Food Security in a Warming World: The Role of a “Right to Food” in National Policy Responses

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EXECUTIVE SUMMARY

The ultimate purpose of this thesis is to improve knowledge of practices for countries to employ in support of food security under the conditions of climate change. Food security, as defined by the World Food Summit of 1996, is “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life.” It is usually broken down into four pillars: availability, accessibility, usage, and stability, which considered together are the foundation for people to be properly nourished. This four-pillar approach is central to the framework of this thesis, as it allows us to understand the different factors contributing to food security, and thus to analyze current policy for how well these policies may address the states’ problem areas under the conditions of climate change.

In order to accomplish this overarching goal, this thesis seeks to answer the following three questions: 1) How do current agricultural and climate change policies contribute to food security? 2) In what ways does a rights-based approach to food security help prepare countries for the fight against hunger under the conditions of climate change? and 3) What should these countries do to improve food security domestically both now and in the future? Answering these questions will be accomplished by analyzing four case studies: Bolivia, Kenya, Nepal, and Ukraine.

Agriculture lies at the heart of food security, contributing to each of the pillars for overall improved food security. Although agriculture is most commonly linked with availability, or the supply of food, it also contributes to access, or the economic and physical ability of people to procure food. The linkages between agricultural development and poverty alleviation are complex, but it is generally accepted that agricultural development significantly contributes to lifting people from poverty. To answer the second question, I depend heavily on historical, political, and geographical analysis to understand the country context. I investigate the 2008 food crisis, an international shock to food systems, to identify vulnerable populations and the strength of the case study countries’ food security response. I also apply the temperature and precipitation output data from a climate change model to key crops to determine potential effects of climate change on food security. I find that while every country studied is taking some action to mitigate or adapt to climate change and support food security through agricultural policy, there is no one-size-fits-all model. Results of the agricultural and climate change policies analysis supports the context-specific approach to formulating and evaluating policy.

In 1967, the International Covenant on Economic, Social and Cultural Rights (ICESCR) established an international legal framework to assure that everyone gets fed using the individual rights approach. Enshrining the right to food in international law is not enough to ensure the end of world hunger, however. States that are party to ICESCR have to take action to respect, protect, and fulfil the
right. In order to make the right justiciable in domestic courts so that individuals can bring suit when they feel their right to adequate food has been violated, states often integrate the right to food into their domestic legal systems. Each of the case study countries’ constitutions include a provision on the right to food. I find that the context in which the constitution was negotiated has a large impact on the strength of this constitutional provision, but that this does not translate into different approaches to food security at the level of agricultural or climate change policy. Based on jurisprudence from Kenya and Nepal, I posit that the right to food is more tractable in the courts when the case involves acute hunger and when there is clear evidence that the government has not done anything to prevent it. Furthermore, in preliminary results, I show that there are significant barriers to pursuing justice for the right to food, including through the Optional Protocol to the International Covenant on Economic, Social and Cultural Rights, which has the potential to allow individuals who feel their rights have been violated to seek help on the international level.

Finally, I offer some guidelines for ways to think about creating and assessing agricultural policy. If land rights are a flash point, there needs to be policy put into place that reflects understanding of historical inequalities. Policymakers, whether they be locally based or foreign consultants should be sensitive to the issue characteristics of any given problem, and try to understand its origin before putting policy into place. Taking into account who farms what, where, and how will help policies be responsive to farmers’ needs as well as to climate change. Determining who is vulnerable to food insecurity, and whether they face seasonal, chronic, or acute hunger will allow for better targeting of these groups. Social safety nets and food and nutrition policies that improve access should be included alongside efforts to increase productivity. To minimize the effects of climate change on food security, early warning systems on natural disasters, agricultural research and extension services, as well as agricultural insurance can support both farmers and consumers.
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AA</td>
<td>Association Agreement</td>
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<tr>
<td>ADS</td>
<td>Agriculture Development Strategy (Nepal)</td>
</tr>
<tr>
<td>AfCFTA</td>
<td>African Continental Free Trade Area</td>
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<tr>
<td>AgGDP</td>
<td>Agricultural gross domestic product</td>
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<tr>
<td>AIDS</td>
<td>acquired immunodeficiency syndrome</td>
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<tr>
<td>ASAL</td>
<td>Arid- and semi-arid lands</td>
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<tr>
<td>ASDS</td>
<td>Agricultural Sector Development Strategy (Kenya)</td>
</tr>
<tr>
<td>C (°)</td>
<td>degrees Celsius</td>
</tr>
<tr>
<td>CA</td>
<td>Constituent Assembly (Nepal)</td>
</tr>
<tr>
<td>CAP</td>
<td>Common Agriculture Policy (of the European Union)</td>
</tr>
<tr>
<td>CCT</td>
<td>conditional cash transfer</td>
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<tr>
<td>CESCR</td>
<td>Committee on Economic, Social and Cultural Rights</td>
</tr>
<tr>
<td>CIA</td>
<td>Central Intelligence Agency (United States)</td>
</tr>
<tr>
<td>CIMMYT</td>
<td>International Maize and Wheat Improvement Center</td>
</tr>
<tr>
<td>CMIP5</td>
<td>Coupled Model Intercomparison Project Phase 5</td>
</tr>
<tr>
<td>CONAN</td>
<td>Consejo Nacional de Alimentación y Nutrición (Bolivia)</td>
</tr>
<tr>
<td>DCFTA</td>
<td>Deep and Comprehensive Free Trade Area (between Ukraine and the EU)</td>
</tr>
<tr>
<td>DSR</td>
<td>dry-seeded rice</td>
</tr>
<tr>
<td>EBRD</td>
<td>European Bank for Reconstruction and Development</td>
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<tr>
<td>EMAPA</td>
<td>Empresa de Apoyo a la Producción de Alimentos (Bolivia)</td>
</tr>
<tr>
<td>ESC</td>
<td>Economic, social and cultural</td>
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<td>EU</td>
<td>European Union</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>FDI</td>
<td>foreign direct investment</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>FNSP</td>
<td>Food and Nutrition Security Plan (Nepal)</td>
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<td>GATT</td>
<td>General Agreement on Tariffs and Trade</td>
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<tr>
<td>GC</td>
<td>General Comment</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic product</td>
</tr>
<tr>
<td>GESI</td>
<td>Gender equality and social and geographical inclusion (Nepal)</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographical information system</td>
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<tr>
<td>GMO</td>
<td>Genetically modified organism</td>
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<tr>
<td>ha</td>
<td>Hectare</td>
</tr>
<tr>
<td>ICCPR</td>
<td>ICCPR International Covenant on Civil and Political Rights</td>
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<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
</tr>
<tr>
<td>kg</td>
<td>Kilogram</td>
</tr>
<tr>
<td>LDC</td>
<td>Least Developed Countries</td>
</tr>
<tr>
<td>LEDS</td>
<td>Low Emission Development Strategy (Ukraine)</td>
</tr>
<tr>
<td>MAPF</td>
<td>Ministry of Agrarian Policy and Food (Ukraine)</td>
</tr>
<tr>
<td>masl</td>
<td>Meters above sea level</td>
</tr>
<tr>
<td>MDRyT</td>
<td>Ministerio de Desarrollo Rural y Tierras (Bolivia)</td>
</tr>
<tr>
<td>m</td>
<td>Meter</td>
</tr>
<tr>
<td>mm</td>
<td>Millimeter</td>
</tr>
<tr>
<td>NAPA</td>
<td>National Adaptation Programme of Action</td>
</tr>
<tr>
<td>NATO</td>
<td>North Atlantic Treaty Organization</td>
</tr>
<tr>
<td>NCCAP</td>
<td>National Climate Change Action Plan (Kenya)</td>
</tr>
<tr>
<td>NCPB</td>
<td>National Cereals and Produce Board (Kenya)</td>
</tr>
<tr>
<td>NeKSAP</td>
<td>Nepal Food Security Monitoring System</td>
</tr>
<tr>
<td>NFC</td>
<td>Nepal Food Corporation</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>NFNSP</td>
<td>National Food and Nutrition Security Policy (Kenya)</td>
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<tr>
<td>NGO</td>
<td>non-governmental organization</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OP-ICESCR</td>
<td>Optional Protocol to the International Covenant on Economic, Social and Cultural Rights</td>
</tr>
<tr>
<td>PAN</td>
<td>Política de Alimentación y Nutrición (Bolivia)</td>
</tr>
<tr>
<td>PMSC</td>
<td>Programa multisectorial desnutrición cero (Bolivia)</td>
</tr>
<tr>
<td>PPP</td>
<td>public-private partnership</td>
</tr>
<tr>
<td>PSDA</td>
<td>Plan del Sector Desarrollo Agropecuario 2014-2018 “Hacia el 2025” (Bolivia)</td>
</tr>
<tr>
<td>ReSAKSS</td>
<td>Regional Strategic Analysis and Knowledge Support System</td>
</tr>
<tr>
<td>SCS</td>
<td>Single and Comprehensive Strategy and Action Plan for Agriculture and Rural Development (Ukraine)</td>
</tr>
<tr>
<td>SDG</td>
<td>Sustainable Development Goals</td>
</tr>
<tr>
<td>SOE</td>
<td>State-owned enterprise</td>
</tr>
<tr>
<td>SPS</td>
<td>sanitary and phytosanitary</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<tr>
<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>USSR</td>
<td>Union of Soviet Socialist Republics (Soviet Union)</td>
</tr>
<tr>
<td>VAT</td>
<td>value-added tax</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
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<tr>
<td>WFP</td>
<td>World Food Programme</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>World Trade Organization</td>
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This project started not in spring 2018 but rather way back in 2002 when I first got chickens. I have been more or less obsessed with food since. I am thankful for the values that I have learned along the way: of food, of hard work, of kindness.
Alongside climate change, food insecurity is one of the top problems we are currently facing: after declining from 2005 to 2014, the number of undernourished people in the world increased to 821 million in 2017 (FAO et al. 2018). Each effects the other: agriculture significantly contributes to greenhouse gas emissions, while climate change jeopardizes agricultural production through changing climatic conditions. There are a number of tools that policymakers can use to lower these numbers, but they must be tailored to the country context and implemented properly. According to the World Food Summit in 1996: “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (World Food Summitt and Food and Agriculture Organization 1996). Food security can be described according to four pillars: availability, access, utilization, and stability. A.K. Sen began challenging the focus on food availability as the cause of famines, pointing to the “failure of exchange entitlements” as another concern in hunger prevention (Sen 1982, 1976). Accessibility is central to Sen’s ideas, such that it is not enough to have food present, but people must also have the physical, economical and socio-cultural means to access it (Simon 2012, 5–6). The utilization pillar dictates that food should be safe and nutritious; this is the pillar with which this thesis deals the least. Last, stability refers to the need for the other three conditions to be met year-round. Governments take different approaches to ensuring food security for the people. Wealthier countries have the resources to set up expansive safety nets, but do not always manifest the political will to make them a reality. In the United States, for example, approximately one in five children faces food insecurity (Harris 2013). In poorer countries, rural peoples rely on subsistence agriculture with few governmental supports and when a harvest fails, their lives are also on the line. Already-marginalized groups are particularly vulnerable to hunger around the world (Elsheikh and Barhoum 2013, 3–4). Food aid is often the first thing we think of when we think about fighting food insecurity, but it is often not the best choice to solve this complex problem. Instead, approaches that focus on key sectors-agriculture, health care, education, for example-and granting the right to food can be more effective at producing the desired results.

In the United States, we often boast of the rights we have and what we can do with them. In other parts of the world, however, people have not only the first generation negative rights enshrined in the
American Bill of Rights, but also constitutionally-enshrined economic, social and cultural rights (second generation), and even rights to things like development and peace (third generation rights) (Vasak 1977). Together, the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social, and Cultural Rights (ICESCR) form the legal bulwark against infringements of a variety of human rights. Indeed, the International Bill of Human Rights (1948) includes the Universal Declaration of Human Rights (1948), the ICCPR (1976) and the ICESCR (1976). An artificial separation between these two groups of rights led to ESC rights being “rights of conduct,” whereas civil and political rights were “rights of outcome,” which has allowed states more leeway in addressing economic and social rights issues; however, over time these barriers have blurred (Ishay 2008, 223–24; Rosga and Satterthwaie 2009, 64–65). Some states have ratified all of these treaties, while other have ratified none. Though less discussed than other human rights, the right to adequate food stands out as particularly important because of its connection to other rights, particularly health (Committee on Economic, Social and Cultural Rights 1999, 12). Children are not able to concentrate in school if they are hungry, and adults lead less healthy and productive lives when they are not fed (Wehler and And Others 1995; Olson 1999; Brown and Pollitt 1996). Even in ancient agrarian states, rulers recognized the importance of food security to political stability and economic prosperity (Spitz 1985, 308). Because right to adequate food is a human right codified in international law, states that have ratified human rights treaties have obligations to respect, protect, and fulfill the right to adequate food.

RESEARCH AIMS AND QUESTIONS

This thesis hopes to fill gaps in the literature about the right to food and agricultural policies’ roles in supporting food security under the conditions of climate change; its analytical basis will be composed of case studies of four different countries. While both policymakers and scholars have contributed to understanding what the right to food looks like and ways to implement it, there is little comparative or case study-based research to determine the ways that the right to food plays out on the ground. Delving into sectoral policy illuminates a way that less sexy instruments contribute significantly to food security around the world. The research methods used here, which rely much more on historical texts and subjective analysis than econometric models or other quantitative methods, seek to show that only with an understanding of the local context can we hope to create policy to solve people’s pressing problems.

The overarching question that this thesis seeks to answer is: what lessons can we learn from these case studies about effective ways to fight hunger under the conditions of climate change? This question can be further broken down into three questions: 1. How do current agricultural and climate change policies contribute to food security? 2. In what ways does a rights-based approach to food security help prepare countries for the fight against hunger under the conditions of climate change? What should these
countries do to improve food security domestically both now and in the future? To find answers, I will look at four case studies, Bolivia, Kenya, Nepal, and Ukraine, in their historical, political, and economic context, read policy documents and legal statutes on the right to food, study critical crops, and view climate change data. In this chapter, I set the stage for my thesis research by presenting current literature and important concepts that will come up as I answer these questions.

**Question 1:** How do current agricultural and climate change policies contribute to food security?

There are three ways that international right to food law can—and should—be integrated into national policy: through constitutional articles, framework laws, and sectoral policy (Bultrini et al. 2009, 3-4). Sectoral policy refers to the bundle of laws and regulations of a specific economic area; it is the least studied way that right to food law becomes integrated into national policy (Knuth and Vidar 2011, 1). As a result, studying sectoral policy will fill important gaps in the literature. Specifically, I will investigate the implementation mechanisms of agricultural policy via sectoral plans for the agricultural sector. The advantage to analyzing sectoral plans is that rather than looking at laws on a specific topic (e.g. water use), they allow us to see how the government envisions all of the agricultural production factors working together and thus will give us a better picture of the reality on the ground. I focus on the agricultural sector rather than on education (or any other related sector) is because of the strong linkages between agricultural production and food access via poverty alleviation as well as food availability (Irz et al. 2001, 462). While the education sector can contribute to the usage pillar of food security, it does not have the same cross-cutting influence that agricultural policy does. Similarly, evaluating climate change policy is an essential step because of the potential impacts of climate change both on agriculture in specific and food security in general (Howden et al. 2007, 19691; Schmidhuber and Tubiello 2007).

