Seeds of Disaster

The International History of Hurricane Mitch in Honduras

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Date of submission: August 13, 2020

Word count: 16372 words

Abstract

Natural disasters have a history. The impact of a natural hazard on a society is not just determined by the severity of the hazard but predominantly by the vulnerability and resilience of the people it hits. With the prospect of further global warming, it is crucial that scholars from various disciplines examine such environmental events, whether sudden or slow, and how societies have coped with them. This thesis deals with the long-term patterns of economic and environmental vulnerability in Honduras that precluded the widespread destruction caused by Hurricane Mitch in 1998. The degraded topsoil in much of rural Honduras made this hurricane particularly deadly and destructive because it was washed away by the significant rainfall. I question in this thesis to what extent land tenure has impacted the degradation of the topsoil and thus exposed the disaster vulnerabilities of Honduras. The existing body of disaster literature has mainly focused on the political, economic, social, and demographic developments after World War II. From a longer-term political ecology perspective, I argue that the roots of these vulnerabilities can be found in the historical political and economic relations between Honduras and the Global North that started in the late nineteenth century. The influence that external state and non-state actors have had in Honduras has impacted how Honduran administrations and agricultural producers have dealt with the distribution of agricultural lands and thus with land tenure. Inequalities of land tenure, together with agricultural developments and population growth after World War II, have been central to the deforestation and land degradation in Honduras.

Keywords: environmental history; natural disaster; hurricane; political ecology; land ownership; vulnerability; resilience; deforestation; topsoil; land degradation; agriculture

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Acknowledgements

Writing this thesis has been both fascinating and challenging. First of all, for this thesis I had to dive into a topic that was relatively new for me, namely environmental history. Then, the situation regarding Covid-19 has made the extensive process of researching, drafting, and rewriting even more challenging. For much of the process, libraries were closed and there was little social contact with friends to discuss the thesis and to find the space to unwind. Especially because of these circumstances, I would like to thank my supervisor Liesbeth van de Grift for making the time, even during the holiday period, to discuss my plans and ideas, via Zoom, and to provide constructive feedback throughout the process of writing this thesis. I would also like to express my gratitude to my friends, family, and loved ones for their infinite support in these challenging times. Without their help, ideas, and moral support, I would not have been able to finish this thesis.

Introduction

Natural disasters have a history. The impact of a natural hazard on a society is not just determined by the severity of the hazard but predominantly by the vulnerability and resilience of the people it hits. Decades of research from a wide range of disciplines, from soil science to anthropology, have examined the question of how societies have coped with sudden or slow environmental changes. Whether or not environmental changes are abrupt, such as earthquakes, or have been developing for several years, such as droughts, "they sweep across every aspect of human life: environmental, biological, and sociocultural" (Oliver-Smith and Hoffman 1999, p. 1). The total sum of people affected by natural hazards, which means deaths, injuries, and homelessness, has increased significantly since the 1960s (Ritchie and Roser 2014). However, technological advancements in the field of disaster prediction and relief, such as tsunami warning systems and international financial aid programs, have resulted in a significant global reduction of mortality rates due to natural hazards (Ritchie and Roser 2014). Environmentally induced migration is also one of the potential consequences of natural hazards. With the prospect of rising temperatures due to global warming, several scientists expect that the number of environmental migrants, a term that can both refer to the movement of people due to both slowly changing environments or sudden natural events, will grow significantly in the next decades (Lübken 2019, p. 2; Myers 2001, p. 609).

Until the 1980s, social scientists who examined natural disasters focused mainly on the physical severity of an environmental event. Natural disasters were perceived as unforeseen and unfortunate "accidents" that were abnormal (Hewitt 1983, p. 22). The geographer Kenneth Hewitt (1983) was the first who approached natural disasters from a sociocultural perspective, in which natural disasters were, at least, partly socially constructed. These social structures that can make a natural hazard a 'natural' disaster have historical roots and could thus be analyzed. Scholars from a wide variety of disciplines have used numerous conceptual frameworks and methodologies to investigate such patterns behind disaster vulnerability. Anthropologists, for instance, have used their ethnographic fieldwork to show the cultural systems behind human-environment relations (Oliver-Smith and Hoffman 1999, p. 3). Some political and socio-economic scholars have contributed to disaster research with various conceptual models that focus on the question of how societies have managed natural hazards, which includes preparedness, mitigation, and responses (Bohle et al. 1994; Ciurean et al. 2013; Gerulis-Darcy 2008). The field of history can also make useful additions to the body of natural disaster literature. There is a myriad of social, cultural,

economic, and political longer-term processes that can influence the vulnerability and resilience of populations in certain contexts. Historians can reveal these long-term structures of vulnerability and resilience that precede 'natural' disasters by bridging the contributions by various academic disciplines.

In general terms, this thesis works on the premise that although a natural hazard is often environmentally induced, it can become a disaster because of long-term human action. This thesis focuses on the historical processes behind these actions that can ultimately culminate in a natural disaster. Looking at these long-term developments in a specific context, disaster scholars can obtain a better understanding of how and why such disasters can happen. Because of the limitations in time, scope, and availability of sources, I will focus on one natural hazard in the context of specific processes. In this thesis, I will use the case study of Hurricane Mitch in Honduras in 1998. Hurricane Mitch was a storm in category five, the highest possible ranking on the scale of Saffir Simpson. This thesis examines the long-term political forces that made Hurricane Mitch, which would have would have posed danger to any society in the world due to its severity, the deadliest storm in the history of Central America.

The extraordinary rains that Hurricane Mitch dropped on Honduras caused over a million mudslides, taking with them crops, hillsides, and entire towns. Rivers also overflew because of the rains, flooding urban areas. The mudslides were mainly caused by decades of deforestation and unsustainable cultivation of the environment, which resulted in the degradation of much of the topsoil in rural areas (Smith 2013, p. 56). This development has been mainly attributed to the continuous marginalization of Honduran farmers due to neoliberal policies of the 1980s and 1990s and economic crises (Smith 2013, p. 56; Ensor and Ensor 2009, p. 26). Little attention, however, has been devoted to the longer-term influence of land tenure policies on environmental degradation and the marginalization of population groups in Honduras.

Historiography

The history of natural disasters has not yet been a field of study that has produced large numbers of publications. There have been, however, several publications of the last three decades that have put so-called 'natural' disasters into a historical perspective. The anthropologist Oliver-Smith (1999) was one of the first who used a historical approach to examine a sudden environmental event, with his chapter in the book *Angry Earth*, "Peru's Five-Hundred-Year Earthquake,

Vulnerability in Historical Perspective”. In this chapter, he tracked the origins of the earthquake back to the colonial practices that were introduced by the Spanish colonialists. Many other publications have focused on natural disasters in the United States, partly to counter the assumption that vulnerability to natural hazards only applies to the Global South. Especially Hurricane Katrina has received significant attention. Steinberg (2006), for instance, put Hurricane Katrina in a historical perspective by showing it as only one of the many natural disasters that have hit the United States. By doing this, he mainly wanted to counter the assumption that natural hazards are ‘acts of God’ and show that disasters in the United States are socially constructed. Recently, the works of Uwe Lübken (2012; 2019) have focused on the issue of disaster migration. In Lübken’s (2019) view, mobilities after a sudden environmental change can only be understood and contextualized if these are analyzed as part of longer-term patterns of vulnerability and resilience (p. 4).

In the case of Hurricane Mitch, research has predominantly focused on the direct causes of the disaster in Honduras. What made Hurricane Mitch so particularly deadly and destructive, has been attributed to the floods and enumerable mudslides that followed the extraordinary rains that the storm dropped on Honduras (United Nations 1999). Degraded topsoil in much of the rural and mountainous Honduras was the main reason behind these mudslides. The overflowing rivers in Honduras due to Hurricane Mitch created another problem. The pesticides and fertilizers that were used by Honduran farmers were stocked in warehouses, which were flooded by Hurricane Mitch (Jansen 2003, p. 45).

There have been few historical studies that examined why Honduras was so physically and economically vulnerable to Hurricane Mitch. In their regional historical assessment of vulnerability in Central America, Cockburn et al. (1999) argued that large agricultural corporations, such as the United Fruit Company (UFC), put pressure on national governments to enable them to force marginalized peasants off fertile lands into less fruitful hillsides (p. 459). They traced this process back to the removal of a leftist Guatemalan government, led by the Central Intelligence Agency and urged by the United Fruit Company, in 1954 (p. 459). Smith (2013), although he does refer to both the deforestation and environmental degradation in Honduras, only focuses on the economic developments twenty years prior to Hurricane Mitch (p. 54). Ensor and Ensor (2009), whose work mainly focuses on the management of the aftermath of Hurricane Mitch, do argue that “environmental degradation in Honduras can be viewed as a product of political,

economic, and environmental factors" (p. 35). Because of their focus on the aftermath of Hurricane Mitch, however, they slide over these complex factors and only focus on the developments in agricultural modernization and foreign financial intervention that occurred after WOII. What still lacks is historical depth.

International corporations like the United Fruit Company, for instance, already had a grip on Honduran and other Central American politics and economies in the decades before WOII. Tim Merrill (1995) argued in his country-study of Honduras that "during the first half of the twentieth century, the Honduran economy was so dominated by the United Fruit Company and the Standard Fruit Company that company managers were frequently perceived as exercising as much power as the Honduran president" (p. 3). There has not yet been a study that examines how this interplay between foreign actors and Honduran politics gradually contributed to its vulnerability in the context of Hurricane Mitch. This thesis will focus on these long-term processes.

Research question and conceptual framework

The main research question of this thesis is how developments in land ownership in Honduras since the early twentieth century have influenced the physical and economic vulnerability of marginalized people in Honduras to Hurricane Mitch in 1998. In order to answer this main question, I will first answer the sub-question of why focusing on Hurricane Mitch as a natural hazard alone does not fully explain the 'natural' disaster that it caused. Then, I will reveal the external and domestic forces that have influenced and shaped land ownership in Honduras from the colonial era to the 1990s. After that, I will answer the question of how the inequalities in land ownership and underlying dependencies in Honduras have resulted in both the migration of farmers onto marginalized land, deforestation and soil degradation, which ultimately proved to be disastrous in the wake of Hurricane Mitch.

Although these questions do not specifically refer to one theoretical framework, they are informed and shaped by the framework of political ecology. Political ecology is an umbrella term for studies that seek to reveal the relationships between political, social, and economic factors and environmental issues and changes. This approach has been used by scholars from different disciplines, ranging from environmental science to human geography, political science, anthropology, and history. Because scholars have focused on different factors in the realm of political ecology, there are various definitions. Despite these differences, political ecologists have

the common premise that “environmental change and ecological conditions are the product of political process” (Robbins 2012, p. 20). According to Robbins (2012), political ecologists have employed this premise on five main themes that range from environmental degradation to constructions of identity (p. 22). One of these narratives is the degradation and marginalization thesis, which focuses on the transition of environmentally sustainable production systems into the overexploitation of natural resources due to national, regional, and international political and economic developments. This approach provides me with the analytical means to examine the political, economic, and ecological processes behind the vulnerability of Honduras to natural hazards. I will focus on the impact of land ownership and marginalization on long-term vulnerabilities.

