent United Nations survey of over 5000 persons with disabilities from 126 countries found only 20 % could evacuate immediately without difficulty in the event of a sudden hazard, while the remainder reported they could evacuate with some degree of difficulty (UNISDR 2013). Children with disabilities are particularly vulnerable in disaster as schools often do not have adequate emergency management plans in place for their needs (Peek and Stough 2010; Ducey and Stough 2011; Boon et al. 2012). Other contextual factors that individuals with disabilities encounter during disaster include “disruption of support networks (which may be friends and family), loss and damage of assistive devices (e.g. wheelchairs), inaccessibility of emergency shelters and warning messages, and greater difficulty in accessing basic humanitarian needs” (CBM 2014).

International agreements and accords have recognized the importance of disaster risk reduction with respect to individuals with disabilities. Article 32 of the United Nations Convention on the Rights of Persons with Disabilities (CRPD) (UN 2006) recognizes that international programs should be inclusive and accessible to people with disabilities and, in Article 11, specifically declares that “States Parties shall take, in accordance with their obligations under international law, including international humanitarian law and international human rights law, all

necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters.” The Verona Charter on the Rescue of Persons with Disabilities in Case of Disasters (European Emergency Number Association 2007), in concurrence with Article 11 of the CRPD, lays out foundations for ensuring the protection of persons with disabilities. The Incheon Strategy, which produced the first set of regionally agreed upon disability-inclusive development goals, identified ensuring disability-inclusive disaster risk reduction and management as one of its 10 goals (UNESCAP 2012). The Sphere Project (2011), developed to improve international response, acknowledges the particular needs of people with disabilities as a “cross-cutting theme” across all sectors of disaster response. The International Day for Disaster Reduction in 2013 focused on the needs of people with disabilities and recognized that “People with disabilities—as with older people—are among the most at-risk groups during natural disasters” (CBM 2014). It is evident that awareness of the needs of people with disabilities in disaster has gained traction within the international community.

## 2 The 2015 World Conference on Disaster Risk Reduction

The Third UN World Conference on Disaster Risk Reduction (WCDRR) 2015 in Sendai, Japan incorporated explicit recommendations toward a disability-inclusive disaster risk reduction framework and its implementation (FEMA 2015). The third WCDRR venue and conference sessions were accessible to both participants and speakers with disabilities in attendance. Closed captioning in English and Japanese were provided at main venues and sign language interpretation was available on demand for various sessions. Venues provided wheelchair accessible transportation. Documents were in accessible format and blind participants were provided machines that displayed documents in Braille. Most significantly, more than 200 persons with disabilities actively participated in the WCDRR proceedings as either delegates, speakers, panelists, or contributors.

Thirty-four events addressed various issues related to disability. People with disabilities presented their own expertise in disaster risk reduction (DRR) as part of the working session “Proactive Participation of Persons with Disabilities in Inclusive Disaster Risk Reduction for All.” Disability advocates spoke at several sessions, including a public forum entitled “Taking Action Toward a Disability-Inclusive Disaster Risk Reduction (DiDRR) Framework and Its Implementation” (FEMA 2015). Several other

disability-related sessions were held during the conference including “Women with Disabilities: A Major Player in DRR,” = “Integration of Gender, Age, Disability, and Cultural Perspectives in The Post-2015 Framework For DRR,” and “Minimum Initial Service Package for Reproductive Health Saves Lives and Prevents Illness, Trauma and Disability, Especially among Women and Girls.” A Disability Stakeholder Meeting was held, as well as the UN Department of Economic and Social Affairs (UN-DESA) public forum on the DiDRR framework entitled “UN-DESA Forum on Disability-Inclusive Disaster Risk Reduction and Resilience: Inclusion Saves Lives.” Working sessions were held throughout the WCDRR as part of the multistakeholder segment. One of the working sessions entitled “Proactive Participation of Persons with Disabilities in Inclusive DRR for All” was dedicated to issues related to the needs of people with disabilities. Two all-day disability-related booths took place, one on disability-inclusive DRR and the other highlighted the Nippon Foundation’s activities for recovery from the Great East Japan Earthquake and Tsunami. In sum, both disability-related sessions and practices that accommodated disabilities were interwoven throughout the WCDRR event.

### 3 Development of the Sendai Framework for Disaster Risk Reduction 2015–2030

To understand how disability-related needs came to be reflected as part of the third WCDRR and the SFDRR outcome documents, a review of the preceding two World Conferences and their resulting documents is in order. The first WCDRR took place in Yokohama, Japan, in 1994 and produced the Yokohama Strategy and Plan of Action for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation (UN 1994). The Yokohama Strategy document contained no references to people with disabilities nor did it include disability-associated terms or themes such as accessibility, inclusion, or universal design. Some sections of the document did refer to vulnerability, but only within reference to developing countries rather than with reference to particular populations of individuals. Not until the Review of the Yokohama Strategy and Plan of Action for a Safer World (UNISDR 2004), released after the meetings in Hyogo, Japan in January 2005, did reference to vulnerable societies and groups or to an inclusive approach to disaster risk reduction appear. These mentions, though indirect, suggest consideration of disability-related needs were just beginning to emerge in discussions of disaster risk reduction.