In order to answer the question of how the case study countries’ current policies effect agricultural production and food security, I must decide what elements agricultural and climate change policies need to address to support food security. In each of the first four sections that make up Part I of this thesis on national context, agricultural context, the 2008 crisis, and climate change context, I will gain the information and criteria with which I will analyze the agricultural and climate change policies. I base this approach on the assumption that context matters when writing policy, that there is no one-size-fits-all template that can be used to assure food security. The importance of taking into account context in evaluating environmental policy (Mickwitz 2003) and improving peacemaking (Autesserre 2014) shows that there is support in the literature for this method, and it may be applied to agricultural policy and food security, despite a tendency to promote the use of indicators and more quantitative approaches to these areas (Josling and Valdés 2004). This thesis will ultimately uphold the value of understanding context in
agricultural and climate change policy to support food security. In the following, I describe the components of and reasoning behind each of these four elements that will be included in Part I, as well as my research methods.

**National Context**
To begin each of my case studies, I will explore the recent history of the country, as well as the geopolitical and socioeconomic situation. This background information is vital for a complete picture of the country context; to illustrate this point, I will draw the reader’s attention to several of these elements and explain their importance. First, policy that does not take into account past or current minority-majority group tensions could exacerbate the problem and create violence, similar to that which occurred in Kenya in 2007-2008 (Kanyinga 2009). Second, agricultural policy must be attentive to the structure of land holdings in order to provide support to those who need it most: support for smallholder rice farmers in the United States is an extreme example but nevertheless illuminates the necessity for such information. Third, agricultural policies should be responsive to geographic conditions, especially in countries with big variation. Agronomy research has not always been attentive to geographic factors, yet these can largely determine where and what time of crops can be grown (White, Corbett, and Dobermann 2002). Fourth, trends in economic and population change can raise alarm bells about potential future problems or help assuage fears. Information that will be included in this section includes the formation of the state, the political situation through today, the economy and historical changes, and a general outlook based on current statistics on hunger and the economy. Because of the large number of issues facing societies, I will identify three that I consider the largest and most relevant to food security to use to analyze the policies. The first element of my case study will therefore rely on secondary sources, mainly historical accounts and geography primers. I will also reference databases from the World Bank and the Food and Agriculture Organization to understand trends in hunger and poverty.

**Agricultural Context**
In addition to the general background explored in the previous section, there are elements specific to the agricultural sector that should be accounted for when evaluating agricultural policy and climate change policy. To understand the conditions in which the agricultural policy went into effect and the specific problems facing agricultural producers, I will profile the agricultural sector in each country. The essential points covered in this section pertain to Who? What? Where? And How? That is, who grows what types of crops, where, and how do they grow them. Looking ahead at some of the differences on these four counts between the case study countries will help explain the importance of these factors.

Starting with the who, we turn to Bolivia and Ukraine. In Bolivia, around 200,000 smallholder farmers produce most of their top consumer crop, potatoes; in Ukraine, large agriholdings, many of them
still partially state-owned, dominate agricultural production across the board. Moving to the what, we look at Ukraine and Kenya. Ukraine tends to dominate in cereal production and oilseed worldwide. Kenya grows some cereals, but is a net importer of them; its main export crop is tea. The where also matters: in Kenya, tea is grown in the wetter areas around Lake Victoria, while in Nepal, cardamom is grown in the hills. Finally, the how: those doing terrace farming in the hills of Nepal lack even basic mechanization, while soybean production in Bolivia is better mechanized. What the answers to these questions allow policymakers to do is to target their interventions at the groups that need the support the most.

In order to answer these questions, this section of each case study will entail an investigation of production efficiency, the structure of holdings, export items, and other characteristics of the agricultural system. Using both secondary profiles of the agricultural system as well as data from the Food and Agriculture Organization and World Bank, I will identify the key challenges facing the agricultural system at large to analyze the agricultural and climate change policies.

**The 2008 Food Crisis: Causes, Consequences, and Policy Responses**

In order to focus on the country-specific context in the case studies, in this section I will explain the global context and causes of the 2008 crisis. Here, this crisis will be explained in order help readers understand why the 2008 crisis is a useful reference point and an event from which it is crucial to draw lessons. The 2008 food crisis served as a wake-up call to flaws in both the global food landscape as well as individual countries’ capacities to prepare for and respond to shocks, as well as weaknesses in fulfilling the international right to adequate food. Although climate change presents a new type and scale of challenge for countries to feed their populations, this is not the first time that they have dealt with potential disruptions and changes in their food systems. Indeed, when approaching the 2008 food crisis, scholars looked to the 1972-1974 crisis to understand trends and prepare for the future (Headey and Fan 2010, vol. 165, chap. 4). Through drawing on the past, I hope to make connections and learn lessons to prescribe solutions for the future. To understand how well countries are prepared to meet the challenges of climate change, I will investigate the effects of the 2008 crisis on the country, and the country’s immediate response. Specifically, I will determine the principle factors causing the domestic crisis, the relation between the international and domestic crises, areas impacted, and the groups that were most affected. These last two pieces of information will allow me to analyze the policies in place to determine whether they are targeting the appropriate populations. In addition, information from this section will

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1 While some researchers have warned about the potential for the occurrence of more frequent extreme weather events with climate change, and this trend’s negative impact on food security, the science has not reached a definite conclusion on the effects of climate change on extreme weather events (Rosenzweig et al. 2001, 91–93; Stott et al. 2016, 37).
facilitate policy recommendations on what the country should do should similar situations happen in the future.

In 2007 and 2008, food prices around the globe shot up in a matter of months: from 2005 to 2008, there was an 83% increase in global average food prices (Christiaensen 2009, 1). In 2009, the FAO estimated that there were 1.02 billion people undernourished; before the crisis, from 2004 to 2006, these numbers were closer to 850 million people (FAO 2009). The 2008 food crisis had profound immediate and long-effects on the global food landscape, but particularly hurt the world’s urban poor (Bezemer and Headey 2008). While the numbers vary between studies, there is a general agreement among scholars that the food crisis created more poverty, particularly in Least Developed Countries (LDCs) (Headey and Fan 2010, 165:74–75).

Food price hikes do not cause harm equally between or within societies. In poorer countries, households can spend up to 80 percent of their budget on food (UNCTAD 2008, 82). When food prices increase dramatically in a short period of time, households do not have room in their budgets to react quickly. Urban households without their own production of foodstuffs (about 60 percent of urban dwellers in developing countries) and that rely completely on the market are at risk when real wages do not rise in tandem with food costs (Cohen and Garrett 2009, 6, 8–9). Although some farmers might benefit from high prices, most smallholders are net food buyers so they are also hit by high food prices. Because they lack bargaining power, they often cannot reap the full benefits of higher prices either (Rapsomanikis 2015, 26; Spitz 1985, 312).

Because of its global scope of the crisis, the triple economic, fuel, and food threats, and increased integration of developing countries into the global economy, this crisis was particularly devastating, distinguishing it from other periods of food insecurity (FAO 2009, 9–10). Determining the exact causes of a global crisis and is tied with many other changing variables is difficult. Using different economic models, teams of researchers came to different conclusions on how much of the price increase could be explained by a given factor, or even if a factor contributed to the crisis at all. Attribution is further complicated by how different researchers define food. For example, Ng and Aksoy use two separate definitions: one that includes meats, dairy, grains, fruits, and vegetables, and the other that includes coffee, nuts, and agricultural raw materials (Ng and Aksoy 2008b, 3). Konandreas, on the other hand, focuses on his own selection of 17 agricultural products to create his analysis (Konandreas 2012, 10). In the systems-level analysis that is necessary to undertake for problems like the 2008 food crisis, however, results from different methods are important to understand the multitude of explanations and interwoven threads of causality. The most-frequently cited causes of the crisis are summarized in the table below.
Table 1.1. Evidence for the primary drivers of the 2008 global food crisis.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Supporting evidence</th>
</tr>
</thead>
</table>
| **Biofuels**                    | • Correlations between biofuels and related commodities before and during the food crisis: A taxonomy perspective (2012). Kristoufek, Janda, and Zilberman.  
• A Note on Rising Food Prices (2008). Mitchell.                                                             |
| **Low grain stocks**            | • Soaring Food Prices: Facts, Perspectives, Impacts, and Actions Required (2008). Food and Agriculture Organization of the United Nations.  
| **Speculation**                 | • Commodities Market Speculation: The Risk to Food Security and Agriculture (2008). IATP’s Trade and Global Governance program with Steve Suppan.  
| **Oil and chemical input price increases** | • Long-Term Drivers of Food Prices (2013). Baffes and Dennis.                                                

In addition to these factors, several studies have indicated that other influences contributed to the food crisis. Some scholars have posited that changing demand for animal products from industrializing countries contributed to the price spikes (Popkin and Du 2003; FAO 2008; Trostle 2010, 12). Weather, too, may have impacted production as droughts occurred in the major exporting countries of Russia, Ukraine, Australia, and South Africa, yet decreases in production from these countries was largely compensated for by surpluses in others (Mitchell 2008, 13). Food export restrictions have been deemed both a primary cause and an exacerbating action (Shama 2011, 10–13; Paarlberg 2010, 23–24).

States took different actions on agricultural trade during and immediately after the price spikes. The two dominate trade-based policy responses were to reduce taxes on cereals and create subsidies for consumers. About a quarter of states surveyed by the FAO also implemented export restrictions. Most states did take some action to help mitigate the impacts of the high food prices on their populations, to varying degrees of success. The two regions where governments were the least active were also home to some of the most vulnerable groups: in Africa and Latin America (FAO 2008, 41–42). McMichael
chronicles food riots and other responses to high prices throughout history, as food prices have frequently been the source of much political unrest, giving states another incentive to stabilize food prices (2009). In the long run, however, these trade-based actions actually exacerbated the problem at hand and slowed recovery (Mitra and Josling 2009, 11).

Since 2008, the international community has taken few additional steps to prevent food crises. One way to create market stability is through negotiations on which trade measures states can implement in order to restrict the use of tools that might exacerbate price spikes. As many states imposed export restrictions when food prices began to rise which further increased prices, experts have pointed to the global trade arena as the level at which the most effective preventative measures may be taken (Shama 2011, 6). Conventionally, the World Trade Organization is where such negotiations would occur.

Commonly referred to as the WTO, this multilateral trade group serves as the platform wherein member states decide on the conditions of multilateral trade. Starting in 2001, WTO members began negotiations on a sensitive topic: trade in agricultural products. This ministerial-level series of trade negotiations aimed to lower trade barriers, which in the context of agriculture specifically dealt with eliminating subsidies (World Trade Organization n.d.). Recalling the contribution of subsidies to biofuel prices in the 2008 food crisis, it becomes evident that this is an area in which addressing market distortions might help stabilize world prices. Rather than accelerating the negotiations following the food crisis, wider dissent grew between member countries, stalling the discussion. There has been no movement on Doha negotiations since 2016 (Elliott 2018).

Responses immediately following the crisis and in the ten years since have done little to change global food architecture. While the 2008 crisis was an exceptional event because of its scale and scope, with changes in climatic conditions, more shocks to the system may be expected. Understanding the tools that these countries used during the food crisis and their current legislative state will illuminate the ways in that agricultural and climate change policy can prevent crises like that in 2008. Research methods for this section will include reviewing secondary sources, reports from both the respective governments, international organizations, and NGOs, news reports, and statistics.

Climate Change Context
Many countries or municipalities have begun preparing for impacts of the conditions of climate change on agriculture. The case study countries have begun implementing their own laws on climate change: for example, Kenya signed a framework law to address climate change in 2016 (Parliament of Kenya 2016). As climate change may have differential effects on different crops, I will choose two key crops rather than attempting to generalize to the whole sector. The main export crop will be analyzed because of its large impact on AgGDP and the agricultural economy. I am also using this crop to measure how access (based primarily on economic ability to get food) might change. The second crop, the major food crop consumed
domestically, will relate more closely to availability of food under the food security framework. Together, these two crops will provide for a glimpse into the effects of changes in production on food security. I will follow a similar pattern to the who grows what, where and how four-part question used above in order to determine challenges to production and specific growing requirements.

In order to investigate the projected impact of climate change upon food security in each case study, data outputs from the Coupled Model Intercomparison Project Phase 5 (CMIP5) will be used. CMIP5 is a global collaborative model of the effects of climate change around the world. CMIP5 assumes business as usual CO₂ emissions, population growth, and low adaptation causing radiative forcing, or increased energy absorbed by the earth, of 8.5 Watts per m² by 2100 (Riahi et al. 2011). Using CMIP5’s viewer, I will obtain the model ensemble mean projection for precipitation and temperature for each case study country. I will use information from crop guides to determine the boundaries for production, as well as water and temperature requirements throughout the growing season. Comparing the crops’ needs with the climate projections, I will determine the potential impact on the production of each crop. Because I will not be downscaling the data to fit with the specific areas that the main two study crops are grown due to time constraints, I will instead perform back of the envelope calculations to adjust temperature outputs for crops grown significantly higher or lower than the country’s average elevation, specifically in Bolivia and Nepal. Thus, in the section on climate change I will use both data from CMIP5 as well as qualitative data about the crops themselves.

Armed with an understanding of the projected temperature and precipitation changes and the needs of crops, I will be able to determine the impacts on food security in the aggregate and also speak to potential changes in access and availability. For each case study country, I will determine which, if any, policy measures countries have taken vis-à-vis climate change in support of food security. I will look at constitutional provisions, adaptation plans, climate change law, as well agricultural sector policy itself. I will determine the strengths and weaknesses of the climate change policy in relation to specific challenges to the two main crops as well as to the sector at large from the previous section.

**Agricultural and Climate Change Policy Analyses**

Finally, in Part II in the sections on agricultural and climate change policies, I will use the information and factors that I have determined to be most important to food security from Part I in order to analyze the case study countries’ current agricultural and climate change policies. I will do a close reading of the relevant documents, and offer commentary on their strengths and weaknesses. In order to analyze the policy, I will use the information on challenges to the sector, vulnerable areas and groups, and climate change impacts to assess the strengths and weaknesses of the policy. In this section, I will answer part of the second question on agricultural and climate change policy. The thrust of the analytical work in this
thesis will take place in two sections of Part II, in the section on the right to food framework, as well as in the conclusion.