As I will use this political ecology approach in the context of a ‘natural’ disaster, I will focus predominantly on the concept of vulnerability. Vulnerability is an umbrella term that has been used by researchers to answer the question of why disasters impact certain populations or societies harder than others. The most commonly used definition of vulnerability is “the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard” (Blaikie et al. 1994, p. 11). The factors that Blaikie et al. (1994) mention are differences in wealth, occupation, caste, ethnicity, gender, health, age, and whether a person has legal documents or not (p. 11). To understand how these aspects contribute to vulnerability in a certain society, historians who examine environmental disasters have looked at the processes and structures behind these factors. Lübken (2019), for instance, argues that often it is a marginalized population that suffers the most from natural hazards because they live in “[…] already degraded spaces or urban borderlands” (p. 7). The basis of this thesis works from the notion that long-term land tenure patterns have strongly impacted the social and physical vulnerabilities of Hondurans in both rural and urban areas.

In this thesis, I will briefly touch upon an additional concept related to disaster research, namely resilience. This concept was first introduced by Holling (1973), who described it as an ecological term that is “a measure of the ability of ecological systems to absorb changes of state variables, driving variables, and parameters, and still persist” (p. 18). In the context of natural hazards and disasters, “resilience can be understood as an umbrella term that encompasses a range of ways in which a system responds to external stresses, major disruptions and new circumstances” (Tiernan et al. 2018, p. 53). Resilience not only refers to the ways in which a society can cope with

threats such as natural disasters but also how it recovers afterward. Recent literature on resilience has countered the widespread assumption of scholars that post-disaster resilience is a return to the normal state of society. Kelman et al. (2016), for instance, have argued that that post-disaster resilience as 'bouncing-back' should not mean that a society returns back to its 'normal' state, but rather that resilience is the process in which a post-disaster society changes "[…] social processes and structures which sustain vulnerability […]" to prevent such an event from happening again (p. 138).

Methodology

To answer the research questions, I will rely predominantly on secondary sources. This is both due to the language barrier, which obstructs me to dive into researching Spanish archives, and the scope and available time for this thesis. The political ecology approach, however, does enable me to access a wide range of sources from history, social sciences, and anthropology. Moreover, applying a new interpretive framework discloses patterns of vulnerability that have hitherto remained neglected, yet without which the severity of Hurricane Mitch cannot be properly understood. The secondary sources that I will use are thus from various disciplines. To analyze the various forces at play in the history of land ownership in Honduras, I will access publications that focus on the political and economic history of Honduras from the colonial era to the 1990s (Macleod 1973; Merrill 1993; Brockett 1988; Stonich 1993; Wiley 2008).

To examine the relationship between the land tenure policies and subsequent migration into less fertile and environmentally unstable lands, deforestation, and other forms of land degradation, I will rely heavily on the works by Stonich (1991a; 1991b; 1993), Brockett (1988), Tucker (2008), and Jansen (1998), who have focused on the political ecology of Honduras' agriculture and environmental degradation. Stonich (1993) has been a leading scholar on the marginalization of Honduran farmers due to land scarcities and economic processes. Brockett (1988) has provided a comprehensive volume on the history of land ownership and marginalization in Central America. Brockett (1988) and Stonich (1993) have also provided reliable statistics on land ownership and land use in Honduras, which is crucial data that I could not have derived from other sources. I will refer to Tucker (2008) and Jansen (1998) frequently because of their relevant field work in rural areas of Honduras, where the effects of economic marginalization and environmental degradation have been most ubiquitous.

I will use this body of secondary sources in the analytical framework of long-term vulnerability of Honduras to natural hazards. What this thesis and case study will add to the body of literature is not just another history of a 'natural' disaster, but also a different analytical focus. This thesis will highlight the salience of economic and political processes behind land tenure in the long-term construction of vulnerability. This focus will also highlight the importance of international markets and Global North and Global South power distributions as underlying processes contributing to disaster vulnerability.

Chapter 1 - Hurricane Mitch, a natural disaster?

Hurricane Mitch struck Central American, predominantly Honduras and Nicaragua, between October 29 and November 3, 1998. When it hit Honduras, Hurricane Mitch was classified as a category five hurricane on the Saffir-Simpson scale, which means that the storm brought wind speeds of more than 252 km per hour (Lott et al. 1999, p. 2). While storms of this severity are rare, Central America is generally prone to hurricanes and other natural hazards. Hurricane Mitch was the thirteenth hurricane of the 1998 hurricane season. It still is the second-deadliest Atlantic hurricane in history, only surpassed by the Great Hurricane of 1780. Hurricane Mitch is also the deadliest hurricane in the history of Central America, as it was even deadlier than Hurricane Fifi-Orlene in 1974, which killed approximately 8000 people in Honduras (Guiney and Lawrence 2000, p. 2). The destruction of Hurricane Mitch was so widespread and all-encompassing, that the president at the time Carlos Flores, stated that the devastations following the storm put the Honduran economy fifty years back in time (1998).

In this chapter, I will show how Hurricane Mitch hit Honduras and why the destruction it caused cannot be attributed solely to this natural hazard.

The disaster

In the days before Mitch struck Honduras, it became a hurricane of the highest category. According to the disaster report for the U.S. National Hurricane Center by Guiney and Lawrence (2000), the hurricane was able to form because of tropical waves that started at the west coast of Africa in early October (p. 1). These tropical waves, which are long areas of low pressure, moved through the Caribbean Sea where it became a tropical storm on October 22 when it was located south of Jamaica (Guiney and Lawrence 2000, p. 1). On October 24, Mitch became a hurricane and intensified rapidly, and on October 26, it reached its peak as a category five hurricane. When Mitch passed the Swan Islands, northeast of the Honduran northern coast, the hurricane started to weaken, although it was still a category five hurricane when it hit Guanaja island, north of the Honduran coastline (Guiney and Lawrence 2000, p. 2). Hurricane Mitch further weakened as it slowly moved over the landmass of Honduras, after it entered Honduras on October 29 at the city of La Ceiba (Guiney and Lawrence 2000, p. 2). Until November 3, Mitch moved from north to south and then to the southwest of Honduras as a tropical storm (Guiney and Lawrence 2000, p. 2).

Hurricane Mitch did not dissipate over Central America but ultimately reached the United Kingdom as a depression. After Mitch left Honduras, it moved over the west of Mexico, meandered to the Yucatan region and then to Florida. When it moved over Yucatan, Mitch only was a tropical depression (Guiney and Lawrence 2000, p. 3). Moving over the Bay of Mexico, however, Mitch accelerated and strengthened to a tropical storm (Guiney and Lawrence 2000, p. 3). Tropical storm Mitch made landfall in Florida on November 5, after which it moved northeastward to the Atlantic Ocean. Although the storm dissipated over the Atlantic, it did ultimately reach Europe as a depression ("Hurricane Mitch" 2003).

Hurricane Mitch had disastrous consequences for Honduras. Every territorial department in Honduras was affected by the storm (Ensor and Ensor 2009, p. 23). Analysts have estimated that the total accumulated rainfall of the hurricane in Honduras was almost 190 centimeters high (Lott et al. 1999, p. 3). There is no definitive death toll in Honduras, but estimates from the Honduran National Master Plan for Reconstruction and Transformation (NMPRT) show that 5,657 people died, 12,272 people got injured, 8,058 people are unaccounted for, and 441,150 people became homeless (Ministerio de la Presidencia 1999, p. 4). In total, about 11,000 people died, and between 11 and 18 thousand people went missing in Honduras, Nicaragua, El Salvador, Guatemala, Mexico, Costa Rica, Jamaica, Panama, and the U.S., due to Hurricane Mitch (Lott et al. 1999, p. 4). According to data presented by the U.N. Economic Commission for Latin America and the Caribbean (ECLAC), more than 600,000 Hondurans had to take refuge in shelters (1999, p. 10).

The damage to infrastructure was also severe. According to data presented by the National Climatic Data Center (Lott et al. 1999, p. 4), approximately seventy to eighty percent of the transportation infrastructure, such as roads and bridges, was destroyed, and airports were flooded. The storm hit marginal rural and urban areas especially hard. People living near rivers were hit hard because these overflowed due to the heavy rains, while the houses of people living near hills in, for instance, Tegucigalpa, were washed away by mudslides and flowing debris (ECLAC 1999, p. 8). Ensor and Ensor (2009) describe how "large parts of most urban areas were buried under mud contaminated with sewage, chemical products such as pesticides and fertilizers, and even decomposing human and animal remains, which represented a serious health hazard apart from preventing the return of the displaced population" (p. 24). Because the shelters, mainly schools, camps, and sports facilities, for evacuees were overcrowded, respiratory, intestinal, eye, and skin diseases appeared (ECLAC 1999, p. 10).

In rural areas, the agricultural infrastructure was also heavily damaged. Pieces of agricultural land were washed away by mudslides, crops were destroyed, and cattle died. According to the NDNC (2009), over seventy percent of all crops were destroyed, which included eighty percent of the banana crops for export. The estimated value of the agricultural damage done by Hurricane Mitch was approximately 800 million dollars (Ensor and Ensor 2009, p. 25). Not just the crops were destroyed. Also warehouses that stored export products, such as coffee, and bananas, were flooded and thus rendered useless (Ensor and Ensor 2009, p. 25; Lott et al. 1999, p. 4). As agricultural exports have been the main source of income in the Honduran economy, many Hondurans lost not just their homes but also their livelihoods and financial resources.

Hurricane Mitch as a natural hazard

While I argue in this thesis that the factors that made Hurricane Mitch a 'natural' disaster are social, political, and economic, it is important to acknowledge that the storm would have been destructive in any region of the world. The main aspect that made Hurricane Mitch destructive was rainfall. Analysts have pointed out two environmental factors that intensified the amounts of precipitation of Hurricane Mitch. The first factor is the slow movement of the hurricane. Guiney and Lawrence (2000) have stated that the motion of Hurricane Mitch over Honduras was slow, approximately seven kilometers per hour for almost a week (p. 2). Because of this slow movement, the hurricane could drop larger amounts of rain for a longer period of time. Analysts have also pointed out the tropical climate and mountainous terrain of Honduras as contributing factors to the precipitation in Honduras (Hellin and Haigh 1999, p. 352; Guiney and Lawrence 2000, p. 2). These factors contributed to the severe rainfall, while the hurricane itself was reduced to a tropical storm when it moved over Honduras.

Despite these favorable conditions for this hurricane, the storm seems to be less unprecedented and extraordinary than it is often described. Wind speeds are often considered to be one of the most dangerous aspects of a hurricane. In the case of Hurricane Mitch, it was mainly the northern departments of Cortés and Colón that encountered severe wind speeds (Ensor and Ensor 2009, p. 23-24). The other departments mainly encountered countless mudslides and several floods due to the severe rainfall. Although the rainfall was significant and highly destructive, it appears that the amount of precipitation was not unprecedented. Because of the devastations following Hurricane Mitch, it has been difficult to obtain on the ground data on rainfall. Much of

the data on rainfall during Hurricane Mitch has been derived from satellite data, as much of the infrastructure was destroyed due to the hurricane (Hellin and Haigh 1999, p. 352). Moreover, many of the measuring instruments on the ground in Honduras were destroyed by the hurricane, which affected the preliminary results (Hellin and Haigh 1999, p. 352). From the data was available directly after the storm, Hellin and Haigh (1999) argue that "the amount of precipitation during Mitch was comparable with that of other hurricanes and tropical storms" (p. 358). This would mean that Hurricane Mitch as a natural hazard was less extraordinary and less unprecedented than often described.

