

Representations of resilience in the disaster policies of four Association of South East Asian Nations (ASEAN) member states

by

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Candidate's Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of the author's knowledge, it contains no material previously published or written by another person, except where due reference is made in the text.

Asha Niall

Date:

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Abstract

Disasters have the ability to overwhelm coping capacities of both communities and the state. This makes them an area of significant concern on local, regional, national and international scales. The international governance framework established to deal with disaster risk is the Hyogo Framework (HFA) and its successor, the Sendai Framework for Action (SFA), and has been adopted by the Association of South East Asian Nations (ASEAN) to guide disaster policy development in the region. Climate change is a major driver of disaster risk, and is governed internationally by the United Nations Framework Convention on Climate Change (UNFCCC). These two frameworks aim to address disaster risk through building resilience by reducing vulnerability.

This thesis is concerned with ideas that influence the development of disaster policy within the Association of South East Asian Nations (ASEAN). More specifically, how the concept of resilience permeates from international governance frameworks, into regional agreements and domestic policy. Resilience is contested and can be loosely defined – within this study it is understood as a network of adaptive capacities. Word searches and document analysis of key country documents were used to examine how resilience is reflected in disaster policy within ASEAN countries. Due to the scoping limitations of this study, four countries - Cambodia, Lao PDR, Indonesia and the Philippines – are explored.

This thesis found that resilience is described as a general goal, used as a guide for a broader policy direction over different time scales, across multiple levels of government. Throughout analysis, it became clear that disaster risk is influenced by a variety of factors, many of which need to be better understood. Similarly, resilience is used to inform policy explicitly designed to address increased risk from disaster as a result of low levels of development. There is also a strong focus on vulnerability through the lenses of demographic dynamics, including gender. However it is unclear how enhanced demographic information influences disaster policy. This thesis established that resilience ‘works’ within policy by drawing together multiple temporal, spatial and governance scales, and can encourage interactions by creating networks to build adaptive capacities.

Resilience has a strong influence on international, regional and domestic disaster policy. By demonstrating how resilience is reflected in disaster policy, this research provides a firm foundation for areas of further study, particularly surrounding the implementation and efficacy of disaster policy within ASEAN states.

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List of acronyms and abbreviations

AADMER	ASEAN Agreement on Disaster Management and Emergency Relief
ADP	Ad-hoc Working Group on the Durban Platform for Enhanced Action
AEC	ASEAN Economic Community
ASEAN	Association of South East Asian Nations
APSC	ASEAN Political-Security Community
ASCC	ASEAN Social-Cultural Community
BNPB	Badan Nasional Penanggulangan Bencana (National Disaster Management Agency – Indonesia)
BPBD	Badan Penanggulangan Bencana Daerah (Regional Disaster Management Agency – Indonesia)
CCA	Climate Change Adaptation
DRR	Disaster Risk Reduction
HFA	Hyogo Framework for Action
IPCC	Intergovernmental Panel on Climate Change
IFRC	International Federation of Red Cross and Red Crescent Societies
NAR	National Assessment Report
NDMP	National Disaster Management Plan
NDRRMP	National Disaster Risk Reduction and Management Plan
NDRRMF	National Disaster Risk Reduction and Management Framework
NSDP	National Strategic Development Plan
RGC	Royal Government of Cambodia
SREX	Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation Report
SFA	Sendai Framework for Action
SNAP	Strategic National Action Plan
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNIATF	United Nations Inter-Agency Task Force on Climate Change and Disaster Risk Reduction
UNISDR	United Nations Office for Disaster Risk Reduction
WHO	World Health Organisation

Glossary and Terms

Unless otherwise noted, all glossary terms are referenced from United Nations Office for Disaster Risk Reduction (UNISDR), 2009. *Terminology on Disaster Risk Reduction*, United Nations.

Adaptation: The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities (p.4)

Capacity: The combination of all the strengths, attributes and resources available within a community, society or organisation that be used to achieve agreed goals (p.5)

Coping capacity: The ability of people, organisations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters (p.8)

Community: a group of people with diverse characteristics who are linked by social ties, share common perspectives and engage in joint action in geographical locations or settings (MacQueen et al, 2001, p.1932)

Disaster risk management: The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster (p.10)

Disaster risk reduction: The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to 11 hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events (p.11)

Early warning system: The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss (p.12)

Exposure: People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses (p.15)

Preparedness: The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions (p.21)

Prevention: The outright avoidance of adverse impacts of hazards and related disasters (p.22)

Response: The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected (p.24)

Risk: The combination of the probability of an event and its negative consequences (p.25)

Risk assessment: A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend (p.26)

Risk management: The systematic approach and practice of managing uncertainty to minimize potential harm and loss (p.26)

Structural measures: Any physical construction to reduce or avoid possible impacts of hazards, or application of engineering techniques to achieve hazard resistance and resilience in structures or systems (p.28)

Non-structural measures: Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risks and impacts, in particular through policies and laws, public awareness raising, training and education (p.28)

Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (p.29)

Chapter 1: Introduction

1.1 *Disaster and international frameworks*

Disasters are a key area of concern for both people and governments, impacting at local, regional, national and international scales. More specifically, natural disasters impact communities, destroying lives, livelihoods and homes. Disasters can also impact the functions of the state by limiting opportunities for economic development, and destroying infrastructure including roads, bridges, schools and hospitals (Blaikie et al, 2003). Disasters can result in serious disruption causing the capacity of a country or community to be overwhelmed. The ability to transcend national boundaries makes disasters a significant issue of international concern. Global governance frameworks have been negotiated to address this, specifically the Hyogo Framework for Action (HFA), and its successor, the Sendai Framework for Action (SFA). These frameworks focus on disaster risk reduction (DRR).

Climate change is a key driver of disaster risk (IPCC, 2012a), and is governed internationally by the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC and HFA/SFA shape national policies by placing obligations on the national governments that adopt them. Global frameworks for disaster management can provide a strong foundation for planning by national governments to reduce disaster risk. These frameworks aim to address disaster risk through increasing 'resilience' (UNISDR, 2005; UNFCCC, 2013)

In the context of disaster management, the concept of resilience implies an ability to manage and adapt to hazardous events (Folke, 2006; Miller et al, 2010). Exposure and vulnerability to disaster fluctuate over multiple temporal and spatial scales, influenced by "economic, social, geographic, cultural, institutional, governance and environmental factors" (IPCC, 2012b, p.5). Both the HFA/SFA and UNFCCC identify a common problem - vulnerability to disaster - that can be addressed through increasing resilience. However, there are nuanced and complex interactions among factors that contribute to vulnerability and resilience that need to be better understood.

This thesis is concerned with the ideas that influence the development of disaster policy within the Association of South East Asian Nations (ASEAN). ASEAN experiences significant levels of disaster risk: The *Natural Hazards Risk Atlas 2015* indicates that fifty-six of the top hundred most vulnerable cities are located in the Asia-Pacific region. All but two of the top ten are in the Philippines (Verisk Maplecroft, 2015).

Also, ASEAN has a suite of regional agreements related to disaster governance that acknowledge the importance of developing disaster policy at both national and community levels. Key high-level terms such as resilience provide a conceptual foundation for the direction of disaster policy development recommended by international agencies and endorsed by national governments. The major aim of this investigation is to understand how 'resilience' transfers from international frameworks into domestic disaster policy. The disaster management policy of a subset of ASEAN countries will be explored: Cambodia, People's Democratic Republic of Lao, the Philippines and Indonesia.

1.2 *Relevance of study*

Resilience is a highly contested concept. Much of the debate surrounding definitions of resilience refers to what Jacobs describes as 'second level meanings', underpinned by disputes on "how the concept should be interpreted in practice" (1999, p.25). As will be discussed further in Section 2.4, definitions of resilience can be vague and loosely defined. The definition used in this thesis – a set of networked capacities – is no exception. However, challenges over meaning reflect the complexity of disaster governance. Resilience engages with the complex dynamics of social, ecological and economic factors, implying its value as a concept for use in policy development. The debates over meaning, "are not semantic disputations but are the substantive political arguments with which the term is concerned" (Jacobs, 1999, p.26).

Understanding how resilience is incorporated into policy is dependent on scale. Resilience permeates through international governance frameworks despite being contested. It is important to explore how this is reflected in domestic policy. Studying the representation of resilience in disaster policy is important because it can embrace the complexity of disaster governance on multiple scales.

1.3 *Scoping*

This thesis seeks to better understand how resilience is transferred from international governance frameworks into national disaster policy. There are two major assumptions behind this study. First, the researcher assumes that national policy developed in accordance with the HFA, SFA and the UNFCCC will be implemented: such implementation is outside of the scope and scale of the study. Second, that international recommendations are made in accordance with best practice. It is outside of the scope of this thesis to critique the international frameworks. Rather, the researcher accepts their recommended

policy direction in order to achieve the broader aim of this thesis: understanding how international governance frameworks influence national policy development. It is noted that the HFA, SFA and UNFCCC were negotiated and widely agreed to by national governments. It is therefore also outside the scope to discuss the efficacy and implementation of these policies, however this could be an area of further study.

1.4 *Research Questions*

Using grey and peer-reviewed literature, and key policy documents to analyse policy and framing approaches to disaster, the research will explore two main questions:

- How is resilience reflected in disaster policy on a national and community scale? What do the policies aim to achieve? To whom do the policies refer? How do the policies address issues of multiple scales of governance?
- Can the broad goal of resilience help to address the structural and institutional issues that contribute to vulnerability to disaster on both national and community scales?

1.5 *Chapter Outline*

These questions are pursued in a literature review to establish the key concepts in Chapter Two. Chapter Three outlines the methodology and methods of policy analysis used in this study and identifies the key documents analysed. Chapter Four provides a summary of the key policies for the four ASEAN countries examined. In Chapter Five, emergent themes are analysed and discussed alongside the policy implications of including resilience in disaster policy. Chapter Six summarises the final conclusions and limitations of studying resilience in disaster policy, noting areas for further study.

Chapter 2: Context and Key Concepts

The following chapter includes a literature review on resilience and vulnerability, exploring their definitions in the context of disaster policy. This section outlines the context of ASEAN, and the current agreements and governance frameworks on climate change and disaster. Due to the time and scoping limitations of an Honours thesis and the scope of the literature covered, these analyses draw primarily on syntheses and reviews of the concepts addressed.

2.1 Hazards

Hazards can be split into three different categories: natural, technological and violence (Coletta, 2004). The United Nations International Strategy for Disaster Reduction (UNISDR) defines hazard as:

A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation (2005, p.1).

In accordance with the Hyogo Framework for Action (HFA), the hazards relevant to disaster risk reduction are those of “natural origin and related environmental and technological hazards and risks” (HFA, 2005, p.1). In an attempt to maintain manageable scope for this thesis the focus is rapid onset natural events, specifically meteorological and hydrological hazards.

Geological hazards are defined as “earthquakes, volcanic activity and emissions” and the processes that may accompany them including “mass movements, landslides, rockslides, surface collapses, and debris or mud flows” (UNISDR, 2009, p.16). Meteorological hazards are defined as “atmospheric, hydrological or oceanographic” (UNISDR, 2009, p.18), processes that include:

Tropical cyclones, thunderstorms, hailstorms, tornados, blizzards, heavy snowfall, avalanches, coastal storm surges, floods including flash floods, drought, heatwaves and cold spells (UNISDR, 2009, p.18).

Hazards are omnipresent events that become disasters based on a multitude of social-ecological factors, a progression influenced by levels of socio-economic development. White et al explain viewing disaster through a development lens:

Natural hazards become greater problems in the minds of men as affluence spreads and as recognition grows of a social responsibility to cushion all members of a society against unexpected hazards (1968, p.4).

2.2 Disaster

The concept of disaster has evolved from an understanding of hazards as an 'Act of God' (Furedi, 2007), towards a more nuanced approach that seeks to recognise the complexity of social-environmental interactions.

To illustrate this nuanced approach, White et al discuss the idea that a flood occurs when "rainwater ponds up in poorly drained areas. By another criteria, no flood occurs until damage begins" (1968, p.9). The latter outlines a definition of disaster that is dependent on what, and who, is affected. This introduces a social aspect to understanding disaster and highlights the importance of disaster framing. An event may occur, but it is the way the event is *perceived*, and the accompanying *perception of risk* that influences planning and defines the response.

The UNISDR describes disaster as:

A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources (2009, p.9).

The human, economic and environmental losses are closely related to development. 'Our Common Future', also known as the Brundtland Report, which coined the term 'sustainable development', states:

All major disaster problems in the Third World are essentially unsolved development problems (WCED, 1987, p.30).

Similarly, as stated in SREX :

A disaster is one of...many moments, signifying unmanaged risks that often serve to highlight skewed development problems (IPCC, 2012a, p.69).

It follows then, that disaster risk is not only about physical events, but the broader socioeconomic context. Disaster risk can be understood as “a function of the risk process” (WHO, 2007, p.7), gauged by the following equation (UNIATF, 2004, p.2):

$$\text{Disaster risk} = \frac{\text{hazard} \times \text{vulnerability}}{\text{capacity}}$$

As highlighted in SREX and Brundtland, disasters in developing countries are framed as an issue of development on an international level. This follows the logic that low levels of development equates to lower coping capacities, making communities more likely to be overwhelmed and less able to rely on their own resources. However, the elements of disaster risk are not set, but “a continuum in constant evolution” (IPCC, 2012a, p.69). Key international development agencies including the International Federation of Red Cross and Red Crescent Societies (IFRC) and United Nations Development Program (UNDP) continue to draw links between the impacts of disaster, disaster risk reduction and development (UNDP, 2010; IFRC, 2014). The 2014 UN Human Development Report states, “higher income and socioeconomic status are associated with greater ability to absorb losses and higher resilience” (UNDP, 2014, p.48).

Disaster management is partly about reducing and managing risk. As White et al explain, “in favourable conditions, by informing and educating the public, it is possible to help in the development of improved public policies” (1968, p.9). Increased levels of development could form the ‘favourable conditions’ White et al allude to, but furthering development does not automatically address issues of disaster. Problem framing, information and education form the basis for disaster risk reduction, particularly where development contributes to disaster risk. Development should be considered in disaster management and risk reduction, but development policies should not be used in lieu of those aimed to address disaster risk specifically. The constant flux of disaster risk requires understanding the fluidity of its contributing components: capacity, vulnerability and resilience. This will be discussed further in subsequent sections of this chapter.

In the context of this thesis, disaster is understood as a serious disruption resulting from rapid onset natural events that overwhelms the capacity of a country or community, and is influenced by social, economic and environmental factors including levels of development.