**QUESTION 2: IN WHAT WAYS DOES A RIGHTS-BASED APPROACH TO FOOD SECURITY HELP PREPARE COUNTRIES FOR THE FIGHT AGAINST HUNGER UNDER THE CONDITIONS OF CLIMATE CHANGE?**

I start this section by outlining the importance of the right to food, before explaining its origin. The right to food is significant: a rights-based approach allows people to think of the problem they are experiencing (lack of food for whatever reason) as a violation of their rights, allowing them to challenge the “policies and structures behind violations” (Jochnick 1999, 60). By acknowledging that hunger is not a personal failure or problem but instead a violation, people can use legal systems to seek recourse or support when they are harmed (McClain-Nhlapo 2004). Using a rights-based approach allows us to take into account the numerous factors and complexities behind hunger, instead of focusing on the individual responsibility of those experiencing it.

Article 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) codifies the right to adequate food in the most all-encompassing way under international law. Champions of a universal human to food rely on this Article to urge states to include right to food law in their national legislations. The Article reads:

“1. The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international co-operation based on free consent.

2. The States Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programmes, which are needed:

(a) To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources;

(b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.”

Simply having the right to food codified in international law unfortunately is not enough to cause states to take action on this issue. The superior coercive powers, other states or the Committee on Economic, Social and Cultural Rights provide weak enforcement for economic, social and cultural rights like the
right to adequate food on the international level. Non-governmental organizations (NGO) can also contribute to enforcing the right to food by use the “name and shame” method to try to get states to change their behavior by exposing what actors are doing to an angry public (Roth 2004b, 67). This method relies on information gathering, framing of the issue, and leveraging connections to get states to stop or start doing something (Keck and Sikkink 1998; Roth 2004a).

The primary way that the right to food can become justiciable is thus the integration of international law into domestic legal systems; individuals and companies can then file complaints in domestic courts. Some states integrate ICESCR into their national legislation directly, taking a monist approach, and others integrate it into their domestic legal systems before it can apply under the dualist system; many fall somewhere in between (Kadelbach 1999, 66). While Bolivia, Kenya, and Ukraine are closer to the monist end of the spectrum, Nepal has not stipulated international law’s status in relation to domestic law.

Those who believe their right to food has been violated and who are not able to get justice domestically can look internationally for help. ICESCR does not have a complaint mechanism, but its Optional Protocol, formally adopted by the UN General Assembly during the food crisis in December 2008, establishes an individual complaint mechanism, a state-initiated complaint mechanism, and an inquiry mechanism. States must become party to the OP-ICESCR in order for its people to use it; as only 45 states have signed the agreement, which entered into force in 2013, its broad usefulness is compromised. Although the Optional Protocol represents an important step toward supporting human rights, it falls short in its goals due to geopolitical constraints as many states are wary of giving direct power over their domestic legislation to international bodies; the United States in particular has slowed much of the international progress towards fulfilling the right to food (Shaw 2007). Despite some practical challenges to enforcing international human rights law, painting human rights as something that states have the “moral duty” to protect supports the realization of these rights (Cronin-Furman 2010, 188).

One of the ways that governments have skirted taking action on the right to food is through the vagueness of obligations under ICESCR. A push to clarify states precise obligations under the ICESCR Article 11 began after the 1996 World Food Summit. At this event, states asked the Committee on Economic, Social and Cultural Rights, the body of independent experts that monitors the implementation of the ICESCR, for guidance on what exactly they had to do to “take appropriate steps” to “progressively realize” the right to food under ICESCR (Committee on Economic, Social and Cultural Rights 1999, 1).

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2 There have also been several moves to expand the number of actors with responsibilities from states to include individuals and corporations, see Cronin-Furman, 2010 and Jochnick, 1999 for a longer discussion of this issue.
While the Summit itself was tense, the Rome Declaration and the World Food Summit Plan of Action were negotiated beforehand and approved upon arrival (FAO 1996; Shaw 2007, 347–55). In the documents, the leaders acknowledge food security as a multifaceted issue requiring work at all levels, and reaffirm the right to food (Food and Agriculture Organization 1996). The food security paradigm as we know it today is largely a product of this Summit, wherein a host of different actors work on all four pillars of food security.

Not only was this summit monumental for food security in general, but it also helped propel economic, social and cultural rights onto par with civil and political rights. In 1999, the Committee on Economic, Social and Cultural rights published General Comment 12 that offered clarification on this subject. The General Comment (GC) defines the right to adequate food as “The availability of food in a quantity and quality sufficient to satisfy the dietary needs of individuals, free from adverse substances, and acceptable within a given culture; The accessibility of such food in ways that are sustainable and that do not interfere with the enjoyment of other human rights,” harkening back both to the World Food Summit definition of food security with an added emphasis on sustainability and interconnectivity with other human rights (Committee on Economic, Social and Cultural Rights 1999, 3).

The specific obligations under the covenant, as clarified by GC 12, are to take steps to progressively achieve the full realization of the right to adequate food (United Nations 1976). Progressive realization, while giving states flexibility because of the realities of the difficulties of granting ESC rights, compels states to “move as expeditiously and effectively as possible” (Committee on Economic, Social and Cultural Rights 1990, pt. 9). They must take “deliberate, concrete, and targeted” steps to meet their obligations, which is not limited to only implementing legislation but rather includes other activities to advance the right (Committee on Economic, Social and Cultural Rights 1990, 1–2). Like other human rights treaties, ICESCR has three levels of obligations: the obligation to respect, to protect, and to fulfill. In this context, the obligation to respect means that states should not take any action that would prevent individuals from accessing adequate food; the obligation to protect means that states should take action to prevent other actors from interfering with the fulfillment of this right; the right to fulfill means that states should both facilitate the right to food by taking action and implementing policies to help people have access to food and by providing food when people cannot get it on their own (Committee on Economic, Social and Cultural Rights 1999, 4). Violations occur when a state’s actions or non-actions prevent people from having “minimum essential levels” of food (Committee on Economic, Social and Cultural Rights 1999, 4). These violations may be the result of the direct action of states or of actors that the state upon

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3 This standard was first applied to ICESCR in General Comment 3, and further affirmed to apply to the right to food in GC 12.
which the state does not enforce proper rules that would allow for the right to food to be achieved (Committee on Economic, Social and Cultural Rights 1999, 5, 1990, 3–4). States submit periodic reports on the measures that they have taken to achieve the right to adequate food, and indicators can be used to determine whether states have upheld their obligations.

Because much of the enforcement of international law depends upon states self-reporting what they have done and plan to do, states must create verifiable benchmarks such as framework laws so that third parties can check if they are following their obligations (Committee on Economic, Social and Cultural Rights 1999, 13–14). Framework laws refer to a broad set of rules, in this case relating to meeting the right to food. Aspects that General Comment 12 says should be in the law include intended collaboration with civil society and the private sector, recourse procedures, and national monitoring mechanisms (Committee on Economic, Social and Cultural Rights 1990, pts. 4–7). The General Comment is clear: while only states are party to the Covenant and have formal obligations, all members of society have responsibilities in the realization of the right to adequate food (Committee on Economic, Social and Cultural Rights 1999, 4).

This Article and GC 12 clearly articulate that everyone has the right to adequate food, and that states need to take measures both domestically and collaboratively to ensure that this right is met (Committee on Economic, Social and Cultural Rights 1999). Some legal scholars have suggested that the language in Article 2 of ICESCR as well as General Comment 12 create transboundary obligations, so that states must work together to ensure that their actions do not hurt the food security in other countries (Skogly and Gibney 2002, 790). International trade of foodstuffs, as the proceeding section on the 2008 crisis shows, can have extremely detrimental impacts on global food security because of unpredictability in prices and demand (Sarris, Conforti, and Prakash 2009, 2). Trade agreements can prevent states from taking restrictive measures that might negatively impact other countries’ peoples, and should be encouraged according to the ICESCR (United Nations 1976, pt. 11(2)b).

In this thesis, then, I will investigate if and how the right to food is justiciable in the case study countries, and also investigate the impact that the language in the constitution on the right to food has on sectoral policy. In answering my first question on right to food law’s influence on countries’ preparations for food security under climate change, then, I will look primarily at the legal situation, as well as any other legislation with the explicit goal of advancing the right to food. This step of the case studies will entail a deeper investigation of the right to food laws on the books in each country. I will explore the country’s constitutional provisions related to the right to food; through investigating the context in which the constitution was negotiated and the actors involved as well as the language itself, I will determine the reasons behind the specific formulation. I hope to determine if and how the ICESCR influenced the articles by comparing the language in the international treaty and the domestic constitutions. In looking at
the constitution, I will also see if any of the problems I identified in the background section have any legal solutions. Next, I will look at court cases and jurisprudence in each country to see if, and how, the right to food is justiciable in practice within domestic legal systems. If the country has a food and nutrition security strategy I will review it here, as well as analyzing briefly any relevant components of the country’s development strategy. This right to food section will include the first important analytical output of this thesis by answering the first question; thus, it is the first section in Part II of the case study chapters.

**QUESTION 3: WHAT SHOULD THESE COUNTRIES DO TO IMPROVE FOOD SECURITY DOMESTICALLY BOTH NOW AND IN THE FUTURE?**

I will answer this question in the conclusion of my thesis by drawing upon my investigation of the right to food framework and agricultural and climate change policies in each country. I will compare the four different case studies to each other, while also offering country-specific policy recommendations. Based on my analysis, I will also create some general guidelines to help policymakers and right to food advocates think about their work and do it more effectively.

**CASE STUDY SELECTION METHODOLOGY**

In order to answer questions about the right to food and sectoral policy and give policy recommendations to improve food security under changing climatic conditions, four case studies have been selected. As no country can represent the world or even the majority of situations, case study countries will act as the units of analysis. In the following paragraphs, I lay out the selection criteria that led to the selection of Bolivia, Kenya, Nepal, and Ukraine as the case study countries to be pursued, as well as the research supporting these choices.

First, presence of constitutional right to food law, whereby provisions on human rights become part of the “supreme law of the land,” was the first characteristic taken into account for this project (Vidar, Kim, and Cruz 2014, 2). This selection criterion was chosen to ensure that countries would have documentation for the completion of this project. Because of limitations on how many countries could be studied, it is impossible at this time to complete a comparative study between countries with and without constitutional provisions, making this an observational study. How countries integrate these rights into their constitution varies considerably by country, which means that even four countries with constitutional provisions can have diverse implementation. Bolivia, Kenya, and Nepal have direct and general

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4 Knuth and Vidar divide constitutional integration into four main categories: 1) “explicit and direct recognition of the right to food;” 2) “the right to food as implicit in a broader human right;” 3) “direct principles of state policy;” 4) “indirect recognition through interpretation of other human rights” (Knuth and Vidar 2011, 14–18).
constitutional provisions, yet in Bolivia and Nepal the right focuses on food sovereignty rather than security; Ukraine has a more general provision closer to ICESCR’s standard of living provision (Knuth and Vidar 2011, 35–36).

Second, the case study countries in this thesis have been chosen to represent a variety of distinct possibilities for adaptation. If a given country already faces land or water constraints on what they can grow, they will be less able to respond to climate change’s impact on their food system through expanding land under agricultural development. Fader et al. use climate data, soil texture, land use patterns, seasonal phenology, agricultural management and yields as well as hydrological variables to ascertain how a country might reach food independence (Fader et al. 2013, 2). The key limiting factors they identify are access to land and water, which for some countries can be counteracted with increased productivity or expansion of crop lands (Fader et al. 2013). According to Fader et al., Nepal requires a productivity increase to meet demands, it is not possible for Bolivia to meet demands with its land constraints, Kenya will require a productivity increase or expansion of crop area, and Ukraine has the possibility of meeting demand under current productivity and crop areas of 2000 (Fader et al. 2013). The usefulness of this study ends in selecting case study countries, however, because the authors’ scenarios do not include potential changes in production due to climate change, only due to demand and production changes.

Third, I have chosen to work with countries classified as having low or medium levels of development because of the importance of agriculture to developing countries’ economies. Subsistence farming typically accounts for a higher percentage of livelihoods in these countries than in industrialized countries, yet at the same time, there are fewer government supports for farmers (de Janvry and Sadoulet 2010). Thus, changes in agricultural production will directly affect the ability of families to stay on their land. Developing countries’ exports are dominated by raw materials, including agricultural goods, which put them at risk of market fluctuations (Jaffee 1992). While wealthier countries can adapt to climate change by importing food, poorer countries are less able to do this. If their trade balance further shifts into the red with fewer agricultural exports, importing foodstuffs in adequate amounts will prove an enormous hurdle. Finally, some developing countries are paradoxically most at risk due to the effects of climate change but are also less able to adapt to climate change. This is not to say that every developing country’s agriculture production will be adversely affected by climate change; indeed, Ukraine has already seen an upshot in production as temperatures moderate (Bindi and Olesen 2011). The Human Development Index rates Nepal as having low development, while the other three case studies have medium levels of development.

Fourth, the case study countries were also chosen because of two practicalities: their locations and the ability to access documentation. As where a country is located has a direct impact on its climate
and ability to import goods, as well as the geopolitical context, it is important that countries in this study come from different parts of the world. As such, Nepal is in Asia, Bolivia is in Latin America, Kenya is an African state, and Ukraine is in Eastern Europe. In addition, access to necessary sectoral plans and legislative documents can be difficult, particularly since the author does not speak the main languages in each of the case study countries. Each of the case study countries had the necessary documents available in accessible languages. To ensure that information on sensitive topics would be available, countries classified as “not free” in 2018 by Freedom House were excluded; all four case studies were in the category partly free (Freedom House 2018).

A number of countries were excluded from being case studies because they are oil exporters or they are small island states. Research by Ng and Aksoy has shown that each of these conditions has a large impact on a country’s ability to obtain and distribute food, particularly in a crisis (2008). Small island states have limited land on which to grow crops, and little money to import goods. As they have trade deficits in agricultural foods, they are less able to respond to food crises by importing goods, making them even more vulnerable (Ng and Aksoy 2008a, 448). Conflict itself can disrupt both agricultural production and trade of agricultural goods (for fascinating coverage of how this played out in the Ethiopia-Eritrea border dispute, see White 2005). In times of conflict, policy human rights can go to the wayside and holding perpetrators accountable becomes more difficult. Ukraine is a bit of an exception in this category: since 2014, it has been fighting a war against Russian-backed separatists in the Donetsk and Luhansky oblasts. The conflict has been going on in a simmering state for five years with no end in sight; as Ukraine is the only top grain exporter that is not a highly developed country or an unfree country, Ukraine was ultimately selected. While being a small island state or a state involved in a conflict negatively impacts countries’ ability to get food to its people, oil exports give countries a source of wealth from which to purchase food.

THESIS ORGANIZATION
This study will consist of four countries serving as case studies. Each case study—and thus each chapter—will be divided into two parts. The first part is devoted to an introduction to the background of the specific country, detailing in particular its specific geopolitical and socioeconomic context. This is followed by discussions of its agricultural context, its experience of the 2008 food crisis relating to causes, consequences, and responses, and climate change projections for key crops. The second part explores the right to food framework, the agricultural framework, and the climate change framework in the context of the background from Part I. The conclusion will tie these threads together and elucidate larger trends and guidelines. The challenges to our food system are great, but this thesis is based on the premise that there is concrete action that states and individuals can take to help alleviate suffering. I hope
that this thesis can serve as a first step in my life’s work of contributing to decrease food insecurity around the world.