The second WCDRR took place in Hyogo, Japan in 2005 and produced the Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and

Communities to Disasters (HFA) (UNISDR 2005). Again, people with disabilities were not specifically mentioned as a vulnerable group. The theme of inclusion was addressed, but only in the context of school curriculums on disaster, education and training, and gendered perspectives. The experience of people with disabilities with hazards were not mentioned at all in the HFA document.

In July 2014, the first Preparatory Committee for the third WCDRR met and agreed on a draft agenda, along with proposed rules of procedure for adoption by the WCDRR. Persons with disabilities were not mentioned in any of the documents resulting from this meeting. However, between the first and the second Preparatory Committee meetings, several open-ended, informal consultative meetings took place and written contributions on the Pre-Zero Draft were accepted. A Disability Caucus consisting of six disability advocacy and stakeholder groups was organized. The work of the Disability Caucus during this time period was instrumental in advocating for references to people with disabilities and disability-related concepts in the Pre-Zero Draft and subsequent documents. In a strongly worded statement leading up to the development of the Pre-Zero Draft, the Caucus stated “persons with disabilities have remained largely invisible within member states’ disaster risk reduction (DRR) policies and practices under the HFA” (UNISDR 2014a). In addition, the Disability Caucus pointed out the importance of aligning the SFDRR with Articles 11 and 32 of the United Nations Committee on the Rights of Persons with Disabilities (CRPD) as an international agreement. These recommendations included a call for data disaggregated by disability, the integration of universal design, and accessibility of information and communication for all disaster survivors, including those with disabilities.

As a result of the Disability Caucus’ efforts, three different references to people with disabilities appear in the Pre-Zero Draft released in August 2014. The Disability Caucus additionally made specific recommendations for the Zero Draft reflecting the CRPD, that documents should take into account persons with disabilities not only as recipients of assistance, but as contributors to DRR efforts on accessibility and inclusion (UNISDR 2014b). These recommendations were subsequently reflected in the Zero Draft. When the Zero Draft of the post-2015 framework for DRR was released on 20 October 2014, in advance of the second Preparatory Committee, it contained five direct references to people with disabilities. Indirect references to disability-related principles such as universal design, inclusivity, and accessibility were also included. However, the wording in both the Zero Draft and the SFDRR fell short of recognizing people with disabilities as experts or resources in disaster risk reduction. During the second Preparatory Committee, held 17–18 November 2014 in

Geneva, a negotiation process took place on the Zero Draft. On 17 November, the Disability Caucus, in a statement on the Zero Draft to the second Preparatory Committee, expressed satisfaction with the reflection of their recommendations in the Zero Draft (UNISDR 2014c). During the third Preparatory Committee session that was held just before the opening of the third WCDRR, the Zero Draft was considered and then transmitted to the cochairs of the conference.

#### 4 How the SFDRR Includes the Needs of Persons with Disabilities

The Sendai Framework for Disaster Risk Reduction 2015–2030 (SFDRR), as a result of the above processes, highlights the needs of people with disabilities to a much greater extent than previous documents. In the Hyogo Framework for Action 2005–2015 (HFA) there was no direct mention of people with disabilities in any of the drafts, whereas in the SFDRR, beginning with the Zero Draft to the final version, there are both direct and indirect references to people with disabilities. People with disabilities are mentioned five separate times as part of the preamble, the guiding principles, the priorities for action, and the role of stakeholders. Their inclusion in the document firmly establishes people with disabilities and their advocacy organizations as legitimate stakeholders in the design and implementation of international disaster risk reduction policies.

##### 4.1 The Preamble

The first direct mention of individuals with disabilities appears in the preamble of the SFDRR under Paragraph 7, which calls for “a more people-centered preventive approach to disaster risk” (UNISDR 2015a, p. 5). The SFDRR states that “While recognizing their leading, regulatory and coordination role, Governments should engage with relevant stakeholders, including women, children and youth, persons with disabilities, poor people, migrants, indigenous peoples, volunteers, the community of practitioners and older persons in the design and implementation of policies, plans and standards” (UNISDR 2015a, p. 5). While references to people with disabilities were much the same in the Zero Draft and the final SFDRR, the final text strengthened the language with respect to who was responsible for engaging people with disabilities in designing and implementing policies, plans, and standards. The SFDRR identified that it is the responsibility of governments to engage relevant stakeholders, including people with disabilities. This slight change in language strengthens the likelihood that the needs of people with disabilities will

be part of ongoing disaster risk reduction processes spearheaded by governments committed to the implementation of the SFDRR.

