



An Empirical Exploration of the Capabilities of People with Disabilities in Coping with Disasters

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Abstract While the capability approach is increasingly being adopted for evaluating well-being and social justice in the field of human development, this approach in disaster research has remained scarce. This research thus seeks to address the disaster risk that humans face through a lens of capabilities, with a focus on the lives of people with disabilities. A multi-case study approach was adopted and two rural communes in Vietnam were selected as study contexts. Data were collected using focus group discussions and interviews that involved people with disabilities, parents/caregivers of people with intellectual/psychosocial disabilities, and representatives from related organizations. It was found that people with disabilities are affected by disasters due to the lack of capabilities that they value in coping with disasters. A range of capabilities that people with disabilities value was revealed in the study sites, with many being valued not only in times of disasters but also in daily life. The findings also highlight that, to actualize their valued capabilities, people with disabilities need access not only to resources but also to the factors that enable them to convert the resources to their valued capabilities. In most

cases, the limitations to the achievement of capabilities are related to the external environment.

Keywords Capability approach · Disasters · People with disabilities · Vietnam · Vulnerability

1 Introduction

Although people with disabilities (PWD) are disproportionately affected by disasters, research on disability and disasters has remained scarce to date (Wisner et al. 2004; Alexander et al. 2012; Stough and Kelman 2018). When it comes to researching issues of disability in the context of disasters, there are two contradicting perspectives—the individual and the social—adopted by disaster scholars. The individual perspective reduces disability to impairment-related difficulties in times of disasters (Fjord and Manderson 2009). It views the disablement as a result of body function limitations and treats PWD as “victims” or as those in need of “special assistance” during emergencies or disasters (Wisner 2002). The social perspective of disability, however, claims that disablement is mainly rooted in social arrangements and practices (Priestley and Hemingway 2007; Stough et al. 2016). The proponents of this social perspective contend that the preexisting barriers for PWD to achieve safety are often not addressed in and removed from society and are further exacerbated by the occurrence of disasters. This perspective is in line with the social vulnerability theory of disasters, which claims that disasters have disproportionate impacts on certain groups in society, resulting from cultural, economic, and social processes or factors, and their interactions (Wisner et al. 2004; Tierney 2014; Drabek 2018). Priestley and Hemingway (2007, p. 25) noted that “Just as disability is not the

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inevitable consequence of physical or cognitive impairment, disaster is not the inevitable consequence of natural hazard.”

Recently, some scholars have adopted the capability approach (CA) to research disability issues (Burchardt 2004; Dubois and Trani 2009; Mitra 2018). In the CA, disability is viewed as the outcome of the interaction between personal characteristics (including health conditions and impairments), resources, and the environment (Mitra 2006). In the context of disasters, Ton et al. (2019) suggest adopting this CA to address disaster risks facing PWD. They argue that the risk of disasters that people face may be interpreted as a manifestation of the deprivation or restriction of capabilities to deal with disasters. This restriction arises not only from the shortage of resources but also from limited individual, cultural, social, economic, and political factors that enable people to use the resources to cope with disasters.

Drawing on the theoretical framework of Ton et al. (2019), this article provides an in-depth empirical analysis through the lens of the CA to explain why PWD are affected by disasters. It seeks to explore disaster impacts on the lives of PWD, what capabilities they value in dealing with disasters, and how their valued capabilities can be achieved. Two rural and highly storm- and flood-prone communes¹ in the central coastal region of Vietnam were studied to explore these research problems. The article begins by providing a brief overview of the capabilities of PWD in disasters. It then goes on to the research design and descriptions of the study sites before examining the capabilities of PWD to face disasters.

2 Capabilities of People with Disabilities in Disasters

The capability approach was developed by Amartya Sen in the 1980s (Sen 1992, 1999). Sen sees human life as comprised of activities and states of being, namely functionings, such as being healthy, being well-nourished, avoiding morbidity, or being employed. While functionings are considered as the achievement of valuable doings and beings, “capability” is viewed as the real opportunity that individuals have to achieve functionings that they value (Sen 1992).

Sen (1999) places a strong emphasis on the freedom of an individual to choose from a range of possible functionings. He argues that development should aim to expand human capabilities and proposes to focus on capabilities rather than functionings. He explains that focusing on functionings can deprive people of the freedom to choose, since, in certain cases, some functionings could be achieved by force or

coercion, or people could choose not to pursue a functioning to fulfill another functioning instead.

Sen (1992) argues that the achievement of valuable functionings depends not only on the availability of resources that people possess (that is, goods or services that have certain characteristics to enable a functioning) but also on how/what they are able to use or do with the resources effectively. This utilization of resources is greatly influenced by what Sen calls “conversion factors”—the degree to which individuals can transform a resource into a functioning they value (Robeyns 2017). Conversion factors are categorized into individual and environmental. Individual factors are internal to the person, such as mental and physical abilities, health conditions, sex, age, literacy level, or attitude, while environmental factors are external. The environmental factors can be classified into four groups: social factors such as norms, discrimination, stigma, family support, and social network; economic factors such as markets and budget allocation; political factors such as policies and power relations; and physical factors such as stability and accessibility of infrastructure, means of transport and communication, and hazard-prone areas.

