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Expanding the Capabilities of People with Disabilities in Disaster Risk Reduction

Khanh That Ton

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy in Environmental Science, The University of Auckland, 2021.

ABSTRACT

People with disabilities (PWD) are disproportionately impacted by disasters. In times of disaster, they are at higher risk of death, injury, and loss of property than people without disabilities. The contemporary approach, which is widely adopted to address disaster risk for PWD mainly relies on examining the availability of or access to resources. This poses challenges to understand how PWD are affected by disasters. This thesis thus employs the capability approach, which is increasingly adopted in disability research, as an alternative approach to address disaster risk facing PWD.

To enable the explanatory power of the capability approach in explaining disaster risk facing PWD, this study adopted critical realism as its research paradigm. It argues that critical realism is well suited for uncovering causal factors that explain the potentialities for PWD to achieve their valued capabilities. Furthermore, by focusing on both agency and structures, it can generate explanations for how capabilities are actualised. A multi-case study design was implemented in two rural communes in Vietnam. 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 organisations.

It was found that PWD are affected by disasters due to the lack of capabilities that they value in dealing with disasters. A range of capabilities that PWD value was revealed with many being valued not only in times of disaster but also in daily life (such as being healthy, being nourished, being mobile, having clean water, and being sheltered safely). The findings also highlight that, to actualise 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.

In addition, this study demonstrates that, although social structures play an important role in creating and perpetuating disadvantages and injustices, PWD, as active agents, have the power to transform social structures that, in turn, bring about positive changes to reduce disaster risk for themselves. It was found that, in most cases, PWD need to participate in decision-making processes to achieve valuable capabilities for their safety in times of disaster. This process of participation can be seen as both an end and a means. As an end, it *refers to the capability of engaging in decision-making processes. As a means, it is a process in which PWD individually or collectively exert their agency (i.e. raising their voice, influencing decision making and transforming decisions into actions) to actualise their valued capabilities. For participation as a means to be achieved, however, participation as an end must be secured.*

Despite its focus on PWD, this study also raises the possibility of applying the capability approach for understanding disaster risk faced by other groups of people in society. It further demonstrates the potentiality of using critical realism in disability and disaster explanatory research.

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LIST OF ACRONYMS

CA	Capability Approach
CBDRM	Community-based Disaster Risk Management
CBM	Christian Blind Mission
CSO	Civil society organisation
CRPD	Convention on the Rights of Persons with Disabilities
DiCBDRM	Disability-inclusive Community-based Disaster Risk Management
DPO	Disabled People’s Organisation
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ESCAP	Economic and Social Commission for Asia and the Pacific
FGD	Focus group discussion
ICF	International Classification of Functioning, Disability and Health
IDA	International Disability Alliance
JICA	Japan International Cooperation Agency
IFRC	International Federation of Red Cross and Red Crescent Societies
ISDS	Institute for Social Development Studies
GFDRR	Global Facility for Disaster Reduction and Recovery
GoV	Government of Vietnam
GSO	General Statistics Office
HI	Humanity & Inclusion (also known as Handicap International)
NGO	Non-government organisation
INGO	International non-government organisations
MARD	Ministry of Agriculture and Rural Development
MI	Malteser International
MOLISA	Ministry of Labour - Invalids and Social Affairs
PAR	Pressure and Release
PWD	People with disabilities
SRV	Socialist Republic of Vietnam
UN	United Nations
UNDP	United Nations Development Programme

UNISDR	United Nations International Strategy for Disaster Reduction
VCA	Vulnerability and Capacity Assessment
VNRC	Vietnam Red Cross
WB	World Bank
WHO	World Health Organization

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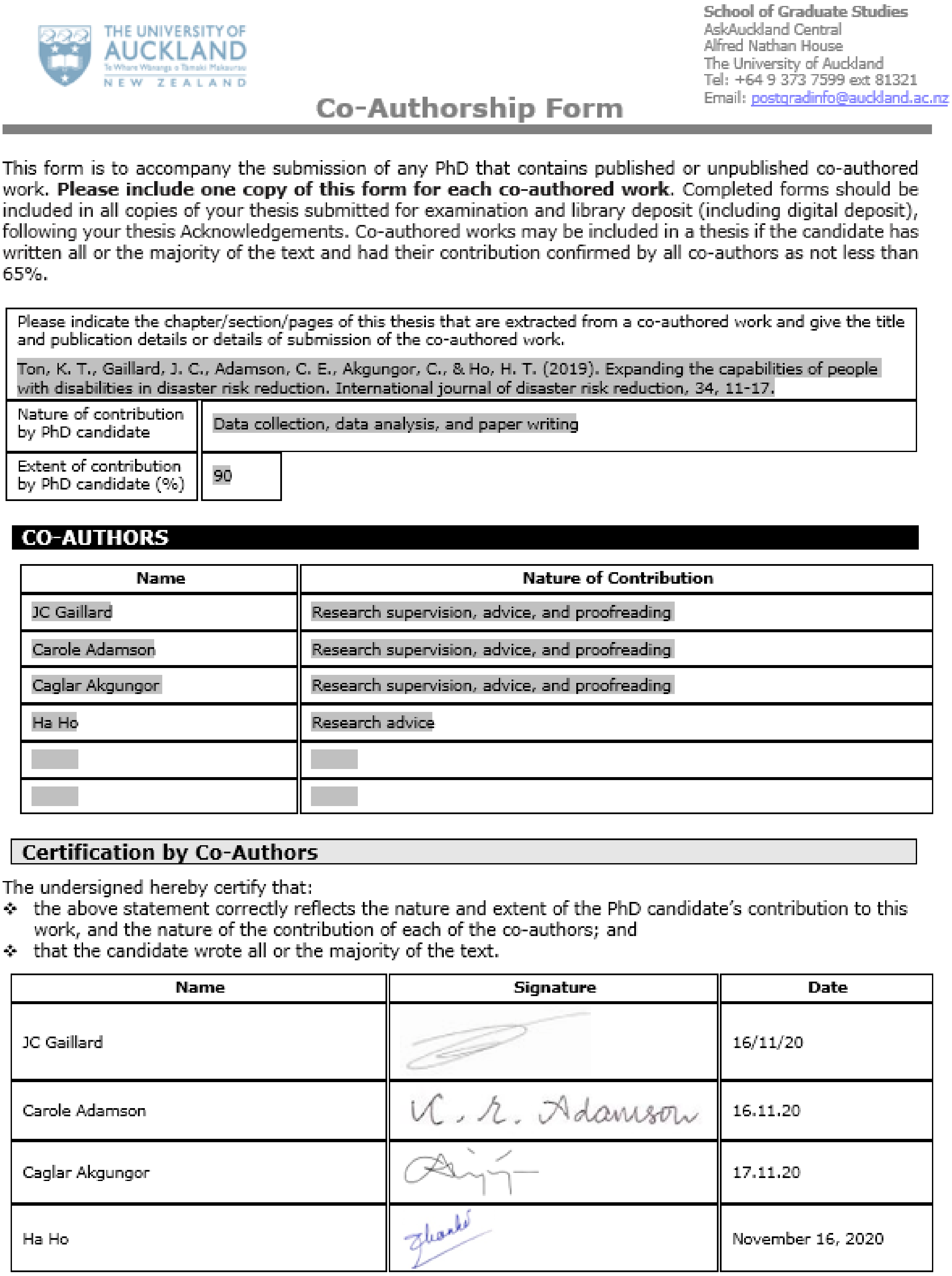

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JC Gaillard	Research supervision, advice, and proofreading
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Caglar Akgungor	Research supervision, advice, and proofreading
Ha Ho	Research advice

Certification by Co-Authors

The undersigned hereby certify that:

- the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and
- that the candidate wrote all or the majority of the text.

Name	Signature	Date
JC Gaillard		16/11/20
Carole Adamson	C. R. Adamson	16.11.20
Caglar Akgungor		17.11.20
Ha Ho		November 16, 2020

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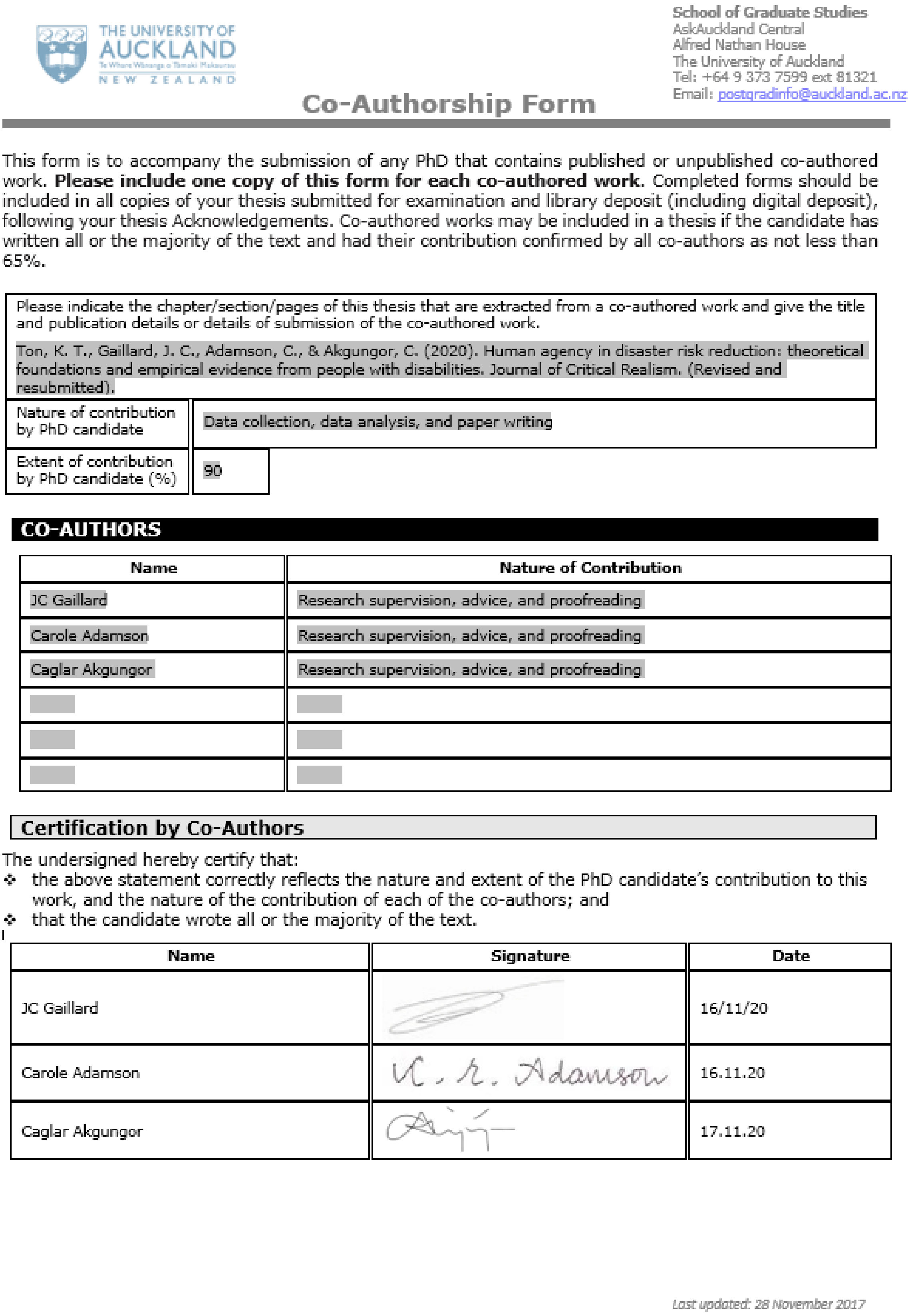

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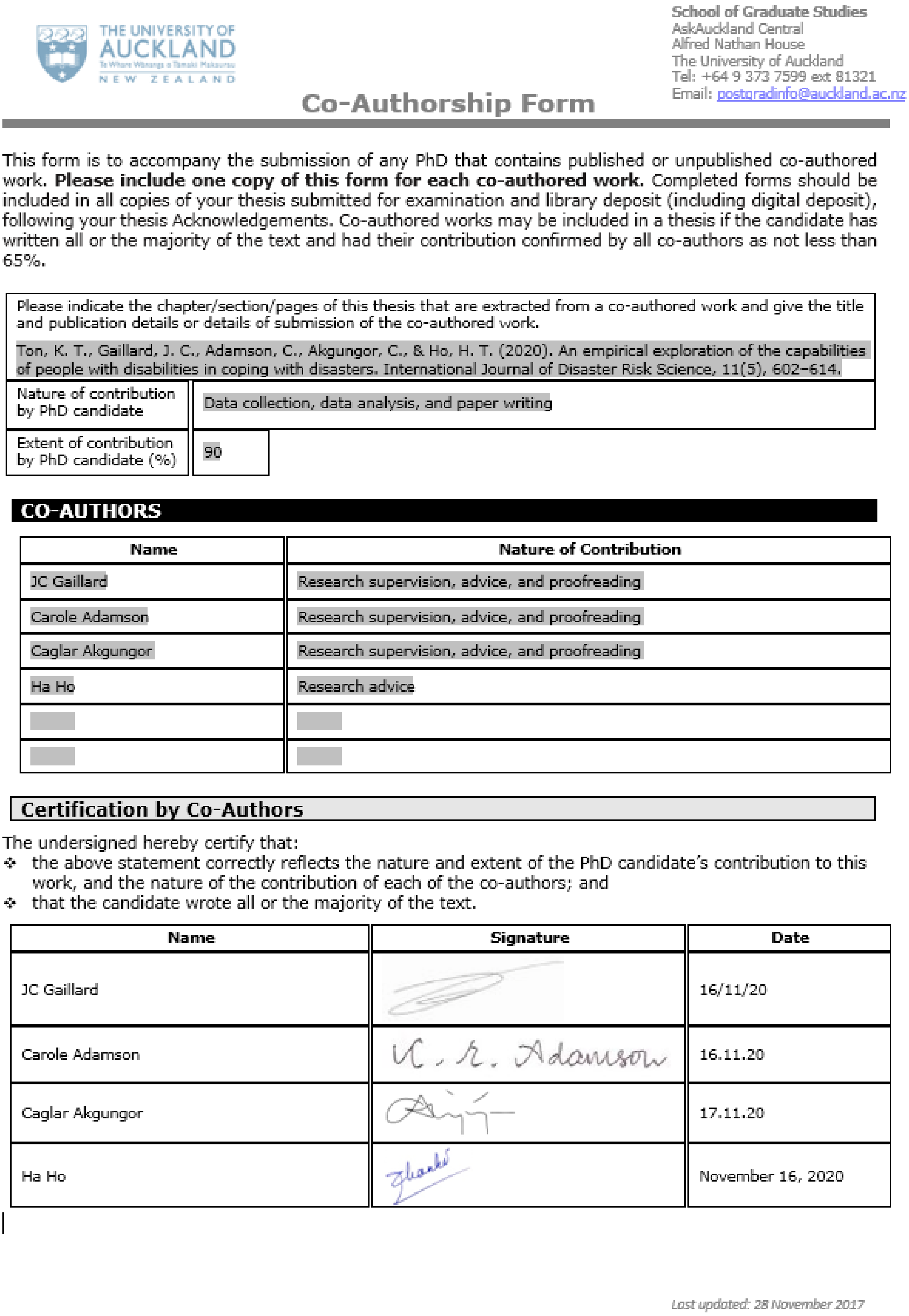

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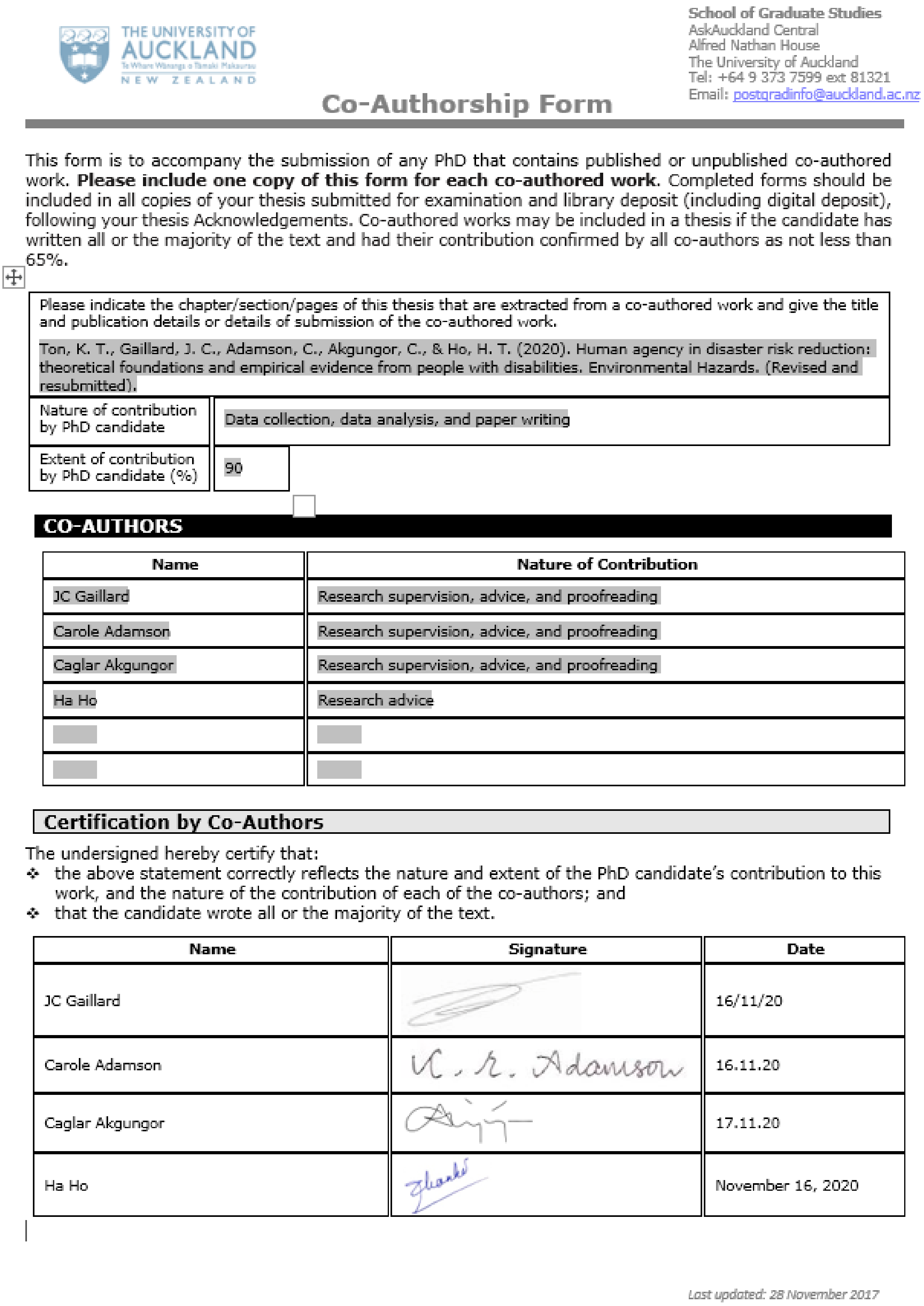

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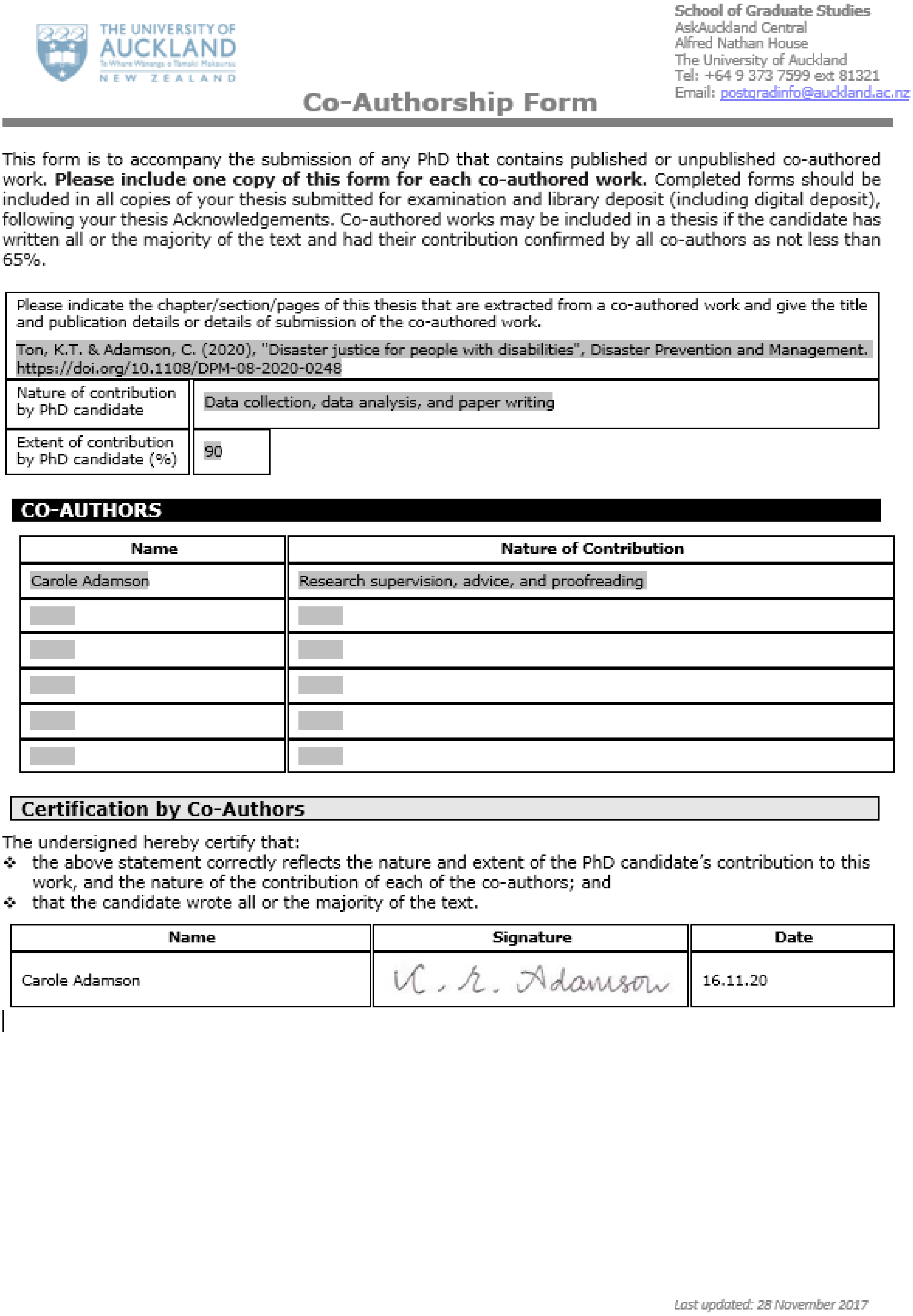

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CHAPTER 1. INTRODUCTION

This study uses the capability approach to frame an exploration of disaster risk faced by people with disabilities. The thesis is presented in a publication format consisting of five scientific papers either published or revised and resubmitted for publication. Details of these papers are listed in Table 1-1 below (Section 1.7). These papers have been kept original in content with format modified to ensure the consistency of the whole thesis. The reader is first introduced to the key concepts of capability and human agency in Chapter 3. This chapter continues to suggest a theoretical capability-centred framework to examine disaster risk for people with disabilities. Chapter 4 describes the research paradigm, critical realism, with the details of its methodology and research process included in Chapter 2 – Setting the scene. The concept of capability is then explored more thoroughly in Chapter 5 whereas the concept of human agency is addressed in Chapter 6 with the contextual information detailed in Chapter 2. Chapter 7 extends the discussion of the capability and human agency of people with disabilities to deal with disasters into disaster justice. Chapter 8 concludes the whole study and suggests future research directions.

1.1. Introduction

Disasters are a major threat to development (IFRC, 2018). From 2005 to 2015, it was estimated that more than 1.5 billion people were affected by disasters in various ways, including over 700 thousand people losing their lives, over 1.4 million people being injured, and approximately 23 million people made homeless as a result of disasters (UNISDR, 2015a).

People with disabilities (PWD) account for approximately 15% of the global population (WHO, 2011). United Nations (2006) defines that, *"persons with disabilities include those who have long term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others"* (Article 1, the Convention on the Rights of Persons with Disabilities). In times of disasters, they are disproportionately affected. Stough and Kang

(2015) argue that PWD are at higher risk for death, injury, and loss of property than people without disabilities.

The contemporary approach which is widely adopted to address disaster risk for PWD mainly relies on examining the availability of or access to resources. For example, the United Nations explains that the disproportionate impacts of disasters on the lives of PWD arise from a wide range of factors including poor living conditions, inadequate infrastructure, income inequality, and limited access to basic services, especially education and information (UNISDR, 2015b). Such a resource-based approach often faces challenges in addressing disaster risk for PWD.

Considering the challenges of the resource-based approach in DRR, this thesis employs the capability approach, which is increasingly adopted to address disability issues such as well-being and social justice for PWD (Mitra, 2018; Robeyns, 2017), as an alternative approach to address disaster risk facing PWD. Two communes in Vietnam, one of the most hazard-prone countries in the Asia and Pacific region (GFDRR, 2015), were selected for this research. The following section, Section 1.2, provides a background and rationale for this study. Section 1.3 presents the objectives of the research. Section 1.4 offers a theoretical framework which was used for exploring the research problems. Section 1.5 discusses the rationale for using critical realism as a research paradigm. Section 1.6 presents the significance of the research. The last section, Section 1.7, outlines the structure of the thesis.

1.2. Research background and rationale

1.2.1. An overview of disaster research

In disaster studies, the interpretation of disasters has remained divergent to date (Gaillard, 2017; Rodríguez et al., 2018). Historically, disasters have been interpreted merely as hazardous events - the physical phenomena in the natural or artificial environment that have the potential to damage human society - or the consequences of such events (Hewitt, 1983). The earliest disaster studies were framed from the biophysical perspective, widely known as the dominant or hazards paradigm, which focused mainly on understanding the characteristics (timing, duration, frequency and magnitude) and causal processes of hazards and their impacts (Hewitt, 1995; Wisner, 1993). This perspective overlooked social processes that place people in vulnerable conditions in the face of disasters. It subsequently viewed people as passive victims and heavily relied on expert knowledge and technological solutions to deal with disasters.

Some early efforts to consider social factors, particularly anthropogenic ones, can be found in human ecology – a study of human-environment interrelationships (Burton et al., 1978; Hewitt, 1983). This perspective moved away from explaining disasters as natural occurrences and 'Acts of God'. It, however, still emphasised the role of hazards in creating disasters and viewed people as actors unable to make good decisions for their safety in times of disasters due to their limited knowledge or information of the risk (Tobin & Montz, 1997). It, subsequently, reinforced the 'top-down' or 'command and control' approaches to disasters rather than mitigation or adaptation that aims to reduce and prevent risk.

While research grounded in the hazards paradigm contributed to the knowledge of disasters, its limited understanding of the social causes of disasters failed to propose effective solutions to deal with disasters. This paved the way for the vulnerability paradigm, which places more emphasis on social dimensions of disaster, to emerge. Drawing on political economy, many scholars highlighted the role of inequality in resources and political and economic power, class conflicts, and processes of marginalisation in increasing the vulnerability of people to disasters (Sen, 1981; Susman et al., 1983; Watts, 1983). The foci of political economy analysis lie in understanding the links between politics and the economy through exploring power relations in policy-making processes and examining institutions (Wilkinson, 2012). Nonetheless, the overemphasis on social processes of a disaster overlooked the interaction of political-economic structures with ecological processes in producing disasters (Wisner, 1976, 1978). This gave rise to the emergence of a political ecology perspective in disaster studies.

Political ecologists seek to establish the root causes of environmental problems and adopt a radical ethical position in favour of the poor and marginalised. Disaster from this perspective arises from the interaction between hazards and vulnerability. Such interpretations can be clearly seen in the Pressure and Release (PAR) model that has been one of the most influential frameworks in disaster research and practice to date (Blaikie et al., 1994; Wisner et al., 2004). This PAR model defines vulnerability as *"the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard (an extreme natural event or process)"* (Wisner et al., 2004, p. 11). It describes the progression of people's vulnerability to a hazard, which includes: *root causes* (i.e. an interrelated set of widespread and general processes within a society and the world economy), *dynamic pressures* (i.e. processes and activities that 'translate' the effects of root causes into unsafe conditions), and *unsafe conditions* (i.e. specific forms in which the vulnerability of a population is expressed in time and space in conjunction with a hazard). The PAR recognises the significance of natural hazards as part of human society and as trigger events leading to disasters. Wisner et al. (2004, p. 83) write *"…In reality, nature forms a part of the social framework of society, as is most evident in the use of natural resources for economic activity. Hazards are also intertwined with human systems in affecting the pattern of assets and livelihoods among people…"*. However, it places a great emphasis on social processes that make people vulnerable to disasters.

1.2.2. Why the capability approach?

In the vulnerability paradigm, the resource-based approach is widely adopted in explaining human vulnerability to disasters. This can be illuminated in the revised PAR (Wisner et al., 2012) and the Access model which are grounded in the sustainable livelihood framework (Chambers & Conway, 1991) and the entitlement approach (Sen, 1981). As a complement to the PAR, the Access model attributes unsafe conditions to the economic and political processes that allocate assets, income and other resources unfairly among different groups in a society (Wisner et al., 2004). This accordingly leads to a differential impact on these groups when a disaster strikes.

While this resource-based approach is undeniably important in understanding how people are affected by disasters, it is considered insufficient to address the risk that people face in times of disaster. Resources are a means for people to do or to be what they value and are often defined independently of human characteristics. Wisner (1993, p. 127) highlighted that *"all persons at the same level of income do not suffer equally in disaster situations nor do they encounter the same handicaps during the period of recovery"*. This implies that approaches that focus merely on resources may not be adequate to explain why people fail to take actions in coping with disasters or how people utilise resources to achieve what they value in times of disaster. Mitra (2006) argues that conversion from resources to the actions or states that people value is influenced by a range of factors that may be individual (such as physical/mental conditions, age, literacy level, and skills), or environmental (such as infrastructure, social norms, and policies). An example is that evacuation centres and roads built without reference to individual features and needs (e.g. lack of ramps) may prevent PWD from self-evacuating to centres in times of disaster. Robinson (2017) also notes that it may take more time for a person in a wheelchair to reach the centre (even supported by an assistant). Therefore, despite having equal access to a local evacuation centre in times of disaster, a person with mobility disabilities in a wheelchair may be at greater disadvantage and risk than one without disabilities. That is to say, even though people have sufficient, secured and sustainable access to resources, they may not be able to convert the resources to their valued activities or states due to individual and/or environmental barriers, and the interaction between these. Hence, understanding and examining what resources PWD have may not fully explain the extent of disaster impact on their lives (see Chapter 3 for a fuller discussion on the gaps of the resource-based approach).

In response to these critiques of the resource-based approach, this study adopts the capability approach (CA) to examine the capabilities that people value in reducing disaster risk. The CA was developed by Amartya Sen in the 1980s (Sen, 1992, 1999). Sen sees human life as comprised of activities and states, namely functionings. For example, being healthy, being well nourished, avoiding morbidity, being employed, and being safely sheltered may be ‘basic’ functionings that people value in their everyday lives and perhaps also in times of disaster. Functionings are considered as the achievement of valuable doings and beings, whereas ‘capability’ is viewed as the real opportunity that individuals have in order to achieve their valuable functionings (Sen, 1992). Sen (1999) places a strong emphasis on the freedom of an individual to choose from a range of possible functionings. To this end, he argues that development should aim to expand human capabilities.

Sen (1992) contends that people need resources - goods or services that have certain characteristics to enable functioning - for achieving their valuable capabilities. However, this achievement depends not only on the availability of resources that people possess but also on how/what they are able to use or do with the resources effectively. This utilisation of resources is greatly influenced by what Sen calls ‘conversion factors’ - the degree to which individuals can transform a resource into a functioning (Robeyns, 2017). In other words, a person can convert the same resources to different outcomes in different contexts. Conversion factors are categorised 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. Environmental factors are external and can be social (norms, discrimination, stigma, and social network), economic (markets and budget allocation), political (policies and power relations), and physical (accessibility of infrastructure, means of transport and communication, and hazard-prone areas). Chapter 3 will provide a fuller description of the capability approach and its key concepts.

This capability perspective indeed goes beyond the resource-based approach by looking at what people value doing and being, and how people utilise and convert resources to their valued doing and being in dealing with disasters. This conversion process will be empirically explored in depth in Chapter 5.

This CA has been adopted to address a variety of issues in various fields such as poverty (Alkire & Foster, 2011; Schischka et al., 2008), public health (P. M. Mitchell et al., 2017; Simon et al., 2013), environmental policy (Holland, 2014), disability (Mitra, 2006), technology (Oosterlaken, 2015), human rights (Burchardt & Vizard, 2011; Osmani, 2000), gender (Nussbaum, 2000) and education (Terzi, 2010a). While scholars have proposed different capability-based frameworks to investigate their problems of interest and different approaches to operationalise their frameworks in practice, their frameworks revolve around the key concepts: resource, functioning and capability. The review by Robeyns (2017) indicated the three broad ways in which the CA has been used.

First, it can be used for normative purposes. On the one hand, moral and political philosophers used the CA to develop their normative theory. The concepts of functionings and capabilities are often viewed as the goals that a just society or morally sound policies should pursue. For instance, in her theory of social justice, Martha Nussbaum (2006) developed a list of basic capabilities that everyone should be entitled to, as a matter of human dignity. Similarly, Burchardt and Vizard (2011) developed a list of 10 domains of capabilities as a matter of human rights to defend their justice theory. On the other hand, quantitative social scientists, especially economists, are interested in normative applied analysis. For instance, Alkire and Foster (2011) used the CA to evaluate or measure the multidimensional poverty. Kuklys (2005) and Zaidi and Burchardt (2005) used the CA to measure the disadvantages that PWD face. In these cases, the concepts of functionings and capabilities are often used as social indicators to measure the phenomenon of analysis.

Second, for conceptual purposes, capability-based research aims to understand the nature of certain ideas, practices, notions by a different conceptualisation. For instance, Bellanca (2011) used the CA to conceptualise the notion of disability as dis-capability rather than as impairments or social barriers per se. Wigley and Akkoyunlu-Wigley (2006) conceptualised education as the expansion of a capability rather than as a legal right or as an investment in human capital.

Third, for explanatory purposes, capability-based research aims to explain a phenomenon through identifying the mechanisms that cause the phenomenon, or the determinants of the phenomenon. For instance, Brunner (2017) adopted the CA to explain why people with mental distress have poor social outcomes. Tao (2013) employed the CA to explain teacher performance. Robeyns (2017) notes that the CA is a strongly interdisciplinary approach. Therefore, it may play a role in bringing different disciplines within the social and behavioural sciences together in explanatory research. To date, however, capability-based research for an explanatory purpose has remained limited, particularly in disaster studies.

In this thesis, the CA was used as a lens to explain disaster risk facing PWD. This thesis, however, argues that to strengthen the explanatory power of the CA, capability-based explanatory research should be grounded in critical realism. Chapter 4 will detail how this CA is used to explain the capability of PWD in a methodological sense.

1.2.3. Why research the agency of people with disabilities in DRR?

With the increasing adoption of the vulnerability paradigm in disaster research over the last decades, attention has been increasingly paid toward explaining why and how disasters disproportionately affect some individuals who are poor, elderly, children, migrants, women, and people with disabilities (Stough & Kelman, 2018; Wisner, 2016). People with disabilities (PWD) are among the groups most at risk in the face of disasters. They are often labelled as ‘vulnerable’ and ‘helpless’, and accordingly are hardly considered as active actors in DRR processes. Disability status appears to stretch across all stigmatising categories (such as poor, elderly, women, migrants, and children) and accordingly tends to exacerbate the vulnerability of individuals who bear these stigmatising categories (Hemingway & Priestley, 2006; Peek & Stough, 2010). Despite the increased risk faced by PWD in times of disasters, research on disability and disasters remains limited (Stough & Kelman, 2018). This study has, therefore, focused on the experiences of PWD in examining the human capabilities in DRR.

The recent review of Stough and Kelman (2018) indicated that most of the previous work has been dedicated to the impacts of disasters on PWD and explored inequities in access to resources and services for dealing with disaster and how these inequities differentially and negatively affect PWD. The conception of disability used in these studies is often inclined toward the social disability model that mainly attributes social conditions to disability experience in disasters, or to making people vulnerable to disasters. In this sense, it overlooks the human agency of PWD to effect social changes for dealing with disasters. To date, the meaning of 'agency' has seldom been clarified and is often collapsed into individual capacity/ies such as knowledge, skills, creativity, experience, and creativity in disaster research (Gaillard et al., 2019; Wisner et al., 2004). These interpretations often cannot thoroughly reflect the real ability of PWD to achieve what they value in coping with disasters

In the same vein, strengthening the participation of people, particularly those at risk, in decision making has long been recognised as a crucial means to DRR (Maskrey, 1989; Wisner et al., 2012). The important role of participation of at-risk groups in DRR is also emphasised in the most recent international Sendai framework for DRR.

> *"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 the older persons in the design and implementation of policies, plans and standards" (UNISDR, 2015a, p. 8).*

From the human rights perspective, Article 4.3 of the UN Convention on the Rights of Persons with Disabilities (UNCRPD) highlights that ensuring the participation of PWD is an obligation of states for any decision that affects their lives (UN, 2006). By meaningful participation, it argues that their deprivation and social inequalities can be addressed, and accordingly social changes (for instance, in the governance of service providers, and the development and enforcement of inclusive policies and practices) can be made for reducing their disaster risk (CBM et al., 2019). However, PWD and their representative organisations are often excluded from DRR processes (Alexander et al., 2012).

Recently, there has been an urgent call for recognising PWD as active agents in DRR (Bolte et al., 2014; Craig et al., 2019; Kelman & Stough, 2015). Many researchers argue that the knowledge, expertise and experiences of PWD are valuable to DRR planning and that PWD are able to protect themselves from disasters provided that an enabling environment exists (Abbott & Porter, 2013; Kelman & Stough, 2015; Priestley & Hemingway, 2007). Human agency, in this sense, is mistakenly conflated into individual capacities such as knowledge, skills, and experience. Furthermore, despite having the same function as a means to DRR, the relationship between human agency and participation in decision-making processes that affect PWD' well-being and safety in times of disaster has hardly been addressed.

1.3. Purpose of the study

This study arose from the three primary concerns discussed in Section 1.2. These include the inadequacies of the resource-based approach in addressing disaster risk, the lack of disaster research on PWD, and the scarcity of research on the human agency, particularly its relation to participation in decision-making processes for DRR. Therefore, the overall aim of this study is to explore the disaster risk faced by PWD through the lens of the capability approach. This overall purpose is achieved through the three specific objectives as follows:

- Objective 1: To investigate the capabilities that people with disabilities value in dealing with disasters
- Objective 2: To explore factors that influence their capabilities to cope with disasters
- Objective 3: To explore the relationship between the human agency of people with disabilities and their participation in decision-making processes in reducing disaster risk for people with disabilities.

1.4. Theoretical framework

People with disabilities (PWD) are among those who face many disadvantages and hence are disproportionately affected by disasters (Alexander et al., 2012). Disability is a controversial concept that has been inconsistently defined from diverse perspectives such as medical, social, psychological, or cultural models. For the purposes of this thesis, however, I adopted the interactional model of disability which defines 'disability' as an emergence from the interaction between impairments and the socially constructed environment (UN, 2006) (see Chapters 3 and 4 for fuller reviews on disability models and the rationale for the adoption of the interactional model of disability in this study).

This study argues that disasters arise from the deprivation or restriction of capabilities that PWD wish to achieve for dealing with hazards (Figure 1-1). This conception of disaster does not deny the important role of hazards. Rather, it acknowledges that disaster emerges from the interaction between the deprivation of capabilities and hazards. This deprivation has roots in social development processes and reflects the inequality of capabilities among social groups. In their Human Development Reports, UNDP (2014, 2019) indicated many basic capabilities (such as health, education, employment, water, sanitation, electricity and housing) of which ‘vulnerable’ groups such as PWD and women are deprived in everyday life. Such deprivations accordingly make people more vulnerable to disaster and less able to recover from the aftermaths of disasters.

This deprivation of capabilities is not necessarily caused by a mere lack of resources but by barriers or disabling conversion factors. For example, having resources such as an evacuation centre in place and a wheelchair may not enable a person with a mobility disability to make a timely evacuation. This may be because of environmental conversion factors such as inaccessibility of the evacuation centre, its facilities (e.g. bathrooms), and the road, limited social support, or severe community stigma toward PWD, and individual ones such as their poor health conditions and self-stigma. Sen (1992) claims that equality of resources may not lead to equality of capabilities. PWD may require more resources (i.e. costs directly or indirectly associated with disabilities) to achieve the same living standards or outcomes as people without disabilities (Mitra et al., 2017; Sen, 1992).

Such considerable inequity in the provision of conditions for individuals to flourish or to be safe in times of disaster is created and perpetuated by social, economic, and political structures of a society (Burchardt & Vizard, 2007; Oliver-Smith et al., 2016; Robeyns, 2005a; Wisner et al., 2012). These structural forces are intertwined in affecting the distribution and availability of resources to PWD as well as shaping environmental and individual conversion factors (Wolff & De-Shalit, 2007).

Social structures may be the welfare and educational systems, and social ideologies. For example, a national educational system that is not disability-inclusive can lead to low literacy levels among PWD, which accordingly prevent them from accessing and understanding the information related to risk or livelihood support. Some religions and traditional beliefs may create norms that increase stigma and discrimination to PWD.

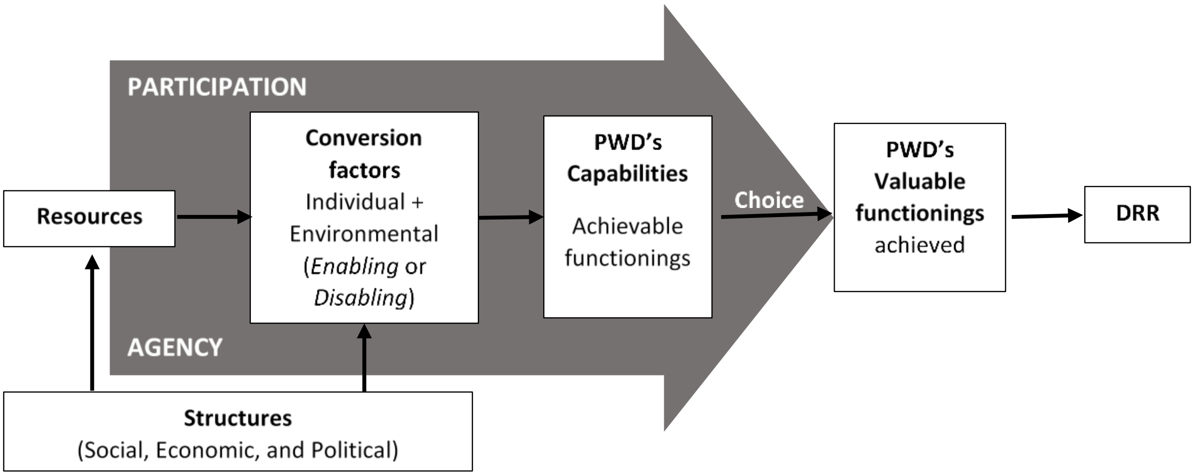

Figure 1-1. A capability-based conceptual framework for understanding disaster risk facing PWD

Economic structures may be government debt, economic priorities, urbanisation, and distribution of wealth. For example, government debt often leads to priorities for economic growth in poor countries. This accordingly may result in neglect of investments in improving the accessibility of public infrastructure. Similarly, a limited national budget or unfair redistribution of goods and wealth may result in small funds allocated to social support and emergency services for PWD.

Political structures may be power structures, forms of governance, and legislation. For instance, a lack of national disability-inclusive legislation may result in the shortage of disability support services and physical inaccessibility of infrastructure. This also contributes to the exclusion of PWD and their representative organisations from DRR processes as well as restricts their voice in decision-making. Disability-exclusive policies may also influence the labour market in which employers are not encouraged or provided with incentives to hire PWD or to create a disability-friendly working environment for PWD.

To achieve the equality of capabilities, it is imperative to promote the meaningful participation of PWD in DRR processes. This process of participation in this study is viewed as both an end and a means. As an end, it refers to the capability of being involved in decision-making processes. Its achievement thus depends on the availability of resources and is also influenced by both personal and environmental factors. For example, PWD need disability-adapted vehicles or family support to travel to meetings.

As a mean, it is viewed as a process in which people exert their agency, individually or collectively, to address deprivation and to act and bring about changes in development policy and/or practice (Clark, 2006; Cleaver, 2004; Goulet, 1989). Sen (1992) relates agency to people's ability to realise and pursue goals that they value and have reason to value. In many cases, for the realisation of their goals, individuals need to reproduce or transform society to generate resources or create enabling social arrangements (or remove disabling ones). This task often goes beyond individual agency or control and requires collective actions (Evans, 2002). This leads to the conceptualisation of another type of agency, namely 'collective agency' or 'corporate agency', that emerges from social relations (Archer, 2002; Bellanca et al., 2011; Crocker, 2008).

As the exercise of agency is directly associated with power relation, human agency in this study is examined through the lens of power. Rowlands (1997) identifies four types of power: power over, power to, power with and power (from) within. Despite its various interpretations, Vermeulen (2005, p. 12) argues that 'power' can basically be understood as *"an ability to achieve a wanted end in a social context"*. 'Power over' is often owned by those who have control over resources and decision-making processes. This type of power is often associated with negative connotations such as repression, force, coercion, discrimination, corruption, and abuse (Csaszar, 2005). 'Power to' is often regarded as 'individual agency' which can be enhanced by new skills, knowledge, awareness, and confidence. 'Power with' is often understood as 'collective agency' that focuses on individuals' engagement in a collectivity to achieve what they value. 'Power within' means personal self-confidence, self-worth, and self-knowledge, including the ability to recognise their 'power to' and 'power with' (Csaszar, 2005). It argues that a combination of these three types of power - within, to and with - enables PWD to raise their voice, influence decision making processes and transform the decisions into actions.

1.5. Research paradigm

1.5.1. Why philosophy?

Philosophy originates from the Greek '*philosophia'* and in a broad sense refers to *"love of wisdom."*[1] Philosophy is often claimed as functioning as an 'underlabourer' to research and practice (Benton & Craib, 2011; Collier, 1994). Here, John Locke defines 'underlabour' as

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[1] "Online Etymology Dictionary". https://www.etymonline.com/word/philosophy#etymonline_v_14869. Accessed 17 Oct. 20.