Conclusion

Hurricane Mitch caused significant destruction in Honduras, and to a lesser extent, in Nicaragua. Every region in Honduras was hit severely by the storm, tenths of thousands of people died or got injured, much of the infrastructure was destroyed, and most of the agricultural crops were ruined. Although Hurricane Mitch would have caused significant destruction anywhere in the world, the storm was not unparalleled. The notion that Hurricane Mitch was not such an unprecedented natural hazard poses the question of how 'natural' a natural disaster actually is. Analysts of Hurricane Mitch have argued that the social, economic, and physical vulnerability to hurricane Mitch can be traced back to the environmentally degraded topsoil in both the rural and urban areas of Honduras (Hellin and Haigh 1999, p. 358; Ensor and Ensor 2009, p. 26; Smith 2013, p. 56). One of the factors behind the soil degradation is land tenure and access to agricultural lands. The next chapter will focus on the forces behind land ownership in Honduras, indirectly have contributed to the disaster vulnerabilities.

Chapter 2 – Land ownership in historical perspective

In order to understand the long-term impact of land tenure policies on the physical and economic vulnerability of Hondurans to Hurricane Mitch, it is crucial to examine the forces that were behind these policies. The aim of the chapter is, therefore, to examine the internal and external forces that shaped land reforms in Honduras throughout the twentieth century. The central argument in this thesis is that since the colonial era both the structure of land tenure and the economy of Honduras has been mainly influenced by the Global North and Global South relations.

In this chapter, I will employ a macro perspective on land tenure reforms because of two major reasons. Firstly, the issues of land tenure have occurred throughout Central America, not only Honduras. Secondly, the powers that have influenced land reforms are both internal, such as civil disobedience and labor strikes, and external, such as monetary interests and international conflicts. Examining the forces behind Honduran land tenure reforms from either a national or international perspective would be incomplete or would deny the agency of Honduran farmers, merchants, and government in producing their own legislation and forming their own livelihoods. It is not the goal of this chapter to provide a comprehensive history of Honduras. The colonial legacy has been central to the structure of land ownership in Honduras, so this will be the starting point of this chapter. The main focus of this chapter, however, will be on the forces behind land ownership from the early twentieth century to World War II. After that, I will focus on the interplay of domestic and external forces behind the various attempts to tackle the inequalities between large and small landowners.

The colonial legacy

The influence of external forces on Honduran society, economy, and politics started in the colonial era. From the early sixteenth century until the year 1821, Honduras was under Spanish colonial rule. The Spanish conquest was disastrous for the indigenous people that lived in Central America. The Italian merchant Girolamo Benzoni estimated the population of Honduras to be about 400,000, while the historian Johannesen has argued the population to be around 1,2 million (Stonich 1993, p. 61). In the late fourteenth century, the populations in the Americas exceeded the European (Brockett 1988, p. 15). These populations, however, quickly diminished after the arrival of Spanish conquistadores. With the Spanish conquest of Latin America also came multiple epidemics of European diseases unknown to the indigenous peoples of Central America,

disruptions of food production, the slave trade, and the use of indigenous slave labor (Stonich 1993, p. 50). These factors enabled the extermination of much of the indigenous peoples and their cultures in Central America.

The main goal of the Spanish colonies in Central American was to obtain wealth (see: Stonich 1993; Brockett 1988). In the early sixteenth century, indigenous slave labor was used for the mining of gold and silver, which was "sent to Spain as a bullion to underwrite Spain's military operations in Europe, support an unwieldy growing bureaucracy, and settle European debts" (Stonich 1993, p. 50). Labor for these endeavors was obtained through the *encomienda* system. In this system, which essentially was slavery, indigenous people were entrusted to the Spanish owner of the land they lived in, and in return for labor, they would be civilized and Christianized (Brockett 1988, p. 16). Throughout the sixteenth century, however, the labor supply dried up because of the rapid depopulation of indigenous peoples and the formal abolition of the *encomienda* system in 1542 (Brockett 1988, p. 16). To maintain a sufficient number of laborers, the Spanish introduced a different system, called the *repartimiento*. In this system, every indigenous village had to provide a quota of laborers that were to be resettled into central or new areas (Brockett 1988, p. 16). Although initially profitable, the mining industry in Honduras declined after a peak in 1584, as export was hindered by several difficulties in transportation, labor supply, fraud, and technology (MacLeod 1973, p. 149; Stonich 1993, p. 51).

Although other attempts to develop industries in parts of Honduras and other Central American regions, such as indigo and cattle, failed to thrive, they did have a lasting influence on the land tenure complex of *latifundios* and *minifundios*. *Latifundios* are of agricultural lands over five hundred hectares, while *minifundios* are small parcels that are predominantly used for subsistence living (Nelson 2003, p. 3). The Spanish conquerors introduced this dualistic system of private land ownership throughout Central America, in which the Spanish crown would give large tracts of land, called *haciendas*, to elites, such as knights, squires, and captains (Stonich 1993, p. 52; Nelson 2003, p. 2). During the colonial period of Honduras, which lasted until 1821, more than eighty percent of all land grants were private (Villanueva cited in Stonich 1993, p. 52).

Throughout the history of Honduras and Central America, there has been an inequality of distributions of *latifundio* and *minifundio* lands. The inequality is located in the duality between the small number of *latifundios* and the large number of *minifundios*, and although there have been fluctuations in the distribution, this issue remains apparent. Nelson (2003) states that, "[…]

in 1993, 71.8 percent of all farmers had five hectares or less and controlled between them 13 percent of agricultural land" (p. 3). Meanwhile, "the 1 percent of farmers who owned 500 hectares or more controlled 12.3 percent of land devoted to agriculture" (Nelson 2003, p. 3). One of the consequences of this disparity is that many of the poor rural populations still live on small pieces of land that too small to raise enough crops by subsistence farming (Nelson 2003, p. 4-5). Although the first agrarian land reform that attempted to redistribute these large tracts of land to landless peasants and small landowners was passed in 1829, only eight years after the independence of Honduras, the *latifundio/minifundio* is still apparent (Trackman et al. 1999, p.1). The structure of land ownership behind these inequalities thus find their historical roots in the colonial era of Honduras.

An additional aspect of the land tenure system that was introduced in the colonial era of Central America is *ejidal* land. These lands are communal, as these have been granted to local municipals and can be used by villagers that do not own any land (Nelson 2003, p. 2). These lands have often been occupied for such a long time by the same groups, that they both feel that they own the land and often have usufruct titles to the lands granted by local jurisdictions (Nelson 2003, p. 2). Usufruct titles do not show any property rights but do contractually allow others to use and profit from the land. In the colonial era, however, indigenous villagers generally did not know about such titles or were not told about them by Spanish officials, which allowed Spanish farmers to claim such lands (Macleod 1973, p. 222). Even when villagers would resist against such claims, Spanish judges, who knew about the existence of such communal lands, still offered the title to the Spanish claimant (Macleod 1973, p. 222-23).

The rise of foreign interests in Honduras

This section deals with the agricultural and economic developments in the nineteenth century. It becomes clear that, in part, due to the political instability throughout the nineteenth century in Central America, foreign mining companies and ultimately banana companies start to get a foothold in Honduras. The arrival of these companies in Honduras has had asignificant impact on land tenure and agriculture in the twentieth century. Other authors who have written on environmental degradation and the political ecology behind it have often neglected or only briefly discussed this part of Honduran history (see: Howard-Borjas 1995; Stonich 1993). The developments of the external forces in Honduras before WOII may not directly have impacted the

issues of land scarcity or environmental degradation that occurred in the late twentieth century, as land scarcity was less of an issue then. They did, however, set the stage for the issues that escalated after WOII, such as population growth, combined with unequal concentrations of land, and the widespread environmental degradation across Honduras.

The first decades of post-colonial Honduras did not see effective agricultural reforms, in part due to political instability. In 1829, however, an early piece of agricultural legislation was implemented, which was meant to redistribute latifundio lands to smaller landowners (Trackman et al. 1999, p. 1). Other land tenure reforms in the nineteenth century were passed in 1877 and 1889 (Nelson 2003, p. 6). Especially the 1829 legislation has received attention from scholars, as they have identified significant similarities between this redistribution and reforms that were passed in the twentieth century (Trackman et al. 1999, p. 1; Nelson 2003, p. 6).

Historians and other scholars have identified several reasons why early land reforms and policies did not have the desired effect. Legislators behind the 1829 land reforms wanted to redistribute parts of the *latifundios* to smaller landowners in order to develop agricultural productivity (Trackman et al. 1999, p. 1). The most influential factor behind the failure of such reforms was the political instability of Honduras in most of the nineteenth century. This instability is clearly demonstrated by the fact that between 1826 and 1876, Honduras saw eighty governments come and go (Stonich 1993, p. 53). In the first decade after Central American independence from Spain, Honduras was part of the United Provinces of Central America (henceforth UPCA). Honduras was one of the weakest provinces of this federation, with fewer than 150,000 inhabitants (Merrill 1995, p. 14). During the existence of the UPCA, Honduran economy and politics were obstructed. Internally, there was a rivalry between the cities of Tegucigalpa and Comayagua, which almost resulted in both forming their own province in the UPCA (Merrill 1995, p. 13). British involvement in Central American formed an external threat, as they took control over the northern Honduran Islas de la Bahía (Merrill 1995, p. 14).

The dissolution of the UPCA in 1836 did not improve the political stability of Honduras because of ideological differences and external interventions. The two main political opposites in Honduras and Central American in general, the conservatives and the liberals, had ideological differences that could not be bridged (Merrill 1995, p. 15). The neighboring states of Nicaragua, El Salvador, and Guatemala used this turmoil for their own political gains in Central America (Stonich 1993, p. 53). Several Honduran presidents were put in place with the help of external

interventions. President Lindo (1847-52), for instance, only managed to withstand an insurgency of his vice-presidency because El Salvador and Nicaragua intervened (Merrill 1995, p. 15). In 1855, Lindo's liberal successor Trinidad Cabanas was put aside by an invading force from the conservative Guatemala, who put the conservative Santos Guardiola in his place (Merrill 1995, p. 15). This powerplay continued until the late nineteenth century, when the liberal President Bonilla asserted power with the help of Nicaragua's liberal dictator Zelaya (Merrill 1995, p. 17). When Bonilla's tenure ended, one of the few constitutional transfers of power occurred, as he ensured the succession of the highest military officer of Honduras, General Terencio Sierra (Merrill 1995, p. 17).