In addition, references to persons with disabilities in Paragraph 7 in the context of design and implementation of policies, plans, and standards are significant. The inclusion of people with disabilities in their development is not only an equity goal, it is a pragmatic goal. Input from people with disabilities is grounded in their own experiences. Their knowledge is firsthand and thus able to propose strategies that appropriately address barriers. People with disabilities are also knowledgeable about what approaches will result in effective methods for disaster risk reduction for the disability community. An example provided by the United Nations (UNISDR 2015c, p. 2) illustrates this point:

[...] in Urakawa Town, North East Japan, the local government worked with community members and in particular those individuals with psychosocial disabilities to design best-case scenarios for planning disaster response. This resulted in an effective response during the Great East Japan Earthquake and tsunami in 2011, which saw the group of residents with psychosocial disabilities evacuated first thanks to the training they had received as part of their social skill development program and the multimedia training manuals that were designed to be accessible by all in the community.

Involvement of the disability community thus not only increased better outcomes for people with disabilities, but also created accessible products beneficial to others in the community.

Also in Paragraph 7, the SFDRR contains several important disability-related constructs that become highly relevant in disaster situations. The disability-related constructs of inclusion and accessibility appear as common terms in discussing disaster risk reduction and state “Disaster risk reduction practices need to be [...] inclusive and accessible in order to be efficient and effective” (UNISDR 2015a, p. 5). Within the disability community, “accessibility” is multifaceted and has been a longstanding goal in the areas of education, transportation, housing, and employment. “Accessibility” not only refers to physical access, but access to services and resources. It is a term that applies, for example, to how individuals in wheelchairs can board public buses or enter public buildings over ramps, but also to how individuals who are blind access public documents through Braille or how Deaf individuals can access public announcements on television through closed captions.

In the case of individuals with cognitive impairments, such as intellectual disabilities or mental health disorders,

accessibility might include evacuation instructions that are understandable or assistance in deciding when to either evacuate or shelter-in-place. “Accessibility” within the disaster context not only includes physical access to emergency evacuation vehicles and shelters, but also access to emergency communications and disaster resources. Similarly, the term “inclusive” within the disability community is used to convey the concept that people and societies should accommodate the needs of people with disabilities in a manner that allows them to freely and independently live in the way they choose. Most recently, inclusion has involved efforts to assimilate people with disabilities into educational, workplace, and community environments. Along these lines, “inclusive” in the disaster context implies intent to assimilate the needs of people with disabilities in emergency planning and practices so that they receive disaster-related preparation and services as do all other people.

Although the concepts of inclusion and accessibility have been used within the disability community in connection with people with disabilities, these practices also benefit people without disabilities. For example, the accessibility shift to the use of curb-cuts in the United States on pedestrian sidewalks at intersections not only benefits people using wheelchairs, but also elderly people with balance problems and mothers pushing strollers. Similarly, the inclusion shift in the United States to provide close captioning on television not only benefits Deaf people but those who are learning English as a second language or those who would rather watch sports without narration. Within the context of disaster risk reduction, the constructs of accessibility and inclusion can be beneficial in similar ways. Evacuation procedures for people with mobility impairments, for example, will benefit both people who use wheelchairs and people who cannot walk long distances. Inclusive procedures, for example, such as considering the diverse dietary needs of people in a shelter, will benefit people with diabetes as well as people following religious dietary laws.

Paragraph 7 also stresses the importance of collaboration among civil society organizations, academia, and scientific and research institutions in addressing problems in disaster risk reduction. Typically, when we consider academic disciplines that address disaster risk reduction, engineering, meteorology, or geology come to mind. However, the social sciences offer us new frameworks within which to examine the needs of vulnerable populations in disaster. Circumstances that inhibit effective and efficient evacuation in disaster, such as is often the case with individuals with disabilities, call for the implementation of more social science research. Although some research on the effects of disasters on people with disabilities exists, there has been little recognition of this

research in the design and implementation of policies and standards.

Also in the Preamble, while not a direct mention of people with disabilities, the SFDRR in Paragraph 4 refers to the 1.5 billion people who “were affected by disasters in various ways,” noting that “Women, children, and people in vulnerable situations were disproportionately affected” (UNISDR 2015a, p. 4). Wording of the Zero Draft text was changed during the WCDRR from “vulnerable groups,” which may have included people with disabilities, to “people in vulnerable situations,” which seems to be a broader, more contextual, phrase. However, the recognition that populations exist who are disproportionately affected by disaster is meaningful.

## 4.2 The Guiding Principles

Direct mention of people with disabilities in the SFDRR again appears in Section III: Guiding Principles in Paragraph 19(d), which states that “Disaster risk reduction requires an all-of-society engagement and partnership.” The paragraph states that all policies and practices should include “A gender, age, disability and cultural perspective” (UNISDR 2015a, p. 8). This specific addition makes it more likely that people with disabilities will be involved in making policy and implementing practices. Partnership is particularly important as the HFA, and subsequently, the SFDRR, recognized that vulnerability to disaster is the result of societal conditions that exist in advance of a given hazard. These unfavorable societal conditions, as applied to people with disabilities, often preclude equal opportunities to overcome disaster situations.