2.3 *Vulnerability*

The key parameters to vulnerability - “stress to which a system is exposed, its sensitivity, and its adaptive capacity” (Adger, 2006, p.269) - are relatively well established. The divide in vulnerability analysis occurs in determining how the vulnerability occurs, and how it can be alleviated. This is particularly true when exploring disaster and natural hazards, where vulnerability is closely linked to risk and resilience. The UNISDR defines vulnerability as:

The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard (2009, p.30).

This definition includes a broad range of ideas evident in the literature and further discussed in this section. It acknowledges Adger’s idea that vulnerability is perceived as negative, defined as the “susceptibility to be harmed” (2006, p.268). Turner et al state this explicitly in their definition, where vulnerability is:

The degree to which a system, subsystem or system component is likely to experience harm due to exposure to a hazard (2003, p.8075).

Reviewing vulnerability literature and discourse, Adger (2006) outlines two distinct approaches to vulnerability analysis: the entitlements approach and the natural hazards approach. The *entitlements approach* is concerned with the structural and institutional dynamics that contribute to vulnerability, for instance class and gender. Vulnerability occurs as “the result of processes in which humans actively engage and which they can almost always prevent” (Adger, 2006, p. 269). Stern agrees, elevating the importance of “structural processes, which create relations of vulnerability or instability” (2006, p.218). The focus is on the influence of social structure on vulnerability. However, this approach does not acknowledge the ecological context of social systems. As Gleeson argues, communities are “bound, whether we like it or not, by perilously disturbed systems, habits, ambitions, ecologies, technologies and structures” (2013, p.9).

The *natural hazards approach* looks at constraints “placed on individual action by more powerful institutional forces” (Hufschmidt, 2011, p.623). This approach explores the

“geographical and psychological perspectives in addition to social parameters of risk” (Adger, 2006, p.269). It acknowledges the potential of the framing of disaster to contribute to or exacerbate vulnerability.

Hufschmidt’s contribution to vulnerability describes a contrast between the behavioural and structural paradigms. The behavioural paradigm focuses on “a human activity intended to reduce the negative impact” through social and physical strategies for adaptation (2011, p.623). The structural paradigm suggests “socio-economic and political structures are held responsible for the increasing losses” (Hufschmidt 2011, p.623).

The entitlements approach explains vulnerability as an outcome influenced by structural dynamics such as class and gender. This is furthered by Hufschmidt’s assertion that these structural barriers may “restrict access” (2011, p.625). The natural hazards approach explores the effects of social perception of risk and how this impacts vulnerability. For example, understanding weather events as an ‘Act of God’ may undermine prevention and preparedness activities by removing agency of the community to avoid a disaster.

The transition between hazard and disaster is influenced by lack of agency and self-determination, which can be manipulated by structural processes; disaster may occur because of a lack of access to resources or an inability to influence the outcome. Similarly, Burton et al (1978) suggest that the impact of disaster is not uniform, that different groups are affected by hazards in different ways.

Hewitt introduces the idea of “human ecology of endangerment” (1997, p.143), where the geography or location of settlements puts people at higher risk from natural disaster. This highlights a trend where “poorer households tend to live in riskier areas” (Adger, 2006, p.271). It is easy to equate poverty with vulnerability but “social units are not passive” (Turner et al, 2010, p.8075). Similarly, as Burton et al (1978) distinguish, increased levels of development do not instinctively limit vulnerability to the impacts of disaster.

Links between poverty alleviation and reduced vulnerability can become confused. Poverty is one of multiple factors that contribute to vulnerability. The poor may be considered the most vulnerable, but this does not automatically hinder their capacity for resilience. This is why recognising different approaches to vulnerability is so important. It is, as Hufschmidt (2011) discusses, the adaptive capacity that can be constrained by structural and institutional processes, which may increase vulnerability.

The key point is the way the structural and entitlements approaches towards vulnerability are reflected in the development of national and community level disaster policies. In this thesis, vulnerability is defined as “encompassing characteristics of exposure, susceptibility, and coping capacity, shaped by dynamic historical processes, differential entitlements, political economy, and power relations, rather than as a direct outcome of a perturbation or stress” (Miller et al, 2010, p. 4), where the key concepts of vulnerability are exposure, sensitivity and coping capacity.

2.4 Resilience

The concept of resilience is contested, with most of the conflict stemming from different understandings of the state of a system. In a review of resilience literature, Folke outlines two approaches to resilience – equilibrium and multi-state resilience. *Equilibrium resilience* assumes the system in question exists in a stable state, where resilience refers to the return to a “steady state following a perturbation” (Folke, 2006, p. 257). This approach is about resisting change “to conserve what you have” (Folke, 2006, p.257) where change is considered a shock. This understanding can undermine opportunities for adaptability because the focus is on a *return* to the previous state, rather than adapting to increase capacity for future change. This approach gives limited attention to multiple temporal and spatial scales, which can confuse management approaches and lead to systems “that become spatially homogenised and vulnerable to disturbances that could be absorbed” (Folke, 2006, p.256).

Multi-state resilience focuses “not on consistency but on variability” (Folke, 2006, p.254). Instead of emphasising a steady state, multistate resilience accepts the multiple spatial and temporal scales of a dynamic system. It highlights change and developing “the capacity to deal with it instead of trying to block it out” (Miller et al, 2010, p.4). In a social-ecological system, multistate resilience includes “adaptation, learning and self-organisation in addition to the general ability to persist disturbance” (Folke, 2006 p.259).

The contrast between multi-state and equilibrium resilience is particularly sharp in the context of disaster policy. Focus on a return to equilibrium is problematic when considered alongside the findings of SREX and the Brundtland Report. For countries with limited development, a return to the previous state would in many cases be a return to both vulnerability to disaster and under-development. This understanding ignores opportunities to ‘Build Back Better’, an approach encouraged by multi-state resilience and outlined in the Sendai Framework for Action (UNISDR, 2015).

The UNISDR defines resilience as:

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions (2009, p.24).

Miller et al outline three critical features of resilience as persistence, adaptability and transformability, where resilience is the:

Ability of a system to absorb shocks, to avoid crossing a threshold into an alternate and possibly irreversible new state, and to regenerate after disturbance (2010, p.3).

Folke describes resilience as the “capacity to absorb shocks and still maintain function” which includes “capacity for renewal, reorganisation and development” (2006, p. 253).

Folke defines the resilience of an adaptive system as the:

Capacity of a system to absorb disturbance and re-organise while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks (2006 p.259).

Adger (2006) agrees, outlining the capacity to absorb disturbance, to self-organise and the capacity to adapt as key to resilience. Carpenter et al stress the importance of the “degree to which the system is capable of self-organisation” (2001, p.766). Kaufmann (2013) furthers this, highlighting the importance of self-determination. A recurring element of resilience in the literature is the idea of capacity and the ability to adapt. Norris et al define resilience as:

A process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disturbance (2007, p.130).

This can also be described as a “network of adaptive capacities” (Norris et al, 2007, p.127). This definition of resilience is the most relevant to this thesis. The focus on resilience as a process reflects the creation of a policy framework over time that is flexible enough to absorb shock, but strong enough to guide future activity in the medium to long term.

A major criticism of resilience is its broad and ill-defined use. In a critique of the concept, Gleeson states:

It is far from clear whether the term resilience enjoys a shared understanding within academic disciplines and policy areas and also between them (2013, p.11).

Reid and Botterill comment in a similar vein:

The more disciplines that were explored for their use of the term, the more diverse understandings of the concept were revealed (2013, p.32).

However, as Jacobs asserts, these criticisms are part of the value of resilience and:

Shouldn't be perceived as a remediable lack of precision...rather such contestation constitutes the political struggle over the direction of social and economic development (1999, p.26)

Loose understandings of resilience can be problematic if it is used to justify investment or policy direction without rigorous definition. However, the concept of resilience can be valuable when its elements are well defined. Williams discusses the concept of security as "meaningless without something to secure" (2007, p. 7); the same is true of resilience. Understanding 'whose resilience' is being addressed is helpful when analysing the inclusion of resilience as a policy concept. In the context of this thesis, resilience is understood as a set of networked capacities.

2.5 Disaster Risk Reduction

This section outlines the key terms and agreements involved in international disaster risk reduction governance. Disaster risk reduction (DRR) aims to reduce disaster risks "through systematic efforts to analyse and manage the causal factors of disasters" (UNISDR, 2009, p.24). This includes addressing exposure to hazards, vulnerability, and "improved preparedness for adverse events" (UNISDR, 2009, p.24). Disaster risk reduction has been criticised for not properly addressing the complex nature of short and long-term policy development. As Miller discusses "the DRR community has struggled to

conceptualise changes in societal vulnerability to both shock events and long term climate effects" (2010, p.4).

The Hyogo Framework for Action (HFA) ends in December 2015 and is a product of the World Conference on Disaster Reduction in 2005. The strategic goals and priorities for action can be seen in the figures below.

Table 2.1: Strategic Goals and Priorities for Action for the Hyogo Framework for Action

Strategic Goals of the Hyogo Framework for Action
• More effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction • The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards • The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities (UNISDR, 2005, p.4)
Priorities for Action of the Hyogo Framework for Action
1. Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation 2. Identify, assess and monitor disaster risks and enhance early warning 3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels 4. Reduce the underlying risk factors 5. Strengthen disaster preparedness for effective response at all levels (UNISDR, 2005, p.6)

The Sendai Framework for Action (SFA) is the 2015-2030 successor to the HFA. It is an "action oriented framework" (UNISDR, 2015, p.5) continuing the general themes outlined in the HFA but maintains a "broader and a more people centred preventive approach to disaster risk" (UNISDR, 2015, p.5). SFA aims to:

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural,

educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience (UNISDR, 2015, p. 7).

Table 2.2: Priorities for Action of the Sendai Framework for Action

Priorities for Action of the Sendai Framework for Action	
1.	Understanding disaster risk
2.	Strengthening disaster risk governance to manage disaster risk
3.	Investing in disaster risk reduction for resilience
4.	Enhancing disaster preparedness for effective response, and to 'Build Back Better' in recovery, rehabilitation and reconstruction (UNISDR, 2015, p.36).

The goal of 'Building Back Better' links closely with the definitions of resilience previously discussed in this chapter. Its inclusion recognises the need to view the recovery and rehabilitation period following a disaster as an opportunity for furthering development and resilience initiatives. This also includes promoting a "gender equitable and universally accessible response", which continues the established links with development (UNISDR, 2015, p.21). The representation of disaster risk has shifted from "identify, assess and monitor" (UNISDR, 2005, p.6) in the HFA to "understanding" in the SFA (UNISDR, 2015, p.26). The relevance of this will be discussed in Chapter 5.

2.6 Climate Change Adaptation

Climate change adaptation (CCA) falls under the jurisdiction of the United Nations Framework Convention on Climate Change (UNFCCC): specifically the Cancun Adaptation Framework and the Durban Platform for Enhanced Action (UNFCCC, 2011). The ADP outlines the necessary implementation of "adaptation actions aimed at reducing vulnerability and building resilience" to the adverse effects of anthropogenic climate change (UNFCCC, 2013, p.7). As Adger et al discuss, "it can be difficult to separate climate change adaptation decisions or actions from actions triggered by other social or economic events" (2005, p. 78).

There is considerable overlap between CCA and DRR activities. Part of reducing disaster risk is adapting to a changing climate, where hazard patterns are shifting. These close ties create opportunity for co-benefits, where elements of disaster recovery can include strategies for climate change adaptation, reducing disaster risk in the long term. In an international governance context this relationship is complex and highly political. The SFA mentions "climate change as one of the drivers of disaster risk", but maintains that:

Climate change issues mentioned in the present framework remain within the mandate of the UNFCCC under the competences of the Parties to the Convention (UNISDR, 2015, p.6).

This acknowledges the interconnections and then effectively separates the two sets of issues by removing the opportunity to actively link CCA and DRR at an international level.

Adaptation and risk reduction occur across multiple scales of governance and action, from international to local. Part of this process involves the “social construction of appropriate scales by institutions to further their own aims” (Adger et al, 2005, p.80). The conscious uncoupling of CCA/DRR at an international level is partly a result of common but differentiated responsibilities, a fundamental pillar of the UNFCCC. This stipulates developed countries bear responsibility for the damage caused by climate change (UNFCCC, 1992). The explicit separation of CCA and DRR removes the question of international liability for disasters by detaching them from the UNFCCC.

It is important to explore the CCA/DRR dynamic in policy at a national level because the international split places explicit limitations on agencies. This may act as a disincentive to initiatives aimed to address both CCA and DRR. The issues created as a result of this split will be further discussed in Chapter 3 using principles from Moser’s framework to diagnose barriers to climate change adaptation (2010).

2.7 National Security

The discussion of security within this thesis aims to contextualise the language used in international, regional and domestic disaster policy, rather than engage in debate surrounding securitisation of disaster.

Human security emerged after the end of the Cold War, which saw an increase in the recognition of non-violent challenges as a threat to the state. An event that threatens or undermines the capacity of the state can be considered a security issue (Levy, 1995). The Brundtland Report inspired the development-focused UNDP definition of human security in its 1994 Human Development Report (Aravena et al, 2001).

The report outlines security of the individual in seven areas:

- Economic security
- Food security
- Health security
- Environmental security
- Personal security
- Community security
- Political security (UNDP, 1994, p.25).

Human security questions the underlying assumption that state security guarantees the security of its people (King and Murray, 2001). Whilst the state may be the primary provider of security, it also has the ability to exacerbate challenges faced by its citizens. The genocide lead by Pol Pot and the Cambodian government is a clear case, but the Burmese government's refusal to allow humanitarian relief following Cyclone Nargis in 2008 is a more nuanced and relevant example (Belanger and Horsey, 2008).

Using security policy to address issues of disaster may not be the most effective path to develop disaster policy. However, a lack of disaster policy could be understood as an issue of national security because it undermines capacity for response and recovery, limiting opportunities for resilience. This highlights a link between national security and national resilience. National resilience strategies are fundamental to the success of the state because they are part of the process that allows the state to absorb shock. Part of this is the provision of early warning systems emphasised by the HFA and SFA. As Samarajiva describes, disaster warning is a core public good that "legitimises the existence of the state" (2005, p.741). Exploring the relationship between resilience and security rhetoric on disaster policy on a national and regional level is key and will be further discussed in Section 2.8.