Within this framework of both political turmoil and economic decline in the nineteenth century, the first opportunities for foreign businesses emerged. The late nineteenth century saw a series of liberal presidents, brought to power with the help of either Guatemalan or Nicaraguan interventions (Merrill 1995, p. 17; Stonich 1993, p. 54). This started with the presidency of Aurelio Soto (1876-82), who got in power after an intervention by the Guatemalan leader Justo Rufino Barrios. He managed to implement some liberal reforms, such as supporting export agriculture, financial reforms, and improving education (Merrill 1995, p. 17; Stonich 1995, p. 54). Despite renewed civil turmoil after his removal from office by Barrios, Soto's successors also pushed a liberal agenda (Merrill 1995, p. 17). These reforms had limited results due to the continuous political instability, the lack of infrastructure and transportation, and the focus of Honduran farmers on subsistence farming (Merrill 1995, p. 18).

One consequence of the liberal policies in the late nineteenth century was that foreign corporations gained a foothold in Honduras. The first that saw corporate opportunities in Honduras were mining corporations, of which the New York and Honduras Rosario Mining Company (NYHRMC) was the most successful (Merrill 1995, p. 18). The successive liberal governments promoted policies that were beneficial to foreign investors, such as "[…] land grants; tax exemptions; and rights to other resources such as timber, water, and limestone" (Stonich 1993, p. 54). Because of these policies, companies like the NYHRMC could operate in Honduras with paying nearly no taxes and without any restrictions (Merrill 1995, p. 18). Despite these favorable measures for mining companies, many failed to take off because of the civil unrest, poor transportation through the rugged Honduran terrain, and lack of capital (Merrill 1995, p. 18; Stonich 1993, p. 54). Although the mining boom ended before 1900, the power of transnational

corporations, especially banana companies, would only grow in the first half of the twentieth century.

Historians have attributed the rapid growth of the banana industry in Honduras and Central America in the early twentieth century to the well-willingness of the Central American governments to grant land for the construction of railroads and the political influence of the banana corporations, supported by the business interests of the U.S. government. Before the large-scale banana trade started, independent farmers selling to U.S. trading companies dominated the banana trade (Ellis 1983 cited in Wiley 2008, p. 5; Brockett 1988, p. 30). According to historian Ellis (1983), the commercialized banana industry started when the United Fruit Company (UFC) was founded in 1899 (cited in Wiley 2008, p. 5). Other banana companies quickly followed, such as UFC, Cuyamel, and Vaccarro Brothers (Brockett 1988, p. 30). In order to rapidly develop the commercial banana industry and the construction of railroads, the Honduran government granted significant parcels of land to the banana companies.

The construction of railroads was crucial for the Honduran government. There was little infrastructure between the northern Caribbean coast and the interior cities, such as the capital Tegucigalpa, and the Honduran government hoped that the banana companies would build these connections for the transportation of their goods (Brockett 1988, p. 30; Stonich 1993, p. 55). According to historian Wiley (2008), the necessity for rail lines accounted for much of the well-willingness of Honduran governments until World War II to grant land to banana companies (p. 10). In return for railroad construction, Honduras granted land to the Vaccaro Brothers in 1906, to Cuyamel Fruit Company in 1912, and approximately four hundred thousand acres of land, of which almost half were given as subsidies, to two subsidiaries of UFC (Wiley 2008, p. 10; Brockett 1988, p. 30). Following World War I, it became apparent that these banana companies were not going to fulfill the promise of constructing rail lines, as the fines for not building the railroads were cheaper than actually building them (Wiley 2008, p. 10).

In general, the concessions that the Honduran government made towards the banana companies did not result in infrastructural or economic development. The infrastructure that was built mainly served the banana companies and because of other fiscal exceptions, the Honduran economy benefited only marginally from the exports of bananas. The ways in which the banana industry could have supported the Honduran economy were "[…] based on goods and services purchased domestically and on taxes and duties paid" (Brockett 1988, p. 32). Because the banana

companies in Honduras were generally excluded from the rest of the country as they were centered around the banana plantations in the north, they imported required goods from the United States rather than from Honduran markets (Brockett 1988, p. 32). Although the taxes on both import and export goods could have been lucrative for the Honduran government, these were conceded to stimulate foreign investment (Brockett 1988, p. 32).

Consequently, banana companies became one of the most powerful actors in Honduras and other Central American states. Banana companies not only were the largest landowners and employers throughout Central America (Brockett 1988, p. 33), they also wielded significant political power which was used to protect their interests. Especially along the northern coast of Honduras, where the banana industry was located, the banana companies were omnipresent. Because these companies not only provided employment for many but also housing, education, medical amenities (Brockett 1988, p. 31), the banana companies had significant power in such cities. According to historian Merrill (1995), "coastal cities such as La Ceiba, Tela, and Trujillo and towns farther inland such as El Progreso and La Lima became virtual company towns, and the power of the companies often exceeded the authority wielded in the region by local governments" (p. 23). The influence of the banana companies was, however, not limited to coastal regions.

These companies also wielded their power to influence politics on a national level. Although the general interests of the banana companies, namely making profits, aligned, company-specific interests could differ, which could lead to rivalries that impacted national politics. The Cuyamel Fruit Company, for instance, financially supported opponents of the administration of President Dávila, who unsuccessfully invaded Honduras in 1908 (Merrill 1995, p. 22). The Dávila administration, in turn, granted a railroad exclusively to the Vaccaro Brothers, which angered the Cuyamel Fruit Company, after which the Cuyama Fruit Company continued to contend the administration (Merrill 1995, p. 22). Although these companies did not have the power to topple governments by themselves, they did have the capital to influence national politics.

Land tenure reforms in the twentieth century

The post-WOII era in Honduras saw several attempts by various administrations to reform the system of land ownership and to decrease the inequalities in land access. Before the 1980s, this was mainly done through redistributions of public and *ejidal* lands. In 1961, the liberal

administration of Ramón Villeda Morales promised several changes, among which agrarian reforms. In 1961, one of the few long-lasting reforms was passed by the Honduran parliament, namely the establishment of the *Instituto Nacional Agratio* (INA). This institution still exists and has carried the responsibility to implement agrarian reforms and settle land disputes between farmers or between individual farmers and commercial agricultural producers. To what extent the INA has favored the farmers or the large landowners depended on who was the president of the institution.

The other piece of agrarian legislation that the Morales government pushed was more controversial. This reform, which materialized in 1962, was meant to provide new parcels of land to landless peasants, who were expropriated from fruit companies, national lands, and *ejidal* lands (Nelson 2003, p. 8). Landless peasants, in this case, are the farmers who could not work for the agricultural companies for wages and did not own any land to cultivate themselves. Although this reform was an attack on the inequalities in land tenure in Honduras, scholars have articulated the many shortcomings of this policy. Nelson (2003) has argued that the 1962 reforms did not tackle the problems of the *latifundio/minifundio* complex and that the lands that were expropriated from fruit companies were often still under their control (p. 9). The agricultural companies could, for instance, buy out the farmers that have received redistributed lands or make sure that the lands could not be redistributed at all by letting cattle graze the land to make it seem as if they use such lands properly.

The militarist administration under President Oswaldo López Arellano also pushed several land reforms. In the second tenure of President Arellano, between 1972 and 1975, his administration passed two significant land reforms. The first, called the *Decreto Ley No. 8*, was a temporary measure that gave peasants the temporary rights to work national and *ejidal* lands they already occupied and redistributed unused public and private lands (Nelson 2003, p. 9). When the 1972 legislation ended, the second legislation, called the *Decreto Ley No. 170*, made the 1972 reforms permanent. This reform would work on the premise that if a piece of land was not used it can be expropriated and redistributed to landless peasants, who were then expected to work and cultivate the land (Nelson 2003, p. 9). The effects of the land redistributions in the 1960s and 1970s were limited. Although the largest farms lost a lot of land relative to the available land between 1952 and 1993, the same period saw the percentage of landowners with less than five hectares of

land grow from 57 percent to 71.8 percent (Nelson 2003, p. 4). The inequality that existed between small and large landowners only grew.

In the 1980s, the nature of land reforms shifted from redistributing unused lands to small farmers to land titling. These changes emphasized opening up the land markets can be related to several macro-political, economic, and demographic developments. These reforms mainly focused on projects of land titling. The 1982 *Proyecto de Titulación de Tierras* (PTT), which translates to the Land Titling Program, and the 1992 *Ley de Modernización de la Agricultura*, or Agriculture Modernization Law, were "[…] meant to regularize the land market by decreasing the amount of informal land tenure arrangements and to improve land-information systems so that summaries of rights and interests are accessible to market participants, and transactions are more secure" (Trackman et al. 1999, p. 19). With the PTT, the Honduran government hoped to stimulate the economy by increasing agricultural exports. The idea was that the PTT would allow landless Honduran farmers to obtain a title to the land they already occupied, which would give them a legal attachment to the land. This way, farmers would have more secure lands, which would also serve as collateral to access bank credits (Brockett 1988, p. 138). Jansen and Roquas (1998), however, have argued that the effects of the PTT were opposite of what was hoped. Institutions such as the INA were unable to effectively implement these policies because the policymakers did not fully understand the informal ways in which rural Hondurans dealt with local landownership and because the inadequate Honduran bureaucracy, which made the procedures to obtain the titles expensive, lengthy, and complex (p. 102).

Influence of external economic factors

There are several economic and political factors behind the land reforms and their limited success in the twentieth century. The limited success of the redistributions and the land titling projects had been mainly due to the influence of external political and economic factors, which I will be describe in the next sections.

Fruit companies and land distribution

The fruit companies in Honduras have demonstrated their power several times to halt the impact of the land reforms in the 1960s and 1970s. To curtail the effects of the 1962 land redistribution of land, fruit companies could, for instance, let cattle graze the uncultivated lands to prevent

expropriation or buy off the farmers who benefitted from the redistributions. Brockett (1988) argues that pressures from the United Fruit Company, which highly opposed the law, resulted in revisions to the legislation and the removal of the head of the INA (p. 125). What mainly restrained the legacy of the 1962 land reforms was a military coup by Oswaldo López Arellano just ten days before the general election in 1963. There is no concurrence among scholars what the forces behind this coup were (Brockett 1988, p. 126). The U.S. ambassador in Honduras at the time, however, has argued in a recorded interview that the reason for the coup was that the military wanted to prevent another liberal presidency, as the liberal party was expected to win the general election by a landslide (O'Brien 1969, p. 34). Because of these restraints, the redistributions that the 1962 land reforms intended had very little effect on the existing inequalities in land access.

The effects of the 1972 and 1975 reforms were also restrained, in part due to the power and privileged position of the fruit companies. A scandal in which President Arellano's administration accepted a payoff by United Brands, which was the new name of UFC, of 1.25 million dollars in return for significant export tax reduction, resulted in his removal (Brockett 1988, p. 132). Although the political influence of the fruit companies may seem less apparent after World War II, this scandal and subsequent regime change still demonstrates the far-reaching power of these corporations. The administration of Arellano's successor, Juan Melgar Castro, proved to be less supportive of such policies. It took his administration over half a year to implement the *Decreto Ley No. 170*, while the law was already published. Because of this, the large landowners in Honduras had enough time to make sure their land was used, so that these lands could not be expropriated and redistributed (Brockett 1988, p. 1932.).