When it comes to disability-related issues, Sen (2009) argues that PWD often face difficulties or disadvantages in earning income as well as converting income and resources into the life they value. He terms such disadvantages as “earning handicap” and “conversion handicap” respectively (Sen 2009, p. 258). He claims that PWD may have an earning handicap as they may find it harder to get a job and may receive lower compensation for work. Further, due to their conversion handicap, PWD may require more resources associated with disabilities to achieve the same living standards or outcomes as people without disabilities (Sen 1992, 2009; Mitra et al. 2017). Sen (2009) then raises the need to pay attention not only to earning handicaps but also to conversion handicaps when examining disability-related issues.

In disaster contexts, Sen often discusses famine, which may be triggered by natural hazards such as droughts, storms, and floods. In line with the vulnerability perspective (Wisner et al. 2004), Sen (2010) recognizes the interplay between hazards and social, economic, and political arrangements/conditions in leading to human disasters.² He, however, argues that “even when nature plays a part, society can make a huge difference” (Sen 2010, p. 3), by which he means that the effects of disasters can be prevented or reduced by social interventions.

¹ Commune is the smallest unit in the three-level administrative divisions of Vietnam.

² Sen (2010) defines “human disaster” as a subset of disasters that is associated with the misfortunes of human beings and focuses on the predicaments of groups of people.

Malik (2014) claimed that disasters play a role in eroding human development achievements and that the disaster risk people face is greatly influenced by their capabilities. In most cases, failure to protect people from disasters—or to protect human capabilities from being eroded by disasters—is a consequence of poor societal arrangements. Lewis (1999) argued that the vulnerability of people at risk such as PWD, older people, and children preexists in society and is revealed and exacerbated by hazards. This includes a lack of access to, and equal opportunity for, acquiring safe conditions in times of disaster (Davis et al. 2013). Robinson (2017) noted that PWD often have limited access to any early warning information. Even if they can access the information, they may face challenges to act on it, for example, due to the inaccessibility of evacuation centers. Robinson (2017) also pointed out that the time needed by a person using a wheelchair (and supported by an assistant) to reach an evacuation point is double the time needed by a person without disabilities. This indicates the critical role of environmental conditions, such as accessibility and inclusive evacuation plans, in enabling PWD to secure their safety in times of disasters.

In addition, restricted access to resources and services after a disaster may prolong the recovery process for PWD (Stough et al. 2016). Disruptions in basic support services or networks and omission in emergency registration systems often leave PWD struggling to meet their needs or to sustain their valuable functionalities (for example, shelter, health, transportation, and employment) during and after disasters. Discrimination in relief activities such as food distribution or medical services and recovery efforts also place PWD in increased vulnerable situations in the aftermath of disasters (Wisner 2002; Smith et al. 2012).

3 Research Design

Recently, the possibility of using the CA in explanatory research has been raised (Robeyns 2017). However, to be used for this explanatory purpose, it is argued that the CA needs to be grounded in an appropriate philosophical paradigm. Critical realism is considered well-suited for this purpose, and thus was used as a research paradigm in this study. Critical realism combines realist stratified ontology, constructivist epistemology, and pluralist methodology (Fleetwood 2014). Given the pluralist methodology, critical realists have flexibility in choosing research methodologies, either qualitative, quantitative, or both.

As this study aims to explain the disaster risk faced by people with disabilities through the capability lens, a qualitative approach was adopted. A multi-case study design (Yin 2018) was used for data collection, which mainly drew on interviews and focus group discussions (FGDs). These

methods were reviewed and approved by the University of Auckland Human Ethics Committee. Two communities—Cam Thuy Commune, Quang Tri Province, and Phu Luong Commune, Thua Thien Hue Province—were selected as the study contexts through consultation with the Disabled People's Organizations³ (DPOs) of Quang Tri Province and Thua Thien Hue Province and Malteser International,⁴ a nongovernmental organization in Vietnam. The selection of the study sites was mainly based on the hazard profile and access to the study communes. The field data collection took place in these two communes from March to July 2018. In each commune, two FGDs were facilitated by the lead author, one with 7–11 people with physical disabilities and the other with 5–8 parents/caregivers of people with intellectual/psychosocial disabilities (16 males and 15 females). Each FGD lasted from 4 to 6 h. The FGDs focused on understanding the local hazard profile, what PWD are capable of doing and being in coping with disasters, and what and how personal and environmental factors influence their capabilities. Tools such as disaster timelines, hazard mapping, Venn diagrams, priority ranking, and a Yes/No game on disability stereotypes were used during the FGDs.