2.8 Association of South East Asian Nations (ASEAN)

The Association of South East Asian Nations (ASEAN) is made up of ten countries in South East Asia: Brunei Darussalam, Kingdom of Cambodia, Republic of Indonesia, Malaysia, the Union of Myanmar, Lao People's Democratic Republic, the Republic of the Philippines, Republic of Singapore, Kingdom of Thailand and Socialist Republic of Vietnam.

ASEAN offers an appropriate case study for this research: there is a range of economic and human development and national security settings and active interaction between

internal, national and regional policy focused on DRR and CCA. The ASEAN Charter outlines fifteen purposes characterised into four groups:

- Development
- Culture
- Security
- Cooperative governance

These are underwritten by ASEAN Principles reiterating mutual respect for sovereignty, culture and territory, and the explicit requirement of “non-interference” (ASEAN, 2008, p.8). The ASEAN Community is the legal framework of ASEAN. It will be fully established by the end of 2015, and its structure can be seen in the hierarchy below.

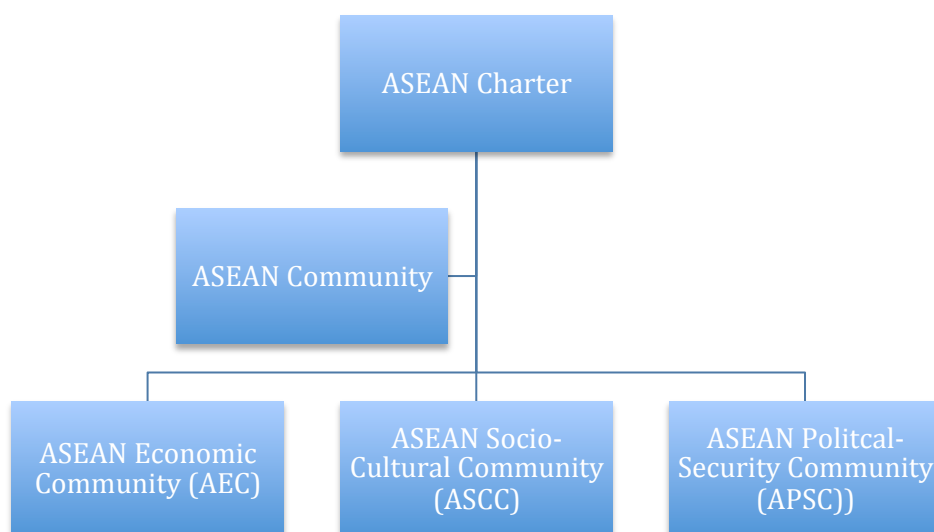


Figure 2.1: ASEAN Community Hierarchy

The ASCC aims to “contribute to realising an ASEAN Community that is people-centred and socially responsible” and “characterised by a culture of regional resilience” (ASEAN, 2009a, p.1). Section B7, “Building disaster resilient nations and safer communities”, is included under the broader goal of Social Welfare, where the focus is to “promote community resilience to disasters” (ASEAN, 2009a, p.11). This is in line with the broader goals of the HFA and SFA.

The focus of the APSC is to:

Respond effectively, in accordance with the principle of comprehensive security, to all forms of threats, transnational crimes and trans-boundary challenges (ASEAN, 2009b, p6).

Comprehensive security aims to broaden a more traditional understanding of security based on military threats to the state, to include threats that emerge from non-violent challenges. The APSC outlines comprehensive security as going

Beyond the requirements of traditional security but also takes into account non-traditional aspects vital to regional and national resilience (ASEAN, 2009b, p.8).

National resilience can be understood as adaptive capacities at a national level. This illustrates a relevant link between security and disaster. Disaster can overwhelm capacity at a national level, which can undermine the functions of the state. Sections B5 and B6 of the APSC aim to “Strengthen ASEAN cooperation on disaster management and emergency response”, and facilitate “effective and timely response to urgent issues or crisis situations affecting ASEAN” (ASEAN, 2009b, p.14).

The ASEAN Agreement on Disaster Management and Emergency Response (AADMER) came into force at the end of 2009 and acts as “the regional policy backbone on disaster management by giving priority to disaster risk reduction” (ASEAN, 2010, p. 6). It cites Section B7 of the ASCC and Sections B5 and B6 of the ASPC as having been developed to further the goals of regional and international agreements and declarations. AADMER highlights the link between disaster risk reduction and climate change adaptation measures, whilst reiterating the key ASEAN theme of a “people-centred ASEAN” (ASEAN, 2010, p.8). AADMER has four strategic components:

- Risk Assessment, Early Warning and Monitoring
- Prevention and Mitigation
- Preparedness and Response
- Recovery

The ASCC Blueprint reflects the trend in international disaster management away from a purely humanitarian relief towards a disaster risk reduction approach. This occurs alongside the acknowledgement within AADMER to link DRR and CCA activities. It is then up to national governments to develop and implement policy that reflect these changes.

This thesis focuses on the incorporation of resilience into disaster policy on a national and community scale. Part of national resilience to disaster is creating flexible frameworks to ensure the state continues to function during a disaster. Understanding how natural hazards affect the security of the state involves exploring impacts on the functions of the

state. Alongside well-understood impacts like loss of life, natural hazards have the potential to destroy infrastructure and limit opportunities for economic growth, both considered key functions of the state. This is the nexus between security and disaster.

The complex dynamics between the international frameworks that govern climate change adaptation and disaster risk reduction exist alongside regional frameworks of security, natural disaster and national policy. The aim is not to contest this definition, rather to explore the disaster policies that result from obligations under HFA, SFA, UNFCCC, APSC and ASCC. This dynamic can be seen below in Figure 2.2, where national resilience, national security and community resilience filter down into domestic policy.

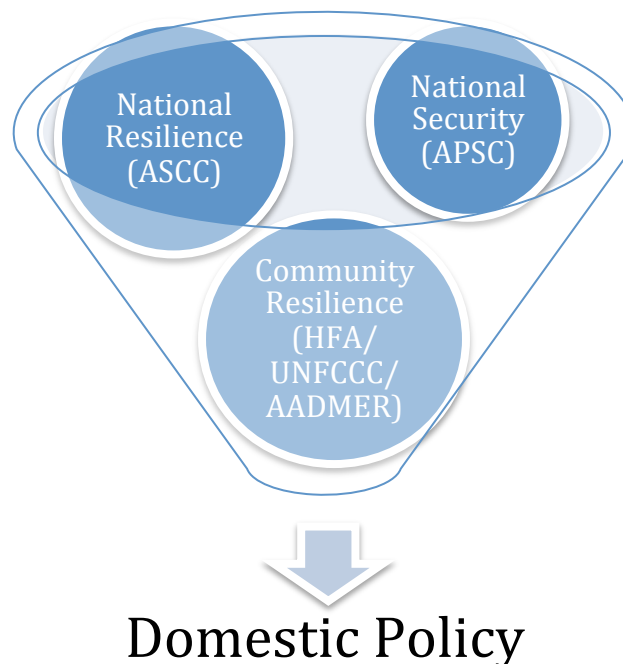


Figure 2.2: International influences on domestic policy

ASEAN is a regional group underpinned by principles of cooperation and non-interference. The APSC is concerned with resilience as a priority of national, and therefore regional security, while the ASCC aims to achieve national resilience by focusing on the community scale. Despite the split at an international level, AADMER links CCA and DRR activities in its regional policy framework for disaster risk reduction and management. These provide further context for the development of disaster policy on a national level.

2.9 Resilience and Vulnerability in Policy

Vulnerability and resilience have strong ties, where the “build-up or erosion of the elements of social-ecological resilience” (Adger, 2006, p. 268) are closely linked to vulnerability. In this sense, resilience can be broadly understood as the inverse of vulnerability.

The value of resilience depends on how policy reflects the different approaches outlined above. As will be further discussed, some disaster management policy aims to increase resilience by reducing vulnerability largely through poverty reduction. This logic overlooks the distinction between resilience from a development perspective and resilience to disaster specifically. According to Rose, policymaking is the “intersection of a multiplicity of networks that operate in different dimensions” (2004, p.53). As disaster management and policy needs to connect to multiple levels of government and community on short, medium and long-term time scales, resilience offers a tempting framework.

Exploring vulnerability in international governance frameworks and national policy is important to understand and anticipate the effectiveness of framing resilience as a pillar of disaster management. The way vulnerability and risk are represented sets the tone for a whole of government approach to disaster across multiple time scales. Policies designed to increase resilience require firm knowledge of disaster risk that reflects a nuanced understanding of vulnerability. As Evans and Reid discuss:

The underlying ontology of resilience...is actually vulnerability. To be able to become resilient, one must first accept that one is fundamentally vulnerable (2013, p.84).

However as Barnett and Campbell state, in policy, “usually, vulnerability is not self-identified” (2010, p.161). Rather, disaster governance often involves actors who “are entitled to define danger on behalf of a political collective” (Hagmann and Cavelty, 2012, p.81). Bulley describes resilience in governance as the “hierarchical planning of the resilient individual above the vulnerable individual” (2013, p.270). This paints the vulnerable as “incapable of resilience, relying on the knowledge and organisation of champions and volunteers” (Bulley, 2013, p.270).

Resilience, in the context of disaster policy, is about managing risk to both the state and communities. This partly involves shifting the weight of responsibility for impacts of disasters from the state onto communities themselves (Brasset et al, 2013). As articulated by Reid:

Subjects that are capable of securing themselves are less of a threat to themselves and in being so, are not a threat to the governance capacities of their states nor to the governance of the global state order either (2012, p.74).

Increasing community resilience to disaster is partly about lessening the burden of disaster on the state. Disaster, by definition, indicates overwhelmed capacity. Building national resilience to disaster also involves increasing capacity to absorb shock on a community scale.

As previously discussed, a significant aspect of resilience is adaptive capacity, which can be hindered by the structural barriers that contribute to vulnerability. Kaufmann states, “resilience governance redistributes responsibilities” (2013, p.60) by prioritising the self-organisation of the system of concern. Determining the vulnerability of a group may undermine its ability to be resilient by casting it as “passive and incapable” (Barnett and Campbell, 2010, p.161), thus weakening capacity for self-determination. It is unclear if resilience governance contributes to, or allows for, a shift in these structural barriers that exacerbate vulnerability. This is particularly true when the governing system is an attempt to “advance a political agenda that shapes the way in which the larger organisation of public danger is to be understood” (Hagmann and Cavelty, 2012, p.81).

In this context, the overarching political order is reflected in the ASEAN Charter, which explicitly states that

Member states shall take all necessary measures, including the enactment of appropriate domestic legislation, to effectively implement the provisions of this Charter and to comply with all obligations of membership (2008, p.9).

The obligations of membership include principles outlined in the ASPC, ASCC and AADMER (as a requirement of HFA). The ASEAN states have accepted international frameworks that rely on national governments to enhance resilience at a community level, but how do they translate into domestic reality? As the mandate and collection of agencies gets wider, so too does the opportunity for “imperialist nationalism”. Rose defines this as “the belief that you can understand the politics of every country by projecting abroad what you know about your own” (2004, p.6). As such, including resilience in domestic policy should reflect national autonomy and policy direction.

Chapter Two discussed concepts key to developing domestic disaster policy. In a disaster policy setting, where resilience is defined as a network of adaptive capacities, understanding vulnerability is key. Vulnerability influences disaster risk, which drives policy direction. This process draws from international frameworks on the development

of disaster policy on a national and community scale. The key point is that the HFA and SFA exist in a crowded space of international frameworks that govern disaster, including development and climate change adaptation. Even managing the transition between the HFA and SFA is complex. It is important to understand how disaster policy at a national and community level negotiate this dynamic alongside national and regional obligations. This is further discussed in Chapter Three.

Chapter 3: Methodology and Methods

This thesis is concerned with the dynamics that influence domestic disaster policy development within ASEAN countries. A major aim is to understand how high-level concepts such as resilience and vulnerability transfer into policy on a national and community scale. This section outlines the methodology and methods used in this investigation.

Ideas that shape the current UN Frameworks on disaster risk reduction (DRR) and climate change adaptation (CCA) stem from abstract concepts. On comparative policy analysis, Rose notes the importance of “learning to abstract knowledge from multiple sources of information” (2004, p.7). The ideas identified to inform current policy are used to navigate the complex dynamics between CCA, DRR and sustainable development. Understanding national context can aid in the effective translation of conceptual frameworks into public policy. However, Rose warns against the assumption that “a society can undergo a revolutionary transformation by the application of universal theories” (2004, p.5).

As demonstrated above, resilience and vulnerability are most effective when grounded in context – they need to be analysed within practical applications. The first step is exploring how they are reflected in policy and is the aim of this study. Subsequent lines of enquiry include investigating the implementation process of these policies and evaluating their effectiveness. However, due to time and word limitations, these further questions fall outside the scope of this thesis.

Policy, legislation and national assessments guided by international governance frameworks may provide information about how resilience translates into disaster policy. These will be analysed to understand which ideas inform disaster policy on a national and community scale. This contributes to the analysis by indicating how key abstract concepts are integrated into public policy. This informs further areas of study surrounding implementation and effectiveness.

3.1 Diagnosing Barriers to CCA Implementation

The researcher has used principles from Moser’s framework to diagnose barriers to climate change adaptation to enhance the analysis of resilience in disaster policy. Moser and Ekstrom (2010) identify barriers to the adaptation process through three phases: understanding, planning and managing. The focus on adaptation and adaptive capacities

makes it applicable to this study. Disaster policy requires a comprehensive and coordinated approach to address issues on multiple temporal and spatial scales, which are described as ‘systems of concern’. As Moser and Ekstrom explain:

The problem requires coordination and collaboration across jurisdictions to implement options. Failing to develop such cross-level relationships may result in barriers (2010, p.22029).

This is particularly relevant when discussing the split between CCA and DRR, where “choosing a particular scope and scale of adaptation has significant implications for the number and types of barriers” (Moser and Ekstrom, 2010, p.22026). This will be discussed further in Chapter Five.

3.2 International policy lessons informing methods

Rose (2004) discusses the importance of matching domestic will with international pressure to implement policy lessons. Table 3.1 shows the interactions between external pressure and domestic desirability, where the four cells characterise possible responses for individual countries. ASEAN states face international pressure to develop DRR and CCA policies through international and regional frameworks. However, the domestic feasibility of this is different for each country. This interaction helps to shape the methods of this investigation; there is a substantial amount of analysis available pushing the vulnerability of ASEAN states to disaster. Policy development is dependent on the ability and the will to implement changes. Understanding the effectiveness of ideas such as vulnerability and resilience needs to take into account the domestic will to introduce and accept them into national policy. This is partly explained by Rose in Table 3.1.