Direct mention of people with disabilities also appears in the Guiding Principles in Paragraph 19(g), which states that “Disaster risk reduction requires a multi-hazard approach and inclusive risk-informed decision-making based on the open exchange and dissemination of disaggregated data, including by sex, age and disability” (UNISDR 2015a, p. 9). Despite the assertion that people with disabilities are disproportionately affected by disasters, international data on disasters have not been collected in a manner that allows analysis of the problem. Lack of such data hampers efforts to effectively respond to the needs of people with disabilities in disaster as the levels and types of supports needed by people with disabilities cannot be accurately determined. Given local conditions, such as famine, war, or a high rate of infectious diseases, rates of disability may concurrently rise and necessitate a greater level of supplies such as wheelchairs or other durable medical equipment, or specialized support, such as sign language interpretation. The limited empirical research (as well as a great number of anecdotal reports) also suggests differential effects of disaster. However, as

disaster statistics usually do not disaggregate based on disability status, critical data on how and the extent to which people with disabilities are affected in disaster, as well as their support needs post-disaster is missing from the research and practice literatures. The Incheon Strategy additionally points out that including disability as a demographic variable in surveys and other types of questionnaires used in emergency situations would signal that people with disabilities should be considered in the design and delivery of disaster risk reduction (UNESCAP 2014).

While it does not directly reference individuals with disabilities, Paragraph 19 refers to “special attention to people disproportionately affected by disasters, especially the poorest” (UNISDR 2015a, p. 8). With the acknowledgment that certain groups of people are disproportionately affected by disaster it is also implicitly acknowledged that some groups of people are more severely affected by disasters due to pre-disaster circumstances. While the Zero Draft acknowledged that diverse groups of people should be involved in DRR, the SFDRR takes the language one step further in stating that the perspective of vulnerable populations should be included in all policies and practices. This reconceptualization emphasizes that partnership is required not only after the occurrences of disasters but also before they occur. When people, who belong to vulnerable populations, including individuals with disabilities, participate in decision making, disaster risk reduction activities can take place in anticipation of disaster, not simply in reaction to it.

#### 4.3 The Priorities for Action

Recommendations from the Disability Caucus appear most significantly in Priority 3 in both the Zero Draft and in the SFDRR. Paragraph 28(b) in Priority 3 of the Zero Draft emphasizes the “Principles of Universal Design” when discussing investments in critical facilities and physical infrastructure (UNISDR 2014d, p. 11). The SFDRR takes a step further in (the renumbered) Paragraph 30(c) of Priority 3 in that it advocates for “the use of the principles of universal design” not only in public but also in private infrastructure construction (UNISDR 2015a, p. 15).

An indirect reference to people with disabilities also exists in Priority 3. Paragraph 30(j) in Priority 3 of the SFDRR discusses inclusive policies, social-net mechanisms, livelihood enhancement programs, and basic health care services. The paragraph does not contain a reference to people with disabilities, but the phrase “people disproportionately affected by disasters” (UNISDR 2015a, p. 16). However, a parallel clause written for the Zero Draft directly referenced the needs of people with disabilities in conjunction with social safety-net mechanisms. Paragraph 30(j) under Priority 3 of the SFDRR provides a more

detailed version of what services and activities should be inclusive in nature.

Although people with disabilities should not be de facto viewed as having medical needs, some individuals do concurrently experience medical needs. Paragraph 30(k) of Priority 3 states that “People with life threatening and chronic disease, due to their particular needs, should be included in the design of policies and plans to manage their risks before, during and after disasters, including having access to life-saving services” (UNISDR 2015a, p. 16). The SFDRR thus includes the medically fragile as part of its expanded emphasis on the needs of diverse vulnerable populations.

Direct mention of disabilities also occurs in Priority 4. More disability-related content appears in Priority 4 in the SFDRR than in the Zero draft. Priority 4 focuses on how to “Build Back Better,” stating that “Empowering women and persons with disabilities to publicly lead and promote gender equitable and universally accessible response, recovery, rehabilitation and reconstruction approaches are key” (UNISDR 2015a, p. 17). During the WCDRR, in a session on “build back better” principles, several countries emphasized that reconstruction also involves social, economic, and cultural reconstruction. In these arguments, reconstruction and disaster risk management were linked with broader development issues and their contribution to enduring disaster risks. The introduction to Priority 4 in the SFDRR states that empowering people with disabilities and universally accessible response, recovery, rehabilitation, and reconstruction approaches are critical. The text acknowledges that vulnerable populations are well-situated to identify their own needs and solutions in disaster situations.

#### 4.4 The Role of Stakeholders

The final direct reference to people with disabilities, falls under Section V: Role of Stakeholders, under Paragraph 36(a), which states that “Persons with disabilities and their organizations are critical in the assessment of disaster risk and in designing and implementing plans tailored to specific requirements, taking into consideration, inter alia, the principles of universal design” (UNISDR 2015a, p. 20). Recommendations from the Disability Caucus are particularly evident in the text on the role of stakeholders. The role of persons with disabilities is treated as critical in assessing the design and implementation of plans. Also, in Paragraph 36(a), the role of “Persons with disabilities and their organizations” is acknowledged (UNISDR 2015a, p. 20). This attention is beneficial to people with disabilities as organizational advocacy can sometimes be more powerful than individual advocacy. Partnership suggests that people with disabilities are given a voice as

stakeholders who are entitled to equal rights in the decision-making process.