"clearing the ground a little, and removing some of the rubbish that lies in the way of knowledge" (Nidditch, 1975, p. 10). Collier (1994) holds the idea that everyone is a philosopher and has *"an unconscious philosophy, which they apply in their practice - whether of science or politics or daily life"* (p. 16). He emphasises the function of philosophy as making "*explicit knowledge that is already implicit in some practice or other*" (ibid, p. 17). In response to the question "why philosophy?", Collier (1994, p. 16) answers *"A good part of the answer to the question 'why philosophy?' is that the alternative to philosophy is not no philosophy, but bad philosophy"*. Putting it differently, Porpora (2015, p. 7) notes *"Do we need a philosophy of science or metatheory?" Well, yes. The fact is you already have one. The question is whether you have the right one"*. Researchers often operate in what Thomas Kuhn called 'normal science'. As such, the philosophy of 'normal science' or its paradigmatic presuppositions are taken for granted and deployed to explain within their terms why something happens or is what it is. In Kuhn's terms, Porpora (2015, p. 3) explains that a paradigm - a set of paradigmatic presuppositions - is *"the established way of approaching things because the scientists in that discipline have managed to reach consensus – at least for the time being – on fundamental reality in their field."*

To date, there are various ways to categorise the paradigms. For instance, Creswell and Creswell (2018) identify four paradigms: positivism/post-positivism, constructivism, transformative, and pragmatism. These paradigms are based on differences in the assumptions of ontology (i.e. what is reality), epistemology (i.e. how we can gain knowledge of it), axiology (i.e. what is the role of values) and methodology (i.e. the process of research or a set of methods)[2]. Such differences in philosophical paradigms often lead to challenges in inter-paradigm dialogue and adjudication (Porpora, 2015). Philosophical paradigms indeed have significant impacts on the practice of research (Creswell & Creswell, 2018). They shape how the researcher defines the research goals, frames the research problems or questions, seeks data to answer the questions, and explains the research findings. Paradigms also enable the researcher to justify why qualitative, quantitative, or mixed methods approaches are selected for particular research.

Indeed, as PhD students or novice researchers, we tend to adopt an epistemology and methodology that our peers or supervisors have used without questioning whether its philosophical foundations are well-suited for our research problem. It would be possible to

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[2] For detailed reviews and discussions on research paradigms, see Guba and Lincoln (1994); Denzin and Lincoln (2018); Creswell and Creswell (2018).

say that epistemology and methodology are strongly associated with the ontology of the phenomenon under research. At the beginning of my PhD journey, I chose social constructivism as my research paradigm. This choice was influenced by my interest in the social model of disability and perhaps in part by my supervisors' worldviews. As detailed in Chapter 4, most disability research that adopts the social model of disability is grounded in the social constructivist paradigm. This social model is also adopted widely in disaster research on PWD driven by the vulnerability paradigm (Stough & Kelman, 2018).

However, when I came to know critical realism, I started to be critical about my epistemological choice. I realised that social constructivism is not adequate in explanatory research due to limitations in its ontological and epistemological foundations. I will detail these limitations in the following sub-sections and Chapter 4.

With the critical realist perspective in mind, my perception of disability has changed. In line with Shakespeare's argument (Shakespeare, 2014), I believe that disability can be reduced to neither social barriers, nor impairments, nor language and discourse (e.g. ableist ideologies[3]). I find the social and cultural models, often grounded in social constructivism, alone cannot thoroughly resolve disability issues. For this reason, I acknowledge the brute facts[4] of disability and argue that disability emerges from the interaction of impairments and environment. The conceptualisation of disability in the way that individual factors, environmental factors, and their interaction are recognised is indeed related to the capability approach. For example, Bellanca et al. (2011) interpret disability as dis-capability. The following sub-section will provide the rationale for the adoption of critical realism in researching the capabilities of PWD in dealing with disasters.

1.5.2. Why Critical Realism?

The capability approach is broadly adopted as conceptual and normative frameworks (Robeyns, 2017). In disability studies, the capability approach has been useful for

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[3] Campbell (2009, p. 5) defines ableism as "a network of beliefs, processes and practices that produces a particular kind of self and body (the corporeal standard) that is projected as the perfect, species-typical and therefore essential and fully human". Disability then is framed as a diminished and undesirable state of being human.

[4] In disability studies, Vehmas and Makela (2009) clarify the ontology of impairment and disability. Impairment is a physical or biological phenomenon (i.e. brute fact) whose identification and definition are determined culturally and socially (i.e. institutional fact). Disability is a social phenomenon that includes not only institutional facts, but also brute facts such as physical or mental health conditions.

conceptualising the notion of disability or disability-related issues (Bellanca et al., 2011; Burchardt, 2004; Mitra, 2006; Nussbaum, 2006). For its normative purpose[5], the capability approach has been useful for evaluating disability-related states such as poverty or economic wellbeing (Mitra, 2018; Rosano et al., 2009; Trani et al., 2015). Despite the dominance of the normative application of the capability approach, some scholars have raised the possibility of using this approach as an explanatory theory (i.e. explaining disability-related issues through the lens of the capability approach) (Robeyns, 2017; Zimmermann, 2006). In this study, the explanatory purpose of the CA was applied to explain disaster risk facing PWD.

The normative application of the CA is often trapped in the positivist paradigm that adopts quantitative methodologies (e.g. relying on statistical or mathematical analysis with deductive reasoning) to analyse and measure human capabilities at the empirical level. This thesis argues that the positivist paradigm applied to the contemporary disability-related capability research fails to capture the dynamics of human and environmental systems. It overlooks human agency, social structures, and their interaction in creating human capabilities (see details in Chapter 4). These weaknesses challenge researchers to use positivism to explain how the capabilities of PWD are actualised in dealing with disasters.

Some capability researchers have adopted the constructivist paradigm in researching human capabilities. This paradigm is strongly associated with qualitative methodologies that often aim to explore valuable capabilities from the perspective of participants in the research context and generate insights of the dynamics of, and interactive relationship between, various human capabilities (Ibrahim & Tiwari, 2014). Thus, it is well suited for explanatory research. However, at the radical end of social constructivism, the existence of social reality is denied and reduced to individual meanings. This strong version of social constructivism also claims that different viewpoints of participants are all equally valid (i.e. multiple realities or truths) (Fleetwood, 2014). As a methodological compromise to improve the quality of data, some recent inquiries into disability issues have attempted to adopt qualitative methods (or a participatory approach) and quantitative methods in a combined way (i.e. mixed methods or pragmatist methodology). The qualitative methods used in this mixed-methods approach are mainly limited to identifying, selecting and/or ranking dimensions or factors of

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[5] Robeyns (2017, p. 27-28) notes that whilst ‘evaluative analysis’ (in which values are used to evaluate a state of affairs) and ‘normative analysis’ are philosophically different, social scientists, especially economists, often conflate them into the heading ‘normative analysis’. A normative analysis tends to entail a moral norm that tells us what we ought to do.

measurements for evaluative purposes (Dubois & Trani, 2009; Kinghorn et al., 2015; Mitra et al., 2013). The choices of methods and/or methodologies within this approach, therefore, raise difficulties for researchers in making sense of data obtained from using methodologies based on conflicting ontological and epistemological assumptions (Mcevoy & Richards, 2006).

This thesis argues that the shortcomings in the application of a positivist paradigm, alongside the challenges from social constructivism and pragmatism, can be addressed by adopting critical realism - that combines ontological realism with epistemological constructivism - as a research paradigm (Martins, 2006, 2007; Smith & Seward, 2009). Accordingly, it is argued that a critical realist methodology can capture the genuine meaning of capabilities and is philosophically well suited for explaining human capabilities. It also allows researchers to capture the agency of PWD, which is often ignored in contemporary disability research, and the interaction of their agency and social structures in realising their capabilities (Watson, 2020). The following will provide a brief overview of critical realism and the agency-structure relationship from a critical realist perspective.

1.5.3. What is Critical Realism?

Critical Realism is a philosophy of science developed by Roy Bhaskar (1978) as a critique of the positivist paradigm in social science. Whilst agreeing with positivists that reality (e.g. entities, events, or phenomena) exists independently from human thought, critical realists negate the positivist assumption that reality is only reducible to the observation of phenomena. Rather, they argue that reality exists regardless of whether we can observe or know it (Danermark et al., 2019). In line with constructivism/post-structuralism, critical realists agree that knowledge is itself a product of social processes and discourses, and there is always an interpretive element in making sense of reality. That is, we can only know them under particular descriptions, particularly when it comes to social entities or phenomena (López & Potter, 2001). However, critical realists assert that reality is not reducible to human knowledge or discourse. Rephrasing Kuhn's statement[6] from the CR perspective, Bhaskar (1991, p. 10) writes *"Though the (natural (or object)) world does not change with the change of paradigm, the scientists afterward works in a different (social (or cognitive)) world"*. To clarify this, Bhaskar (1998c) distinguishes two dimensions of an object: intransitive

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[6] Kuhn (1970, p. 121) *"though the world does not change with a change of paradigm, the scientist afterward works in a different world"*

(ontological) and transitive (epistemological) dimensions. The intransitive is what exists independent of identification. The transitive is a social product that includes knowledge and perception (e.g. concepts, theories, or models) of reality. Thereby, he claims that ontology (i.e. what is reality) is not reducible to epistemology (i.e. our knowledge of reality). This is what Bhaskar calls the 'epistemic fallacy' when critiquing both constructivist and positivist paradigms which reduce reality to human knowledge. Critical realism contends that we may have different views on reality, but this does not mean that there are different realities. Rather, those views may represent different parts of reality.

Reality under the critical realist ontology is structured or stratified (Bhaskar, 1998c). There are three domains or levels of reality: the empirical, the actual and the real (Figure 1-2). The empirical level includes phenomena and events that we actually see and experience. The actual level includes events and non-events which are generated from the real level and can be observed and experienced or not. The real level is comprised of underlying structures and mechanisms responsible for what can be observed. The concept 'structures' in CR terms does not refer to physical patterns of things but natural and social objects or entities that have causal mechanisms. A structure may also be part of a greater structure or itself constituted by substructures (Sayer, 1992). For example, stigma can be a part of a cultural system, or a local institution can be constituted by units of operation, internal relations, and regulations. Mechanisms refer to "the ways of acting of things", often understood as tendencies (Bhaskar, 1978, p. 14). Tendency refers to the propensity to act or behave in a particular way. Martin (2006, p. 676) uses the term 'tendency' to emphasise the idea that a continuous activity "may or may not be actualised in concrete events and states of affairs, even when it is continuously exercised". The real cannot be seen and we do not have direct knowledge of the real.

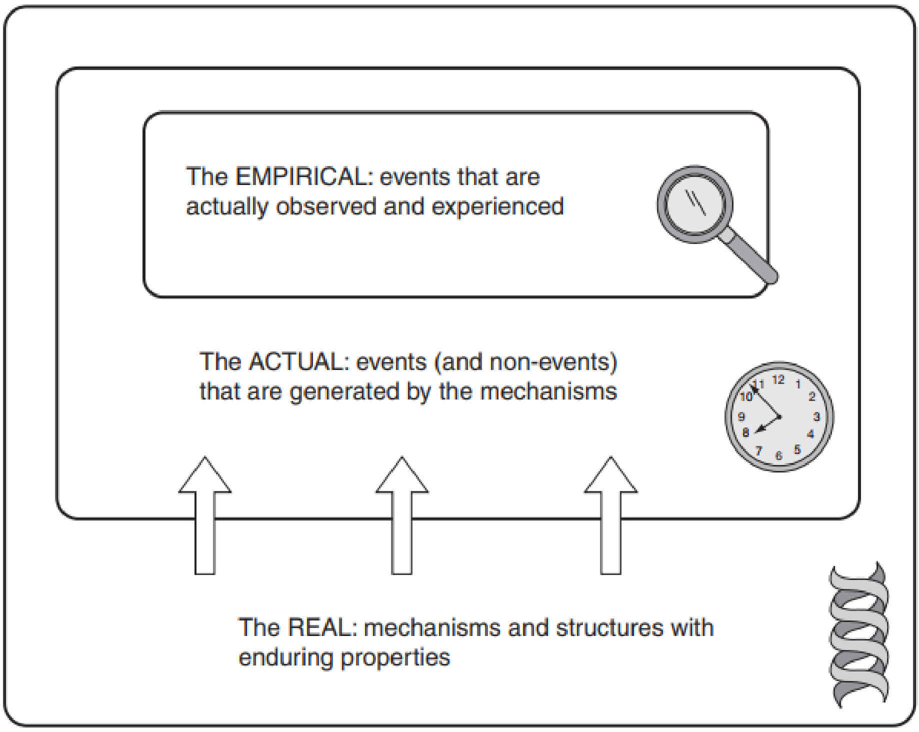

Figure 1-2. The Real, the Actual, the Empirical.

Source: Mingers (2014, p. 19)

Since social phenomena are multiplicitous, complex, evolving, and subject to the exercise of human agency; they are not characterised by event regularities, determinism, or stochastic laws (Fleetwood, 2014). Recognising that events or phenomena are derived/governed by the underlying structures and mechanisms, critical realists argue that the investigation needs to be shifted from the empirical and actual levels to the real level (i.e. the structures and mechanisms that govern the occurrence of events or phenomena), or in other words, from the consequences, outcomes or results (i.e. patterns as event regularities) of actions, to the conditions that make the actions possible. Critical realists caution not to explain the cause of an empirical event based on observations only. Components, likely in a complexly interactive way, generate events, and many of these components are not readily observable or knowable to us.

When capability is interpreted in critical realist ontology, it is located at the actual level. Martins (2006) considers capabilities as causal powers that provide the potential to realise particular functionings that can be observed at the empirical level. At the real level, structures can be viewed as conversion factors that have causal mechanisms. To clarify this, I use the term ‘structure’ to refer to all (ontologically) natural and social objects or conditions, and ‘mechanism’ to emphasise how a structure works or the causal link between the structure and the associated functioning. Each mechanism has a tendency or counter-tendency that accounts for the partial explanation of an outcome (Kincaid, 1996). Smith and Seward (2009) classify the mechanisms into individual mechanisms, which are associated with individual conversion factors, and structural mechanisms, which are associated with external conversion factors. Some mechanisms can generate tendencies to actualise capabilities while others may create counter tendencies to the actualisation of capabilities.

1.5.4. Social structures and agency

In contradiction to both positivism and constructivism, critical realists acknowledge the existence of the agency and structure. Fleetwood (2014) notes that positivism collapses structures and mechanisms into agency or the outcome of human actions while constructivism insists that both humans and structures are socially constructed via discourse. From this understanding, there is no genuine agency or structures under constructivism. However, for critical realists, it is argued that human agents and social structures are ontologically distinct entities and mutually dependent (Danermark et al., 2019). Social structures are always already there for agents. People take social structures or arrangements as a given for their actions or social activities. Social structures thereby do influence human agency. Though social structures are not created by agents or not the products of human actions, their existence relies on human agents. That is, social structures are reproduced and transformed by human actions. The relation between social structure and agency is thus dialectical (Figure 1-3). In general, social structures are observable only through their effects. This, therefore, often requires a process of abstraction from the empirical and actual domains to the real domain.

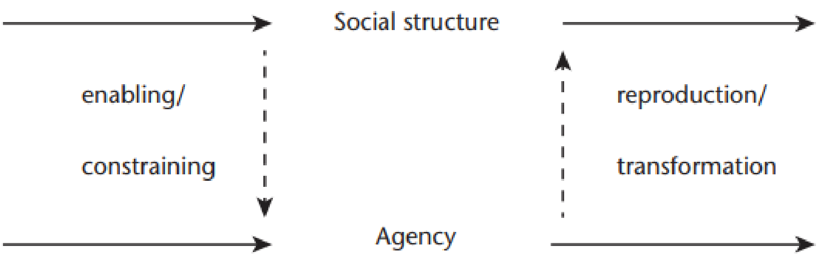

Figure 1-3. Social structure and agency according to the transformation model of critical realism

Source: Danermark et al. (2019, p. 80)

1.6. Significance of the research

This thesis contributes to the broader literature in disaster studies in two ways. First, drawing on the capability approach, this thesis has theoretically provided an alternative way to examine disaster risk that people face. It has provided a brief historical review of disaster research, including the hazards and vulnerability paradigms. It accordingly focused its analysis on exploring the drawbacks of resource-based approaches under the vulnerability paradigm. This study does not negate the contributions of resource-based approaches in addressing the vulnerability of people, especially of PWD, to disasters. Rather, drawing on the strengths of the resource-based approaches, it has provided a capability-based theoretical framework to broaden the understanding of disaster risk faced by people. This framework highlights the key elements in examining the disaster risk faced by PWD, including resources, individual and environmental conversion factors, and capabilities. It argues that for reducing disaster risk for PWD, it is critical to expand the capabilities of PWD to deal with disasters. To achieve this goal, it cannot be simply by increasing the availability of resources or improving the access to resources but also by taking into account the conversion process (both individual and environmental factors) and then providing essential support to ensure that PWD can utilise and convert the resources to their valued capabilities. When it comes to disaster justice for PWD, this thesis argues that 'capability' is a more adequate concept than 'resource' to address distributive injustices as well as discrimination that PWD experience in times of disaster. This is because the capability approach focuses on ends rather than means. Also, as it is sensitive to individual variations, it is well-suited to guide the just distribution and delivery of public resources and services. Furthermore, given the limited empirical research employing the capability approach in DRR field, as well as the limited consideration of people with disabilities within DRR in Vietnam and other countries in the Global South, this thesis has indeed contributed to bridging these gaps.

Second, this thesis has also raised a need to have greater philosophical consideration in disaster research. It thereby provided a research paradigm, critical realism, in response to the methodological critiques of positivism and social constructivism in social inquiries related to disaster, disability, and capability. From a critical realist perspective, this study has highlighted the crucial role of human agency in understanding disaster risk. It argues that the failures of people to act in times of disaster are not merely reduced to social structures but rather the (dialectal) relationship between people and social structures. This view is indeed an emancipatory idea as it emphasises that human actions are influenced but not determined by social structures, and that everyone has their agency or power to act (individually and collectively) to transform social structures that are unfit for the actualisation of their valuable capabilities.

While the "P" in my Doctor of Philosophy programme implies that the targeted audience of this thesis is mainly researchers; policymakers and practitioners may also benefit from it. As the main aim of this thesis is for academia, I have spent the majority of space discussing the theories and providing philosophical reflections on my research problems in disaster and disability studies. This is detailed in Chapters 3, 4, and 7. Chapters 5 and 6 are designed to support the theoretical statements or framework presented in Chapters 3 and 4. The audience of Chapters 5 and 6, hence, may be expanded to policymakers and practitioners.

1.7. Thesis structure

This thesis is presented in the publication format. The choice of 'thesis-by-publication' was motivated by the advantages of easier and quicker circulation during the course of the research. The thesis is comprised of five scientific papers, each of which forms a chapter. Three of the papers are already published and the other two are currently under review (Table 1-1).

Prior to discussing the important outcomes of this study in detail, it is necessary to understand the hazardscape and the political, social, and economic contexts wherein this study is conducted, and the research design. The following chapter, Chapter 2, thus provides an overview of the disaster context and disaster risk reduction approaches in Vietnam. It then briefly reviews the concept of disability, relevant legal frameworks, and the living situations of PWD in Vietnam. Following this, it describes the settings of the two study communes. It lastly describes the research methodology and process in these study communes.

Chapter 3 provides a detailed literature review on the research problems and suggests a conceptual framework for this study. It firstly reviews the vulnerability of PWD in disasters through the resource-based approach. It argues that frameworks under the resource-based approach focus mainly on the means (i.e. resources) but overlook the ends (i.e. what people are capable of doing or being in order to cope with disasters). Furthermore, the resource-based approach neglects the processes or factors that are involved in converting resources to meaningful activities and states. Therefore, to bridge these gaps, this chapter suggests a human capability-centred framework as an alternative approach to better understand disaster risk faced by PWD. This chapter subsequently raises the need for empirical research to elaborate on the proposed capability-based conceptual framework.

Table 1-1: List of Chapters/Articles of this thesis

Article/ Chapter	***Title***	***Authors***	***Journal***	***Status***
Chapter 1	Introduction			
Chapter 2	Setting the scene			
Chapter 3/ Article 1	Expanding the capabilities of people with disabilities in disaster risk reduction	Khanh Ton JC Gaillard Carole Adamson Caglar Akgungor Ha Ho	International Journal of Disaster Risk Reduction	Published
Chapter 4/ Article 2	Researching the capabilities of people with disabilities: Would a critical realist methodology help?	Khanh Ton JC Gaillard Carole Adamson Caglar Akgungor	Journal of Critical Realism	Revised and resubmitted
Chapter 5/ Article 3	An empirical exploration of the capabilities of people with disabilities in coping with disasters	Khanh Ton JC Gaillard Carole Adamson Caglar Akgungor Ha Thanh Ho	International Journal of Disaster Risk Science	Published
Chapter 6/ Article 4	Human agency in disaster risk reduction: theoretical foundations and empirical evidence from people with disabilities	Khanh Ton JC Gaillard Carole Adamson Caglar Akgungor Ha Ho	Environmental Hazards	Revised and resubmitted
Chapter 7/ Article 5	Disaster justice for people with disabilities	Khanh Ton Carole Adamson	Disaster Prevention and Management: An International Journal	Published
Chapter 8	Conclusion			

Chapter 4 provides a methodological foundation for empirical research that adopts the aforementioned conceptual framework. It firstly reviews the adoption of the capability approach in disability research. It notes that the majority of such capability-driven disability research remains trapped in treating this approach as a normative framework for evaluating the well-being of PWD. Recently, a possibility of adopting this approach in explanatory research has been raised. However, to enable the explanatory power of the capability approach in understanding disability-related issues, it is necessarily grounded in an appropriate research paradigm. This chapter, thereby, argues that critical realism is well suited for explanatory purposes as this research paradigm aims to uncover causal structures and mechanisms that explain the potentialities for PWD to achieve their valued capabilities.

By focusing on both agency and structures, it also generates explanations for how capabilities can be actualised. This chapter then discusses how a critical realist methodology can help in explanatory research related to the capabilities of PWD.

Chapter 5 seeks to address the disaster risk that humans face through a lens of capabilities, with a focus on the lives of PWD. A multi-case study approach was adopted to examine the research problem in the two rural communes in Vietnam. 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 organisations. It was found that PWD are affected by disasters due to the lack of capabilities that they value in coping with disasters. A range of capabilities that PWD value was revealed in the study sites, with many being valued not only in times of disaster but also in daily life. The findings also highlight that, to actualise their valued capabilities, PWD 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.

Chapter 6 focuses on exploring the human agency of PWD that has seldom been elaborated theoretically and empirically in disaster research. Through the capability lens, this chapter examines the agency of PWD to deal with disasters. Their agency is explored in relation to their participation in decision-making processes which has long been regarded as a means of disaster risk reduction. Drawing on the empirical data from one of the study communes, the study found that, in most cases, PWD need to participate in decision-making processes to achieve their valuable capabilities for their safety in times of disaster. This process of participation can be seen as both an end and a means. For participation as a means to be achieved, however, participation as an end must be secured. It subsequently raises the need to enhance the agency of PWD through their genuine participation in DRR decision-making processes.

Chapter 7 expands the theoretical arguments on capability and human agency into disaster justice for PWD. Drawing on the capability approach, it explores distributive injustice that PWD face in dealing with disasters. It then discusses procedural justice with a focus on the agency of PWD and their participation in decision-making processes concerning DRR. The chapter argues that disaster injustice faced by PWD can be construed as the inequalities of capabilities that they experience in the face of disasters. Furthermore, although social structures play an important role in creating and perpetuating disaster injustice, PWD, as active agents, have power to transform social structures that, in turn, bring about justice for themselves. The article, finally, raises the need for considering the equality of capabilities and human agency in achieving disaster justice for PWD.

The final chapter, Chapter 8, concludes the research by summarising all findings against its objectives. It also provides implications for research and practice, and then identifies possible future studies.

CHAPTER 2. SETTING THE SCENE

2.1. Setting the scene

2.1.1. Disaster context and disaster risk reduction approaches in Vietnam

2.1.1.1. Hazard profile in Vietnam

Vietnam is located in Southeast Asia. Approximately 70% of its population lives in coastal areas and low-lying deltas (GFDRR, 2015). With a complex topography, a dense river network, and a long coastline, it is exposed to various types of hazards (Figure 2-1).

Hydro-meteorological hazards such as droughts, floods and storms are the highest risks. The impacts of floods and storms are diverse on human lives and multiple sectors of the economy (agriculture, industry, and energy), the environment, and the education. From 2007 to 2017, floods and storms alone accounted for almost 70% of the mortality and up to 91% of the economic loss in Vietnam (JICA, 2018). Such losses occurred mostly in coastal areas across the country, particularly in the central region of Vietnam. Less severe than floods and storms, the impacts of droughts are mainly on the economy, particularly the agriculture sector, and access to water for the daily activities of people. Droughts, particularly in 2010 and 2014-2016 that were considered the most severe over the last 100 years, accounted for almost 6.4% of economic loss over the 2007-2017 period. Saline intrusion in coastal areas is often exacerbated during droughts (JICA, 2018; World Bank, 2017).

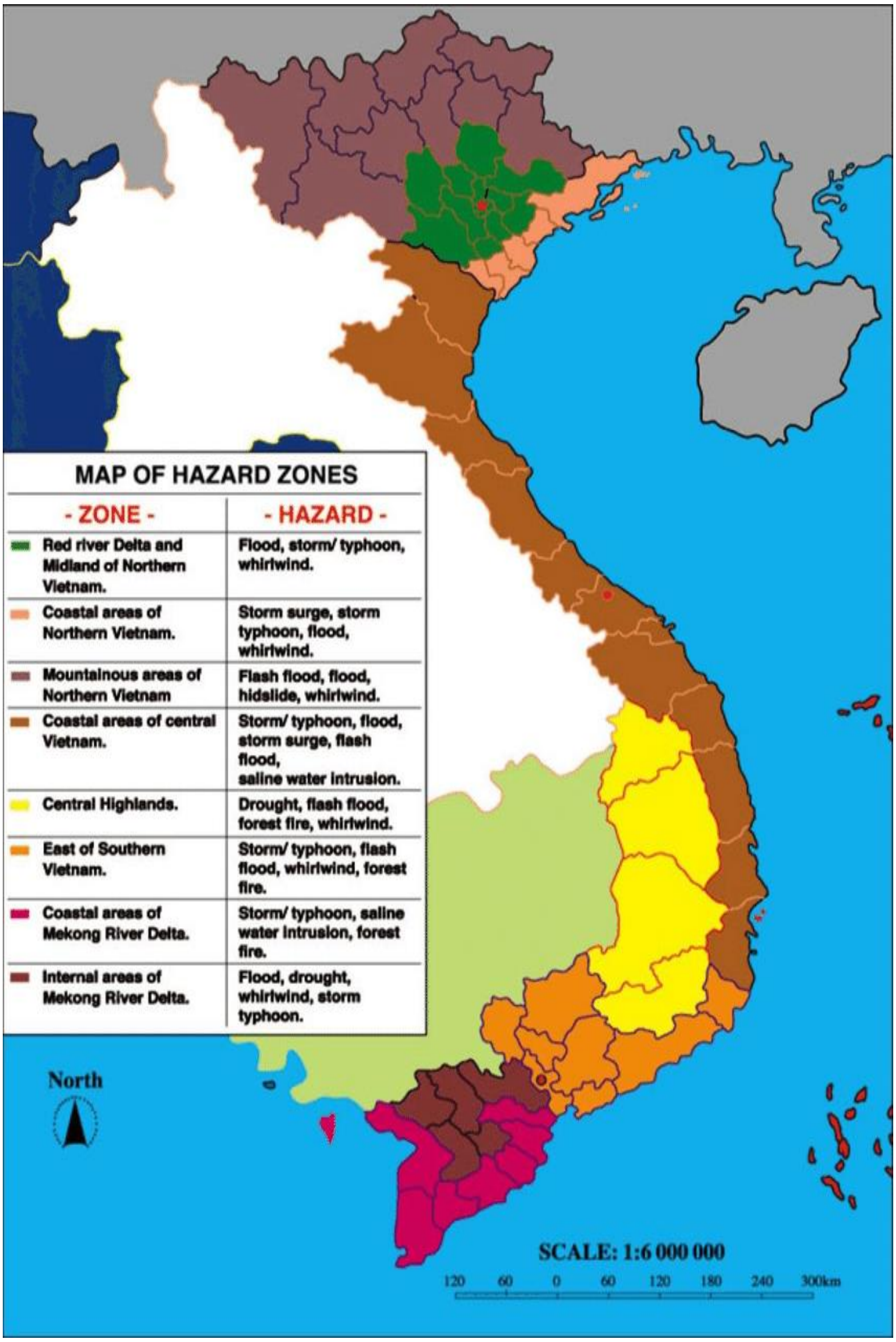

Figure 2-1. Map of hazard zones in Vietnam

Source: SRV (2004)

2.1.1.2. Institutional arrangements for DRR in Vietnam

Over the last two decades, the Government of Vietnam (GoV) has formulated and adopted a set of policies and legal frameworks for Disaster Risk Reduction (DRR). The changes in its legal DRR framework reflect the shift of the GoV's DRR focus from response and relief to prevention and preparedness (IFRC, 2014; JICA, 2018). One of the critical milestones in this shift is the advent of the Law of Natural Disaster Prevention and Control (hereafter the DRM Law) in 2014.

The DRM Law emphasised long-term prevention and risk management in dealing with disasters. It defines ‘natural disaster’ as an *“abnormal natural phenomena which may cause damage to human life, property, the environment, living conditions and socio-economic activities”* (Article 3). This has raised confusion for DRR practitioners in distinguishing between disaster and natural hazard.

The DRM Law also promotes the decentralisation of DRR through:

- clarifying the responsibilities of each authority level according to the “Natural Disaster Risk Levels”,
- providing for the establishment of “Natural Disaster Prevention and Control Funds” that can be directly collected and utilised by provincial governments for their DRR operations,
- strengthening local capacity and efforts with the “Four on-the-Spot Motto”[7] philosophy to deal with disasters,
- emphasising the participation of all society in DRR processes,
- mainstreaming of DRR from the local level by integrating DRR into local socio-economic development plans and sectoral development plans.

As required by the DRM Law, the national/central government, all ministries, and local (provincial, district and communal level) governments must develop their own DRM Plans every five years[8]. The DRR planning approach is either top-down or bottom-up. Some provinces adopted a bottom-up approach in DRR planning. In this case, communes are requested to prepare their plans first. The district approves and consolidates the communal plans, then formulates its own plan. Consolidating the district plans, the Standing Office of the Provincial Commanding Committee for Natural Disaster Prevention and Control, Search and Rescue (hereafter the DRM Committee) formulates the provincial plan which is finally

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[7] “Four on-the-Spot” refers to command, manpower, supplies and logistics on the spot. Considering disaster as a local event, it strongly emphasises that disaster management should be based on local efforts and capacities.

[8] According to Article 110 of the 2013 Constitution of Vietnam, Vietnam’s local administration is formally organised at three levels: provincial, district and communal. A commune is further divided into hamlets/villages.

approved by the Provincial People's Committee. On the other hand, in the top-down DRR planning approach, the provincial DRM Committee formulates the provincial plan first. All the districts in the province then formulate their plans based on the provincial plan. Similarly, all commune-level plans are formulated based on the district plan (JICA, 2018).

2.1.1.3. Community-based Disaster Risk Management in Vietnam

Community-based Disaster Risk Management (CBDRM) projects have been implemented by international non-government organisations (INGOs) and the Vietnam Red Cross (VNRC) (with support from IFRC and other National Societies) since the 1990s (IFRC, 2014). The key activities in these projects are participatory Vulnerability and Capacity Assessment (VCA), DRR planning, and promoting the participation of different vulnerable groups, including women, older people, children, PWD, and the poor into DRR processes. These projects also support local communities in implementing some DRR measures (listed in the local DRM plan) such as risk awareness-raising activities in communities and schools, capacity building for local government staff in disaster response, early warning system, response planning, small-scale structural mitigation work (e.g. identifying and upgrading evacuation routes and shelters), and improvement of water and sanitation (IFRC, 2014).

In 2009, recognising the advantages of CBDRM in empowering local communities to deal with local disasters, a National Project on Community-Based Disaster Risk Management (Project 1002 – Decision No.1002/2009/QD-TTg) was launched by the government to promote local resilience to disasters through community-based activities.

The overall objective of Project 1002 is to minimise the deaths and loss of assets due to disasters and to ensure sustainable development and national defence. Project 1002 consists of the following two components.

- Component-1: Improve the technical capacity of personnel who manage and execute CBDRM activities at all levels. The activities in this component include developing policies and legal documents, strengthening the organisational structure for DRM, developing a training system for CBDRM at all levels, and upgrading offices of DRM agencies.
- Component-2: Improve communication skills and education on disaster risk management in communities, strengthen communities' capabilities of DRM. The activities, in this component, are the establishment of implementing groups at the

commune level, risk mapping, guidelines for DRM, risk assessment, DRR planning, drills, risk communication, early warning systems, training for local people, and small-scale mitigation measures.

Project 1002 targets to implement CBDRM in 6,000 disaster-prone communes, which are more than a half of the communes in Vietnam, within 12 years from 2009 to 2020. The Ministry of Agriculture and Rural Development (MARD) is the leading agency in the implementation and coordination of Project 1002. With the limited capacities of local governments, Project 1002 sought financial and technical support from civil society organisations (CSOs), particularly INGOs (Tong et al., 2012). Project 1002, and later the DRM Law, have placed a strong legal basis for the participation of local people and CSOs in DRR processes ranging from disaster risk assessment and planning to implementation and monitoring.

2.1.2. Disability and the living situations of people with disabilities in Vietnam

2.1.2.1. The conception of disability in Vietnam

The conception of disability in Vietnam is significantly influenced by religious beliefs and cultural values, mainly Buddhism, Taoism, Confucianism, and later, Christianity (Le, 1995). From such cultural perspectives, disability is often interpreted as an individual flaw (i.e. a physical and mental impairment), and accordingly associated with stigmas and other negative norms. Each of the religions or traditions had certain impacts on people's thoughts, behaviours, feelings, and actions in their daily life activities, as well as toward PWD. Buddhism, Taoism, and Confucianism (i.e. the three major religions – "Tam giáo") were introduced to Vietnam during the early years of the Chinese invasion (Hunt, 2005; Tru, 1996). In Buddhism[9], 'karma' - an important concept related to cause and effect - is used to explain a person's circumstances. What people have in this life is a consequence of what they did in their previous life. Impairments are often interpreted as a result of people's or their parents' bad deeds in the previous life or before acquiring the impairments in the present life (Nguyen, 2011). Having such impairments is their fate. Families with PWD thus may

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[9] The central tenet of Buddhism is that human life is filled with miseries and sufferings as a result of their desires (for wealth, fame, power and material goods). To eliminate the sufferings, people must suppress their desires. Buddhists believe in reincarnation and that life is a cycle with no end. That is, people often experience four stages in their life: birth, aging, becoming ill, and death. However, Buddhists do not believe that death is the end of life but just a final stage for people to go into another life cycle.

experience shame. However, as Buddhist teachings focus on mercy and compassion, they reinforce the charity attitude and practices of people toward PWD.

Confucianism[10] is often viewed as a philosophy rather than a religion. Confucian teachings in combination with humanistic values practised by the Vietnamese have influenced the ways in which PWD are treated. For example, PWD are considered as an object of pity and abandoning old parents or parents with disabilities is viewed as cruel and inhumane.

Daoism[11] views disability and illness as a result of disequilibrium of Yin and Yang within a body or during pregnancy. From the religious perspective of Daoism, disability, particularly mental disability, is often associated with supernatural causes (e.g. possession by a demon or evil spirit). This may cause stigma and shame for PWD and their family.

Christianity was introduced to Vietnam in the second half of the sixteenth century. It did not make a major impact on Vietnamese culture until the nineteenth century when French colonialism invaded Vietnam (Tru, 1996). This religion may have reinforced the perception of the supernatural causes of impairments. However, like Buddhism, it teaches people to conduct themselves morally and reinforces the charity mindset toward PWD. All of these imported religions melded with local beliefs and traditions (e.g. animalism, humanism, and ancestor worship) and created a Vietnamese religious/spiritual complex (Hinton et al., 2008).

Since the ending of the Vietnam War, a new perspective on disability has emerged. With the increasing evidence on the causal link between Agent Orange[12] and impairments, as well as the tangible impacts of the war such as injuries, most PWD are viewed as victims of the war (Hunt, 2005). With the increasing use of Western technologies in recent decades, religious beliefs and traditional values have been replaced with scientific approaches that define disability from a medical perspective. Gammeltolf (2007) notes that the modernist (and perhaps ableist) ideologies of normalcy and productivity arising from the development and

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[10] Confucianism deals with the ethical and moral dimensions of daily life activities such as social relations (King-citizen, father-children, husband-wife, siblings, and friends), conduct, and harmony. Confucian theories teach people about respecting elders, loyalty to one's family (i.e. filial piety) and country, valuing education, and emphasising the responsibilities of parents in taking care of and educating children.

[11] Similar to Confucianism, the original ideas of Daoism (or Taoism) were a philosophy emphasising harmony with nature and balance between internal and external elements. It was then mysticised to become a religious system that links humans to the supernatural world.

[12] Agent Orange is an herbicide developed by the U.S. military in the 1940s. It was used to destroy all trees, vegetation, and crops in jungles and farmlands where the enemy could hide during the Vietnam War. Agent Orange is harmful to humans and causes a variety of diseases in humans and animals (Hunt, 2005).

adoption of modern technologies in health care (e.g. ultrasound and screening methods in early diagnoses), media, and population policies, have had adverse effects on attitudes to disability.

In the Vietnamese language, 'tàn tật' or 'tàn phế' (handicap) have long been used to refer to PWD. 'Tật' refers to 'an abnormal condition of a body part which is congenital or the result of an accident or a disease' (Phe, 2003). 'Tàn' or 'tàn phế' raise a negative feeling of 'ending' or 'dying' and imply 'uselessness'. 'Thằng mù' (blind person), 'thằng què' (limping person), 'con điên' (lunatic person), 'đồ dở hơi' (crack-brained person) are common epithets to call PWD in a disparaging way (Duong et al., 2008). These words imply a disrespectful attitude as well as stigma toward PWD. In 2010, the Vietnamese Government officially replaced 'tàn tật' by 'khuyết tật' (disability) through the Law on People with Disabilities (hereafter the PWD Law). The term 'disability' has been adopted in the legislation since. However, although 'khuyết tật' sounds less negative than 'tàn tật', its meanings remain strongly linked to impairments (e.g. 'khuyết' refers to 'defect' or 'flaw') and the term 'tàn tật' is still being widely used in everyday conversations.

Whereas the Convention on the Rights of Persons with Disabilities by the United Nations (UNCRPD) (UN, 2006) recognises the interaction between impairments and the environment (or environmental barriers) in creating disability, the PWD Law reduces disability to impairments ('khiếm khuyết'). It defines persons with disabilities as those *"who are impaired in one or more body parts or suffer functional decline manifested in the form of disability which causes difficulties to his/her work, daily life and study"* (Clause 1 Article 2). This thereby underestimates the important role of environmental barriers in creating, or even exacerbating, the disability experience of a person and considers disability as an individual problem rather than a social one.

2.1.2.2. Institutional arrangements for disability support in Vietnam

The changes in the disability legal framework since 1980 have reflected a shift in the approach of the Vietnamese Government to disability from a medical one to a human rights-based one. Specifically, the first Constitution of the Socialist Republic of Vietnam enacted in 1980 stated that *"elderly and handicapped people who have no one to rely on are entitled to support by the State and the society"* (Article 74). The subsequent 1992 Constitution (amended by the Resolution No. 51/QH10 dated 25 December 2001) added the duty of the state and society in providing conditions for PWD in rehabilitation, employment, and education (Articles 59 and 67). However, until 1998, the enactment of the Ordinance on Handicapped Persons became a strong legal basis for the mandates of the state and society in assisting PWD, as well as for the recognition of PWD as political equals and their rights in society. The latest 2013 Constitution reiterated the onus of the state in protecting the rights of PWD, particularly in social welfare, social security and policies, and vocational education (Articles 59 and 61).

The promulgation of the PWD Law in 2010 (Law No. 51/2010/QH12 as a replacement for the Ordinance), and later the ratification of the UNCRPD in 2014 legally marked significant milestones in Vietnam's political commitment to protecting the rights of PWD and promoting the equality in access to services and social inclusion for PWD. The PWD Law indeed paved the way for the advent of the National Action Plan to Support Persons with Disabilities for the period 2012-2020 (Prime Minister Decision No. 1019/QD-TTg dated 5 August 2012) and the National Plan on Implementation of the UNCRPD (Prime Minister Decision No. 1100/QD-TTg dated 21 June 2016). The ministries concerned also promulgated Circulars and Inter-Circulars guiding the implementation of the PWD Law (GoV, 2017).

In terms of disability classification, the PWD Law categorises six types of disability including mobility, hearing and speaking, vision, mental, intellectual, and other types of disability (Clause 1 Article 3). Most types of impairment are derived from old age, congenital causes, diseases, or wars (ISDS, 2013). It is predicted that impairments acquired from traffic accidents or HIV/AIDS are likely to increase in the future (Lynch & Kiet, 2013). The PWD Law also regulates three levels of disability: (a) persons with extremely severe disability are those who are unable to support themselves in their daily activities; (b) persons with severe disability are those who are able to support themselves in some of their daily activities; and (c) persons with mild disabilities are those who do not fall under provisions *a* and *b* of this Article (GoV, 2017). The type and degree of disability are assessed at the communal level and determined by the Disability Degree Determination Council (according to the Joint Circular 37/2012/TTLT-BLĐTBXH-BYT-BTC-BGDĐT dated 28 December 2012). The degree of disability ("mild", "severe" or "extremely severe") is calculated using a standardised scoring system based on the applicant's ability to perform eight daily life activities (walking; eating and drinking; toilet hygiene; personal hygiene; dressing; hearing and understanding what people say; communicating using speech; and performing housework such as folding clothes, sweeping, washing dishes and cooking), with or without assistance from others. Given the degree of disability, the local government determines which social protection benefits a person with disabilities is eligible for (Table 2-1).

Table 2-1. Social protection provisions for people with disabilities in Vietnam

Entitlement	***Social Protection Component***	***Eligibility (disability degree)***	***Description of entitlement***
Social assistance	Social assistance to groups at high risk of poverty	Severe, extremely severe	Unconditional minimum monthly cash transfer: VND 405,000 [USD 18] (severe), VND 540,000 [USD 24] (extremely severe). Slightly higher amounts for children and older adults. A separate cash transfer is available for caregivers of people with extremely severe disabilities (VND 405,000/month [USD 18])
Health insurance	Social insurance, access to basic services	Severe, extremely severe	State pays full premium for health insurance; coverage of 95% of eligible medical expenses
Education supports	Access to basic services	Any classification	Various (e.g. individual education plan, adapted admission criteria; exempted tuition fees/scholarship if also poor)
Vocational training & employment supports	Opportunities for decent work	Any classification	Various (e.g. free vocational training at recognised centres, preferential loans for self-employed workers, incentives for employers to hire people with disabilities)
Transportation discounts	Access to basic services	Any classification	Free or subsidised public transportation

Source: Banks et al. (2019)

According to the National Survey in 2016, PWD account for approximately 7.09% of the population aged two and over (equivalent to approximately 6.2 million PWD) in Vietnam (GSO, 2016). Of the total PWD, there is about 3.85% (3.5 million) of people with lower mobility disabilities, 2.3% (2.1 million) with upper mobility disabilities, 2.83% (2.6 million) with cognitive disabilities, 1.18% (1 million) with psycho-social disabilities, 0.9% (0.8 million) with communication disabilities, and 1.32% (1.2 million) with self-care disabilities. The survey also shows that many persons have multiple disabilities. About 20,05% of total households (nearly 5 million households) have at least a person with disabilities. About 75% of total PWD live in rural areas where the lifeline infrastructure and services are limited. The following sub-section discusses the deprivation of basic capabilities for PWD in Vietnam.

2.1.2.3. Disability and deprivation of basic capabilities in everyday life

The reforms in 1986, known as *'Đổi Mới'* (Renovation), marked a significant milestone in Vietnam's political and economic history. These structural reforms transformed the centrally planned economy of Vietnam into a market economy that accordingly promoted rapid economic growth and significantly reduced the poverty rates (Bogenschutz et al., 2020). However, the results of the rapid economic growth and modern industrialisation in Vietnam have increased social inequalities, and thereby left marginalised groups, such as PWD, disproportionately living in poverty.

Disability and poverty are interrelated (Mont & Cuong, 2011). Disability can contribute to poverty due to, for instance, the exclusion of PWD from education and employment. The conditions of poverty such as poor nutrition, lack of access to health care, poor water and sanitation, and unsafe living and working conditions can lead to disability. In Vietnam, the conception of poverty has changed since 2015. Before 2015, Viet Nam adopted the single-dimensional poverty measurement[13] (monetary poverty). In 2015, however, a multi-dimensional poverty measurement based on the Alkire-Foster method (drawing on the capability approach) was formally adopted to measure poverty. Multidimensional poverty is measured through five basic five dimensions of capabilities: healthcare, education, housing, water and sanitation, and information access. Each dimension has two indicators (i.e. social services)[14], which are equally weighted. A household is considered multidimensionally poor if it is deprived in at least three indicators (i.e. the multidimensional cut-off is 30% or 3/10) (MOLISA, 2018). From 2016 to 2020 is the transition period from single-dimensional poverty to multi-dimensional poverty, both income criteria and multi-dimensional poverty criteria are used to identify poor households. In 2016, it was estimated that about 17.8% of PWD lived in multidimensionally poor households (MOLISA, 2018).

No matter what measurement methods are adopted, PWD and households with PWD are always at higher risk of poverty than people without disabilities and households without

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[13] The poverty line was set at the amount of money per month sufficient for a 2100-2300 Kcal/person/day diet as well as essential non-food spending (equivalent to 700,000 VND/person/month in rural areas and 900,000 VND/person/month in urban areas for the period of 2016-2020) (GSO, 2016; MOLISA, 2018).

[14] 1. Healthcare: Access to healthcare services and health Insurance; 2. Education: Adult education level and child schooling; 3. Housing: Housing quality and average dwelling area; 4. Water supply and sanitation: Water for living and sanitation; 5. Information: Using telecom services and assets for information access

PWD. Specifically, according to the survey by the General Statistics Office (GSO, 2016), there is always a gap between PWD and people without disabilities in all dimensions of poverty. About 66% of PWD living in multidimensional poor households were deprived of access to at least three out of the 10 basic social services (MOLISA, 2018).