Table 3.1: External pressures and domestic desirability

Domestic desirability	External pressures	
	<i>High</i>	<i>Low</i>
<i>High</i>	Cooperation	Lonely advance
<i>Low</i>	Submission, negotiation, evasion	Avoid

Cooperation is the expected outcome where domestic desirability is coupled with external pressure, whereas avoidance is anticipated if both domestic desirability and external pressures are low. Jacobs asserts: “the question is whether the new discourse has changed the nature and salience of political activity and debate on these issues” (Jacobs, 1999, p.28). The inclusion of resilience has changed the discourse surrounding DRR, as evidenced by the content of the policy included in this study. The influence is not about the

explicit inclusion of the term resilience, rather the way the concept can engage and encourage different approaches to disaster management.

3.3 Countries chosen and justification

Due to the time and word limitations of an Honours project, four ASEAN countries are explored: Kingdom of Cambodia, Republic of Indonesia, Lao People's Democratic Republic and the Republic of the Philippines. Refer to Appendix 1 for ASEAN country specifics. These countries were chosen because they offer a range of geographic and hazard profiles and have low to medium levels of development. Cambodia and Lao PDR are mountainous and experience seasonal flood, drought and tropical storms. The Philippines and Indonesia are densely populated archipelagos and experience among others, volcanoes, earthquakes, typhoons, flood and drought. All four countries have high rates of rural to urban migration, large populations and the Philippines, Lao PDR and Indonesia are multilingual, with a GDP per capita lower than USD15, 000 per year (CIA World Fact Book, 2015a; 2015b; 2015c; 2015d).

3.4 Document analysis approach and justification

Document analysis was the primary tool of analysis for this project. The data includes policy documents, national action plans, assessment reports and legislation made publically available. Information about authorship of documents, framing of key concepts, relevant agencies, and emphasis on disaster is integral to exploring resilience in disaster policy. Although the examined countries have obligations under international frameworks, each has different governance structures and therefore different policy documents. This disparity is reflected in this study.

The analysis process involved a comprehensive word analysis of 1,401 pages of key national documents. The documents can be seen in Table 3.2.

Table 3.2: Key Documents

Document	Year	Author
Cambodia		
Strategic National Action Plan for Disaster Risk Reduction 2008-2013	2008	Royal Government of Cambodia, National Committee for Disaster Management; Ministry of Planning
National Strategic Development Plan 2014-2018	2014	Royal Government of Cambodia
Draft Law on Disaster Management	2011	Royal Government of Cambodia
Lao PDR		
Mainstreaming Disaster Risk Reduction in Education	2008	Asian Disaster Preparedness Centre
Draft National Disaster Management Plan 2012-2015	2011	Earl James Goodyear, Disaster Risk Reduction Consultant (UNDP), for National Disaster Management Office of the Ministry of Labor and Social Welfare
National Assessment Report on Disaster Risk Reduction	2012	Government of Lao PDR, National Disaster Management Office of the Ministry of Labor and Social Welfare; Asian Disaster Preparedness Centre
The Philippines		
Republic Act 10121: Philippine Disaster Risk Reduction and Management Act of 2010	2010	Government of Republic of the Philippines
National Disaster Risk Reduction and Management Framework 2011-2028	2011	Government of Republic of the Philippines
National Disaster Risk Reduction and Management Plan 2011-2028	2011	Government of Republic of the Philippines
Strategic National Action Plan 2009-2019	2009	Government of Republic of the Philippines
Indonesia		
Law 24 of 2007 Concerning Disaster Management	2007	Government of Indonesia
Government Regulation 21 of 2008 Concerning Disaster Management	2008	Government of Indonesia
Presidential Regulation 8 of 2008 Concerning National Agency Disaster Management	2008	Government of Indonesia
Government Regulation 22 of 2008 Concerning Disaster Aid Financing and Management	2008	Government of Indonesia
Government Regulation 23 of 2008 Concerning Participation of International Institutions and Foreign Non-Governmental Organisations in Disaster Management	2008	Government of Indonesia
Country Program Action Plan 2011-2015	2011	Government of Indonesia and United Nations Population Fund (UNFPA)

3.4.1 Coding approach

Word searches were used with the aim of understanding how disaster is described within each national context. This formed the foundation of analysis of the reflection of resilience in national disaster policy. These words emerged as significant after a review of both the literature and the international governance frameworks. They were used to organise the data “in such a way that patterns, commonalities [and] relationships” (Hay, 2010, p.284) could be identified. The process remained iterative, but the following words, or slight variations, were searched in the documents listed above:

- | | |
|------------------------|-----------------|
| ▪ Adaptation | ▪ Preparation |
| ▪ Adaptive capacity | ▪ Preparedness |
| ▪ Capacity | ▪ Prevention |
| ▪ Climate change | ▪ Recovery |
| ▪ Community | ▪ Resilience |
| ▪ Cooperation | ▪ Risk |
| ▪ Disaster | ▪ Relief |
| ▪ Early warning system | ▪ Reduction |
| ▪ Emergency | ▪ Security |
| ▪ Gender | ▪ Vulnerability |
| ▪ Hazard | ▪ Women |

Chapter 4: Results

National disaster policy development is driven by obligations from international frameworks and local necessity as a result of high frequency events. This section presents a country-by-country analysis of policy and legislative documents to illustrate how resilience is adapted to context. Each country has a different structure to their disaster policy frameworks, and this is reflected in the documents used in this study.

To aid the reader, results are presented by country, with key documents outlined at the start of each section. These boxes present the reference for each document and describe how they will be cited in the text. Full references are located in the reference list. Analysis results are presented as *background to policy development* and *disaster governance structure*. Discussion and analysis of data in relation to research questions will follow in Chapter 5.

4.1 Cambodia

Cambodia SNAP: *Strategic National Action Plan for Disaster Risk Reduction 2008-2013*, 2008, Royal Government of Cambodia, National Committee for Disaster Management and Ministry of Planning
Cambodia NSDP: *National Strategic Development Plan 2014-2018*, 2014, Royal Government of Cambodia
Cambodia LDM: *Draft Law on Disaster Management*, 2011, Royal Government of Cambodia

Box 4.1: Cambodian policy documents

4.1.1 Background to policy development

Disaster management in Cambodia is a strategic goal set in the context of broader aims of poverty alleviation and national development. The Strategic National Action Plan for DRR (Cambodia SNAP) recognises the role of disaster in Cambodia's development trajectory, stating that:

Without serious efforts in risk reduction, disaster will increasingly become a serious obstacle to the achievement of the country's development aspirations, particularly to its highest priority of poverty reduction (2008, p.3).

As a result, Cambodia's disaster management policy framework is linked to "the attainment of the national development goals and objectives" (Cambodia SNAP, 2008, p.11), specifically:

- Poverty alleviation
- Technical and institutional capacity
- Availability of human and financial resources (Cambodia SNAP, 2008, p.11)

These objectives act as criteria to inform the priority level of DRR actions. A policy and legal framework is considered critical, alongside a coordinating mechanism for DRR. Once these are established, actions are categorised into three levels seen in Table 4.1:

Table 4.1: Priorities for disaster risk reduction (Cambodia SNAP, 2008)

Priorities	Descriptions
First level priorities	▪ Integration of DRR in programs and priorities of key ministries ▪ Capacity building at a local level (provincial to commune) ▪ National and local government capacity building and response development
Second level priorities	▪ Activities that boost the first level priorities (capacity building, and preparedness and response capabilities) ▪ Local and national risk assessments, including early warning ▪ Public education and awareness
Third level priorities	▪ Increasing funding opportunities (particularly for emergencies, preparedness and mitigation) ▪ Developing collaborative relationships with academic and scientific bodies

4.1.2 Disaster governance structure

The Cambodia SNAP outlines five indicators to evaluate the effectiveness of its proposed DRR activities:

1. A legal framework for disaster risk reduction exists.
2. A national multi-sectoral platform for disaster risk reduction is operational.
3. Level of funding allocated to disaster risk reduction and disaster management
4. Number of adaptation and risk reduction measures implemented.
5. Reduction in the number of deaths, injuries and impact from disasters. (2008, p. 26)

Table 4.2 outlines the components of DRR described in the Cambodia SNAP. Resilience is mentioned only to influence “a culture of safety” (Cambodia SNAP, 2008, p.10) The significance of this will be discussed in Chapter Five.

Table 4.2: Components of disaster risk reduction (Cambodia SNAP, 2008, p.10)

Disaster risk reduction component	Description
Ensure that disaster risk reduction is a national and a local priority	- Formulate policies and legislation in support of DRR - Creation and strengthening of a national DRR coordination mechanism or “National DRR Platform” - Integration of DRR into national development policies and planning - Allocate appropriate resources for DRR at national level
Strengthen sub-national and community-based disaster risk management	- Decentralize responsibilities and resources for DRR - Promote implementation of community-based DRR programs
Identify, assess and monitor hazard risks and enhance early warning	- Conduct national and local risk assessment - Establish a disaster management information system - Develop multi-hazard early warning systems - Collaborate with international and regional DRR initiatives
Use knowledge innovation and education to build a culture of safety and resilience	- Establish mechanisms for information exchange and networking - Promote DRR education and training - Promote gender and cultural sensitivity training as integral component of DRR - Undertake disaster risk reduction management technical and scientific research - Promote public awareness
Mainstreaming DRR into policies and programs of relevant government ministries	- Incorporate DRR in sustainable environmental and natural resource management - Integration of DRR to climate adaptation program - Promote food security to enhance community resilience - Integrate DRR planning into the health sector - Promote appropriate structural and non-structural mitigation measures - Incorporate DRR into land use planning and other technical measures - Develop innovative financial instruments for addressing disaster risks
Strengthen disaster preparedness for effective response at all levels	- Strengthen national and sub-national capacity for preparedness and response - Develop coordinated regional operational mechanisms for emergencies exceeding national coping capacities - Prepare and periodically update disaster preparedness and contingency planning - Establishment of emergency funds

Cambodia SNAP states:

Increasing community and household resilience is the first line of defence against disasters and has a significant potential to contribute to the poverty alleviation goals of the government (2008, p.15).

The Cambodia SNAP acknowledges that in smaller scale disasters, “little or no external assistance may arrive” (2008, p.17). Emphasis for action is placed on local governments and communities, described as “the main actors that immediately respond to disaster events” (Cambodia SNAP, 2008, p.17). It aims to “develop guidelines for the preparation of local preparedness and response plans” (Cambodia SNAP, 2008, p.18).

The National Committee for Disaster Management (NCDM) is tasked with mainstreaming disaster risk reduction “into policies, plans and sustainable development programs at all levels” (Cambodia NSDP, 2014, p.140). The development of “sub-national capacities, particularly at the community level” is emphasised (Cambodia SNAP, 2008, p.10). Despite this emphasis, the National Strategic Development Plan (Cambodia NSDP) states the reform of disaster management “remained pending” and had not been considered for the “working structure at line ministries and agencies” (2014, p.39). While improving disaster management might be a priority for the Cambodian government, the development of institutional capacity to do so may not. The Cambodia NSDP continues to outline unaccomplished goals, stating:

The NCDM and Sub-National Committees for Disaster Management were inadequate in resources and capacities for implementation of their tasks and requirement of the communities (2014, p.39).

This will be discussed in subsequent sections of this thesis but it raises the question of the opportunities and weaknesses of institutional maturity and capacity.

The Cambodia NSDP aims to integrate DRR into:

Preparation and implementation of disaster preparedness, emergency response and recovery programs to minimise disaster losses, and encourage full participation of RGC institutions (Cambodia NSDP, 2014, p.140).

This is discussed as an aim alongside strengthening response mechanisms and protecting potential victims through:

Further increasing collaboration, cooperation and coordination with all related stakeholders such as the Cambodian Red Cross, various international humanitarian aid agencies, private sector, donors and other partners (Cambodia NSDP, 2014, p.194).

The Cambodia NSDP also acknowledges the need for increased vertical and horizontal cooperation over all levels of government. Cambodia is in the process of implementing the recently passed Law on Disaster Management (Cambodia LDM) - the draft was used for this study. The Cambodia LDM is underpinned by a commitment to:

Integrate internationally recognised principles of disaster risk management into the development and implementation of sustainable development strategies within poverty reduction strategy, policy, planning and budgeting (2011, p.4).

The Cambodia LDM stipulates that the National Committee for Disaster Management shall coordinate disaster management activities at all levels. A National Emergency Coordination Centre (NECC) shall be set up to manage emergency and humanitarian response. The mandate of the NECC is to cooperate with “national-international organisations in the country and regions”, specifically the ASEAN Coordinating Centre for Humanitarian Assistance (Cambodia LDM, 2011, p.7).

Sub-national councils for disaster management shall be set up at the capital, provincial, city, district and local government levels. The role of the sub-national councils is to implement “national policies, strategies and national disaster management plans at the sub-national level” (Cambodia LDM, 2011, p.8).

