September 2017; and (ii) Provincial consultation in Tacloban City on 28 September 2017

- Inputs from the National Multi-stakeholder Forum on Tenure and Climate Change in Quezon City on 10 November 2017.

In addition, this paper involves a review of literature to provide a discussion framework and broader context on the link between tenure and climate change/natural disasters in the Philippines.

The *working contexts* for the two case studies and provincial consultations were two of the deadliest typhoons to hit the Philippines in recent years – Typhoon Washi (*Sendong*) in 2011 and Typhoon Haiyan (*Yolanda*) in 2013. Super-typhoons are among the most recognized effects of climate change that bring about what are termed as "rapid impacts"—i.e., immediate and felt effects in terms of destruction to landscapes and property, and the internal displacement of people.

However, a *limitation* of this paper is that it does not examine the tenure-related impacts of other climate change events, including those that may bring about "gradual, long-term and more lasting impacts"—for example, sea level rise that may cause inundation of lands and increased soil salinity, or the effects of changing weather patterns on crop production, that may cause changes in land use or the migration of people over time. At best, these are subjects for future study.

Moreover, this paper does not examine the existing and potential links between tenure and climate change *mitigation*, which could be another subject for future study.

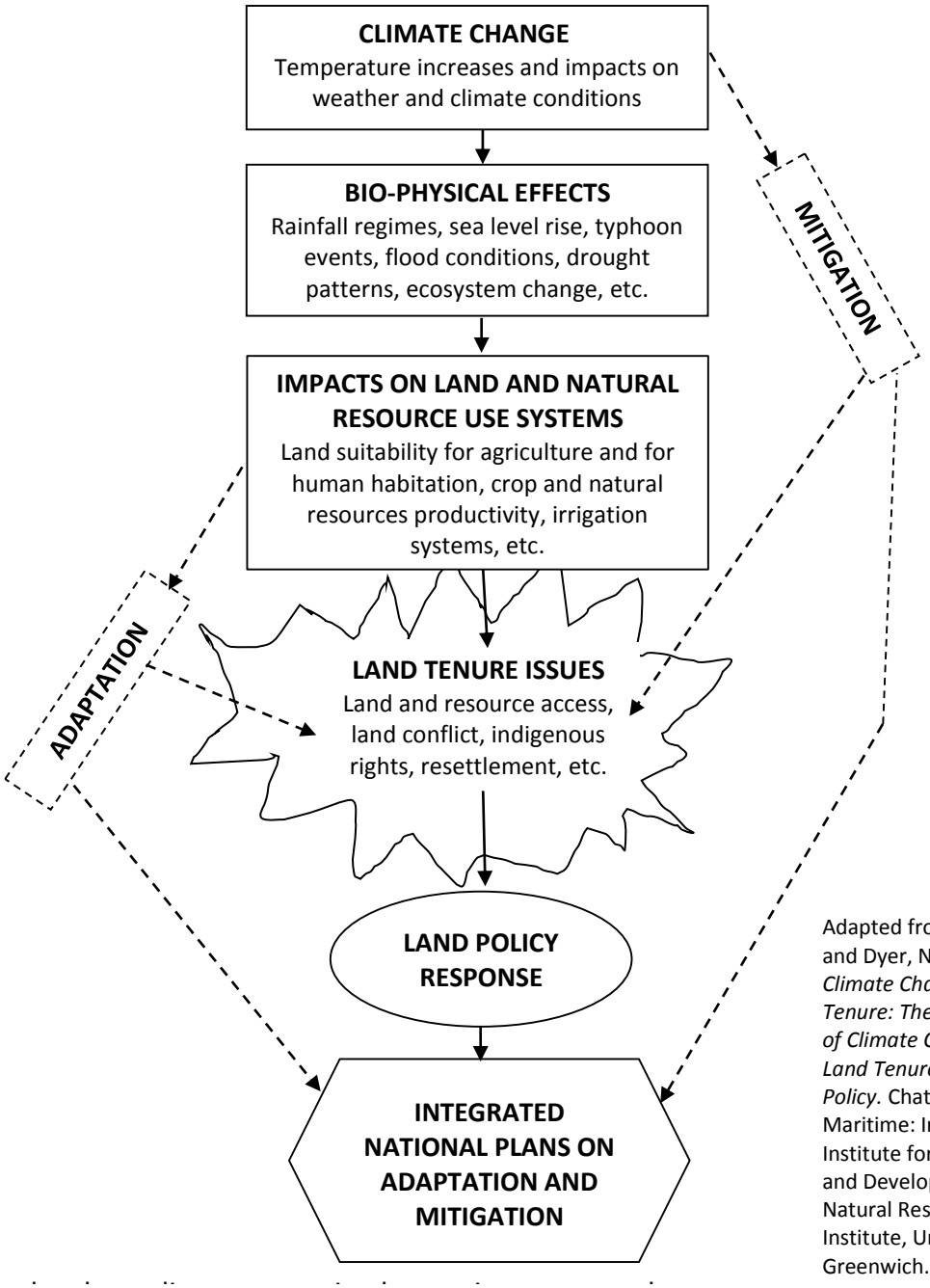
This paper is organized into six sections:

- *Framework* for understanding land and climate change linkages;
- *Philippine context* of natural disasters and internal displacements;
- *Local field experiences* (and cases) on climate change and land tenure issues;
- *Scoping of Philippine laws* on climate change and tenure;
- *Review of VGGT provisions* related to climate change and disasters; and,
- *Summary assessment and policy recommendations.*

A framework for understanding land and climate change linkages[6]

The linkages between climate change and land tenure are multiple, complex and indirect. *Figure 1* provides a framework to help us understand these linkages and their policy implications.