The role of media in taking “an active and inclusive role” and providing information “in a simple, transparent, easy-to-understand and accessible manner” was made in both the Zero Draft and the SFDRR (Paragraph 36(d), UNISDR 2015a, p. 21). While the paragraph does not specifically mention people with disabilities, it does contain the important constructs of inclusion and accessibility. In the United States, the accessibility of media services has been particularly of concern with respect to individuals with sensory disabilities. Closed captioning, alternative types of alerting systems, and sign language translation of public announcements have all been evaluated with respect to their capacity to make emergency communications more accessible.

## 5 Discussion

The SFDRR identified disability-related needs and related references throughout the document and to a greater extent than the HFA, which made no direct mention of people with disabilities. The final SFDRR document includes more references to the needs of people with disabilities than the earlier Zero Draft. The additions intersect with Article 11 of the Convention on the Rights of Persons with Disabilities (UN 2006). The SFDRR has assisted in firmly situating the topic of people with disabilities within international policy and discourse on disaster risk reduction.

Several pivotal themes, each with philosophical origins in disability theory and research, permeated both the SFDRR and the WCDRR meeting itself. These themes, though applied in this context to the issue of disaster risk reduction, have historically been used by disability researchers and policymakers to address the needs of individuals with disabilities in the areas of education, housing, social services, and community living.

The universal design of environments was addressed both in the SFDRR and as part of the WCDRR meeting. Universal design was first conceptualized by Mace (an architect and wheelchair user), Hardie, and Plaiice (1991) as the principle that products and environments should be designed to be usable by all people without the need for adaptation or specialized design. While universal design has been primarily implemented through architectural design principles (and, most recently, as part of instructional design), the SFDRR presents universal design as a principle also useful in disaster mitigation. Two ideas are contained within this approach. First, that universal design not only assists people with disabilities in disaster—ramps, for example, make exiting more rapid for people with disabilities in wheelchairs, but also for other groups who

find ramps easier to navigate than stairs. The second idea is that when infrastructures are rebuilt, they should contain aspects of universal design so that the built environment does not place people with disabilities differentially at risk for future disasters. Thus the construct of universal design intersects neatly with the principles of “build back better” addressed in sessions at the WCDRR and in the SFDRR document. In addition, accommodations for people with disabilities incorporated into general usage may offer new ideas of how to effectively design for risk reduction across society.

A second pivotal theme regards the emphasis placed on inclusivity of disaster preparedness, response, and mitigation activities. While the concept of inclusion has been used to describe the incorporation of people with disabilities in educational, community, and workplace settings, the SFDRR expands the construct to include “all of society” (UNISDR 2015a, p. 8). This approach incorporates the needs and viewpoints of other marginalized or vulnerable groups and potentially strengthens overall resilience through broad-based planning. Sharma (2014) defines the approach: “Inclusive Disaster Risk Management is about equality of rights and opportunities, dignity of the individual, acknowledging diversity, and contributing to resilience for everyone.” Such goals are relevant to all individuals affected by disaster, as well as to individuals with disabilities.

A third pivotal theme pertains to accessible technology and communications during disaster. Providing information through media in a manner that is more understandable to all means that protective actions can be taken more effectively and by a broader range of the population. New technologies and modifications of assistive technology devices, including wheelchairs, hearing aids, Braille, and communication boards, have historically been used to level the field for persons with disabilities. Design of accessible technology has the potential to similarly provide equitable access to disaster risk reduction for other vulnerable populations. While the focus in the SFDRR is on technology that would make disaster notification more accessible for people with disabilities, such technology also serves people without disabilities.

A final pivotal theme pertains to the essential role of individuals with disabilities and disability advocacy organizations as stakeholders and collaborators in emergency planning and recovery. Inclusion in community life has long been a central objective of the disability community. Recognition by the SFDRR of persons with disabilities as stakeholders in the design and implementation of disaster risk reduction acknowledges people with disabilities as potential active participants alongside the rest of the community. Margareta Wahlström, Head of the UN Office for Disaster Risk Reduction, reported “In a survey of

people living with disabilities that we conducted last year a large majority told us that they want to be consulted equally about their needs in order to face and prepare for disasters, as well as being able to contribute expertise and participate in planning and implementation. We need to keep in mind that disability is not inability” (UNISDR 2013). Actions taken on behalf of people with disabilities can be beneficial for other vulnerable groups. While such actions are empowering for people with disabilities and their organizations, they empower other vulnerable groups to become participatory actors in disaster risk reduction.

Including disability and disability-related themes in the SFDRR has provided dimensions to the document that it did not have before. The concepts of inclusion, accessibility, and universal design are of use for all people, not just people with disabilities. In essence, including people with disabilities in planning and policy not only has the potential to make people with disabilities safer—it makes everyone a bit safer.