**BIBLIOGRAPHY**


Committee on Economic, Social and Cultural Rights. 1990. “General Comment 3.” General Comments 3. UN.


Chapter 1: Bolivia

Bolivia presents a fascinating case study on the right to food because of its strong rights-based legal framework and policies. A new constitution in 2009 ushered in an era of rights related to the environment, land, food, and other second and third generation rights. Since Bolivia is a signatory to the Optional Protocol to the International Covenant on Economic, Social and Cultural Rights, investigating how Bolivia applies the right to food, and how it differs from non-signatory countries suggests policy recommendations around legislating for the right to food. Despite these legal frameworks Bolivia has the second-highest rate of undernourishment of the four case studies, and is tied with Kenya for the highest poverty levels. Bolivia is a landlocked and mountainous country, which creates challenges to agricultural production, distribution, and importation. As a lower-middle income country, Bolivia faces problems not only with producing enough food, but also with ensuring that citizens have economic access to food. The main food crop in Bolivia is the potato, and soybeans account for the largest share of agricultural exports. By investigating the national context, the agricultural context, the 2008 crisis, and climate change context in Part I, I will be able to analyze how Bolivia’s right to food framework, and agricultural and climate change policies respond to food security challenges in Part II.

Part I: Context

National Context

In order to understand how Bolivia is working towards food security-and what it should do to improve in the future-this first section introduces important foundation-laying information on the political, economic, geographical, and historical context of the country. Bolivia is a landlocked country on the western side of Latin America, sharing borders with Peru, Chile, Brazil, Argentina, and Paraguay. Bolivia’s Human
Chapter 2: Bolivia

Development Index has risen little since 2000, yet its poverty headcount ratio has been decreasing while its gross domestic product (GDP) has increased (United Nations Development Programme 2018; World Bank 2019). Its population of around 11 million in 2017 has been growing, following population trends in many lower- and middle-income countries, including Nepal and Kenya (Central Intelligence Agency 2018). Most population growth since the 1950s has occurred in urban areas, and Bolivia has also experienced geographical shifts in its population, as transportation allows more people to move into the lowlands (Food and Agriculture Organization n.d.; Hudson et al. 1991, 58, 86).

Geographically, the country is composed of three major zones: tropical lowlands in the east, valleys and yungas in the center, and altiplanos (high plateaus) and mountains, which includes the Andes occidental range, in the west (Klein 2011, 3). Despite the existence of better cropland in the eastern lowlands, Bolivia’s population was historically restricted from these areas because of how difficult they were to reach without modern roads (Klein 2011, 1–2). This trend has rapidly changed course in recent years, as soybean production in the Santa Cruz district has become the regional driver of growth in the country, with growth rates higher than that at a national level (Urioste 2012, 439). The yungas and valleys provide the most fertile agricultural land as well as good rainfall, yet a lack of infrastructure particularly in the northeast tempered the expansion of agriculture in the area (Hudson et al. 1991, 55). In the mountainous region, what little rainfall is received is concentrated in the north near Lake Titicaca (Hudson et al. 1991, 52). Lake Titicaca, the largest lake in South America, feeds the Desaguadero River which runs south; glacial melting in the warmer season also supplies water in this area (Hudson et al. 1991, 53–54). Water availability changes dramatically throughout the country: Lake Titicaca and northeast of La Paz, the capital city, have high amounts of rainfall and rivers, as does the upper lowlands. The south of the country is notably drier, especially in the mountainous and yungas areas (Hudson et al. 1991, 52, 55–56). Extreme weather events like El Niño also plague the country, and may become more frequent under the conditions of climate change (Trenberth and Hoar 1997).

Bolivia shares in the familiar South American story of colonial rule by the Spanish who treated those previously living in the Inca empire as slaves and destroyed existing social and governmental structures (Hudson et al. 1991, 60). Simón Bolívar Palacios led the fight for independence for what was then called Upper Peru and ousted Spanish forces in 1825; in 1826, the Peruvian assembly approved Upper Peru’s independence, creating the Republic of Bolivia (Hudson et al. 1991, 16–17). Over the course of the next century, Bolivia was forced to cede much of its original land to its neighbors, including its access to the sea, shrinking the country to its present size (Hudson et al. 1991, 24). After political

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5 The Human Development Index accounts for education, health, and living standards to create a composite and human-focused measure of development.
turmoil and economic distress in the 1940s and 1950s, the Revolutionary Nationalist Movement (MNR) seized La Paz in early 1952 and instituted a new government in what is now called the Bolivian National Revolution (Hudson et al. 1991, 35). Starting in 1964, Bolivia experienced just under two decades of instability caused by coups and countercoups, with civilian rule only firmly reappearing in 1982 (Central Intelligence Agency 2018).

Bolivia’s economy has gone through a series of changes, alternating between socialist policies and more liberal ones. After the Bolivian National Revolution, policies swung left, putting into place the Agrarian Reform Law and nationalizing tin mines (Hudson et al. 1991, 36). State income could not keep up with spending, particularly on the salaries of a growing public sector, causing the economy to plummet (Hudson et al. 1991, 101). Siles Zuazo, the president at the time, responded to the crisis by decreasing government spending and freezing wages to balance the budget in 1956 with help from the IMF (Hudson et al. 1991, 38, 104). The economy picked up steam in the early 1970s, experiencing fast growth thanks to high commodity prices and the discovery of oil (Hudson et al. 1991, 44, 104). In 1978, however, things changed course again when political instability and sharply declining public and private international funding prevented the government from being able to pay its debts (Hudson et al. 1991, 101).

By 1983, Bolivia’s foreign debt had reached $3 billion, which made up 80 percent of the total GDP (Klein 2011, 241). The government printed more money as a solution to the spiraling debt, leading to exorbitant levels of inflation: by 1985, inflation reached over 24,000 percent (Klein 2011, 241; Hudson et al. 1991, 105). The president at the time, Paz Estenssoro, undertook an “orthodox shock” program through the New Economic Plan of 1985 (Klein 2011, 244). Orthodox shock programs consist of applying Washington Consensus measures to countries facing severe economic problems. In one ambitious decree (Decree 21060, 29 August 1985), Paz Estenssoro began this liberalizing program by devaluing the currency, establishing uniform interest rates, eliminating price and wage controls, and decreasing government expenditures. He further disassembled the state bureaucracy and reduced the power of organized labor in subsequent decrees (Klein 2011, 245).

While the achievements of this program “in terms of macroeconomic stability and structural reforms are beyond doubt,” the social impact of the program is less clearly positive (Thiele 2003, 199). Reviewing changes following the adjustment program in the Gini index, which measures inequality from 0 (perfect equality) to 1 (perfect inequality) reveals that inequality likely remained between 0.55 and 0.6 through 1997, indicating persistent high inequality (Thiele 2003, 303–4). 21.5 percent of the population

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6 The Washington Consensus is a set of ten policy measures that induce economic liberalization; the name comes from the location of the headquarters of the major financial institutions backing the reforms (the World Bank Group, the International Monetary Fund, etc.).
was unemployed in 1985 following extreme layoffs in the public sector and privatization (Hudson et al. 1991, 106). Using a non-monetary indicator of poverty called the unfulfilled basic needs index (NBI) showed that while urban poverty almost halved following structural adjustment, rural poverty remained stagnant (Thiele 2003, 306–7). As government spending on public goods like infrastructure decreased, support for development dwindled (Hudson et al. 1991, 107). Even health markers placed Bolivia significantly lower than other countries with similar GDP per capita levels (Thiele 2003, 308). Structural adjustment, then, may have had positive macroeconomic effects, but its successes were not evenly distributed throughout society: as of 2015, 71.5 percent of rural people continue to live in poverty (Colque, Urioste, and Jose Luis 2015, 16).

The 1989 and 1991 elections brought the mestizo, or those with both white and indigenous ancestors, into full power, showing a distinct social shift that placed mestizos at the top of the power structure, but that also included indigenous groups in the coalition. The president, Gonzalo Sánchez de Lozada, continued many of the liberalizing policies started in the 1980s, including privatizing state-owned enterprises (SOE) (Pearce 2011, 56). At the same time, de Lozada also took measures to include peasants and indigenous groups, protecting communal property rights for indigenous communities and decentralizing power to municipal governments largely made up of indigenous representatives (Pearce 2011, 57–58). This new political power invigorated indigenous voters, who turned out in great numbers to vote for the Movement Towards Socialism (MAS) party in 2002 (Klein 2011, 261, 279). In 2005, after de Lozada’s resignation due to a number of protests and strikes over the construction of a natural gas pipeline, the country elected Bolivia’s first fully indigenous president, Evo Morales (Pearce 2011, 60). In 2009, a new constitution was approved, making Bolivia into a plurinational democratic state, with four independent branches of government and nine highly independent regional departments.

Under the Morales administration, the state made a re-entrance into economic and political affairs, reversing the post-1980s trend of state withdrawal, and perhaps suggesting that the country may be moving towards a “socialist-communitarian” economy (Pearce 2011, 115). Education became a top priority, with education spending making up eight percent of GDP (Klein 2011, 277). The leftist government, backed by a new progressive constitution, has made considerable strides in supporting the indigenous population, although indigenous people remain more impoverished as compared to their non-indigenous counterparts (Gigler 2009, 9). Morales, who in 2019 continues to act as president, has had his share of scandals, including mass protests over a proposed road in 2011 and a run for president in 2018 that, although approved by the Supreme Electoral Court, protesters say violates the constitution (Quiroga 2011; Casey 2018).

In this next section, I will explore the macro-level issues at play, as problems in society at large have bearing upon food security and food policy. In Bolivia, there is a distinct divide between indigenous
and non-indigenous groups, with the former being generally better off in measures of health and wealth. Land rights and reform, although a topic of policymaker concern since independence, have not materialized in ways that ensure either private property or communal use. Because of difficult geographical conditions and lack of access to waterways or the sea, infrastructure is needed to ensure that people and goods can travel around the country, yet transportation networks are severely lacking.

The population can be roughly divided into whites, mestizo people, and indigenous groups, which can themselves be further divided into minority communities (Hudson et al. 1991, 61). Mestizo people form the largest portion of society, at about 68 percent (Central Intelligence Agency 2018). Wealth and language also divide the groups, as indigenous communities tend to speak their own languages, although many people are bilingual speakers of Spanish (Hudson et al. 1991, 63, 65). While indigenous poverty has decreased, a wage gap in rural areas between indigenous and non-indigenous people remains (World Bank 2015, 8). Indigenous households are also 11 percent more likely to be poor than other groups, and rural-dwelling indigenous communities experience even higher rates of poverty (World Bank 2015, 9). While there has not been the same type of violence between majority-minority groups in Bolivia as there has in Kenya, indigenous peoples have still faced discrimination and marginalization. Indigenous people gained the vote in 1952 after the Bolivian National Revolution when literacy requirements were repealed, over a century after Bolivia’s independence (Pearce 2011, 27). Although explicit legal discrimination was eliminated in the 1960s, Bolivia continues to struggle with other mechanisms of exclusion that disenfranchised the poor and indigenous groups (Schilling-Vacaflor 2011, 5–6). Indigenous people are more likely to be undernourished than their non-indigenous counterparts, pointing toward a group that should receive special attention under any food and nutrition security-related intervention (Larrea and Freire 2002, 359).

Issues related to who owns land and in what quantities continue to plague Bolivia. Despite post-independence legislation to remedy land inequalities, large haciendas remained in the hands of the few: in 1950, estates with 1,000 or more hectares of land held 92 percent of arable land (Hudson et al. 1991, 35). Reforms undertaken in the 1950s after the 1952 revolution, including the Agrarian Reform Law of 1953, also took up the issue of land rights to varying degrees of success: in the western part of the country, peasant groups were stronger and so reforms were implemented more effectively, but in the lowlands to the east, the status quo remained (Hudson et al. 1991, 70–71). While they did not increase production by large margins, they did help the rural poor by giving them security and the means to produce their own food (Hudson et al. 1991, 118). The land reforms also ended indentured servitude, which allowed the poor to move throughout the country (Pearce 2011, 31). Despite land redistribution through acreage restrictions initiated in 2006 with Law 3501, land grabbing poses a significant threat to smallholders (Ormachea Saavedra 2009, 35). Brazilian and Argentinian investors make up the biggest portion of foreign land
holders, although they often lack official titles (Urioste 2012, 442–52). Despite this, those living in Santa Cruz commonly identify migrants from the Andes as the opposition group, which prevents residents from organizing against foreign land grabs (Urioste 2012, 450).

Lack of adequate infrastructure prevents people and goods from traveling around and outside of Bolivia. Ranked number 131 on the World Bank’s Logistic Performance Index, Bolivia is the case study country with the poorest infrastructure (World Bank 2018a). The National Road Service began increasing road construction in 1964, although many of these roads are deteriorating and dangerous (Hudson et al. 1991, 145). In recent years, Bolivia has invested about 4 percent of its GDP in infrastructure, while receiving little in terms of private investment (Serebrisky et al. 2015, 9, 11). Despite these investments, which are high for the Latin America and the Caribbean region, infrastructure development in Bolivia continues to lag. Like Nepal, Bolivia lacks access to ports, making international trade more difficult. Unlike Nepal, however, Bolivia does not have a single country exerting control over its access to the sea, allowing it more opportunities to trade with all of its neighbors. Because of constraints on production from lack of land and water resources, Bolivia must import foodstuffs to meet its population’s needs.

Bolivia is currently working towards adhesion to the regional trade integration and trade bloc called Mercosur; even without being included in the trade bloc, most of Bolivia’s trade is with Mercosur members (Simoes and Hidalgo 2011). This group includes Argentina, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, and Venezuela, (Brazil, Argentina, Paraguay, and Uruguay are full members with voting rights) which are all significant trading partners with Bolivia (Mercosur Secretariat n.d.). The association applies a common tariff to all goods entering the bloc, and allows citizens to freely travel within it. It also has a political dimension, suspending Paraguay in 2012 and Venezuela indefinitely in 2016 over authoritarian leanings (Felter and Renwick 2018). If Bolivia becomes a full member, as it has been in the process of doing since 2012, it will likely cause a change in supply and demand as Bolivia’s market access expands. Nevertheless, these hopes are tempered by a lack of transportation infrastructure that continue to make regional trade inefficient (Gligo 1996, 21–22). Thus, lack of infrastructure poses a challenge to trade and transportation, and isolates Bolivia from its neighbors.

I finish this background section by noting macro trends in poverty and food security. It is clear that the past 30 years have showed a marked improvement in living conditions for some of Bolivia’s population, yet there is more work left to do to meet SDG 2 on zero hunger. Undernourishment has fallen since 1999, although in the last five years both the prevalence and number of people undernourished has increased. Measures of food availability, including supply of animal protein and average value of food production have also leveled off in the last five years, indicating that Bolivia is facing a problem with food availability (Food and Agriculture Organization n.d.). GDP per capita has risen from $4,412 in 2000
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to $6,885 in 2017. One might be surprised to learn that Bolivia’s GDP per capita is the highest of the four case studies, surpassing the runner up Ukraine by about the same amount as Nepal’s GDP per capita ($849). Yet, the income inequality in Bolivia is high on international charts, and the highest in Latin America (Central Intelligence Agency 2018).\(^7\) The proportion of people living below the national poverty line has fallen from 63.1 percent in 2004 to 36.4 percent in 2017 (World Bank 2017). Taken together, these trends show that while poverty is declining and the economy is doing well, hunger has, and continues, to increase due to decreases in food availability. Because of this situation, it becomes clear that there must be issues with availability, stability, and usage beyond just accessibility.