The structure of Cambodia’s National Committee for Disaster Management can be seen below:

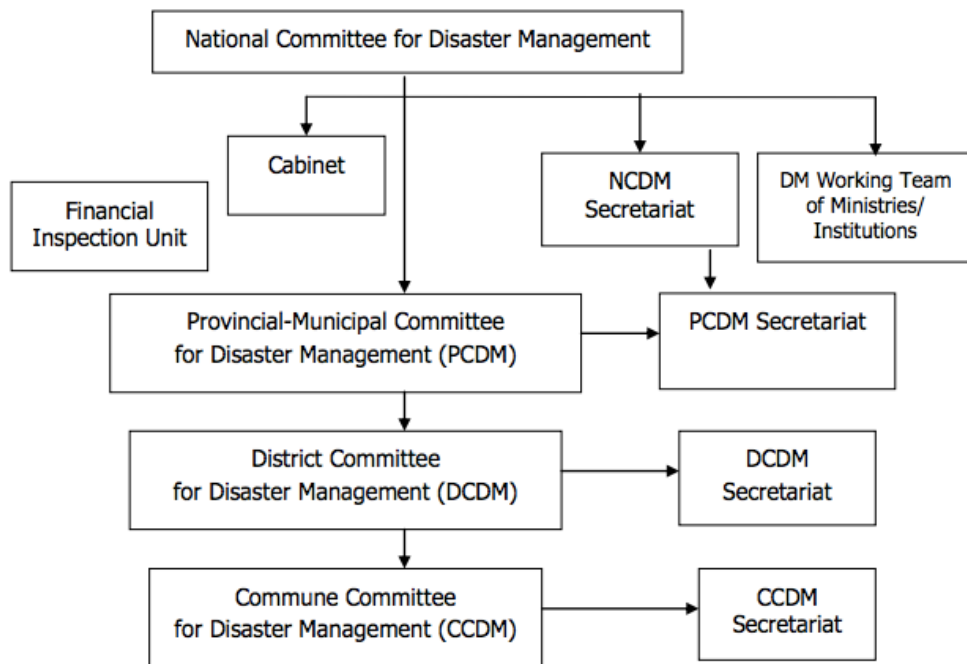


Figure 4.1: National Committee for Disaster Management (Cambodia SNAP, 2008, p.21)

4.2 Lao PDR

Lao NAR: *National Assessment Report on Disaster Risk Reduction*, 2012, Earl James Goodyear, National Disaster Management Office of the Ministry of Labor and Social Welfare

Lao NDMP: *Draft National Disaster Management Plan 2012-2015*, 2011, Government of Lao PDR, National Disaster Management Office of the Ministry of Labor and Social Welfare; Asian Disaster Preparedness Centre

Lao DRR in Education: *Mainstreaming Disaster Risk Reduction in Education*, 2008, Asian Disaster Preparedness Centre

Box 4.2: Lao PDR key documents

4.2.1 Background to policy development

The National Assessment Report on DRR of Lao PDR (Lao NAR) has seen a shift away from “disaster management, response and relief towards disaster risk reduction and climate change adaptation” (2012, p.8). A significant problem in Lao PDR is that activities aimed at increasing short-term economic prosperity such as agriculture and forestry are resulting in “deforestation, unsustainable management of water sheds and degradation of the ecosystems”, activities that also increase disaster risk (Lao NAR, 2012, p.8).

Poverty is a pervasive problem in Lao PDR and disasters are now understood by policymakers as “manifestations of unresolved problems of development” (Lao NAR, 2012, p.44). This wording is similar to that of SREX and the Brundtland Report previously discussed. The Mainstreaming DRR in Education Policy (Lao DRR in Education) document asserts that the “majority of the country’s population does not have the capacity to cope with disasters due to poverty” (2008, p.47). The Lao NAR discusses the multi-dimensional nature of vulnerability, including “class, ethnicity, community structure, community decision making processes and political issues” (Lao NAR, 2012, p.45) alongside poverty as factors that contribute to vulnerability. The report acknowledges that strong “social, cultural and political capacities” (Lao NAR, 2012, p.45) may allow communities to benefit from disaster risk reduction activities despite economic vulnerability.

Accessibility is also an issue for disaster management in Lao PDR, where:

Only a limited part of the country can be reached by ‘all weather’ roads and large parts become inaccessible in times of disaster (Lao DRR in Education, 2008, p.47).

In the case of localised disasters, “little or no external assistance may arrive” (Lao NDMP, 2011, p.53). This is precisely the same wording as the Cambodia SNAP. The lack of

accessibility in Lao PDR means that local governments and communities are first responders in the event of disaster (Lao NDMP, 2011).

Data collection and analysis in Lao PDR is limited, as “data collection and recording are not systematic yet” (Lao DRR in Education, 2008, p.81). The purpose of data collection is to create comprehensive multi-hazard risk maps for the entire country, something “very expensive to conduct” (Lao DRR in Education, 2008, p.81). This results in an “identified knowledge gap” between a “multi-hazard assessment and demarcation of potential risks from natural disaster” (NAR, 2012, p.8). There is a lack of understanding of what the hazards are, what their effects will be, and what the transition from hazard to event will look like. However, the Lao NDMP suggests that “more people will be living in existing settlements in hazard-prone areas and new settlements will continue to spring-up with expanding population” (p.11, 2011).

4.2.2 Disaster governance structure

The Environmental Protection Law underpins disaster management in Lao PDR. However, this is currently under review and a disaster management and climate change legislative framework is being developed.

UN Agencies are to:

Provide financial and technical support for the development of sustainable disaster management preparedness and response capacity with key stakeholders in addition to responding to humanitarian crises (Lao NDMP, 2011, p.34).

The National Disaster Management Office (NDMO) plays a “critical role in the initiation of the National Disaster Management Plan, it faces inadequate capacity, authority and resources to fulfil its current mandate” (Lao NDMP, 2011, p.55). The success of DRR activities in Lao PDR is to be evaluated according to the following criteria:

1. A legal framework for disaster risk reduction exists
2. A national multi-sectoral platform for disaster risk reduction is operational
3. Level of funding allocated to disaster risk reduction and disaster management
4. Number of adaptation and risk reduction measures implemented
5. Reduction in the number of deaths, injuries and impact from disasters (Lao NDMP, 2011, p.54)

4.3 Indonesia

Indonesia Law 24/07: *Law 24 of 2007 Concerning Disaster Management*, 2007, Government of Indonesia

Indonesia Regulation 8/08: *Presidential Regulation 8 of 2008 Concerning National Agency Disaster Management*, 2008, Government of Indonesia

Indonesia Regulation 21/08: *Government Regulation 21 of 2008 Concerning Disaster Management*, 2008, Government of Indonesia

Indonesia Regulation 22/08: *Government Regulation 22 of 2008 Concerning Disaster Aid Financing and Management*, 2008, Government of Indonesia

Indonesia Regulation 23/08: *Government Regulation 23 of 2008 Concerning Participation of International Institutions and Foreign Non-Governmental Organisations in Disaster Management*, 2008, Government of Indonesia

UNFPA: Government of Indonesia. 2011. *Country Program Action Plan 2011-2015*, United Nations Population Fund (UNFPA), Government of Indonesia,

Box 4.3: Indonesia key documents

Background to policy development

The current disaster management framework was developed after the Indian Ocean tsunami in 2004, which killed an estimated 167, 000 people in Indonesia. Part of this development process includes recognising limited capacities at a local and regional level to respond to emergencies (UNFPA, 2011, p.16). Indonesian disaster policy is underpinned by the partnership between the UN Population Fund and the Government of Indonesia that was developed to further the achievement of the Millennium Development Goals. This aims to focus policy around “social services, governance and participation, climate change, and disaster management/resilience” (UNFPA, 2011, p. 17). The links between development and disaster policy in Indonesia are closely linked to mainstreaming three perspectives:

1. Sustainable development
2. Good governance
3. Gender (UNFPA, 2011, p. 17).

4.3.1 Disaster governance structure

Disaster policy in Indonesia is based around Law Number 24 of 2007 concerning Disaster Management (Indonesia Law 24/07). The Law 24/07 splits policy in to three time periods:

- Pre-disaster (see Table 4.3)
- Emergency response (see Table 4.4)
- Post-disaster (see Table 4.5)

Table 4.3:Pre-disaster period (Indonesia Law 24/07)

With potential disaster	Situation without disaster
Alertness	Disaster management planning
Preparation	Recognition and study of disaster threat
Organisation, installation and testing of EWS	Understanding on community's vulnerability
Preparation/provision of supplies	Analysis of potential disaster impact;
Organisation and training of emergency response mechanism	Options for reducing risk disaster measures
Evacuation location	Selection of mechanism for alertness and for disaster impact management
Up to date data on emergency response procedures	Allocation of tasks, authority, and available resources
Provision of materials and equipment to fully recover facilities and infrastructure	
Early warning	Disaster risk reduction
Observation and analysis of signs of disaster	Recognition and monitoring of disaster risk
Decision making by authorities	Participatory disaster management planning
Dissemination of disaster warning information	Promotion of disaster'-awareness practices
Community action	Greater commitment of disaster management team
	Application of physical and non'-physical efforts, and instructions on disaster management
Disaster mitigation	Prevention
Implementation of spatial structuring	Sure identification and recognition of sources of disaster danger or threat
Regulation of development, infrastructure, building lay out	Check on control and management of natural resources with abrupt and/or gradual potential to become a source of disaster
Education, training, counselling	Monitoring the use of technology with abrupt and/or gradual potential to become a source of disaster threat or danger
	Spatial structuring and environmental management
	Strengthening of community's social resilience

Table 4.4: Emergency management period (Indonesia Law 24/07)

Key activities
- Quick and appropriate study of location, damages and resources including: - Disaster area coverage - Number of victims - Damage to facilities and infrastructure - Disturbance to the functions of public service and government administration; and - Capability of natural and artificial resources - Deciding on the disaster emergency status - Rescue and evacuation of disaster-affected community - Fulfilment of basic necessities - Protection for vulnerable groups - Immediate recovery of essential facilities and infrastructure

Table 4.5: Post-disaster period (Indonesia Law 24/07)

Rehabilitation	Reconstruction
- Improvement to disaster area environment - Repair to public facilities and infrastructure - Provision of aid for community housing repair - Socio psychological recovery - Healthcare - Reconciliation and conflict resolution - Socioeconomic and cultural recovery - Security and order recovery - Government administration function recovery - Public services' function recovery	- Rebuilding of facilities and infrastructure - Rebuilding of community's social facilities - Revival of socio cultural community life - Use of appropriate design with improved and disaster-resistant equipment - Participation of social institutions and organizations, business world, and community - Participation of social institutions and organisations, business world, and community - Improvement to public service functions - Improvement to essential services in community

As can be seen above, there are different disaster management structures depending on the perceived level of disaster risk. The terms *with potential disaster* and *situation without disaster* remain undefined in Indonesian disaster legislation and regulation.

Disaster management and planning is coordinated by government agencies at three levels:

- National Disaster Management Agency (BNPB) at the national level
- Regional Disaster Management Agency (BPBD) at the regional level
- Regency/city disaster management agencies

The BNPB is a “non-departmental government institution” (Indonesia Law 24/07, p.9) and sits on a level equal to national ministries. The BNPB must report to the Indonesian president once a month. It is made up of a Steering Committee and an Executive Committee. The Steering Committee prepares the framework of disaster management policy on a national scale, and is charged with monitoring and evaluation of disaster management policy. The Executive Committee manages the coordination, command and execution of disaster management policy. Its structure and members can be seen in Figure 4.2 below.

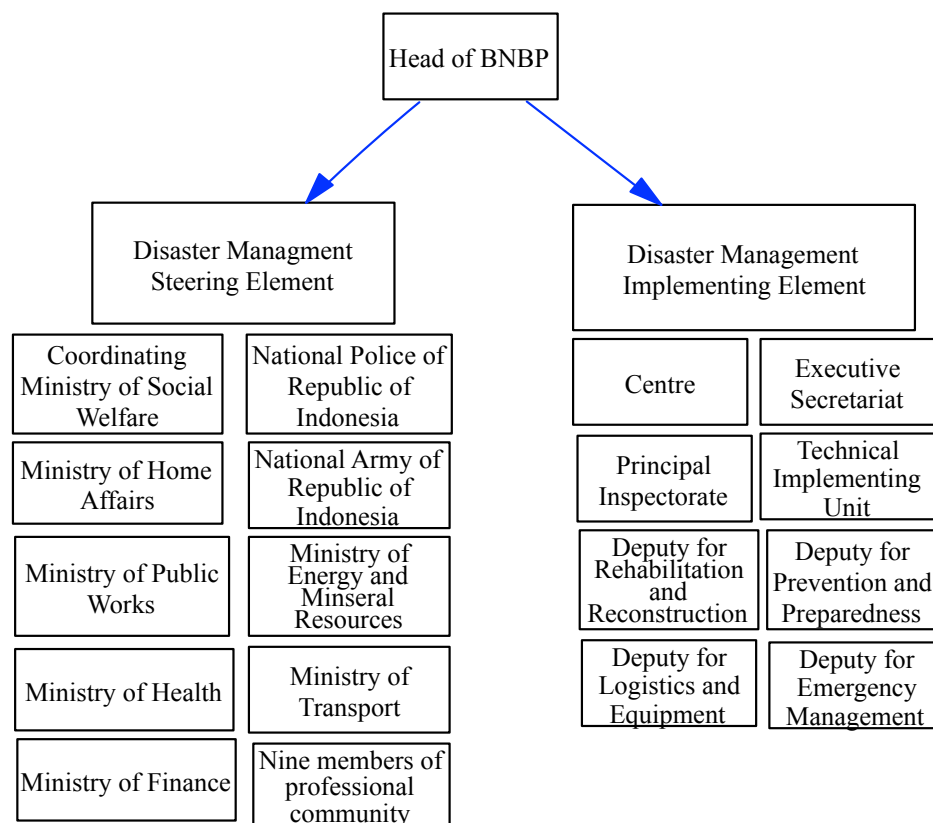


Figure 4.2: National Disaster Management Agency (BNPB)

The role of the BNPB is to formulate and coordinate disaster management policy in a “well planned, integrated, and comprehensive manner” (Indonesia Law 24/07, p.9). The BNPB also develops the guidelines for the “establishment of Regional Disaster Management Agency” (Indonesia Law 24/07, p.9).

The Regional Disaster Management Agency (BPBD) has a similar structure to the BNPB, with both the Executive and Steering Committees under the same obligations at regional and national levels. Regional policy development must be done in accordance with national guidelines. The president declares emergency status on the national level, the governor at the provincial level and the regent or mayor at the city level (Indonesia Law 24/07, p.14).

Disaster management plans are developed for five-year periods, and reviewed every two years or in the case of a disaster. Disaster risk reduction action plans are developed for three-year periods to be “reconsidered as necessary” (Indonesia Law 24/07, p.7).