International development and agricultural change

Honduras' economy and agrarian production changed in the mid-twentieth century. As a result of the worldwide Great Depression, World War II, and outbreaks of banana diseases, the banana trade collapsed in the 1930s and 1940s (Stonich 1993, p. 58). Banana companies in Honduras had to diversify and they thus resorted to the production of other goods, such as cattle and citrus fruit, for both the export and, for the first time, for the domestic market (Stonich 1993, p. 58). Because of this shift, these companies also changed their focus from solely on exporting goods to the development of the Honduran economy. As this focus changed in the late 1940s and 1950s, the involvement of the U.S. and newly founded transnational organizations increased. For instance,

the International Monetary Fund (IMF) targeted Honduras to establish centralized banks, which it lacked until 1950 (White 1977 cited in Stonich 1993, p. 58). Stonich (1993) mentions that the main reason that the U.S. started with programs to develop the Honduran infrastructure, medical facilities, and military capabilities during World War II was because of security considerations (p. 58). What she neglects to mention, however, is the impact of the Cold War on these considerations. I will continue briefly on this point in the section on the external political influence- in Honduras.

Neoliberalism and land titling

The existing discourse on the driving factors behind the PTT of the 1980s has mainly focused on the rise of neoliberal thinking in Honduras in the 1980s. Brocket (1988), citing the United States Agency for International Development (USAID), has argued that it was a change of thinking on agricultural support by Honduras and the U.S. from helping groups of farmers on *ejidal* lands to "an agrarian reform based on the principles of private property" (p. 137). According to Nelson (2003), advocates of neoliberal reforms managed to convince both the Honduran government of President Suazo Córdova and Honduran farmers "that with the secure land titles provided by the PTT, the rural poor would become more interested in improving their holdings because these new documents would guarantee long term legal possessions (p. 13). Both works, however, have neglected the political, economic, and demographic context of these policies.

It is, however, important to stress two other factors contributing to new agricultural reforms. The first is the financial crisis, often referred to as the 'debt crisis', that struck Latin America in the 1980s. According to González (1987) from the United Nations Economic Commission for Latin America and the Caribbean, the Latin American gross domestic product decreased by 10.7 percent between 1980 and 1987, and in Honduras there was a decline of 9.6 percent (p. 15). Analysts have provided several and widely diverging explanations of the crisis. Some have focused on the economic mismanagement by Latin American states (see Sjaastad 1983; Wiesner 1985), while others have indicated capitalism as a major factor (MacEwan 1985; Devlin 1990). Although scholars have differed in their interpretations of the roots of the crisis, the significant accumulation of debts across Latin American states has been the direct cause of the economic downturn. One of the ways in which Honduran administrations have attempted to tackle the substantial debts was to stimulate the export industry to increase revenues (Smith 2013, p. 56).

The PTT was meant to accomplish this by reinforcing legal rights to land and stimulating modernizations and productivity in the agrarian sector.

Next to the debt crisis in the 1980s, Honduras also saw a drastic increase in population growth in the late twentieth century. Between the years 1970 and 2000, the estimated population of Honduras grew from roughly 2,7 to 6,2 million people ("Population, Total – Honduras" 2019). Many analysts have argued, from a Malthusian perspective, that such a drastic population growth will generally result in increases in conflicts, economic downturns, and environmental damage. The historian William Durham (1979), for instance, has argued that land scarcity, due to the combination of the concentration of landholdings and population pressures in Central America, was the primary cause behind the 1969 war between Honduras and El Salvador, otherwise known as the Soccer War. Smith (2013) states that the economy stagnated because of the debt crisis, as the growth of the gross national product did not match the population growth (p. 56). In this context, projects such as the PTT can be interpreted as attempts to stimulate economic growth proportional to population growth.

The influence of external political factors

American interventionism

One of the major factors that enhanced the political power of the banana companies was the support of the United States government. Especially the early twentieth century saw the high tide of American interventionism in Central America, with policies such as the 1904 Roosevelt Corollary and 'dollar-diplomacy'. Historians concur that with such policies, President Theodore Roosevelt and subsequent presidents took the role of a policeman in the Western Hemisphere (Connel-Smith 2007, p. 433). This meant that "in the early decades of the twentieth century, there were frequent United States interventions in the Central American-Caribbean region, sometimes leading to lengthy occupations" (Connel-Smith 2007, p. 434). Although U.S. interventionism was in part intended to protect American business interests, this did not mean that the U.S. government always directly supported companies operating in Central American states. Indeed, as Brockett (1988) points out, the U.S. "[…] military penetration of the region generally, and specifically incidents of its military support for the companies, had an obvious effect on Central American governments" (p. 33). As the banana companies were often backed by the U.S. politically, it is understandable that Honduran authorities would be more susceptible to demands made by banana companies.

The intertwined interests of the U.S. government and the banana companies in Honduras became especially clear in the aftermath of the 1923 presidential elections. None of the three presidential candidates managed to get the majority of votes, after which the sitting president, Rafael López Gutiérrez, decided to remain in office until new elections were held (Merrill 1995, p. 26). One of the losing candidates Tiburcio Carías Andino, supported by UFC, rebelled against the president, who had the financial support of Cuyamel Fruit (Brockett 1988, p. 34). The U.S. intervened by sending marines to end the violent conflict between the rebels and the government, by which they operated against the forces supported by UFC (Brocket 1988, p. 43; Merrill 1995, p. 26). The U.S. troops remained in Honduras until new elections were held in 1924 (Merrill 1995, p. 27). This conflict shows how intertwined, and at times conflicting, the interests of the banana companies were and how influential U.S. interests at large were in political conflicts in Honduras.

Cold War tensions

Since the 1950s and 1960s, Honduras has been targeted frequently for international development programs in order to develop its economy. Adding to the argument by Stonich (1993) that the security considerations during WOII were central to the start of American development programs in Hondurans (p. 58), rising Cold War tensions in the 1950s were a reason behind the American support in Honduras. The United States feared the rise of communism in Central America, especially after the successful revolution of Fidel Castro in 1959 in Cuba. The most well-known and thoroughly examples of anti-Communist intervention in Central America is the covert operation of the Central Intelligence Agency (CIA) that removed the Guatemalan government in 1954 (Streeter 2000, p. 241; see also Schlesinger and Kinzer 1983). In Honduras, however, the U.S. did not forcefully intervene to protect its interests but did this by increasing its foreign aid and started developmental agencies, such as the Alliance for Progress and the Peace Corps, to ensure that Honduras would see a communist revolution (Nelson 2003, p. 8). Despite that Honduras did not experience a direct U.S.-led coup, the Honduran economy grew increasingly dependent on international loans to fund development programs throughout the 1950s and 1960s.

Domestic political influence on land tenure

Various external factors have been dominant in both triggering land reforms, such as the land titling projects, and preventing reforms to have substantial effects, as happened with the

redistributions of land. Domestic pressures, however, have only played a limited role. Authors have often highlighted the impact that Honduran peasant organizations have had on Honduran politics and land tenure policies (Brockett 1988, p. 129; Stonich 1993, p. 73; Nelson 2003, p. 7).

Indeed, developments in the 1950s saw the power of labor and peasant organizations increase and these would prove to be a factor in the redistributions of land in the 1960s and 1970s. Following the 1954 labor strike, which is still the largest strike in Honduran history, fruit companies implemented reorganizations after which thousands of laborers lost their jobs and thus became landless peasants (Nelson 2003, p. 8). The peasant organizations were a reaction to the firing of thousands of laborers by UFC in 1954 following the labor strike (Brockett 1988, p. 128). Throughout the 1960s the attention of peasant mobilization shifted to the growing pressures on available agricultural lands due to drastic population growth that started after World War II. Because of this, peasant and labor organizations supported the liberal and reformist government of Ramón Villeda Morales because of his promises of land reform.

After the Morales administration was removed in 1963, attempts to establish new peasant organizations, such as the Central Committee of Peasant Unity or the National Federation of Honduran Peasants, encountered repression by the military government under President Arellano (Brockett 1988, p. 128; Nelson 2003, p. 9). Pressures from peasant organizations, however, remained. One success of peasant protesting was the appointment of a director of the INA in 1967, after which the agricultural institute more often favored the peasants in the settlement of land conflicts (Brockett 1988, p. 131). According to Brockett (1988) the peasants did play an indirect role in the overthrow of that administration by the military, as he argues that this coup followed a hunger march by peasants in 1972, in response to the killing of six peasants (p. 131). Such protests by the peasants had effect, as President Arellano, who rose back to power through the coup, wanted to join the cause of the peasants and, therefore, published land reforms in 1972 and later in 1975 (Brockett 1988, p. 132).

However, the influence of the large commercial landowners in Honduras have managed to curtail the impact of the redistributions, which has limited the significance of the peasant mobilization. The reformist administrations of Morales and Arellano were removed not long after their reforms were passed, and the successive governments were far less susceptible to land reforms. The consequence was that redistribution projects were either stopped or implemented reluctantly (Brockett 1988, p. 125). Although one major success of peasant mobilizing was the

appointment of an INA director sympathetic to peasant interests, a successive government removed him from office just two years later (Brockett 1988, p. 131). As stated earlier in this chapter, the large commercial landowners had their ways to make sure the lands ready for expropriation were used again by cattle ranchers or bought back from smaller farmers. The redistribution projects by the reformist administrations of Morales and Arellano only had a marginal effect on the unequal distribution of lands in Honduras, which only grew between 1954 and 1993.

Conclusion

Following the long and complicated history of land ownership in Honduras, Hurricane Mitch struck a country that has been shaped and pressured from various angles. From the independence of Honduras in the early nineteenth century until World War II, Honduran governments had little autonomy to implement land reforms because of political pressures from domestic forces and other Central American states. Since the late nineteenth century, external commercial producers, at first mining companies and later fruit companies, became increasingly powerful landowners. Especially the fruit companies had nearly unlimited control over the fertile northern lowlands and influenced Honduran politics. American interventionism in the early twentieth century generally enhanced this power. In the second half of the twentieth century, external economic institutions and fruit companies became more entrenched in Honduran politics and they had more interest in developing the Honduran economy. Although Honduran peasants gained some political power through various organizations and were a force behind the land redistributions in the 1960s and 1970s, their influence was curtailed by less-reformist governments and large commercial landowners. The debt crisis that hit Latin American in the 1980s, a drastically growing population, and the influence of neoliberalism shaped the land reforms that were most prominent when Hurricane Mitch arrived in 1998. These reforms, however, were still unable to tackle the underlying colonial structures of *latifundios* and *minifundios* and the inequalities in land ownership that developed since the late nineteenth century.