Living conditions: Their living conditions in general are poor. For instance, only about a half (52.1%) of PWD live in permanent houses and less than three quarters of them (73.3%) have access to safe water and sanitary latrines. This implies that a large number of PWD are still living in houses that may be unsafe from floods and storms.

Health care: In 1989, the Vietnamese government commenced health care-related reforms (as part of the wider economic reform programme) that included the introduction of user fees at public facilities and the privatisation of medical practice and pharmaceutical trade. After these reforms, there was an increase in reporting unaffordable health charges (Palmer et al., 2011). In response to these challenges, some government support schemes such as fee waivers and free health insurance cards were issued to disadvantaged groups for free access to health services at public facilities (e.g. Law on Health Insurance, Law on Medical Care). Being identified as a disadvantaged group, PWD benefited from these schemes. There were also some policies (e.g. Community-based functional rehabilitation strategy, Law on PWD) tailored to address the specific disabilities and needs of PWD (e.g. community based rehabilitation; improving staff's expertise about functional rehabilitation, particularly for those on working at local health care providers; early identification and intervention services for CWD) (Tran, 2014).

As a result of these policies, most of PWD (90.1%) have health insurance. However, having this health insurance does not mean that PWD are able to access the health services due to a variety of barriers such as inaccessible roads, particularly in rural and mountainous areas, and lack of competencies of health workers at communal clinics. A nation-wide survey by GSO (2016) indicated that only 57.3% of the total commune clinics provide rehabilitation programmes for PWD and only 16.9% meet the accessibility standard designs for PWD (e.g. sanitary facilities, passageways, ramps).

Due to the stigma associated with disabilities in Vietnamese cultures, PWD are often kept at home and away from the public eye. Although they may have good care in terms of material needs such as food and clothing, their emotional and psychological well-being is rarely attended to (Le, 1995).

Education: Education is highly valued in Vietnamese culture. An individual's level of education will determine their social class and self-esteem (Le, 1995). Recently, there have been many policies developed to support PWD to assess education, clarify the rights and responsibilities of institutions and people involved in providing education for PWD, and provide regulations on the forms of education for PWD (e.g. Law on Education, Decision 23/2006/QĐ-BGDĐT on inclusive education for PWD, and Law on PWD). These policies emphasise the importance of education as a means to change the life of PWD as well as fulfil the human right that PWD are entitled to (Tran, 2014). PWD are supported in three forms: inclusive education, special education and integrated/semi-inclusive education. Despite this enabling legal framework, PWD still face challenges in accessing the education. The opportunities to go to school for children with disabilities is much lower than for children without disabilities. The enrolment rate for children with disabilities is 88.4% in primary schools and this significantly decreases at the higher educational levels. For instance, only 74.7% of children with disabilities go to secondary schools, 39.4% attend high schools, and only 7% are trained in vocational secondary schools. The rate of schools that meets the accessibility standard designs for PWD is very low (2.9%). In addition, most of the schools (72.3%) lack teachers who are qualified to teach children with disabilities. The opportunity for education for children with disabilities is more restricted in poor households that often cannot afford the cost for their children to go to school (ISDS, 2013; Kham, 2018). The majority of PWD (nearly 75%) aged 15 years or older living in households with multidimensional poverty never attend school nor have any educational certification.

From a cultural perspective, social norms also impact the access of PWD to education. The attitude of parents toward their children with disabilities – whether it is either the lack of confidence in their children's abilities or worries about difficulties and harm facing their children in school or society – also plays a role in this deprivation of education (Binh et al., 2017). As Vietnamese society is patriarchal – that is, fathers and men are expected to be the breadwinner and play the authoritative role in the family, sons often have more priorities and receive more support from the family than daughters in education and employment (Le, 1995).

Information, communication, and technologies (ICT): PWD often have limited access to the ICT, particularly computers (13.7%), mobile phones (38.85%), and the internet (16.8%). This lack of these devices can increase the isolation of PWD, particularly those who have mobility limitations or communication difficulties. This is also a challenge for them to receive risk information.

Employment: The poverty of PWD is strongly associated with the participation of PWD in employment or income-generating activities. Only 32.76% of PWD are in the labour force - those who are working or looking and available for work - (about 31,74% are working in the economy) (GSO, 2016). The PWD who have less opportunity to engage in the labour force often fall in the groups of older people, people with difficulties in self-care and communication, and people without education. Many PWD cannot afford assistive devices (e.g. prostheses, hearing aids, adapted vehicles) that play an important role in finding and securing employment.

The opportunities for employment for PWD are closely linked with vocational training services that are often funded by the government (Tran, 2014). Though many regulations such as Labour Code, Vocational Training Law, and recently Law on PWD identified the minimum proportion of the workforce with disabilities in each company or organisation, and defined legal provisions on vocational training and employment for PWD, support for enterprises in recruiting PWD in work force, and requirements for accessible workplace, there is still a gap between the legal directions and the practice. For instance, the national Vocational Training Targeted Program aims to increase training and employment opportunities to PWD. However, it is observed that many trainings did not meet the needs of the marketplace and therefore did not lead to employment of the graduates (Lynch & Kiet, 2013).

From a cultural perspective, PWD in Vietnam have long been viewed as ‘helpless’ and ‘an object of pity’ and subsequently the approach to disability support was mainly based on charity. In employment, due to stereotypes that PWD are not able to work, employers are reluctant to employ PWD. Even if PWD are employed, they are often paid less or receive fewer benefits such as training than their peers (Binh et al., 2017).

Considering the disadvantages that PWD face in their daily lives, over the last two decades, the Vietnamese government implemented many assistance policies and programmes targeted to PWD such as monthly cash allowances, credit support and employment, state-funded scholarships for children with disabilities, and public transport discounts. Despite such disability-inclusive policies and programmes, the number of PWD who have access to the support programmes remains limited. For instance, about 40% of PWD receive monthly allowances (GSO, 2016). This low rate may result from the programme's eligibility rules that determine who can be eligible to the subsidy programme, PWD's lack of knowledge of the programme, other barriers in applications, and the bureaucratic processes for approving applications.

In addition, the government support for carers of PWD, especially those with severe disabilities, is still limited. In families with a person with severe disabilities, there is often at least one family member who cannot engage in full-time employment because they have to stay home and take care of the person with severe disabilities (Palmer et al., 2015). This therefore puts more financial burdens on the family economy.

Transportation and public accessibility: The current regulations in this area (such as Roadway Traffic Law, Railway Law, Vietnam Civil Aviation Law, Barrier-Free Access Code and Standards) provided a legal framework to enable PWD to get access to public transportation and infrastructure. However, there remains a lack of legal enforcement and perhaps procrastination by local governments and relevant agencies in removing physical barriers for disability inclusion (Tran, 2014). For example, lack of disability-friendly designs in public infrastructure, especially in rural and remote areas, prevents PWD from accessing schools and healthcare services, as well as engaging in cultural events. Physical barriers in the workplace also discourage PWD from finding and securing a job.

While the current legal framework is generally favourable for PWD to secure their basic capabilities, its implementation remains slow in practice (Bogenschutz et al., 2020; Tran, 2014). Furthermore, the multi-sectoral and multi-ministerial coordination is still limited, which in turn leads to failures in removing barriers comprehensively (Lynch & Kiet, 2013). For instance, to enable PWD to achieve inclusive education, it is not just the responsibilities of Ministry of Education and Training (e.g. curriculum, training for teachers, teaching tools, materials) and Minister of Labour - Invalids and Social Affairs (e.g. welfare and financial support for children with disabilities) but Ministry of Transport (e.g. accessible roads) and Ministry of Construction (e.g. accessible school building and facilities) should be involved in this process. While lack of funding or inappropriate and insufficient allocation of resources is often raised as a structural challenge, coordination enhancement within and between relevant ministries/agencies would help to reduce overlap in providing support to PWD and improve effective use of limited resources (Lynch & Kiet, 2013).

This deprivation of basic capabilities and the challenges or barriers that PWD are experiencing imply that PWD are less able to respond to and recover from a disaster. It follows, then, that the occurrence of disasters will exacerbate the risk of poverty for PWD, and subsequently increase their vulnerability to disasters.

2.1.3. Disability inclusion in DRR

According to the UN Disability Inclusion Strategy, disability inclusion is defined as “The meaningful participation of persons with disabilities in all their diversity, the promotion of their rights and the consideration of disability-related perspectives, in compliance with the Convention on the Rights of Persons with Disabilities” (UN, 2019, p. 20). From a development perspective, disability inclusion ‘seeks to ensure the full participation of people with disabilities as empowered self-advocates in development processes and emergency responses and works to address the barriers which hinder their access and participation’ (Al Ju’beh, 2017, p. 49). However, before discussing the disability inclusion in depth in disaster contexts in Vietnam, it is worth having a brief overview of people’s participation in local governance[15] in the contexts of Vietnam.

After the ‘*Đổi Mới*’ (Renovation) reforms, new legal instruments have been put in place to “deepen democracy”. One of the key policies was the Decree 29 on Grassroots Democracy [16] (*dân chủ cơ sở*) issued in 1998. It aims to promote the participation of people in local governance in a more deliberative and democratic way. The legal framework to enable people to participate in local decision-making processes was strengthened with later policies. Specifically, the 2013 Constitution states “the people shall exercise state power through direct democracy (*dân chủ trực tiếp*) and through representative democracy (*dân chủ đại diện*) in the National Assembly, People's Councils and other state agencies” (Article 6). Furthermore, the Ordinance on Democratic Implementation at Communes, Wards, and Towns, Law on Elections of People’s Councils, Law on Elections of National Assembly, Law on Law-making Procedures and related decrees legitimised and detailed the channels of participation (Wells-Dang et al., 2015).

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[15] In this thesis, governance is understood basically as “a process of public decision-making carried out by governments, other formal and informal institutions, and citizens” (Wells-Dang et al., 2015, p.2).

[16] Decree 29 was superseded in 2003 and replaced by Decree 79. Both decrees were officially titled ‘Decree on the issuance of regulation on implementing democracy in communes’ and popularly known as the ‘grassroots democracy decree’.

Wells-Dang et al. (2015) noted that, in the context of Vietnam, people's representation in politics takes place through the pre-established structures of the single Party, rather than via institutions of liberal democracy. Therefore, the term 'democracy' is understood as direct and representative participation in the Vietnamese context rather than liberal democracy, the full exercise of individual freedoms and rights, as emphasised in the development discourses. Democracy in Vietnam is often manifested in two phrases/slogans in Vietnamese discourse – '*Dân biết, dân bàn, dân làm, dân kiểm tra'* (People know, people discuss, people do, and people monitor), and '*Nhà nước của dân, do dân, vì dân'* (Government of the people, by the people, and for the people). The former one refers to deliberative or direct participation while the latter refers to representative participation.

Direct participation refers to a process in which people are directly involved in local governance. It requires that people are aware of local governance structures and opportunities for participation. Second, people typically participate through one or more organised groups or associations to have their voice in or contribute to local socio-economic development programmes and policies. Finally, people play active roles in monitoring implementation of local authorities, making formal complaints in case violations occur, and resolving disputes among citizens or between citizens and authorities (Wells-Dang et al., 2015).

Indirect or representative participation refers to the election of village heads, delegates to People's Councils (at commune/ward, district, and provincial levels), and delegates to the National Assembly. Like other single-party states around the world, Viet Nam uses elections to confirm the legitimacy of the ruling party, give citizens a partial voice in selection of candidates for certain leadership positions, and provide a check on accountability and effectiveness of political leaders at the local level (Wells-Dang et al., 2015).

Being grounded on the principle of democratic centralism led by the Communist Party, the Vietnamese state is vigilant about any transformative changes in its current power structure. The state therefore monitors individual and organisational activities in the name of public security, and people's participation only takes place within the boundary of what the legal frameworks indicate as social stability (Kwak, 2019). This results in an asymmetrical power relationship between the people, with 'dependent power,' and the party-state with 'absolute power' (Nguyen, 2016). Despite the enabling policies on people's participation in decision-making, restrictions of citizen participation and top-down approaches in decision-making are still prevalent in Vietnam. While people still have opportunities to participate in public meetings held at the local levels, mainly related to socio-economic issues such as land use, budget monitoring, socio-economic planning, and voluntary contributions to local development (e.g. infrastructure construction), but their participation is often nominal (*hình thức*) that does not allow them to influence the decision-making process or monitor policies (Wells-Dang et al., 2015). Many decisions in development projects and programs have been made without consultation with local people (Dao & Nguyen, 2015).

People's participation in local governance is also assessed through their engagement in civil society organisations (CSOs). Considering the social and political contexts of post-reform Vietnam, the meanings of 'civil society' is different from what it is widely understood in development discourse due to its dependence on the state and market (Emorine et al., 2015). The international project of the "Civil Society Index" classified Vietnamese CSOs into four categories, based on their degree of inclusiveness: mass organizations, professional associations and umbrella associations, Vietnamese NGOs and community-based organizations. Among these, mass organisations (more precisely, 'socio-political organisations' - *các tổ chức chính trị - xã hội*) play an important role in governance, which is affirmed and supported by the party-state. Mass organisations are founded to represent the interests of large sections of society to the state, and act as a channel for state policies to filter down to local people who are the members of those mass organisations. The Viet Nam Fatherland Front (*Mặt trận Tổ quốc*) is the overarching political alliance of all the mass organizations including the Veteran's Union (*Hội Cựu chiến binh*), the Women's Union (*Hội Phụ nữ*), the Youth Union (*Hội Thanh niên*) and the Farmer's Union (*Hội Nông dân*). Given their duties, they are considered the main vehicle through which people gain access to the political realm (Nam & Nandy, 2006). However, due to its dependence on the state, mass organisations often have limited power to influence the decision-making at higher levels. Accordingly, people's participation in CSOs in the contexts of Vietnam, may not necessarily equate to active involvement and real influence on local decision-making processes.

In terms of disability inclusion, Vietnam has a strong legal foundation to include PWD into DRR processes (Malteser International, 2013b). At the international level, with the ratification of the UNCRPD (UN, 2006) in 2014, Vietnamese Government committed to providing *"all necessary measures to ensure the protection and safety of PWD in situations of risk, including situations of armed conflict, humanitarian and occurrences of natural disasters"* (Article 11). In addition, being a signature member of the regional Incheon Strategy to "Make the Right Real" for Persons with Disabilities in Asia and the Pacific

(2013–2022) (ESCAP, 2012), the Vietnamese Government has obligations to ensure integrating disability perspectives into disaster preparedness and management though disability-inclusive DRR planning and providing timely and appropriate support to PWD in responding to disasters (Goal 7).

At the national level, the PWD Law ensures equal rights for PWD to participate in any aspect of life. The DRM Law considers PWD as a ‘vulnerable’ group and emphasises that DRR activities need to give priorities for ‘vulnerable’ groups. More importantly, Project 1002 emphasises the inclusion of local people, particularly ‘vulnerable’ groups, in CBDRM activities such as risk assessment and DRR planning.

Despite such enabling policies for disability inclusion in DRR, the participation of PWD in DRR processes in general, as well as in Project 1002 and CBDRM projects supported by NGOs in particular, remains limited in Vietnam. There may be variety of reasons for this.

First, most of the CBDRM projects consider disability as a cross-cutting issue. Therefore, there are no specific activities to support the participation of PWD. Projects focusing on disability inclusion in DRR have remained very limited. There is a handful of organisations working on disability-inclusive CBDRM in Vietnam, for example, Malteser International, Centre for Sustainable Rural Development (SRD), Christian Blind Mission (CBM), Association for the Empowerment of Persons with Disabilities (AEPD), and Adventist Development and Relief Agency (ADRA).

Second, the attitude of government staff and stakeholders toward PWD is negative (often underestimating the capabilities of PWD to take part in DRR activities). Also, the government staff and stakeholders do not have knowledge of disability inclusion and skills to work with PWD.

Third, a limited number of organisations of PWD that represent the voice of PWD in decision making have been established at the local level[17]. Only 22 out of 63 provinces have established organisations of PWD at the provincial level. Having a provincial organisation of PWD, however, does not mean that district and commune organisations are established. This often leads to the exclusion of PWD in local decision-making processes. Furthermore, a study

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[17] See Ngo Thi Thu Hang on “Sự tham gia của người khuyết tật trong xây dựng chính sách về người khuyết tật”. ACDC. 1 Dec. 19. http://tuvanmienphi.vn/vi/phap-luat/452-su-tham-gia-cua-nguoi-khuyet-tat-trong-xay-dung-chinh-sach-ve-nguoi-khuyet-tat.html. Accessed 19 Nov. 20.

by Binh et al. (2017) indicates that the participation of PWD in civil society organisations, such as the Farmer's Union, Youth Union, Veteran's Association, Women's Union and the Association of the Elderly is rather low. Their participation in such organisations is often passive and nominal (mainly listening to information).

Fourth, in addition to the economic and physical barriers discussed earlier, self-stigma of PWD can profoundly contribute to the exclusion of PWD in DRR activities. PWD have long lived with public stigma. Therefore, these public stigmas may have become internalised and PWD tend to accept these stigmas as 'truths'. This has led PWD to having pessimistic attitudes, underestimating their capabilities, having low self-esteem, and avoiding participation in many aspects of life (e.g. healthcare, education, employment, cultural activities) as well as in social groups and political organisations (Duong et al., 2008).

2.1.4. Descriptions of the study areas

2.1.4.1. Cam Thuy Commune

Cam Thuy is located in a low-lying area of Phu Vang District, Quang Tri Province. Most of the land area is used for agriculture. In this area, there is a river (the Hieu River) as well as many small streams and lakes that retain a high volume of water during rainy seasons. In addition, there is a big dam built for irrigation purposes in Cam Thuy.

Demography: Its total population as of 2018 was 5576 (1380 households) (Cam Thuy People's Committee, 2018). The number of poor households was 108, only 70 of which received social protection from the government. The number of PWD was 174 (86 males and 88 females). Most have physical and intellectual disabilities. In general, most of the PWD are dependent on their families and disability allowances from the government and many households with PWD are poor. The number of older people was 595. Children under the age of 16 were 1427. The residents lived in 11 villages along the main roads and the river.

Employment and income-earning activities: The main sources of income of residents in Cam Thuy are from agriculture, forestry, aquaculture, and trading services. The income from agriculture such as crop cultivation and husbandry is often not stable due to the fluctuation of market prices as well as the impacts of frequent disasters. The majority of PWD, particularly those with intellectual disabilities, do not have jobs. Some PWD assist their family in farming activities, and a few, mostly with mild disabilities, engage in income-earning activities such as agriculture and small grocery stores.

Lifeline infrastructure:

Only about 60% of the total households have access to clean water from the water pipeline network. The rest have to use the water from dug wells or boreholes (which are often smelly, salinised, and alum-contaminated), rainwater, and bottled water. During flooding, dug wells are often contaminated and have to be treated before use. About 25% of the households have no latrines.

About 70% of the roads in villages are concrete. The rest are often inundated and become muddy in rainy days. 100% of the local households have access to electricity. Each village has a hall (i.e. cultural house) where community meetings are held. However, as most of these village halls are in low-lying areas and not safe to strong winds, they are not used as a village evacuation centre. Evacuation centres used in times of floods and storms are local schools, a commune hall, and concrete resident houses. The coverage of local loudspeakers for disseminating local news and risk warnings is limited. Therefore, some households cannot receive warnings for their disaster preparedness.

Healthcare: About 60% of local people have health insurance. There is a clinic in Cam Thuy; however, as it is located in a low-lying area and often inundated, so it is seldom used during floods and storms.

Disaster risk management:

Cam Thuy was exposed to a variety of hazards such as floods, storms, droughts, and agricultural pests and diseases. Among these hazards, floods and storms are frequent and have significant impacts on the lives of local people. In charge of disaster risk management work is the DRM Committee at the commune level. This committee, led by the Chairman of Commune People's Committee, is composed of government staff from various sectors (such as military, police, agriculture, cultural and social work, health care, and education) and representatives from local CSOs (such as women's union, youth association, farmer's association). Similarly, sub-committees under the coordination of the commune committee are established at the village level.

In 2016, Malteser International (MI) collaborated with the Disaster Management Policy and Technology Center (DMPTC) – a government agency under Vietnam Disaster Management Authority – and the Quang Tri Disabled People's Organisation (DPO) to implement a 2-year project, namely "Widening the participation of people with disabilities in community-based disaster risk management" (the MI project) in four communes (Malteser International, 2016). This MI project aimed to improve the capabilities of government and non-government actors in implementing disability-inclusive community-based disaster risk management (DiCBDRM) activities and increase the resilience of local communities, especially PWD, to disasters (Malteser International, 2016).

In Cam Thuy, following the requirements of Project 1002, the MI project supported the local government to establish a technical support group and village support groups that are responsible for the implementation of all CBDRM activities (such as risk assessment, DRR planning, risk communication). It then advocated the local government include the representatives of PWD into the DRM Committee, sub-committees, and support groups.

The MI project attempted to change the government staff's attitude (i.e. realising the importance of disability inclusion in DRR), equipping them with knowledge and skills to implement a DiCBDRM model through a range of training (e.g. project management, CBDRM with a focus on disability inclusion in all of its steps, policy advocacy for DRR, risk communication, and first aid with additional skills for PWD). With the financial and technical support of MI, these groups opened up arenas for local people, including PWD, to participate in DRR-related decision-making processes such as disaster risk assessment (through community/group meetings and interviews) and DRR planning. PWD were also included in the implementation of local DRR activities such as disaster drills and risk awareness-raising campaigns.

2.1.4.2. Phu Luong Commune

Phu Luong is located in the most low-lying area in Phu Vang District, Thua Thien Hue Province. Like Cam Thuy, most of its land is dedicated for agriculture. It is embraced by two branches of the Dai River and has numerous small lakes and streams. The total population as of 2015 was 6530, 117 of whom are PWD (65 males, 52 females) (Phu Luong People's Committee, 2015).

Employment and income-earning activities:

Agriculture, mainly rice and mushroom cultivation, is the main source of income of Phu Luong residents. The other income generation activities in the commune are small businesses and construction builders. Similar to Cam Thuy, most of PWD in Phu Luong do not have jobs. People with mild disabilities often engage in their family farming activities such as rice harvesting and cow herding.

Lifeline infrastructure:

The road network in Phu Luong is in poor condition. There are not many concrete or sealed roads in the commune and most of them are damaged with many potholes. The roads within villages are either gravel or dirt, which often become inundated and muddy on rainy days. These poor road conditions create a great challenge for PWD with wheelchairs to move around in the commune. There are no cars or motorbike taxi services. The roads along the river were raised to function as a dyke that protects the villages near the river from floods. All local households have access to electricity and clean water through the local pipeline network. Like Cam Thuy, due to the limited coverage of local loudspeakers, many local households cannot receive warnings for their disaster preparedness.

Disaster risk management:

The hazard profile in Phu Luong is similar to Cam Thuy. It is exposed to a variety of hazards, among which floods and storms are frequent and have significant impacts on the lives of local people. In some low-lying areas of the commune, floods often last 7-14 days.

The disaster risk management approach in Phu Luong remains top-down and focuses mainly on emergency preparedness and response which is led by the commune DRM Committee. Similarly, sub-committees under the coordination of the commune committee were established in each village to conduct DRM activities. At the time of this study, no representatives of PWD were included in local DRM (sub-)committees partly because the local DPO was not established. Disaster preparedness and response plans, particularly the evacuation plans, were developed by the captain of the commune military in collaboration with village leaders. These plans are seldom communicated to local people.

The following section will detail the research design and process in these study communes.

2.1.5. Research design

In this study, a case study design was selected due to its compatibility with the critical realist paradigm and its flexibility in using methods for data collection. Yin (2009, p. 18) defines a case study as *"an empirical inquiry that investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident"*. He emphasises that case study would be an appropriate approach if the research attempts to answer "how" or "why" questions, behavioural phenomena are beyond the control of researchers, and the study focus is on a contemporary phenomenon. This is consistent with the main question of this thesis which is explaining how a capability is achieved. That is, seeking to uncover the underlying generative mechanisms that lead to the capabilities being studied, and if appropriate, providing a means to address and challenge factors counteracting the actualisation of capabilities of PWD. Thus, critical realist case study is well suited for researching the complex interactions of causal mechanisms as well as the interplay between humans and structures in forming human capabilities.

Yin (2018) suggests five critical components in research design. Here, a research design is understood as a logical plan for getting from the set of questions to be addressed to some set of conclusions about these questions (Yin, 2018). These five components are: a) study questions; b) study propositions; c) the case(s) of study; d) the logic linking the data to the propositions; and e) the criteria for interpreting the findings. The three first components - (a), (b) and (c) - enable the researcher to identify the types of data to be collected. The last two components - (d) and (e) - help to anticipate case study analysis. The following details the designing process of this study.

2.1.5.1. Developing research questions (in forms of "who," "what," "where," "how," and "why"):

As discussed earlier, the research questions arose from the gaps and challenges in disaster literature (see Chapter 1). These questions (rephrased research objectives) include:

- What capabilities do PWD value in dealing with disasters?
- What (and how) factors influence the actualisation of those capabilities?
- How is the agency of PWD exerted, through their participation in decision-making processes, to achieve their valuable capabilities in DRR?

2.1.5.2. Developing its theoretical propositions:

From the critical realist perspective, a theory can be described as follows (Danermark et al., 2019, p. 139):

- Theory is a language, indispensable to science.
- The theoretical language includes an interpretation of social reality. We see and understand the world - the meaning and relationships of a phenomenon - with the help of theories. Theories serve as interpretative frameworks.
- Theories are indispensable in explanation since they conceptualise causal properties and mechanisms.
- Theories are abstractions; they describe phenomena with reference to certain aspects (dimensions, constituents, and structures) separated from other aspects also characterising concrete events or phenomena.

In this study, combining various theories from capability, disability, and disaster studies, a conceptual framework was produced (see Section 1.4). This framework provides some theoretical propositions to the research questions. Yin (2018) notes that theoretical propositions can give us some ideas for determining what data to collect and how it is analysed. Vaughan (1992, p. 195), however, cautions that *"the paradox of theory is that at the same time as it tells us where to look, it can keep us from seeing"*.

This caution is similar to what Bhatt (1998, p. 71) suggests, that is, a researcher *"filtering what she or he reads through the conceptual framework, assumptions, and values of her or his culture and, as a result, is creating false "stories" that fit her or his expectations*". Indeed, the knowledge and values that people have accumulated over the course of their lives always shape the way they interpret their material and social world. This is like we wear a pair of coloured glasses. If the lenses are green, the world we see will be green. However, this does not mean the world is green; it is only green because the lenses have filtered what we can see. Different people may have different coloured lenses. The colour of the lens is changing over time when our knowledge of the world is increasingly accumulated. Critical realists thus insist that all theories just reflect some aspects of the reality and they all may be fallible.

The researcher's subjectivity in shaping the analysis and interpretation of the data in social inquiries is inevitable. Even in grounded theory research that aims to generate theories from the data, the researcher definitely cannot get rid of the knowledge or theories they have already known, or pretend that they know nothing about their research problems prior to the research (Charmaz, 2006; Danermark et al., 2019). The question to Bhatt, therefore, is not what conceptual framework or pre-existing theories the researchers bear in mind but whether they are open-minded and accept that all theories may be fallible and that empirical research is an opportunity for them to test their theoretical presumptions. When the theoretical presumptions cannot explain the research problem, the researcher has to either seek other theories or modify the existing theories to better explain the problem of investigation.

As Hammersley and Atkinson (2007, p. 16) claim,*"…there is no way we can escape the social world to study it"*. Therefore, rather than trying to eliminate the researcher's influences on the research, the researcher needs to acknowledge the influences of their beliefs, values, and prior experiences on their research. This is what Hammersley and Atkinson (2007) call 'reflexivity'. Since I worked for the German Red Cross and the Swiss Red Cross in several community-based DRR projects for four years, my knowledge and experience may have influenced the research orientation, particularly selection of theories, construction of theoretical propositions and design of research questions, which all may have led to unknowing bias during the interpretation. My personal values in humanity may also explain why I put more effort into exploring societal factors rather than personal factors that contribute to the restriction of the capabilities of PWD in the face of disasters.

2.1.5.3. Identifying its case(s) or units of analysis:

Yin (2018) notes that defining the case is a crucial part of case study design. The case by his definition can be persons or events/entities such as processes, programmes, citizen participation, or decisions. Once the case is defined, bounding the case is necessary. That is, the context in which the case is studied should be time and place specific. These clarifications of the case will contribute to determining the scope of the data collection.

The case of this study is the capabilities of PWD to deal with disasters. Two communes in Quang Tri Province and Thua Thien Hue Province, Vietnam, were chosen as study contexts to examine the case in this research. This is in line with Type 3 – a multiple-case holistic design (Figure 2-2) – in which the same case is examined in multiple contexts and the research procedures and tools are replicated in each context.

Maxwell (2013) argues that a purposeful selection of particular settings, persons, or activities in qualitative research is necessary as it can provide information that is particularly relevant to the research questions. The selection of the case contexts is thus subjective and purposeful.

Vietnam was selected for this study for the following reasons. Firstly, Vietnam is one of the most hazard-prone countries in Asia (GFDRR, 2015) and PWD's issues in DRR have still received limited attention from both researchers and practitioners. Secondly, since I am Vietnamese, it would be easier and less time-consuming for me to understand the study contexts. Thirdly, during my work in Vietnam, I have built up a good network of organisations working in DRR in Vietnam. Therefore, I could take advantage of this network to find and gain access to study settings.

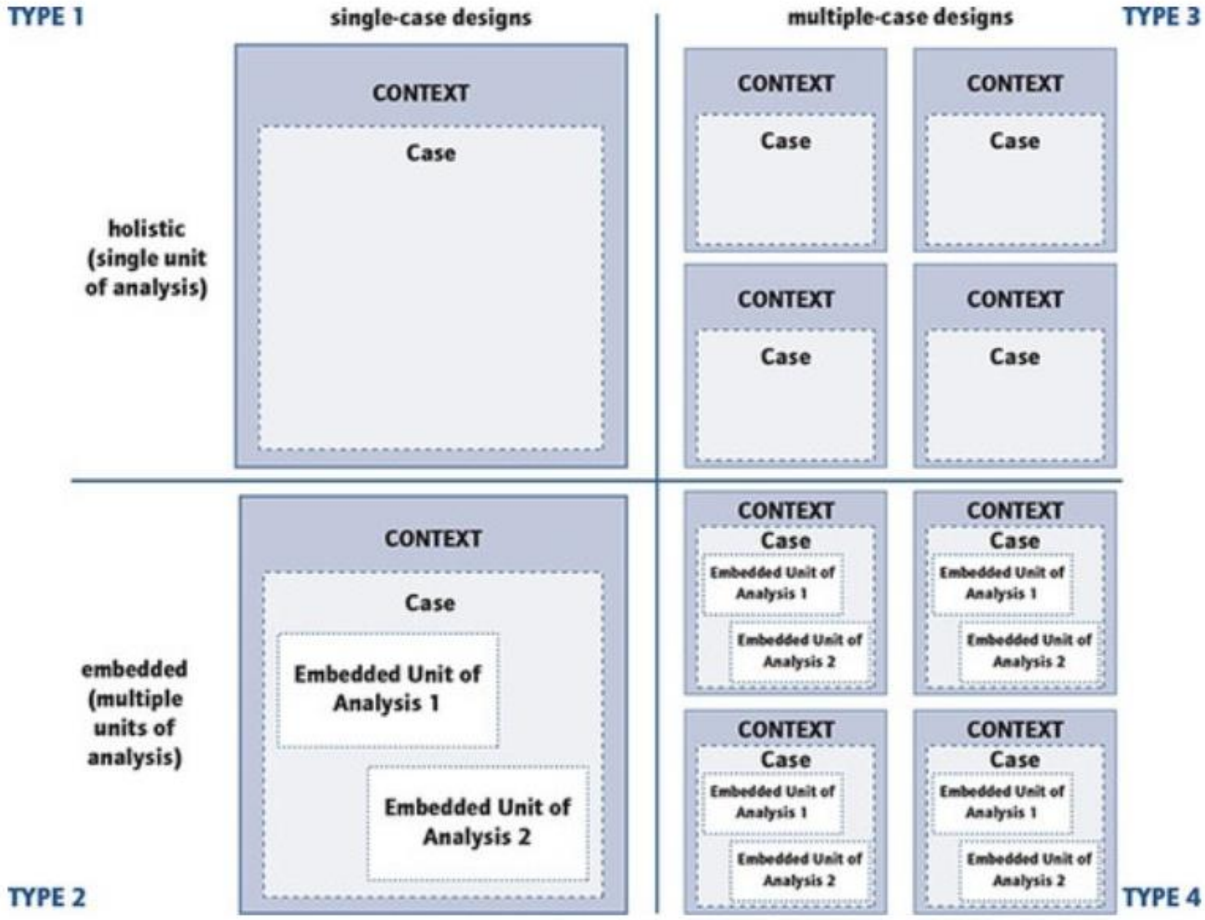

Figure 2-2. Basic types of designs for case studies

Source: Yin (2018)

Quang Tri Province and Thua Thien Hue Province were chosen because the former is my home province where I was born and grew up while the latter is where I have lived for more than seven years. Thus, I am very familiar with local traditions and protocols in both provinces, which helped me build the relationships with research participants and local people easily. The two study communes - Cam Thuy Commune in Quang Tri Province and Phu Luong Commune in Thua Thien Hue Province - were deliberately selected against the criteria: hazardscape and access to the study communes. Cam Thuy was selected through consultation with Malteser International (MI) while Phu Luong was selected though consultation with Thua Thien Hue DPO. Access to both these communes was supported by MI and the Centre for Climate Change Study in Central Vietnam (CCCSC) where I worked as a visiting researcher. The deliberate purpose of selecting the two communes with different social, economic, and political settings in this study is to test the explanatory power of structures and mechanisms of capabilities under different contexts.

2.1.5.4. The logic linking the data to the propositions and criteria for interpreting the findings.

Yin (2018) proposes five analytic techniques of linking data to propositions: pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis. In this study, as the propositions shaped the data collection plan, I relied on the propositions to identify the important concepts from the data that can generate possible explanations for my research questions.

According to Yin (2018), to generate an explanation, the researcher needs to compare the data against the research statements or propositions and revise these propositions if they do not match. The revised propositions are then examined against the data. This process is iterative and only ends when the final explanation is reached. Therefore, the final explanation is not necessarily the same as the theoretical propositions stated at the beginning of a study. This procedure is partly deductive (based on the propositions at the beginning of the case study) and partly inductive (based on the data from the case study). A similar process focusing on retroduction and retrodiction was applied in this study (see Section 2.1.7 for details on the data analysis process).

The findings from this study therefore are not applicable to all PWD in all places. Rather, it does provide important insights to our knowledge of how causal factors act and influence the actualisation of a capability of PWD to deal with disasters in real world.

In short, the case study design of this study can be summarised as follows:

- It studies the capabilities of PWD (a contemporary phenomenon) in depth in its real contexts, which are not controlled by the researcher; This subsequently provides explanations on how these capabilities can exist.
- It relies on different sources of data (including documents, interviews, focus group discussions, and field observations) and uses triangulation of data to achieve validity.
- It uses initial theoretical propositions for data collection and analysis; the explanatory power of those theoretical propositions is tested and elaborated with empirical data.
- It embraces the realist ontology and social constructivist epistemology.
- It includes a multiple-case design.

2.1.6. Data collection

2.1.6.1. Recruitment of participants and ethical considerations

Fleetwood (2014) argues that a critical realist methodology accepts "epistemic relativism". As such, he (2014, p. 185) explains that *"one's social position (e.g. class, gender, race, being a researcher, being researched) influences the way one interprets the world, formulates concepts, and makes claims about it"*. For this reason, the inclusion of different stakeholders in the research process is critical. This allows researchers to work with various social actors on different levels, each interpreting the phenomenon in different ways. PWD have unique and invaluable insights into the complexity of their disability experience, as have carers, parents, policy makers and others. The selection of participants with different backgrounds and views also contributes to the triangulation of data from different types of participants (Yin, 2018).

In this study, whereas the focus was on PWD, other actors from government and non-government organisations related to disability and disaster issues were also involved (see details in the next sub-section, 2.1.6.2). Due to my limited skills in communicating with people with hearing/speaking disabilities and intellectual disabilities, these groups of participants were not directly involved in this study. The information about these groups was mainly collected from their family members and carers. For recruiting local participants with disabilities in the two study communes, I requested the support from local DPO staff (e.g. sharing the information of my research and inviting participation). In Cam Thuy, gaining access to the participants was more advantageous as I had opportunities to participate in project activities by MI and thus built a good rapport with local people. Through these activities, I identified potential participants and invited them to participate in this research.

Since the quality of the information provided by key informants from the related government and non-government organisations is crucial to this qualitative research, a direct approach was adopted for recruiting this participant category. With many years of working in the field of DRR in Vietnam, I knew some staff members of NGOs who had good knowledge of this research topic and could provide the data needed for this research. I, therefore, actively approached these staff members (via email, phone call or in person) to invite them for participation in this research. Through their network, they also connected me with other key informants from other organisations for more information on my research.

During this process of participant recruitment, establishing relationships with the participants is critical. From a critical realist perspective, relationships between the researcher and participants in the study settings are 'real' phenomena and complex processes *"that have profound, and often unanticipated, consequences for the research"* (Maxwell, 2018, p. 26). In this study, I acknowledge the potential power dynamics between me and the participants that may have influenced the findings. This power imbalance between me and the participants with disabilities perhaps arose from my identity as a person without disabilities in this research. To some extent, it was hard for the participants with disabilities to share their problems and experience related to their impairments which remain stigmatised in my society. For this reason, I spent more time building a good rapport with the participants, and in some cases, had several sittings with them prior to coming directly to my research questions. Another power relation issue was associated with the fact that I gained the access to the study commune through the project by MI in Cam Thuy. For this reason, many participants (including those from the local government) saw me as an affiliate with MI. Though I spent time explicitly explaining the purpose of my study, the use of the data, and that I was not working for the project or MI, they still feared the possible consequences of what they said. Thereby, some of them, particularly those who were involved in the project management and implementation, were reluctant to share 'truths'.

In terms of the ethical considerations in this study, the formal ethics approval was obtained from The University of Auckland Human Ethics Committee prior to the start of research. Every effort was made to meet the ethical standards throughout the research process. All the participants were provided with the information about this research and their consents were also sought before the research activity was commenced (see details in Appendix A and B).

2.1.6.2. Data collection methods

Maxwell (2013) notes that methods are the means to answering research questions. The selection of methods depends not only on the research questions but also on the actual research situation and as well as the ability of the methods to generate the data needed in that situation. The flexibility in the use of data collection methods in a case study design would enable critical realist researchers to collect both quantitative and qualitative data from multiple sources. The sources of data in case study research are eclectic from documentation and archival records (e.g. reports and statistical data), interviews, focus groups, direct observations, participant observations, and physical artefacts (Yin, 2009). Quantitative data can help to determine regularities and patterns (e.g. statistic data on access and availability of resources and services to PWD or rate of their participation in social activities) while qualitative data through, for example, interviews and focus groups, can provide explanations to those patterns (Houston, 2010).

The field data collection took place in the two study communes from March to July 2018. It mainly drew on the methods of interviews, focus group discussions (FGDs), and observations. These methods were reviewed and approved by The University of Auckland Human Ethics Committee. Maxwell (2013) argues that the adoption of multiple methods can enable researchers to gain information about different aspects of the studied phenomena.

FGDs can generate information that reflects different aspects of the research problem from diverse backgrounds of the participants. In each commune, two FGDs were conducted, 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 hours. The FGDs had three sessions: disaster profile, valuable capabilities to deal with disasters, and human agency and participation in DRR (See Appendix C). Tools such as disaster timelines, hazard mapping, Venn diagrams, priority ranking, and a Yes/No stereotype game on disability stereotypes were used during the FGDs.

In the first session, disaster timelines and hazard mapping were conducted at the beginning of the FGDs (Fig. 2-3). They are fun and collective activities. In these activities, the participants were given colour markers to draw a map that included commune boundary, village boundary, hazard-prone areas, and safe evacuation places. During this mapping, the information of previous disasters such as the time of occurrence, their impacts, particularly on the lives of PWD, and affected areas was discussed. These activities played a role as an icebreaker and to connect the participants as they are from different villages. They also helped the participants retrieve their previous experiences of disasters which are the contextual information for the latter discussions on their valuable capabilities to cope with disasters.

In the second session, I facilitated the group participants to discuss what ‘doing’ and ‘being’ PWD value in dealing with disasters (e.g. reducing the impacts and being safe in times of disaster), and facilitating and preventing factors for those valued doings and beings. For brainstorming the aforementioned questions, the participants were given small cards to write down their answers. For those who could not write, other participants helped them. A ranking tool using candies was conducted to identify the five most valuable capabilities for PWD from their standpoint. For those who could not read, I read out loud again all the options for their ranking.

Drawing on the interviews with local participants, the informal conversations with local people, and the literature review on stigmas for PWD in Vietnam, I came up with six stereotypes and stigmas toward PWD:

- PWD are vulnerable to disasters.
- PWD should not participate in DRM activities.
- PWD are a burden of families and society.
- PWD are not capable of working and generating incomes.
- PWD do not know to share their ideas in meetings, training, or social activities.
- PWD have self-stigma or inferiority feelings.

The participants were then asked to select YES if they agreed or NO if they disagreed with each stereotype. This game aimed to understand part of their human agency.

(a) (b)

(c) (d)

Figure 2-3. Some focus group discussion activities in Cam Thuy Commune.

Note: (a) ranking the value of capabilities; (b) VENN diagram; (c) risk mapping; (d) Yes/No stereotype game

(Photographs by Khanh Ton, 2018)

The last session focused on exploring the perception of PWD on participation, DRR activities that they have participated in or want to participate in, factors that facilitate and prevent them from participating in those activities, and their ability to influence the local decision making in DRR. Questions on human agency were, for instance, how they share their ideas in commune and village meetings for their everyday life and DRR issues, whether their ideas are transformed into actions and support, and who have helped them. The participants were also asked to provide real examples of positive change they or their peer PWD had made. The Venn diagram was used to identify organisations relevant to the livelihoods and DRR for PWD and to examine the power relations between PWD and these organisations in making positive changes for PWD.

Semi-structured and unstructured interviews were conducted with PWD, parents/caregivers of PWD, and representatives from government and non-government organisations (Table 2-

2). The selection of the participants with disabilities mainly relied on the government categorisation of disabilities under the PWD Law. Their impairments and health conditions were 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 minutes. The interviews aimed to gain an understanding of the local disaster risks, structural forces such policies, organisational structures, local and national DRR approaches, government programmes related to DRR for PWD, culture, disability stereotypes, and valuable capabilities for PWD to cope with disasters. The interviews with PWD also aimed to understand their human agency through exploring positive changes they had made in their lives (e.g. claiming a seat in local training, claiming relief support, getting a job or earning incomes) and how those changes were made (See Appendix C).

Maxwell (2013) notes that in qualitative research, researchers are also the instrument of research. That is, they use their eyes and ears as the tools to gather information and to make sense of what is going on. He, accordingly, emphasises that researchers should always include informal data-gathering strategies such as hanging out, casual conversations, and incidental observations because these strategies can provide important contextual information and be a check on the data collected from the formal interviews. During my fieldwork, I had informal conversations with local people to better understand the social, economic, and political settings of the study communes, which helped me tailor my research questions and understand the participant responses. Such informal conversations also allowed me to understand local cultures that contributed to creating stereotypes and stigmas towards PWD.

Although interviewing is often useful to understand someone’s perspective, there are some aspects of their perspective that they are reluctant to state directly in interviews. In this case, observation can help to explore and draw inferences about these aspects. In Cam Thuy, I observed local DRR activities such as disaster drills, DRR planning, First Aid training, and risk communication meetings conducted by the MI project. Observations of those activities were recorded in notes and photographs. Through such activities, I had opportunities not only to build up trust with local people but also to observe how local people, particularly PWD, participated in DRR and how they were treated by local authorities. This also helped me validate the data provided by the local participants. For example, while most of the interviews (and informal conversations) with the local authorities showed their recognition of PWD’s participation in DRR, it was observed that the representative of PWD was excluded from the DRM Committee meeting in a disaster drill. In Phu Luong, PWD were often excluded from

DRR activities (even in everyday life) and no DRR activities were conducted during my fieldwork. Therefore, it was impossible to observe how PWD were engaged in DRR activities.

Table 2-2. Interview participants

Participants	***Quantity***	***Notes***
People with disabilities	15 (10 males and 5 females)	Mobility= 13 persons and visual= 2 persons.
Parents/caregivers of people with intellectual, psychosocial, and speaking/hearing disabilities	12 (6 males and 6 females)	Intellectual and psychosocial= 8 persons Speaking/hearing= 4 persons
Government	20 (17 males and 3 females)	Local government officers in charge of social work, health workers, village leaders, and members of the Disaster Risk Management Committee
Civil society and non-government organisations	15 (7 males and 8 females)	Disabled People's Organisations, a school for autistic children, Vietnam Red Cross, Malteser International, Action to the Community Development Center, and Sustainable Rural Development

During the data collection period, relevant documents (such as legal documents, policies, annual disaster risk management reports, socio-economic development reports and other published materials) related to disability and DRR were collected from the related organisations. This document review provided the contextual information which enabled me to tailor my research questions to the study contexts.

2.1.7. Data analysis

To understand the critical realist data analysis, it is necessary to review its key concepts here. Danermark et al. (2019) argue that abduction and retroduction/retrodiction are the foundational modes of inference in critical realist analysis. Abduction, a creative form of reasoning, means to put an event or social phenomenon in a different context to give it a new meaning. Retroduction can be viewed as a form of abduction with the question: "what makes this phenomenon possible?" (Oliver, 2012). To answer this question, critical realists often seek structures and mechanisms that would cause the phenomenon to happen. Retrodiction is an inference from effects to causes (or the event of investigation to antecedent states of affairs or events) in a specific context. Whilst retroduction is often adopted in theoretical enquiries, retrodiction is more applicable to applied research (see Chapter 4 for a fuller review).

The data from the interviews, FGDs and field notes were coded deductively with flexibility (Fletcher, 2017) using NVivo 12. The coding process followed the steps of qualitative data analysis suggested by Schreier (2014). Schreier (2014, p. 174) defines qualitative content analysis as *"a method for systematically describing the meaning of qualitative data... by assigning successive parts of the material to the categories of a coding frame"*. The basic steps can be described as follows:

1. Deciding on a research question
2. Selecting material
3. Building a coding frame
4. Segmentation (the material has to be segmented into units)
5. Trial coding
6. Evaluating and modifying the coding frame
7. Main analysis
8. Presenting and interpreting the findings

For Objectives 1 and 2, the data analysis followed the five analytical stages in explanatory research suggested by Danermark et al. (2019) to identify structures and causal mechanisms (that is, resources and conversion factors) that ultimately answer the question: "what causes the capabilities to be actualised?"