**Agricultural Context**

Moving from macro-level societal issues to focus on agriculture, in this section I explain agriculture’s history and setting to understand constraints and challenges in the sector and to better assess current policies and make recommendations for improvement. Agriculture in Bolivia has been deeply entwined with political movements and economic issues. After the Bolivian National Revolution, for example, a decline in agricultural production by peasant farms contributed to an economic crash (Hudson et al. 1991, 37). Even after the end of colonialism, white colonialists remained in control of the haciendas, their wealth allowing them to retain control over both the labor force and politics (Hudson et al. 1991, 61). Bolivia’s agricultural sector can be characterized by two different systems of agriculture: larger scale operations growing cash crops, and smallholders producing subsistence items. These two groups are also roughly split geographically: large farmers generally control the lowlands, while smaller subsistence farmers live in the **yungas** and highland areas (Hudson et al. 1991, 115). In Bolivia, the average size of land that smallholders cultivate was 0.89 ha in 2005 (Rapsomanikis 2015, 5). About 26 percent of people are employed in the agricultural sector, putting Bolivia just behind Ukraine (14 percent) for the lowest amount of sector livelihood participation among case study countries (World Bank and ILO 2018).

Because the Andes mountain range cuts across the country lengthwise, most agriculture is undertaken in the department of Santa Cruz in the east (Zapata-Caldas et al. 2009, 16). However, in most of the agriculture production from this region is for export: according to the vice minister of Santa Cruz, in 2013, 80 percent of production was for foreign consumption (Agencia Boliviana de Información 2013).

Agricultural policies starting in the 1950s incentivized diversification and industrialization in the sector, with strong support for smallholders in the agrarian reform package (Hudson et al. 1991, 101). Bolivia took an import-substitution approach to development, placing tariffs on imports and providing

\(^7\) Because the informal economy is an important contributor (only about a third of the population receives regular salaries) to incomes but is not usually accounted for in dominant measures of inequality, it is likely that these claims may be slightly exaggerated (Pearce 2011, 41, 54).
support to domestic producers until the 1980s. Under the IMF’s austerity program, however, trade was liberalized, and Bolivia worked to promote diversification in its agricultural exports (Hudson et al. 1991, 150). From 1990-1998 and following structural adjustment, public investment in agriculture fell from 0.48 percent of GDP to 0.27 percent of GDP (Thiele 2003, 315). Smallholders have been systematically excluded from many agricultural development initiatives, as investments in agriculture have been concentrated in the more profitable lowlands (McKay and Colque 2016; Hudson et al. 1991, 119; Ladman and Tinnermeier 1981, 69). After the economic crisis and adjustment program, the government stopped being involved in setting prices and producing and marketing key products, letting the market step in where it had previously asserted control (Hudson et al. 1991, 116). In the 2000s, the government again started participating more actively in the agriculture sector under Morales’ administration.

While Bolivia’s exports center around mining and the extraction of other natural resources, the country does produce foodstuffs both for export and for local consumption (Simoes and Hidalgo 2011). The connection between agriculture and mining had been even closer in areas like Potosí, where miners took up agricultural production on the side (Klein 2011, 52). Unlike the other case study countries with clearer food trade balances, Bolivia is a net food exporter if one only counts raw foods, but adding processed foods to the balance flips Bolivia into a net food importer (Ng and Aksoy 2008, 130, 136). Tin mining drove the economy and political system for much of the early 20th century, and accounted for as much as 40 percent of exports through 1980 (Hudson et al. 1991, 104). When the international tin market collapsed in 1985, agriculture made up a greater share of the GDP. In the 1990s, natural gas exports expanded with construction of new pipelines, making the two main export products natural gas and soybeans (Pearce 2011, 53). Agricultural exports, hindered by a lack of infrastructure, were (and remain) difficult, so most of the food produced was for the domestic market (Hudson et al. 1991, 113). In 2002, over 90 percent of agricultural production was consumed domestically (Berdegué et al. 2006, 6). In 2017, 14 percent of GDP came from the agricultural sector (Central Intelligence Agency 2018).

It is important to note that Bolivia is a producer of coca, the plant used to make cocaine. This illicit market flourished in the 1970s through the 1990s, particularly on small farms, but has since been in decline. During the country’s economic problems in the 80s, farmers turned to coca production for access to the US dollar, that did not have the same degree of hyperinflation problems as the peso (Hudson et al. 1991, 124–25). Under pressure from donors, the government began aggressively cracking down on production in 1983, although the crop remained legal in designated areas and for traditional use (Hudson et al. 1991, 125).\(^8\) Klein credits funds from this clandestine market with financially supporting the

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\(^8\) Indeed, component nine of the most recent agricultural development plan calls for supporting the production of coca.
agricultural production of other crops as well as supporting the economy throughout the structural adjustment period. However, it also negatively impacted the production of other crops, as farmers often switched to coca for higher profits (Klein 2011, 251; Hudson et al. 1991, 126; Pearce 2011, 51). Despite recent high levels of funding for agriculture (13 percent of GDP in 2008), there remain many challenges to agriculture in Bolivia. Farmers face high barriers to enter national and international markets, particularly due to poor rural infrastructure and lack of direct access to the sea. There is still a technological divide between the most rural population in the highlands, who are likely also to be potato subsistence farmers, and larger farms in the lowlands. Farmers also lack access to credit and banking options, so the ability to invest in mechanization and other inputs is low (Klein 2011, 284–85). Research and extension services to help farmers improve their methods and yields have been insufficient, limiting growth (Hudson et al. 1991, 113). Because of the soil composition in the highlands, land is subject to erosion (Klein 2011, 4). Irrigation is low, with only seven percent of land under cultivation equipped with irrigation systems, which makes agriculture especially difficult in arid lands in the southwest (FAO 2015, 9).

THE 2008 FOOD CRISIS IN BOLIVIA: CAUSES, CONSEQUENCES, AND POLICY RESPONSES

While thus far I have explored factors related to food availability and access, another pillar of food security is stability, or whether people have the food they need year-round. In order to investigate the food security pillar of stability, I will analyze the 2008 food crisis that destabilized the food security status quo in Bolivia. This crisis reveals several points: first, those who are most vulnerable to shocks; second, the government’s responses; and third, the key areas in which policy faltered.

Prior to the 2008 crisis, GDP and GDP per capita had been rising, likely increasing access to food. The biggest challenge to food security in Bolivia is lack of access, as incomes remain low, particularly for rural people (World Food Programme 2019). During the international food crisis of 2008, prices in Bolivia rose 49.3 percent from January 2006 to December 2008 (José Cuesta et al. 2010, 850). Households in Bolivia spend on average 61.4 percent of their daily income on food and cooking fuel (Melgar-Quinonez et al. 2006, 1434S). There have been big disparities in income between rural and urban areas, with those living in rural areas in the southern highlands receiving the lowest wages, and thus experiencing the lowest access to food (Hudson et al. 1991, 110; Gigler 2009, 6). The distribution of poverty mirrors the distribution of indigenous groups: “the poorest regions are the ones where most of the indigenous peoples live” (Gigler 2009, 9). Compared to the general population, in which the split is 70 percent to 30 percent urban to rural, just over 50 percent of indigenous people lived in rural areas in 2012 (World Bank 2015, 31). In rural areas, the gap between indigenous and non-indigenous wages is higher by four percent than that in urban areas (World Bank 2015, 11). In addition, regional disparities in access to social services has been occurring since at least the 1950s, with better services for those living in the
It is clear, then, that rural indigenous communities are those who are vulnerable to price increases because of their low wages and poverty. When international prices rose, those who purchase food from the market, both urban and rural dwellers, experienced the effect of lowered purchasing power (José Cuesta et al. 2010, 849). As about 30 percent of smallholders are net food buyers who would have had to purchase more food when potato production fell, high international prices were not limited to urban areas (Organization 2008, 76). Ivanic and Martin show that price increases of a large array of goods would increase the poverty rates for urban people slightly more than rural people (2008, 409). Other simulations also projected urban groups to be the most influenced by the crisis as they are overwhelmingly net food buyers (José Cuesta et al. 2010, 857). Therefore, we know that the urban poor are vulnerable to price spikes in addition to the rural poor, especially indigenous groups.

In addition to the international price increases explained in chapter one, there were also domestic factors contributing to the crisis. In July 2008, Bolivia as a country did not require urgent food assistance, but a regional flood did occur, causing localized hunger (FAO 2008). A La Niña event occurred from November 2007 to March 2008, bringing with it the increased rainfall that caused the devastating flood. Beni and Santa Cruz were the two areas hit hardest by the flooding, which resulted in over 70 deaths and the declaration of a natural disaster (EFE Newswire 2008c, 2008b). Because of the flooding, over $300 million worth of crops were lost, and soybean production declined by 170,000 tons in 2008 (EFE Newswire 2008a; Food and Agriculture Organization n.d.). Following the winter and fall floods, Bolivia experienced drought in Oruro, La Paz, and Potosí, regions along the western side of the country (Government of Bolivia 2008). This drought had a smaller impact than the flood on agricultural production of potatoes, which grow in La Paz. While potato production decreased from 754,807 tons in 2006 to about 735,254 tons in 2007, the 2008 harvest regained 10,000 tons before an explosion in production in 2009 (Food and Agriculture Organization n.d.). Potato imports increased from around 2,200 tons in 2006 to 25,000 tons in 2008, before decreasing again in 2009 (UN Comtrade 2019). There are signs that this decline in production had an impact on food availability in Bolivia, as the average dietary energy supply adequacy stagnated during this period (Food and Agriculture Organization n.d.).

Like in Kenya and Nepal, violence also occurred in Bolivia at the same time as the 2008 crisis. The departments of Pando, Beni, Santa Cruz, and Chuquisaca which hold most of Bolivia’s natural gas, wanted more autonomy from Morales’ government control. There were violent protests in the Santa Cruz and Pando departments, particularly by those angered over Morales taking some natural gas profits to use

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9 It is unclear whether this increase in production in 2009 is due to changes in data collection methods, or some other factor contributing to increased production.
for the national pension fund (Facts on File News Digest 2008; Burbach 2008). The conflict escalated, and Bolivia expelled the US ambassador over claims that he was helping protestors overthrow the government (Associated Press 2008). While these protests were eventually quelled and the constitution ratified, these fractures likely contributed to the uptick in hunger in 2008. Increased biofuel demand also contributed to the crisis in Bolivia, according to a representative of Bolivia to the Economic and Social Council; however, as soybeans are not a food crop and maize is, the effects of increases in demand for biofuels did not impact food security as directly in Bolivia as it did in Kenya (United Nations 2008).

While Bolivia experienced domestic declines in food availability and access, there was also high international price transmission (Schüttel et al. 2011, 127). Bolivians tend to eat products such as potatoes, cereals, and fruits and vegetables rather than meats and dairy, which means that their breadbasket is based on foods traded on the commodities market (Pérez-Cueto et al. 2006, 566). Poverty simulations showed an expected increase of just over 6 percent in Bolivia, the highest in the region (José Cuesta et al. 2010, 855). Despite these signs of a possible crisis, the period from 2007 to 2009 failed to produce any noticeable macro trends in poverty or hunger. Indeed, the Global Hunger Index which takes into account child stunting, child wasting, child mortality, and undernourishment, gave Bolivia a score of 27.1 in 2005 and 21.8 in 2010 (Global Hunger Index 2018). Data on undernourishment from the FAO shows that while the prevalence of undernourishment remained stagnant in 2007-2009 rather than following the trend of decreasing, it did not increase during the years of the crisis; the number of undernourished people, however, increased by about 100,000 in the three-year period from 2008-2010 (Food and Agriculture Organization n.d.). Poverty actually fell from 2007 to 2009 for both urban and rural dwellers (World Bank 2019). These trends in hunger and poverty are quite curious given that Bolivia experienced higher prices and lowered production in 2008.

One way to explain the difference between the expected impact on hunger and poverty and the actual outcome are the actions that the government of Bolivia took during the crisis. I begin by looking at the trade measures applied. Bolivia’s top food product import sources are Argentina, Chile, Brazil, Peru, and the United States (World Integrated Trade Solution 2015). As its trade partners began implementing export restrictions on key commodities, prices rose in Bolivia. Over the course of the food crisis, Bolivia implemented export bans on wheat (July 2007) soy and sunflower oils (May 2008), maize, sugar and sorghum (February 2010), as well as poultry (Shama 2011, 32; Schüttel et al. 2011, 128). Wheat consumption in Bolivia is second only to potatoes; however, Bolivia covers 70 percent of the domestic demand of wheat through imports. When wheat prices rose on the international market, Bolivia lowered the rate of the import tax (Schüttel et al. 2011, 128). An export ban was placed on all vegetable oils from March 19 to April 18, 2008 and afterward quotas were placed on oil production (Schüttel et al. 2011, 129). Bolivia is a net exporter of vegetable oils, something that these export restrictions did not seem to
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take into account (José Cuesta et al. 2010, 850). Only about one third of vegetable oils produced in Bolivia are consumed there, so these export bans set shockwaves throughout the system, as exporters were no longer able to sell most of the production (Schüttel et al. 2011, 129). These measures came as producers were recovering from floods, which caused huge losses, decreasing economic profits. The trade restrictions have had negative effects overall, while the elimination of import tariffs may have increased availability (José Cuesta 2011, 89).

Under the Morales government, which came into power in 2006, Bolivia began pursuing social programs more aggressively, including special feeding programs for children and the elderly that were put into place prior to the crisis (Food and nutrition security platform 2019). Food products including oil, rice, wheat flour, and sugar began to be sold at reduced prices at special government stores, (WFP 2009, 5). Special government-owned EMAPA stores also distributed subsidized wheat flour directly to consumers. Starting in July 2007, 95 percent of imported flour was distributed with subsidies to the national bakery sector (Schüttel et al. 2011, 128). On the production side, wheat farmers were given subsidized fertilizer and access to government milling. Bolivia’s social safety nets are quite good overall; Bolivia did not, however, take any specific actions that “intensified or expanded” its social safety nets during the crisis, pointing to the need for a better emergency response network (José Cuesta 2011, 89).