Chapter 3 – The long-term political ecology of disaster vulnerability in Honduras

Scholars have argued that Honduras was especially vulnerable to the severe rains that Hurricane Mitch brought in 1998 mainly because of the degraded soils in hillsides (see Ensor and Ensor 2009; Hellin and Haigh 1999; Smith 2013). In this thesis, I use the lens of political ecology to examine land ownership in Honduras as a long-term contributing factor to the soil degradation and thus to the disaster vulnerability of Honduras. It became clear in chapter two that, especially since the late nineteenth century, land tenure in Honduras has been shaped and pressured predominantly by external forces, such as fruit companies, the United States, and international markets. In this chapter, I will answer the question of why these inequalities have resulted in the economic marginalization of Honduran farmers and environmental degradation. I will use the political ecology approach to examine the influence of land tenure on these disaster vulnerabilities of Honduras. The main argument that I will present in this chapter is that the focus of Honduran administrations and the aforementioned external forces on short-term economic gain and development throughout the history of Honduras resulted in patterns of environmental and economic vulnerability, especially in the late twentieth century, that ultimately made Hurricane Mitch a 'natural' disaster. The argument itself that economic and political factors have contributed to economic and environmental vulnerability of Honduras to natural hazards is not new, but employing a longer-term political ecology perspective shows that the root causes of the disaster of Hurricane Mitch go further and deeper than previously indicated. An additional consequence of this is that people throughout Honduras, in both rural and urban areas, have built up no resilience to natural hazards.

The political ecology of marginalization and environmental degradation

One of the classic foci of the political ecology framework is the notion of environmental degradation. One of the first monumental works in this focal point is Pier Blaikie's (1985) landmark work *Political Economy of Soil Erosion in Developing Countries*. In this book, Blaikie (1985) challenged the common notion that soil deterioration and conservation policies in developing states are politically neutral. Blaikie (1985) and many other scholars have produced a significant body literature on the political and economic factors behind land degradation. The

notion of marginalization and environmental degradation does not suggest that marginalization is always a driving factor behind environmental degradation but rather argues "that under conditions of increasing marginality and disruptive social change, especially where sustained economic exploitation is allowed, undesirable regional scale ecological transformations [...] tend to increase in momentum and become difficult to reverse" (Robbins 2011, p. 160). From the political ecology perspective, researchers can thus identify non-environmental factors that ultimately contribute to such ecological transformations.

The notion of political ecology that there is a connection between marginalization and environmental degradation is not necessarily universal. Some researchers that have employed the political ecology perspective, have used specific crops as targets of investigation. Especially the cultivation and export of cotton has been studied extensively because, according to Robbins (2012), the export-oriented production of cotton happened mostly in post-colonial regions and because this crop generally has high demands in terms of nutrition, which has led farmers to extensively use fabricated fertilizers and pesticides (p. 161). Research by Mosely (2005) in Mali, for instance, has indicated that there are no significant differences in soil quality between rich and poor farmers (p. 36). The impact of the marginalization of a population on the environment thus depends on the context. Robbins (2012) states that the conclusions of such studies question the universality of the marginalization and environmental degradation thesis of political ecology, which has implications for the questions that scholars ask (p. 162). In the following sections, I will assess the impact of land tenure in Honduras as a contributing factor to environmental degradation.

Land tenure, migration, and deforestation

Movement into hazardous areas

According to environmental historians, marginalized populations have historically moved into hazardous regions, such as swamps, hillslopes, and close to rivers (Lübken 2019, p. 7). According to Lübken (2012), one of the reasons this has happened so frequently over history is that the benefits of a certain region outweigh the costs (p. 13). The benefits that come with the movement into such areas could, for instance, be that to find new agricultural ground to cultivate, while the costs could be the dangers of heavy rains and landslides. This phenomenon is not limited to states in the Global South but also in the North. Historian Bonnelle (2014), for instance, has stated in her work on the history of the Don River in the capital of Canada, Toronto, that the Don Valley "was

a place for squatters in the 1830s, a camp site for Roma families in the 1910s and 1920s, and a 'Hobo jungle' during the depression years of the 1930/31 (cited in Lübken 2019, p. 7). Such mobilization into hazardous areas also occurred in the United States, where areas such as North Carolina's Dismal Swamp "became a haven for runaway slaves and poor whites who lived on the fringes of plantation society" (Pisani 2000 cited in Lübken 2019, p. 7). Environmental ignorance is also seen a contributing factor. According to Lübken (2019), European colonists who migrated to the Americas often had no knowledge of the environment they moved into and neglected the environmental knowledge of the indigenous peoples they encountered (p. 13).

The question here is why Honduran farmers have moved into difficult and dangerous environments. The environments that have proved to be most vulnerable to natural hazards in Honduras, such as Hurricane Mitch, are hillslopes and floodplains. Hillslopes are prone to, among others, landslides, mudslides, and earthquakes. Floodplains can be dangerous to populations because of river floods due to, for instance, heavy rains and high tides due to melted water from mountainous areas. It is important to note that much of the geography of Honduras can be seen as disadvantageous. Approximately eighty percent of the Honduran landmass is mountainous, and the few lowlands are located at the coasts and in river valleys (Woodward et al. 2020). With such a geography, Honduran farmers that seek new agricultural lands or non-agricultural opportunities have little choice other than to move into mountainous areas or to urban centers that are often located next to rivers.

Based on existing literature, there are several factors that could contribute to the movement of Honduran farmers into hazardous regions. One factor dominant in the existing literature is the neo-Malthusian notion of population growth. The neo-Malthusian argument is that agricultural productivity cannot keep up with population growth, which ultimately will lead to increased poverty and environmental degradation (Pender 1999, p. 1). From this perspective follows that population growth would lead to pressures on available land, as more people seek the same amount of land, which would lead to increased poverty and ultimately environmental degradation. According to Pender (1999), population growth could, in general, trigger rural to urban migration because it "may induce people to seek alternative sources of income" (p. 33). Indeed, according to Stonich's (1991a) study of Honduran households, the period between the 1950s and 1980s in which there was significant population growth also saw migration between rural areas and from rural to urban regions (140). Despite this correlation, popular criticism of the neo-Malthusian

notion of demographic pressures argues that population growth is highly dependent on social variables, such as "gender notions in society, social valuations of birth control methods, loose family structures, and the role of child labor in the rural economy" (Jansen 1998, p. 209). Population growth as a contributing factor to land scarcity should, therefore, always be examined in relation with other factors. The political ecology approach has allowed for such an examination because it focuses on the political and economic structures behind patterns of, among others, migration and environmental degradation.

Although the migration into hazardous areas has occurred predominantly after WOII, the structures that facilitated these population movements have been in place for much longer. Scholars, who have also employed a political ecology approach, concur that inequalities in land ownership and unequal economic development in Honduras are the primary drivers behind land degradation, rather than just population growth (DeWalt et al. 1993, p. 120; Jansen 1998, p. 208; Stonich 1993; p. 166). According to the study of DeWalt et al. (1993) in southern Honduras, the expansion of the large landowners, as a result of the developing infrastructure in Honduras after WOII, and their response to bursts in the international demand of cotton, beef, and shrimps in the second half of the twentieth century, had several social consequences, such as the expansion of their lands, the expulsion of the peasants living there and unemployment (p. 109). Small landowners and peasants who were forced to leave the fruitful areas in the lowlands by large commercial producers, had to move to and live on small and impoverished plots of land that were difficult to live from and were often located on mountain and hillsides (DeWalt et al. 1993, p. 113). Other landless Hondurans decided to move to urban areas, where they also inhabited the most marginalized and poorest of areas. This inequality in land tenure not only had economic and nutritional consequences for small landowners and peasants, but it also meant that they were living on already unstable soils that can easily wash away. To understand the political ecology of these developments in the post-WOII era, scholars must look further in history.

The reason that the large landowners in the south and the commercial fruit companies in the north were able to evict farmers on such a large scale in the mid twentieth century is because they already wielded and consolidated significant power over their territory since the late nineteenth century. Because the Honduran governments conceded these grounds in the late nineteenth and early twentieth century with the goal of improving the infrastructure, increasing agricultural productivity, and expanding the export profits, banana companies owned much of the

fertile lands in the north of Honduras. As stated in chapter two, these farmers were not just dependent on their wages, but these companies also provided their homes, schools, and medical facilities (Brockett 1988, p. 31). When these farmers were sacked by the commercial producers, they did not just lose their income but their entire subsistence. As the land reforms of the 1960s and 1970s provided little more land for these landless farmers and for a drastically growing population, available agricultural lands started to become scarcer. While in 1900, populations in southern Honduras lived mainly in the lowlands on extensive cattle ranches (Stonich 1993, p. 56), sixty years later, peasant farmers had to move further up hillsides for agricultural lands. The structure behind the economic and physical vulnerability of Honduran farmers did not start in the 1950s, but can thus be traced back to developments in the late nineteenth century.

From agricultural diversification to land scarcities and deforestation

After WOII, the Honduran economy and politics were also prone to new economic opportunities that seemed lucrative on the short term but had devastating effects on land ownership and the state's forests on the long-term. International markets after WOII saw several booms in the demand of primary goods, such as coffee, shrimp, melon, and beef. International development programs from, for instance, USAID and the World Bank, granted a significant number of loans to Honduran agricultural producers diversify the agricultural exports throughout Central America to meet this demand. In the period between 1960 and 1983, Honduras received more than half of all agricultural loans from the World Bank, of which more than one-third encouraged the expansion of livestock (Stonich 1993, p. 67). Because of these loans, the dependency of the Honduran economy on fluctuations on international markets continued. This dependency not only proved to be persistent throughout the rest of the twentieth century but also increased.

As a result of this dependency and the increasing land scarcities, agricultural producers were prone to changes in the international demand for products. As a result of the increases in demand for beef, both small and large agricultural producers shifted large parts of their production to cattle ranching, which has had significant impact on the forests in Honduras. From the data-analysis by Stonich (1993), she states that "between 1947 and 1988, the number of head of cattle rose 220 percent in Honduras and 152 percent in Central America" (p. 68). This growth generally happened on larger parcels (Stonich 1993, p. 68). In Honduras, land scarcities also played a role in the extensive expansion of cattle ranching. For both the commercial producers on the coastal

plains and affluent landowners in the mountainous interior, cattle ranching was an attractive business because it also allowed them to hold on to lands that would otherwise seem unused and could, therefore, be redistributed as a result of the 1960s and 1970s land reforms (Jarvis 1986 cited in Stonich 1993, p. 68).

These increases in cattle ranching had dramatic effects on deforestation rates. In the south of Honduras, cattle ranching required extensive amounts of land, as one hectare was needed per cattle head (Stonich 1993, p 68). The link between the increase in cattle ranching and deforestation in Honduras and Central America, as well as the link with disaster vulnerability in the context of Hurricane Mitch, is well-known among scholars. Data from the FAO presented by Stonich (1993) also shows that with the increase of pastures for cattle after WOII came a decrease in forested land of fifty-one percent between 1961 and 1987 (p. 69). Deforestation is one of the major factors that has contributed to land degradation in Honduras. Forests are crucial for the quality of soils for several reasons. Trees are deeply rooted in the ground, which protects the soil from wind and water erosion and thus prevents it from washing away. Forests also retain significant amounts of water, which prevents soils from silting. Deforestation has, therefore, generally been linked directly to the notions of climate change and global warming, desertification, soil erosion, the silting of soils, floods, and decreasing biodiversity (Dorner and Thiesenhusen 1992, p. 2).