The lead author conducted semistructured and unstructured interviews with 15 people with disabilities (10 males and 5 females) and 12 parents/caregivers of people with intellectual and psychosocial disabilities (6 males and 6 females), and 35 representatives (24 males and 11 females) from government organizations (for example, local government officers in charge of social work, health workers, village leaders, and members of the Disaster Risk Management Committee), the Blind Association of Thua Thien Hue, Disabled People's Organizations, the Vietnam Red Cross, and nongovernmental organizations (including Malteser International, Action to the Community Development Center and Sustainable Rural Development). The selection of the participants with disabilities mainly relied on the government categorization of disabilities under the Vietnamese Law on Persons with Disabilities 2010 (Law No. 51/2010/QH12). Their impairments and health conditions are physical (for example, myasthenia, limb amputation or limbless, muscle atrophy, clubfoot) and visual (total loss of vision in both eyes). Each interview took 30–120 min. The interviews aimed to gain more understanding of the local disaster risks,

³ In 2018, due to a redundancy policy of Quang Tri Province, the Quang Tri Disabled People's Organization and two other organizations that work for agent orange victims, people with disabilities and orphans were merged into an umbrella organization, the Quang Tri Association of People with Disabilities, Agent Orange Victims, Sponsoring People with Disabilities, and Protecting Children's Rights.

⁴ In collaboration with the Quang Tri Association and the Disaster Management Policy and Technology Center, Malteser International implemented a disability-inclusive disaster risk reduction project (2016–2018) in Cam Thuy.

structural forces such policies, political structures, local and national disaster risk reduction (DRR), government programs related to DRR for PWD, and culture and disability stereotypes, which had been raised during the FGDs.

In Cam Thuy, by participating in local DRR activities such as disaster drills, disaster risk reduction (DRR) planning, risk communication and First Aid training, and communication meetings, the lead author built up trust with local people and had informal conversations with them to better understand the social, economic, and political contexts of the study commune. Observations of those activities were recorded in notes and photographs.

The FGDs and interviews were recorded and transcribed by the lead author. The data from interviews, FGDs and field notes were coded deductively with flexibility (Fletcher 2017) using NVivo 12. The data analysis followed the six analytical stages in explanatory research suggested by Danermark et al. (2002) to identify structures and causal mechanisms (that is, resources and conversion factors) that ultimately answer the question: “what causes the capabilities to be actualized?”

4 Setting the Scene

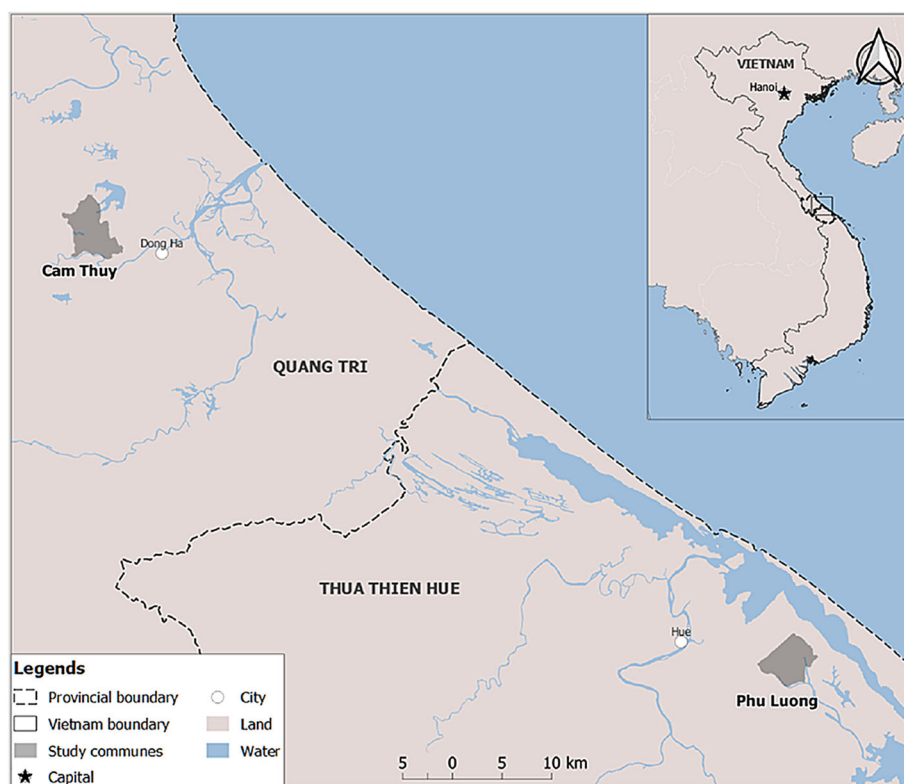
The two study communes are located in the central region of Vietnam (Fig. 1). Their geographic locations close to the coast expose them to storms and tropical depressions that

occur annually in Vietnam. With many small lakes and a river flowing through each of the two communes, they are also prone to floods, especially during the rainy season from October to December.