4.4 Philippines

Philippines RA 10121: *Republic Act 10121 – Philippine Disaster Risk Reduction and Management Act of 2010*, 2010, Government of the Philippines

Philippines NDRRMF: *National Disaster Risk Reduction and Management Framework 2011-2028*, 2011, Government of the Philippines

Philippines NDRRMP: *National Disaster Risk Reduction and Management Plan*, 2011, Government of the Philippines

Philippines SNAP: *Strategic National Action Plan 2009-2019*, 2010, Government of the Philippines

Box 4.4: Philippines key documents

4.4.1 Background to policy development

The Philippines is a country highly susceptible to “natural and human-induced disasters”, which strongly influences disaster policy development (Philippines NDRRMC, 2011, p.10). Disaster policy in the Philippines is highly structured, which is a way of acknowledging the complexity of disaster management. Influenced by its commitment to the Hyogo Framework for Action and the Millennium Development Goals, the Philippine Disaster Risk Reduction and Management Act (Philippines RA 10121) of 2010 forms the legislative backbone for the National Disaster Risk Reduction and Management Framework (Philippines NDRRMF), published in 2011. The NDRRMF outlines a “comprehensive, all hazards, multi-sectoral, inter-agency and community-based approach” across four ‘quadrants’ (Philippines RA 10121, 2010, p.9):

- Prevention and Mitigation
- Preparedness

- Response
- Rehabilitation and Recovery (Philippines NDRRMF, 2011, p.18)

These four quadrants are addressed through the “vertical and horizontal coordination of disaster risk reduction and management in the pre-disaster and post-disaster phases” (Philippines RA 10121, 2010, p.9). The NDRRMF informs the development of the National Disaster Risk Reduction and Management Plan. The focus of disaster management in the Philippines is moving towards creating a “culture of safety” (Philippines NDRRMP, 2011, p.17). Consequently, there is a growing recognition that “disaster response operations need to be continuously enhanced within a risk reduction approach” (Philippines NDRRMP, 2011, p.13). The goal of the NDRRMP is:

To have a paradigm shift from reactive to proactive DRRM wherein men and women have increased their awareness, understanding on DRRM with the end in view of increasing people’s resilience and decreasing their vulnerabilities. Our aim is to empower leaders and communities and to develop the ‘right’ mindset and positive behavioural changes towards reducing and managing risks and lessening the effects of disasters (Philippines NDRRMP, 2011, p.17).

The NDRRMP is guided by the NDRRMF and sets out “goals and specific objectives for reducing disaster risks together with related actions” (Philippines RA 10121, 2010, p.9). It is built on ideas of sustainable development and supported by the two pillars key to climate change adaptation and disaster risk reduction:

1. Vulnerability alleviation
2. Increasing resilience through capacity building

The NDRRMP is used as “the national guide on how sustainable development can be achieved through inclusive growth while building the adaptive capacities of communities” (Philippines NDRRMP, 2011, p.5). This is firmly rooted in the nexus of climate change adaptation and disaster risk reduction and management, and follows the logic that:

By increasing the resilience of people to disasters through risk reduction efforts, people will be able to adapt to the effects of climate change and become less vulnerable (Philippines NDRRMP, 2011, p.13).

The NDRRMP also guides the development of disaster management plans of lower levels of government. Part of the Philippines' approach to disaster policy is to mainstream the pillars of DRR into all policies of sustainable development. DRRM is presented as “an integral and important component of sustainable development and not just within the context of disaster” (Philippines NDRRMP, 2011, p.36). This is to “ensure the integration of disaster risk reduction and climate change adaptation into local development plans, programs and budgets as a strategy in sustainable development and poverty reduction” (Philippines RA 10121, 2010, p.22).

4.4.2 Disaster governance structure

The NRRMC is the backbone of disaster governance structure in the Philippines. Figure 4.3 shows the structure of the NDRRMC, where the Chair has the power to call on government departments and NGOs for assistance, and “call on the reserve force as defined in Republic Act No. 7077 to assist in relief and rescue during disasters or calamities” (Philippines RA 10121, 2010, p.17).

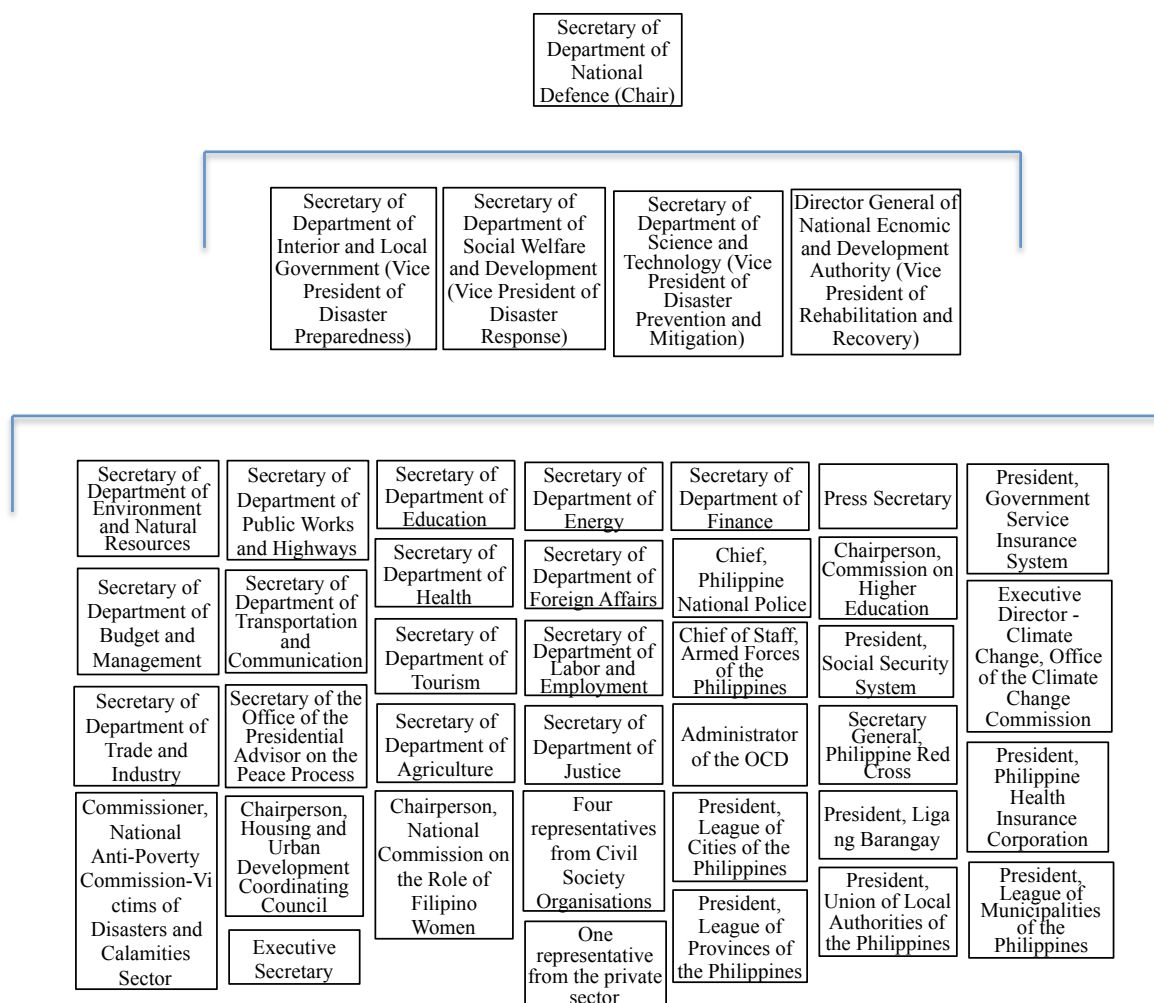


Figure 4.3: National Disaster Risk Reduction and Management Council

A legislative framework further reflects goals of poverty alleviation and capacity development. The Philippines RA 10121 aims to:

Uphold the people's constitutional rights to life and property by addressing the root causes of vulnerabilities to disasters, strengthening the country's institutional capacity for disaster risk reduction and management and building the disaster resilience of local communities to disasters including climate change impacts (Philippines RA 10121, 2010, p.2).

The legislation states the NDRRMP shall identify:

Hazards, vulnerabilities and risks to be managed at the national level; disaster risk reduction and management approaches and strategies to be applied in managing said hazards and risks; agency roles, responsibilities and lines of authority at all government levels; and vertical and horizontal coordination of disaster risk reduction and management in the pre-disaster and post-disaster phases (Philippines RA 10121, 2010, p.9).

The NDRRMP forms the guide for the design of DRRM activities at the provincial, city and municipal levels. This includes development of Local DRRM Plans, particularly of the Barangay Development Councils (Philippines RA 10121, 2010, p.37). This process can be seen in Figure 4.4 below.

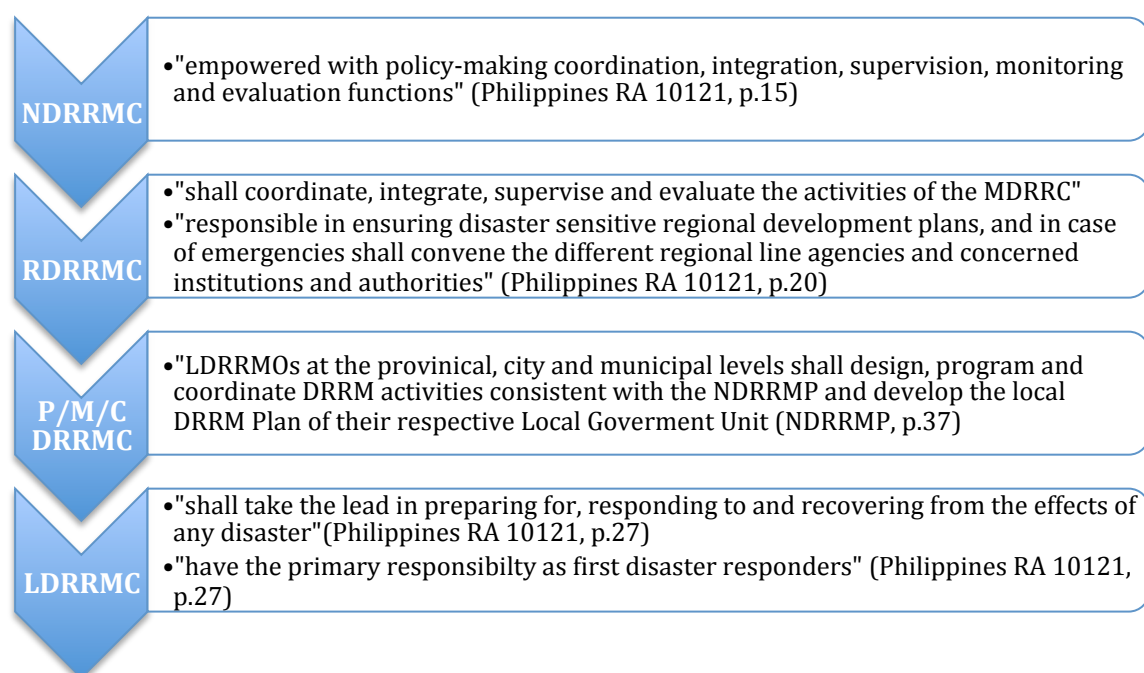


Figure 4.4: Vertical structure of disaster management in the Philippines

4.5 Chapter Summary

This chapter has outlined the background to policy development and the governance structure of each of the countries examined in this study. Generally, disaster policy in each country is underpinned by broader development goals including poverty alleviation and vulnerability reduction. Disaster governance structure in Indonesia and the Philippines is based around coordinating agencies at a national level that report directly to their respective presidents. Cambodia and Lao PDR have existing national disaster coordinating bodies, but these are under resourced, with concerns regarding their ability to fulfil their mandate. The policies of Cambodia and Lao PDR are strongly influenced by international development agencies and the UNISDR, which is evidenced by the identical wording in several areas of disaster policy.

This chapter outlined the examined documents by country. The next chapter will discuss the themes that emerged from the document analysis in the context of resilience, including governance structure, influence of development, risk communication and assessment, and climate change adaptation.

Chapter 5: Discussion

This thesis is concerned with understanding how resilience is reflected in disaster policy on a national and community scale, exploring who the policies refer to, what they aim to achieve and how government is structured to address such issues. Further, this thesis explores how the concept of resilience could help to address institutional issues that contribute to vulnerability. Chapter 5 examines emergent themes from key documents to answer these questions. Discussion follows the key findings presented in Figure 5.1.

- **Resilience is used as a concept to guide policy but is rarely stated as an explicit goal**
- **National frameworks for disaster management and risk reduction that take a vertical and horizontal approach offer more opportunities to facilitate resilience than a linear top-down structure**
- **Levels of socio-economic development play a role in the disaster policy process**
- **Disaster risk reduction and management is dependent on multi-hazard risk assessment. Causes of vulnerability, and therefore opportunities for alleviation, are not well understood**
- **There is limited reflection of the social aspects of vulnerability in the development of risk communication strategies and networks**
- **Demography is broadly represented in disaster policy, but its influence is less clear**
- **Disaster is discussed as an element of security at a regional level, but this is not reflected at a national level**
- **The international split between climate change adaptation and disaster risk reduction does not occur at a domestic level**

Figure 5.1: Key findings

5.1 *Language of resilience*

Resilience is used as a concept to guide policy but is rarely an explicit goal

Resilience is rarely mentioned explicitly; rather it is used to guide the development of an overarching policy framework or desired outcome. The term ‘resilience’ is stated in the context of building a “culture of safety and resilience” (UNISDR, 2005, p.6; Philippines

NDRRMP, 2011, p.17). Cambodia describes this as a “culture of prevention and disaster resiliency” (Cambodia NSDP, 2014, p.141). Characterising resilience as a ‘culture’ implies its use as a tool to guide domestic policy through its ability to adapt to domestic context.

5.2 Governance

Governance and government structure are an important aspect of disaster management, and therefore of building resilience to disaster. The disaster management continuum, from pre-disaster prevention and preparedness to post-disaster is complex. It requires both horizontal (across multiple departments) and vertical (at multiple levels) coordination of government agencies, NGOs and civil society. As described in SREX:

National systems are at the core of countries’ capacity to meet the challenges of observed and projected trends in exposure, vulnerability, and weather and climate extremes (IPCC, 2012b, p.11).

Guidelines to inform the trajectory of a country’s disaster management framework are important, especially when that country is reliant on international assistance. The HFA describes the importance of “a strong institutional basis for implementation” (UNISDR, 2005, p.6). Similarly, SREX states

Effective national systems comprise multiple actors from national and sub-national governments, the private sector, research bodies, and civil society including community-based organizations, playing differential but complementary roles to manage risk, according to their accepted functions and capacities (IPCC, 2012b, p.11).

5.2.1 National – regional – local

National frameworks for disaster management and risk reduction that take a vertical and horizontal approach offer more opportunities to facilitate resilience than a linear top-down structure

SREX and the HFA both acknowledge the importance of a strong institutional framework for disaster management. However, national governments are influenced by various factors and these influence the structure of disaster management frameworks. Factors including decision rights, funding allocation and national priorities influence domestic governance arrangements. Indonesia and the Philippines have coordinating national

disaster management bodies at the national level that report directly to their respective presidents. The major structural difference, with respect to governance, is that the Philippines NDMC sits at a higher level than the government ministries. This means it has the capacity to direct the ministries and influence resource allocation. In Indonesia, the BNPB is a non-departmental government agency that exists on the same level of authority as national ministries. It has less direct influence and must coordinate action by garnering the support of agencies in a more collaborative manner.