Stage 1 – Description

This stage requires detailed descriptions of the phenomenon being studied using the participants' meanings or views and the study contexts. At this stage, I looked at the data from the FGDs, interviews, field notes and secondary documents, to identify capabilities that PWD value and understand why they valued these capabilities. I also tried to understand the local contexts such as hazardscape, disaster impacts, existing disaster risk management, socio-economic conditions of PWD, and local cultural and religious traditions related to disability. When I went through the data, I categorised it into big "chunks": Valuable capabilities (and specific capabilities as sub-categories), disaster profile, DRM, socio-economic conditions, and culture.

Stage 2 - Analytical resolution

In this stage, the studied phenomenon is dissolved into various components. After identifying the valuable capabilities, I tried to address the question: "what causes the capabilities to be actualised?". For each capability, I built a coding frame by creating three main codes, "resources", "internal conversion factor", and "external conversion factor", following my theoretical framework.

Stage 3 - Abduction/theoretical redescription

The components identified are interpreted through the initial conceptual framework and theories. These various theories are compared, evaluated, and possibly integrated to provide explanations to the studied phenomenon.

Stage 4 – Retroduction

This stage is closely related to Stage 3 in research practice and aims to identify possible causal mechanisms of the studied phenomenon.

In Stages 3 and 4, for each specific capability, various available theories from medical, social or cultural theories related to disability and vulnerability theories (see Chapters 3 and 4) were used to dissolve the studied capabilities into possible structures and mechanisms. For example, in the capability of being mobile/evacuating to safe places, from the medical perspective, the codes such as impairments, health conditions, and assistive devices were generated. From the political perspective, the code was disability inclusion in DRM. From the social and cultural perspectives, the codes were risk knowledge, attitude, social support, and accessibility. These initial codes were assigned to the three main codes in Stage 2. All the materials related to this capability were then coded with the coding frame created. Here, it should be noted that the coding frame was modified and added to with new codes/subcodes during the coding. For example, the code 'attitude' was clarified by adding the codes family attitude and social stigma/discrimination. That is to say, adjusting (adding, deleting, reorganising, or combining) the codes/subcodes was data-driven.

Stage 5 - Retrodiction and contextualisation

This stage aims to judge the explanatory power of the possible mechanisms and empirically examine their relationships and interaction that give rise to the studied phenomenon in a certain context. Acknowledging that all explanations are fallible but not equally fallible (i.e. each may have particular strengths and weaknesses), the researcher may have to move between theory and evidence (i.e. abstraction and concretisation) to find the most plausible explanation for the studied capabilities. In other words, some structures and mechanisms may have more explanatory power than others in addressing the studied capabilities. This may lead to eliminating some explanations and supporting others. For example, the social stigma and discrimination explained better than means of transport and accessibility for restricting the participation capability of PWD and the evacuation capability of people with intellectual and psychosocial disabilities in the studied communes.

For Objective 3, the coding frame was built with two categories: participation as an end and participation as a means. The process of data analysis for the capability of participation as an end was similar to Objectives 1 and 2 above. That is, under the category of participation as an end, the main codes including resources (with subcodes, for examples, vehicles, money, transport services), internal conversion factors (health conditions and attitude), and external conversion factors (public stigma, accessibility, and social support), were created.

For the participation as a means (i.e. human agency), I used the power theories to generate three main codes: power within (self-stigma, confidence), power to (knowledge, skills), power with (engagement in civil society organisations, capacity building), and power over (policy, governmental attitude/mindset).

The following chapter provides a detailed literature review on disability research in the context of disasters. It then proposes a human capability-centred framework to examine disaster risk for PWD.

CHAPTER 3. EXPANDING THE CAPABILITIES OF PEOPLE WITH DISABILITIES IN DISASTER RISK REDUCTION

3.1. Introduction

Recent decades have witnessed a considerable shift from a hazard paradigm to a vulnerability paradigm in disaster studies (Hewitt, 1983; Wisner, 2016; Wisner et al., 2012). In the hazard paradigm, disaster research is hazard-centred, which means that the physical characteristics of hazards and the physical conditions in which disasters happen – or human responses and adjustments to hazards – are the focal points of research and analysis (Gaillard, 2017). In the vulnerability paradigm, the research focus is placed on societal conditions in relation to hazards and disaster risk, accordingly, is basically defined as a combination of vulnerabilities and hazards. It is widely accepted that vulnerability is a product of social, economic and political pressures which are imposed on individuals, and thereby restricts their ability to cope with disasters (O'Keefe et al., 1976). A number of academics assert that vulnerability is closely embedded in broader societal and environmental processes of development and disasters, and therefore cannot be considered as a natural phenomenon in isolation with other processes (Hewitt, 1983; Wisner et al., 2004). Wisner et al. (2004) argue that the level of vulnerability of people is rooted in their activities of daily life. Vulnerability to 'hazards', therefore, cannot be fully understood and addressed unless the occurrence of these hazardous events is considered within the context of affected people's abilities and everyday lives. This paper will focus on the experience of people with disabilities (PWD) who are among the groups most at risk in the face of disaster.

To date, a variety of theoretical frameworks have been developed to examine disaster risks under this vulnerability paradigm. Many of these frameworks focus mainly on availability and access to resources, namely a resource/asset-based approach, that shapes people's vulnerability (Freitag et al., 2014; Mayunga, 2007; Sanderson, 2000; Vatsa, 2004; Wisner et al., 2004, 2012). Resources under this approach are comprised of both tangible resources such as land, production tools, income, savings, and protective equipment, and intangible resources such as social networks, health, knowledge, and emergency support services.

Accordingly, vulnerability is viewed as a consequence of the lack of resources within the locality, or the inability of people to secure access to resources for their disaster risk reduction (DRR) actions. In other words, people are affected by disasters because they do not have sufficient resources and/or have limited access to resources to cope with disasters. For people living with disabilities, there may be a heightened, pre-existing vulnerability and under-resourcing of their needs.

However, it is argued that frameworks under this resource-based approach focus mainly on means but overlook ends in examining disaster risk. Robeyns (2016) contends that resources are considered as a means, not an end, for human well-being. That is, people use resources to conduct activities or achieve states in coping with disasters. Additionally, the resource-based approach is considered insufficient as it overlooks the process of conversion of resources to the actions and states that people value. In other words, the question of how people utilise resources to take actions in coping with disasters is not well explained under the resource-based approach. Mitra (2006) points out that conversion from resources to the actions or states that people value is influenced by a range of factors that may be individual such as physical/mental conditions, age, literacy level, and skills, or environmental such as infrastructure, social norms, and policies. Accordingly, even though they have sufficient, secured and sustainable access to resources, they may not be able to convert the resources to their valued activities or states due to individual and/or environmental barriers, and the interaction between these. Thus, understanding what resources that people with disabilities have may not fully explain the extent of disaster impact on their lives.

In response to this critique of the resource-based approach, this position paper provides an overview of the capability approach (CA) to examine the capabilities of people with disabilities when facing disasters. This perspective, which goes beyond a resource-based approach, will look at states/activities that people value in disaster risk reduction (DRR). The authors argue that people are disproportionately affected by disasters because they do not have capabilities to cope with disasters. While participation has long been considered as a crucial means for DRR, the authors argue that in order to expand the capabilities of people at risk, they should be given opportunities to participate effectively in decision-making processes influencing their well-being and safety in times of disaster. To position this argument, the article firstly reviews the concept of disability and the experience of people with disabilities (PWD) in disasters. Following this, the second section provides an introduction to the CA and the conceptualisation of disability in the CA. The third section presents the concept of participation through the lens of the CA. The fourth section proposes a conceptual framework to understand disaster risk facing PWD under the human capability perspective.

3.2. The experience of people with disabilities in disasters

Disability is a controversial concept that has been inconsistently defined by a large array of scholars (Smart, 2009). In earlier disability studies (Nagi, 1965; Verbrugge & Jette, 1994), disability was viewed from medical and individual pathological perspectives. From this perspective, disability was interpreted merely as a deviation from biomedical norms or limitations in functioning and these limitations were mainly attributed to mental or physical health conditions, namely impairments (Riddle, 2014). Impairments in this regard are often viewed as an individual's biological traits. As the experience of disability was perceived as a medical phenomenon, disability was treatable and preventable by medical or technological interventions. This model has been critiqued for narrowly focusing on individual inabilities and ignoring the social and environmental factors in creating restrictions and disadvantages faced by PWD. This has led to the emergence of the social model. This social model makes a distinction between impairment as a biological trait and disability as a social construct, or how impairments are manifested socially (Oliver, 1996). In a radical interpretation, it does not consider disability as an individual problem but as a failure of society to accommodate individual differences (Smart, 2009). To reduce disability, society needs to be reorganised or changed to remove disabling barriers that prevent PWD from participation in social, economic, and political activities, or to make PWD independent as much as possible.

The construction of disability is currently shaped by critical influences from feminism, race studies, queer studies, cultural studies, and postmodernism. This movement is coined critical disability studies (see Goodley, 2011 and Meekosha & Shuttleworth, 2009). Their findings have contributed to a nuanced understanding of disability, which cannot be simply explained only in social, economic and political terms but also in psychological, cultural, discursive and sexual terms (Goodley, 2011; Meekosha & Shuttleworth, 2009). Some authors also emphasise the corporeal or physical experience of PWD or physical aspects associated with impairments (Anastasiou & Kauffman, 2013; Vehmas & Mäkelä, 2009). Accordingly, disability is considered as "a complex interaction of biological, psychological, cultural and socio-political factors, which cannot be extricated except with imprecision" (Shakespeare, 2014, p. 26). In this interactional approach, they are grouped into intrinsic and extrinsic factors. Intrinsic factors involve the nature and severity of impairment an individual has, his/her attitudes to it, his/her personal qualities and abilities, and his/her personality, while extrinsic factors arising from his/her living context are community attitudes, accessibility, and disability-related cultural issues. This distinction does not necessarily deny the causal role of extrinsic factors over intrinsic factors. For instance, wars or traffic accidents can cause impairments or upbringing context and culture can influence one’s personality. In this paper, we refer to impairments as physical and mental health conditions that may cause some bodily functioning limitations, and to disability as a restriction created by the interplay of intrinsic and extrinsic factors. In most of the cases, especially in times of disaster, extrinsic factors such as social stigma, discrimination, lack of accessibility, and exclusion outweigh intrinsic factors such as physical or mental impairments themselves in leading a person with impairments to disability.

In disaster studies, attention to disability has increased in recent years (Stough & Kang, 2015). Disasters contribute to the incidence of impairments through injury and loss of body parts. For instance, in the aftermath of the Haiti earthquake in 2010, out of the three million people who were affected, approximately 200,000 people acquired various types of impairment (ESCAP & UNISDR, 2012). Reinhardt et al. (2011) found that people with pre-existing physical or mental health disabilities are more likely to acquire additional impairments or health conditions than people without disabilities in times of disaster.

It is evident that disasters have disproportionate impacts on people with pre-existing disabilities (Alexander et al., 2012; Stough & Kang, 2015). Under the resource-based approach, the disproportionate impacts of disasters on people with disabilities in a society are a consequence of inequalities of distribution of, and access to, resources or means of protection. Scholars consider that such inequalities stem from patterns and processes of social interaction and organisation (Hemingway & Priestley, 2006; Wisner, 2016; Wisner et al., 2004). Lewis (1999) argues that vulnerable conditions of people at risk pre-exist in society are revealed and exacerbated by hazards. In this view, many factors pre-existing before disasters may contribute to increased disaster impacts on the lives of PWD. These include a lack of access to, and equal opportunity for, acquiring safe conditions in times of disaster (Davis et al., 2013). Though poverty is not the only proxy of vulnerability, it is considered a significant factor contributing to the vulnerability of PWD (Smith et al., 2012). Disability and poverty are linked in a vicious cycle and PWD are at risk of being among the poorest (Kett & Twigg, 2007; Priestley & Hemingway, 2007; Wisner, 2016). Accordingly, they often have limited access to health care, shelter, food, education and employment, and are more likely to live and work in hazardous conditions.

In addition, pre-existing barriers for them to achieve safety are often not addressed and removed within communities and further exacerbated by the occurrence of disasters. All of these factors may lead PWD to higher risk for death, injury and property damage/loss than those without disabilities in the face of disasters. For instance, the reports of recent disasters such as the cyclone in Myanmar in May 2008, the earthquake in Haiti in 2010, and the 2011 Tohoku Japan earthquake and tsunami, indicate that the mortality rate of people with disabilities is higher than that of the general population (Ito, 2014). Similarly, previous earthquake death-related studies show that the risk of death for persons with pre-existing physical disabilities compared to those without disabilities nearly doubled in the great Hanshin-Awaji earthquake in 1995 (Osaki & Minowa, 2001) and the Taiwanese earthquake in 1999 (Chou et al., 2004). Additionally, the findings of Van Willigen et al. (2002) point out that households with PWD were more likely to have experienced damage to their houses than those without PWD, due to the poorer housing conditions of those households with PWD. The cost of this damage accounts for up to 80% of their monthly per capita income compared to 20% for households without PWD.

Van Willigen et al. (2002) claim that households with people with physical disabilities (e.g. mobility, visual and hearing disabilities) tend to delay their evacuations and evacuate less frequently than in households without PWD. In most of the cases, inaccessibility of evacuation routes, emergency exits/entrances, shelter facilities and early warning systems hinders people from proactively evacuating to safe places or saving their lives in times of disaster (Hemingway & Priestley, 2006; Kett & Twigg, 2007; Priestley & Hemingway, 2007; Twigg et al., 2011). Reinhardt et al. (2011) found that, in many circumstances, even when PWD are evacuated safely, the loss of medication, assistive devices, and support personnel can worsen or impair their functioning and well-being.

It is also evident that restricted access to resources and services after a disaster is reported to prolong the recovery process for PWD (Fox et al., 2010; Rooney & White, 2007; Stough et al., 2016; Stough & Mayhorn, 2013). Disruptions in basic support services or networks and omission in emergency registration systems often leave PWD with hardships in meeting their needs during and after disasters. In addition, discrimination in relief activities (e.g. food distribution or medical services) and recovery efforts place them in increased vulnerable situations in the aftermath of disasters (Ito, 2014; Smith et al., 2012; Wisner, 2002).

Additionally, many writers assert that demographic factors such as age, race, ethnicity, social class, gender, or socioeconomic status are associated with vulnerability (Peek & Stough, 2010; Wisner et al., 2004). Disability status intersects with all these factors, leading to a "layering" of vulnerability factors which place PWD at increased disaster risk (Peek & Stough, 2010). For example, a higher mortality rate was observed for the elderly and children compared to the general population after the Guatemalan and Indian earthquakes (Osaki & Minowa, 2001). Girls are more likely to be sexually abused and exploited after disasters (Enarson et al., 2007). Accordingly, the elderly, children, and women with disabilities may face higher risk than those without disabilities in times of disaster.

Stereotypes and social stigma are also important factors that contribute to the vulnerability of PWD. PWD is often viewed as a 'vulnerable group' with 'special needs' or in need of 'special help', or 'helpless victims' (Peek & Stough, 2010; Wisner, 2002). Accordingly, this viewpoint diminishes their contribution or capacity to contribute to DRR, thereby, leading to institutional exclusion of PWD from DRR processes or decision-making processes that affect their well-being. The UNISDR survey shows that 85.57% of the respondents have not participated in community disaster management and risk reduction processes existing in their communities despite the fact that more than a half of the respondents said that they wanted to participate in such processes (UNISDR, 2014). This lack of participation obviously leads to not only designing inappropriate DRR measures for PWD, but also placing PWD in a passive position in receiving attention and support from outside. The following sections review the capability approach (CA) and discuss the concepts of disability and participation through the lens of the CA, which will provide a foundation for addressing disaster risk from the human capability perspective.

3.3. Disability through the lens of the capability approach

The Capability Approach, which was developed by Amartya Sen in the 1980s, is a people-centred framework for the evaluation and assessment of individual well-being and social arrangements (Robeyns, 2005b). Capabilities in the CA do not refer to the ordinary sense of 'ability' but real opportunities that individuals have in order to achieve the functionings they value. Functionings are activities and states (i.e. doings and beings) that are constitutive of a person's being (Sen, 1992). Functionings refer to the achievement of valuable activities and states. In DRR, valuable functionings could be being healthy, being sheltered safely, being well-nourished, evacuating to safe places, receiving and understanding early warnings, being employed/engaged in income-generating activities, avoiding post-disaster morbidity, or participating in DRR planning. These functionings such as being sheltered safely, being well-nourished or being healthy are somewhat valued not only in times of disaster but also in daily life. Functionings are not always an absolute end but can be a means to other functionings (Robeyns, 2016). For instance, 'being employed' may lead to 'being adequately nourished'. Sen does not provide a definitive list of basic functionings, as he argues that it depends on the purpose of the exercise and *"…to have such a fixed list, emanating entirely from pure theory, is to deny the possibility of fruitful public participation on what should be included and why…"* (Sen, 2005, p. 158). Accordingly, he emphasises democratic or participatory processes and public reasoning for selecting valuable functionings.

At times, the term 'capabilities' is used interchangeably with 'capability set' that can be understood simply as various combinations of possible functionings from which people can choose to achieve (Sen, 1992). In the sense of capability, Sen (1999) emphasises on the freedom of an individual to choose from a range of possible functionings. To exemplify the concept of 'choice', Sen compares two cases of people who are starving or being undernourished. One is starving as he or she does not have enough food to eat and the other one is fasting. The difference here is the first one has no option but to starve due to poverty, while the latter has food to eat, but he or she chooses not to eat for religious reasons. Accordingly, Sen (1992) distinguishes functionings (i.e. doing or being 'x') from capability (i.e. choosing to do or to be 'x', and then doing or being 'x'). In other words, *"the former [is] about the things a person does and the latter about the things a person is substantively free to do"* (Sen, 1999, p. 75).

Sen (2003) views development as the expansion of human capabilities. Subsequently, he proposes a focus on capabilities rather than functionings (Sen, 1992). He argues 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 achieve some functionings to fulfil other ones, as with the starving or fasting example.

In his writings on functionings and capabilities, Sen also discusses the concept of 'conversion factors' (Sen, 1992). He argues that the achievement of valuable functionings depends not only on the availability of, or access to, resources but also on a number of factors, namely ‘conversion factors’. Resources could be goods or services that have certain characteristics to enable functioning, whereas ‘conversion factors’ refer to the degree in which a person can transform a resource into functioning that she/he values (Robeyns, 2016). Conversion factors can be individual or environmental. Individual factors are intrinsic to the person, such as mental and physical health conditions, sex, age, literacy level, or attitude, while environmental factors are extrinsic to the person. Environmental factors can be classified into: 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.

Despite the wide adoption of the capability approach in human development, it can be critiqued from a structural perspective as potentially individualising the perception of a person’s capability. Deneulin (2008) claims that the CA does not take into account the role of collective actions, institutions, and other social structures in maintaining, enhancing or limiting individual capabilities. That is to say, individuals do not normally realise and act for their valuable capabilities in a vacuum. Stewart (Stewart, 2005) explains that group membership positively or negatively influences people’s capabilities in three ways: affecting people’s sense of well-being, determining efficiency and resource shares, and influencing values and choices. Drawing on this claim, Ibrahim (2006, p. 398) introduces the concept of ‘collective capabilities’ that refer to ‘newly generated functioning bundles a person obtains by virtue of his/her engagement in a collectivity that help her/him achieve the life he/she has reason to value.’ She claims that collective capabilities should be a result of a process of collective action and should benefit the whole group at large rather than a single individual. Stewart (2005, p. 200) emphasises that collective capabilities should not be perceived as ‘the sum of individual capabilities of members of the group’ due to the interactive nature of the collectivity.

It is argued that issues facing PWD in disasters can be augmented by being viewed through a CA lens. Under the CA, Mitra (2006) considers disability as the outcome of an interaction between personal characteristics, resources or assets, and the environment. She argues that an impairment may lead a person to a disability if the impairment causes constant pain due to which a person with this impairment is not capable of achieving a functioning like engaging in work. However, this is not always the case, as it depends on the environment. For instance, a person with physical impairments does not have an opportunity to participate in a village disaster preparedness meeting due to neither his/her physical impairments nor having no means of transport but a community stigma toward him/her. Therefore, under the capability perspective, disability is often associated with restricted capabilities or dis-capabilities (Bellanca et al., 2011; Mitra, 2006).

In the literature of disability-related CA, the term ‘entitlement’ is often discussed. It is argued that in some circumstances, a person with disabilities can give entitlement to one who he/she trusts (e.g. a family member or guardian) to support him/her to achieve valuable functionings or capabilities that he/she is not able to achieve by his/her own (Bellanca et al., 2011; Nussbaum, 2009). Such capabilities are often labelled as external capabilities (Foster & Handy, 2008) or combined capabilities (Nussbaum, 2000). The conditions such as support of family members or guardians that enable PWD to convert the resources to their valuable functionings, in this sense, are regarded as social conversion factors (Nussbaum, 2000). For example, a person with severe disabilities, who is not able to take care of himself/herself to be healthy, has to rely on the support of his/her mother. In this case, the capability of being healthy is not an individual capability of the person with severe disabilities but an external one which is achieved through the direct relationship with his/her mother.

Foster and Handy (2008) argues that external capabilities are different from collective capabilities that are achieved when people are organised into a group. In other words, collective capabilities are beyond individual ability or none of the group members is able to achieve those capabilities, while external capabilities are relational, i.e. often depend on an individual’s informal relationship with other people and the willingness of those who provide or create such capabilities. For instance, a person with physical disabilities cannot move himself/herself to a safe place in times of disaster and thus asks for support from his/her neighbours to evacuate him/her to the safe place. In this case, that person has achieved an external capability of evacuating to a safe place. However, when that person collaborates with the other people who also have physical disabilities or join in a disabled people’s organisation to claim the evacuation support for people with physical disabilities from the local committee for disaster risk management (which is the group goal), the achieved capability of evacuating to a safe place then is a collective capability.

3.4. Participation through the lens of the capability approach

Participation has become a buzzword in development discourse since the mid-1980s (Leal, 2007) and is a key process in ensuring DRR for people with disabilities (Alexander et al., 2012). To date, there has been no concrete definition of participation. Scholars have defined it in different ways, which may result from looking at the concept from different aspects such as originating agents (Goulet, 1989), motivations for adopting and practising participatory approaches (Pretty, 1995), power and control (Arnstein, 1969; Gaventa, 2006), or interests (White, 1996). Despite the divergence in the conceptualisation of participation, it is generally accepted that participation is not only about ‘being involved’ but also ‘having people’s voice heard’ and ‘being empowered to transform their voice into actions’ (i.e. being able to decide and act for themselves) (Cornwall, 2008).

Participation is basically viewed as a means and an end (Cornwall, 2008; Rocheleau & Slocum, 1995). As an end, it is valued as a developmental outcome or an activity or state people want to achieve (i.e. a valuable functioning) (Sen, 1999). Within this regard, scholars normally look at values or features that construct the meaning of participation from participants’ perspective (Alkire, 2002; Hammel et al., 2008; Narayanasamy, 2009). Achieving the functioning of participation that people value is influenced by a range of conversion factors. For instance, a person with disabilities may not be able to fully participate because of his/her impairments of mobility or health conditions (i.e. personal factors), lack of assistance devices (i.e. resources), or inaccessible building, discrimination, and disability-exclusive policies (i.e. environmental factors). Thus, to achieve effective participation, people also need to have resources and enabling conversion factors.

As a means to an end, participation can be understood as having instrumental value, in that people participate in decision making or use participatory processes as instruments to identify and achieve other developmental outcomes that they value (Alkire, 2002; Cornwall, 2008; Sen, 1999). Sen (1999) underscores the importance of people shaping their own destiny by active involvement in social and political decision making rather than being passive recipients of assistance. Participation in this sense is often regarded as a process in which people exert their agency to address deprivations and to act and bring about changes in development policy or practice (Cleaver, 2004; Goulet, 1989; Sen, 1999). Sen (1992) refers to ‘agency’ as a person’s ability to realise and pursue goals that he/she values and has reason to value, whether or not they are connected with his/her own well-being (Sen, 1992). He considers an agent as ‘someone who acts and brings about change’ (Sen, 1999, p. 19).

A number of scholars also identify levels or modes of participation, for example, Arnstein’s (1969), Pretty’s (1995), and Crocker’s (2007) – each level is equivalent with the extent of agency or power that agents can exert to make influence over decision making, or to induce changes. Sen (1999) insists that agency is only achieved when people have effective power or direct control in the process of pursuing their goals and objectives. However, it is argued that the level of individual agency, which an individual can achieve, depends on the traits of that individual as well as collective or structural processes (e.g. political structure, distribution of power, social norms, health care systems, and education systems), which are beyond individual control (Crocker, 2008; Deneulin, 2008). Thus, people tend to organise themselves into self-help groups to form collective efforts and exercise their collective agency to achieve those outcomes (Ibrahim, 2006), or to have other people ‘who have expertise or wield influence and power to act on their behalf to get the outcomes they desire’ (Bandura, 2000, p. 75). Crocker (2008, p. 153) defines ‘collective agency’ as ‘a process for combining the decisions and agency freedoms of many agents’. Bellanca et al. (2011) explain that, in ‘collective agency’, ‘the agent chooses the option that, in spite of not always optimising his/her individual position, represents the optimum if taken in conjunction with the options chosen by the others within the team’.

Examining the extent of agency that people have in the light of power relations, Rowlands (Rowlands, 1997) identifies four types of power: power over, power to, power with and power (from) within. ‘Power over’ is often owned by those who have control on resources and decision-making processes. This type of power is often associated with negative connotations such as repression, force, coercion, discrimination, corruption, and abuse (Csaszar, 2005). ‘Power to’ is regarded as ‘individual agency’ while ‘power with’ is a ‘collective agency’ that focuses on individuals’ engagement in collectivities to achieve what they value. ‘Power within’ means personal self-confidence, self-worth and self-knowledge, including the ability of recognising their ‘power to’ and ‘power with’ (Csaszar, 2005). In practice, to deal with power imbalances, the strategies often focus on opening up participatory arenas that bring more excluded people into decision making, and capacity building to increase the types of power to, power with and power within of the excluded people. The combination of the three types of powers would influence and change the ‘power over’ (Chambers, 2006).

3.5. Understanding disaster risk facing people with disabilities from the human capability perspective

Drawing on the limitations of the resource-based approach in addressing disaster risk discussed in the previous sections and the review on the concepts of disability and participation through the lens of the CA, this paper proposes the adoption of the human capability approach for better understanding disaster risk facing PWD. It is argued that, to understand why people are affected by disasters (i.e. people's vulnerability to hazards), it is necessary to go beyond looking at the availability of or access to resources, but at what capabilities people have and at how their capabilities are restricted in coping with disasters. In other words, disaster impacts can be viewed as manifestations of the deprivation or restriction of capabilities to cope with disasters. A conceptual framework (Figure 3-1) is proposed to better understand disaster risk facing PWD through the lens of the capability approach.

It is undeniable that resources play a critical role in the achievement of valuable functionings and people may be deprived of capabilities due to a lack of resources. However, the deprivation of capabilities is not necessarily caused by a mere lack of resources but by barriers or disabling conversion factors. For example, having resources such as an evacuation centre in place and a wheelchair may not enable a person with mobility disabilities to make a timely evacuation. The reasons why he/she cannot achieve this functioning – despite wanting to – may be: the road from his/her home to the evacuation centre is not accessible; the evacuation centre is not accessible; the facilities (e.g. toilet) in the centre are not accessible; community stigma for PWD is severe; or he/she feels shamed by or experiences self-stigma about his/her appearance or impairments in front of people. Sen (1992) claims that equality in terms of resources may not lead to equality in terms of capability. For instance, a person with severe disabilities who cannot cook due to his/her physical or cognitive disabilities may not achieve the same level of 'being well-nourished' as a person without disabilities, even though both have the same resources such as raw materials and cooking facilities. Previous studies indicate that PWD may require more resources (i.e. costs directly or indirectly associated with disabilities) to achieve the same living standards or outcomes as people without disabilities (Mitra et al., 2017; Sen, 1992).

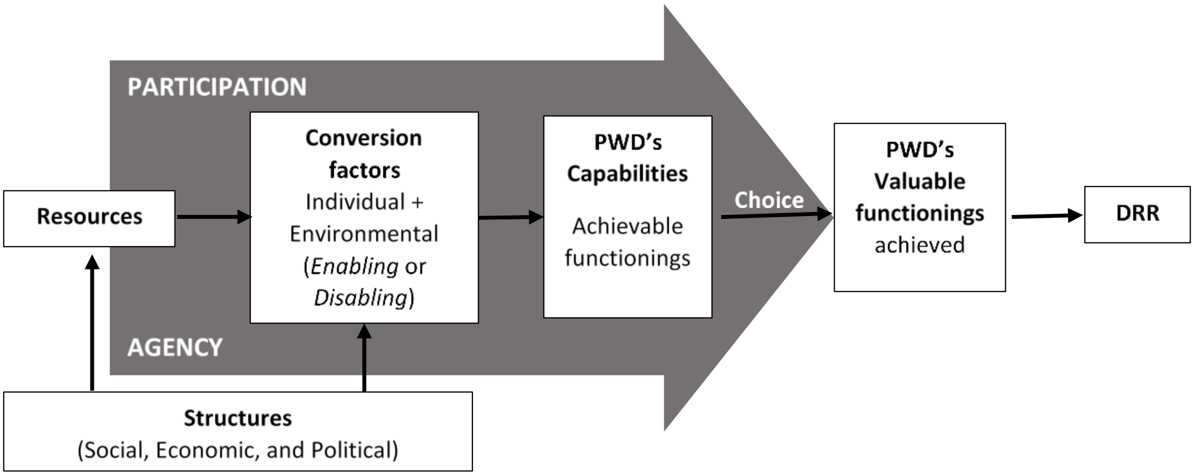

Figure 3-1. A capability-based conceptual framework for understanding disaster risk facing PWD

In addition, it is argued that inequality in terms of capabilities is a social product. In other words, social, economic and political structures of a society create considerable inequity in the provision of conditions for individuals to flourish or to be safe in times of disaster. Social structures may be the welfare and educational systems, and social ideologies. Economic structures may be government debts, economic priorities, urbanisation and distribution of wealth. Political structures may be power structures, forms of governance, and legislation. These structural forces may determine the distribution and availability of resources not only to PWD but also to DRR institutions and stakeholders (e.g. Committees for Disaster management, NGOs and health centres) in localities. As the framework focuses on the capabilities of people with disabilities, we do not attempt to explain how the structural forces influence DRR institutions, agencies, and organisations on the access of resources in this paper. The forces may also shape environmental conversion factors (e.g. community attitude and reaction to disability, accessibility of facilities, inclusive policies, or disability-related awareness of local DRR institutions and stakeholders), or some of the individual conversion factors (e.g. knowledge and skills, attitude or personality). For instance, a lack of national disability-inclusive legislation may result in the shortage of disability support services and physical inaccessibility of infrastructure.

A national educational system that is not disability-inclusive can lead to limited knowledge and barriers in access to information for PWD. Social ideologies may create norms that increase stigma and discrimination to PWD as well as self-stigma from PWD themselves. Therefore, DRR efforts should go beyond increasing or securing the availability of resources, or access to resources but creating/maintaining the enabling factors for PWD to utilise and convert the resources to their valuable functionings as well as removing/reducing the disabling factors preventing them from achieving valuable functionings. This ultimately aims to expand their capabilities from which they can choose to achieve for their DRR.

To achieve the equality in terms of capabilities, it is imperative to promote opportunities for meaningful participation of people at risk in development and DRR processes. Previous studies indicate that PWD may conceive participation in daily life activities or decision making as a valuable end in their well-being and they may have various reasons to value it (Hammel et al., 2008; UNISDR, 2014). As a valuable functioning, its achievement depends on the availability of resources and is also influenced by both personal and environmental factors. Nevertheless, in many cases, they often use participation as a means to achieve other valuable functionings. As the exercise of agency is directly associated with power relation, that is, through meaningful participation, PWD can gain ‘power within’, ‘power to’ and ‘power with’ to transform the power relation in their community, which subsequently enables them to achieve their valuable functionings.

Firstly, being involved in representative organisations (e.g. Disabled People’s Organisations or self-help groups) and collective activities, PWD can gain more knowledge regarding disability rights and disaster-related knowledge. It accordingly increases their confidence (i.e. ‘power within’) to influence the decisions that impact theirs and the lives of others (Sightsavers, 2015; Smith et al., 2017). This participation process also helps PWD realise valuable functionings as individuals do not value and make choices of what functionings need to be achieved in isolation, but after discussion and consultation with others (Alkire & Deneulin, 2009). Secondly, through genuine participation processes, PWD can exercise their individual agency (i.e. ‘power to’) to achieve their valuable functionings or to play an active role in shaping collective functionings in times of disaster. For example, it is reported that, by participating in village disaster response planning, people with severe physical disabilities had a chance not only to voice their needs, but also to request transportation support from village Emergency Response Team members or other community members for evacuating to safe places in Vietnam (CBM, 2013). Similarly, people with hearing disabilities in that village are capable of receiving early warnings or knowing the situation of pending hazards at a locality by requesting the support of their neighbours with visual messages (CBM, 2013). The findings of Smith et al. (2017) also indicate that through fostering the participation of PWD in community work and planning, barriers such as stigmas and discrimination have been significantly addressed and reduced.

In practice, however, the achievement of valuable functionings is not always easy, especially in the case of scarce resources and unfavourable environments, or interventions aimed at social and structural changes. When it comes to changes in social, economic and political structures, interventions for such changes are often beyond individual reach or control and require collective actions. Thus, people tend to organise themselves into a group/organisation, or engage in a group/organisation to build up the collective agency (i.e. 'power with') for achieving their valuable functionings (Alkire & Deneulin, 2009; Evans, 2002). For example, the findings of Smith et al. (2017) indicate that, though their Disabled People's Organisation and the support of organisations working with PWD, PWD can change the local power structure by claiming their rights to be part of the decision-making bodies (e.g. disaster management committees) and to participate in DRR planning. Subsequently, this may ensure their voices are heard and their needs in terms of resources (e.g. access to funding sources for livelihood development, assistive aids, recovery services) and enabling conversion factors (e.g. accessibility of evacuation centres, support in evacuation and early warnings, non-stigma and non-discrimination) are fulfilled before, during and after disasters. Therefore, DRR efforts should not be limited to promoting the involvement of excluded or marginalised people in decision-making processes but also need to help them perceive themselves as active agents (i.e. 'power within') and accordingly increase their agency as an individual or a group (i.e. 'power to' and 'power with') to achieve their valuable functionings.

3.6. Conclusions and ways forward

This article, as a position paper, has proposed that the human capability-centred approach is a viable alternative approach to resource-based planning for disasters, and that the capability approach assists comprehension of the disaster risk facing people with disabilities. A conceptual framework focusing on the concepts of resources, conversion factors, structural forces, and functionings/capabilities to cope with disasters is also proposed to examine disaster risk facing PWD in times of disaster. It is argued that in order to address the inequality or deprivation of PWD's capabilities in the face of disasters, it is critical to look at not only the space of 'resource' but also the spaces of 'conversion factors' and 'structural forces' that shape availability and accessibility of resources and conversion factors.

Although there has been an increasing number of studies regarding the vulnerability of PWD in the face of disasters, studies looking at the capabilities of PWD in DRR remain very limited. In disaster literature, the word 'capability' is often used interchangeably with 'capacity', which refers to 'assets', 'resources', 'capital', or the ability to acquire resources (Wisner, 2016). In contrast, Sen's concept of capability has a larger meaning that includes not only the space of resources but also the space of utilisation and conversion of resources and choice (Sen, 1992). Accordingly, the process of converting resources to what people are capable of doing and being is often overlooked in previous disaster and disability studies. Thus, empirical research to address the questions regarding what capabilities PWD value and how such valued capabilities are restricted is critically necessary.

The article also highlights the role of meaningful participation as a means for PWD to exercise their (individual and collective) agency for the achievement of their valuable functionings. In order to ensure a meaningful participation process, external support should aim to provide not only favourable conditions such as resources and enabling conversion factors for their participation but also transform the power relations in society. This transformation of power relations is only achieved when the individual agency (e.g. power within and power to), as well as collective agency (i.e. power with) of PWD, are enhanced to change the 'power over'. In practice, this transformation does not always mean one's gain and another's loss. Chambers (2006) argues that a pedagogy (e.g. workshops and reflection, training to facilitate, or peer influence between the powerful) can make the powerful realise that they can achieve a 'win-win situation' by using their 'power over' to empower the powerless to achieve this situation.

Though the article focuses mainly on the experience of PWD, it raises a possibility of applying this human capability-centred approach to address the disaster risk for other social groups (e.g. children, women, ethnic minorities and older people, all of whom have been identified as living with particular vulnerabilities at times of disasters (Wisner et al., 2012). Empirical research, however, is essential to explore and elaborate on this approach in the context of disasters.

With the capability-based framework in mind, an empirical study was conducted in two communes in Vietnam to explore the capabilities that PWD value as well as their human agency in dealing with disasters. The following chapter (Chapter 4) provides a philosophical foundation for conducting this research. Following this, Chapter 5 presents the findings to illustrate the former argument on the capabilities of PWD while Chapter 6 provides evidence for the latter argument on the agency of PWD. Chapter 7 brings back and discusses the two main theoretical statements of capability and agency (from the capability-based conceptual framework) with the empirical evidence which is provided in Chapter 5 and 6, and presented elsewhere in the world. It then expands the theoretical discussions of capability and human agency into disaster justice for PWD.

CHAPTER 4. RESEARCHING THE CAPABILITIES OF PEOPLE WITH DISABILITIES: WOULD A CRITICAL REALIST METHODOLOGY HELP?

4.1. Introduction

Amartya Sen's capability approach, developed in the 1980s, has been applied in disability research for two distinct purposes: for conceptualisation and for normative application. For the former, the approach has been useful for conceptualising the notion of disability or disability-related issues (Bellanca et al., 2011; Burchardt, 2004; Mitra, 2006; Nussbaum, 2006). In the case of its normative purpose, the capability approach has been useful for evaluating disability-related states such as poverty or economic wellbeing (Mitra, 2018; Rosano et al., 2009; Trani et al., 2015). To this end, this application is often trapped in the positivist paradigm that adopts quantitative methodologies to analyse and measure human capabilities at the empirical level. By paradigm, this paper adopts the definition of Guba and Lincoln (1994) that refers to basic beliefs including ontology (the nature of reality), epistemology (the nature of knowledge), and methodology (an approach or a research process to inquiry). Though some scholars in disability-related capability research recently attempted to adopt qualitative methods or a participatory approach as a supplement to quantitative methodologies (i.e. mixed methods), qualitative methods remain limited to identifying, selecting and/or ranking dimensions or factors of measurements (Dubois & Trani, 2009; Kinghorn et al., 2015; Mitra et al., 2013). This positivist paradigm applied to the contemporary disability-related capability research fails to capture the dynamics of human and environmental systems. It overlooks human agency, social structures, and the interaction between them in creating human capabilities. Despite the dominance of the normative application of the capability approach, some scholars have raised a possibility of using this approach as an explanatory theory (i.e. explaining disability-related issues through the lens of the capability approach) (Robeyns, 2017; Zimmermann, 2006). However, to enable its explanatory power, the approach needs to be grounded in an appropriate research paradigm.

This paper argues that critical realism, with its increasing recognition and influence in disability research (Bhaskar & Danermark, 2006; Danermark, 2002; Watson, 2012), is well suited for this purpose. Within this paradigm, researchers can go beneath the empirical level and search for structures and causal mechanisms that might impede or facilitate the potentialities for people with disability to achieve what they value. It also allows the researchers to capture the agency of people with disabilities, which is often ignored in contemporary disability research, and the interaction of their agency and social structures in achieving their capabilities (Watson, 2020).

To elucidate this argument, the first section of this paper provides an overview of models of disability (i.e. theoretical frameworks that map the relationship of conceptual elements included in the definition of disability) and paradigms in disability research. The second section presents a brief introduction to the capability approach and discusses some shortcomings of the current methodologies in explaining human capabilities. The third section gives an overview of critical realism and discusses the ontological nature of ‘capability’ through the lens of critical realism. Following this, the fourth section explores a critical realist methodology in researching the capabilities of people with disabilities.

4.2. Models of disability and paradigms in disability research

Disability is a controversial concept that has been inconsistently defined from diverse perspectives such as medical, social, psychological, or cultural models (Nagi, 1965; Pfeiffer, 2001; Smart, 2009; Verbrugge & Jette, 1994). Oliver (1992) notes that disability researchers tend to select research paradigms that are aligned with their chosen model of disability. This thereby shapes the choice of methodology, which in turn, greatly influences the results and conclusions of the research (Creswell & Creswell, 2018). The earliest disability research adopted an individual approach (also known as the ‘medical model’) that mainly focused on impairments to understand disability. Disability in this sense was perceived as individual problems that required medical treatments or rehabilitation (Nagi, 1965; Oliver, 1992). This perspective was challenged in the 1960s by the disability movement that viewed disability as a social issue. The proponents of this social perspective (known as the ‘social model’) insisted that physical and social environments are the root causes of disability (Oliver, 1996). Oliver (1992) notes that the individual/medical model is often associated with the positivist paradigm while the social model is a social constructivist or interpretivist paradigm.

To synthesise the medical and social models, some interactional models emerged over time. One of the most well-known and influential interactive models is the International

Classification of Functioning, Disability and Health (ICF) developed by World Health Organisation (WHO, 2001). This ICF model is also known as the ‘biopsychosocial model’ (Bhaskar et al., 2018; Mitra, 2006; Pilgrim, 2015). According to the ICF, disability is an umbrella term for impairments, activity limitations or participation restrictions. In other words, it encompasses human functioning across three levels: the body level (e.g. biological functions such as visual acuity or missing limbs), the personal level (e.g. execution of a task or action such as thinking, communicating, walking), and the social level (e.g. involvement in life situations such as attending school and working) (Bickenbach, 2020). Activities at the personal and social level are fundamentally influenced by both environmental and personal factors. As the line between the personal and social level is not always clear, the notions of capacity and performance are adopted to examine a task or an action in the operationalisation of the ICF (ibid.). Capacity refers to an individual’s ability to execute a task or an action; it is the intrinsic health state of a person and independent of environmental impacts. Performance, in contrast, describes what a person actually does and depends on his/her environmental settings or features. Bickenbach (2020, p. 65) thus defines ICF-Disability as *“an outcome of an integration of two sets of determinants – intrinsic health and extrinsic environment”*. This ICF model often adopts the positivist paradigm (e.g. naïve or empirical realism) (Bhaskar et al., 2018; Gustavsson, 2004)

In the 1990s, some scholars offered an alternative way of understanding disability, grounded in postmodernist and poststructuralist perspectives, which focused mainly on the discourse (i.e. cultural and linguistic construction) of ‘disability’, namely critical disability studies or the ‘cultural model’ (Goodley, 2011; Meekosha & Shuttleworth, 2009). Their findings have contributed to a more nuanced understanding of disability by expanding the explanations of disability from social, economic and political terms to psychological, cultural, discursive and sexual terms. The cultural model is often associated with the social constructivist paradigm. Considering the diversity of factors that construct disability experience (and drawing on the critical realism), Shakespeare (2014, p. 26), views disability as a consequence arising from “a complex interaction of biological, psychological, cultural and socio-political factors, which cannot be extricated except with imprecision”.

4.3. Understanding the capability approach

The capability approach is a people-centred framework used for the evaluation and assessment of individual well-being and social arrangements (Sen, 1992, 1999). In the capability approach, there are three core concepts: Functioning, Capability, and Agency. Functionings are activities and states that are constitutive of a person's being (Sen, 1992). Functionings refer to the achievement of valuable activities and states, and are not always an absolute end but can be a means to other functionings (Robeyns, 2016). For instance, 'being adequately nourished' could be dependent on 'being employed', and therefore the latter may be a means to the former. Sen does not provide a definitive list of basic functionings as he argues that it depends on the purpose of the exercise and *"…to have such a fixed list, emanating entirely from pure theory, is to deny the possibility of fruitful public participation on what should be included and why…"* (Sen, 2005, p. 158). Accordingly, he emphasises the need for democratic or participatory processes and public reasoning in selecting valuable functionings.

'Capability' in the capability approach does not refer to the ordinary sense of 'ability' but real opportunities that individuals have in order to achieve functionings that they value. At times, the term 'capabilities' is used interchangeably with 'capability set,' that can be understood simply as various combinations of possible functionings from which people can choose to achieve (Sen, 1992). In the sense of capability, Sen (1999) places a strong emphasis on the freedom of an individual to choose from a range of possible functionings. Accordingly, Sen (1992) distinguishes functionings (i.e. doing or being x) from capability (i.e. choosing to do or to be x, and then doing or being x). In other words, "*the former [is] about the things a person does and the latter about the things a person is substantively free to do*" (Sen, 1999, p. 75).

In the last decade, the concept of capability has been increasingly adopted in order to understand disability and disability-related issues (Dubois and Trani 2009; Mitra 2006; Nussbaum 2006; Trani and Bakhshi 2008; Burchardt 2004). Under the capability perspective, disability can be seen as a deprivation of capabilities (Mitra, 2006) or dis-capabilities (Bellanca et al., 2011) that arises from the interaction of the individual and the environment. Mitra (2018) later terms this capability perspective in disability research as the human development model of disability, health and wellbeing.

Sen (2003) views development as an expansion of human capabilities. Subsequently, he proposes to focus on capabilities rather than functionings. He argues that focusing on functionings, in some cases, can deprive people of the freedom to choose. In other words, some functionings could be achieved by force or coercion, or people could choose not to do those functionings to fulfil other functionings. An example of this is the two cases of people who are starving. One is starving by force as he has nothing to eat, while the other one, though having food to eat, still chooses to be fasting to fulfil the other functioning of 'praying' or 'worshipping'. Sen (2003) thus argues against evaluations focusing on the achieved outcomes but rather, on the process of how an individual reaches his or her achievements. This underscores the importance of qualitative design that often aims to answer 'how' and 'why' questions in researching human capabilities.