In Cam Thuy, the total population as of 2018 was 5576 people, 174 of whom were people with disabilities (86 males, 88 females) (Cam Thuy People’s Committee 2018). In Phu Luong, the total population as of 2015 was 6530 people, 117 of whom were people with disabilities (65 males, 52 females) (Phu Luong People’s Committee 2015). The majority of PWD in these two communes have mobility, intellectual, and psychosocial disabilities. The residents mainly live along the main roads and the river. There are 11 villages in Cam Thuy and 10 villages in Phu Luong. Each village has a community hall where village meetings are often held or people are accommodated in times of evacuation. However, many of these halls in Cam Thuy are located in low-lying areas and are therefore often flooded.

The main sources of income of Cam Thuy and Phu Luong people are from agriculture (cultivation of rice, vegetables, mushrooms, fruit trees, and so on) and small-scale animal husbandry (for example, cows, pigs, and poultry). Other sources of income are from aquaculture and small businesses such as restaurants, cafes, and grocery stores. The majority of PWD, particularly those with intellectual disabilities, do not have jobs. Some PWD assist

Fig. 1 Locations of the two study communes in Vietnam—Cam Thuy Commune, Quang Tri Province, and Phu Luong Commune, Thua Thien Hue Province



their family in farming activities, and a few, mostly with mild disabilities, engage in income-earning activities such as agriculture and small grocery stores. In general, most of the PWD in both communes are dependent on their families and disability allowances from the government and, according to the criteria of the Vietnamese government, many households with PWD are poor.

The main hazards in both communes are similar, including floods, storms, droughts, and pests and diseases that affect crops and animals. The impacts of these hazards are summarized in Table 1.

5 Exploring Capabilities that People with Disabilities Value for Their Disaster Risk Reduction

Considering the impacts of disasters, the participants were asked what valuable “doing or being” (that is, functionings) should be achieved to reduce these impacts or to ensure the

safety for PWD in times of disaster. The FGDs and interviews revealed a wide range of capabilities that PWD in the study sites valued in coping with disasters. The main capabilities are summarized in Table 2. This article does not attempt to describe all the capabilities identified. Rather, it endeavors to explain how capabilities are created by uncovering what resources PWD need for their valued capabilities and how individual and external conversion factors and their interrelations influence the achievement of these valuable capabilities.

5.1 Resources

In this study, resources refer to materials, goods and services that people use to achieve their valuable capabilities for reducing disaster risk. They can be privately or collectively owned (for example, public goods or services). Resources are always an important factor for people to cope with disasters. People can use different types of resources to achieve the same capability. For instance, for

Table 1 Hazard profiles in Cam Thuy and Phu Luong Communes, Vietnam, 1983–2017. *Source:* Interviews and focus group discussions (FGDs) in 2018

Hazards	Time of occurrence		Frequency (per year)		Impacts
	Cam Thuy	Phu Luong	Cam Thuy	Phu Luong	
Floods	July–November 1983, 1985, 1992, 1999, 2016	October–December 1983, 1989, 1999, 2004, 2006, 2009, 2016	1–3	3–4	Deaths and injuries Housing damage Infrastructure damage (road and irrigation systems) Loss of crops and animals Loss of rice and assets Human diseases (for example, red eyes and diarrhea) Environmental pollution Lack of clean water in Cam Thuy Schools closed
Storms	July–October 1983, 1985, 2016	September–November 1985, 1989, 2004, 2006, 2008, 2016	1–5	1–3	Deaths and injuries Housing damage Infrastructure damage (power cut-off) Loss of crops and animals Schools closed
Droughts	March–June 2013	June–July 1976	Rare	Rare	Loss of crop harvest Lack of water for everyday life use
Pests and diseases in agriculture			Annually	Annually	Loss of harvest
Tornados		September–October 2016, 2017		Very rare	Housing damage

Table 2 Main capabilities to reduce the impacts of disasters valued by people with disabilities in Cam Thuy and Phu Luong Communes, Vietnam. *Source:* Interviews and focus group discussions (FGDs) in 2018