## 6 Recommendations for the Future

While the SFDRR refers to the importance of addressing the needs of people with disabilities, it is not a toolbox for concrete practices. Future risk reduction activities need to be developed in response to the recommendations in the document. Disaggregated data collection is required for systematic response to the needs of people with disabilities in disaster situations. Persons with disabilities tend to remain invisible in registration systems (Ito 2014) and most disaster agencies do not include the assessment of needs of people with disabilities in their vulnerability and capacity assessments (Twigg 2014). The Incheon Strategy laid out concrete guidelines for data collection and generation by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) member states on the needs of people with disabilities, including those affected by disaster (UNESCAP 2014). Solid statistics on people with disabilities are needed for evidence-based policy making in the area of disaster risk reduction (UNESCAP 2012).

Second, an examination of practices among signing countries of whether recommendations and consensus agreements are actually followed in their policy and practices is necessary. When international organizations establish broad consensus frameworks among states, it is reasonable to expect that changes in policy making and practices will follow within these states. However, we cannot expect automatic outcomes stemming from agreements and policy, particularly as the SFDRR does not include specific regulations or legal controls that enforce implementation.

Third, the SFDRR did not address funding or resources required by states to address the framework’s priorities.

Issues of disaster risk reduction cannot be separated from financing, especially when considering limited resources in developing countries. The SFDRR does mention cooperation and participation from the private sector and that the role of the private sector including businesses, civil society organizations, and academia is critical. Global companies, in particular, have an ethical responsibility for supporting disaster risk reduction, particularly as many have benefited from the contributions provided by workers in developing countries. It is incumbent on member states, with support from the international community, to address funding mechanisms in order for policy to translate into concrete practice.

Fourth, while recognizing the significant contribution that the SFDRR makes towards international disability-related policy, policies are not always followed through and practiced at the national and local level. Particularly in the case of people with disabilities, who often have been excluded in decision making or hold unfavorable social status within their communities, there are additional barriers to implementation. Even the CRPD, with its central focus on the rights of people with disabilities, faces significant challenges to its implementation (Kett et al. 2009; Lang et al. 2011). Disasters often serve to compound existing societal attitudes in societies where people with disabilities are devalued, ostracized, or excluded, particularly when there is competition for scarce resources, as in disaster contexts (Mitchell and Karr 2014). Furthermore, the needs of individuals with disabilities must be understood within specific national and geographical contexts to understand how to implement policy (Stough 2015). These multiple factors should be considered in developing disaster risk reduction policies and practices that are in line with international agreements on the rights of people with disabilities.

Finally, it is important to continue to boost the participation of people with disabilities and their organizations in making policy and practice. Direct participation of people with disabilities is necessary as they themselves can best represent their needs during disaster. The significance of this type of participation is evident in the influence the Disability Caucus had on shaping the SFDRR. Advocacy organizations for people with disabilities made their voices heard through written recommendations, direct participation in meetings, and commentaries. Continued efforts should be made to empower people with disabilities and their advocates to become involved in disaster risk reduction.

## 7 Conclusion

The SFDRR has made remarkable progress towards recognizing the needs of persons with disabilities in disaster and disaster risk reduction. In addition, people with



disabilities and their organizations made significant contributions in shaping the framework to reflect their experiences and needs. In the SFDRR, the role of people with disabilities is not one of passivity; rather they are recognized as partners and stakeholders. The United Nations notes that there was “an additional focus on empowerment of persons with disabilities in planning for risk management and resilience” (UNISDR 2015b).

The infusion of disability-related terms and concepts such as accessibility, inclusion, and universal design throughout the SFDRR document, in connection to and separate from the mention of disability, is significant. These concepts, with their origin in disability history, are used in the document to refer to the needs of all in disaster, not only to people with disabilities as a particular group. These concepts, historically used almost exclusively within the disability community, will now serve the field of disaster risk reduction as overarching important principles in disaster. The field of disability has thus made a significant contribution to another field of practice through the contribution of the concepts of accessibility, inclusion, and universal design. Not only is the recognition of these concepts important as empowering for the disability community, it is also a prime example of how vulnerable groups and their advocates can contribute to disaster risk reduction, not only through their participation, but through their innovative ideas.

Through its advocacy, the Disability Caucus was able to advocate for laudable policy changes as part of the SFDRR process and the final document. However, the needs of persons with disabilities continue to be absent in other international agreements, documents, and discussions. For example, disability issues were not recognized at the Rio+20 Conference on Sustainable Development in 2012, nor was disability recognized as one of the nine Major Groups of the United Nations’ Agenda 21 on sustainable development. The US government also demonstrates continuing reluctance to ratify the CRPD—an incomprehensible stance—especially from a nation espousing a human rights agenda in other areas. Persons with disabilities and their organizations must continue to advocate for equal rights in the international arena. Including disability needs in the SFDRR was an impressive movement forward in advancing international recognition of human rights for people with disabilities. We must keep that momentum.