In his work on the capability approach, Sen also discusses the process from resources to functionings (Sen, 1992). He argues that the achievement of valuable functionings depends not only on the availability of, or access to, resources but also on many internal and external factors, namely 'conversion factors'. Resources could be goods or services that have certain characteristics to enable a functioning whereas 'conversion factors' refer to the degree in which a person can transform a resource into a functioning she/he values (Robeyns, 2016). Conversion factors are categorised into personal and environmental. Personal factors are internal to the person, such as impairments, mental and physical abilities, health conditions, sex, age, literacy level, or attitude. Conversely, environmental factors are considered external to the person. The environmental factors, in this case, can be classified into four groups: social factors such as norms, discrimination, stigma, family support, and social networks; 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, communication, and hazard-prone areas. When it comes to disability-related issues, Sen (2009, p. 258) argues that people with disabilities often face difficulties or disadvantages *"in converting income and resources into good living"*, namely what he terms a 'conversion handicap'. A conversion handicap is associated with extra costs directly or indirectly associated with disabilities; people with disabilities may require more resources to achieve the same living standards or outcomes as people without disabilities (Mitra et al., 2017; Sen, 1992, 2009). For instance, people with disabilities may have to pay extra costs to buy assistive devices (e.g. a wheelchair) or to modify their vehicles (e.g. cars or motorbikes) in order to achieve 'being mobile.'

The third core concept that Sen has extensively discussed in his capability approach is 'agency'. Sen (1992) relates agency to a person's ability to realise and pursue goals she/he values and has reason to value. These goals may or may not relate to her/his own well-being. He insists that *agency* is only achieved when people succeed in pursuing their goals and objectives while an *agent* is *"someone who acts and brings about change"* (Sen, 1999, p. 19). It is argued that human agency emerges from the interaction between the traits of an individual as well as the setting in which his/her agency is exercised. Therefore, the level of individual agency depends on both individual traits and the environment (Crocker, 2008).

The capability approach is broadly adopted as conceptual and normative frameworks rather than an explanatory theory (Robeyns, 2017). For the normative purpose, the application of the capability approach is often grounded in the positivist paradigm and quantitative design. This is the case for disability-related capability research that aims to measure disability or disability-related issues such as poverty (Mitra 2018; Trani & Bakhshi, 2008). Since capability is not directly observable (Sen, 1992), positivist scholars often use functionings or situational indicators (i.e. conversion factors), as indirect proxies to research human capabilities (Comim et al., 2008; Ibrahim & Tiwari, 2014). Quantitative methodologies (e.g. relying on statistical or mathematical analysis with deductive reasoning) are often used to explore the regularities in the form of 'whenever event x then event y' (Fleetwood, 2014; Lawson, 2003). This form presupposes the existence of closed systems that are widely known in the natural world.

Fleetwood (2014) notes that in positivism, where causality is reduced to mere event regularity, explanation is often expressed in forms of a regular succession of events and therefore confused with prediction. In quantitative capability research, explanation aims to predict actual behaviour. This prediction can be achieved in two steps: first, by describing rational behaviour exactly in a predictable way (e.g. preference orderings); and then, by making the presumption that rational behaviour coincides with actual behaviour (Martins, 2006). Sen (1997) contends that preference orderings are incomplete and rational human behaviours do not need to conform to any preference ordering. He argues that reasons for choice are complex and go beyond self-interest. They are determined by social rules, moral imperatives, moral sentiments and social commitments (ibid.). Martins (2006) argues that a quantitative methodology relying on observable behaviours and situational indicators, or achieved functionings, is inconsistent with open systems[18] and cannot capture the theoretical meanings of capabilities, as defined by Sen. Lawson (2003) notes that the form *'if event X then event Y'* (i.e. empirical correlations) is not always the case, as the social world is an open

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[18] Mingers (2014) clarifies the confusion of using the term 'system' in Bhaskar's work. He refers to 'system' as a general term for an entity of any type (e.g. physical, social, cognitive, etc.) that are composed of components and their relations.

system and a social phenomenon is seldom manifested unambiguously. Thereby, capabilities may not be actualised or manifested in a constant and predictable way, even if all enabling conversion factors and resources are available.

Many scholars also view capability as a dynamic concept (Comim et al., 2008). This has raised a need to integrate social ontology into the application of the capability approach (Smith & Seward, 2009). Stewart (Stewart, 2005) contends that the capability approach underestimates the role of collectivity (e.g. influences on people's choices and values, collective actions, and resource sharing) in facilitating or constraining individual capabilities. Ibrahim (2006) argues that the capability approach overlooks the interrelationship between individuals and social structures. Many of these social factors and underlying processes that affect social practices and the ability of people to act (i.e. human agency) are non-observable and counterfactual or disabling to individual capabilities. Some also note that conversion factors are interrelated and the boundary between them is not always intrinsically distinct (Hvinden & Halvorsen, 2018; Kremakova, 2013). This is also the case for capabilities. For instance, capabilities such as employment, education, health are mutually dependent in many cases. For these reasons, quantitative research with static analysis would find it challenging to address dynamic questions related to the interrelations and interactions between people and between people and environment. To understand how people achieve their valued capabilities, it requires insights into their lives that go beneath what can be empirically observed. This account is often beyond the capacity of quantitative methodologies and suggests the use of qualitative methodologies.

Some capability researchers adopt the constructivist paradigm in researching human capabilities. This paradigm is strongly associated with qualitative methodologies that often aim to explore valuable capabilities from the perspective of participants in the research context and generate insights of the dynamics of, and interactive relationship between, various human capabilities (Ibrahim & Tiwari, 2014). Thus, it is well suited for explanatory research. However, at the radical end of social constructivism, the existence of social reality is denied and reduced to individual meanings. Radical social constructivism also claims that different viewpoints of participants are all equally valid (i.e. multiple realities or truths) (Fleetwood, 2014). As a methodological compromise to improve the quality of data, some recent research on disability-related issues has attempted to adopt qualitative methods or a participatory approach and quantitative methods in a combined way (i.e. mixed methods or pragmatist methodology). The qualitative methods used in this mixed-methods approach are mainly limited to identifying, selecting and/or ranking dimensions or factors of measurements for evaluative purposes (Dubois & Trani, 2009; Kinghorn et al., 2015; Mitra et al., 2013). The choices of methods and/or methodologies within this approach, therefore, raise difficulties for researchers in making sense of data obtained from using methodologies based on conflicting ontological and epistemological assumptions (Mcevoy & Richards, 2006).

This paper argues that the shortcomings in the application of a positivist paradigm, alongside the challenges from social constructivism and pragmatism, can be addressed by adopting critical realism as a research perspective (Martins, 2006, 2007; Shepherd, 2015; Smith & Seward, 2009). Accordingly, it is argued that a critical realist methodology can capture the genuine meaning of capabilities and is philosophically well suited for explaining human capabilities. This paper now provides an overview of critical realism and explores how capabilities can be interpreted through the lens of critical realism in the next section.

4.4. Capabilities through the lens of critical realism

Critical Realism is a philosophy of science developed by Roy Bhaskar (1978) as a critique of the positivist paradigm in social science. While agreeing with positivists that reality (e.g. entities, events or phenomena) exists independently from human thoughts, critical realists negate the positivist assumption that reality is only reducible to the observation of phenomena. Rather, they argue that reality exists regardless of whether we can observe or know it (Danermark et al., 2019). In line with postmodernism, critical realists agree that knowledge is itself a product of social processes and discourses, and there is always an interpretive element in making sense of reality. That is, we can only know them under particular descriptions, particularly when it comes to social entities or phenomena (López & Potter, 2001). However, critical realists assert that reality is not reducible to human knowledge or discourse. To clarify this, Bhaskar (1998a) distinguishes two dimensions of an object: intransitive (ontological) and transitive (epistemological) dimensions. The intransitive is what exists independent of identification. The transitive is a social product that includes knowledge and perception (e.g. concepts, theories, or models) of reality. Thereby, he claims that ontology (i.e. what is reality) is not reducible to epistemology (i.e. our knowledge of reality). This is what Bhaskar calls the ‘epistemic fallacy’ when critiquing both constructivist and positivist paradigms which reduce reality to human knowledge. Critical realism contends that we may have different views on reality but this does not mean that there are different realities. Rather, those views may represent different parts of reality.

Reality under the critical realist ontology is structured or stratified (Bhaskar 1998a). There are three domains or levels of reality: the empirical, the actual and the real. The empirical level includes phenomena and events that we actually see and experience. The actual level includes events and non-events which are generated from the real level and can be observed and experienced or not. The real level is comprised of underlying structures and mechanisms responsible for what can be observed. The concept 'structures' used in this paper does not refer to physical patterns of things but natural and social objects or entities that have causal mechanisms. A structure may also be part of a greater structure or itself constituted by substructures (Sayer, 1992). For example, stigma can be a part of a cultural system, or a local institution can be constituted by units of operation, internal relations and regulations. Mechanisms refer to *"the ways of acting of things"*, often understood as tendencies (Bhaskar 1978, p. 14). Tendency refers to the propensity to act or behave in a particular way. Martin (2006, p. 676) uses the term 'tendency' to emphasise the idea that a continuous activity "may or may not be actualised in concrete events and states of affairs, even when it is continuously exercised". The real cannot be seen and we do not have direct knowledge of the real.

Since social phenomena are multiplicitous, complex, evolving, and subject to the exercise of human agency, they are not characterised by event regularities, determinism or stochastic laws (Fleetwood, 2014). Recognising that events or phenomena are derived/governed by the underlying structures and mechanisms, critical realists argue that the investigation needs to be shifted from the empirical and actual levels to the real level (i.e. the structures and mechanisms that govern the occurrence of events or phenomena), or in other words, from the consequences, outcomes or results (i.e. patterns as event regularities) of actions, to the conditions that make the actions possible. Critical realists caution not to explain the cause of an empirical event based on observations only. Components, likely in a complexly interactive way, generate events and many of these components are not readily observable or knowable to us.

4.4.1. The critical realist ontology of capability

When capability is interpreted in critical realist ontology, it is located at the actual level. Martins (2006) considers capabilities as causal powers that provide the potential to realise particular functionings that can be observed at the empirical level. At the real level, structures are as conversion factors that have causal mechanisms. Smith and Seward (2009, p. 218) view capability as *"a bundle of structures with associated causal mechanisms"* that provide *"the instrumental link between this capability and the associated functioning"*.

In critical realism, the world is seen as an open and highly complex system and is always determined by a multitude of factors. Accordingly, causal mechanisms do not exist in isolation from one another but always interact with each other to generate the observed outcome. Each mechanism has a tendency or counter-tendency that accounts for partial explanation of an outcome (Kincaid, 1996). That is, if an object has a tendency to A, it does not mean that it always does or brings about A but only tends to A. When looking at human capabilities through the critical realist lens, Smith and Seward (2009) classify the mechanisms into individual mechanisms, which are associated with individual conversion factors, and structural mechanisms, which are associated with external conversion factors. Some mechanisms can generate tendencies to actualise capabilities while others may create counter-tendencies to the actualisation of capabilities. For instance, for people with mobility disabilities, a wheelchair has a tendency to actualise the capability of moving around a village, while stigma has a counter-tendency to that actualisation. It thus cannot be concluded that if people with mobility disabilities have a wheelchair, they will use it to move around their village but only that they 'tend' to use it to move around the village. Whether they actualise this capability of moving around the village would depend on the existence of counter-tendencies that are generated by other mechanisms such as stigma, footpaths without potholes, or their motivations and interests. This means the cause of an event or action is not assumed merely to be the event(s) that preceded it, but rather the wider conflux of interacting causal mechanisms that enable the event or action to occur.

To further explore disability issues through the lens of critical realism, some researchers also suggest stratifying the mechanisms into, for example, (i) physical, (ii) biological, (iii) psychological, (iv) psycho-social, (v) socio-economic, (vi) cultural and (vii) normative levels (Bhaskar & Danermark, 2006; Danermark, 2002). In the review of disability research, Bhaskar and Danermark (2006) note that medical, social and cultural models focus on one or several mechanisms that form or reproduce disability and thus they all play a role in explaining the experience of disability. That is, the experience of a person with disabilities at the empirical level is the outcome of a complex interplay of mechanisms located at those levels. A mechanism at one level may be a condition for other mechanisms to emerge at another level but this is not always the case. For instance, the communication capability of a person with hearing disabilities can be explained by mechanisms at biological, psychological, social and cultural levels. A hearing impairment is caused by biological mechanisms and it leads to limited ability to hear. The experience of this impairment also depends on psychological mechanisms (e.g. working memory and lexical memory). However, how the person communicates (i.e. capability to communicate with others) is socially constructed and dependent on social and cultural mechanisms such as stigma. Stigma associated with the hearing impairment is a culturally determined process. Therefore, the dis-capability of communication or lack of capability to communicate with others cannot be explained merely by references to biological and psychological mechanisms.

4.4.2. Human agency and social structures in critical realism

In contradiction to both positivism and constructivism, critical realists acknowledge the existence of the agency-structure. Fleetwood (2014) notes that positivism collapses structures and mechanisms into agency or the outcome of human actions while interpretivism/constructivism insists that both people and structures are socially constructed via discourse. From this understanding, there is no genuine agency or structures under constructivism. However, for critical realists, it is argued that human agents and social structures are ontologically distinct entities (ibid.).

On one hand, critical realists acknowledge that human agency is influenced by social structures (ibid.). They contend that social structures emerged from social relations and are a prerequisite for an individual's actions (Bhaskar, 1998b). Here, social relations refer to the relations between humans, and between these human relations and nature. Indeed, societies are structures of social relations where people occupy different positions and each position provides different resources and power for people to undertake their activities and define their roles in society (Archer, 1995; Danermark et al., 2019). Sen (2009, p. 245) emphasises that, to understand why and how a person takes action, it is important to learn about their social contexts and relations. Though people have free will to act, the possibility of their actions is often restricted or enabled by social structures. For instance, cultural factors like social norms can influence the thoughts and actions of individuals and groups while the regulations or code of conducts can influence the ways these people act. Similarly, inaccessible infrastructure created by government transport agencies may limit the mobility of people with physical disabilities.

On the other hand, critical realist proponents negate the presumption that human agency is determined by social structures (Fleetwood 2014). For instance, though grammatical rules may influence human speech, they do not determine the way people speak; in other words, people can choose to speak in a way which is not grammatically right or not following grammatical rules. Recognising individuals as constituent parts of society, critical realists argued that people have power to reproduce and transform society through their actions or engaging in social relations and practices (Archer, 1995). That is, social structures may have a causal influence on human agency but human agents themselves can also act to influence or transform the social structures. Indeed, human actions are often the result of human intention, and so intentions can be viewed as causes for human actions. In the capability approach, these intentions may be considered as individual interest or values in some functionings (i.e. valued functionings). Smith and Seward (2009) assert that individuals have internal capacities (e.g. speech and practical reason, emotionality, memory, desires, reflexivity, and sense of self) and can act on these capacities. These capacities are individual-inherent structures that generate causal mechanisms and is altered through an individual's interaction with the external environment or social structures. For instance, the capacity of reasoning may be developed and enhanced by educational institutions.

In many circumstances, agency is relational (Archer, 2002). When it comes to societal transformation, it is often beyond just individual agency and also requires collective actions. People with disabilities, especially those with severe cognitive disabilities, are seldom seen as agents because it is often presumed that they have limited capacity to conceive of their own good or set their own goals and to act on them by themselves (Boyle, 2014). It can be argued that agency is not always *"dependent on the autonomous actions conceived and executed by a singular individual, but rather are more social and relational"* (Kittay & Carlson, 2010, p. 153). For instance, people with cognitive disabilities may be engaged in an interactive process of assistive thinking and acting with one or many people, such as caregivers and family members (L. P. Francis & Silvers, 2007). This leads to the conceptualisation of another type of agency, namely 'collective agency' or corporate agency that has emerged from social relations to achieve socially structural changes or societal transformations (Archer, 2002; Bellanca et al., 2011; Crocker, 2008). Crocker (2008, p. 153) defines 'collective agency' as 'a process for combining the decisions and agency freedoms of many agents'. Bellanca et al. (2011, p. 173) explain that, in 'collective agency', *"the agent chooses the option that, in spite of not always optimising his/her individual position, represents the optimum if taken in conjunction with the options chosen by the others within the team"*.

In the review of the agency-structure debate in disability research, Watson (2020) notes that the contemporary emancipatory research agenda (driven by the social disability model) favours structural analysis but overlooks the agency of people with disabilities, while the medical model-driven agenda individualises the problems experienced by people with disability and hardly address the problems created by the social structures. He accordingly suggests the adoption of critical realism in the disability research agenda, as this paradigm acknowledges the ontological distinction of both agency and structures as well as their interaction in producing disability experience. Therefore, when researching the capability of people with disabilities, it would contribute to our understanding of the achievement of a capability of people with disabilities drawing on the interaction of agency and structure (e.g. how agency is influenced by structures and vice versa.)

4.5. Critical realist methodology in researching the capabilities of people with disabilities

Critical realism recognises the existence of a wide range of entities – material objects and forces; social structures and practices; conceptual systems such as languages, beliefs and reasons; and feelings and experiences - provided they have causal effects (Sayer, 1992, 2000). Our means of access to them (i.e. methodology for research practice) has a link to the ontological and epistemological assumptions. Danermark et al. (2019) consider critical realist methodology as pluralist. They argue that *"the distinction between quantitative and qualitative method is no longer relevant"* and *"there is no such thing as a 'universal method' – both approaches have their domains and relevance"* (ibid., p. 167). Thus, determining a methodological approach (e.g. between quantitative and qualitative methodologies, or both) would depend on research questions and direction of the investigation. A quantitative methodology may be suitable for describing phenomena at the empirical level whereas a qualitative methodology would have great value in capturing the dynamic interaction between causal mechanisms at the actual and real levels and explaining for the occurrence of phenomena at the empirical level. In the social world, inquiries related to human behaviours, personal values and feelings, and their interaction with the environment arguably require qualitative investigation (i.e. involving participant perspectives and hermeneutic analysis).

In capability studies, a quantitative methodology may provide reliable descriptions, accurate comparisons, or patterns of achieved functionings and access to resources among groups of people. Examples of this would be differences in access to schools or employment between people with disabilities and people without disabilities. However, this methodology is often insufficient to uncover root causes of capabilities or social inequalities (e.g. why people with disabilities cannot achieve a functioning of education or employment they value), and subsequently fails to suggest effective interventions or induce social changes that help people actualise their valued capabilities or reduce social inequalities. This is only achieved when our research aim is shifted toward understanding the foundational conditions for a capability to emerge. This is to say that through the lens of critical realism, seeking to uncover the underlying generative mechanisms, and if appropriate, providing a means to address and challenge factors counteracting the actualisation of capabilities of people with disabilities. In this case, it would need qualitative methodology or design (i.e. intensive research – see Danermark et al., 2019). This qualitative methodology is indeed consistent with the critical realist aim which is to explain (not only describe) the phenomena (Oliver, 2012; Shepherd, 2015; Watson, 2012). To date, there is considerable literature on qualitative approaches developed for social inquiries, such as narrative, phenomenology, grounded theory, ethnography, and case study, to name a few (Creswell & Poth, 2018). A number of researchers attempted to explore these approaches through the lens of critical realism, for example, critical realist grounded theory (Oliver, 2012), ethnography (Porter, 1993; Rees & Gatenby, 2014), and case study (Easton, 2010; Kazi, 2003). The following sections will discuss important considerations in adopting critical realist methodology to research the capabilities of people with disabilities.

4.5.1. Developing research strategies

As critical realist research endeavours to go beneath the surface of the problem being studied, it is fundamental to ask, “what causes this capability to be actualised?” To answer this question, it is critical to understand human agency, social structures, associated causal mechanisms, and the relations between them. Bhaskar (1978, p. 47) notes that mechanisms are *“not unknowable, although knowledge of them depends upon a rare blending of intellectual, practico-technical and perceptual skills”*. Accordingly, it can be recommended to use available theories to identify hypothetical structures and mechanisms that, if they existed, would generate the phenomenon under study. In this paper, we refer to theory as a descriptive theory, which is defined by Danermark et al. (2019, p. 137) as a language *“to describe and characterize properties, structures, internal relations and mechanisms”*. This can help us interpret and explain different social phenomena. They note that critical realists often regard theories as conceptualisations; theories help to conceptualise a phenomenon in a certain way. Once the hypothesis about the structures and mechanisms is generated with the help of the theories, it can be "tested quite empirically, although not necessarily quantitatively" (Bhaskar, 1998b, p. 228).

In researching the capabilities of people with disabilities, it is important at this stage to look at capability as well as disability theories. To date, there have been a great number of theories to explain disability developed from various perspectives such as medical/individual pathological, social, and cultural ones (Pfeiffer, 2001; Smart, 2009). Though the theories generated from these perspectives seem to be competing, they are equally valuable to understanding the disability experiences or dis-capabilities as they look at causal mechanisms located at different levels of the real. This indeed may help to identify individual and structural mechanisms related to the capabilities of people with disabilities, and accordingly to propose a priori hypothesis or conceptual framework that will guide the research practice. However, recognising the fallibility of our knowledge, Bhaskar (1998c, p. 5), cautions to *"avoid any commitment to the content of specific theories and recognize the conditional nature of all its results"*. It is argued that all theories are fallible but not equally fallible (Danermark et al., 2019). The onus is on researchers to identify the theory that has greater explanatory power for the studied phenomenon compared to the others. For this reason, such an initial hypothesis or framework proposed for the research practice and direction may be rejected, modified, or supported, after being tested empirically, to better explain the study problem.

Critical realist methodology accepts "epistemic relativism", which claims that *"one's social position (e.g. class, gender, race, being a researcher, being researched) influences the way one interprets the world, formulates concepts, and made claims about it"* (Fleetwood 2014, p. 185). This renders the inclusion of different stakeholders in the research process as critical. This allows researchers to work with various social actors on different levels, each interpreting the phenomenon in different ways. People with disabilities have unique and invaluable insights into the complexity of their disabled experience, as have for example, carers, parents, and policymakers.

When it comes to exploring the depth of the capabilities of people with disabilities, , qualitative methods or tools such as interviews, focus groups, and participant-observation are well suited for this purpose (Haig & Evers, 2016; Sayer, 1992). As social phenomena or structures are "concept-dependent and thus are not independent from the agents' notion of them" (Zachariadis et al., 2013, p. 863), we need tools that enable the researcher to interact with the participants and see things from their perspectives in the study context. This involves the researcher's interpretations and will require reflexivity from the researchers (Creswell & Poth, 2018);the ability to self-reflect about their biases, values, and personal background, and how these factors influence their interpretations formed during the research.

The choice of what methods to be used would depend on the capacity of methods in gaining different kinds of knowledge on the structures and causal mechanisms (Zachariadis et al., 2013). For instance, interviews may be an effective method to capture the perceptions of participants or their meanings attached to studied phenomena or events, and then to provide multiple interpretations on the studied problem., Participant observation may be useful to identify social structures and understand the meanings associated to such structures (Creswell & Poth, 2018; Lune & Berg, 2017; Sayer, 1992). However, the source of data in critical realist research is not necessarily limited to these tools and may need to consider the ones from documentation and archival records (e.g. reports and statistical data) (Fleetwood, 2014). Such quantitative data can help to determine regularities and patterns (e.g. statistic data on access and availability of resources and services to people with disabilities or rate of their participation in social activities), that may contribute to identifying research problems or directions.

4.5.2. Data analysis

Abduction and retroduction/retrodiction are the foundational modes of inference in critical realist analysis (Danermark et al., 2019). Abduction, a creative form of reasoning coined by Peirce (1955), involves redescription or recontextualisation. This means to put an event or social phenomenon in a different context to give it a new meaning. In social science, it re-describes the studied event or phenomenon through various available theories to produce all plausible explanations for the phenomenon.

Retroduction, on the other hand, is a reasoning process coined by Bhaskar (1978). Oliver (2012) views retroduction as a form of abduction with a question "what makes this phenomenon possible?". To answer this question, critical realists often seek structures and mechanisms that would cause the phenomenon to happen. This form of reasoning thus moves from a description of some phenomenon to a description of necessary contextual conditions for a causal mechanism to take effect and to result in the phenomenon observed. In order words, it intends on *"going back from, below or behind"* the observed events to identify what makes them happen (Houston, 2010, p. 82).

Whilst retroduction is often adopted in theoretical enquiries, retrodiction is more applicable to applied research. In retroduction, the researcher lacks the knowledge of causal mechanisms that give rise to the studied phenomenon, and therefore, tries to identify causal mechanisms using the available theories. By contrast, in retrodiction, the researcher is relatively knowledgeable of the mechanisms and wants to use it to explain the phenomenon under investigation (Bhaskar et al., 2018). Retrodiction, in this sense, is inference from effects to causes or the event of investigation to antecedent states of affairs or events using the available explanatory knowledge. Mingers (2014) notes that absences and omissions can be considered as causes; exploring what is missing in a social context can give us some ideas of why and how the event does or does not happen. Danermark et al. (2019) further comment that in retrodiction the researcher tries to investigate how different mechanisms interact to cause the studied event. In practical research in the social world, retroduction (i.e. retroductive theoretical discovery of mechanisms) and retrodiction (i.e. retrodictive application of these theories) are often related and operate in tandem (Bhaskar, 2016; Bhaskar et al., 2018).

In practice, some scholars indeed suggest using the existing theories (Fletcher, 2017; Maxwell, 2012) or inductively drawing from the data (Craig & Bigby, 2015; Oliver, 2012) to identify structures and causal mechanisms. In data coding, the former often starts with theoretical pre-understanding or concepts to construct the codes from the data while the later, associated with the grounded theory approach, generates the codes from the collected data.

When it comes to researching the capabilities of people with disabilities, it is critical to ask "what causes a capability to be actualised?", or, "What properties/conditions must exist for a capability to be actualised?". At this stage, various theories from medical, social or cultural perspectives can help to dissolve the studied capabilities into structures and mechanisms (i.e. resources, individual and external conversion factors), that accordingly may produce different explanations to the studied capabilities. During this retroductive process, being acknowledged that all explanations are fallible but not equally fallible (i.e. each may have particular strengths and weaknesses), the researcher may have to move between theory and evidence (i.e. abstraction and concretisation) to find the most plausible explanation for the studied capabilities. In other words, some structures and mechanisms may have more explanatory power than others in addressing the studied capabilities. This may lead to eliminating some explanations and supporting others. In practice, the retrodictive moment happens when the researcher empirically investigates how structures and mechanisms are manifest in concrete contexts (Danermark et al., 2019). More specifically, s/he tries to apply the explanatory knowledge of the structures and mechanisms (derived from the retroductive process) to explain how a capability is actualised in a specific context.

As a social phenomenon is examined in open systems, characterised by both complexity and emergence, Bhaskar (2016, p. 82) also emphasises that understanding the operation of a structure or mechanism is not independent of its context. He then emphasises the importance of relating mechanisms not only "back to explanatory or grounding structures, as in the theoretical natural sciences, but also to context or field of operation". Drawing on the idea of Pawson and Tilley (1997) on an explanatory combination of mechanisms that produce outcomes in concerned contexts, Bhaskar (2016, p. 80) raises the need for critical realists to think of "a context-mechanism couple, C + M, and thus of the trio of context, mechanism, outcome (CMO), or more fully the quartet composed of context, mechanism, structure and outcome (CMSO)" when analysing and explaining a phenomenon in the social field.

A number of scholars have developed various procedures in critical realist data analysis (Arroyo & Åstrand, 2019; Craig & Bigby, 2015; Danermark et al., 2019; Fletcher, 2017; Houston, 2010; Oliver, 2012). For instance, Danermark et al. (2019) suggest an analytical process of five stages, that moves from concretisation to abstraction and then back to concretisation, in explanatory research:

- Stage 1 – *description* – requires detailed descriptions of the phenomenon being studied using the participants' meanings or views and the study contexts;
- Stage 2 – *analytical resolution* – the studied phenomenon is dissolved into various components;
- Stage 3 – *abduction/theoretical redescription* – the components identified are interpreted through the initial conceptual frameworks and theories and these various theories are compared, evaluated, and possibly integrated to provide explanations to the studied phenomenon;
- Stage 4 – *retroduction* – is closely related to stage 3 in research practice and aims to identify possible causal mechanisms of the studied phenomenon;

- Stage 5 – *retrodiction and contextualisation* – aims to judge the explanatory power of the possible mechanisms and empirically examine their relationships and interaction that give rise to the studied phenomenon in a certain context.

These stages are not necessarily in a chronological order but can be intertwined. This process can also be iterative to allow for greater explanation, especially when researchers have to go back to the field to collect more data to verify and refine their understanding.

4.6. Conclusion

To conclude, the capability approach is viewed as an effective tool to describe and evaluate social inequalities. However, when it comes to explaining such inequalities, the capability approach needs to be supplemented by a philosophical paradigm with explanatory power. Critical realism is considered well suited for this purpose. With its stratified ontology (i.e. empirical, actual and real levels), capability is located at the actual level and fuelled or constructed by structures and causal mechanisms which are located at the real level. When a capability is actualised, it can be observed in the form of an achieved functioning. In this sense of conceptualising the capability, it is argued that the aims of capability research should not only be limited to describing the capability or inequalities of capabilities at the empirical level but also explore the causal structures and mechanisms that give rise to those phenomena.

While agency is a critical concept to understand human capability, especially of people with disabilities, it is often overlooked in capability studies adopting positivist and constructivist paradigms. Sen (2009) emphasises that to understand human agency, it is important to learn about people's social contexts and relations. In critical realism, the existence of the agency-structure is acknowledged. Human agency is influenced by social structures but human agents themselves also have power to act in order to transform the social structures that enable their agency. Critical realists also view agency as relational, which gives rise to the concept of 'collective agency' - focusing on the collectivity or cooperation of people in taking actions. This type of agency is indeed helpful in understanding the capability of people with severe disabilities.

With its potential for multiple methodologies, critical realists have flexibility in selecting research methodology depending on the research questions and direction of investigation (e.g. level of reality). For inquiries related to explaining human capabilities or exploring the root causes of capability inequalities, a qualitative methodology can be suggested to be better suited than a quantitative one. With the help of a retroductive process, a methodological foundation for critical realist research, the root causes for the studied capabilities or inequalities can be revealed, and accordingly, more effective interventions and solutions can be proposed to address such inequalities. This will also pave the way for social actors including researchers and practitioners to move from facts to actions for social change or transformation.

This chapter highlights the importance of philosophical research paradigms in doing research. It, accordingly, suggests critical realism as an appropriate research paradigm in researching the capabilities of PWD and then provides a methodological road map to this end. The following chapter (Chapter 5) adopts a critical realist case study approach to research the capabilities of PWD in dealing with disasters.

CHAPTER 5. AN EMPIRICAL EXPLORATION OF THE CAPABILITIES OF PEOPLE WITH DISABILITIES IN COPING WITH DISASTERS

5.1. Introduction

Although people with disabilities (PWD) are disproportionately affected by disasters, research on disability and disasters has remained scarce to date (Alexander et al., 2012; Stough & Kelman, 2018; Wisner et al., 2004). 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 disaster (Fjord & 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 & Hemingway, 2007; Stough et al., 2016). The proponents of this social perspective contend that the pre-existing 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 (Drabek, 2018; Tierney, 2014a; Wisner et al., 2004). Priestley and Hemingway (2007, p. 25) noted that *"Just as disability is not the 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 & 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 communes[19] 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.

5.2. 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 fulfil 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 utilisation 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 categorised into individual

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[19] A commune is the smallest unit in the three-level administrative divisions of Vietnam.

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 (Mitra et al., 2017; Sen, 1992, 1999). 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) recognises the interplay between hazards and social, economic, and political arrangements/conditions in leading to human disasters.[20] 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.

United Nations Development Programme (UNDP) claimed that disasters play a role in eroding human development achievements and that the disaster risk people face is greatly influenced by their capabilities (UNDP, 2014). 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 pre-exists in society and is revealed and exacerbated by hazards. This includes a lack of access to, and equal opportunity for, acquiring safe

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[20] 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.

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 centres. 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 disaster.

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 functionings (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 (Smith et al., 2012; Wisner, 2002).

5.3. 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 Organisations[21] (DPOs) of Quang Tri Province and Thua Thien Hue Province and Malteser International,[22] a nongovernmental organisation 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 hours. The FGDs focused on understanding the local hazard profile, what PWD are capable of doing or 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 semi-structured 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 organisations (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 Organisations, the Vietnam Red Cross, and nongovernmental organisations (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 categorisation 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 minutes. The interviews aimed to gain more understanding of the local disaster risks, structural forces such policies, political structures,

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

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

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, 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 actualised?"

5.4. Setting the scene

The two study communes are located in the central region of Vietnam (Figure 5-1). 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 5,576 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 6,530 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.

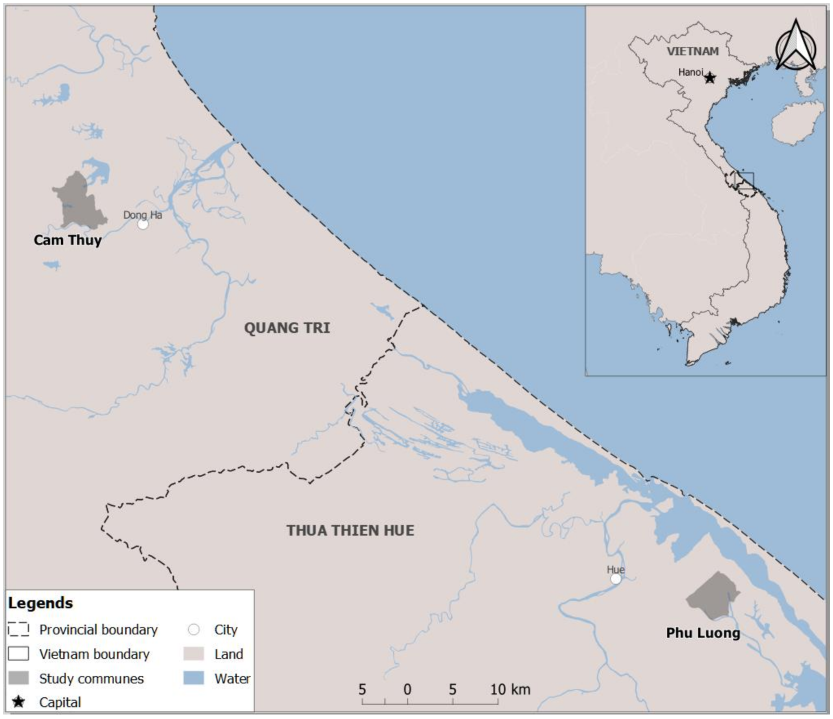

Figure 5-1. Locations of the two study communes in Vietnam – Cam Thuy Commune, Quang Tri Province, and Phu Luong Commune, Thua Thien Hue Province

(Source: Khanh Ton 2020)

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 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 summarised in Table 5-1.

Table 5-1. Hazard profiles in Cam Thuy and Phu Luong Communes, Vietnam, 1983–2017

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 diarrhoea) • 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

Source: Interviews and focus group discussions (FGDs) in 2018.

5.5. 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 summarised in Table 5-2. This article does not attempt to describe all the capabilities identified. Rather, it endeavours 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.

Table 5-2. Main capabilities to reduce the impacts of disasters valued by people with disabilities in Cam Thuy and Phu Luong Communes, Vietnam

Goods and Services	Individual Factors	External Factors	Capabilities that People with Disabilities Value in Coping with Disasters
• Sources of water: River, ponds, wells, rainwater, pipelines, or bottled water from local shops • Water filters • Water containers	• Attitude • Financial capacity	• Water supply service: Inappropriate water treatment and poor management; transparency in management/governance • Support from external organisations (for example, water tanks, pipeline network extension)	Having clean water
• Medicines • Local pharmacies • Local clinic services • Access to clean water	• Health conditions • Attitude • Knowledge	• Accessibility of the local clinic service • Policies (for example, free health insurance for people with disabilities and poor households) • Family support	Being healthy
• Land • Training services • Agricultural extension services • Loans	• Health conditions • Knowledge and skills • Self-stigma	• Stigma and discrimination • Livelihood project • Competency of agricultural staff • Market prices • Weather and pests • Policies and programs for poverty reduction • Accessibility of workplace • Support of local Disabled People's Organisations • Family attitude and support	Engaging in income-earning activities (for example, employment, farming)
• Loans • Concrete houses or entresols • Materials for house retrofitting	• Health conditions • Attitude	• Social support (for example, neighbours, Youth Union) • Policies (for example, to support the poor to access loans)	Being sheltered safely at home
• Commune evacuation centres • Safe houses of	• Health conditions • Risk	• Family attitude and support • Family/caregivers: Skills to communicate with people with	Being mobile / evacuating to safe

neighbours or relatives • Means of transport	knowledge • Self-stigma	intellectual/psychosocial disabilities • Stigma and discrimination • Social support (for example, neighbours, Youth Union) • Accessibility of evacuation centres • Disability inclusion in disaster response plan	places
• Local groceries • Food supply in evacuation centres	• Health conditions • Attitude • Adaptive diet	• Social support (for example, buy food from local groceries on credit or borrow food from neighbours) • Relief support from government and nongovernmental organisations	Being nourished

Source: Interviews and focus group discussions (FGDs) in 2018.

5.5.1. 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 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 centres or their neighbour’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.

5.5.2. 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, ploughing a field, working as builders, and so on) and retrofitting their house or moving heavy items to the entresol[23] (Figure 5-2) 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 centres or neighbouring 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 emphasised that PWD could do many preparedness tasks by themselves before a flood rather than waiting for external help. In some cases, a lack 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

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[23] 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.

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 neighbours or the commune response team for help in household preparedness tasks and evacuation, although their neighbours 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.

5.5.3. 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 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 organisations 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 worshipers have to stand or kowtow (Khanh & 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 (Figure 5-2). This was a significant challenge for PWD's self-evacuation in times of disaster. 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/QD-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 organisations led to poor mobilisation 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.

(a) (b) (c) (d)

Figure 5-2. Some factors that prevent the actualisation of the capabilities that people with disabilities (PWD) value in coping with disasters in Cam Thuy and Phu Luong Communes, Vietnam.

Note: (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 centre.

(Photographs by Khanh Ton, 2018)

Social support from families, neighbours, and civil society organisations 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 organisations, 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. Neighbours 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 Organisations and leadership was raised as one of the most important barriers for realising 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, organising 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.

5.6. 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 (UNDP, 2019). In this study, many PWD, especially those who are under-resourced, had challenges in securing basic capabilities, not only in times of disaster 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 disaster. In terms of safety or healthcare for PWD, it is not a question of how many evacuation centres or clinics have been built in the area but of how PWD access and benefit from these services. In this sense, the process of utilising 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 actualisation 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 centres and limited disability inclusion in disaster response plans in Phu Luong significantly hindered PWD from achieving evacuation and safety in times of disaster. 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 disaster 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 disaster 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 (Duong et al., 2008; Hunt, 2005). 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 stigmatising 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 neighbours who can help them access resources or convert resources to their valued capabilities. Foster and Handy (2008) call this an "external capability" that emphasises 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 disaster, PWD can stay in their neighbours' houses if their own houses are not safe. In this situation, their neighbours 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 actualise 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 socialising or participating in social activities in their communes. Corrigan (2014, p. 18) views this process as "self-stigmatisation," which describes *"the individual's internalisation 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 stigmatised 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."*

5.7. 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 disaster

s. However, in contrast with social disability models and social vulnerability theories in disaster research (Stough & Kelman, 2015, 2018), the findings of this study recognise the role of individual factors such as pre-existing 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.

This chapter basically reveals the capabilities that PWD value in dealing with disaster. It also uncovers the important factors that give rise to the actualisation of these capabilities. However, the question is then "so what?", or more specifically, "how can these capabilities be achieved?" and "by who?". These questions will be addressed in the following chapter (Chapter 6) that focuses on the human agency of PWD and their participation in decision-making processes.

CHAPTER 6. HUMAN AGENCY IN DISASTER RISK REDUCTION: THEORETICAL FOUNDATIONS AND EMPIRICAL EVIDENCE FROM PEOPLE WITH DISABILITIES

6.1. Introduction

People with disabilities (PWD) are among those at the greatest risk in the face of disasters (Kelman & Stough, 2015). They are more likely to suffer or die, and to acquire new disabilities than people without disabilities (Alexander et al., 2012; Twigg et al., 2011). Craig et al. (2019) explored numerous explanations for their vulnerability to disaster; for instance, poverty, stigma and discrimination, limited access to risk information, limited knowledge and skills of stakeholders of how to support PWD, and more importantly ignorance of stakeholders on knowledge and skills that PWD can contribute to disaster risk reduction (DRR). These factors, accordingly, may lead to or exacerbate the exclusion of PWD in DRR-related decision-making processes.

People with disabilities have often previously been considered as vulnerable and as passive victims in the face of disasters (Wisner, 2002). In recent research, the capacity/ies of PWD in disasters has been recognised through the concept of agency, a notion widely used in the theories and practice related to social change (Clark et al., 2019; Craig et al., 2019; Crocker, 2008; Ducy et al., 2012; Heinicke-Motsch & Sygall, 2003; Kelman & Stough, 2015). However, the meaning of 'agency' in disaster research has seldom been clarified and is often collapsed into individual capacity/ies such as knowledge, skills, creativity, experience, and creativity (Gaillard et al., 2019; Wisner et al., 2004). In the same vein, participation in decision making has long been recognised as a crucial means for people, particularly those at risk, to address their deprivation and social inequalities and accordingly to effect social change for reducing their disaster risk (Maskrey, 1989; Wisner et al., 2012). Little research, nonetheless, has examined the link between their agency and participation in decision-making processes that affect their well-being and safety in times of disaster.

Drawing on the capability approach (CA), this paper examines the agency of PWD and explores how their agency is exercised through participation in decision-making processes to achieve their safety in times of disaster. The research was conducted in conjunction with a project funded by an international non-government organisation (NGO), Malteser International, whose aim was to expand the participation of local people including PWD in local DRR processes in Cam Thuy commune[24], Quang Tri province, Vietnam.

6.2. Literature review

The capability approach was developed by Amartya Sen in the 1980s (Sen, 1992, 1999). Sen sees human life as composed of activities and states, namely functionings, such as being healthy, being well nourished, avoiding morbidity or being employed. While functionings are considered as the achievement of valuable activities and states, 'capability' is viewed as a real opportunity that individuals have in order to achieve functionings that they value (Sen 1992). The achievement of valuable functionings depends not only on the availability of, or access to, resources but also on 'conversion factors'. Resources could be goods or services that have certain characteristics to enable functioning, whereas 'conversion factors' refer to the degree in which a person can transform a resource into functionings that she/he values (Robeyns, 2017). Conversion factors can be individual or environmental. Individual factors are intrinsic to the person (health conditions, sex, age, literacy level, and attitude) while environmental factors are extrinsic to the person (stigma, social network, markets, policies, and accessibility of infrastructure).

Sen (1992) argues that development should aim to expand human capabilities as well as human agency for people to live the life they value. He relates agency to people's ability to realise and pursue goals their values and have reason to value. These goals may or may not relate to her/his own well-being, which is normally viewed as 'wellness', 'personal advantage', or 'personal welfare' of one's being (Sen, 1993). Sen (1992) insists that agency is only achieved when people succeed in pursuing their considered goals.

Sen (1992, p. 58) distinguishes between "realised agency success" and "instrumental agency success". The former one refers to the achievement of one's goals regardless of his/her role during the process of realisation while the latter requires the person to play an active role in this realisation. 'Realised agency' implies the vital role of social structures such as institutions and social networks in the realisation of one's goals. For example, through his/her carer, a person with a severe disability can realise the capabilities of being healthy or being

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[24] A commune is the smallest unit in the three-level administrative divisions of Vietnam.

nourished (despite his/her limited contribution or participation into this realisation or in this decision making process). Indeed, agency is relational (Archer, 2002). The agency of PWD, especially those with severe cognitive disabilities, is seldom recognised due to their limited capacity to conceive their own good or set their own goals and to act on them by themselves (Boyle, 2014). It is, however, argued that agency is not always "dependent on the autonomous actions conceived and executed by a singular individual, but rather are more social and relational" (Kittay & Carlson, 2010, p. 153). For instance, people with cognitive disabilities may be engaged in an interactive process of assistive thinking and acting with one or many people, such as caregivers and family members (L. P. Francis & Silvers, 2007). In his later work, Sen (1999) is more concerned with the "instrumental agency" focusing on the "agency role" of people who act alone or in groups to achieve their goals. He defines an agent as "someone who acts and brings about change" (Sen 1999, 19).

In many cases, for the realisation of their goals, individuals need to reproduce or transform society to generate resources or create enabling social arrangements. This task often goes beyond individual agency or control and requires collective actions (Evans, 2002). This leads to the conceptualisation of another type of agency, namely 'collective agency' or corporate agency that has emerged from social relations (Archer, 2002; Bellanca et al., 2011; Crocker, 2008). Crocker (2008, p. 153) defines 'collective agency' as "a process for combining the decisions and agency freedoms of many agents". Bellanca et al. (2011, p. 173) explain that, in 'collective agency', *"the agent chooses the option that, in spite of not always optimising his/her individual position, represents the optimum if taken in conjunction with the options chosen by the others within the team"*.

When human agency is examined in the light of power relations, Rowlands (1997) identifies four types of power: power over, power to, power with and power (from) within. Despite its various interpretations, Vermeulen (2005, p. 12) argues that 'power' can basically be understood as "an ability to achieve a wanted end in a social context". 'Power over' is often owned by those who have control over resources and decision-making processes. This type of power is often associated with negative connotations such as repression, force, coercion, discrimination, corruption, and abuse (Csaszar, 2005). 'Power to' is often regarded as 'individual agency' which can be enhanced by new skills, knowledge, awareness and confidence. 'Power within' means personal self-confidence, self-worth and self-knowledge, including the ability to recognise their 'power to' and 'power with' (Csaszar, 2005). 'Power with' is often understood as 'collective agency' that focuses on individuals' engagement in a collectivity to achieve what they value. Evans (2002, p. 56) argues that forms of organised collectivities such as unions and groups can provide *"an arena for formulating shared values and preferences, and instruments for pursuing them, even in the face of powerful opposition"*. Giddens (1984) notes that power is an intrinsic part of human agency and people as agents are never completely governed by social structures. In practice, to deal with power imbalances, the development strategies often focus on opening up participatory arenas that bring more excluded people into decision making, and on capacity building to increase the types of power to, power with and power within of the excluded people. The combination of the three types of powers would influence and change the 'power over' (Chambers, 2006).