Increased food aid and foreign assistance does not explain why Bolivia did not experience the increase in poverty and hunger that was expected. Food aid flows actually declined from 2006 to 2009, illustrating that an increase in aid did not prevent the poverty increase that was projected to occur (Food and Agriculture Organization 2017). Overall food security-related official development assistance fell in 2008, before increasing again in 2009 (FAO 2019). As all of the factors for a crisis were present in Bolivia, it is unclear at first glance why the dramatic increases in poverty and hunger that were projected did not come to pass. There are several explanations for this incongruence in the data. First, the data on poverty and hunger simply might not be as accurate as we would need it to be in order to see increases at such a level. However, there was stagnation in the decline of hunger during this time, and there was a general decrease in availability as measured in calories available. This suggests that the crisis did have a negative effect, just not as extreme as that predicted. EMAPA and the government’s other responses to the crisis probably did have a positive impact on hunger, although this is not quantifiable in this thesis.

International prices rose, and the high prices were transmitted onto Bolivia’s domestic markets at the same time as a La Niña year decreased potato production. Rural people, especially indigenous communities and smallholders who are net food buyers, experienced a reduced crop just as global prices were rising. In addition, the EMAPA shops are mainly in more urban areas, so rural people would not have had access to as much state support. The urban poor were also impacted, as they produce little of their own food and thus experienced the brunt of the international price increases. Similar to Nepal and
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Kenya, there was political violence and extreme weather events that contributed to the crisis on the domestic level. Removing tariffs allowed for more food to enter the country (for example, potatoes), and which was likely the most useful action the government took. Some of its export restrictions on primarily export crops had a more negative impact: as in Ukraine, Bolivia consumes little of its vegetable oils, and so preventing them from leaving just created a situation in which farmers and processors lost out on income. There was not a significant international response to the crisis as there was in Nepal and Kenya, perhaps due to some social safety nets already in place when it occurred. While EMAPA allowed for reduced-priced items to reach consumers and subsidies for agriculture prevented the climatic conditions from negatively affecting the next harvest, Bolivia could do more to implement specific emergency food response programs. While Bolivia did feel the effects of the 2008 crisis due to both international and domestic factors, these were somewhat abated by government action.

**Climate Change Context**

In this next section, I profile the two main crops that will be studied in this thesis, and then using climate projection data, I discuss potential challenges to production in the future. First, I investigate potatoes. Potatoes are the top subsistence crop, with a key role in food availability, particularly for the rural poor (Colque, Urioste, and Jose Luis 2015, 35). The dependence upon potatoes as a food crop means that if there were to be changes in production in the future related to climate change, Bolivia’s food availability could take a hit. Next, I look into soybean production. Soy production, unlike potatoes, is almost entirely for export. Soybeans account for 3 percent of GDP, and are the largest export crop (Nolte 2015, 2).

Because of their importance to the economy, soybean production can be related to food accessibility. In addition, soybeans and potatoes are grown in two distinct parts of the country, so together, the two crops provide insights into food security in most of Bolivia. By investigating potential changes due to climate change in the production of these two crops, we can gain a fuller picture of changes in availability and access to food.

The potato was first domesticated in the Lake Titicaca region, and continues to be Bolivia’s most important food crop (FAO 2008; Hudson et al. 1991, 119). Classified as tubers, potatoes grow underground from starch produced in the potato plant’s leaves. Unlike other crops that require farmers to repurchase seeds each year, new potato plants grow from the eye of other potatoes, allowing farmers greater control over their cultivation (International Potato Center n.d.). The majority of the production still occurs at a high elevation along the Andes corridor, in relatively close proximity to Lake Titicaca. About 200,000 smallholder farmers produce most of the country’s potatoes, cultivating around 30
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traditional varieties using methods suited to the tough climatic conditions of the Andes (FAO 2008). In 2012, the government of Bolivia reported that Bolivians eat on average 92 kg of potatoes each year, well above the next most-consumed item, bread products, at 40 kg a year (PIEB 2012). Potato production has been steadily increasing in Bolivia since the turn of the century, and in 2017, over a million tons of potatoes were produced, covering domestic demand (Devaux et al. 2010, 10; Food and Agriculture Organization n.d.). Subsistence farmers in the highlands, where potatoes are grown, face some of the most challenging growing conditions in the country: they have the smallest plots, and both geographical conditions and historical use have damaged the soil (Hudson et al. 1991, 115). Production is already challenged by poor soils and climatic variability, which points towards vulnerability to climate change (Devaux et al. 2010, 9). Potato farming in Bolivia is very inefficient, with yields significantly lower than those in neighboring countries (Pearce 2011, 43). A lack of technology, poor research and extension services and little access to credit have prevented Bolivian potato farmers from thriving (Hudson et al. 1991, 119; Godoy, de Franco, and Echeverria 1993).

Figure 2.1. Map of potato production in Bolivia, courtesy of the Ministerio de desarrollo rural y tierras de Bolivia.

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10 The International Potato Center (CIP) reports that there are approximately 4,000 potato varieties that are native to the Andes region, although only some of them are edible (International Potato Center n.d.).

11 The FAO reports that these numbers were closer to 65 and 40 kg per capita per year, respectively; regardless of these discrepancies, potatoes are still the product most consumed in Bolivia.
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Now, I profile Bolivia’s most-produced crop: soybeans. Soybeans are they are relatively new to Bolivia, with commercial production beginning around 1985 (McKay and Colque 2016, 4). The majority of this legume is grown in the Santa Cruz region, taking up 55 percent of agricultural land in the district. Yields are lower than in other neighboring countries, coming in between 1.8 and 2.3 metric tons per hectare (Nolte 2015, 2). Many smallholder farmers have been pushed out of soybean production, and the 11,000 that remain struggle with a lack of access to good land, financial institutions, and labor markets (McKay and Colque 2016, 3–4, 22). Foreigners are also increasingly the owners of soybean farms, and 95 percent of soybean production is controlled by only six companies (Urioste 2012; McKay and Colque 2016, 16). In 2015, soybeans accounted for 10 percent of total exports, making up $1.1 billion in exports in 2014 (Nolte 2015, 2). Exports mainly go to the Andean countries surrounding Bolivia: Chile, Colombia, Ecuador, Peru and Venezuela. Domestic demand for soybeans was approximately 800,000 metric tons in 2015, much of which goes to animal feed (Nolte 2015, 2; Hudson et al. 1991, 122). Only one genetically modified type, or event, of soybean (GTS 40-3-2) has been allowed to be grown in Bolivia since 2008 (International Service for the Acquisition of Agri-biotech Applications 2017, 1). In 2017, however, 100 percent of farmers were using biotech soybeans (2017). The main challenges to soybean producers mirror overall agricultural issues: difficulty in transporting products, lack of technology to increase production, and accessing credit (Nolte 2015, 3). In addition, all of the land officially dedicated to intensive soybean production in Santa Cruz is already under soybean production, so the growth seen in the past 30 years may be coming to an end unless yields increase (Urioste 2012, 440).
In Bolivia, climate variability already causes floods and droughts, as it did in 2008. In this part of the climate change section, I study the key crops, soybeans and potatoes, with an eye toward potential changes in production due to climate change. By comparing temperature and precipitation requirements to projections from the Coupled Model Intercomparison Project 5 (CMIP5), I will be able to consider food stability and availability in the future. The model ensemble mean for annual temperature projects an increase of 3.2°C for the period from 2050-2074 as compared to 1980-2004 (Adler and Hostetler 2013). The model ensemble mean for precipitation shows zero change at the country level, and disaggregating by month shows few variations as well. Smallholder farmers that grow potatoes are concentrated at altitudes between 3,000 and 3,500 meters above sea level (Theisen 2009). Soybeans are produced at the much lower altitude of 400masl (Nolte 2015). In order to account for these two disparate production zones, I will adjust the temperature data to better fit the two locations. To complete back-of-the-envelope calculations on the projected mean temperatures for the higher altitude regions of the country, three cities were selected for their location in relation to the concentration of potato and soybean production. The chosen cities, La Paz, Sucre, and Santa Cruz, sit at 3,639m, 2,810m, and 400m above sea level respectively. Although temperature increases are predicted to be higher at higher altitudes, at the altitudes of interest for soybean and potato growth, regional models have shown that temperature change remains
consistent at the relevant elevations (Urrutia and Vuille 2009, 8). The CMIP5 model ensemble mean increase in temperature by month was then applied to climate data from each of the cities for an estimate of what temperatures might look like in Bolivia’s key crop zones.

Figure 2.3. Average monthly temperature observed and projected for La Paz, 3,639 masl (Adler and Hostetler 2013; Merkel n.d.).
Figure 2.4. Average monthly temperature observed and projected for Sucre, 2,810masl (Adler and Hostetler 2013; Merkel n.d.).

Figure 2.5. Average monthly temperature observed and projected for Santa Cruz, 400masl (Adler and Hostetler 2013; Merkel n.d.).
Figure 2.6. Average monthly precipitation observed and projected for Bolivia (Adler and Hostetler 2013; Merkel n.d.).

These projected temperature increases may pose considerable challenges to potato cultivation lower in the Andes. Potato plants themselves grow best between 16°C and 20°C, while the optimal soil temperature for tuber formation is between 15°C and 18°C (FAO Land and Water Division 2008, 2; Beukema and van der Zaag 1990, 38). As temperatures rise, tuberization, or the formation of new potatoes, decreases (Sonnewald et al. 2015). While farmers closer to 3,500m, as represented by La Paz, may not experience as many temperature-driven changes in production, those at lower elevations might experience reduced production because of higher temperatures. The CMIP5 model ensemble mean shows that precipitation may increase in the winter, which may be beneficial for potatoes because they need water during their early growth so that the plants can produce good quality tubers (FAO n.d.). Potatoes require 500 to 700mm of water over a season, so as long as precipitation does not decrease as projected, temperature will likely be the limiting factor for potato production. Those who live in mountainous areas

12 While there is a direct correlation between elevation and temperature, changes with precipitation are more varied, so it was impossible to adjust precipitation for altitude with the author’s limited data analysis skills.

13 The Andes region has 4,000 varieties of potatoes with different temperature requirements, and so these approximations of growing requirements may not include all varieties.
will have more flexibility under the conditions of climate change up to a certain point, at which point soil composition and precipitation would make for difficult growing conditions. Using this method of adaptation has its own potential flaws, as farmers may have to increasingly contend with land rights issues. As the Bolivian government seeks to ensure land rights and conservation areas, there may be increasing tensions between farmers and conservationists as smallholders climb higher into the páramos in order to plant their crops. Another possibility for potato production is a shift to planting earlier or later in the season, when the weather is still cooler. As these cooler times also correspond to the dry season, changing time of the year for potato growth will pose challenges in terms of water availability. If potato production declines because of higher temperatures, this will have direct negative effects on Bolivia’s food security as it may decrease food availability.

Soybean production in Santa Cruz may increase under the conditions of climate change. Soybeans are produced in two crop cycles, one in the winter and one in the summer, and yields can vary considerably between the seasons as well as between individual growers (Nolte 2015). Soybeans require temperatures of at least 10°C to germinate, and growing time shortens with higher temperatures (Casteel 2010, 6). Soybeans grow best in hot temperatures up to about 30°C (FAO n.d.). Because the temperature is projected to rise, the time from planting to harvest for soybeans may shorten, allowing for more crop rotations. While the CMIP5 model ensemble mean projects that only the winter months may have increased precipitation, a regional climate model for the Andes using A2 and B2 scenarios found that precipitation might increase up until 2,000masl which includes the soybean growing elevation (Urrutia and Vuille 2009, 10; Adler and Hostetler 2013). Soybeans generally need between 450 and 700mm of water per growing season (FAO, n.d.). The model shows the possibility for up to 400mm per year increases of precipitation below 500m, perhaps showing a positive change for soybean production. The biggest challenge, however, may come from pests and diseases, as warmer temperatures encourage their spread. Successful disease prevention therefore may become more important in the future.

Climate data from the CMIP5 shows that food availability, illustrated through temperature-induced potato production declines at lower elevations, might decrease under the conditions of climate change. As rainfall may increase in the lowlands, this may help soybeans and potatoes alike. Temperature is the limiting factor for potatoes, as they require lower temperatures for tuberization and better growth to occur. Soybean production may increase, increasing the income for growers in the Santa Cruz department and increasing food accessibility. In this analysis, however, it was not possible to investigate the effects of

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14 A2 and B2 are two of four scenarios established under the Emissions Scenarios report from the Intergovernmental Panel on Climate Change in 2000. Generally, both scenarios envision regionally-based economic growth with slow technology adaptation, with population projections being lower in B2 (Nakicenovic et al. 2000, 4–5).
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extreme weather events on production. Potato farmers have already noted that droughts have begun killing much of their crops (Rights & Democracy and Coordinadora de Integracion de Organizaciones Economicas Campesina de Bolivia 2011, 25). As production declined in 2008 because of flooding related to La Niña, it is important to stipulate that these projections must be considered in light of there also being natural disasters that destroy crops and cause instability in food security.

PART II: ANALYSIS

RIGHT TO FOOD FRAMEWORK
A rights-based approach to food insecurity, as detailed in chapter one of this thesis, is one way to help people get the food they need. In order to better understand how the right to food approach contributes to food security under changing climatic conditions, we must first understand the legal framework in Bolivia. Bolivia ratified the International Covenant on Economic, Social and Cultural Rights (ICESCR) in 1982, following its return to civilian government, similar to the events that unfolded in Nepal. It signed the Optional Protocol in 2010, and ratified it in 2012; it entered into force in 2013 after 13 states ratified it. Bolivia is the only case study country that has ratified the Optional Protocol, which will allow us to determine whether the Option Protocol appears to have had a positive influence on food security in the country by an international avenue for justice and making remedy on the national level an obligation. Not only are inhabitants guaranteed these rights in the constitution, they are also protected by international human rights law which the Bolivian constitution deems part of the constitution itself (“Constitution of Bolivia” 2009, pts. 14 (3); 410).15

Since independence, there have been no fewer than 22 significant changes to Bolivia’s constitution (Kohl and Farthing 2006, 41). Following protests calling for the nationalization of hydrocarbon resources and a new constitution, Morales created the Constituent Assembly to draft a new constitution; it was then proposed and approved by a referendum (Schilling-Vacaflor 2011, 8). During negotiations, issues that were particularly salient for the political parties included natural gas privatization and distribution of funds from the sector, the location of the capital, and worries about the secession of four lowlands departments (recall from the 2008 food crisis section that there had been violence there prior to the food crisis) (Pearce 2011, 108–11). Because of the tense negotiations, like that in Nepal and Kenya, the constitution is expansive but also includes some opaque meaning in order to placate different sides (Pearce 2011, 112).

15 When negotiating treaties, the government of Bolivia needs to consider food security and sovereignty under article 255 (8).
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The language around the right to food in Bolivia’s constitution is very much a product of the context in which the constitution was negotiated. The push to include food sovereignty in the constitution was not the first major step into the food sovereignty paradigm; indeed, prior development plans and laws had included language on the issue (Jose Cuesta, Edmeades, and Madrigal 2013, 2; McKay, Nehring, and Walsh-Dilley 2014, 1190–91). The food crisis in 2008 also contributed to the language on food sovereignty in the constitution, as officials called for food sovereignty to prevent future crises (United Nations 2008). What emerged after years of negotiations between different factions was a constitution that “supports enhanced human rights, particularly economic, social and cultural rights and the rights of underprivileged groups” (Schilling-Vacaflor 2011, 10). At play in negotiations were questions of the state of Bolivia’s sovereignty in relation to international actors and interests (McKay, Nehring, and Walsh-Dilley 2014, 1177–78). Food sovereignty in Bolivia and Nepal both served as means to unifying disparate groups, with the concept used by “state actors in particular ways to support their own strategies and goals” (McKay, Nehring, and Walsh-Dilley 2014, 1178).