Figure 1. Framework for understanding land and climate change linkages



Adapted from Quan, J. and Dyer, N. (2008). *Climate Change and Land Tenure: The Implications of Climate Change for Land Tenure and Land Policy.* Chatham Maritime: International Institute for Environment and Development and Natural Resources Institute, University of Greenwich. p. 10.

Based on the above diagram, certain observations are noted:

1. First, climate change involves increases in temperature that impacts on climate and weather systems.[7]

2. Second, there is a need to identify the main elements of climate change and its bio-physical effects on land and natural resource systems where the impacts will be felt most directly. In the Philippines, for instance, there is likely to be an increase in rainfall during the southwest and northeast monsoon seasons, and increases in the occurrence of tropical cyclones, with a

generally decreasing trend in rainfall in Mindanao, especially by 2050, due to climate change (Climate Change Commission, 2011).

3. Third is to consider the changes induced by climate change on *land and natural resource systems* that have implications on land tenure. These changes may be *abrupt*, resulting from extreme weather events such as typhoons and floods that may cause soil erosion, inundation of farmlands and changes in land-based production systems, or the disruption and displacement of human settlements. These changes may also be *long-term*, such as the unpredictability of weather events that affects agricultural productivity and the utilization of natural resources, leading to shifts in tenure systems or even human migration over time.

4. Next, the impacts on land and natural systems can lead to *land tenure issues* involving land access, land conflict and overlapping claims, displacement and forced resettlement, and other tenure rights issues.

5. Meanwhile, the *adaptation* measures undertaken by communities and resource users, and by government at different levels—whether these are spontaneous, or systematic and planned—may also affect land tenure systems. These measures may include zoning systems and regulated land use, spontaneous or forced migration to safer grounds, temporary relocation or forced resettlement, construction of new infrastructure such as dikes and canals, and protection measures for natural resources and human settlements. Such changes that affect land regulation, allocation and use are likely to impact on existing land tenure systems.

6. Similarly, *mitigation* measures may also affect existing land tenure systems. For instance, the policies of avoided deforestation and reforestation, the development of carbon sinks and the commercial trading of carbon rights, the promotion of alternative energy sources including biofuels could open up commercial opportunities for new land users, while affecting land access and tenure rights of traditional forest users and indigenous communities.

7. Finally, there should be better integration of *land policies* with adaptation and mitigation plans into broader *national development frameworks*.

As climate change is likely to affect land use and human settlements, climate change adaptation needs to be mainstreamed into national planning and policy frameworks, including land policy. In turn, land policy should aim to deliver adequate tenure security, as this is necessary to provide incentives for good land and resource management, and reduced vulnerability.

Moreover, climate change is likely to raise questions for land policy, not only in terms of providing tenure security, but also in terms of wider issues of land access and redistribution, population and urban growth, management of common property resources, land use regulations, environmental protection, resettlement in the face of natural calamities and hazards, and potential conflicts to which climate change may be contributing.

Basic Concepts and Terms

Climate change is defined by the Intergovernmental Panel on Climate Change as "any change in the climate over time, whether due to natural variability or […] human activity." However, the United Nations Framework Convention on Climate Change focuses specifically on climate change that is "attributed directly or indirectly to human activity" and is "in addition to natural climate variability."

Mitigation refers to measures aimed at minimizing the extent of global warming by reducing emission levels and stabilizing greenhouse gas concentrations in the atmosphere.

Adaptation refers to adjustments in natural or human systems in response to actual or expected climate stimuli or their effects, which moderate harm or exploit beneficial opportunities. In other words, they are measures to reduce harm and strengthen the capacity of societies and ecosystems to cope with and adapt to climate change risks and impacts (as cited in Brookings Institution, 2014).

Land tenure is the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land (and natural resources). Land tenure systems determine who can use what resources for how long, and under what conditions.

Tenure security is the certainty that a person's rights to land will be recognized by others and protected in cases of specific challenges. People with **insecure tenure** face the risk that their rights to land will be threatened by competing claims, and even lost as a result of eviction (FAO, 2002).

Philippine situation: natural disasters and internal displacement

The Philippines is an archipelago located on the western rim of the Pacific Ocean, which is the hotbed of tropical cyclones. Owing to its geographic structure and location, the country is frequented by weather disturbances and natural hazards, and is highly vulnerable to their devastating effects (SEPO, 2017; Whiteman, 2014). A study by the World Bank concluded that the Philippines is a natural disaster hotspot—50.3 percent of the country's land area and 81.3 percent of its population are vulnerable to natural hazards (Rincón and Virtucio, 2008).

Over the past decade, the Philippines has consistently ranked among the top five most disaster-hit countries according to the Center for Research on the Epidemiology of Disasters (CRED) (Whiteman, 2014). With a climate risk index (CRI) score of 21.33, Germanwatch ranked the Philippines the fifth in terms of having the greatest long-term climate risk based on extreme weather events from 1996 to 2015 (Kreft, et al., 2016).

The country experienced 283 climate-related events in the past 20 years, which is the greatest in frequency relative to the other countries in the long-term CRI top 10. These events resulted to an average death toll of 862 individuals, or around one per 100,000 inhabitants. These climate