Resources	Conversion factors		Capabilities
	Individual factors	External factors	
Goods and services			Capabilities that people with disabilities value in coping with disasters
Sources of water: River, ponds, wells, rainwater, pipelines, or bottled water from local shops	Attitude Financial capacity	Water supply service: Inappropriate water treatment and poor management; transparency in management/governance	Having clean water
Water filters		Support from external organizations (for example, water tanks, pipeline network extension)	
Water containers			
Medicines	Health conditions	Accessibility of the local clinic service	Being healthy
Local pharmacies	Attitude	Policies (for example, free health insurance for people with disabilities and poor households)	
Local clinic services	Knowledge	Family support	
Access to clean water			
Land	Health conditions	Stigma and discrimination	Engaging in income-earning activities (for example, employment, farming)
Training services		Livelihood project	
Agricultural extension services	Knowledge and skills	Competency of agricultural staff	
Loans	Self-stigma	Market prices Weather and pests Policies and programs for poverty reduction Accessibility of workplace Support of local Disabled People's Organizations Family attitude and support	
Loans	Health conditions	Social support (for example, neighbors, Youth Union)	Being sheltered safely at home
Concrete houses or entresols	Attitude	Policies (for example, to support the poor to access loans)	
Materials for house retrofitting			
Commune evacuation centers	Health conditions	Family attitude and support	Being mobile/evacuating to safe places
Safe houses of neighbors or relatives	Risk knowledge	Family/caregivers: Skills to communicate with people with intellectual/psychosocial disabilities Stigma and discrimination	
Means of transport	Self-stigma	Social support (for example, neighbors, Youth Union) Accessibility of evacuation centers Disability inclusion in disaster response plan	
Local groceries	Health conditions	Social support (for example, buy food from local groceries on credit or borrow food from neighbors)	Being nourished
Food supply in evacuation centers	Attitude Adaptive diet	Relief support from government and nongovernmental organizations	

being safe in times of storms in the study areas, people may have two options: either staying in their concrete (or retrofitted) house or evacuating to a safer place such as local evacuation centers or their neighbor's house.

In the study areas, many PWD, especially those with low incomes, had limitations on resources to achieve their valued capabilities. In Cam Thuy, many participants reported the lack of access to clean water. They mostly relied on the water from their wells (which is

predominately of unreliable quality—often smelly, salinized, and alum-contaminated), rainwater, and bottled water purchased from local groceries. In times of floods, they could not use water from the wells or afford enough bottled water for daily use. Many participants with disabilities noted that their evacuation to other safe places was due to their poor housing conditions.

For some capabilities, PWD may need additional resources. For instance, for the capability of evacuating to a

safe place in times of storms, people with mobility disabilities may need vehicles such as wheelchairs, handcycles, or three-wheel motorbikes. While motorbikes are the most common and affordable means of transport in Vietnam, the ones adapted for mobility disabilities, that is, three-wheel motorbikes, are generally not affordable for people with mobility disabilities. In many cases, they have to pay additional costs to adapt a two-wheel motorbike into a three-wheel motorbike. In addition, few bike shops offer these means of transport for PWD, and they are located far from the communes. Access to these means of transport was a challenge for people with mobility disabilities.

5.2 Internal Conversion Factors

Although possessing or having access to resources is necessary for people to achieve their capabilities, it does not guarantee that people can use the resources to achieve what they value doing or being. This achievement depends on individual factors and characteristics of the environment or context in which people live.

A range of internal or individual factors was revealed in this study. Many participants considered health conditions as barriers. Physical impairments and poor health conditions restricted them from engaging in income-earning activities (cutting grass to feed cows, herding cows, plowing a field, working as builders, and so on) and retrofitting their house or moving heavy items to the entresol⁵ (Fig. 2) by themselves before storms or floods. Loss of vision prevented some participants from traveling, cooking, eating, and doing preparedness tasks by themselves. Hearing or intellectual disabilities also prevented people from receiving and understanding warnings. With respect to evacuation, some families reported how the health conditions of their children with intellectual/psychosocial disabilities (for example, being unable to control defecation or urination, being aggressive to or attacking other people, and damaging things) challenged their willingness to take their children to safe places such as commune evacuation centers or neighboring houses.

Knowledge and skills were also raised as an important internal factor. A participant with a physical disability claimed that while health conditions do matter for some PWD, how tasks are achieved is equally important—for example, dividing a heavy bag of rice into small bags for an easy lift to the entresol. He emphasized that PWD could do many preparedness tasks by themselves before a flood rather than waiting for external help. In some cases, a lack

⁵ As flooding is a frequent hazard in the study communes, most households have an entresol to store valuable items and to retreat to when the floodwater rises. Depending on the financial capacity of households, it may be composed of only a few wooden panels or made out of concrete.

of knowledge and skills was a significant barrier for PWD to achieving some capabilities by themselves. In a case of two brothers with intellectual disabilities living together on their own in Phu Luong, their limited communication ability and cooking skills restricted their capability of buying and cooking food by themselves. Therefore, their nourishment was heavily dependent on relatives delivering food to them.

The attitudes of PWD are another influential factor in the achievement of capabilities. In some circumstances, attitude became a barrier for PWD to achieve their valued capabilities. A few participants reported that PWD felt ashamed or uncomfortable to ask their neighbors or the commune response team for help in household preparedness tasks and evacuation, although their neighbors and the team were willing to provide support. Similarly, some participants with disabilities felt inferior or had low self-esteem due to their disability identity, or believed that they are not “complete” or “normal.” A woman with a physical disability shared that she did not visit the local clinic often as, in addition to the long distance to get there, she did not want to bother other people and felt as if she was displeasing others. Many participants felt inferior not only because of their personal disabilities but also because they are poor. A FGD participant with physical disabilities commented:

... the feelings of inferiority can be reduced if we become better off. So we can keep our chin up when we go out... If going out without [proper] shoes and clothes...being poor... stigma is inevitable...