Bolivia’s 2009 constitution sets the stage for its people to enjoy the right to food. Article 16 lays out the right in two clauses: “Every person has the right to water and food. The State has the obligation to guarantee food security, by means of healthy, adequate and sufficient food for the entire population.” While in Nepal citizens have the explicit right to food sovereignty, in Bolivia food sovereignty is not an individual right, but rather something the state is supposed to pursue. Food sovereignty, the term famously promoted by the international peasants movement Via Campesina at the World Food Summit in 1996, relates to the choice that countries and communities have in what they eat and produce, and is also associated with local control and trade (Campesina 2003; Edelman 2014, 970). Food sovereignty may not be so different to food security now as in earlier years where food security was tied to availability with a focus at the international level; however, food sovereignty as a concept remains less well-defined and universally understood than food security (Edelman 2014, 967). In Bolivia, this poses challenges for legislating and adjudicating the right: “How can you have a powerful notion of food sovereignty at the level of the nation state, particularly in the context of plurinationality like in Bolivia and Ecuador, when different groups (peoples, nations or communities) have divergent ideas about what food sovereignty means and looks like in practice?” (McKay, Nehring, and Walsh-Dilley 2014, 1179). As scholars have noted there is a tension between sovereignty of the state and sovereignty of individuals and communities within food sovereignty, which the constitution resolves by making food sovereignty something the state

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16 The origin story of food sovereignty is of course more nuanced than the popular version of Via Campesina’s sole creation of the concept; for a longer discussion of this issue, see Edelman 2014.
should take action upon instead of something to which individuals are entitled (McKay, Nehring, and Walsh-Dilley 2014, 1177, 1192–93; Edelman 2014, 967–68).

This relegation of power to the state can be seen in the articles on the right to food. The state-owned enterprises (SOEs) are given the dual mandate of economic development and promoting food security (“Constitution of Bolivia” 2009, pt. 309 (4)). The concept of food sovereignty applies beyond Bolivia’s domestic sphere: when negotiating treaties, the government must also think about the food security of the population. It cannot import, produce, or commercialize genetically modified organisms or toxic elements that “harm health and the environment” (“Constitution of Bolivia” 2009, pt. 225 (8)). In aligning with the control aspect of food sovereignty, the regional departments are given control over their resources in order to preserve food security (“Constitution of Bolivia” 2009, pt. 300 (16)). Municipalities have further control over energy projects in their jurisdiction to ensure food security. It is also notable that the municipalities can regulate transport and sale of food products, which opens up the opportunity for them to set price controls if necessary (“Constitution of Bolivia” 2009, pts. 302 (12-13)). Another way that the constitution sets the stage for food security and sovereignty is through delineating the steps in Bolivia’s rural development strategy (“Constitution of Bolivia” 2009, pt. 405). Indeed, the goal of the rural development policy is to guarantee food security and sovereignty through prioritizing the consumption of agricultural goods produced in Bolivia (“Constitution of Bolivia” 2009, pt. 407 (1)).

Searches into the existence of cases on article 16 in the constitutional court showed that there have not been to date any legal challenges to the right to food in Bolivia. In addition, Bolivia has not had any cases brought against it under OP-ICESCR. This lack of jurisprudence raises questions about the justiciability of the right to food in general for several reasons. As the constitution of Bolivia includes language that not only gives individuals the right to food but also gives the state the obligation to fulfill that right, the opportunity to file suit should theoretically be higher in Bolivia than in other countries. Several potential explanations for this difference between expected outcomes and actual outcomes include corruption, underfunding of the court system, poor access to courts, and an excruciatingly slow and backlogged system (The Economist 2012). The reason that I find most salient based on my research is that of those experiencing hunger lacking access to courts, based on the geographical location of the

17 I used both Bolivia’s database of rulings in the constitutional court, searching for key terms and articles. I verified these findings with cases in www.escr-net.org’s database of jurisprudence related to ESC rights. It is possible that there have been rulings in lower courts that do not use online archives, but I have been unable to find mention of jurisprudence on the right to food in Bolivia in secondary sources, pointing to a dearth of rulings.
poorest and most undernourished peoples. Those facing the most harm, and with the best ability to prove that the state is not fulfilling its obligation to the right to food live in rural, indigenous communities. This means that although there might be violations to the right to food, there are high barriers to addressing them through the legal system in Bolivia.

Two of the macro issues identified in the background section, indigenous rights and land inequalities, are dealt with in the constitution. The constitution provides new and stronger rights for indigenous peoples; indeed, Articles 2, 3, and 5 establish indigenous people as having the right to autonomy, the same rights as other Bolivians, and indigenous languages as official languages. Under articles 9 and 26, indigenous people have the right to special representation and communal democracy. Furthermore, there is an entire chapter, chapter four, dedicated to the rights of indigenous people. This support for indigenous people succeeded years of reforms led by the indigenous-campesino sectors of society (Schilling-Vacaflor 2011, 7). The constitution gives the national and local governments control over the land and establishes principles about using it with thought to biodiversity and the social good. However, lobbying from commercial farmers and agroindustrialists nullified the constitution’s ability to bring about true land reform through Article 311 which guarantees the right to land property (McKay and Colque 2016, 15).

Article 45 of the constitution grants the right to social security for reasons of sickness, work risks (including those involved in agricultural production), and disability, among others. Universal health care is guaranteed under article 36 which created the national health system, but less than a third of the population was registered under the schemes in 2004 (ILO and Samame 2017). Employees pay into their pensions so that they can have support when they are elderly, and there is a universal pension system for those who cannot (World Bank 2018b, 74). Finally, individuals can receive benefits if they are injured at work. Overall, Bolivia’s social safety nets coverage of the poor is one of the best of in the world, at 73 percent (World Bank 2018b, 40). About 23.4 percent of the poorest of the poor receive unconditional cash transfers from the government, and 75 percent of this same group receive conditional cash transfers (World Bank 2018b, 36–37).

The government of Bolivia formulates its specific and ambitious goals for food sovereignty in its Agenda Patriótica 2025. First, the plan calls for the elimination of hunger and the reduction of malnutrition for all people by 2025. Towards this end, the agenda states that all levels of government should act together to provide food in schools, as well as promoting the production of the amount and type of products that people want to consume, diversifying production, and supporting smallholder agriculture (Peña Claros et al. 2013, 25). Both these goals and the aspirations expressed in the constitution should be taken as just that: aspirational goals. They also serve a political purpose for the
government, as it can point at these documents as evidence of its commitment not only to complying with international human rights law, but also to helping the people.

Bolivia has a National Council on Food and Nutrition, or a food sovereignty steering group, as well as a Food and Nutrition Policy. PMSC focuses on eliminating hunger in young children, although it does include language on access, availability and use of food for the whole population. As in Kenya’s National Food and Nutrition Security Policy, this PMSC acknowledges the right to food as one of its goals. The Food and Nutrition policy was put into place in 2014, and also includes language on the right to food and ensuring that this right is justiciable. Usage is the primary pillar of food security that the policy addresses, with the overall motto of knowing how to eat well to live well. It relies heavily on the food sovereignty framework, starting with objective one that calls for production of nutritious and abundant food by family farmers. The policy includes targeted action for indigenous groups and rural populations, two of the most vulnerable (and overlapping) groups. The policy includes a program to develop urban agriculture, but there is not the attention given to this vulnerable group that there should be. One of the most important things that this policy does is address the links between economic inequality and malnutrition, which is a crucial step as Bolivia struggles with the access pillar of food security. In addition, these policies fill gaps in food security related to nutrition and usage that are not addressed in the agricultural policies. The major problem with this policy, however, is that it does not outline implementation, nor is there a separate implementation document. This leaves another gap, and opens space for litigation to force the state to take stronger action on food security.

Large social changes occurred prior to the referendum on the new constitution in 2009 that put into place a new regime based on sovereignty. The constitution takes a leap forward on ensuring indigenous rights and equality, and also moves towards land reform. Bolivia’s right to food legislation should be read in the context of a state trying to push back against what it saw as international meddling. Nevertheless, the constitution does acknowledge the right to food, despite tensions between human rights as internationally recognized and imbedded in the liberal order and the constitution’s rejection of that very framework (Gregor Barié 2014, 28). As such, food sovereignty in Bolivia seems more akin to anti-colonialist and liberalization rhetoric than it does a guide for the state’s anti-hunger work (McKay, Nehring, and Walsh-Dilley 2014, 1193). The Food and Nutrition Policy creates the specific framework legislation on hunger including the right to food. The right to food should be most justiciable in Bolivia since it is party to the OP-ICESC, and the constitution and framework law explicitly give the state a role in guaranteeing the right to food. As we see, however, the presence of this legal framework has not led to cases being heard on the topic, which raises an important point: even when there is a strong legal framework, the right to food is still only marginally adjudicated. A similar phenomenon occurs in Kenya, in which other ESC rights are heard much more frequently than the right to food. What the study of
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Bolivia adds is that unless people feel that they will benefit from using the courts, that they can actually access courts, and that there is a clear path to justice through them, whether or not the right to food is theoretically justiciable becomes irrelevant.

**Agricultural Framework**

In order to evaluate Bolivia’s current agricultural policies, this section will use the issues previously identified in this chapter. Starting at the macro level, Bolivia’s indigenous population continues to be marginalized, its infrastructure in general and for trade in specific is in poor shape, and land reform, particularly in the soybean-producing lowlands, has not settled the score on divisions relating to land rights. In the agricultural sector, farmers have little technology, the lowest yields in the region, little irrigation, and poor access to credit which challenge investment and production. Soil erosion has also plagued farmers, particularly in the highlands. The agricultural policy, then, should address many of these issues in order to support food availability. Programs that target rural indigenous communities as agricultural producers will help prevent crises like that in 2008 by both increasing availability of food and decreasing poverty in rural areas. In addition, measures that support natural disaster preparedness can help minimize the decreases in production that were seen in 2008. We see from data on precipitation and temperature that climate change-induced temperature rises will harm potato production. Soybeans on the other hand may benefit from increased precipitation and higher temperatures, if pests do not spread. Using this information, I will now assess the agricultural policy and make recommendation to improve sectoral policy and food security in Bolivia.

Derived from the Agenda Patriótica and the constitution, as well as earlier agricultural plans, the government created the 2014-2018 plan for agricultural development, called Plan del Sector Desarrollo Agropecuario 2014-2018 “Hacia el 2025,” (PSDA) to support and develop the agriculture in the country, which is Bolivia’s most recent agricultural strategy. As in Kenya, climate change is a fundamental principle in the plan, as well as risk management; together, this sets the framework for agricultural policy that fully integrates climate change into its programs. However, food sovereignty or security are not principles for action except in so far as the plan derives from the Agenda Patriótica 2025, although sustainability and local production, which are part of the concept of food sovereignty, are included. The plan is organized around ten main components, each of which contains its own set of strategic objectives. The plan is somewhat standard in its objectives, but on the whole, it tends towards a more socialist ideology, which aligns with the country’s legislation. The PSDA focuses its attention throughout on smallholder farmers. This approach is valuable for two reasons: first, smallholders produce most of the food that is consumed domestically, and second, they tend to live in the highlands where there is the most poverty. Thus, attention to smallholders will support increased availability of food, as well as access for the poor. While it does give particular indicators for each strategic objective, it is extremely unlikely that
every goal will be met, or even for there to be data to show progress towards the goal. The stated objective may say something of political interest for the government, yet the indicators and funding amounts reveals the writers' true priorities.

In relation to the three macro level issues—indigenous rights, land rights, and infrastructure—this plan makes a strong step toward ameliorating the conditions causing the problems. Attention to infrastructure is the macro issue that receives the least attention, likely because of Agenda Patriótica’s work on the issue. Infrastructure challenges are not even mentioned in component nine which focuses on increasing exports; this is a serious oversight, as the top barrier to trade is lack of infrastructure. Having agricultural fairs internationally, as the plan calls for, will prove ineffective at marketing if products cannot be shipped from the country in the first place. It calls for increased investment in infrastructure under component five, but there are no infrastructure indicators besides those for irrigation. The plan provides good support for indigenous peoples, dedicating all of component six to advancing their welfare through community development and ensuring that indigenous rights are respected. Indigenous groups are also targeted for special access to land under component 3, helping with both the macro issue while also decreasing vulnerability. The first component is to transform and consolidate tenancy, access and use of land under cultivation, which speaks to the macro problem of land accesses and land grabbing issues. Strategic objectives include finishing the process of land restructuring and ensuring that land under cultivation is properly titled in light of Law 429 (2013) and Law 3501 (2006). These laws that put into place the framework for land reform, requiring the redistribution of land that does not fulfill its economic and social function, determining whether current land usage follows the law, and regulating the market in order to avoid the creation of large estates. This part of the agricultural plan is important for Bolivia in terms of showing its dedication to its marginalized rural population and their ability to subsistence farm. The inclusion of land reform in this policy demonstrates several key remaining problems in the agricultural sector. First, land reform through the constitution and the flagship land rights laws has not been entirely effective in completing the redistribution efforts that Morales espouses. As in the constitution, there is tension between property rights and land distribution within the first component, as the PSDA outlines both. Smallholders, indigenous groups, and the poor are targeted as recipients of land under component one’s fourth objective, yet they do not appear as special beneficiaries as part of the goals section, meaning that in the implementation phase these groups are not given priority. In addition, it is easy for foreigners to get around land restrictions through marrying a Bolivian citizen or through shadowy, and mostly unregulated, land transactions (Urioste 2012)

The policy takes some action to address the problems specifically facing the agricultural sector. I start with the areas in which the plan could improve. In the first component, the plan explains how converting plots into titled or collective lands will help smallholders access credit. This is the only
component in which credit is mentioned, despite ample evidence that lack of credit is a large-scale problem. There is no plan to improve extension services for potatoes besides a brief mention under component ten to ensure that agricultural information is available to all. Extension services will be particularly necessary so that potato farmers have the knowledge they need to select the types (as well as access to the types) of potato that is best suited for their specific changed environment. The plan is rather imprecise on steps related to irrigation, beyond component three which includes the improvement of water management as well as soil management, and component five which says that there should be investment in irrigation for smallholders. Irrigation is one of the key challenges facing the sector, and may also become increasingly important with more frequent droughts in the future.