Similarly, Sen (1999, p. 11) contends that development should provide social arrangements that enable individuals to be "active agents of change, rather than passive recipients of dispensed benefits". This underscores the importance of people having control of their own life by active participation in decision making rather than being passive recipients of someone else's decisions. Indeed, in development and disaster studies, enhancing the participation of PWD is always suggested as a crucial means to address disability issues (Alexander et al., 2012; Smith et al., 2017). While the meanings of participation are diverse, it can be viewed as an end, that is 'being involved', and as a means, that is 'having people's voice heard' and 'being empowered to transform their voice into actions' (i.e. being able to decide and act for themselves) (Cornwall, 2008).

As an end, participation can be viewed a capability of being involved and is influenced by access to resources and a range of conversion factors. For instance, a person with disabilities may not be able to fully participate because of his/her impairments of mobility or health conditions (i.e. personal factors), lack of assistive devices (i.e. resources), or inaccessible building, discrimination, and disability-exclusive policies (i.e. environmental factors). As a means to an end, participation is often regarded as a process in which people exert their agency, individually or collectively, to address deprivation and to act and bring about changes in development policy and/or practice (Clark, 2006; Cleaver, 2004; Goulet, 1989). Several levels or modes of participation have been identified by, for example, Arnstein (1969), Pretty (1995), White (1996) and Crocker (2007) – each level is equivalent with the extent of agency or power that agents can exert to make influence over decision making, or to induce changes. For instance, in her classic ladder of citizen participation in decision-making, Arnstein (1969) defined eight rungs: (1) Manipulation, (2) Therapy, (3) Informing, (4) Consultation, (5) Placation, (6) Partnership, (7) Delegated power, and (8) Citizen control.

Each rung reflects a level of power that people have in decision-making, ranging from no power to full power (or control). Rungs (1) and (2) are described as non-participation and thereby no power to engage in and influence the decision-making. Rungs (3), (4) and (5) are viewed as levels of tokenism that allow people to hear or have a voice but the right to decide is still on powerholders. The top three rungs – (6), (7) and (8) – reflect levels of power that people have to engage in, to negotiate, and at the top of the participation ladder, to control the decision-making.

6.3. Research design

This study adopts critical realism as its research paradigm to investigate the agency of PWD, in relation with social structures, to face disasters. In this paradigm, human agency and social structures are ontologically distinct and disability experience is not reducible to either agency or structures; rather, is produced from their interaction (Watson, 2020). Furthermore, critical realism is compatible with a variety of research methodologies such as grounded theories, ethnography, and case study (Edwards et al., 2014).

With its strengths in addressing the ‘why’ and ‘how’ questions, a case study design (Yin, 2018) was adopted in this research. The field data collection, drawing on focus group discussions (FGDs) and interviews with PWD and stakeholders, took place in Cam Thuy Commune, Quang Tri Province, Vietnam from March to July 2018. These data collection methods were reviewed and approved by the University of Auckland Human Ethics Committee. The participants with disabilities were identified following the government categorisation of disability. Their impairments and health conditions are physical (for example, myasthenia, limb amputation or limbless, muscle atrophy, clubfoot).

Two FGDs were conducted, one with 11 people with physical disabilities (3 females and 8 males) and the other with 8 parents/caregivers of people with intellectual/psycho-social disabilities (5 females and 3 males). Each FGD lasted from 4 to 6 hours. Semi-structured and unstructured interviews were conducted with 7 people with physical disabilities (2 females and 5 males), 5 parents/caregivers (4 females and 1 male) of people with intellectual/psycho-social disabilities, and 17 representatives (8 females and 9 males) from government organisations (e.g. local government officers in charge of social work, health workers, village leaders and members of Disaster Risk Management Committee), Quang Tri Disabled People’s Organisation (DPO), Vietnam Red Cross, and non-government organisations (e.g.

Malteser International, Action to the Community Development Center, and Sustainable Rural Development). Each interview took 30-120 minutes. The topics of the FGDs and interviews revolved around understanding the local hazard profile, their valuable capabilities to cope with disasters, how they achieve these capabilities, and how they participate in and influence the decision-making processes for achieving their valuable capabilities.

The lead author also participated in local DRR activities such as disaster drills, DRR planning, and communication meetings, which allowed him to build up trust with local people and have informal conversations with locals 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 content analysis with the steps suggested by Schreier (2014) was conducted by the lead author. The data analysis aimed to understand how the capability of participation as an end can be actualised and how the agency of PWD is exerted in participation through the lens of power. The coding frame was developed mainly from the capability and power literature. The data from interviews, FGDs and field notes were coded deductively with flexibility using NVivo 12; that is, the coding frame was modified and added with new codes/subcodes during the coding. Under the category of participation as an end, the main codes were resources (with subcodes, for examples, vehicles, money, transport services), internal conversion factors (health conditions and attitude), and external conversion factors (public stigma, accessibility, and social support). Under the category of participation as a means, the main codes were power within (self-stigma, confidence), power to (knowledge, skills), power with (engagement in civil society organisations, capacity building), and power over (policy, governmental attitude/mindset).

6.4. An overview of the study context

Vietnam is prone to diverse types of natural hazards, among which storms and floods are generally the most frequent and cause significant impacts on people's lives (Dat et al., 2018; Nguyen & Tran, 2016). Over the last two decades, Vietnam has been shifting its DRR focus from response and relief to prevention and preparedness. One of the government initiatives that reflect this movement is the National Project on Community-Based Disaster Risk Management (CBDRM) (the Project 1002) approved in 2009 (IFRC, 2014). The Project 1002 aims to improve community awareness and implementing CBDRM in 6,000 disaster-prone communes from 2009 to 2020. The concept of community in the CBDRM Project 1002 refers to the people who live in the same area such as communes or villages (DMPTC, 2014).

While the Project 1002 emphasises the inclusion of local people, particularly at-risk groups, in CBDRM activities such as risk assessment and DRR planning, that of PWD remained limited in the implementation of the Project 1002 and CBDRM projects supported by NGOs in Vietnam (DMPTC, 2011; Malteser International, 2013b). Malteser International (MI) is an international NGO that has been promoting disability inclusion in CBDRM in Vietnam since 2012. In 2016, MI collaborated with the Disaster Management Policy and Technology Center (DMPTC) – a government agency under Vietnam Disaster Management Authority – and the Quang Tri Disabled People's Organisation to implement a 2-year project, namely "Widening the participation of people with disabilities in community-based disaster risk management" (the DiCBDRM project) in four communes in Quang Tri and Quang Ngai provinces. Cam Thuy (Fig. 1) was one of these four project communes (Malteser International, 2016).

This DiCBDRM project aimed to improve the capabilities of government and non-government actors in implementing DiCBDRM activities and increase the resilience of local communities, especially PWD, to disasters (Malteser International, 2016). The DiCBDRM project thus attempted to change the government staff's attitude (i.e. realising the importance of disability inclusion in DRR) and equipping them with knowledge and skills to implement a disability-inclusive community-based disaster risk management (DiCBDRM) model through a range of training (e.g. project management, CBDRM with a focus on disability inclusion in all of its steps, policy advocacy for DRR, risk communication, and first aid with additional skills for PWD). It then advocated with the local government for the inclusion of representatives of PWD into the commune technical support group and village support groups who were in charge of implementing the DiCBDRM at the commune level. With the financial and technical support of MI, these groups opened up arenas for local people, including PWD, to participate in DRR-related decision making processes such as disaster risk assessment (through community/group meetings and interviews) and DRR planning. PWD were also included in the implementation of local DRR activities such as disaster drills and risk awareness-raising campaigns.

Cam Thuy (Figure 6-1) was frequently exposed to storms and floods. Its total population as of 2018 is 5576 people, 174 of whom are people with disabilities (86 males, 88 females)

(Cam Thuy People's Committee, 2018). The majority of PWD live with mobility, intellectual, and psycho-social disabilities. The majority of PWD, particularly those with intellectual and psycho-social disabilities, do not have jobs and live dependently on their family and government social protection. However, the access to health insurance and disability allowances (that mainly meet basic food needs) is only limited to people with severe and extremely severe disabilities (Banks et al., 2018; Palmer et al., 2015). Many households with PWD are poor according to the criteria of the Vietnamese government.

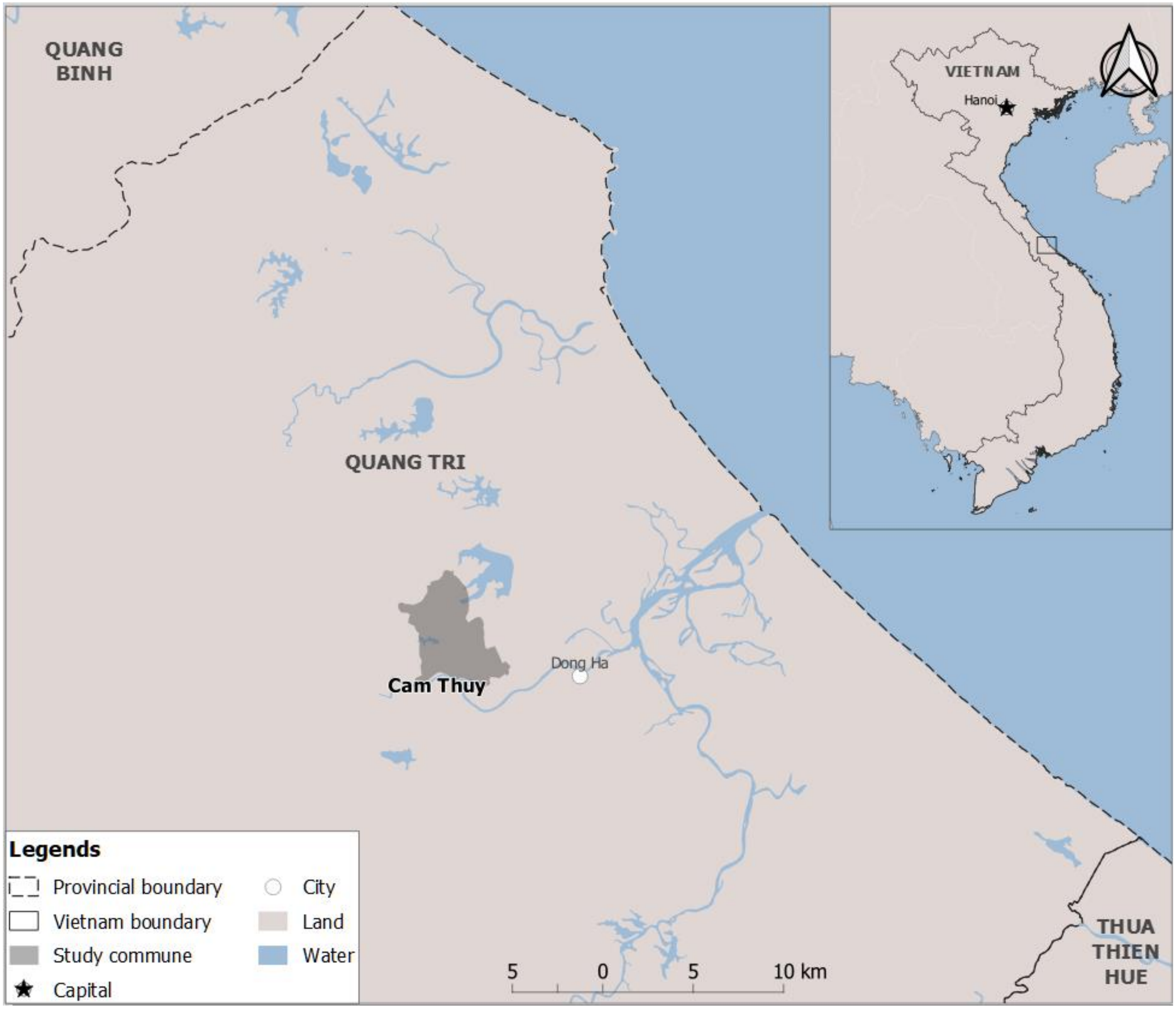

Figure 6-1. Location of the study commune

(Source: Khanh Ton 2020)

6.5. Findings

To date, there has been a diversity of perspectives on participation (Cornwall, 2008; Hammel et al., 2008). However, to understand the concept of human agency and its interrelationship with participation, this paper focuses its analysis on participation in decision-making processes and interprets this concept from two aspects: an end and a mean through a capability lens. As an end, it is simply understood as involvement in decision-making processes such as local DRR planning or development planning meetings. As a mean, it is viewed as a process in which PWD alone or in groups exert their agency (i.e. raising their voice, influencing the decision making and transforming the decisions into actions).

6.5.1. Participation as an end

The research findings indicate that the top-down planning in DRR and socio-economic development has long been dominant in Cam Thuy. Local people including PWD were rarely involved in such planning processes before the project. During the project, the PWD’s participation, despite being promoted in the project activities, remained limited in the local development planning process. The participants revealed a variety of factors that influenced the engagement of PWD in local decision-making processes. Drawing on the CA, these factors are categorised into the three following groups – resources, internal conversion factors and external conversion factors – in order to examine how their capability for participation is actualised.

6.5.1.1. Resources

Many participants attributed their limited participation in decision-making to a lack of resources such as means of transport or money to pay for their travel to the meeting venue. It was observed that many people with mobility disabilities could not afford an appropriate vehicle such as wheelchairs, handcycles, and three-wheel motorbikes due to their limited financial capacity. Some people living with severe mobility disabilities and in poverty received prostheses, wheelchairs, and handcycles from external charity organisations and individuals. The bus services were not accessible for PWD and not available within the commune. In most of the cases, those with severe mobility disabilities often rely on their relatives and friends or use local motorbike taxi services to travel within and beyond the commune.

6.5.1.2. Internal conversion factors

The participants recognised the role of health conditions in enabling PWD to take part in a meeting. For instance, poor health conditions did not allow some PWD to stay long in a meeting. Hearing and speech disabilities may prevent PWD from accessing the information or engaging in a discussion.

Many participants raised self-stigma as a barrier for PWD to participate in a meeting. This self-stigma was associated with disability or poverty status and accordingly made PWD self-exclude from participating in social life as well as decision-making processes.

> *... 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 FGD participant with physical disabilities]*

> *... Thinking that I am disabled, I cannot do anything… so I should not participate as I don't want to be a burden for them [the local government and other people]... [A participant with a mobility disability]*

Reflecting from her previous experience in other projects, a NGO participant also commented on the attitude of PWD

> *...At times they overthink of money and they get used to getting paid for their participation… if no compensation is offered for their participation, an answer would be 'we had no money to pay for the motorbike taxi'.*

However, this raises the question of whether PWD realised that their participation was worth their effort or resources they spent, or that the benefits brought by participation were less valued than other capabilities. For instance, a participant with a mobility disability commented

> *...PWD are often the poor... they have to work so do not have time to participate… Also, they are busy with their housework.*

Some participants believed that participation significantly depends upon the will of PWD regardless of a lack of resources such as means of transport. They claimed that if PWD's desire for participation was strong enough, they would manage to travel to the meeting venue on foot or ask for help from relatives and friends.

6.5.1.3. External conversion factors

The participants emphasised the importance of an enabling environment to have PWD involved in decision-making processes. Many participants viewed public stigma, such as ‘disability is useless’ or ‘PWD are vulnerable’, as a significant factor that led to underestimating the contribution of PWD into DRR and excluding them from decision-making processes.

> *…And when asked why not let PWD participate [in DRR], they [the local government staff] kept saying that if PWD were weak, how could they participate? [A NGO participant]*
>
> *…If they [the government staff] respect me, even though I am old, they can allow me to be there [at the watch office of the committee for disaster risk management] to give some help. It is a share that allows PWD to see that they are still valuable in the community… I think it [denial of participation] is offensive. [A participant with a physical disability]*

It was observed that local meetings were often conducted in communal or village halls. However, the access to many village halls remained challenging for PWD using wheelchairs due to physical barriers (e.g. no ramps and inaccessible toilets). Also, many of the village roads were not sealed and this challenged people with mobility disabilities to travel on foot or wheelchairs to the halls, particularly on rainy days.

While the involvement of people in wheelchairs faced challenges related to the physical barriers of the existing infrastructure, it was also the case for people with hearing and speaking disabilities due to the lack of sign language interpreters, not only in the commune but also in the whole province, and the limited funding and political will of the local government. Thus, they were excluded in village meetings. Within the DiCBDRM project, MI employed sign language interpreters from other provinces at additional expense to enable the participation of people with hearing and speaking disabilities in DRR activities such as risk assessment, DRR planning and communication.

Social support from relatives and friends was also identified as an important factor for PWD’s participation. For instance, PWD can ask their relatives or contact their friends who go to the same place to give them a ride. However, some participants contended that the relatives were not always available, able, or willing to support PWD. For instance, a participant with a physical disability from the club of parents of children with disabilities commented

> *…Inviting her [a woman with a mobility disability] to meetings but she never shows up…Being a spinster, she often feels embarrassed… and thus it's mostly her mom who goes to the meetings. Her family is also poor and has only an old bicycle. Her mom is ill and weak. Riding the bicycle alone is already a challenge for her, how could she carry her daughter?*

For participation as an end to be actualised, therefore, it is paramount to consider not only resources that PWD possess or can access but also the diverse health conditions (and attitudes) of individuals with disabilities, and accordingly, to create environmental conditions (e.g. non-stigma, non-discrimination, accessibility, and social support) that enable their engagement in decision-making processes.

6.5.2. Participation as a means

In most cases, people participate in a decision-making process not just for the sake of being involved but for achieving other purposes. In the context of disasters, the participants wanted to participate in the local DRR planning for their voices to be heard and their needs included in the DRR plan, which ultimately leads to improving their safety in times of disaster (Bolte et al., 2014; Malteser International, 2013a).

In general, many participants with disabilities valued their participation in risk assessment and DRR planning in the MI project, as through this participation process, some of their valued capabilities for DRR were achieved. For example, the local government assigned people to inform those who were identified to have limited access to early warnings through the TV, radio, and the commune loudspeakers. Similarly, the local government also assigned the members of the commune response team to support those who face difficulties in reinforcing their house and in self-evacuation. The participants revealed various factors that influence PWD's ability to raise their voice and influence decision-making processes.

First, self-stigma was raised as a significant barrier that prevented PWD from raising their voice. This self-stigma was associated with their impairments and low education attainment. For instance, a participant with disabilities shared *"…But because PWD do not know the information, do not know the law, they often have low self-esteem."* Many participants with disabilities thus emphasised overcoming self-stigma as a fundamental step to raise their voice, fight for benefits to which they are entitled, and confront the public stigma.

> *... Only PWD understand PWD. If we don't speak up, no one will speak for us.*
>
> *... We are not obligated to participate but we participate to speak on behalf of other PWD… We want to tell the society about the needs and requirements of PWD.*
>
> *... And I also want to let them know I am able to participate.*
>
> *... Disability does not mean uselessness [Tàn mà không phế].*
>
> *[FGD participants with physical disabilities]*

Many participants claimed the lack of knowledge and speaking skills as factors that hinder the ability of PWD to raise their voice in discussions. For instance, PWD with low educational attainment may have some difficulties in understanding the information and expressing their ideas in a meeting. Some participants also claimed that as most of PWD were excluded or self-excluded from social life, they did not have courage or confidence to speak or give feedback in meetings. It was reported that this fear of public speaking was in part attributed to public stigma or disrespectful behaviours of other people toward PWD.

It is also found that the voice of PWD was often raised through their representative organisations. However, the engagement of PWD in local civil society organisations (CSOs) such as women unions, farmers unions, and elderly associations, remained limited. In addition to supporting PWD to raise their voice, the engagement of PWD in the activities of these organisations was also believed to reduce their self-stigma or improve their confidence.

> *... There are many people [with disabilities] who participated enthusiastically and actively to express their actual needs. Often these people have had the experience of participating in social activities and local CSOs, so they speak boldly in group meetings. The rest [PWD] sat quietly and rarely shared their ideas... Usually, in village meetings, PWD do not speak, only others speak. [A DPO participant]*
>
> *... Invite them to join local CSOs, for instance, women with disabilities can join women unions, farmers with disabilities can join farmers unions, so they can go*

> *to meetings, and have a voice to the government departments. [A participant with a physical disability]*

Many participants particularly emphasised the key role of the local DPO in enabling the effective participation of PWD. They believed that if the DPO is established, the peers of PWD can support them mentally and physically with what they are not good at.

> *... Only when they [PWD] can set up their own organisation, they may have the opportunity to comment… to share their needs... [A DPO participant]*

> *... The effectiveness here is the benefits of the meeting and the improvement of their confidence. [A FGD participant with physical disabilities]*

> *... I think [when he's] out in the community, he [a FGD participant] could not speak. But today, sitting here [at the FGD of people with physical disabilities], he is confident to speak because I am as disabled as he is… he feels protected, so he has confidence to speak. [A FGD participant physical disabilities]*

However, at the time of the fieldwork, the local DPO had not been established due to the organisation development strategies of Quang Tri province that aimed to reduce the government expenditure on human resources through simplifying the government structure. This led to the staff redundancies and the combination of some of CSOs whose operations rely on government funding. As a result, the provincial DPO and other three organisations working for those affected by Agent Orange, PWD and orphans were merged into an umbrella organisation, namely the Quang Tri Association of People with Disabilities, Agent Orange Victims, Sponsoring People with Disabilities, and Protecting Children's Rights. This umbrella organisation was criticised by the participants with disabilities for its nature which is 'for PWD' rather than 'of PWD'.

Some FGD participants commented that having their voice heard did not mean that it was then considered in decision making and transformed into actions. These participants recognised that PWD and the CSOs of which they are members were not always able to influence the decisions of local government. Since many of CSOs in Vietnam, especially mass organisations (e.g. Women's Union, Farmers' Association, DPOs), are established by the Communist Party and rely on the government funding to operate, their role is inclined with supporting the government (e.g. disseminating government strategies or policies to their members and encouraging them to comply). This indeed restricts their autonomy in policy advocacy (Thanh et al., 2015; Wells-Dang, 2014). They thereby often seek support from external organisations such as international NGOs to advocate for policy changes or join in initiatives taken by the international NGOs (Nguyen, 2014). For instance, MI supported the provincial and district DPOs in advocating the local government to include the representatives of PWD in the Committee for Disaster Risk Management (DRM Committee) and the support groups in charge of implementing the local CBDRM and to change the DRR planning approach.

The interviews with NGO staff members indicated that the limited participation of PWD in decision-making processes for DRR was attributed to a lack of knowledge and skills of government staff and lack of funding. While the current policies (e.g. the national CBDRM Project 1002 and Vietnamese Disability Law) have created a legal basis for the participation of PWD in any aspect of life and DRR, many of the local government staff had not been aware of such policies before the project. In addition, several NGO participants shared that planning for DRR has long been top-down and the mindset of the local government staff in reducing disaster risk remained emergency response-oriented. This led the local government staff to beliefs or stereotypes that PWD who are ‘suffering’ from their poor health conditions are not capable of participating in DRR. Such stereotypes were also internalised by local people including PWD and accordingly exacerbated the self-stigma of PWD or eroded their self-confidence and self-esteem.

Hence, the MI project had training for local government staff, especially the commune committee for disaster risk management, on building disability-inclusive CBDRM to provide them with knowledge and essential skills to work with and include PWD in DRR processes, and accordingly advocated for including PWD in local DRR planning (Malteser International, 2016). Despite the efforts of the project in changing the attitude of government staff through both training and practice, some participants believed that the local government staff still had negative stereotypes towards the participation of PWD in decision making.

> *... The government should promote communication and awareness-raising activities about the laws and rights of PWD so that the community understands the line between the two disability issues – that PWD can take care of themselves and humanitarian work. From that point on, don't assume that PWD are just recipients. Especially it is critical to change the perception of leaders, those in power. They need to pay attention to create conditions for PWD to reduce self-*

> *stigma, integrate and participate in community activities. If this can't be done, PWD will always have low self-esteem… in addition to material support, they should have mental support and encourage PWD to participate. At present, their support is mostly charitable and of pity, for example, "we should give them something". [A DPO participant]*

The NGO participants emphasised that changing the government attitude, which has long been grounded in the top-down approach, is a long-term process and hard to achieve within a 2 or 3-year project. Furthermore, as effective participation for PWD may require time and resources, the local government may not be patient and have resources to sustain the participation of PWD in DRR activities initiated by the DiCBDRM project.

A NGO participant, however, believed that the capacity building for PWD and their DPOs might help to sustain the power balance. This was in part achieved through the training and communication activities of the project that provided them with the knowledge of their rights, obligations, and benefits of participation. For example, as observed in the disaster drill, the representative of local PWD was excluded in the meeting of the local DRM Committee though she was officially a member of this committee. When the chairman of the district DPO recognised this, he actively requested the local DRM Committee for including her into the meeting.

6.6. Discussion

The vulnerability of people to disaster is widely viewed as social inequality or failures of a society to bring about the equal distribution of resources to all of its citizens (Stough & Kelman, 2015; Wisner et al., 2004). People with 'vulnerable' labels are often presumed to face resource limitations and other disabling conditions, and accordingly are deemed to be greatly affected by disasters. In disaster studies, PWD have long been viewed as 'a vulnerable group' or 'victims' of disasters (Abbott & Porter, 2013). This perspective is particularly the case for disability research which adopts medical or even social disability models in a disaster context (Fjord & Manderson, 2009; Kelman & Stough, 2015). The medical model-driven research individualises the problems experienced by PWD and hardly address the problems created by the social structures while the social model-driven research favours analysis of social structures that induce the vulnerability of PWD (Ducy et al., 2012; Stough & Kelman, 2018). Stough and Kelman (2015) argue that vulnerability-driven research often overlooks the human agency that constructs the experience of people in disasters. Some scholars recently adopted the concepts of capacity/ies and resilience that recognise the abilities and activeness of people to face disasters (Brown & Westaway, 2011; Gaillard et al., 2019; Kett & Twigg, 2007; Manyena, 2006; Rouhban, 2014). Since local people's lives and livelihoods are directly threatened by disasters, as Delica-Willison and Gaillard (2012) argue, in most cases, they are proactive or motivated in planning and taking DRR actions to protect themselves from disasters. Yet, these concepts are mainly associated with abilities and resources to cope with disasters rather than human agency, individually or collectively, to claim or generate resources by changing social structures for realising their goals in DRR.

Social structures, in this sense, provide frames or conditions for human actions. These structures influence, but not determine, people's actions (Fleetwood, 2008; Sen, 1999). For examples, lack of means of transport, inaccessible infrastructure/facilities, and public stigma (resulting from exclusive policies, budget allocation, and social norms) may restrict PWD's engagement in a decision-making process. Yet, these factors do not determine their engagement, since it, as some participants with disabilities noted, also depends on the will or desire of PWD - whether or not it is strong enough to overcome such limitations or challenges. This will is strongly driven by individual interests or values.

Since human beings have internal capacities such as knowledge, skills, physical abilities, and cognitive abilities (e.g. speech, reasoning, emotionality, memory, desires, reflexivity, and sense of self), they can act on these capacities for their goals (Nussbaum, 2011; Smith & Seward, 2009). These capacities are inherent and can be fostered or hindered through their interaction with the external environment or social structures. As observed in this research, PWD used their internal capacities to claim support from their social network, and to some extent, to overcome disabling conditions (e.g. confronting public stigma) to secure their participation in a decision making process.

However, when it comes to systemic and structural changes in DRR planning procedure (e.g. participatory and disability-inclusive) or organisational structures for DRR (e.g. having representatives of PWD) to claim resources and support from the local government, it may go beyond the control of an individual or the individual agency. In such cases, people tend to engage in a group/organisation to formulate their collective capabilities and collective actions (Ibrahim, 2006; Mascarenhas & Wisner, 2012; Stewart, 2005; Wells-Dang, 2012). These collective capabilities thus emerge from a process of engagement in a collectivity - that affects people's sense of well-being and safety, values and choice, and from collective actions - that take advantage of individuals' resources and strengths to benefit the whole group rather than a single individual. For example, PWD in this study joined the efforts by the DPO and MI to formulate their values and needs, claim participatory spaces, raise their needs, and request support from the local government in order to achieve their valued collective capabilities in DRR such as early warning and early evacuation. The agency in this sense can be perceived as collective and relational.

In most cases, to exert the agency for their valued capabilities in DRR, people need to participate in the decision-making processes such as DRR planning (Alexander et al., 2012; Kett & Twigg, 2007). Participation in this sense can be considered as a means for people to achieve their valuable capabilities. For participation to become a means, however, its 'end' must be secured. That is, PWD need resources and enabling conversion factors (e.g. physical health, cognitive abilities, accessibility, and non-stigma) to secure their involvement in a decision-making process. When it comes to influencing the decision-making, their participation can be viewed as a dynamic negotiation process of power relations between PWD and the local government.

The local government has 'power over' PWD (Mascarenhas & Wisner, 2012; O'Brien et al., 2012). They can use this type of power to deny access to resources or constrain the choices available to PWD for their safety and exclude PWD from DRR processes. However, this 'power over' can be confronted by the agency of PWD in individual or collective forms. The former is understood as 'power within' and 'power to' while the latter is as 'power with'. In contrast with the perspectives that view PWD as 'helpless' and 'reliant', Ducy et al (2012, p. 316) note that when the desire, i.e. 'power within', is sufficiently strong, it can generate 'power to act' in times of disaster. As observed in this study, many PWD had self-stigma which was reinforced by the 'power over'. Notwithstanding, through their involvement in local CSOs and interactions with their peers, PWD enhanced their 'power within' such as self-esteem and self-confidence. Similarly, through their involvement in the DiCBDRM project activities such as training and communication activities, PWD were more aware of the CBDRM, DRR-related legislations and their rights of participation, and thereby enhanced their power to act. Being part of collective actions by the DPO and MI, PWD strengthened 'power with' that enabled them to claim participatory arenas, have their voice heard and influence local decision-making.

While ‘power over’ is often associated with domination, manipulation, or coercion, it can be used for empowerment (Chambers, 2006); that is, the powerful use ‘power over’ to empower. By empowerment, Ibrahim and Alkire (2007) refer to enhancing individual and collective agency and providing preconditions to exert the agency. Chambers (2006) believes that this positive side of ‘power over’ should be utilised through a pedagogy for the ‘power over’ (e.g. workshops and reflection, training to facilitate, or peer influence between the powerful). Some of these strategies were indeed adopted in this MI project and elsewhere (Alburo-Cañete, 2016; Craig et al., 2019; Malteser International, 2014; Mitchell & Karr, 2014) to help the powerful realise that they can achieve their DRR goals (e.g. reducing mortality, damage and loss from disasters) by acknowledging the agency of PWD to protect themselves from disasters provided that preconditions exist and by empowering the PWD to achieve these goals. Civil society organisations, including NGOs and DPOs, indeed play a critical role in this process, such as addressing the issues of power imbalance and participation, bridging government policies and their enforcement, recognising and mobilising local resources and knowledge, and providing technical expertise and additional resources (Nguyen 2014; Thompson 2012). It argues, nevertheless, to change the mindsets of the powerful and institutional cultures requires a large amount of time and resources. Thus, building human agency through ‘power with’, ‘power to’ and ‘power within’ remain necessary for PWD and their organisations to balance the power relations with the powerful.

6.7. Conclusion

The vulnerability paradigm mainly focuses its analysis on social structures and the way these structures create disabling conditions for people’s actions in the face of disasters (Wisner et al., 2012). Human agency and the way it transforms social structures to bring out the outcomes that people value are often downplayed in such an analysis. Focusing on the experience of PWD in disasters, this paper argues that PWD are not and should not be viewed as passive actors in the face of disasters. Their agency can be in an individual form or collective form that arises from the collaboration with DPOs or organisations that work for PWD. In most cases, PWD can use their agency to secure their participation in DRR decision-making processes and induce changes for reducing disaster risk on their lives.

Recognising that PWD have agency to face disasters does not mean that there is no change or support needed for them to cope with disasters. Rather, it should be understood, as Sen (1999) insists, that people should be the agents of their life. That is, they should decide on what is important and needed for them to reduce disaster risk through their genuine participation in DRR decision-making processes, rather than being the “recipient” of someone else’s decision. Therefore, development, if perceived as good social change, should aim to expand human agency. In this sense, society should provide social arrangements for PWD to exert their agency. In turn, PWD use their agency not only to achieve their valuable capabilities for DRR but also to make the social structures more appropriate for the actualisation of their valuable capabilities.

This chapter provides empirical evidence showing that PWD have agency to achieve the capabilities of protecting themselves from disaster. It also raises the need to enhance their agency by promoting their genuine participation in DRR decision-making processes. The following chapter ties together the findings from this chapter and the previous chapter (Chapter 5). It expands the thesis’ theoretical discussions of capability and agency into disaster justice for PWD.

CHAPTER 7. DISASTER JUSTICE FOR PEOPLE WITH DISABILITIES

7.1. Introduction

People with disabilities (PWD) are among those who face many disadvantages and hence are disproportionately affected by disasters (Alexander et al., 2012). For the purposes of this article, disability is defined as an emergence from the interaction between impairments and the socially constructed environment (UN, 2006). Some scholars have recently employed the concept of disaster justice to address vulnerability and disadvantages that people face in times of disaster (Lukasiewicz & Baldwin, 2020; Verchick, 2012). This concept emphasises the failure of institutions and government in providing "vulnerable" people with the protections and resources for their safety in times of disaster (Bankoff, 2018; Verchick, 2012). It is strongly linked to the concept of environmental justice. Jerolleman (2019) regarded environmental injustice as disproportionate distribution of environmental risks and harms among social groups that result from unequal access to environmental goods and to participation in environmental decision-making. Despite the divergence and complexity in the conceptualisation of justice, Allen (2013) identified five ideas or aspects of justice that are relevant to environmental justice: distributive, procedural, cultural, representative and capability. Distributive justice is concerned with the just distribution of goods and the best principles for this distribution. Procedural justice examines institutional processes, particularly the role of government, to the just distribution of goods. Cultural (recognition-based) justice is interested in understanding the influence of social and cultural factors such as class and race on the disproportionate impacts on social groups. Representative justice aims to equal participation in political processes. This participatory parity and recognition often go hand in hand. In other words, the prerequisite for full participation is the recognition of individuals or groups as moral and political equals. Capability-based justice deals with the equality of capabilities or opportunities to lead the life that people value. These aspects of justice have a strong bearing on how people are affected by disasters. To date, however, research that explores disaster injustice faced by PWD has remained scarce.

In disability studies, the capability approach (Sen, 1992) is increasingly adopted to address social injustice for PWD (Robeyns, 2017; Terzi, 2010b). Capability is also a key concept adopted by Verchick (2012) to address disaster injustice faced by at-risk people. This paper hence employs the capability approach to examine distributive injustice that PWD face in coping with disasters. It also discusses procedural justice with a focus on the agency of PWD and their participation in decision-making processes concerning disaster risk reduction (DRR). This article is a conceptual discussion drawing on previous research and positioning the capability approach as an organising concept for response to disaster justice for PWD. While its focus is on the distributive and procedural aspects of disaster justice for PWD through the capability lens, the other aspects such as representation and recognition are also used to elaborate the distributive and procedural justice. To these ends, the article firstly reviews the concept of inequality – which is construed as a root cause of injustice (Verchick, 2012) – and its relation to the vulnerability of PWD to disasters. Following this, it focuses on an overview of the capability approach and examines the capability-based justice for PWD in the context of disasters. The concept of agency is then used to discuss how full participation and agency can contribute to the procedural justice for PWD in DRR.

7.2. Inequalities of resources and the vulnerability of people with disabilities to disasters

Inequality is defined as the condition of being unequal (Webber, 2017). It is often reflected in relation to qualities such as well-being, health, income, wealth or social status. In disaster studies, inequality is often interpreted in diverse ways. It is one of the focal points in the vulnerability paradigm. Under this paradigm, it is observed that people are unequally affected by disasters, which explains the unequal distribution of vulnerability levels among social groups. Cutter et al. (2003) consider inequalities as a root cause of vulnerability and frame it from two aspects: social and place. Social inequality refers to “social factors that influence or shape the susceptibility of various groups to harm and that also govern their ability to respond”, whereas place inequality is “characteristics of communities and the built environment, such as the level of urbanisation, growth rates, and economic vitality, that contribute to the social vulnerability of places” (Cutter et al., 2003, p. 243). Ge et al. (2019) classify inequality into economic (unequal income and wealth), social (unequal access to social services and social positions), health (variations in health conditions due to age or other factors) and cultural (inequalities derived from beliefs, customs and cultures). The boundary between these inequalities is not always unequivocal.

Grounded in the perspectives of political economy and political ecology, Wisner et al. (2004) focus mainly on access to resources to address inequalities and their relation to disaster risk. They consider people's vulnerability as the manifestation of unsafe location and social inequalities – failures of a society to bring about the equal distribution of resources to all of its citizens. Such vulnerable conditions of people at risk and inequalities in access to resources pre-exist in society, and they are only revealed by hazards and even exacerbated in the aftermath of disasters when people's livelihoods and social support systems have collapsed (Douglass & Miller, 2018; Thomas et al., 2013).

From this perspective, PWD are among at-risk groups in times of disaster as they face inequalities in access to resources before, during and after disasters. For instance, as disability and poverty are strongly linked in a vicious cycle, PWD are at risk of being among the poorest (Priestley & Hemingway, 2007). Accordingly, they often have limited access to health care, shelter, food, education and employment, and are more likely to live and work in hazardous conditions.

Robinson (2017) notes 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. It was also reported that the time for a person using a wheelchair (and supported by an assistant) to reach an evacuation point would be double compared to a person without disabilities (Robinson, 2017). This indicates the critical role of environmental conditions (e.g. accessibility and inclusive evacuation plans) in enabling PWD to secure their safety in times of disaster. Similarly, it is observed that the needs of people with hearing disabilities for risk information are often overlooked during disasters, for instance, no sign language interpreters in shelters and inaccessible forms of communication (Phibbs et al., 2014; Twigg et al., 2011).

The aftermath of disasters tends to impose more challenges on PWD. For instance, after the 2004 Hurricane Charley in Florida, an increase of market prices, or price gouging, was noted, particularly for basic necessities, and this challenged under-resourced PWD in meeting their basic needs (Sandel, 2009). Tierney (2014b) argues that post-disaster assistance may also reinforce existing inequalities. Disruptions in basic support services and omission in emergency registration systems often leave PWD with hardships in meeting their needs and reaching external support during and after disasters. These, in turn, exacerbate their vulnerable situations after disasters (Hay & Pascoe, 2019; Smith et al., 2017).

Tierney (2006) argues that to understand people's vulnerabilities to disasters, it is paramount to examine the processes through which social inequalities are created and perpetuated in society. Scholars consider that such inequalities stem from patterns and processes of social interaction and organisation (Hemingway & Priestley, 2006; Wisner et al., 2004). Putting it differently, Gaillard (2017) explains that inequalities in access to resources locally reflect the unequal power relations between social groups. Accordingly, those with stronger economic, political and social positions in society tend to experience more privilege in accessing available resources locally, and have more power to control the participation of the powerless in local decision-making processes concerning the distribution of resources.

While vulnerability paradigm-driven approaches have been more attentive to addressing the inequalities through the resource lens, it is argued that having resources or access to resources does not secure the realisation of states or activities that PWD value in coping with disasters. Drawing on the capability approach (Sen, 1992), Ton et al. (2019) claim that disaster risk can be viewed as manifestations of the deprivation or restriction of capabilities of people to cope with disasters. The following section will give a brief introduction of the capability approach and then explain why "capability" is a more adequate metric than "resource" to address injustices faced by PWD in times of disaster.

7.3. The capability approach and capability justice for people with disabilities in the context of 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, namely, functionings. For example, being healthy, being well-nourished, avoiding morbidity, being employed and being safely sheltered may be "basic" functionings that people value in their everyday life and perhaps also in times of disaster. Functionings are considered as the achievement of valuable doings and beings, whereas "capability" is viewed as the real opportunity that individuals have in order 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. To this end, he argues that development should aim to expand human capabilities.

Sen (1992, 2009) is more concerned with distributive justice. In his book 'Inequality reexamined', Sen (1992) raised two questions: why equality, and equality of what? He argued that we cannot answer the former question if the latter question is not answered. For the latter question, the most commonly used metrics were welfare (Arneson, 1989) and resources such as income and wealth (Ronald Dworkin, 1981; Rawls, 1971).

In critique of utilitarian approaches (welfare-based) that focus on human pleasures or desire fulfilment, Sen (2009) argues that people can adjust their pleasures and happiness to circumstances, and adapt their needs or desires to adversities. For instance, many PWD who live in poverty, particularly in low- or middle-income countries, may be happy with a small amount of disability allowance which even does not sufficiently cover their basic needs (Banks et al., 2018). This is what Sen calls "adaptive preference".

Sen (2009) also critiques resource-based approaches in examining inequality. He notes that resources are often defined independently of human characteristics. An example is that evacuation centres and roads built without reference to individual features and needs (e.g. lack of ramps) may prevent PWD from self-evacuating to the centres in times of disaster. Robinson (2017) also notes that it may take more time for a person in wheelchairs to reach the centre (even supported by an assistant). Therefore, despite having equal access to a local evacuation centre in times of floods or storms, a person with mobility disabilities in a wheelchair may be at greater disadvantage and risk than one without disabilities. This is to say, the approaches that rely on resources cannot capture what people can do with the resources to achieve what they value doing or being.

A response from the position of resource theorists may consider that the conception of the inequality of resources covers not only the inequalities in individual possession of resources and access to public resources and services but also the unequal distribution of resources in society in terms of, for instance, designing accessible structures and providing assistive aids for PWD (Pogge, 2010). However, it argues that this redistribution of societal resources may address only physical barriers, but not cultural and attitudinal barriers (Terzi, 2010b). For example, stigma and discrimination, rather than inaccessibility of infrastructures and services or lack of resources, can be the main causes for the exclusion of PWD in everyday life as well as in DRR processes (Ton et al., 2020). This factor obviously cannot be resolved by redistribution of resources or, more broadly, by resource-based approaches.

Sen (1992) contends that the achievement of valuable functionings depends not only on the availability of resources that people possess (i.e. goods or services that have certain characteristics to enable a functioning) but also on how/what they are able to use/do with the resources effectively. This utilisation 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). In other words, a person can convert the same resources to different outcomes in different contexts. Conversion factors are categorised into individual and environmental factors. Individual factors are internal to the person, such as mental and physical abilities, health conditions, sex, age, literacy level or attitude. Environmental factors are external and can be social (norms, discrimination, stigma and social network), economic (markets and budget allocation), political (policies and power relations) and physical (accessibility of infrastructure, means of transport and communication and hazard-prone areas).

When examining disability issues through a capability lens, Sen (2009) argues that PWD often encounter difficulties or disadvantages in earning, as well as converting, incomes and resources into the life they value. He terms such disadvantages as "earning handicap" and "conversion handicap", respectively (p. 258). He claims that PWD may experience "earning handicap" as they may find it harder to get a job and may receive lower compensation for work. PWD often face multiple barriers to enter a formal employment market. In most cases, their employment is self-created or informal. If they are employed, they often earn less than their counterparts (WHO, 2011). Insecurity in employment or income-earning activities may influence the actualisation of other capabilities such as education and health. Due to their conversion handicap, PWD may require more resources associated with their disabilities (e.g. to adapt a vehicle and to pay for expenses associated with their health conditions) to achieve the same living standards or outcomes as people without disabilities (Mitra et al., 2017; Sen, 1992, 2009).

Some scholars – perhaps proponents of a medical disability model – attribute disadvantages to people's impairments or health conditions (Anderson, 1999; Pogge, 2002). This risks PWD being treated as needy, deficient or inferior rather than as having diverse mental and physical abilities. Capability theorists are perhaps against neither the important role of individual health conditions in realising their valuable capabilities nor promoting measures to cure or ameliorate impairments and its impacts (provided that it is not "forced treatment" and that it is according to individual preferences and needs). However, they claim that societal modifications should be prioritised as the remedy for disadvantages or limitations that PWD face in realising their valuable capabilities (Barclay, 2019).

In disaster contexts, the major concerns of justice are more relevant to unequal exposure to disaster risk as well as unequal access to resources among individuals and social groups before, during and after a disaster (Bankoff, 2018). Hazards in this case function as a trigger that expose pre-existing inequalities in society. Sen (2009, p. 4) writes, *"a calamity would be a case of injustice only if it could have been prevented, and particularly if those who could have taken action had failed to try"*. This implies that disaster injustice is related to the creation and perpetuation of vulnerability in society that makes some "vulnerable" groups more exposed to hazards and less able to access resources to respond to disasters.

Here, the redistribution of resources is absolutely a fundamental principle in justice. Ton et al. (2020), however, contend that it is just part of the path to the equality of capabilities to cope with disasters. Environmental factors need to be taken into account to ensure that PWD can utilise and convert their own resources, as well as public goods and services, to what they value doing and being in times of disaster. In this sense, it is important to note that modifying the built environment to alleviate or reduce disadvantages for PWD in times of disaster is costly and may not always be financially feasible in some areas with high socioeconomic deprivation (Putnam et al., 2019). Furthermore, it is perhaps utopian to design a shared environment that has equal impacts on everyone or benefits everyone equally (Pogge, 2000). Nevertheless, this is not to say that society has no responsibilities or duties to eliminate the disadvantages created by inequitable or exclusory designs.

Barclay (2019) argues that maximising individuals' environmental fit may require expending more resources for some individuals than others in any given environment. For instance, a local government may need to develop different early-warning communication channels (rather than traditional ones such as sirens, TV or radio) to reach people with hearing and cognitive disabilities, and modify the built environment to make it accessible to people with mobility disabilities. Similarly, it may need to "correct" the social arrangements such as institutions, norms and social practices that raise stigmas and exclusions towards PWD for utilising the public goods for their well-being and safety in disasters. However, neither those who receive more resources (because their bodily traits and abilities are less suited in a specific environment) should be treated as deficient nor the redistribution should be as compensation for the alleged "deficits" of PWD (Putnam et al., 2019).

Capability theorists argue that there are many means to one end (Robeyns, 2017). In other words, various ways in which social arrangements are made to accommodate human differences can be considered to enable PWD to achieve a capability that they value. Evidence shows that despite the barriers of built environments, the needs and disadvantages related to disability can be considered in local DRR plans, and, accordingly, measures of support from governmental and non-governmental organisations including those of PWD can be put in place to secure the actualisation of PWD's valuable capabilities to cope with disasters (Bolte et al., 2014; CBM, 2013). For example, with the support from the local disaster response team, their family and their neighbours, PWD who have severe disabilities and live in unsafe houses still had the capabilities of receiving early warnings and evacuating to safe places such as village evacuation centres and neighbours' houses.