A common belief among the participants with disabilities, especially those with severe disabilities, was that they were a burden to their family (and society) as they were not capable of working and contributing to the family income. Many of these internal factors, however, do not operate in isolation but are associated with external factors.

5.3 External Conversion Factors

A wide range of external factors were found in the study areas. Depending on what capabilities PWD value, the types and influence level of external factors may vary. Despite the diversity of external factors, some prominent ones existed in many capabilities that PWD valued.

Public attitude, often in the form of stereotypes and stigma, is a factor that greatly influences how the public behaves or treats PWD. The findings show that public stereotypes that describe PWD as “helpless” and “less capable than people without disabilities” were quite dominant especially among the government participants. In Phu Luong, a government officer commented “... being disabled, they can do nothing. If they do something, it cannot

Fig. 2 Some factors that prevent the actualization of the capabilities that people with disabilities (PWD) value in coping with disasters in Cam Thuy and Phu Luong Communes, Vietnam: **a** a simple entresol; **b** poor road conditions; **c** a local clinic without a ramp for PWD; **d** a toilet without a curb ramp in a local school that functions as a commune evacuation center. Photographs by Khanh Ton, 2018



(a)



(b)



(c)



(d)

be as good as normal people...” This led to discriminatory practices or exclusion of PWD in DRR—for example, exclusion from local disaster risk management committees, village response teams, or First Aid training. Some participants also reported the experience of discrimination in gaining employment and accessing loans from banks. Bank officers often judged PWD’s capacity to repay the loans by their appearance or impairments.

In addition, some DPO participants believed that donor organizations and companies often viewed PWD with “pity” or believed that they “could not work.” Thus, their support mainly focused on charity and short-term needs,

such as food and cash, rather than the long-term needs of PWD, such as employment and income-earning activities. Many participants also believed that PWD were excluded from social activities as well as DRR due to the public charity mindset (for example, “they do not need to work” or “we need to take care of them because they are disabled”). Some participants with disabilities, however, believed that this mindset deprived them of their freedom to choose. Within families, the deprivation of capabilities was sometimes attributed to the lack of trust that parents/caregivers had in their children with disabilities, especially those with intellectual disabilities (for example,

their ability to earn a living). The interviews also indicated that because many local people still viewed disability as “bad luck,” PWD in the study communes were not invited or welcomed on some occasions such as weddings or visiting someone’s home during the Lunar New Year. Furthermore, some older participants with physical disabilities found it challenging to comply with some cultural customs such as *cúng*—a ritual to pay homage to the gods or to remember the deceased in which worshippers have to stand or kowtow (see Khanh and Thuy 2007, pp. 126–133). These stereotypes and the stigma related to cultural and religious beliefs contributed to the exclusion of PWD in social life.

Accessibility is not a new issue in disability research. In this study, physical inaccessibility (for example, no disability-friendly passageways and ramps) was commonly found in road conditions and public infrastructures such as village halls, schools, clinics, and government buildings (Fig. 2). This was a significant challenge for PWD’s self-evacuation in times of disasters. Some PWD also complained about the inaccessibility of sanitary facilities such as bathrooms and toilets that prevented them from sheltering in the commune evacuation centers. Inaccessibility was also manifested in a lack of staff competencies. For example, the limited competencies of local agricultural staff could not provide technical support to PWD who live off farming activities. It was similarly reported that many PWD, especially those with hearing, vision, and intellectual disabilities, did not go to local schools due to a lack of accessible facilities in the local schools and the limited competencies of teachers. This low education attainment of PWD was believed to have some impact on their capability of earning income and access to risk information.

Policies are another external conversion factor raised by many participants. Many existing policies (such as the Law on Persons with Disabilities 2010, Decree No. 28/2012/ND-CP—detailing and guiding a number of articles of the Law, and Decree No. 136/2013/ND-CP—regarding social support policies for social protection subjects) enabled PWD in the study sites to access social protection support, for example, a monthly allowance, and healthcare services, including free health insurance cards or exemption from medical expenses. In terms of disaster preparedness, in Cam Thuy, the local disability-inclusive early warning and early evacuation plans assigned people to inform PWD of impending hazards and support them in evacuation where needed. In terms of income-earning activities, poor PWD also benefited from poverty reduction-related policies to access loans from banks at a low-interest rate, or receiving cows to raise, and so on.