Deforestation has been a pressing issue in Honduras, especially since the 1990s. According to the Food and Agriculture Organization of the United Nations (FAO) 41.5 percent of the total landmass of Honduras was forested in 2005 (FAO 2009, p. 114). However, approximately 37 percent of forest cover was lost between 1990 and 2005, with an annual deforestation rate of 156 thousand square kilometers, which is about 3.1 percent (FAO 2009, p. 114). Researchers have pinpointed various factors that contribute to deforestation, such as population growth, agricultural demands for export crops and cattle ranching, and illegal logging by drug cartels and landless farmers (Volckhausen 2019). Although the impact of agricultural diversification and cattle ranching on the environmental disaster vulnerability of Honduras has been widely acknowledged (Ensor and Ensor 2009, p. 36; Smith 2013, p. 56), it has been neglected that deforestation has been subject to discussion half a century before the cattle ranching expanded. Moreover, the impact of nationalized logging on deforestation has received almost no attention in the disaster literature.

Although deforestation has accelerated in the late twentieth century, there is a much larger history that shows the interrelation between processes in land ownership and how forests have

been managed in Honduras. The literature on deforestation as major factor behind the destruction of Hurricane Mitch largely overlooked this history. Deforestation is not an isolated process but is part of a larger history of how people have treated their forests. The colonial era, for instance, had a significant influence on the forests in Honduras because the arrival of the Spanish in Central America and the subsequent conflicts and epidemics led to the, albeit not entirely intentional, extermination of ninety percent of all indigenous populations. The anthropologist Tucker (2008) argues that "the small indigenous population, combined with the low Spanish population in the first few centuries of the colonial period, would have been favorable to forest expansion (p. 26).

Deforestation was already a widely debated issue in Honduras in the early twentieth century. Then, the debate was mainly about the impact of the agricultural practice of slash-and-burn. In this agricultural tradition, farmers cut a section of a forest to subsequently burn and farm it until the soil loses its productivity, after which the piece of land lays fallow for several years until it can be slashed and burned again. Farmers have used this method for thousands of years, dating back to agricultural societies in Egypt and Mesopotamia. Farmers in Honduras, for instance in rural the town of El Zapote, farmers have slashed and burned pieces of land mainly for growing maize and beans (Jansen 1998, p. 110). Since the early twentieth century, slash-and-burn has become controversial. According to Jansen (1998), Honduran intellectuals have argued that this method contributed to soil erosion and deforestation (p. 112). Although they had reason to believe this, forest fires in Honduras destroyed about sixty-one thousand hectares of forests annually between 1975 and 1992, only nine percent of these fires could be traced back to the practice of slash and burn (Tucker 2008, p. 116). While it appears that this practice has had a limited effect on deforestation, it does show that worries about environmental degradation due to agricultural practices have been in popular discourse in Honduras much earlier than other scholars have mentioned.

The focus of the Honduran economy on short-term economic gain throughout its history has not only resulted in the focus on export-crops and cattle but also saw a period of rapid nationalized logging in rural Honduras, something that is not mentioned in the existing disaster literature on Hurricane Mitch. In order to both conserve national forests and benefit from nationalized logging, the second militarist administration under Arellano (1972-1975) implemented the *Decreto ley No. 103* in 1974 to nationalize all trees in Honduras and established the Honduran Corporation of Forest Development, called the *Corporación Hondureña de*

Desarrollo Forestal (COHDEFOR). The *Decreto ley No. 103*, however, contradicted the land redistributions that the Arellano administration pushed, namely *Decreto Ley No. 8* and *Decreto Ley No. 170*. These reforms were to redistribute unused public and private lands to increase land access for farmers. *Decreto Ley No. 103*, however, essentially implied the nationalization of all forests in Honduras, which means that farmers owned the forested land but not the trees. According to the anthropological research by Tucker (2008) in the small village of La Campa, located in the rural and mountainous southwest of Honduras, the result of this nationalization of forests and logging was that the pine forests were depleted in the late 1980s (p. 115).

The nationalized logging in La Campa had significant consequences in terms of disaster vulnerability. The deforestation that was the result of the logging campaign left hillsides vulnerable to natural hazards. Moreover, the export of timber mainly benefitted the national government, while this is not clear for landowners and municipalities like La Campa, which were promised to receive improved public services as payment (Tucker 2008, p. 103). Often, timber payments were delayed in part because of incompetent and inefficient bureaucracy (Tucker 2008, p. 104). In the late twentieth century, local populations like in La Campa did not benefit directly from the logging and were also left with degraded and dangerous hillsides that are difficult to cultivate, so the logging also hit their long-term economic position. This way, the continuous search for short-term economic gain by national and private economic actors in Honduras, for instance, the COHDEFOR, ultimately resulted in both environmental and economic vulnerabilities exposed by Hurricane Mitch.

The deeply rooted dependencies that contributed to the migration into hazardous areas and the widespread deforestation also has a consequence in terms of resilience. For Honduran farmers that had to live on degraded hillsides and parcels due to the land scarcities and deforestation, it has been difficult to build up some resilience to, for instance, natural hazards. Because of the insecurities in land ownership and the failure of the land titling projects to help Honduran farmers to obtain bank credits, it became nearly impossible to create funds to resort to in times of need. This only increases the dependency of Honduran farmers on short-term financial gain in order to survive. A severe natural hazard, like Hurricane Mitch, only exacerbates these dependencies.

Agricultural intensification and soil degradation

Because degraded top soils throughout Honduras were one of the major factors that have made Honduras vulnerable to natural hazards and this thesis focuses on the impact of land tenure on disaster vulnerabilities, it is crucial to examine how the factor of land tenure has impacted the environment and, specifically, the soil. Previous authors who have written on the political ecology background of Hurricane Mitch in Honduras have mainly focused on the social, economic, and political factors since the 1950s (Ensor and Ensor 2009; Smith 2013, Cockburn 1999). I argue, however, that these processes are rooted in economic dependencies that developed since the late nineteenth century.

The fallow crisis

One of the most important aspects of traditional sustainable agriculture is fallow land. Fallow agricultural land is part of the cultivation cycle, in which the piece of land can regenerate and ultimately become fertile again. Leaving land fallow also prevents the land from degenerating and thus from erosion. Several processes in the twentieth century, such as increasing inequalities in land access, demands for export agriculture, and the dramatic increase of cattle ranching, have negatively impacted the length of fallow periods across Honduras. According to Jansen (1998), the 'fallow crisis' is central to environmental degradation in Honduras (p. 128). The fallow crisis essentially is the continuous shortening of fallow periods, which can lead to loss of soil fertility, soil erosion, increase of weeds, and increasing labor demands (Jansen 1998, p. 104). As Jansen (1998) sets out, this crisis is a result of a complex interplay between marginalized farmers and cattle breeders due to increasing land shortages, different land-use systems, and official solutions that do not fit local farming traditions (p. 128). This crisis contributes to the environmental and economic vulnerability of rural areas to natural hazards, such as seasonal rains and severe storms. If agricultural land is not allowed to regenerate in a fallow period, the land will ultimately become more susceptible to erosion and other forms of degradation. Moreover, when land becomes exhausted, it cannot be used for both crop cultivation and cattle ranching, which could dramatically impact the main sources of income for marginalized farmers.

Farmers with small plots or landless farmers who rent parcels from other landowners struggle with the fallow crisis because of their conflict with cattle ranchers. Especially when farmers cultivate their lands according to the "classical systems of grassland management – with

a sequential alternation of fallow periods, maize cultivation and natural pastures" (Jansen 1998, p. 108). When there is a shortage of available land, farmers want to grow crops as quickly as possible, while cattle ranchers want the lands to be pastures for their cattle as long as possible (Jansen 1998, p. 108). With increasing pressures on available land, small landowners and landless peasants often cut short the fallow period to work the land as much as possible, which then ultimately leads to land degradation. Data of available fallow land per farm size class in El Zapote, presented by Jansen (1998), shows that with larger plots, especially in the lower size brackets, more land is in fallow (p. 109). Having in mind that reductions in fallow land can result in soil erosion, land inequalities indirectly lead to increased vulnerabilities to natural hazards.

Inequalities in land access that have been developing since the late nineteenth century are central to the fallow crisis. Although the fallow crisis was a direct result from the diversification of the agricultural sector since the 1950s, the increasing landless population, and population growth, which all accumulated into land scarcities, this crisis is rooted in the dependencies of the Honduran economy on agricultural exports and the large agricultural producers since the late nineteenth century. Along the northern coast of Honduras, the fruit companies wielded almost absolute power over the land and the wage workers on it during the first half of the twentieth century. Stonich (1993) argues that the southern, more mountainous regions, were really incorporated in the national and international agricultural markets when the fruit companies and international development programs encouraged the diversification of the agricultural sector (p. 58). Before that, large landowners in the south were not able to connect to the international markets because the infrastructure was not developed enough and there was a lack of credit (Stonich 1933, p. 59). She thus ascribes the diversification of agriculture in the south to the economic integration after WOII. However, these macro-economic developments only could happen because of the structural dependencies of the Honduran economy on commercial agricultural producers and the international markets.

The transition from food crops to export crops

The factor of land tenure also impacts the farmer's and commercial producer's choices of crops. Brockett (1988) indicates that the population growth and increasing inequalities in land access between the 1950s and 1970s have increased land scarcity and the population of landless peasants (p. 74). In roughly the same period, there has been a shift in Honduras and in other states in Central

America from the production of food crops to export crops. Following the statistics calculated by Brockett (1988), the food production per capita declined with fifteen percent between the periods 1948-1952 to 1981-1983 (p. 78), while 19 percent of the total food supply for humans and livestock was imported in the 1970s (p. 80).

Although there are not many statistics available on the increase in land dedicated to export crops, there have been indications of this trend. Historically, export crops were produced by large landowners and, especially, the commercial producers in the northern parts of Honduras. Data collected and presented by Stonich (1993) shows that generally between 1952 and 1988/89 the amount of area dedicated to the production of the food crops, in this case corn, sorghum, and beans, have declined, while the areas dedicated to cotton, sugar, melon, sesame, and rice have seen several bursts (p. 75). The cultivation of such crops has been linked to unsustainable agriculture. Browning (1971) argues there is, for instance, a difference in how growers of coffee, who have traditionally been small landowners, and how growers of cotton treat their land, as he states that

"whereas coffee farmers realized that sound techniques of cultivation based on applied research were a necessity for the long-term future of the crop, the cotton farmers cleared and cultivated the coastal plain in an attempt to gain maximum and immediate profits with little thought of the long-term effects of their activities" (cited in Brockett 1988, p. 90).

With the diversification of the agricultural sector came the production of non-traditional export crops (Stonich 1991b, p. 725), which brought with them less focus on the quality of the soil and more focus on the continuous production for profit. The result was that more and more agricultural lands, which were increasingly on unstable hillsides, became further exhausted, leading to a loss of topsoil. In terms of resilience, this builds on the consequence that I mentioned earlier. Because of the dependencies of small Honduran farmers on short-term financial gains, they have fallen into a vicious circle in which they Honduran farmers often only have small degraded parcels of land to live from. One of the ways to survive is to produce as many crops as possible for short-term financial gain, which ultimately exhausts the topsoil, making it even harder to survive. This lack of resilience has made a natural hazard even more detrimental for Honduran farmers.