It is argued that capability injustice is a social product. Disadvantages and injustices people face in their everyday life have roots in social, economic and political structures. In other words, social, economic and political structures of a society provide considerably unjust conditions for individuals, particularly PWD, to flourish or to stay safe in times of disaster. Social structures may comprise a lack of disability-inclusive welfare and educational systems, religious belief systems and social ideologies that give rise to stigmas and negative stereotypes towards PWD. Economic structures may be economic growth priorities, urbanisation and distribution of wealth that do not consider the needs of PWD in employment, health and mobility. Political structures may be imbalanced power relations, poor representation of PWD in decision-making authorities, a lack of disability-inclusive legislation and poor governance and enforcement of disability-related policies. These structures may not only determine the distribution and availability of resources to PWD but also shape environmental conversion factors (e.g. negative community attitude and reaction to disability, in accessibility of facilities, exclusive plan of actions or limited disability-related awareness of local DRR institutions and stakeholders), or some of the individual conversion factors (e.g. lack of knowledge and skills, or self-stigma) (Ton et al., 2020; Wisner et al., 2004). In the aftermath of disasters, these injustices are likely to be reinforced, and new ones can be created (Lukasiewicz & Baldwin, 2020; Tierney, 2006).

Determining whether or not an outcome was distributively just is significantly influenced by the procedures leading to the outcome. In the other words, procedural justice can be viewed as a subset or as a means to distributive justice (Jerolleman, 2019; Nussbaum, 2006). Some researchers have associated procedural justice with people's participation and agency

(Anderson, 1999; Claassen, 2016; Jerolleman, 2019; Lukasiewicz & Baldwin, 2020; Shrader-Frechette, 2002). The article now considers the concept of agency and its contribution to procedural justice for PWD.

7.4. The agency of people with disabilities

Sen (1992) defines agency as a person's ability to realise and pursue goals they value and have reason to value. These goals may or may not relate to their own well-being, which is normally viewed as "wellness", "personal advantage" or "personal welfare" of one's being (Sen, 1993). In other words, people may choose to exert their agency, not to maximise their utility or wellbeing but to contribute to others' well-being such as by looking after their children or elderly relatives, helping the neediest or saving lives of people in accidents. Sen (1999, p. 19) defines an agent as *"someone who acts and brings about change"*.

Archer (2002) insists that agency is relational. The agency of PWD, especially those with severe cognitive disabilities, is seldom recognised due to their limited capacity to conceive their own good or set their own goals and to act on them by themselves (Boyle, 2014). This stereotype often leads to the exclusion of PWD in decision-making processes that affect their everyday life as well as their vulnerability to disasters.

In many circumstances, for the realisation of their goals, individuals need to reproduce or transform society to generate resources or create enabling social arrangements. This task often goes beyond individual agency or control and requires collective actions (Evans, 2002). This gives rise to another type of agency, namely, "collective agency" or corporate agency, that has emerged from social relations (Archer, 2002; Crocker, 2008). This concept emphasised the idea that people do not exist in vacuum but are tied together and influenced by complex social relations and moral obligations (that perhaps they all constructed) (Sandel, 2009).

When human agency is examined in the light of power relations, Rowlands (1997) identifies four types of power: power over, power to, power (from) within and power with. Despite its various interpretations, Vermeulen (2005, p. 12) simply defines "power" as *"an ability to achieve a wanted end in a social context"*. "Power over" is owned by those who have control over resources and decision-making processes. "Power to" is regarded as "individual agency" which can be enhanced by new skills, knowledge, awareness and confidence. "Power within" means personal self-confidence, self-worth and self-knowledge, including the ability to recognise their "power to" and "power with". "Power with" is understood as "collective agency" that focuses on individuals' engagement in a collectivity such as unions and groups to achieve what they value. Giddens (1984) notes that power is an intrinsic part of human agency, and people as agents are never completely governed by social structures.

Sen (1999, p. 11) contends that development should provide social arrangements that enable individuals to be *"active agents of change, rather than passive recipients of dispensed benefits"*. This underscores the importance of people having control of their own life by active participation in decision-making rather than being passive recipients of someone else's decisions. PWD and their organisations are often excluded from decision-making processes affecting their everyday life and their safety in times of disaster (Alexander et al., 2012). This, in turn, leads to unequal distribution of resources and unfit designs of social and institutional arrangements, and accordingly creates challenges for PWD in disaster preparedness, response and recovery. By enhancing the participation of PWD in decision-making processes, and accordingly enabling their (individual and/or collective) agency, it argues that disability-related disadvantages or injustices in their everyday life and disasters can be addressed. These factors – participation and agency – are also focal concerns in procedural justice.

7.5. Procedural justice for people with disabilities

Dworkin (1977, p. 273) defines procedural justice as *"the right to treatment as an equal. That is the right, not to an equal distribution of some good or opportunity, but to equal concern and respect in the political decision about how these goods and opportunities are to be distributed"*. This implies the central role of participation of people in decision-making processes to procedural justice (Allen, 2013; Shrader-Frechette, 2002) – that is, how genuine and meaningful participation of people is secured as a driving force for procedural justice. Here, participation should not be limited to recognition and representation of individuals and groups in the justice-enhancing processes but to have their concerns and their voices heard in developing the justice principles (Parthasarathy, 2018; Shrestha et al., 2019). By recognition, what matters is not only about recognising a collective or group identity such as PWD, older people and women, and accordingly engaging them as political equals in the decision-making processes, but is also about their knowledge and values in generating knowledge of disasters and how the risk that they face can be reduced, and about their capabilities to contribute to DRR (Putnam et al., 2019; Shrestha et al., 2019).

Putting it differently, Ton et al. (2019) argue that the process of participation can be understood as both an end and a means. As an end, participation refers to involvement in the design and implementation of DRR processes such as risk assessment, DRR planning, implementation of DRR activities and monitoring and evaluation. In this sense, PWD need resources as well as individual and external factors to enable their involvement in such activities. However, as PWD are among the poorest, they often cannot afford disability-adapted vehicles, assistive/medical aids for PWD or travel expenses that enable their participation (Bolte et al., 2014).

Health conditions and other individual characteristics may also influence their capability to take part in the DRR processes (Ton et al., 2020). Even in a non-discriminatory and accessible environment, not all PWD are able to participate in such processes due to their severe physical and cognitive disabilities. To realise or secure moral and political equality for these people, assisted participation from surrogates such as their family members/caregivers is required (Nussbaum, 2006, 2009). Whilst the role of surrogates for assisted or substituted participation, particularly in the case of people with severe cognitive disabilities, remains contested (Wasserman & McMahan, 2012), it pragmatically argues that social support from other people such as family, neighbours and caregivers has a profound contribution to realising and securing the valuable, or at least the basic, capabilities for people with severe disabilities, and perhaps enabling the agency of these people to lead the life that they value (Boyle, 2014; Nussbaum, 2006, 2009; Terzi, 2015).

Calgaro et al. (2020) identified a vast array of barriers arising from the external environment that prevents PWD from participating in DRR processes. These barriers may be social (stigma, discrimination and harassment), physical (inaccessible public infrastructures) and political/governance-related (limited reliable disaggregated data on PWD, lack of the skills to work with people with different disabilities, lack of robust disability-inclusive guidelines and inaccessible formats and mediums in access to information, especially for people with vision, hearing and intellectual disabilities). All of these factors render some PWD socially isolated and deprive them of the opportunities to partake in DRR processes and many aspects of their everyday life.

Participation as a means can be viewed as a process in which PWD, individually or collectively, exert their agency (i.e. raising their voice, influencing decision-making and transforming decisions into actions). For participation as a means to be achieved, however, participation as an end must be secured. The exercise of these individual and collective agencies is influenced by a variety of individual and structural factors. Here, for fair treatment to all individuals and groups, it is necessary to challenge the political dynamic or transform the political structure and power relations (Shrader-Frechette, 2002). The local government has "power over" PWD. They can use this type of power to deny access to resources or constrain the choices available to PWD for their safety and exclude PWD from DRR processes. While the design and implementation of social arrangements leading to disaster justice are often put in the hands of the government, it is argued that "vulnerable" people and civil society organisations (CSOs) can play a significant role in claiming a fair procedure to justice and accordingly leading to fair outcomes (Allen, 2013; Bankoff, 2018; Jerolleman, 2019).

By acknowledging that PWD also have agency in individual or collective forms, this "power over" can be challenged by PWD themselves. The former is understood as "power within" and "power to", while the latter is understood as "power with". The collective agency emerging from collaboration among excluded people and their representative organisations can open up arenas for them to participate in decision-making and build up capacity for the excluded people to challenge the underlying economic, social (including cultural) and political processes leading to unequal vulnerabilities and unfair distribution of resources (Chambers, 2006; Douglass & Miller, 2018). For example, it is observed elsewhere that through the involvement in local CSOs and interactions with their peers, PWD enhanced their "power within" such as self-esteem and self-confidence, and their "power to" such as skills and knowledge of DRR-related legislation and their rights of participation (Calgaro et al., 2020; Craig et al., 2019; Smith et al., 2017). Similarly, in collaboration with organisations of/for PWD, their "power with" was strengthened. It subsequently enabled them to claim participatory arenas such as risk assessment and DRR planning and include their needs in such planning processes. They also influenced local DRR decision-making (for instance, making early warning and early-evacuation plans more disability-inclusive and requesting support from local government for their disaster preparedness) and claimed their rights to be part of local disaster risk management committees as well as to engage in the implementation of DRR actions such as risk communication.

Whilst "power over" is often associated with domination, manipulation or coercion, it can be used for empowerment (Chambers, 2006); that is, the powerful use "power over" to empower. Here, empowerment refers to enhancing individual and collective agency and providing preconditions to exert the agency (Ibrahim & Alkire, 2007). Chambers (2006) believes that this positive side of "power over" should be utilised through a pedagogy for the "power over" (e.g. workshops and reflection, training to facilitate or peer influence between the powerful). Some of these strategies were indeed adopted in disability-inclusive projects elsewhere (Craig et al., 2019; Mitchell & Karr, 2014) to help the powerful realise that they can achieve their DRR goals (e.g. reducing mortality, damage and loss from disasters) by acknowledging the agency of PWD to protect themselves from disasters provided that preconditions exist and by empowering the PWD to achieve these goals.

7.6. Conclusion

This article employs the distributive and procedural constructions of justice to explore the disaster risk that PWD face. It argues that "capability" is a more adequate metric than "resource" to address distributive injustices that PWD experience in times of disaster. A benefit of the capability approach to justice is that it not only investigates inequalities in people's capabilities but also analyses the processes that led to those inequalities (Robeyns, 2017). Whereas the concept of "justice" or "just society" is still debatable and reaching a perfectly just society for everyone appears to be utopian, it is perhaps locally feasible to achieve the equality of some capabilities that people value in their everyday life as well as in times of disaster. To this end, it requires a fair procedure that involves "vulnerable" people as equals to determine their valuable capabilities and how they can be realised.

While injustice is mainly created and perpetuated by social, economic and political structures, Robeyns (2017) asserts that the onus of eliminating injustice (or enhancing justice) should not restrictively be placed on government but can also be initiated by individuals and groups at the grassroots. This requires a recognition that people, even with a "vulnerable" label such as PWD, have agency to cope with disasters and bring about disaster justices for themselves. This initiative is increasingly advocated and promoted by a number of organisations and practitioners (Bolte et al., 2014; CBM, 2013; Craig et al., 2019).

This chapter draws on the capability approach to discuss the unjust distribution of disaster risk or disaster justice that PWD experience in the face of disasters. It argues that the conception of disaster justice should not be limited to achieving the equality of capabilities that PWD value in dealing with disaster but to expanding these capabilities. It also re-emphasises the important role of PWD's agency, as well as their participation in DRR processes, in reducing disaster risk and claiming disaster justice. The following chapter (Chapter 8) concludes the whole study by summarising the findings against its objectives and providing the important implications for disaster and disability research and practice.

CHAPTER 8. CONCLUSION

8.1. Introduction

This thesis arises from three concerns. First, it demonstrates the shortcomings of the resource-based approach in addressing disaster risk. It shows that, despite playing a critical role in enabling people to cope with disasters, relying solely on the availability of or access to resources is not sufficient to explain the failures of people in dealing with disasters. This approach often overlooks the conversion process from resources to actions or states that people value. Specifically, the thesis indicates that, even if people have the same level of resources, individual and environmental differences make them suffer differently from disasters. Second, people with disabilities (PWD) face numerous challenges before, during and after disasters, which make them disproportionately affected. However, to date research on exploring disaster risk for people with disabilities is considered to be limited (Stough & Kelman, 2018). Third, with the increasing recognition of PWD as active agents, particularly in the practice of DRR and disability inclusion, there is still a scarcity of thorough scrutiny on their human agency in DRR, particularly its relation to participation in decision-making processes that affect their safety in times of disaster.

To bridge these gaps, this thesis adopted the capability approach to examine disaster risk facing PWD. It proposed a conceptual framework to guide an empirical study in two rural communes in Vietnam (Chapters 2 and 3). This framework argues that disaster emerges from the deprivation or restriction of capabilities that PWD value in dealing with hazards. This deprivation of capabilities results from a lack of resources and/or enabling individual and environmental conversion factors. The shortage of resources and environmental barriers that reflect the inequity in the distribution of resources and the provision of social arrangements to social groups including PWD, have roots in societal development processes. To reduce disaster risk for PWD, it argues that societal development should aim to expand the capabilities of PWD to deal with disasters. To this end, it needs to consider both resources and conversion factors that ultimately enable PWD to realise their valuable capabilities to deal with disasters. This framework also recognises the agency of PWD in realising their valuable capabilities. Thereby, it demands a meaningful participation of PWD and their representative organisations in DRR decision-making processes impacting their well-being and safety not only in times of disaster but also in their everyday lives.

Considering the explanatory purpose of this research, a qualitative multiple-case study design grounded in critical realism was adopted to address the research objectives (Chapter 4). With the critical realist stratified ontology (i.e. empirical, actual, and real levels), capability (located at the actual level) emerges from the interaction of various structures and causal mechanisms (located at the real level). Once a capability is actualised, it can be observed or experienced in the form of an achieved functioning (located at the empirical level). Adopting social constructivist epistemology with the use of qualitative methods, critical realism is considered well-suited for exploring the depth of capabilities in this explanatory research.

This final chapter firstly reflects the research findings against its specific objectives. It then discusses the implications for research and practice in disaster and disability and ends with a final section reviewing research challenges and limitations and suggesting possible future research.

8.2. Research key findings

This study explored disaster risk faced by PWD through the lens of the capability approach in two study communes in Vietnam. This exploration was achieved by addressing the three following objectives.

Objective 1: To investigate the capabilities that people with disabilities value in dealing with disasters

PWD are among the poorest and often experience injustices in the face of disasters (Chapter 7). Such disaster injustice is the manifestation of the pre-existing deprivation of many capabilities to cope with disasters. As detailed in Chapter 5, capabilities that PWD value in dealing with disasters were identified through focus group meetings and interviews with PWD and their carers. Many of these capabilities were valued not only in times of disaster but also in their daily lives. The results show that many of the basic capabilities such as having clean water, being healthy, being mobile, being safely sheltered, and being nourished, were beyond the reach of many PWD in the study areas, particularly those without employment and incomes. This deprivation reflects the failure of the society to secure the basic capabilities for PWD to survive both in times of disaster and in their everyday life crises, or a dysfunctional development that has created inequalities of capabilities among social groups in society (Chapter 7). In the aftermath of disasters, when social goods and services are often destroyed or interrupted, these capabilities become harder to secure if interventions are not implemented to support PWD in advance.

The findings, presented in Chapter 5, also indicate that the valuable capabilities of PWD do not exist in a silo but are inter-related. Some capabilities can be a means to achieve others. For instance, the capabilities of having safe water and adequate nourishment can contribute to the capability of being healthy or avoiding morbidity, or the capability of education can contribute to the capabilities of earning incomes and understanding risk information. More importantly, many PWD recognised the crucial role of the capability of income generation and employment in realising other valuable capabilities such as safe housing and adequate nourishment. This capability is indeed the most widely valued by PWD in both study areas as PWD are often excluded from job opportunities and access to job support services available in their locality. The higher value placed on this capability implies a demand for autonomy or a desire of PWD to lead an independent life and to confront social stereotypes that view them as a financial burden to families and society.

There are two levels of capabilities identified in this study: individual and collective. Individual capabilities are often driven by personal values and conditions, while collective ones are driven by group values. The collective capabilities were identified through focus groups. For example, while different participants had different values on capabilities, as observed in this study, they together determined some common capabilities - such as being well-nourished, being mobile to safe places, being healthy, being safely sheltered, and earning incomes - through interpersonal interactions. In such interactive processes, they shared their personal values, and subsequently constructed their collective values. This is a critical step to initiate collective actions (see fuller details in Objective 3).

Objective 2: To explore factors that influence their capabilities to cope with disasters.

This objective is mainly addressed in Chapters 5 and 7. From the capability perspective, the factors that influence the capabilities of PWD to cope with disasters were examined from three aspects: resources, internal conversion factors and external conversion factors. The findings in Chapter 4 show that PWD are under-resourced, which challenges them in realising their valuable capabilities. Specifically, many PWD in the study have limited access to assistive devices. For example, people with mobility disabilities do not have wheelchairs or three-wheel handcycles to enable their mobility, which is indeed a means to many valuable capabilities such as earning incomes, self-evacuation, and participation in village meetings. Lack of water containers limit the capability of PWD to use clean water during floods and droughts.

This thesis, however, argued that the actualisation of a capability should not be simply reduced to the availability of or access to resources. Rather, it should also consider conversion factors that would determine the level of the capability that PWD can achieve. Individual characteristics indeed have an impact on realising some capabilities by themselves. For example, the results in Chapter 5 show physical impairments and poor health conditions restrict PWD from conducting income generation and disaster preparedness activities by themselves. The study also indicates that the lack of knowledge and skills, and particularly self-stigma, are very influential in the actualisation of PWD's valuable capabilities.

In most cases, this thesis claims that the deprivation of capabilities that PWD value in dealing with disasters is attributed to a disabling environment. While a variety of disabling factors was identified for each specific capability, this study indicates the three most prominent factors which were widely shared by the participants (Chapter 5). The first one is a negative public attitude toward PWD. Specifically, stereotypes and stigmas associated with disabilities restricted PWD from accessing and utilising public goods and services such as education, health, and loan services. These also led to discriminatory practices and exclusion of PWD in DRR and everyday life activities such as engaging in village disaster risk management committees, village meetings, and social and cultural activities in their locality.

The second disabling factor is inaccessibility. For example, physical inaccessibility was observed in most of the local evacuation centres as well as public buildings in the study areas. A lack of skills to work with PWD and limited awareness of disability issues for public service suppliers in health, education, and agricultural advisory, are also another challenge that prevented PWD from accessing and utilising public goods and services to actualise their valuable capabilities.

The last (but not the least) factor is related to enforcement of the policies. The existing policies related to disability and DRR are well formulated, which indeed contribute to realising some basic capabilities for PWD. However, the enforcement of these policies was hindered by a lack of disability awareness among government staff, a lack of political will to eliminate injustices for PWD, and a lack of funding.

Despite such disabling factors, this thesis highlights the critical role of social support in improving access to resources and overcoming the environmental disabling factors. This factor is critical in under-resourced areas. For example, family, relatives, and neighbours shared food and shelter with PWD in times of disaster. Civil society organisations such as organisations of/for PWD and religious organisations provided resources such as assistive devices, funding for income-earning activities, health care, and education services, for PWD.

As discussed in Chapters 5 and 7, conversion factors that have a direct impact on the actualisation of capabilities are the consequences of political, social, and economic structures. Specifically, individual characteristics such as a lack of knowledge and skills, and self-stigma, are derived from having long been excluded from education and training services, as well as social norms and local traditions. Disability-related stigma and discrimination are derived from religious beliefs and cultural traditions. Inaccessibility results in part from economic growth priorities and distribution of social resources that neglect disability issues. Similarly, unbalanced power relations and poor representation of PWD in decision-making authorities may lead to procrastination in the enforcement of disability-related policies. These social causes indeed imply moral and political obligations of every single individual and organisation toward building a just society not only for PWD but for everyone who lives in that society and benefits from its social arrangements.

Accordingly, this thesis argues that for disaster justice for PWD, diversity of individual characteristics should be thoroughly considered to ensure the environmental fit for PWD. Whilst a perfect environmental fit is aspirational, maximising this environmental fit for PWD is of paramount importance. As detailed in Chapter 6, for maximising the environmental fit, PWD may require additional resources to achieve the same level of some capabilities compared to those without disabilities. Furthermore, social arrangements that create barriers for the actualisation of PWD's valuable capabilities need to be 'corrected'. However, neither those who receive more resources (because their bodily traits and abilities are less suited to a specific environment) should be treated as deficient nor the redistribution or modification should be as a compensation for the alleged "deficits" of PWD (Putnam et al., 2019).

Grounded in a critical realist perspective, this study indicates that the realisation of a capability is not simply a (mathematical) sum of separate factors. Rather, it should be viewed as an emergence from a complex interaction of factors including resources, internal factors, and external factors (Chapter 4). Having enabling factors (that generate tendencies toward the realisation of a capability) does not mean that PWD can actualise their valuable capabilities as this also depends on the disabling factors that create counter tendencies. Similarly, the existence of disabling factors cannot determine the actualisation of a capability as this also depends on enabling factors and the human agency of PWD. The following sub-section will further illustrate this point.

Objective 3: To explore the relationship between the human agency of people with disabilities and their participation in decision-making processes in reducing disaster risk for people with disabilities

This objective is addressed in Chapters 6 and 7. This thesis recognises that PWD are active agents. They have agency to induce social changes for realising their goals in DRR. It argues that social structures provide frames or conditions for human actions. They influence, but do not determine, people's actions. Since human beings have internal capacities such as knowledge, skills, physical abilities, and cognitive abilities (e.g. speech, reasoning, emotionality, memory, desires, reflexivity, and sense of self), they can act on these capacities to realise their valuable capabilities. These capacities are inherent and can be fostered or hindered through their interaction with the external environment or social structures.

The realisation of capabilities, in many cases, requires people to transform social structures, to bring about enabling conditions. This task often goes beyond the control of an individual or their individual agency. As addressed in Chapter 6, in such cases, people tend to engage in a group/organisation to formulate their collective capabilities and collective actions. These collective capabilities thus emerge from a process of engagement in a collectivity. Accordingly, this engagement process affects people's sense of well-being and safety, values and choice, and frames collective actions that take advantage of individuals' resources and strengths to benefit the whole group rather than a single individual.

This thesis highlights that, in most cases, people need to participate in the decision-making processes to exert the agency for their valued capabilities in DRR. Participation in this sense can be considered as a means for people to achieve their valuable capabilities. For participation to become a means, however, its 'end' must be secured.

As an end, participation refers to the capability of involvement in the design and implementation of DRR processes such as risk assessment, DRR planning, implementation of DRR activities and monitoring and evaluation. The findings in Chapter 6 revealed a variety of factors - resources, individual and external factors - that influenced the engagement of PWD in local decision-making processes. For example, many PWD in the study did not have vehicles or could not afford travel expenses. Impairments and poor health conditions challenged some people in engaging in decision-making meetings. External barriers such as social stigmas and inaccessibility of meeting venues and information indeed discouraged the participation of PWD. This study, however, recognises the role of social support in enabling PWD to access resources and overcome external barriers to realise their participation.

This thesis argues that people participate in a decision-making process not just for the sake of being involved but for achieving other purposes. Specifically, PWD want to participate in the local DRR planning for their voices to be heard and their needs included in the DRR plan, which ultimately leads to improving their safety in times of disaster. Participation as a means, in this study, is examined through the lens of power.

Local governments have ‘power over’ PWD. They can use this type of power to deny access to resources or constrain the choices available to PWD for their safety and exclude PWD from DRR processes. However, as discussed in Chapters 6 and 7, this ‘power over’ can be challenged by the agency of PWD in an individual form (including ‘power within’ and ‘power to’) and collective form (‘power with’). Through their involvement in local CSOs and interactions with their peers in this study, PWD enhanced their ‘power within’ such as self-esteem and self-confidence. Similarly, through their involvement in the DiCBDRM project activities, PWD gained more knowledge and skills about DRR, and thereby enhanced their power to act. Being part of collective actions by the local DPOs and other CSOs, PWD strengthened ‘power with’ that enabled them to claim participatory arenas, have their voice heard and influence local decision making (for instance, making early-warning and early-evacuation plans more disability inclusive and requesting support from local governments for their disaster preparedness). With the ‘power with’, PWD also claimed their rights to be part of local DRM committees as well as to engage in the implementation of DRR actions such as risk communication.

Whilst ‘power over’ is often associated with domination, manipulation or coercion, this thesis argues that the government can use ‘power over’ to empower by enhancing the individual and collective agency of PWD and providing them with preconditions to exert their agency. This thereby can bring about a win-win situation. That is, the government can achieve their DRR goals (e.g. reducing mortality, damage, and loss from disasters) and PWD are empowered to decide how these goals can be achieved by or with them.

From the critical realist perspective, recognising the ontology of human agency and its independence from social structures can emancipate our thinking that human actions are not simply reduced to or completely determined by social structures. Rather, people have agency to transform and reproduce the society in a form that they value. Therefore, development, if perceived as good social change, should aim to expand human agency. In this sense, society should provide social arrangements for PWD to exert their agency. In turn, PWD use their agency not only to achieve their valuable capabilities for DRR but also to make the social structures more appropriate for the actualisation of their valuable capabilities in dealing with disasters. This thesis claims that eliminating disaster injustice is not always necessarily the onus of government but can also be initiated by individuals and groups, who are often labelled as 'vulnerable', at the grassroots.

While the thesis contributed to the empirical understanding of disability issues in DRR in the context of Vietnam, it also had a great theoretical contribution to the disaster study literature through proposing an alternative theoretical lens and an epistemological foundation to examine disaster risk for people. The following section (Section 8.3) will provide a fuller reflection and discussion on the contribution and implications of this thesis.

8.3. Implications for research and practice

8.3.1. Theoretical implications

8.3.1.1. In disaster studies

This thesis strongly criticises the hazard paradigm that mainly focuses on the physical environment and treats people as irrational and passive humans in responding to environmental changes and hazards. This hazard paradigm often leads to command and control approaches as well as emphasises response and recovery (Chapters 1 and 3). PWD in such approaches are often viewed as 'helpless victims'. Through the capability approach, this thesis demonstrates the significant contribution of social processes to disaster risk creation for PWD (reflected by the restriction of capabilities to cope with disasters) and that PWD are active actors in DRR. Like the vulnerability paradigm, this thesis calls for more attention to social causes of disasters and more recognition of human agency to deal with disasters.

As detailed in Chapter 7, approaches in the vulnerability paradigm have been more attentive to addressing the social inequalities in disasters through the resource lens. Whilst this thesis acknowledges the critical role of resources in realising the capabilities that PWD value in coping with disasters, it argues that having resources or access to resources does not secure this realisation. In critiques of the resource-based approach in examining inequality, Sen (2009) notes that resources are often defined independently of human characteristics. Resources such as goods and services have characteristics that enable people to do or be something. However, these characteristics do not always fit with the abilities and characteristics of everyone, or in other words, not everyone can act on these characteristics to achieve their valuable capabilities.

Furthermore, depending on the specific contexts, a person can convert the same resources to different outcomes. This thesis identifies a variety of contextual factors that greatly influence the realisation of PWD's valuable capabilities (Chapters 5 and 6). Many contextual barriers such as cultural and attitudinal barriers cannot be resolved simply by the re-distribution of resources or other resource-based interventions. For these previously mentioned reasons, the resource-based approach faces challenges in capturing human diversity and the process of what people can do with the resources to achieve their valuable capabilities. This thesis, therefore, raises a need to look beyond the resources that PWD have when examining the disaster risk facing them. This examination subsequently should pay greater attention to the processes of utilising and converting resources to what people value (i.e. internal and external conversion factors).

This study also demonstrates the possibility to apply the capability approach to address disaster risk for other social groups (e.g. women, older people, ethnic minorities). Specifically, differences in their social identities, physical and mental abilities, knowledge, skills, languages, and living environments may require different types and amounts of resources as well as social arrangements to secure their valuable capabilities, or at least basic ones, in dealing with disasters. The conceptual framework and analysis deployed within this thesis can arguably be applied to explore these differences, which subsequently leads to a better understanding of disaster risk facing these groups.

8.3.1.2. In disability studies

This thesis demonstrates that medical, social, and cultural models alone cannot explain the lived experience of PWD in times of disaster. The medical model focuses on individual causes of disability whereas the social model aims at societal and material causes of disability. Like the social model, the cultural model (i.e. critical disability studies) denies the role of impairments in creating disability. Proponents of cultural models argue that disability arises from ableist ideologies (Shildrick, 2012). They accordingly focus their analysis on genealogies and cultures to explore the origins of ableist, discriminatory and oppressive ideas and values. This thesis shows that the capability approach takes the best of these models. Specifically, it frames disability as dis-capabilities or restriction of capabilities. It recognises the role of individual factors, including impairments and health conditions, as well as environmental factors (including cultural ones) in constructing the disability experience of a person (Chapters 3 and 4). This thesis argues that this disability experience in everyday life, as well as in times of disaster, cannot be understood simply as a sum of individual and environmental factors, but as a complex interaction of both types to give rise to disability. Here, individual factors such as impairments or poor health conditions are experienced not only as differences but also as pain and suffering as some of the participants shared in this study (Chapter 5). Recognising the negative effects of some impairments on the lived experience of PWD does not mean that we are accepting individual responsibilities for their disability. Rather, it should be seen as the obligations of society to ensure proper care and treatment and create social arrangements that accommodate these differences. While, in this study, cultural beliefs play a significant role in influencing the dis/capabilities of people, this thesis argues that they do not reflect the whole reality of dis/capabilities that people experience as it overlooks the human agency of PWD (Chapters 6 and 7). It is observed that despite some ableist norms that discourage PWD to realise their capabilities, this is not the case for all PWD. Some PWD used their agency to confront those norms and overcome economic, physical, or political barriers.

Whereas social and cultural model research is at its roots normative, this normative dimension is seldom acknowledged (Vehmas & Watson, 2014, 2016). In those models, researchers often have a normative motivation that drives them to seek and remove the disadvantages experienced by PWD, to criticise unfair social arrangements, and eliminate negative norms and discrimination toward PWD. Vehmas et al. (2016) note that the concept ‘normative’ is often used confusingly and has become mistakenly conflated with ‘normal’, ‘normate’ or ‘standard’, particularly in critical disability studies. They insist that normativity is necessary to answer, validate, or justify what is correct or incorrect, just or unjust, right or wrong, valid or invalid, and so on. Deconstructing dis/ablism, destabilising categories, and reducing disability to discursive norms make it hard to see how policies (always being normative) emerge to resolve disability issues (Shakespeare, 2014). For example, policies against discrimination and oppression or those on redistribution of public goods cannot be developed if the group to be protected is not identified or does not exist. Vehmas and Watson (2016) therefore claim that *"normativity is an inescapable part of social life"* (p. 3) and accordingly emphasise that the need to consider properly the normative dimension related to disability to *"fulfil the practical and theoretical aim of disability studies, namely: to understand disability better, to develop and design appropriate policy responses, and, in general, to make things better for disabled people"* (p. 4).

In the capability research, Robeyns (2017) contends that normative analysis is predominantly adopted. It often entails a moral norm that prescribes what we ought to do. The normative purpose of the CA is important to capture the inequalities among social groups in society. Sayer (2011, p. 122) notes that "we measure ourselves not so much against absolute standards but against what others are like, particularly those with whom we associate the most". As discussed in Chapter 7, while the conception of the best society or the absolute justice remains debatable, normative ideas can tell us about in/equalities of capabilities (that is, who have more or better capabilities, or which capability PWD are deprived of). To secure equality, it needs to identify the most disadvantaged individuals and groups and factors that influence the realisation of their capabilities (Wolff & De-Shalit, 2007). This is crucially necessary to determine how public resources should be fairly distributed (especially under conditions of finite resources), and what social arrangements and support should be provided for those whose capabilities are restricted. In this sense, it needs recognition of social identities and categories. This recognition does not mean to devalue PWD or reinforce the ableist norms but to help PWD explore the inter-personal dimensions of oppression, and accordingly enable them to see how they are unfairly disadvantaged and treated. This consequently paves a way for active disability movements in which PWD actively challenge the status quo and norms that disadvantage them and claim justice. That is, they have equal moral worth to people without disabilities and should be treated politically as equal citizens in decision-making related to their well-being and safety in everyday life.

8.3.2. Methodological implications

8.3.2.1. In disaster studies

This thesis demonstrates the power of critical realism in explanatory research in the context of disasters and its possible adoption in disaster studies. The earliest disaster research in the hazards paradigm was grounded in the (empirical or naive) realist view of nature. This view, inspired by Enlightenment thinking, was supported by logical positivist methodologies (e.g. based on evidence, scientific and statistical methods/procedures) to establish (deterministic) cause-effect relations/patterns (Blaikie, 1999; Watts, 1983). Positivists (adopting realist ontology) hold the idea that a world exists objectively and independently of human perception. In such a positivist hazard paradigm, disasters (often reduced to geophysical processes or events) were studied and observed empirically and objectively. Being perceived as an objective 'natural' event, scientific and technological approaches to disasters were adopted to examine natural causes rather than the role of human and social forces as well as political dynamics in leading to disaster.

In the second wave of disaster research, the vulnerability paradigm, the adoption of social constructivism arose from critiques to the realist view of the hazards paradigm, for example, ignoring the political and social construction of vulnerability, overemphasising the power of science and technology, and providing inadequate frameworks for explaining processes of social change (Westcoat, 2015). Hewitt (1983, p. 8) holds that

> *"...the 'realities' here are not assumed universals of the empiricist's sense data and their psychological assimilation in acts of human perception and cognition. Rather we are looking at conditions that shape these pliable processes; the conditions that influence what facts we are likely to recognise and deem important; the acquired, accepted ways of interpreting them. These are matters of the social order…"*

The constructivist perspective highlights the role of culture in shaping definitions of and exposure to risk (Bankoff et al., 2004; Oliver-Smith, 1996). Blaikie (1999, p. 133) claimed that environmental changes do not become problems only *"because of ontologically real changes in nature, but because they are constructed by social processes, successfully represented and launched"*. Constructivists also argued that conceptualisations of disaster risk, whether lay or professional, are profoundly influenced by socially constructed categories (e.g. gender, class and race) (Enarson, 1998; Fordham, 1999). They, particularly post-structuralists, accordingly accepted plural perspectives on risk that are mediated through linguistic and cultural grids (Blaikie, 1999; Oliver-Smith, 2004). They then turned their attention to how knowledge is produced, represented, and contested - that is, the political origin and institutionalisation of knowledge. At a radical end of social constructivism (i.e. strong social constructivism[25]), there is a failure to distinguish between epistemology and ontology and hence the perception of disaster is mistakenly reduced to ontologically real disaster itself. In other words, if a disaster happens, different people may have different stories, narratives, and even 'theories' about that disaster. However, this does not mean there are different 'disasters' ontologically. Forsyth (2001, p. 149) cautioned us about two types of facts: 'brute facts' - *"entities about which there is little debate concerning their existence"* - and 'institutional facts' - *"entities to which different social groups ascribe different functions"*. Brute facts do not require language or representation for their existence, whereas institutional facts do and thus only exist within human institutions. Nevertheless, to have institutional facts, we need to have brute facts on which we can impose social functions. For example, natural hazards are composed of 'brute' geophysical processes and events. However, the identification of the processes as 'hazard' (which is inevitably determined culturally and socially) implies the translation of 'brute facts' to 'institutional facts'. In this sense, disaster, perceived as a social phenomenon, cannot ignore 'brute' geophysical processes.

Critiques of radical constructivism were also about its subsuming nature into history that leads to repudiating the geophysical factors and processes as independent causal forces (Bankoff, 2004; Rosa & Dietz, 1998). In discontent with post-structuralist analysis, Blaikie (1999, p. 142) noted that its deconstruction of narratives *"seldom attempts to fill the vacuum which results from deconstruction with its own version of environmental or social truth"*. In response to the dilemma between positivist/objective views and social constructivist/subjective views of disaster, some scholars shed light on the interpretation of disasters by deploying critical realism or its ideas in disaster research (Blaikie, 1999; Watts & Bohle, 1993). Despite this, disaster research grounded in critical realism has remained scarce to date.

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[25] According to Bhaskar et al. (2018), social constructivism comes in two versions: weak and strong. In its weak version, both transitive and intransitive aspects of reality are recognised. Intransitive social reality always comes with its transitive interpretation (which is consistent with CR). In its strong version, social reality is all reduced to language. This is the main criticism from CR. This criticism does not mean that CR negates the relevance of discourse and languages. Rather, hermeneutic analysis is essential to social science and to our knowledge of social reality.

It argues that this paradigm can reconcile the divide between positivism and social constructivism in disaster research. It is a place where all values of various paradigms are well considered, rather than negated, to seek the improvement of our knowledge on disastrous phenomena under investigation. Though this study strongly criticises the hazard paradigm that often reduces disasters to hazards themselves, it acknowledges that the hazard paradigm, from a critical realist perspective, can contribute to our knowledge of natural processes and phenomena that, when interacting with social structures and mechanisms, would give rise to a disaster.

8.3.2.2. In disability studies

This thesis provides a review of the models of disabilities in Chapter 4. It argues that the existing models of disability such as medical, social and cultural models all contributed to the understanding of disability. As Shakespeare (2014) notes, the medical model provides helpful empirical evidence showing how the impact of illness or impairment affects the lived experience of people, their sense of self and their relations with others. The social model explores how social barriers disable people with impairments. The cultural model offers a helpful explanation on how cultural and historical variations influence the ways of classifying and describing impairment, and psychological explanations for why impairment is threatening to people without disabilities. However, the main critique of these models is their reductionism. That is, disability is neither biological nor social nor cultural determinism.

The capability approach is increasingly adopted in conceptualising disability and addressing disability issues. However, to strengthen the explanatory power of the CA, this thesis argues that it needs to be grounded in critical realism (Chapter 4). From the critical realist perspective, this thesis attempted to build a synergy between capability and disabilities theories in Chapter 4. The ontology of disability (or dis-capability from a capability perspective) is stratified into (i) physical, (ii) biological, (iii) psychological, (iv) psycho-social, (v) socio-economic, (vi) cultural and (vii) normative levels (Bhaskar & Danermark, 2006; Danermark, 2002). The disability experience of a person at the empirical level is the outcome of a complex interplay of mechanisms located at those seven levels. Also, due to this complex interaction, disabling mechanisms do not always result in a disablement but depend on other counteracting (enabling) mechanisms. A mechanism at one level may be a condition for other mechanisms to emerge at another level but this is not always the case. The existing medical, social and cultural models focus on mechanisms operating at one or several levels. Therefore, each of the models alone cannot provide us with a comprehensive understanding of disability. This leads to ineffective solutions to resolve disability issues (Danermark, 2002). For instance, if audiologists only treated a hearing disability as a biological problem (i.e. hearing impairment), they would suggest providing hearing aids to reduce the hearing disability. However, this may not be successful as many hearing aids are not used due to psychological and cultural mechanisms such as feelings of inferiority and stigmas.

Recognising the roles of mechanisms of various categories would have implications for interdisciplinary research and practice. Bhaskar et al. (2010, p. viii) claim that

> *"Critical realism – as a philosophical framework encompassing an ontology that ranges from the metatheory of so-called hard science through biology and evolutionary theory, to social sciences, to a critical engagement with the 'cultural turn' and the importance of discourse to human action and identity and action – is a good candidate to help to 'broker' interdisciplinary approaches".*

Danermark (2002) refers to interdisciplinary research as studying the same phenomenon at different levels. He notes that researchers addressing different levels of reality need different methodologies. Specifically, at each level, methods and techniques for studying phenomena specific to that level have to be developed. Therefore, interdisciplinary research demands respect for the methodology of the different disciplines. However, a methodological approach appropriate at one level does not mean that it can be transferred and works at another level. For example, a method that requires closed systems cannot be used at a level where this condition cannot be fulfilled (i.e. open systems). This entails methodological pluralism in critical realist research. The ultimate goal of interdisciplinary research from a critical realist perspective is to integrate the knowledge from the various disciplines which are relevant to the research.

Here, the integration of knowledge does not mean unification but rather how to make jigsaw pieces of knowledge fit together to form a whole picture of the complex phenomenon under investigation. In this sense, dialogue between researchers from different backgrounds and disciplines is required[26]. They should work together to complete the jigsaw puzzle rather than

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[26] A similar argument on the integration of knowledge and actions in disaster studies is also made by Gaillard and Mercer (2013). In their proposed road map of the integration, they recognise the different forms of knowledge and the actions at different scales that are all valuable in

negate the knowledge of each other. This entails respect and equality in the attitude of researchers. Danermark (2002) cautions that no type of knowledge has more supremacy than the others and that there should not be any hierarchy between different disciplines. That is, physical and biological sciences cannot claim to be more valuable than psychological and social sciences in disability research.

The outcomes of interdisciplinary research can lead to various levels or domains of interventions to disability. For example, medical interventions may be treatments for pain and provision of assistive devices to reduce the limitations of bodily functions. Economic interventions are benefits and employment opportunities. Social and cultural interventions are social protection and campaigns against negative norms on disability. Political interventions are campaigns for civil rights and welfare services (Watson, 2012).

Another contribution of critical realism to disability research and practice is its recognition of human agency and social structures as ontologically distinct entities. Human agency is often overlooked in disability research (Watson, 2020). PWD are presented as victims of the impairments from the medical perspective and of society and culture (i.e. social and cultural structures) from the social and cultural perspectives. This thesis, however, demonstrates that PWD are active agents and are able to challenge the structures and practices that disable them.

Watson (2020) contends that social change arises from a complex and relational process that lies at the interface of structure and agency. It often requires self-change and self-emancipation. For PWD to emancipate themselves, perhaps it may need to start with self-emancipation. Critical realism is viewed as an emancipatory perspective. Recognising that humans, as agents, are not pre-determined by social structures would emancipate PWD’s attitude. It helps people realise that they have power to act. Bhaskar (2012) notes that most of the social changes in the past were made by unconscious actions. He thus calls for more conscious actions as social structures do not exist or reproduce themselves without human activities. Only when people are truly conscious about their actions, would they take responsibilities for their actions individually or collectively to transform society into the form that they value.

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addressing disaster risk. They accordingly demand dialogue and collaboration among a large array of stakeholders operating across different scales to understand and reduce disaster risk.

8.3.3. Practice implications

8.3.3.1. The need to shift the focus from means to ends

At the time of writing this thesis, my study provinces, Quang Tri and Thua Thien Hue, are experiencing a devastating flood disaster[27]. The losses and damages of this disaster in terms of deaths, housing properties, means of earning incomes, and lifeline utilities are huge. They are judged to be more destructive than the previous historical flood in 1999. It is observed that many individuals and organisations engaging in relief and recovery are following the traditional approach that focuses on the equality of resources - here, including relief goods, and financial and material support for recovery[28]. That means, if a person or a family is affected by the flood, they are entitled to receive the same amount of support as others. However, the fact is, though everyone is - more or less and directly or indirectly- affected by the flood, it is obvious that the damage and loss, which they experience, are not equal. Even if their loss is equal, their capacities to recover from the flood are obviously not the same. Therefore, the equal distribution of support in this case cannot bring about the equal opportunities for the affected people, particularly 'vulnerable' ones, to recover from the flood, as it overlooks the diversity of human abilities and their circumstances. Here, I want to return to the most important questions that this thesis attempts to address in the context of disaster, which are 'Equality of what - resources or capabilities?' and 'What do we expect to achieve? How can we achieve this?'

As discussed throughout this thesis, particularly in Chapter 7, it is argued that 'capability' is a more adequate metric than 'resource' to address disaster risk faced by people. Focusing on the capabilities does not only tell us about the in/equality of 'ends' that people value in their daily lives as well as in times of disaster, but also about how the equality of 'ends' can be

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[27] See Julia Hollingsworth on "More than 100 dead as Vietnam reels from 'worst floods in decades'". CNN. 21 Oct. 20. https://edition.cnn.com/2020/10/21/asia/vietnam-floods-weather-intl-hnk/index.html. Accessed 29 Oct. 20.

[28] See Linh Nguyen on "Quà từ thiện - nơi nhận không hết, nơi lần không ra". Quan Doi Nhan Dan Online. 28 Oct. 202. https://www.qdnd.vn/xa-hoi/dien-dan-mien-trung-dang-can-gi/qua-tu-thien-noi-nhan-khong-het-noi-lan-khong-ra-642270 and
Ky Anh on "Cán bộ thôn ở Quảng Bình thu lại tiền của ca sĩ Thủy Tiên ủng hộ dân vùng lũ". VTC News. 30 Oct. 20. https://vtc.vn/can-bo-thon-o-quang-binh-thu-lai-tien-cua-ca-si-thuy-tien-ung-ho-dan-vung-lu-ar577980.html. Accessed 31 Oct. 20.
The equal distribution of the relief goods and recovery support without considering the damage and capacities of affected families in the previous disasters was also reported by the participants in the two study areas. It appears that many local people also believe that it is not fair unless the support is equally distributed among the affected families.

achieved by considering resources, human diversity, and environmental circumstances. In practice, the questions: "What and how much resource do people need to deal with disasters?" may not be answered if the ends of DRR are not specified; that is, what capability people want to achieve in dealing with disasters. The questions about the "ends" are often overlooked in practice. For example, in Vulnerability and Capacity Assessment[29] (IFRC, 2006), which is derived from the Pressure and Release model (Wisner et al., 2004), after exploring the impacts of disasters on the community, the follow-up questions are often resource-based exploring the vulnerabilities and capacities to deal with disasters. This kind of question, as this thesis argues, overlooks the environmental contexts, diversity of human abilities and power relations within that community. This thesis thus suggests focussing on what doing and being different groups of people value in dealing with disasters, specifically, reducing the impacts of disasters, and how this can be achieved.

To answer these 'what' and 'how' questions on the capabilities, it is of paramount importance to recognise people, particularly those with 'vulnerable' labels, as political equals and agents, and to strengthen their participation in decision making. As such, they can make their own decisions about what capabilities they value and how these capabilities can be achieved by/with/for them. The following sub-sections will discuss the two different approaches which are widely employed to optimise the inclusion of PWD into DRR.