In many cases, the problem does not lie in the content of the policies or strategic plans but in their implementation. This implementation is often associated with governance,

political leadership, and funds. For example, given the national action plan for assisting PWD for the 2012–2020 period (Decision 1019/QĐ-TTg on 5 August 2012), both Quang Tri Province and Thua Thien Hue Province developed an implementation plan that addresses disability issues such as physical accessibility in public infrastructure and transport, access to formal education, access to healthcare services, and vocational training for the 2012–2020 period. However, in the mid-term evaluation of the plan, most of the goals were not achieved as expected, due mainly to a lack of funding. Some government participants also claimed that a lack of coordination among the government organizations led to poor mobilization of their resources for implementing the plan. At the commune level, the delay in addressing disability issues was associated with a lack of disability awareness among the government staff, a lack of political will to integrate disability issues into their socioeconomic plans, and a lack of funding.

Social support from families, neighbors, and civil society organizations was considered an important contributing factor for PWD to achieve their valued capabilities. In Cam Thuy, with his parents’ support, a man with physical and speaking disabilities was capable of earning income by raising chickens and ducks. Religious organizations, such as churches and Buddhist temples, in the study provinces provided care and education services free of charge or at a small fee for the families of PWD. Quang Tri Red Cross provided free water tanks for households with PWD living in flooded zones. Neighbors provided temporary accommodation and food for PWD in times of evacuation and helped PWD with reinforcing their houses before floods and storms.

Finally, a lack of Disabled People’s Organizations and leadership was raised as one of the most important barriers for realizing capabilities. Having seen the operations of local DPOs in other communes, many participants with disabilities believed that a local DPO can help PWD with employment and income-earning activities such as seeking projects and funds from outside, organizing collective income-earning activities (for example, cooperatives for handicraft production), and accessing loans from banks at a low interest rate. Some also believed that a local DPO can create a platform for PWD to help each other in income-earning activities, to promote information sharing, to build up self-confidence and reduce self-stigma, and to promote cultural and sporting activities among groups of PWD. However, it was observed that the establishment of local DPOs was restricted by the existing legal framework, bureaucracy, and a lack of funding.

6 Discussion

Although Sen did not endorse a fixed list of capabilities, he did mention “basic capabilities,” which refer to “certain elementary and crucially important functionings up to certain levels” such as safe housing, adequate nourishment, and being healthy for survival in everyday life (Sen 1992, p. 45). In the context of disasters, these capabilities are crucial for reducing human vulnerability to disasters (Conceição 2019). In this study, many PWD, especially those who are underresourced, had challenges in securing basic capabilities, not only in times of disasters but also in their everyday life.

As capabilities are mutually dependent, the achievement of one capability can be a means to achieve another capability (Kremakova 2013; Robeyns 2017). In this study, many participants valued capabilities such as safe housing in times of disaster. However, they believed that this can be achieved if the capability of earning income is achieved. Similarly, the achievement of formal education may increase access to agricultural information and knowledge, and thereby can enhance the capability of earning income. Among the capabilities identified, the capability of earning income was highly valued as the participants believed that this is a means to many other valuable capabilities such as safe housing, schooling, being adequately nourished, being healthy, and having clean water. Due to the interdependence of capabilities and the restricted resources people have in practice, some capabilities cannot be achieved simultaneously (Robeyns 2017). In Cam Thuy, a woman living with both a child with an intellectual disability and an elder mother shared that she had to work day and night to earn enough income for her family’s daily needs. Thus, it was hard for her to participate in village meetings as well as to take her child to local cultural events.

While it is critical to expand the capabilities of PWD to cope with disasters, the achievement of capabilities is not just a matter of increasing the amount or types of resources, but also of how people can access and use the resources for their valuable capabilities, particularly in times of disasters. In terms of safety or healthcare for PWD, it is not a question of how many evacuation centers or clinics have been built in the area but of how PWD access and benefit from these services. In this sense, the process of utilizing or converting resources to what PWD value is significantly influenced by individual and external conversion factors. These conversion factors are interrelated and the boundary between them is not always intrinsically distinct (Kremakova 2013). Self-stigma was strongly associated with public stigma. Similarly, individual financial capacity was related to poverty reduction and employment policies.

In most cases, the actualization of PWD’s valuable capabilities is restricted by environmental conditions, that is, a lack of enabling conversion factors or existence of disabling factors. The lack of local DPOs limited PWD from accessing resources and support. The physical inaccessibility of evacuation centers and limited disability inclusion in disaster response plans in Phu Luong significantly hindered PWD from achieving evacuation and safety in times of disasters. Similarly, the limited competency of local agricultural staff restricted local farmers with disabilities from accessing and benefiting from the local agricultural advisory services for their farming activities.

In addition to the accessibility issues, stigma, prejudice, and discrimination from the public or even within the family of PWD were found to be significant external barriers to the achievement of capabilities that PWD value. This disability-related stigma often leads to discriminatory actions or denial of basic rights and services to PWD. In turn, discrimination and exclusion tend to be exacerbated in times of disasters when resources are often destroyed and become scarce (Binh et al. 2017; Smith et al. 2017). Social stigma and discrimination deprived PWD, especially those with intellectual/psychosocial disabilities, of the opportunities for employment, participating in social activities, and being safe in times of disasters in the study areas. This stigma, according to Nguyen (2011), has its historic root in the cultural discourse of disability. She explains that, in the Vietnamese language, the notions of *tàn tật* (handicap) and *khuyết tật* (disability) refer to impairments (*tật*), and accordingly disability is viewed as an individual problem rather than a social one.