Conclusion

This chapter has dealt with the structural processes behind the environmental degradation that resulted in the disaster that Hurricane Mitch was. The existing disaster literature on Hurricane Mitch has attributed the deforestation and soil degradation in the late twentieth century mainly to the social, economic, political, and demographic developments since the 1950s. Throughout this chapter, the central argument that I have presented is that these processes are rooted in the late nineteenth century. From then on, the Honduran economy has generally depended on external forces, such as the fruit companies. As a result of this long-term dependency, the large commercial landowners were able to evict wage farmers of their fertile agricultural lands in the mid-twentieth century, stripping them from their entire subsistence. This pushed thousands of landless peasants, and a drastically growing population, onto unstable and impoverished hillsides. Because of the dependencies that developed since the late nineteenth century, the diversification of the Honduran agricultural sector resulted in a dramatic increase of cattle ranching, the fallow crisis, and the shift from the production of food crops to export crops, which led to the main catalysts of deforestation, food scarcities, and soil exhaustion. An additional consequence has been that the deeply rooted dependencies, together with the environmental degradation, have put marginalized Hondurans in a vicious circle from which it is nearly impossible to build up resilience against severe natural hazards.

Conclusion

"In 72 hours, we lost what we had built, little by little, in 50 years" – Former President of Honduras, Carlos Flores (1998)

These mournful words were uttered just days after Hurricane Mitch hit Honduras and Nicaragua in 1998. This storm was a category five hurricane at its peak, just before it arrived at the north coast of Honduras. Over the course of three days, it slowly moved over Honduras and Nicaragua. As a result of the hurricane, thousands of people died in Honduras and Nicaragua, tenths of thousands were injured or went missing, and almost half a million people were left homeless. Not just the physical toll of the hurricane was severe, most of the agricultural lands and infrastructure were also destroyed. Although a storm of this magnitude would have been devastating in any part of the world, the disaster exposed the many vulnerabilities of Honduras to such environmental events. Analysts have generally argued that the torrential rains, together with the already degraded hillslopes in Honduras, culminated in a disaster.

The frequency and severity of such natural hazards will most likely increase throughout the twenty-first century due to global warming. Whether these hazards are sudden, such as hurricanes, floods, and earthquakes, or slow, such as droughts, they often hurt the most marginalized people in a society. It is not just the severity of a natural hazard that can make it a natural disaster but mainly the disaster preparedness of a certain society and their relation to the environment they live in. Historians like Lübken (2019) have argued from this perspective that the field of history is suitable to examine long-term patterns of vulnerability and resilience to natural hazards in the context of disaster migration (p. 4). Examining how societies have dealt with their environments in the long-term can shed light on what makes certain communities and populations especially vulnerable to environmental changes.

In this thesis, I specifically focused on the question of how developments in land tenure in Honduras since the early twentieth century have contributed to the economic and environmental vulnerabilities to severe natural hazards. From a longer-term political ecology perspective, it appears that the developments in land ownership in the twentieth century, that have contributed to the disaster vulnerabilities especially of the most marginalized Hondurans, can be traced back to the economic and political processes that have really started in the late nineteenth century. While the Spanish colonists primarily provided the structures of land ownership and were the first to

internationalize the economy in colonial Honduras, developments in the late nineteenth century have had a significant influence on who owns and can access land, how the agricultural lands are used and on Honduran politics. Since the late nineteenth century, foreign interests, from the commercial banana companies to international banks and U.S. security considerations, have essentially dictated the development of the Honduran economy. As a result, the Honduran economy has been dependent on the fluctuations of demands on international markets. Therefore, the environmental degradation in Honduras through high deforestation rates and the exhaustion of agricultural lands since the 1950s, which are the principal factors behind the loss of topsoil that made Honduras vulnerable to severe natural hazards, are rooted in the political and economic developments in the late nineteenth century. These dependencies have also impacted the extent of which marginalized Honduran farmers have been able to build up resilience against natural hazards.

This longer-term view contends the dominant narrative in disaster literature. Previous authors who have examined Hurricane Mitch have recognized the social, economic, and political factors behind the disaster vulnerabilities of Honduras, but have been fixated on the developments after WOII. They did not approach the disaster vulnerabilities of Honduras from a long-term perspective. What this body of literature did not yet show was how deeply rooted the dependencies of the Honduran economy and the inequalities in land access have been. This thesis shows that the structures behind disaster vulnerability to Hurricane Mitch go further and deeper than the mid-twentieth century. A consequence of this on the understanding of Hurricane Mitch is that the vulnerabilities have been more persistent than previously thought.

To the existing body of political ecology literature, this thesis adds the insights that historical research is crucial in further understanding the relationship between political and economic developments and the environment and that land ownership can be a powerful force behind marginalization and disaster vulnerability. For future works that examine natural hazards from the perspective of political ecology, it is vital to take into account that the factor of land tenure can be central to how populations treat their lands and which choices they make in terms of migration. In Honduras, for instance, lack of land access has influenced the migration patterns from landless peasants both from rural to rural areas and rural to urban centers. Historical perspective is crucial in this case, as this thesis has shown that inequalities in land tenure have deeper historical roots than previously stated.

This thesis offers various opportunities for further research. One of the things this thesis has examined is the migration of Hondurans into hazardous areas before Hurricane Mitch. I have argued that this has increased their physical and economic vulnerabilities to natural hazards. I have, however, not focused on migration patterns after Hurricane Mitch and how this has impacted the vulnerability and resilience of the migrants. The work by Ensor (2008) on the migration of Honduran children, some of which have moved after Hurricane Mitch, to New Orleans where they experienced the destruction of Hurricane Katrina in 2005, is one of the few studies that has explored such coping mechanisms. This phenomenon deserves to be studied further. One of the limitations of my research is the dependence on English secondary sources, which has restricted me in the use of primary sources. Bridging the language gap in future research on Hurricane Mitch could further advance our understanding of the underlying vulnerabilities. It could also transcend the academic discussion on disaster vulnerabilities in general by countering notions of the tropicality of 'natural' disasters.

Global warming will most likely have increasingly negative effects on all regions in the world in the near future. As a result, the frequency and severity of natural hazards will increase rapidly. In order to mitigate the impact of these hazards on societies across the world, not just in the Global South, it is crucial that scholars from various disciplines contribute to the understanding of what makes populations vulnerable or resilient and what influences the relationship between people and their environments. As a conclusive remark, I would like to emphasize that the academic field of international history can also make significant contributions to these matters. While the field of international history has mainly examined why state and non-state actors interact in certain ways and what the impact is of these relationships on societies, historians and scholars of international relations should also examine how these relationships can ultimately impact the environment.

List of used abbreviations

CIA	Central Intelligence Agency
COHDEFOR	Corporación Hondureña de Desarrollo Forestal – Honduran Corporation of Forest Development
ECLAC	Commission for Latin America and the Caribbean (United Nations)
FAO	Food and Agriculture Organization of the United Nations
INA	Instituto Nacional Agraria – National Agrarian Institute
NMPRT	Plan maestro de la reconstrucción y transformación nacional en Honduras - Honduran National Master Plan for Reconstruction and Transformation
NYHRMC	New York and Honduras Rosario Mining Company
PTT	Proyecto de Titulación de Tierras – the Land Titling Project
UFC	United Fruit Company *Was later renamed to United Brands and its current name is Chiquita Brands International*
UPCA	United Provinces of Central America
USA	United States of America
USAID	United States Agency for International Development
WOII	World War II

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Faculty of Humanities
Version September 2014

PLAGIARISM RULES AWARENESS STATEMENT

Fraud and Plagiarism
Scientific integrity is the foundation of academic life. Utrecht University considers any form of scientific deception to be an extremely serious infraction. Utrecht University therefore expects every student to be aware of, and to abide by, the norms and values regarding scientific integrity.

The most important forms of deception that affect this integrity are fraud and plagiarism. Plagiarism is the copying of another person's work without proper acknowledgement, and it is a form of fraud. The following is a detailed explanation of what is considered to be fraud and plagiarism, with a few concrete examples. Please note that this is not a comprehensive list!

If fraud or plagiarism is detected, the study programme's Examination Committee may decide to impose sanctions. The most serious sanction that the committee can impose is to submit a request to the Executive Board of the University to expel the student from the study programme.

Plagiarism
Plagiarism is the copying of another person's documents, ideas or lines of thought and presenting it as one's own work. You must always accurately indicate from whom you obtained ideas and insights, and you must constantly be aware of the difference between citing, paraphrasing and plagiarising. Students and staff must be very careful in citing sources; this concerns not only printed sources, but also information obtained from the Internet.

The following issues will always be considered to be plagiarism:

- cutting and pasting text from digital sources, such as an encyclopaedia or digital periodicals, without quotation marks and footnotes;
- cutting and pasting text from the Internet without quotation marks and footnotes;
- copying printed materials, such as books, magazines or encyclopaedias, without quotation marks or footnotes;
- including a translation of one of the sources named above without quotation marks or footnotes;
- paraphrasing (parts of) the texts listed above without proper references: paraphrasing must be marked as such, by expressly mentioning the original author in the text or in a footnote, so that you do not give the impression that it is your own idea;
- copying sound, video or test materials from others without references, and presenting it as one's own work;
- submitting work done previously by the student without reference to the original paper, and presenting it as original work done in the context of the course, without the express permission of the course lecturer;
- copying the work of another student and presenting it as one's own work. If this is done with the consent of the other student, then he or she is also complicit in the plagiarism;
- when one of the authors of a group paper commits plagiarism, then the other co-authors are also complicit in plagiarism if they could or should have known that the person was committing plagiarism;
- submitting papers acquired from a commercial institution, such as an Internet site with summaries or papers, that were written by another person, whether or not that other person received payment for the work.

The rules for plagiarism also apply to rough drafts of papers or (parts of) theses sent to a lecturer for feedback, to the extent that submitting rough drafts for feedback is mentioned in the course handbook or the thesis regulations.
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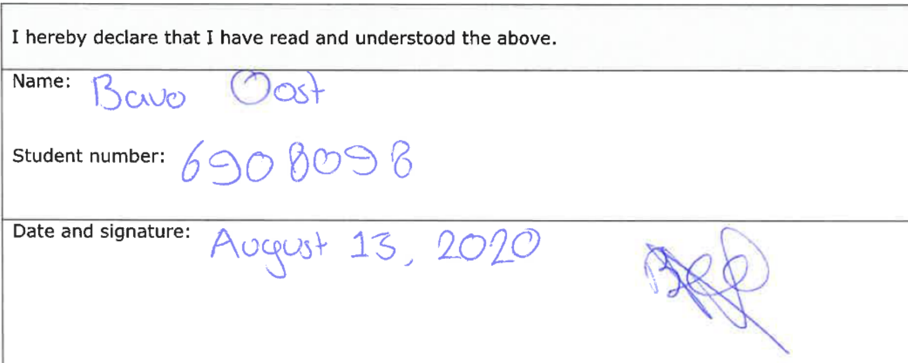

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