8.3.3.2. Twin track approach - what is missing?

A twin-track approach is the most widely adopted in disability inclusion practice (Al Ju'beh, 2017; Bolte et al., 2014; GFDRR, 2020; IASC, 2019; Izutsu, 2019). Like the capability approach, it deals with both individual and environmental factors. The twin-track approach has two main components: inclusive mainstream programmes and targeted interventions for PWD. The first track basically aims to create a fit environment for all people including PWD. Specifically, disability barriers are considered and addressed in the design, implementation, monitoring and evaluation of all policies, interventions, and programmes. For example, the information should be disseminated in multiple accessible formats. Evacuation centres and relief distribution sites should be accessible to everyone including PWD. The second track addresses the specific requirements of PWD. It considers PWD as heterogeneous with diverse

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[29] Similar risk assessment approaches are Community risk assessment (World Vision, 2011), Participatory Capacity and Vulnerability Analysis (Oxfam, 2012), or Hazards, Participatory Vulnerability Analysis (ActionAid, 2004).

functions and needs, and as a result, provides specific interventions for them (e.g. providing assistive devices, transport allowance, capacity building).

CBM (2017) insists that successful outcomes can only be achieved if the emphasis is adequately placed on both tracks as they complement each other. However, in practice, the support programmes and projects appear to place more emphasis on the second track (Al Ju'beh, 2017; CBM, 2013). The lack of interventions in dealing with systematic and structural factors of the disabling environment, as discussed in Chapter 5, would lead to an imbalance of the twin-track approach. This subsequently may challenge the sustainability of outcomes after the support programmes come to an end. From the power lens (see Chapter 6), support for the second track also focuses mostly on building up the 'power to' and 'power with' for PWD and DPOs (e.g. providing knowledge and skills) whilst enduring internalised barriers such as self-stigma and low self-esteem (i.e. power within) are seldom addressed (CBM, 2013; CBM et al., 2019). This, as discussed in Chapter 6, would influence the participation of PWD in DRR and local decision-making processes, and accordingly, restrict their agency from realising their valuable capabilities to deal with disasters. This thesis, therefore, raises a need to have a balance in implementing the twin-track approach, that is, in addition to building up PWD's agency through the three types of power (within, to and with), the interventions should aim to remove structural barriers related to, for example, social norms and policies (particularly their enforcement) in their living environment.

8.3.3.3. A rights-based approach: is it sufficient?

Like the twin-track approach, the human rights-based approach is also increasingly advocated by UN agencies and international cooperation (e.g. 2030 Agenda for Sustainable Development (UN, 2015), Sendai Framework for Disaster Risk Reduction 2015-2030 (UNISDR, 2015a), Charter on Inclusion of Persons with Disabilities in Humanitarian Action (Humanitarian Disability Charter, 2016)) in dealing with disability issues at the international level (Al Ju'beh, 2017; Series, 2020). In this sense, disability is a human rights issue. The Convention on the Rights of Persons with Disabilities (CRPD) adopted by the UN in 2006 is an important legal instrument to remove barriers and promote disability inclusion in social life as well as in DRR at present. A review by Series (2020), however, indicates that no country fully complies with all the provisions of this CRPD, and therefore, the convention has not achieved its full impact.

While philosophical debates on the ontological and epistemological foundations of human rights remain ongoing (Sen, 2009; Series, 2020; Silvers, 2012), this thesis would limit its discussions and implications to the practice of human rights from the capability perspective. Sen (2005) considers human rights as entitlements to basic capabilities. Despite not being fully consistent with the universalist nature of human rights, Sen (2005) argues that, like capabilities, the formulation and vindication of human rights are necessarily grounded in open public reasoning between persons within a given country and across national borders. He insists that the viability and universality of human rights rely on *"their ability to survive open critical scrutiny in public reasoning"* (Sen 2005, p. 163). This implies that the critical role of PWD's participation in such public discussion to confront with the 'power over' for recognising their collective rights and for changing the way societies think about disability. This is indeed addressed in Article 8 of the CRPD – that provides state obligations in combating stereotypes, promoting *"awareness of the capabilities and contributions of persons with disabilities"* and fostering *"respect for the rights and dignity of persons with disabilities"*.

In the context of disasters, Wisner (2003) argues that absolute safety is not a human right. Rather, safety from avoidable loss, injury and death should be the one that everyone including PWD is entitled to. This implies social responsibilities in securing the safety of PWD in times of disaster. Specifically, Article 11 of the CRPD emphasises the state obligations to take *"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"*. While the human-rights approach relies mainly on the state obligations for bringing about equal enjoyment of human rights for everyone including PWD, this thesis demonstrates that PWD and their representative organisations can also play a critical role in claiming justice through their individual and collective agency. It accordingly raises a need for recognising their agency and empowering them to claim their human rights.

8.4. Research challenges, limitations, and opportunities for future research

This thesis recognises that PWD are not a homogeneous group. Emphasising the diversity of the disability experience, Bickenbach et al. (1999, p. 1181) note *"There is no unifying culture, language or set of experiences; people with disabilities are not homogenous, nor is there much prospect for transdisability solidarity"*. People with different dis/abilities may have different values about the capabilities that they have to deal with disasters and thereby require different social arrangements to achieve equality in capabilities.

Considering the diversity in disabilities, this study was limited in its ability to involve people with hearing/speaking, intellectual, and psychosocial disabilities. As discussed by many scholars who have done qualitative research with people with communication disabilities (Bigby et al., 2014; Gilbert, 2004; Hartley & Muhit, 2003; Nind, 2008), I encountered similar challenges arising from the lack of methods/tools to work with people with these disabilities, resources, and time (often requiring prolonged periods to gain access, build up trust, and communicate with the participants). Given the participants' abilities, tailoring the approach and methods is necessary (Gilbert, 2004; Nind, 2008). This thereby requires the researchers to have knowledge and skills to adapt their tools to specific abilities and needs of the participants with disabilities. In this study, given my research circumstances (e.g. lack of skills to work with people with communication disabilities, limited fieldwork time, lack of research funds, and unavailability of interpreters with skills to communicate with them at locality), I chose to work through their carers to understand their capabilities to deal with disasters. As I discussed elsewhere in the previous chapters, people with cognitive disabilities and communication disabilities may be engaged in an interactive process of assistive thinking and acting with one or many people, such as caregivers and family members to determine what capabilities they value and how to achieve them. Therefore, the caregivers may be the ones who best understand the capabilities that people with communication disabilities value. While engaging them as proxies may not have fully captured the values and disability experience of the participants with communication disabilities in times of disasters and there is a risk that these proxies may combine their views in the answers, it raises a need to have more research on the research methodologies with people with cognitive and communication disabilities.

The small number of participants with vision disabilities in this study may not also have captured the diversity of the perceptions and disability experience of this group in times of disaster. Furthermore, it is recognised that people with multiple disabilities may face more disadvantages than people with a single disability. Where some participants in this study have multiple disabilities, the complex relationship between this multiplicity of disabilities and the deprivation of capabilities was not fully analysed and discussed in the thesis. Future research may be necessary to consider and address these issues.

Another limitation of this thesis lies in exploring other stigmatising social identities (such as women, children, older people, ethnic minorities) and their influence on the realisation of capabilities. It argues that the intersection of all social identities that people bear leads to differences in disaster experience and vulnerability to disasters (Chaplin et al., 2019; Crenshaw, 1991). The emphasis of this intersectionality approach on human identities in understanding their lived experience is indeed in line with Sen's idea. Sen notes that *"any classification according to a singular identity polarizes people in a particular way, but if we take note of the fact that we have many different identities - related not just to religion but also to language, occupation and business, politics, class and poverty, and many others - we can see that the polarization of one can be resisted by a fuller picture... So knowledge and understanding are extremely important to fight against singular polarization.*[30]*"* In Chapters 5 and 6, to some extent, this thesis discussed the influence of the intersectionality of social identities such as the disabled, the poor, and the spinster to public stigma and self-stigma. However, a fuller investigation may be necessary. In addition, the relationship between social identities and stigmas would also be variable across cultures. Therefore, any further research needs to be cognisant of cultural and regional differences.

The selection of two case contexts in this study has led to some advantages. That is, it allowed me to explore the diversity of structures and causal mechanisms (especially, environmental factors) that give rise to the valuable capabilities of PWD, and subsequently to test the explanatory power of the identified structures and mechanisms. As I grew up in Quang Tri Province and lived in Thua Thien Hue Province for more than seven years, it brought me some privileges in understanding the basic local cultures and traditions. However, the limited time of the fieldwork (five months for the two study areas) and travelling forth and back between the two study areas restricted me in capturing a full understanding of local contexts as well as exploring the structures and causal mechanisms in depth.

Furthermore, I encountered challenges in translating the "Western" terms into my mother tongue and vice versa during the data collection and thesis writing. For some concepts, it is not always easy, if not impossible, to find a term in many cultures. For instance, the concept of disaster is termed as 'thảm họa' which is not often used in my everyday language, and

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[30] See Amartya Sen on 'Identity and Violence: The Illusion of Destiny' [transcript]. Live Q&As. Washington Post. 12 June 2006. https://www.washingtonpost.com/wp-dyn/content/discussion/2006/06/08/DI2006060800699.html. Accessed 29 Oct. 20.

therefore, not familiar to laypeople. Similarly, the concept of capability is not termed consistently in my language. This challenged me in communicating these concepts with my participants, particularly local people. At times, I felt like I was trying to connect the two cognitive worlds that, at some points, did not appear to be feasible. Therefore, during this thesis writing, I occasionally found it challenging and perhaps painful to properly articulate and express what I wanted to say in Vietnamese from my English vocabulary and knowledge of its grammatical rules.

This thesis found the contemporary disability research in disasters mostly focuses on physical disabilities. There is scarce research on cognitive disability. In the command and control approaches to DRR, people with cognitive disabilities are often treated as victims of disaster and dependants. Their agency and valuable capabilities are often overlooked. Thus, this may be a potential topic to be explored in future research. As this group may have difficulties in communication and understanding, there is a need to have careful consideration in selecting or modifying tools and methods that can enable these people to engage and have their voice in research. In so doing, I hope that the perceptions and values of this group on the capabilities to cope with disaster as well as barriers to the actualisation of capabilities can be better uncovered.

This thesis demonstrates that critical realism can bridge a divide between the positivism and social constructivism in disaster and disability studies. To date, however, there has remained a lack of disaster and disability research grounded in critical realism as exemplars. Therefore, research that illustrates how critical realist methodologies are used to explain disability or disaster issues may be necessary. Also, to bridge the gaps in disability and disaster literature, human agency should be included in the research agenda.

To have a final say on this thesis, I would like to use a quote from the book "Development as freedom" by Amartya Sen (1999, p. 18) who has driven my PhD journey to this point.

> ***"The success of a society is to be evaluated…primarily by the substantive freedoms that the members of the society enjoy"***

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As The University of Auckland has transitioned from APA 6th to APA 7th, the APA 7th referencing style is used in this thesis. Please see key changes (e.g. the place of publication no longer required) between APA 6th and APA 7th at https://www.cite.auckland.ac.nz/files/apa_6th_and_apa_7th_key_changes.pdf.

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APPENDICES

Appendix A: Participant Information Sheet

School of Environment
Science Centre, Building 302
23 Symonds Street, Auckland Central,
New Zealand
Phone: +64 9 373 7599 ext 88465
Fax: +64 9 373 7434
Email: environment@auckland.ac.nz
www.env.auckland.ac.nz

The University of Auckland
Private Bag 92019
Auckland 1142, New Zealand

PARTICIPANT INFORMATION SHEET

People with disabilities – Focus group discussions

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Research period: 01/05/2018 – 31/12/2018

Researcher: Mr. Khanh That Ton

Researcher introduction

Khanh That Ton is currently undertaking a PhD in Environmental Science at the University of Auckland, New Zealand. This research is supervised by Dr. JC Gaillard, Dr. Carole Adamson, and Dr. Caglar Akgungor.

Project description and invitation

This research is funded by the University of Auckland and aims to understand PWD's capabilities in coping with disasters. It also explores the participation of PWD and how it can contribute to reducing disaster risks for PWD in Vietnam. Subsequently, it endeavours to figure out how disaster risks facing PWD can be reduced in the context of Vietnam.

The research relies on the participation of many groups, especially people with disabilities. Therefore, I would like to invite you to participate in this study in order to share your disaster-related experience and capabilities in coping with disasters. You will also be asked about your perception of participation, your participation in DRR activities in your area, and solutions proposed to reduce disaster risks on your lives. Where needed, I have had your parents/carers' permission for you to participate in this research and their assurance that your decision to participate or not participate in this research will not affect your relationship with them in any way. Your active involvement will significantly contribute not only to my Doctoral thesis but also to an increase of your existing DRR-related knowledge and experience as well as to disaster risk reduction for PWD within your community. Your agreement to participate in this study can be given by signing the attached Consent Form. If you have difficulties with written consent, your oral consent will be audio-recorded.

Project Procedures

If you agree to participate in this research, you will be involved in a focus group discussion (FGD) which will have about 5 to 6 participants who have the same kind of disabilities as yours. The FGD will take around 2 to 3 hours of your time on a date between 1 May and 30 May 2018. The detailed schedule and location of discussion will be decided after consultation with all participants in order to fit into their daily activities. The discussion will start with an introduction of the objectives of the research. Following this, the participants will discuss which disasters they have experienced, what they are capable to do or to be to cope with the disasters, and how personal factors (i.e. impairments) and environmental factors influence their capabilities. Furthermore, they will discuss how they participate in local DRR activities, and suggest solutions to reduce their disaster risks. The discussion will be facilitated by the researcher. Participatory tools such as disaster timelines, hazard mapping and VENN diagrams, which have been adapted to fit your communication ability, may be used during the focus group discussion. Given your communication ability, a sign language interpreter, who has signed a confidentiality agreement, may be recruited to support you in presenting or interpreting your views.

During the process of FGDs, you might recall traumatic memories and/or feel distressed when talking about the disaster impacts you have experienced. If you were to get distressed during the process and wanted to speak to someone you could contact the following number for support: 1088 (VNPT Helpline 24/7). Your parents/carers have agreed to be in place for giving mental support when you get distressed if you wish.

Participation and right to withdraw from participation

Your participation in the FGD is voluntary. You will have the option to not answer any of the questions. You have the right to withdraw your participation at any time during the FGD without giving reason but the information you have provided cannot be withdrawn as it is combined with that from the other participants. This means it will be impossible to exactly trace and delete the information you provide in this activity. With your permission, the discussion will be audio recorded. The recorder cannot be turned off (unless all participants want to do so) but you can choose to not answer any question or to leave the room.

Anonymity and Confidentiality

The recordings of FGDs will be transcribed and translated into English by third parties who have signed a confidentiality agreement, and thus data contained within them will be known only to me, my supervisors and the third parties. You are requested to keep the information and the identity of participants in FGDs confidential. Though confidentiality will be strongly encouraged among FGD participants but it cannot be guaranteed that the participants will comply with this request. Only photographs of participants' drawings and maps (with their names and identifying features removed), audio recordings, transcripts and the researcher's field notes will be taken away. The information collected from participants will be kept confidential and only discussed with my supervisors. If the information you provide is reported/published, this will be done in a way that does not identify you as its source.

Data Storage, Retention, Destruction and Future Use

The information collected during focus group discussion will be used for completing my thesis, related conference presentations and academic publications (e.g. scientific articles and reports). To ensure confidentiality, hard copies of data obtained (e.g. the researcher's notes) will be securely stored in a locked cabinet at The University of Auckland for six years. Digital copies (e.g. audio recordings and photographs) will be kept on a password-protected computer. After six years, hard copies will be shredded and digital copies will be deleted from all sources. A summary of findings will be sent to you by the researcher if you are interested.

Thank you for taking your time to consider this invitation and participation in this research. If you would like to have further information about the proposed research, please contact me at the Centre for Climate Change Study in Central Vietnam, 102 Phung Hung, Hue City, Thua Thien Hue; Mobile phone: +84 967267285; Email: kton029@aucklanduni.ac.nz.

Contact details and approval

- Researcher: Khanh That Ton - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +84 967267285 (Vietnam); Email: kton029@aucklanduni.ac.nz
- Main supervisor: Associate Professor JC Gaillard - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +64 9 923 9679; Email: jc.gaillard@auckland.ac.nz
- Co-supervisor: Dr. Carole Elizabeth Adamson - Department of Counselling, Human Services and Social Work, Faculty of Education and Social Work, the University of Auckland, New Zealand; Tel: +64 9 373 7999 ext 48561; Email: c.adamson@auckland.ac.nz
- Advisor: Dr. Caglar Akgungor - AKUT Search and Rescue Association, Turkey; Email: caglarakgungor@akut.org.tr
- Head of School: Professor Paul Kench - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +64 9 923 8440 ext. 85331; Email: p.kench@auckland.ac.nz

For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Research Office, Private Bag 92019, Auckland 1142. Telephone 09 373-7599 ext. 83711. Email: ro-ethics@auckland.ac.nz.

Approved by the University of Auckland Human Participants Ethics Committee on 30/04/2018 for three years. Reference Number 021016

[University logo and contact details]

PARTICIPANT INFORMATION SHEET

Parents/carers of people with disabilities – Focus group discussions

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Research period: 01/05/2018 – 31/12/2018

Researcher: Mr. Khanh That Ton

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Project description and invitation

This research is funded by the University of Auckland and aims to understand PWD's capabilities in coping with disasters. It also explores the participation of PWD and how this can contribute to reducing disaster risks for PWD in Vietnam. Subsequently, it endeavours to figure out how disaster risks facing PWD can be reduced in the context of Vietnam.

I would like to invite you to participate in this study in order to present the voice of the person with severe communication and cognitive disabilities under your care. You will be asked to share your knowledge related to the disaster impacts on his/her life, his/her capabilities in coping with disasters, his/her participation in DRR activities in your area, and solutions proposed to reduce disaster risks for him/her. Your active involvement will significantly contribute not only to my Doctoral thesis but also to reducing disaster risk for PWD within your commune. Your agreement to participate in this study can be given by signing the attached Consent Form. If you have difficulty with written consent, your oral consent will be audio-recorded.

Project Procedures

If you agree to participate in this research, you will be involved in a focus group discussion (FGD) which will have about 5 to 6 participants who are taking care of those with severe communication and cognitive disabilities. The FGD will take around 2 to 3 hours of your time on a date between 1 May and 30 May 2018. The detailed schedule and location of discussion will be decided after consultation with all participants in order to fit into their daily activities. The discussion will start with an introduction of the research objectives. Following this, the participants will discuss which disasters PWD have experienced, what they are capable to do or be to cope with the disasters, and how personal factors (i.e. impairments) and environmental factors influence their capabilities. Furthermore, they will discuss how they participate in local DRR activities and suggest solutions to reduce their disaster risks. The discussion will be facilitated by the researcher. Participatory tools such as disaster timelines, hazard mapping and VENN diagrams, which have been adapted to fit your communication ability, may be used during the FGD.

During the process of FGDs, you might recall traumatic memories and/or feel distressed when talking about the disaster impacts you have experienced. If you were to get distressed during the process and wanted to speak to someone you could contact the following number for support: 1088 (VNPT Helpline 24/7).

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Your participation in the FGD is voluntary. You will have the option to not answer any of the questions. You have the right to withdraw your participation at any time during the FGD without giving reason. However, the information you have provided cannot be withdrawn as it is combined with that from the other participants. This means it will be impossible to exactly trace and delete the information you provide in this activity. With your permission, the discussion will be audio recorded. The recorder cannot be turned off (unless all participants want to do so) but you can choose to not answer any question or to leave the room.

Anonymity and Confidentiality

The recordings of FGDs will be transcribed and translated into English by third parties who have signed a confidentiality agreement, and thus data contained within them will be known only to me, my supervisors and the third parties. You are requested to keep the information and the identity of participants in FGDs confidential. Though confidentiality will be strongly encouraged among FGD participants but it cannot be guaranteed that the participants will comply with this request. Only photographs of participants' drawings and maps (with their names and identifying features removed), audio recordings, transcripts and the researcher's field notes will be taken away. The information collected from participants will be kept confidential and only discussed with my supervisors. If the information you provide is reported/published, this will be done in a way that does not identify you as its source.

Data Storage, Retention, Destruction and Future Use

The information collected during focus group discussion will be used for completing my thesis, and related conference presentations and academic publications (e.g. scientific articles and reports). To ensure confidentiality, hard copies of any data obtained (e.g. field notes) will be securely stored in a locked cabinet at The University of Auckland for six years. Digital copies (e.g. photographs, audio recordings, and transcripts) will be kept on a password-protected computer. After six years, hard copies will be shredded, and digital copies will be deleted from all sources. A summary of findings will be sent to you by the researcher if you are interested.

Thank you for taking your time to consider this invitation and participation in this research. If you would like to have further information about the proposed research, please contact me at the Centre for Climate Change Study in Central Vietnam, 102 Phung Hung, Hue City, Thua Thien Hue; Mobile phone: +84 967267285; Email: kton029@aucklanduni.ac.nz.

Contact details and approval

- Researcher: Khanh That Ton - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +84 967267285 (Vietnam); Email: kton029@aucklanduni.ac.nz
- Main supervisor: Associate Professor JC Gaillard - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +64 9 923 9679; Email: jc.gaillard@auckland.ac.nz
- Co-supervisor: Dr. Carole Elizabeth Adamson - Department of Counselling, Human Services and Social Work, Faculty of Education and Social Work, the University of Auckland, New Zealand; Tel: +64 9 373 7999 ext 48561; Email: c.adamson@auckland.ac.nz
- Advisor: Dr. Caglar Akgungor - AKUT Search and Rescue Association, Turkey; Email: caglarakgungor@akut.org.tr
- Head of School: Professor Paul Kench - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +64 9 923 8440 ext. 85331; Email: p.kench@auckland.ac.nz

For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Research Office, Private Bag 92019, Auckland 1142. Telephone 09 373-7599 ext. 83711. Email: ro-ethics@auckland.ac.nz.

Approved by the University of Auckland Human Participants Ethics Committee on 30/04/2018 for three years. Reference Number 021016

[University logo and contact details]

PARTICIPANT INFORMATION SHEET

People with disabilities – Interviews

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Research period: 01/05/2018 – 31/12/2018

Researcher: Mr. Khanh That Ton

Researcher introduction

Khanh That Ton is currently undertaking a PhD in Environmental Science at the University of Auckland, New Zealand. This research is supervised by Dr. JC Gaillard, Dr. Carole Adamson, and Dr. Caglar Akgungor.

Project description and invitation

This research is funded by the University of Auckland and aims to understand PWD's capabilities in coping with disasters. It also explores the participation of PWD and how it can contribute to reducing disaster risks for PWD in Vietnam. Subsequently, it endeavours to figure out how disaster risks facing PWD can be reduced in the context of Vietnam.

The research relies on the participation of many groups, especially people with disabilities. Therefore, I would like to invite you to participate in this study in order to share your disaster-related experience and capabilities in coping with disasters. You will also be asked about your perception of participation, your participation in DRR activities in your area, and solutions proposed to reduce disaster risks on your lives. Where needed, I have had your parents/carers' permission for you to participate in this research and their assurance that your decision to participate or not participate in this research will not affect your relationship with them in any way. Your active involvement will significantly contribute not only to my Doctoral thesis but also to an increase of your existing DRR-related knowledge and experience as well as disaster risk reduction for PWD within your community. Your agreement to participate in this study can be given by signing the attached Consent Form. If you have difficulties with written consent, your oral consent will be audio-recorded.

Project Procedures

If you agree to participate in this research, you will be involved in a face-to-face interview that takes about 60 to 90 minutes of your time on a date between 1 June and 30 July. The interview will be conducted at a time and in a location which are the most convenient and accessible for you. Given your communication ability, a sign language interpreter, who has signed a confidentiality agreement, may be recruited to support in presenting or interpreting your views.

During the process of FGDs, you might recall traumatic memories and/or feel distressed when talking about the disaster impacts you have experienced. If you were to get distressed during the process and wanted to speak to someone you could contact the following number for support: 1088 (VNPT Helpline 24/7). Your parents/carers have agreed to be in place for giving mental support when you get distressed if you wish.

Participation and right to withdraw from participation

Your participation in this interview is voluntary. You have the option to not answer any of the questions. You have the right to withdraw your participation at any time during the interview without giving reason. With your permission, the interview will be audio recorded. If you wish, you will receive the transcript of your interview or listen again to the summary of your interview and will have 30 days to edit it. You have the right to withdraw the information you have provided within 30 days after receiving the transcript or listening to the summary of your interview.

Anonymity and Confidentiality

The recordings of interviews will be transcribed and translated into English by third parties who have signed a confidentiality agreement, and thus data contained within them will be known only to me, my supervisors and the third parties. All information collected during the interview will be kept confidential and only discussed with my supervisors. The data obtained from this research will be presented in a way that does not identify the participants.

Data Storage, Retention, Destruction and Future Use

The information collected from this interview will be used for completing my thesis, related conference presentations, and academic publications (e.g. scientific articles and reports). To ensure confidentiality, the researcher's notes (if the interview is not recorded) will be securely stored in a locked cabinet at The University of Auckland for six years. Digital copies (e.g. audio recordings and interview transcripts) will be kept on a password-protected computer. After six years, hard copies will be shredded and digital copies will be deleted from all sources. A summary of findings will be sent to you by the researcher if you are interested.

Thank you for taking your time to consider this invitation and participation in this research. If you would like to have further information about the proposed research, please contact me at the Centre for Climate Change Study in Central Vietnam, 102 Phung Hung, Hue City, Thua Thien Hue; Mobile phone: +84 967267285; Email: kton029@aucklanduni.ac.nz.

Contact details and approval

- Researcher: Khanh That Ton - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +84 967267285 (Vietnam); Email: kton029@aucklanduni.ac.nz
- Main supervisor: Associate Professor JC Gaillard - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +64 9 923 9679; Email: jc.gaillard@auckland.ac.nz
- Co-supervisor: Dr. Carole Elizabeth Adamson - Department of Counselling, Human Services and Social Work, Faculty of Education and Social Work, the University of Auckland, New Zealand; Tel: +64 9 373 7999 ext 48561; Email: c.adamson@auckland.ac.nz
- Advisor: Dr. Caglar Akgungor - AKUT Search and Rescue Association, Turkey; Email: caglarakgungor@akut.org.tr
- Head of School: Professor Paul Kench - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +64 9 923 8440 ext. 85331; Email: p.kench@auckland.ac.nz

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[University logo and contact details]

PARTICIPANT INFORMATION SHEET

Parents/carers of people with disabilities – Interviews

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Research period: 01/05/2018 – 31/12/2018

Researcher: Mr. Khanh That Ton

Researcher introduction

Khanh That Ton is currently undertaking a PhD in Environmental Science at the University of Auckland, New Zealand. This research is supervised by Dr. JC Gaillard, Dr. Carole Adamson, and Dr. Caglar Akgungor.

Project description and invitation

This research is funded by the University of Auckland and aims to understand PWD's capabilities in coping with disasters. It also explores the participation of PWD and how it can contribute to reducing disaster risks for PWD in Vietnam. Subsequently, it endeavours to figure out how disaster risks facing PWD can be reduced in the context of Vietnam.

I would like to invite you to participate in this study in order to present the voice of the person with severe communication and cognitive disabilities under your care. You will be asked to share your knowledge related to the disaster impacts on his/her life, his/her capabilities in coping with disasters, his/her participation in DRR activities in your area, and solutions proposed to reduce disaster risks for him/her. Your active involvement will significantly contribute not only to my Doctoral thesis but also to reducing disaster risks for PWD within your commune. Your agreement to participate in this study can be given by signing the attached Consent Form. If you have difficulty with written consent, your oral consent will be audio-recorded.

Project Procedures

If you agree to participate in this research, you will be involved in a face-to-face interview that takes about 60 to 90 minutes of your time on a date between 1 June and 30 July. The interview will be conducted at a time and in a location which are the most convenient and accessible for you.

During the interview, you might recall traumatic memories and/or feel distressed when talking about the disaster impacts you have experienced. If you were to get distressed during the process and wanted to speak to someone you could contact the following number for support: 1088 (VNPT Helpline 24/7).

Participation and right to withdraw from participation

Your participation in this interview is voluntary. You have the option to not answer any of the questions. You have the right to withdraw your participation at any time during the interview without giving reason. With your permission, the interview will be audio recorded. If you wish, you will receive the transcript of your interview or listen again to the summary of your interview and will have

30 days to edit it. You have the right to withdraw the information you have provided within 30 days after receiving the transcript or listening to the summary of your interview.

Anonymity and Confidentiality

The recordings of interviews will be transcribed and translated into English by third parties who have signed a confidentiality agreement, and thus data contained within them will be known only to me, my supervisors and the third parties. All information collected during the interview will be kept confidential and only discussed with my supervisors. The data obtained from this research will be presented in a way that does not identify the participants.

Data Storage, Retention, Destruction and Future Use

The information collected from this interview will be used for completing my thesis, related conference presentations, and academic publications (e.g. scientific articles and reports). To ensure confidentiality, the researcher's notes (if the interview is not recorded) will be securely stored in a locked cabinet at the University of Auckland for six years. Digital copies (e.g. audio recordings and interview transcripts) will be kept on a password-protected computer. After six years, hard copies will be shredded and digital copies will be deleted from all sources. A summary of findings will be sent to you by the researcher if you are interested.

Thank you for taking your time to consider this invitation and participation in this research. If you would like to have further information about the proposed research, please contact me at the Centre for Climate Change Study in Central Vietnam, 102 Phung Hung, Hue City, Thua Thien Hue; Mobile phone: +84 967267285; Email: kton029@aucklanduni.ac.nz.

Contact details and approval

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Approved by the University of Auckland Human Participants Ethics Committee on 30/04/2018 for three years. Reference Number 021016

[University logo and contact details]

PARTICIPANT INFORMATION SHEET

Staff of related organisations (Government organisations/agencies, NGOs, and Organisations representing for PWD) – Interviews

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Research period: 01/05/2018 – 31/12/2018

Researcher: Mr. Khanh That Ton

Researcher introduction

Khanh That Ton is currently undertaking a PhD in Environmental Science at the University of Auckland, New Zealand. This research is supervised by Dr. JC Gaillard, Dr. Carole Adamson, and Dr. Caglar Akgungor.

Project description and invitation

This research is funded by the University of Auckland and aims to understand PWD's capabilities in coping with disasters. It also explores the participation of PWD and how it can contribute to reducing disaster risks for PWD in Vietnam. Subsequently, it endeavours to figure out how disaster risks facing PWD can be reduced in the context of Vietnam.

I would like to invite you to participate in this study in order to share your knowledge and experience related to disaster impacts on PWD, and PWD's capabilities to cope with disasters. I also would like to learn about your organisation's support to expand the capabilities of PWD as well as to promote the participation of PWD in DRR activities. Your active involvement will significantly contribute not only to my Doctoral thesis but also to the synthesis and sharing of the existing DRR knowledge and experience as well as to reducing disaster risks for PWD in Vietnam. I have had your manager/director's assurance that your decision to participate or not participate in this research will not affect your employment, services you are receiving, or relationship with him/her and the organisation in any way. Your agreement to participate in this study can be given by signing the attached Consent Form. If you have difficulty with written consent, your oral consent will be audio-recorded.

Project Procedures

If you agree to participate in this research, you will be involved in a face-to-face interview that takes about 60 to 90 minutes of your time on a date between 1 June and 30 July. The interview will be conducted at a time and in a location which are the most convenient and accessible for you. Given your communication ability, a sign language interpreter, who has signed a confidentiality agreement, may be recruited to support in presenting or interpreting your views.

Participation and right to withdraw from participation

Your participation in this interview is voluntary. You have the option to not answer any of the questions. You have the right to withdraw your participation at any time during the interview without giving reason. With your permission, the interview will be audio recorded. If you wish, you will receive the transcript of your interview or listen again to the summary of your interview and will have 30 days to edit it. You have the right to withdraw the information you have provided within 30 days after receiving the transcript or listening to the summary of your interview.

Anonymity and Confidentiality

The recordings of interviews will be transcribed and translated into English by third parties who have signed a confidentiality agreement, and thus data contained within them will be known only to me, my supervisors and the third parties. All information collected during the interview will be kept confidential and only discussed with my supervisors. The data obtained from this research will be presented in a way that does not identify the participants. Though the researcher will make every effort to keep your identity confidential, this cannot be guaranteed as your organisation and case study sites will be named in the documents published out of the findings and the number of participants in this group is small.

Data Storage, Retention, Destruction and Future Use

The information collected from this interview will be used for my thesis, conference presentations, and academic publications (e.g. scientific articles and reports). To ensure confidentiality, the researcher's notes (if the interview is not recorded) will be securely stored in a locked cabinet at the University of Auckland for six years. Digital copies (e.g. audio recordings and interview transcripts) will be kept on a password-protected computer. After six years, hard copies will be shredded and digital copies will be deleted from all sources. A summary of findings will be sent to you by the researcher if you are interested.

Thank you for taking your time to consider this invitation and participation in this research. If you would like to have further information about the proposed research, please contact me at the Centre for Climate Change Study in Central Vietnam, 102 Phung Hung, Hue City, Thua Thien Hue; Mobile phone: +84 967267285; Email: kton029@aucklanduni.ac.nz.

Contact details and approval

- Researcher: Khanh That Ton - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +84 967267285 (Vietnam); Email: kton029@aucklanduni.ac.nz
- Main supervisor: Associate Professor JC Gaillard - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +64 9 923 9679; Email: jc.gaillard@auckland.ac.nz
- Co-supervisor: Dr. Carole Elizabeth Adamson - Department of Counselling, Human Services and Social Work, Faculty of Education and Social Work, the University of Auckland, New Zealand; Tel: +64 9 373 7999 ext 48561; Email: c.adamson@auckland.ac.nz
- Advisor: Dr. Caglar Akgungor - AKUT Search and Rescue Association, Turkey; Email: caglarakgungor@akut.org.tr
- Head of School: Professor Paul Kench - School of Environment, Faculty of Science, the University of Auckland, New Zealand; Tel: +64 9 923 8440 ext. 85331; Email: p.kench@auckland.ac.nz

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Approved by the University of Auckland Human Participants Ethics Committee on 30/04/2018 for three years. Reference Number 021016

Appendix B: Consent Form

[University logo and contact details]

CONSENT FORM
People with disabilities – Focus group discussions

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Researcher: Mr. Khanh That Ton

I have read the Participant Information Sheet and I understand the nature of the research and why I am participating in this research. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- I understand that my participation in this research is voluntary.
- I understand that I have the right to withdraw my participation at any time during the focus group discussion but all information that I have provided cannot be withdrawn.
- I agree / do not agree for this focus group discussion to be audio recorded.
- I understand that the audio recorder cannot be turned off unless all participants want to do so.
- I understand that third parties who have signed a confidentiality agreement will transcribe and translate the recording of the focus group discussion.
- I understand that I always have the option to not answer any of the questions.
- I understand that a sign language interpreter, who has signed a confidentiality agreement, may participate to support the researcher and me in communication.
- I understand that only photographs of my drawings or maps (without my name or my picture), audio recordings and the researcher's field notes will be taken away.
- I know who I can speak to if I am worried, distressed or would like to ask questions about this research (contact details are on the Participant Information Sheet).
- I understand that my name will not be used in any reports/presentation.
- I agree / do not agree to keep the identity of the participants and the information provided in the focus group discussion confidential.
- I understand that the researcher will make every effort to ensure confidentiality, but it cannot be guaranteed that my identity and information provided in the focus group discussion will be kept confidential due to the nature of this activity.
- I understand that the information provided during this focus group discussion will be kept in a secure place for a period of six years, after which it will be destroyed.
- I wish/do not wish to receive a summary of findings, which can be provided to me at this email/postal address: ____.

Name of participant______________________ Signature ___________________Date ____________

Approved by the University of Auckland Human Participants Ethics Committee on 30/04/2018 for three years. Reference Number 021016

[University logo and contact details]

CONSENT FORM

Parents/carers of people with disabilities – Focus group discussions

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Researcher: Mr. Khanh That Ton

I have read the Participant Information Sheet and understand the nature of the research and why I am participating in this research. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- I understand that my participation in this research is voluntary.
- I understand that I have the right to withdraw my participation at any time during the focus group discussion but all information that I have provided cannot be withdrawn.
- I agree / do not agree for this focus group discussion to be audio recorded.
- I understand that the audio recorder cannot be turned off unless all participants want to do so
- I understand that I always have the option to not answer any of the questions.
- I understand that only photographs of my drawings or maps (without my name or my picture), audio recordings and the researcher's field notes will be taken away.
- I know who I can speak to if I am worried, distressed or would like to ask questions about this research (contact details are on the Participant Information Sheet).
- I understand that my name will not be used in any reports/presentations.
- I understand that third parties who has signed a confidentiality agreement will transcribe and translate the recording of the FGD
- I agree / do not agree to keep the identity of the participants and the information provided in the focus group discussion confidential
- I understand that the researcher will make every effort to ensure confidentiality, but it cannot be guaranteed that my identity and information provided in the focus group discussion will be kept confidential due to the nature of this activity.
- I understand that the information provided during this focus group discussion will be kept in a secure place for a period of six years, after which it will be destroyed.
- I wish/do not wish to receive a summary of findings, which can be provided to me at this email/postal address: ____.

Name of participant________________________

Signature ___________________________

Date _________________

Approved by the University of Auckland Human Participants Ethics Committee on 30/04/2018 for three years. Reference Number 021016

[University logo and contact details]

CONSENT FORM

People with disabilities – Interviews

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Researcher: Mr. Khanh That Ton

I have read the Participant Information Sheet and I understand the nature of the research and why I am participating in this research. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- I understand that my participation in this research is voluntary.
- I understand that I have the right to withdraw my participation at any time during the interview without giving reason.
- I understand that the interview will last 60-90 minutes.
- I agree/ do not agree to be audio recorded by the researcher in the interview.
- I understand that I am entitled to request to stop the recording at any time.
- I understand that I always have the option to not answer any of the questions.
- I understand that a sign language interpreter, who has signed a confidentiality agreement, may participate to support the communication between me and the researcher where needed.
- I understand that third parties who have signed a confidentiality agreement will transcribe and translate the recording of my interview
- I wish/ do not wish to listen to the summary of my interviews to check the information in it.
- I wish/ do not wish to receive and check the transcript of my interviews. Please provide your email/postal address: ____.
- I understand that I may withdraw/edit the information I provide in the interview within 30 days after receiving the transcript or listening to the summary of my interview.
- I know who I can speak to if I am worried, distressed or would like to ask questions about this research (contact details are on the Participant Information Sheet).
- I understand that my name will not be used in any reports/presentations.
- I understand that the information provided during this interview will be kept in a secure place for a period of six years, after which it will be destroyed.
- I wish/do not wish to receive a summary of findings, which can be provided to me at this email/postal address: ____.

Name of participant____________________ Signature ____________________Date ____________

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CONSENT FORM

Parents/carers of people with disabilities – Interviews

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Researcher: Mr. Khanh That Ton I have read the Participant Information Sheet and I understand the nature of the research and why I am participating in this research. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- I understand that my participation in this research is voluntary.
- I understand that I have the right to withdraw my participation at any time during the interview without giving reason.
- I understand that the interview will last 60-90 minutes.
- I agree/ do not agree to be audio recorded by the researcher during the interview.
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- I understand that I always have the option to not answer any of the questions.
- I wish/ do not wish to listen to the summary of my interviews to check the information in it.
- I wish/ do not wish to receive and check the transcript of my interviews. Please provide your email/postal address: ____.
- I understand that I may withdraw/edit the information I provide in the interview within 30 days after receiving the transcript or listening to the summary of my interview.
- I understand that third parties who have signed a confidentiality agreement will transcribe and translate the recording of my interview.
- I know who I can speak to if I am worried, distressed or would like to ask questions about this research (contact details are on the Participant Information Sheet).
- I understand that my name will not be used in any reports/presentations without my permission.
- I understand that the information provided during this interview will be kept in a secure place for a period of six years, after which it will be destroyed.
- I wish/do not wish to receive a summary of findings, which can be provided to me at this email/postal address: ____.

Name of participant________________________

Signature ___________________________

Date _________________

Approved by the University of Auckland Human Participants Ethics Committee on 30/04/2018 for three years. Reference Number 021016

[University logo and contact details]

CONSENT FORM

Staff of related organisations (Government organisations/agencies, NGOs, and Organisations representing for PWD) – Interviews

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Research title: Capabilities of People with Disabilities (PWD) and Disaster Risk Reduction (DRR)

Researcher: Mr. Khanh That Ton

I have read the Participant Information Sheet and I understand the nature of the research and why I am participating in this research. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- I understand that my participation in this research is voluntary.
- I understand that I have the right to withdraw my participation at any time during the interview without giving reason.
- I understand that the interview will last 60-90 minutes.
- I agree/ do not agree to be audio recorded by the researcher in the interview.
- I understand that I am entitled to request to stop the recording at any time.
- I understand that I always have the option to not answer any of the questions.
- I understand that I have the assurance of my manager(s) that my participation or non-participation will not affect my employment status, services I am receiving, or relationship with him/her and the organisation in any way.
- I understand that a sign language interpreter, who has signed a confidentiality agreement, may participate to support the communication between me and the researcher where needed.
- I wish/ do not wish to listen to the summary of my interviews to check the information in it.
- I wish/ do not wish to receive and check the transcript of my interview. Please provide your email/postal address: ____.
- I understand that I may withdraw/edit the information I provide in the interview within 30 days after receiving the transcript or listening to the summary of my interview.
- I understand that third parties who have signed a confidentiality agreement will transcribe and translate the recording of my interview.
- I know who I can speak to if I would like to ask questions about this research (contact details are on the Participant Information Sheet).
- I understand that my name will not be used in any reports/presentations.
- I understand that my anonymity cannot be guaranteed.
- I understand that the information provided during this interview will be kept in a secure place for a period of six years, after which it will be destroyed.
- I wish/do not wish to receive a summary of findings, which can be provided to me at this email/postal address: ____.

Name of participant_____________________ Signature ________________ Date ______________

Approved by the University of Auckland Human Participants Ethics Committee on 30/04/2018 for three years. Reference Number 021016

Appendix C: Guiding research questions

I. Focus group discussions:

A – Capabilities of people with disabilities (PWD) in DRR

- What hazards exist in your area? What are their characteristics of these hazards (causes, location, frequency, magnitude and severity and trends)? What are the impacts of disasters on your community in general and on the lives of PWD in particular?
- What important activities/states do PWD value to achieve (to reduce the impacts on the community and on the lives of PWD)?
- What activities/states are the people in your group capable to achieve or have opportunities to achieve? How and why? What not yet? Why?
- How can the barriers / disabling factors be removed?

B – Participation of PWD in DRR

- What activities do PWD want to participate for DRR? Why? What activities have PWD participated in?
- List the values or valuable elements or features constructing 'meaningful or full participation'.
- What factors that facilitate and prevent them from participating in the activities listed above?
- How do PWD influence the local decision-making in DRR?

II. Semi-structured interviews

A – People with disabilities

Capabilities of PWD in DRR

- What disasters have you experienced in your life?
- What are the impacts of disasters on your living?
- What are the important/valuable activities/states you would like to achieve (given the impacts)?

- What activities/states are you capable to achieve or have opportunities to achieve? How?
- What activities/states you are not capable to achieve or do not have opportunities to achieve? Why?
- What do you suggest to remove the barriers / disabling factors?

Agency and Participation of PWD in DRR

- What activities do you want to participate for DRR? Why? What activities have you participated in? How can this help reduce the disaster impacts on your life? What activities have you not participated? Why? (e.g. not invited, do not want to)
- List the values or valuable elements or features constructing 'meaningful or full participation'.
- What factors that facilitate and prevent you from participating in the activities listed above?
- How do you influence the local decision-making in DRR? To what extent do you believe you can make an influence on the decision-making of those activities? How?
- Who or what organisation (e.g. Disabled People's Organisation - DPO) have you collaborated with to make influence or changes? How?
- Share a positive change that you have made. How did you make it?

B – Local authorities and Committee for Disaster Risk Management

DRR for PWD

- What are the disaster impacts on PWD in your area? What support have you provided to reduce the impacts of disasters on their lives? How have you come to know those supports?
- What are the obstacles in the way of supporting the needs of PWD in reducing the disaster impacts on their lives?

Participation of PWD in DRR

- What activities do you expect PWD to participate for reducing the disaster impacts on their own lives and community? Why? How?
- What does participation mean from your perspective? List the values or valuable elements or features constructing 'meaningful participation'.

- What have you done to create more opportunities for PWD to participate meaningfully in activities that help reduce the disaster impacts on their lives?
- Is there any activity in which you exclude PWD? If so, why and to what extent have you controlled the participation of PWD in those activities?
- What are the strengths and weaknesses in the operation of local DPO to support the participation of PWD? Any support or plan to support the DPO's capacity of operation?

C – Non-government organisations

Capabilities of PWD in DRR

- What kinds of needs do you look at when working with PWD in DRR? Any needs related to activities/states PWD want to achieve for reducing the impacts of disasters on their lives? If so, what are they? How have you come to know those needs?
- What (disabling) factors reduce their capabilities? What or who have created or contributed to creating these disabling factors?
- What (advantageous/enabling) factors expand their capabilities?
- What have you done or planned to do to expand the PWD's capabilities in DRR?

Agency and participation of PWD in DRR

- What activities do you expect PWD to participate in to reduce the disaster impacts on their own lives and community? Why? How?
- What does participation mean from your perspective? List the values or valuable elements or features constructing 'meaningful participation'.
- What have you done to create more opportunities for PWD to participate meaningfully?
- Is there any activity in which you exclude PWD? If so, why and to what extent have you controlled the participation of PWD in those activities?
- Do you support the development of the local DPO? If so, in what aspects, why and how? What responsibilities or activities do you expect from the local DPO to reduce the disaster impacts on PWD's lives?
- Your comments on the current agency of PWD to make positive changes for their DRR. What factors influence the agency of PWD? What has your organisation done to enhance the agency of PWD?

D – Disabled People's Organisations

Capabilities of PWD

- What are the impacts of disasters on PWD in the area? Why have PWD suffered from those impacts?
- What activities/states do PWD value to achieve for reducing the disaster impacts on their lives? How have you come to know those activities/states?
- What activities/states can they not achieve? Why? What or who have created or contributed to creating these disabling factors?
- What (advantageous/enabling) factors promote them to achieve the valuable activities/states?
- What have you done or do you plan to do to support the PWD to achieve their valuable activities/states (e.g. increase the access to resources, strengthen enabling factors, or remove the barriers or disabling factors)? What difficulties (internal and external) have you encountered?

Agency and participation of PWD

- In what activities have PWD participated to reduce the disaster impacts on their own lives and community? Why? How?
- What does participation mean from your perspective? List the values or valuable elements or features constructing 'meaningful participation'.
- What have you done to create more opportunities for PWD to participate meaningfully? What difficulties have you encountered when supporting the participation of PWD in DRR?
- What changes or influences have your organisation made on the local decision-making related to DRR for PWD? How have you mobilised the participation and contribution of PWD in making those changes? What are the difficulties getting in the way and how have you deal with those?