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## References

- Aldrich, N., and W.F. Benson. 2008. Disaster preparedness and the chronic disease needs of vulnerable older adults. *Preventing Chronic Disease* 5(1). Article no. 27.
- Ayazi, T., L. Lien, A.H. Eide, R. Jenkins, R.A. Albino, and E. Hauff. 2013. Disability associated with exposure to traumatic events: Results from a cross-sectional community survey in South Sudan. *BMC Public Health* 13: 469. doi:10.1186/1471-2458-13-469.
- Boon, H.J., P. Pagliano, L. Brown, and K. Tsey. 2012. An assessment of policies guiding school emergency disaster management for students with disabilities in Australia. *Journal of Policy and Practice in Intellectual Disabilities* 9(1): 17–26.
- CBM (Christian Blind Mission). 2014. International day for disaster reduction 2014. <http://www.cbm.org/International-Day-for-Disaster-Reduction-2014-470100.php>. Accessed 11 May 2015.
- Center for International Rehabilitation. 2005. *International disability rights monitor: Disability and early tsunami relief efforts in India, Indonesia and Thailand*. Chicago: International Disability Network.
- Christensen, K.M., M.E. Blair, and J.M. Holt. 2007. The built environment, evacuations, and individuals with disabilities: A guiding framework for disaster policy and preparation. *Journal of Disability Policy Studies* 17(4): 249–253.
- Ducy, E.M., and L.M. Stough. 2011. Exploring the support role of special education teachers after Hurricane Ike: Children with significant disabilities. *Journal of Family Issues* 32(10): 1325–1345. doi:10.1177/0192513X11412494.
- European Emergency Number Association. 2007. The Verona Charter on the rescue of persons with disabilities in case of disasters. <http://www.eena.org/ressource/static/files/Verona%20Charter%20approved.pdf>. Accessed 11 May 2015.
- FEMA (Federal Emergency Management Agency). 2015. FEMA External Affairs Bulletin Week of March 30, 2015. <http://content.govdelivery.com/accounts/USDHSFEMA/bulletins/fc0af6>. Accessed 11 May 2015.
- Hisamatsu, M. 2013. *Panel discussion on disaster resilience and disability: Ensuring equality and inclusion*. Co-organized by UNDESA, UNISDR in collaboration with Indonesia and Norway and the Nippon Foundation, UN Headquarters, New York.
- International Federation of Red Cross and Red Crescent Societies. 2007. *World disasters report: Focus on discrimination*. Bloomfield, CT: Kumarian.
- Ito, A. 2014. Disability, natural disasters, conflict, humanitarian emergencies: The work of the United Nations. In *Crises, conflict and disability*, ed. D. Mitchell, and V. Karr, 19–24. New York: Routledge.
- Kett, M., R. Lang, and J.F. Trani. 2009. Disability, development and the dawning of a new convention: A cause for optimism? *Journal of International Development* 21(5): 649–661.
- Lang, R., M. Kett, N. Groce, and J.F. Trani. 2011. Implementing the United Nations Convention on the rights of persons with disabilities: Principles, implications, practice and limitations. *ALTER-European Journal of Disability Research/Revue Européenne de Recherche sur le Handicap* 5(3): 206–220.
- Mace, R., G. Hardie, and J. Plaice. 1991. Accessible environments: Toward universal design. In *Design interventions: Toward a more humane architecture*, ed. W.E. Preiser, J.C. Vischer, and E.T. White, 155–175. New York: Van Nostrand Reinhold.
- Mitchell, D., and V. Karr. 2014. *Conclusions*. In *Crises, conflict and disability*, ed. D. Mitchell, and V. Karr, 224–232. New York: Routledge.