It is not for this thesis to evaluate which model is more effective; rather it asserts that the structure of disaster governance needs to fit into the existing framework of national institutions. However, the design of a national disaster governance structure does need to recognise the complexity of managing disaster on a national scale. This involves creating flexible frameworks of policy, legislation and regulation in accordance with national goals and a realistic understanding of coping capacity at all levels of government.

National governments have a larger coping capacity than local governments, particularly in terms of availability of information, technology and financial resources. Local governments and communities have local knowledge, understanding and experience. This should not be overlooked in the disaster planning and recovery process. Similarly, although government organisations are not the only actors within the disaster context, they do play a major role in creating the network to promote adaptive capacities. This structure establishes the tone of interactions between adaptive capacities on multiple levels of government, which influences opportunities for resilience.

As recognised by the HFA, SFA and UNFCCC discussed in Chapter Two, and the national policy and legislation discussed in Chapter Four, communities need to be supported to enhance their resilience. It has become clear from this study that this commitment should acknowledge factors that contribute to vulnerability specifically to disaster, and assess and implement recovery strategies that aim to address these weaknesses, especially if they are unique. This is why having multiple levels of government involved in disaster management across different disciplines is so important – communities are vulnerable for various reasons, some of which are in their power to change, others are not. Having a governance structure that enables communication between different levels of government can facilitate change. This allows issues to be transferred to actors or agencies with the power to do so.

Thus, an effective network of multiple layers of government from a national to a local scale can contribute to achieving resilience. Higher levels of government augment the management and coping capacities of lower levels in the case of disaster. The Philippines calls this having “robust institutional mechanisms” (Philippines NDRRMP, 2011, p.18), and recognises that “building resilient communities cannot and should not be done by a single agency or organisation” (Philippines NDRRMP, 2011, p.35).

An example of this is the Kelompok Keria Masyarakat (PokMas) scheme in Indonesia, where the regional or national government provides “guidance and/or technical aid” to help the community rebuild or repair houses (Indonesia Regulation 21/08, p.34). The purpose of the aid is “to follow a community empowerment pattern, considering the regional character and community culture” (Indonesia Regulation 21/08, p.34).

The disaster management structure in Cambodia, including elements of DRR, takes a top down approach. Coordination of international assistance when national capacity is overwhelmed is a key part of the national frameworks in Lao PDR and Cambodia. Lao PDR’s Draft NDMP discusses “linking community-led experience with national-level policy” (2011, p.24). This is important – disasters are felt on a local scale, where communities are the first to respond and bear the brunt of the damage. This is recognised in exactly the same way in Lao PDR’s NDMP and Cambodia’s SNAP.

5.3 Development

Levels of socio-economic development play a role in the disaster policy process

Disaster and development are closely linked. This connection has been discussed throughout this thesis, but it is important to explore the impacts of development on the policy itself. This section deals with the influence of development on policy frameworks. Low development can mean there is a lack of resources to undertake a full policy development process. This task can be handed over to external development agencies, which can reduce domestic influence over policy direction and overlook local knowledge.

Disaster management and risk reduction policies are written and influenced by multiple stakeholders, from government to civil society and NGOs. Authorship is important, because it can indicate the level of domestic desirability, but also the resources available on a domestic level. As this thesis explores the influence of international governance

frameworks on domestic disaster policy, understanding the level of domestic influence over the policy is important.

Cambodia and Lao PDR relied on international assistance to develop their national policies. There were numerous examples of overlap between national policies, which reflects the international co-authorship. This is significant for two reasons: it highlights the reliance on international assistance for policy development, but it also demonstrates the strength of influence of the UNISDR. The disaster management policies and assessments of Cambodia and Lao PDR emphasise the links between development and disaster.

A second area where development can impact disaster policy is when policy assumes capacity for implementation. For example, in Lao PDR, full implementation of the strategy to mainstream DRR in education depends on universal access to education, which is not a reality in some areas. Disaster awareness is taught in the school curriculum within Lao PDR, where the schools are also used as shelters in the case of disaster. However the Asian Disaster Preparedness Centre report – *Mainstreaming Disaster in Education Lao PDR* – claims the “education services are insufficient to meet the needs of the population” (Lao DRR in Education, 2008, p.49). The Lao NAR states, “villages without primary schools have reported significant higher numbers of death and monetary losses” (Lao NAR, 2012, p.53), which would support the policies of mainstreaming DRR into education. This could indicate that using schools to circulate information on DRR is missing key parts of the population.

However, the Lao NAR then goes on to say:

It was found that the percentage of poor families/villages negatively correlated with all disaster indicators which support the idea that less data gathering has been carried out in poorer districts/villages (Lao NAR, 2012, p.53)

This example aims to highlight the importance of fully understanding country capacity to develop realistic pathways for resilience. This emphasises the importance of development in allocating resources for comprehensive risk assessment. Without understanding risk and the contributing factors of vulnerability, disaster policy is likely to ignore key contributing factors. Lack of information about risk and vulnerability makes planning for disasters difficult. As will be discussed in the next section of this chapter, multi-hazard risk

assessment is particularly expensive, but it is essential to the development of effective disaster management strategies.

5.4 *Information*

Information is discussed in two sections. The first section explores problems and benefits associated with risk assessment. The second section looks at risk communication.

5.4.1 Risk assessment

Disaster risk reduction and management is dependent on multi-hazard risk assessment. Causes of vulnerability, and therefore opportunities for alleviation, are not well understood.

Multi-hazard risk assessments are a pillar of the HFA. Each of the four countries examined in this study recognise the importance of understanding disaster risk. Indonesia recognises it as a crucial underpinning of disaster management planning, which is defined as

Recognition and study of disaster threat; understanding on community's vulnerability; analysis of potential disaster impact; options for reducing risk disaster measures; selection of mechanism for alertness and for disaster impact management; allocation of tasks, authority and available resources (Indonesia Law 24/07, p.17).

Where the "recognition and monitoring of disaster risk shall aim at gathering data on threat, vulnerability, and community capability to face disasters" (Indonesia Regulation 21/08, p.54).

Similarly, the Philippines emphasises:

Proper, continuous and sustained conduct of disaster risk assessments (hazards, vulnerability, exposure) and using them to mainstream into development plans DRRM and CCA activities and priority areas which will address the underlying causes of vulnerabilities of the people (Philippines NDRRMP, 2011, p.13).

This focus permeates through all levels of government, with the Barangay DRRM Councils required to "consolidate local disaster risk information which includes natural hazards,

vulnerabilities and climate change risks, and maintain a local risk map” (Philippines RA 10121, 2010, p.23).

Cambodia outlines a goal of building a “culture of prevention and disaster resiliency” through “collecting, compiling, and disseminating knowledge and information on hazards, vulnerabilities, and capacities to the people” (Cambodia NSDP, 2014, p.141). This partly involves developing strategies for different “geographic and territorial specificities” (Cambodia NSDP, 2014, p.90) aimed at alleviating poverty and vulnerability. A key element of data collection is “recording, analysing, and disseminating the disaster losses information” (Cambodia NSDP, 2014, p.142). Collecting segregated data is particularly important because it provides demographic information about disaster loss. This material further informs the direction of policy development.

Droughts and floods are common hazards for Cambodia and the World Food Programme conducts the relevant vulnerability assessment mapping (Cambodia SNAP, 2008). The Cambodia SNAP outlines a goal of developing a “national multi-hazard vulnerability atlas” (2008, p.26). This would suggest that risk analysis is conducted by specialised international agencies without a national framework for systematic analysis to move Cambodia towards its goal of establishing a “disaster management system”(Cambodia SNAP, 2008, p.26).

The National Disaster Management Office in Lao PDR has developed a multi-hazard risk assessment mechanism with technical assistance in accordance with broader goals to:

Improve the existing capacities for comprehensive risk assessment to ensure that data available is analysed in the right way and can be used to inform policy development (Lao NAR, 2012, p.59).

This has resulted in a National Risk Profile (Lao NAR, 2012).

The common emphasis on risk assessment reflects an understanding of the difficulties developing disaster policy without a strong grasp of country specific issues. It is difficult to develop policy to address risk if there is limited information about its origins. This makes it hard to create disaster policy that is more specific than those aimed to reduce disaster risk through poverty alleviation. However, each country places its own emphasis on the focus of analysis. The Philippines maintains a repeated commitment to addressing the

underlying causes of vulnerabilities. Although each country communicates an understanding of the key role of information and multi-hazard risk assessments, there is limited reflection of specific causes of vulnerability and how this could be alleviated through policy.

5.4.2 Risk Communication

There is limited reflection of the social aspects of vulnerability in the development of risk communication strategies and networks

Risk communication is closely linked to risk assessment as effective communication influences mitigation of the risk in question. The HFA and AADMER strongly emphasise the importance of early warning systems, whereas the SFA has shifted its focus to understanding disaster risk. This shift is significant as it suggests the potential for risk communication systems to exacerbate vulnerability by not fully identifying and communicating the underlying risk factors. As recognised by the Philippines:

People and communities are vulnerable to disasters because of lack of information about the hazards; how to prepare for them; and how to reduce the risks of the hazards affecting their lives and livelihoods (Philippines NDRRMP, 2011, p.24).

Risk communication can be split into two parts: early warning and disaster risk. Early warning systems are about predicting and disseminating information about a specific event. Disaster risk communication is broader and refers to communicating disaster risk in the long term. This includes information about what to do in the case of disaster and how to prevent and manage risk – both aspects are key to building resilience. Currently, the focus of domestic risk communication appears to be on early warning systems. This could be a result of the emphasis of AADMER on the development of a regional early warning network and inter-country technical assistance (ASEAN, 2010).

The most comprehensive definition of an early warning system is included in the Philippines NDRRMP as having:

- The knowledge of the risks
- Monitoring, analysis and forecasting of the hazards
- Communication or dissemination of alerts and warnings

- Local capabilities to respond to the warnings received (Philippines NDRRMP, 2011, p.23).

Indonesia defines early warning in a similar way:

- Observation of disaster signs
- Analysis of results from disaster signs observation
- Decision-making by the authorities
- Dissemination of disaster warning information
- Community actions (Indonesia Law 24/07, p.20).

However, Indonesia defines community actions as obligations to carry out “disaster management activities; and providing correct information to the public on disaster management” (Indonesia Law 24/07, p.14). Theoretically, ensuring local capabilities exist to respond to the warnings received is key because it acknowledges and seeks to address localised causes of vulnerability. As reflected in the Lao NAR:

Poverty is the worst and the generic form of all vulnerabilities. Poor people are often located in unsafe areas, their shelters are generally not constructed with safe designs and materials, and they do not always have access to early warnings and the means to quickly move to safer place (2012, p.44).

Providing information about disaster is not enough to create opportunities for resilience to disaster in the immediate term. Capacity to respond to the warnings should be included in early warning planning as reflected in the Philippines. The Cambodia NSDP aims to provide “simple and understandable information on disaster risk to people at the risk of getting exposed to hazards”(2014, p.141), but does not provide guidelines for subsequent stages. A key part of risk communication is the collection of information, which requires:

More substantial technical assistance and inputs because they involve the applications in more specialized fields, particularly those related to the use of technical and scientific tools and methodologies (Cambodia SNAP, 2008, p.18)

However, the second part is the risk communication itself. The practical process of risk assessment is expensive and tends to focus on the physical processes that contribute to risk over the social factors of vulnerability. Cambodia aims to develop “capacities in technological research for forecasting natural hazards (Cambodia NSDP, 2014 p.141). This

means that social vulnerability and risk assessments are sometimes overlooked. The Philippines has a:

Specialised database which contains among others, information on disasters and their human material, economic and environmental impacts risk assessment and mapping and vulnerable groups (Philippines RA 10121, 2010, p.7).

This is also recognised in Cambodia, which *aims* to collect, compile and disseminate:

Knowledge and information on hazards, vulnerabilities, and capacities to the people for building the culture of prevention and disaster resiliency (Cambodia NSDP 2014, p.141).

Lao PDR is less specific, aiming to develop a hub for "disaster management information, assessments, collection and production of reports on an annual basis" (Lao NDMP, 2011, p.37). This has limited reflection of the social factors that exacerbate vulnerability. The plan then aims to:

Initiate timely early warning information, emergency operations, and mitigation information broadcasts through multi-media services (Lao NDMP, 2011, p.30).

Risk communication, through both early warning systems and disaster risk campaigns over the long term should seek to understand the underlying issues. Similarly, risk communication needs to be accessible. However this requires an understanding of the vulnerability and opportunities for resilience, which necessitates further assessment of risk. This argument can get circular, but the aim is to highlight the importance of integrating social vulnerability in both early warning and disaster risk communication. Information about disaster risk in both the short and long term should include strategies to increase capacities to respond.

5.5 Demographic considerations

Demography is broadly represented in disaster policy, but its influence is less clear

The disaster policy development process requires a nuanced and coherent understanding of risk. This has been discussed in both the literature and policy analyses of this thesis. A key component of risk assessment is an awareness of the factors that influence risk – risk

assessment and communication should reflect the diversity of disaster risk. The documents analysed in this study do not meaningfully reflect the influence of demography on risk and vulnerability. This affects opportunities to enhance resilience to disaster. It is particularly clear in the case of gender, but factors such as age, level of education, and geography play an important role in identifying and alleviating risk.

The legislative and regulatory documents of Indonesia describe women as “pregnant women or breastfeeding mothers” (Indonesia Law 24/07, p.23; Indonesia Regulation 21/08, p.3). There is no mention of gender in the Philippines NDRRMP, other than to discuss the men and women of the Philippines, but RA 10121 emphasises that steps need to be taken to “assist mothers to breastfeed” (2010, p.24) during emergency response. This occurs despite the inclusion of the Chair of the National Commission of the Role of Filipino Women on the NDRRMC. In the Philippines, vulnerable and marginalised groups are defined as:

Those that face higher exposure to disaster risk and poverty including, but not limited to, women, children, elderly, differently abled people and ethnic minorities (Philippines RA 10121, 2012, p.12).

The Women’s Union of Lao PDR serves on its NDMC, which aims to:

Give special attention to the social, cultural and economic needs of women, children and most disadvantaged groups in disaster and risk management by using participatory tools such as vulnerability and capacity assessments (Lao NDMP, 2011, p.31).

The Lao NDMP aims specifically to:

- Promote awareness among women in hazard-prone areas about disaster risks and disaster preparedness
- Raise awareness of the decision makers and Government about the special vulnerabilities and capacities of women disaster episodes
- Ensure that needs of women survivors are addressed in post-disaster situations during the relief, rehabilitation and reconstruction phases
- Support post-disaster rehabilitation of livelihoods of women survivors (2011, p.31).