Furthermore, some researchers observe that, based on the Buddhist theory that has greatly influenced the culture of Vietnam, disability or impairment is interpreted as a punishment or consequence of sins or evil deeds committed by the person with disabilities or his/her ancestors in a previous life (Hunt 2005; Duong et al. 2008). In addition, some Vietnamese cultural practices (for example, *cúng*) that challenge PWD to comply or be engaged may contribute to increasing the public stigma and self-stigma. To address the public stigma and discrimination related to disability, the participants mainly suggested raising public awareness about disability issues and rights. However, it is argued that this awareness-raising should go beyond providing the public with general information of disability, but include evidence-based information that challenges stigmatizing views (Corrigan 2014).

Although individual factors or characteristics were found as barriers in the achievement of capabilities, many of them can be compensated with an enabling environment—for instance, a strong social network (Thanh 2015). In many circumstances, health-related factors prevented people with intellectual/psychosocial disabilities or severe

physical and visual disabilities from achieving their valued capabilities by themselves. Thus, the achievement of their capabilities such as being adequately nourished, being healthy, and being safe in times of floods and storms often rely on the relationships with their family members/caregivers or neighbors who can help them access resources or convert resources to their valued capabilities. Foster and Handy (2008) call this an “external capability” that emphasizes the social relations in achieving a capability. In this study, for being adequately nourished, people with visual, intellectual, and psychosocial disabilities relied on their relatives to buy and cook food for them. Similarly, for being sheltered safely or nourished in times of disasters, PWD can stay in their neighbors’ houses if their own houses are not safe. In this situation, their neighbors share their resources (for example, safe house and food) with them.

Another significant internal barrier is the pessimistic attitude of PWD. This significantly influences the decision-making process of PWD whether or not to actualize their capabilities. Many participants with disabilities expressed their feelings of inferiority due to their “bodily differences,” which, in their words, are “abnormal,” “lacking,” or “incomplete.” They accordingly tended to undermine their confidence or capacity and avoid socializing or participating in social activities in their communes. Corrigan (2014, p. 18) views this process as “self-stigmatization,” which describes “the individual’s internalization of public stereotypes.” This self-stigma may lead to “self-discrimination” as well as the reluctance of PWD to raise their needs in DRR or to participate in decision-making processes that affect their safety in times of disaster (Bolte et al. 2014).

This self-stigma may be exacerbated when PWD bear other stigmatized identities such as age, gender, ethnicity, and social class (Meekosha 2006). Some participants with disabilities associated their self-stigma not only with their disability but also with “being poor.” This raised a need to consider disability at the intersection with other individual characteristics/identities when examining the lived experience of PWD such as stigma and discrimination during disaster times (Smith et al. 2017). In line with the suggestions by Smith et al. (2017) and Duong et al. (2008), many participants believed that by increasing the access to information, the education attainment of PWD and the participation of PWD in public activities and local planning can help reduce the self-stigma. Corrigan (2014, p. 277), however, noted that efforts to reduce self-stigma should not overlook “the central role of erasing the public stigma from which self-stigma emerges.”

7 Conclusion

In line with the vulnerability paradigm in disaster studies (Wisner et al. 2004), this study contributes to the disaster literature by positioning disability and vulnerability to disaster within a broader context of development. It argues that the disaster risks that PWD face arise from their restricted capabilities, especially basic ones such as employment, having clean water, being healthy, and access to safe housing. This restriction is largely attributed to the lack of resources, especially for PWD with low incomes, and disabling environmental conditions, which are created and perpetuated by social development processes and often exacerbated in times of disasters. However, in contrast with social disability models and social vulnerability theories in disaster research (Stough and Kelman 2015, 2018), the findings of this study recognize the role of individual factors such as preexisting health conditions, self-stigma, and their interactions with the external environment in creating disability experiences or dis-capabilities of people in times of disaster. The study also indicated that many of the individual factors (and lack of resources) can be overcome by enabling environmental conditions such as social networks and government support policies.

As Sen (2010) argued, while hazards play a part in leading to a disaster, social interventions or changes can make a profound difference in reducing disaster risk for people. Such social changes should aim to not only increase the availability of, or the access to, resources and to reduce the impacts of individual factors but also to remove environmental barriers—public stigma, discrimination, inaccessibility, and so on—for PWD to achieve their valuable capabilities. Accordingly, the ultimate goal of development should not be limited to expanding PWD’s valuable capabilities. Rather, it should bring about an equality of human capabilities that everyone, including people with disabilities, values in disaster risk reduction as well as in everyday life.

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