- Peek, L., and L.M. Stough. 2010. Children with disabilities in the context of disaster: A social vulnerability perspective. *Child Development* 81(4): 1260–1270. doi:10.1111/j.1467-8624.2010.01466.x.
- Phibbs, S., G. Good, C. Severinsen, E. Woodbury, and K. Williamson. 2015. Emergency preparedness and perceptions of vulnerability among disabled people following the Christchurch earthquakes: Applying lessons learnt to the Hyogo Framework for Action. *Australasian Journal of Disaster and Trauma Studies* 19: 37–46 (Special Issue).
- Sharma, A. 2014. *Making disaster risk management inclusive: Briefing paper*. Council of Europe, Action Aid, Handicap International, and Oxfam. <http://www.actionaid.org/publications/inclusive-disaster-risk-management-briefing-paper>. Accessed 11 May 2015.
- Sphere Project. 2011. *The Sphere Project: Humanitarian charter and minimum standards in humanitarian response*. Dunsmore, UK: Practical Action Publishing. <http://www.ifrc.org/PageFiles/95530/The-Sphere-Project-Handbook-2011.pdf>. Accessed 11 May 2015.
- Stough, L.M. 2015. Disasters and intellectual disability: Considerations on the World Report on Disability. *Journal of Policy and Practice in Intellectual Disabilities*. doi:10.1111/jppi.12116.
- Stough, L.M., A.N. Sharp, C. Decker, and N. Wilker. 2010. Disaster case management and individuals with disabilities. *Rehabilitation Psychology* 55(3): 211–220. doi:10.1037/a0020079.
- Tatsuki, S. 2012. Challenges in counter-disaster measures for people with functional needs in times of disaster following the Great East Japan Earthquake. *International Journal of Japanese Sociology* 21(1): 12–20.
- Twigg, J. 2014. Attitude before method: Disability in vulnerability and capacity assessment. *Disasters* 38(3): 465–482.
- Twigg, J., M. Kett, H. Bottomley, L.T. Tan, and H. Nasreddin. 2011. Disability and public shelter in emergencies. *Environmental Hazards* 10(3–4): 248–261.
- UN (United Nations). 1994. *Yokohama strategy and plan of action for a safer world: Guidelines for natural disaster prevention, preparedness and mitigation*. <http://www.unisdr.org/we/inform/publications/8241>. Accessed 11 May 2015.
- UN (United Nations). 2006. *Convention on the rights of persons with disabilities*. <http://www.un.org/disabilities/convention/conventionfull.shtml>. Accessed 5 May 2015.
- UNESCAP (United Nations Economic and Social Commission for Asia and the Pacific). 2012. *Incheon strategy: 10 goals to make the right real for persons with disabilities in Asia and the Pacific, 2013–2022*. [http://www.unescapdd.org/files/documents/PUB\\_Incheon-Strategy-EN.pdf](http://www.unescapdd.org/files/documents/PUB_Incheon-Strategy-EN.pdf). Accessed 11 May 2015.
- UNESCAP (United Nations Economic and Social Commission for Asia and the Pacific). 2014. *ESCAP Guide on disability indicators for the Incheon strategy*. <http://www.unescap.org/resources/escap-guide-disability-indicators-incheon-strategy>. Accessed 11 May 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2004. *Review of the Yokohama strategy and plan of action for a safer world*. <http://www.unisdr.org/2005/wcdr/intergover/official-doc/L-docs/Yokohama-Strategy-English.pdf>. Accessed 11 May 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2005. *Hyogo framework for action 2005–2015: Building the resilience of nations and communities to disasters*. <http://www.unisdr.org/2005/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf>. Accessed 11 May 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2013. *UN global survey explains why so many people living with disabilities die in disasters*. <http://www.unisdr.org/archive/35032>. Accessed 16 Apr 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2014a. *Disability stakeholders' comments and recommendations: Pre-zero draft of the post-2015 international disaster risk reduction framework (HFA2)*. [www.wcdrr.org/uploads/Disability-stakeholders-pre-zero-HFA2-final.doc](http://www.wcdrr.org/uploads/Disability-stakeholders-pre-zero-HFA2-final.doc). Accessed 31 May 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2014b. *Disability caucus statement on the zero draft of the post-2015 framework for disaster risk reduction*. <http://www.wcdrr.org/conference/events/1046>. Accessed 11 May 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2014c. *Statement of the committee on the rights of persons with disabilities on disability inclusion in the third world conference on disaster risk reduction and beyond*. <http://www.wcdrr.org/conference/events/1046>. Accessed 11 May 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2014d. *Post-2015 framework for disaster risk reduction. Zero draft submitted by the co-Chairs of the Preparatory Committee*. [http://www.un.org/disabilities/documents/events/wcdrr/zero\\_draft.pdf](http://www.un.org/disabilities/documents/events/wcdrr/zero_draft.pdf). Accessed 11 May 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2015a. *Sendai framework for disaster risk reduction 2015–2030*. [http://www.wcdrr.org/uploads/Sendai\\_Framework\\_for\\_Disaster\\_Risk\\_Reduction\\_2015-2030.pdf](http://www.wcdrr.org/uploads/Sendai_Framework_for_Disaster_Risk_Reduction_2015-2030.pdf). Accessed 11 May 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2015b. *Historic framework adopted*. <http://www.unisdr.org/archive/43382>. Accessed 11 May 2015.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2015c. *UN world conference on disaster risk reduction, issue brief: Inclusive disaster risk management—Governments, communities and groups acting together*. <http://www.wcdrr.org/uploads/Inclusive-Disaster-Risk-Management-2.pdf>. Accessed 11 May 2015.
- van Willigen, M., T. Edwards, B. Edwards, and S. Hesse. 2002. Riding out the storm: Experiences of the physically disabled during Hurricanes Bonnie, Dennis, and Floyd. *Natural Hazards Review* 3(3): 98–106.
- Wisner, B. 2002. *Disability and disaster: Victimhood and agency in earthquake risk reduction*. Newcastle upon Tyne: Northumbria University.
- World Health Organization and World Bank. 2011. *The world report on disability*. [http://www.who.int/disabilities/world\\_report/2011/report.pdf](http://www.who.int/disabilities/world_report/2011/report.pdf). Accessed 11 May 2015.