Part of the fundamental principles of disaster management in Cambodia requires DRR and CCA strategies to be “responsive to gender and the most vulnerable groups such as children, women, elderly, disabled, ethnic minority” (Cambodia LDM, 2011, p.4). Cambodia recognises that natural disasters continue to:

Increase socio-economic vulnerabilities of the rural poor, including placing a disproportionate burden of coping with the effects of disaster on women (Cambodia SNAP, 2008, p.3).

The focus of disaster management on prevention, risk reduction and preparedness also includes “mitigation [of] the vulnerability, with specific attention on women and children” (Cambodia NSDP, p.140). Similarly, gender and cultural sensitivity training are to be promoted as part of DRR. The most prominent hazards in Cambodia are flood and drought, which impact significantly on the agricultural industry. Considering 50 per cent of Cambodia’s agricultural labour is female, recognising the potential difference in impacts between genders would be beneficial in developing disaster management policy for the agricultural sector (Cambodia NSDP, 2014, p. vi).

Specifically recognising women in disaster policy does not assume women are more vulnerable, rather that men and women experience disaster in different ways. It is important for policy to acknowledge that experiences of disaster differ for people depending on where they live, and their age, gender, sexuality and ability. Recognising these demographic influences within policy increases opportunities for resilience because it reflects realistic opportunities for adaptive capacities.

Vulnerability is consistently referred to in disaster policy and legislation. However, it is not elaborated on or rigorously defined. Groups that are deemed ‘vulnerable’ are clumped together despite the different factors that contribute to their vulnerability. For example, through its definition, the Philippines assumes women and ethnic minorities have the same needs when faced with disaster. Therefore, the implicit assumption appears to be that the vulnerability of ethnic minorities and women can be alleviated by the same policies. Not only is this unlikely, it undermines resilience by assuming an inherently weaker adaptive capacity. This is reflected at an international level: the SFA strongly reflects the need to include more specific indicators regarding demography, particularly around gender and disability. Without the inclusion of more detailed demographic information such as age, gender, occupation and level of education, it is difficult to fully understand the risk profile of a country. It is important to understand how different

members of the population, in different areas of the country, are at risk from disaster. Without a deeper appreciation of risk, disaster policies cannot comprehensively address the associated risk.

5.6 *Security*

Disaster is discussed as an element of security at a regional level, but this is not reflected at a national level

There is limited discussion of security on a national level, apart from maintaining food security, and general peace and order following a disaster in any of the countries included in this study. The discussion surrounding security and disaster remains at a high level in a regional context, where the emphasis on security is linked to national resilience and refers to maintaining the functions of the state. Whilst disaster, particularly on a national scale, can undermine the functions of the state and therefore threaten the ‘security’, there is value in exploring the regional implications of domestic disaster policy. For example, the policies of both Cambodia and Lao PDR discuss the importance of developing “coordinated regional operational mechanisms for emergencies exceeding national coping capacities” (Lao NDMP, 2011, p.23).

Countries with lower coping and adaptive capacities are more likely to have those capacities overwhelmed, which can result in state collapse. This is a significant issue for neighbouring countries, particularly in the context of AADMER where there is a focus on “collective” regional response (ASEAN, 2010, p.7). Therefore, disaster may be an issue of national resilience, but it is an issue of regional security because of its ability to draw in otherwise unaffected countries in accordance with their obligations under ASEAN. This is an area for further study.

5.7 *Climate Change Adaptation*

The international split between climate change adaptation and disaster risk reduction does not occur at a domestic level

The political split between climate change adaptation (CCA) and disaster risk reduction (DRR) at an international level is not reflected on a regional or national level in this study. Although no CCA-specific policies were used, CCA and DRR are linked in the disaster documents studied for each country.

This highlights more general themes discussed in this section about the broader context of national policy development. National disaster policy, in its immediate sense, is about managing disaster on national level. Each country discussed in this study has indicated that alleviating poverty and reducing vulnerability are national goals. These elements are common to both CCA and DRR.

As Moser and Ekstrom discuss, creating different systems of concern “may inherently limit the range of options” (2010, p.22028). This is certainly true at an international level, where the HFA/SFA do not mention climate change adaptation, and DRR is left out of the UNFCCC. However, AADMER notes the importance of linking the two.

National disaster policy development is not concerned with the geopolitics of climate change in the sense that it limits the scope of domestic disaster policy. The countries examined in this study are primarily concerned with the ability of low levels of development to limit their adaptive capacities on a national and community level, thus increasing vulnerability to climate change and disaster.

It is within the national interest – as indicated by each of the policies referenced – that CCA and DRR should remain connected on a domestic level. The development of disaster policy sits alongside policy development on a broader level. As discussed throughout this thesis, a key element of disaster policy is creating networks between different areas to increase coping and adaptive capacities to enhance resilience. These areas include education, healthcare, transport, communication and infrastructure. Both CCA and DRR, at a basic level, are concerned with adapting, and building the capacities to do so. As Moser and Ekstrom outline, “failing to develop such cross-level relationships may result in barriers” (2010, p.22029). Limiting connections between CCA and DRR at a national level undermines the importance of reflecting nuanced factors in the development of domestic disaster policy.

5.8 Policy implications

Resilience is a pliable concept, presenting both opportunities and risks in its use in disaster management policy. Disaster risk reduction and management is a highly complex policy area. The inclusion of resilience in international frameworks provides opportunities to inform the direction of national disaster policies. Part of the value of resilience is that its broadness reflects the complexity of disaster governance. The concept of resilience is malleable enough to incorporate multiple time and governance scales, alongside

acknowledging different factors that contribute to vulnerability and disaster risk. As a concept for guiding disaster management policy, resilience is comprehensive enough to recognise the need to create policy to address disaster risk over multiple time scales.

There is limited use of the specific term 'resilience' in policy, aside from its inclusion as a broadly stated goal or outcome. Using resilience as a policy framework, rather than a guiding concept, is risky. As it is so inclusive, it can encourage an attitude where fundamental aspects of disaster risk reduction and management, such as a nuanced understanding of vulnerability and risk, can be overlooked in favour of a more ad-hoc approach. Using resilience as a framework supersedes the importance of constructing a systematic framework to enable resilience. It is a presumed outcome of policies that aim to increase levels of development to address disaster risk. Building resilience to disaster through increasing development is a policy for development, not for disaster, notwithstanding that there may be co-benefits.

Part of resilience seeks to address underlying issues of vulnerability to disaster to increase adaptive capacity in the long term. The documents studied continuously refer to increasing resilience of the vulnerable, without acknowledging the uneven experiences of vulnerability. There is little risk analysis tied to specific demographic indicators, or policies to alleviate the disproportionate vulnerability assumed to affect women and other demographic groups.

Resilience addresses issues of multiple scales of governance by linking adaptive capacities at a community level, where help is available from agencies at a regional level. Local scale evacuation and relief can be coordinated using wider adaptive frameworks, utilising the national coping capacities that can offer relief from disaster. Building resilience to disaster is partly about creating this network of adaptive capacities across multiple levels of government.

Although there are strong links between disaster risk and levels of development, this needs to remain a high level association, used to enhance understanding of risk to inform policy specific to disaster. The all-encompassing nature of resilience means it acknowledges the structural and institutional factors that contribute to vulnerability.

Chapter 6: Conclusion

This thesis analysed reflections of resilience in disaster policy. Two questions were posed at the beginning of this research. First, how is resilience reflected in disaster policy on a national and community scale? Second, can resilience address the structural and institutional issues that contribute to vulnerability to disaster on both a national and community scale?

These questions were answered using word searches and document analysis of key disaster policy documents, legislation, regulation and national assessments. This research found that resilience is a high-level concept driving policy direction across multiple time, spatial and governance scales. As a concept, resilience sets the tone of policy, encouraging cohesion across multiple time and spatial scales and cooperation throughout all levels of government.

The research is subject to limitations, particularly resulting from access to key documents. The countries assessed have different approaches to disaster management. This is reflected in the non-uniform availability and existence of policy and legislation. This is not a significant limitation as the major aim of this investigation is to understand how 'resilience' transfers from international frameworks into domestic disaster policy, rather than to compare specific policies.

This thesis has been an examination of the way resilience is reflected in disaster policy in a broader context of international governance frameworks and regional obligations. Part of the value of resilience is that its broad conceptualisations mean it reflects the complexity of disaster. This thesis has found that increasing resilience to disaster requires a comprehensive recognition of its value.

It is too simplistic to suggest an overarching framework to build resilience. Policies aimed to increase resilience to disaster need to address the nuance and detail of situations and vulnerabilities unique to place and society. However, the essence of resilience requires a systematic approach to disaster, where coordination occurs across multiple levels of government, through multiple departments over the short, medium and long term. This is not simple in either theory or application but its acceptance is key for countries and communities to absorb shock and continue an upward development trajectory.

Resilience ‘works’ within policy by drawing together multiple scales of time, space and government. Resilience can encourage interactions and create networks to build adaptive capacities. This research has established a firm understanding of how resilience is reflected in policy through building networks of adaptive capacity, through governance structures, early warning systems, risk communication and risk assessment. The research provides foundations to evaluate and explore implementation and effectiveness of resilience in disaster policy in ASEAN. Further areas to explore are highlighted in Table 6.1

Table 6.1: Situation - Inference - Further Research

Established situation	Leading to defensible inference	With need for further research and exploration
Disaster policy development as a domestic priority is dependent on frequency of events	Frequency and severity are more influential than international frameworks in prioritising the development of national disaster governance frameworks	What are the fundamental factors of adaptive capacity that contribute to resilience?
Focus on vulnerable populations is high, but information about them is low	Gender is generally acknowledged in policy but lack programs to address vulnerability of women and children	Does a successful national disaster policy require vulnerability assessment and policy development that is more demographically specific?
The current international disaster governance framework offers limited opportunities for feedbacks in policy development	There are links between national security and national resilience but these are not fully explored	Is there an overemphasis on government in disaster policy? What roles do NGOs play in the development of adaptive capacity?
Resilience is a recurring high-order principle, permeating international, regional and national policy	Resilience is used as an overarching objective to inform policy direction, rather than as an explicit goal	How does the split between CCA/DRR at an international level affect policies aimed to increase resilience?

As a concept, resilience has permeated international frameworks, regional agreements and domestic disaster policy. This thesis has established how it is reflected in the domestic disaster policies of Cambodia, Lao PDR, Indonesia and the Philippines. As the broad conceptualisations of resilience reflect the complexity of disaster governance, resilience has significant value in setting the tone and direction of policy to create strong, flexible frameworks to address disaster. How effective the broad principle and goal of resilience is at more operational or specific levels of policy requires further investigation.

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Appendix 1: ASEAN Country Background

	Brunei Darussalam	Kingdom of Cambodia	Republic of Indonesia	Lao People's Democratic Republic	Malaysia
Population					
Total	422, 675	15,458,332	253,609,643	6,803,699	30,073,353
Urban	76.90%	20.50%	53%	37.60%	74%
Rate	-1.79%	2.65%	2.69%	4.93%	2.66%
Government					
National	Constitutional Sultanate	Multiparty democracy under	Republic	Communist	Constitutional monarchy
Subnational	4 Districts	24 Provinces	31 Provinces Autonomous province (Aceh)	17 Provinces	13 States
Colonial History	Independence from UK January	Independence from France	Independence from Dutch	Independence from France July	Independence from UK August
Language	Malay, English, Chinese dialects	Khmer	Bahasa Indonesia	Lao, French, English, dialects	Bahasa Malaysia, English Chinese, Tamil, Panjabi, Thai
			English		
			Dutch		
			Over 700 dialects		
Indicators					
GDP/capita(USD)	\$77,700	\$3,300	\$10, 200	\$5,000	\$24,500
GINI	N/A	37.9 (72)	36.8 (81)	36.7 (82)	46.2 (31)
HDI	0.852	0.584	0.684	0.569	0.773
Geography					
Land Area (km ²)	5,765	181,035	1,904,569	236,800	329,847
Coastline (km)	161	443	54,716	0	4,675
Hazards	Typhoons, earthquakes,	Monsoon, flooding, drought	Floods, severe drought, tsunami,	Floods, drought	Floods, landslides, forest
Military Expenditure (% of GDP)	2.43%	2%	0.78%	N/A	1.50%
Other	Stateless cannot own land		Archipelago of 17,508 islands (6000 inhabited) Local govt act as key admin units for govt services since 2001	Landlocked	

	Union of Burma	Republic of the Philippines	Republic of Singapore	Kingdom of Thailand	Socialist Republic of Vietnam
Population					
<i>Total</i>	55,746,253	101,668,231	5,567,301	67,741,401	93,421,835
<i>Urban</i>	33.60%	44.50%	100%	49.20%	33%
<i>Rate</i>	2.49%	1.32%	N/A	2.97%	2.95%
Government					
<i>National</i>	Parliamentary government	Republic	Parliamentary Republic	Constitutional monarchy	Communist
<i>Subnational</i>	7 Regions	80 Provinces	N/A	76 Provinces	58 Provinces
	7 States	39 Chartered cities			5 Municipalities
Colonial History	Independence from UK January 1948	Independence 12 June 1898 (Spain) 4 July 1946 (US)	Independence from Malaysian Federation August 1965	Never colonised	Independence from France September 1945
Language	Burmese	Filipino, English, 8 major dialects	Mandarin, English, Malay, Tamil	Thai	Vietnamese, English, French, Chinese, Khmer
Indicators					
<i>GDP/capita</i>	\$4,800	\$7,000	\$81,300	\$14,400	\$5,600
<i>GINI</i>	N/A	44.8 (42)	46.3 (30)	39.4 (64)	37.6 (77)
<i>HDI</i>	0.524	0.66	0.901	0.722	0.638
Geography					
<i>Land Area (km²)</i>	676,578	300,000	697	513,120	331,210
<i>Coastline (km)</i>	1,930	36,289	193	3,219	3,444
Hazards	Earthquake, cyclone, flood, landslide, drought	Typhoon belt, (affected by 15, struck by 6p/a) landslides, active volcanoes.		Drought	Typhoons, flood
Military Expenditure (% of GDP)	N/A	1.19%	3.52%	1.50%	2.37%
Other		Archipelago of 7,107 islands Conflicts: MILF, Abu Sayyaf, NPA Nearly 500 000 IDPs		Separatist violence in southern provinces	