Under component two, the issue of lack of technology in the sector in general and for potatoes and soybeans in particular will be addressed. This part of the plan is particularly weak, leaving a gap in Bolivia’s agricultural support. Yield increases are the only indicators of the plan, yet the action steps do not make clear exactly what actions will be taken to increase yields. Indeed, the action plan calls for using ancestral knowledge and genetic resources, but does not specify how the Ministry of Rural and Land Development (Ministerio de Desarrollo Rural y Tierras, or MDRyT) will do this. Potato production is targeted for a 30 percent increase in all regions, without attention to the ways that altitude or climate might make yield increases more difficult in higher areas. While there are additional challenges to measuring the transmission of local knowledge, more ambitious goals may have tracked workshops to share practices or community knowledge banks. The lack of attention to traditional agricultural methods in its indicators is highly detrimental to Bolivia’s food security: as most potatoes grown in Bolivia are produced using traditional methods, and Bolivians consume far more potatoes than other crops, by excluding traditional knowledge from the indicators Bolivia leaves behind the largest portion of its farmers.

Next I discuss some of the stronger aspects of the plan. Component number three focuses on management and use of water, soils, and vegetation. Of particular note to food security in Bolivia is soil stewardship, outlined under strategic objective number one, as erosion is already making production difficult in the highlands. Ways to improve the soil that the plan outlines include crop rotation and using better tillage systems. In addition to improving use, the plan sees Bolivia also restoring areas that have suffered erosion and salination by improving vegetation cover and other agroecological methods. Areas that are particularly damaged will be protected in order to return them to a better condition. This tripartite approach to soil rehabilitation is a good one, in which extremely damaged soil is protected, moderately eroded areas are rehabilitated, and farmers use methods to prevent erosion in the first place. These methods will be especially important if potato farmers begin moving higher into the mountains where soil is of poorer quality because of climate change.
This plan is quite strong in dealing with the effects of climate change, and directly connects its climate change mitigation work with food security. Potato production is vulnerable to droughts in La Niña years, and the lowlands are susceptible to flooding, so mitigating the effects climate change on producers through adaptation is a good step. Strategic objective three of component five deals mostly with institutional-level action, such as developing institutional capacities and creating early warning systems. One interesting part of this component is that it envisions climate change preparations happening not only at the level of the national government, but also municipalities. Decentralization is part of the concept of food sovereignty, and it also will help prepare communities for climate change because local actors best understand communities’ needs. Component eight on diversification of the rural economy will also contribute to climate change adaptation, as it will allow more people to move from the highly climate sensitive agricultural sector to more stable job opportunities. The employment target for those in the highlands who are the poorest and also more likely to be indigenous is lower than that in other areas, which is exactly where the government should be dedicating the most resources.

Component five on production increases for “food security with sovereignty” details Bolivia’s primary pathway toward improved yields and overall production. As Bolivia struggles with the lowest yields in the region, implementing this part of the plan will assist in increasing food availability. It is strongly rooted in ecologically-friendly production methods to achieve these yield increases. The plan includes indicators on the yields it would like to achieve, as well as the tonnage of ecologically-friendly produced goods. The specific steps to increasing yields are not clear, however, meaning that the MDRyT has a lot of wiggle room to determine how to accomplish its own goals.

Unlike the three other case study countries’ agricultural plans, Bolivia’s does not credit international actors as authors of the plan. In implementing the plan, however, the government notes that it will rely on international assistance. This is an important point in that even the most anti-internationalist country of the four cannot do what it feels it needs to without international support. In addition, while component nine articulates a path towards increased domestic consumption, it also wants to see increased Bolivian exports on the international market (Ministerio de Desarrollo Rural y Tierras 2014).

This plan is a mixed bag in terms of its potential to improve food security. While this plan uses powerful rhetoric and includes ambitious goals, it does not give much guidance as to the step-by-step actions the state will take in order to put words into action. Positive action on land rights, indigenous rights, erosion, climate preparation, and yields is balanced with lack of attention to infrastructure, extension services, and credit access. This plan is a demonstration of the government’s inability to implement action to put food security and food sovereignty into place. As McKay, Nehring, and Walsh-Dilley write, “Despite a general commitment to food sovereignty, there has been an inability to enact meaningful structural changes that might contribute to the achievement of food sovereignty on the
Income diversification and yield increases may help with food access and food availability, respectively, but overall there is much more that this plan could do with its one-billion-dollar budget.

**CLIMATE CHANGE FRAMEWORK**

In order to understand where Bolivia should go in terms of its climate change policy and food security, this section will focus on the parts of the country’s climate change policies related to agriculture and food security. Specifically, I will examine how Bolivia plans to adapt to rising temperatures in the highlands as well as droughts and floods. While Bolivia contributes little to the causes of climate change, it is already being affected by it. Glaciers have begun melting, jeopardizing electricity supplies from hydropower as well as water for direct human use (Bradley et al. 2006, 1755–56). Bolivia is regularly impacted by El Niño events that have been occurring more frequently likely because of climate change (Cai et al. 2014). The Bolivian Amazon, a biodiversity hotspot, faces the threat of intermittent floods and droughts as well as a reduction in vegetation (Cook and Vizy 2008). The most vulnerable are the rural poor who are less able to adapt to changing temperatures and rely directly upon the earth and climate for their livelihoods.

Bolivia ratified the United Nations Framework Convention on Climate Change in 1994, the Kyoto Protocol in 1999, and the Paris Agreement in 2016. It developed broad strategic objectives to addressing climate change: to reduce vulnerability to climate change in different sectors; to promote planned adaptation under various sectoral programs; and to reduce the risks to climate change impacts in different sectors identified as vulnerable (Plurinational State of Bolivia 2009, 60). Bolivia’s constitution is weaker on climate change than one might expect given its negotiation context: climate change is not mentioned in the document. Standing in for climate change rights are environmental rights. Article nine establishes that the state has the responsibility to protect the environment “for the welfare of present and future generations,” alluding to the multigenerational problem of climate change. Indigenous people have a special right to the environment under article 30, and articles 32 and 33 establish that everyone has the right to a clean environment and that they can take legal action to protect this right.

Within the Economic and Social Development Plan 2016-2020, Bolivia expresses the need for it to take action towards environmentally friendly practices and emissions reductions (Plurinational State of Bolivia 2016, 58). Several relevant goals to agriculture include implementing technology for risk management and production under the conditions of climate change; implementing sustainable agro-industrial systems; supporting water systems to prepare for climate change; and promoting international cooperation on climate change (Plurinational State of Bolivia 2016, 93, 118, 149, 154). It is not just the public sector that has been asked to react to climate change; the private sector is also called upon to support mitigation and adaptation (Plurinational State of Bolivia 2016, 123). It has also taken action, with
the support of development banks and the private sector, on climate change issues: a review of its actions
levels that it undertook no fewer than 20 distinct projects to improve climate change adaptation before

The Food and Nutrition Policy (PAN) acknowledges that climate change will have large impacts
on food security, and that Bolivia is already experiencing the effects of climate change. In the section on
climate change, the policy lists smallholders and indigenous groups as those who will be most impacted
by climate change. This step is an important one because it outlines the groups to target for intervention,
although it leaves out the urban poor who may have to purchase more costly imported food if prices rise
but purchasing power does not, and if poor infrastructure and other barriers to trade are not resolved. The
policy rests more on mitigating the effects of climate change through sustainable resource use at the local
level, and displays little support for putting into place larger adaptation programs. This focus on
mitigation instead of adaptation seems contradictory, as the beginning of the section raises the point that
Bolivia already experiences the effects of climate change.

Although several government documents mention a national plan on climate adaptation, this plan
does not appear to be completed or available to the public. As the last policy available on climate change,
the Mecanismo Nacional de Adaptación al Cambio Climático, or the National Climate Change Adaptation
Mechanism, is from 2007, and there has been no updated version and Bolivia has not submitted a
National Adaptation Programme of Action, I will thus analyze the Ley Marco de La Madre Tierra or the
Law on Mother Nature as the primary document through which Bolivia will adapt to climate change. This
law takes a rights-based approach to climate change, saying that Bolivians have the right to live well, and
that state action on climate change must be done in an equitable manner. This justice and rights-based
approach is similar to that throughout the constitution, which grants a whole host of rights. Speaking to
the larger land rights issue, the law reaffirms the need to plan and regulate land use in accordance with
climate change impacts.

To eliminate risks and reduce climate vulnerability, the law outlines six measures under Article
17. The plan includes incorporating climate change into all policies and programs which, from the
policies and plans surveyed in this thesis, seems to have been well-implemented. The second component
deals directly with the issue at hand: food security under the conditions of climate change. It hopes to
maintain production levels to ensure food security through attention to the availability pillar. What is of
particular note about this article is that it targets vulnerable regions and peoples. Although it does not
specify the groups or areas to which it refers, the law has the potential to significantly help rural and
indigenous people who are the poorest and most marginalized. Another element of the law that may
benefit food security is the creation of early warning systems and information networks to support both
the agricultural sector and climate change awareness. Here the law specifies the communities to target: indigenous peoples, intercultural communities, and Afrobolivians.

The law gives more attention to research and extension services than the agriculture sectoral policy provides under Article 17. There is no mention of crops or areas to be targeted for extension services, so this law only partially fills the gap left in the agricultural sectoral plan. It also includes strong language under Article 27 on water management and protection, key to mitigating both droughts and floods.

The most noteworthy parts of this plan relate to finance and investment. As access to credit is a weakness in Bolivia’s agricultural sector, harnessing state power to support more borrowing opportunities will help smallholder farmers. This plan includes this finance portion in several places, including under Article 20 to support the agricultural sector with the goal of improving food security, and Article 18 which outlines that smallholders should receive special financial support (Plurinational Legislative Assembly 2012).

Bolivia’s climate change policy, like its agricultural policy, leaves some room for improvement. While there are measures that help farmers gain access to investment opportunities and smallholders and indigenous groups are targeted throughout the documents for special attention, there is an overall focus on mitigation instead of adaptation. There is also no attention given specifically to potatoes in any of the planning documents, which is a key crop for food security and also vulnerable to changes in temperature due to climate change. Bolivia will likely be impacted by climate change no matter what mitigation behavior it takes, so investing more heavily in helping farmers adapt to changing climates through extension services is likely a better use of its financial resources. Bolivia should create a program with clear implementation actions and goals to assure that action on climate change actually takes place.

CONCLUSION

In this case study on Bolivia, I investigated the right to food, agriculture, and climate change policies and programs in order to better understand gaps in Bolivia’s current policies and to make policy recommendations. Unlike in Ukraine, where food access is the main challenge to food security, Bolivia struggles to meet any one of the pillars, although availability and access were particularly of note here. In the national context section, I identified majority-minority groups, poor infrastructure that limits trade, and land inequality as macro issues that policies need to address in order to ensure that food security has the institutional and macro-level support to be successfully implemented. The constitution and the agricultural sectoral plan directly address land issues and indigenous rights, and there are other instances in the development strategy and climate change policy where these overarching problems are addressed.
Land rights issues, despite law after law since the 1950s on reform, have proven to be particularly intractable, probably because of the economic and political strength of the owners of large estates in the lowlands. I am unconvinced that the redistributive policies in place will be fully implemented because the power structure in the lowlands remains the same as under past redistribution attempts. Infrastructure in relation to agriculture is not a priority under current agricultural policy, but the Agenda Patriótica and other overall development legislation do prioritize it; the question here is whether infrastructure will be built to take into account climate change and future agricultural import needs. Indeed, the call for increased yield and production will be of little use if Bolivia still cannot effectively move food around the country. Investment in transportation infrastructure is therefore an important step toward food security.

The two main groups vulnerable to food insecurity are at-risk for different reasons. Rural smallholders, particularly indigenous communities, are facing increasingly difficult agricultural conditions in the highlands, which may decrease food availability while also eliminating their source of income. Livelihood diversification under the agricultural sectoral plan is a good step towards supporting rural people, yet the policy’s attention to extension services to help them maintain yields is poorly developed. Urban people, who are also at risk for food security, receive no attention in the agricultural policy, and are only targeted for support through urban farming projects in the PAN.

Extreme weather events, like that in 2008, are one of the biggest concerns for agricultural production going forward. However, there is not as much support in the policies as there should be for action to mitigate flooding and drought, as well as conducting research and providing extension services to farmers, both of which may become more significant problems moving forward. There are several gestures to improve irrigation, which may mitigate droughts; the flip side of the issue, flooding, is left unexplored. As the lowlands is where flooding usually occurs, and it is the primary export production area where more established farmers live, there is the possibility that some farms have the funds to invest themselves on flood prevention. If only to prevent another political crisis similar to 2008, the government should invest in flood prevention programs and infrastructure in the region. In addition, CMIP5 shows that the temperature overall will increase, and precipitation will stay largely the same; these projections may have negative consequences on potato production, as potatoes need cooler temperatures to grow, but soybeans may benefit.

As Bolivia is a net food importing country with limits on production primarily due to geographical land features, the agricultural plan’s focus on erosion mitigation and rehabilitation will support food security by ensuring that there remain areas where food can be grown in the future. Yields are supposed to increase, but it is not clear exactly how the government will support this effort. There are also some glaring gaps in the agricultural policy: it does not do enough to improve technology and credit access, nor does it provide extension services for farmers.
Chapter 2: Bolivia

The most important program that Bolivia has to support food security is its social safety programs. These provide cash transfers, health care, and insurance to almost three-fourths of the population, and helped keep the 2008 crisis from creating the havoc that experts predicted. Accessibility is still a problem, and as there is not an overall program focused solely on nutrition (except for specific groups, e.g. children and the elderly), the cash transfer programs in place should continue to be heavily supported. While opposed by the natural gas-producing districts, diverting some profits into these social programs seems to have had positive effects in decreasing poverty.

Legal support for the right to food in Bolivia includes language on food sovereignty, reflecting the current socialist tendencies of the government. There is a strong backing for this right with the state having the obligation to guarantee food security. As in the other case study countries, it appears that this language has had little influence on food security. While there is strong normative and legislative support for food security, using the courts to force the government to implement programs that specifically target rural indigenous people as well as the urban poor might be more effective than in Kenya for several reasons. First, there is a glaring policy gap that plaintiffs can point to as the state failing to fulfill its obligations. Second, the very process of bringing the government to court on the right to food and food sovereignty would highlight differences between the state’s rhetoric and action, and might shame the government into taking action simply from public opinion. Although Bolivia is party to OP-ICESCR, there have been no complaints brought against it to the Economic, Social and Cultural Committee. I posit that the same reasons that Bolivians do not use the domestic courts are further magnified for this international process. However, this is an avenue which should be tested, if only to attempt to set some precedent at the international level on the right to food to determine whether the OP-ICESCR is useful for this issue.

Overall, Bolivia has some significant challenges to overcome in order to assure food security. Through maintaining and continuing to expand the social safety nets currently in place, Bolivia can work to make sure that people have access to food economically; infrastructure investment can facilitate physical access. Under the conditions of climate change, it appears that food availability may decrease, which again points to the importance of facilitating trade in foodstuffs, which includes infrastructure investments. In order for Bolivia to fulfil the right to food and work towards zero hunger, it must first turn its discourse into action. The government has already faced rising criticism and protests because of Morales’ fourth presidential bid and corruption scandals (Casey 2018). In order to continue the progress that Bolivia has thus far made, political and economic stability are necessarily; any successor to Morales might continue and strengthen the reforms and policies he put in place, while working to maintain democracy and eliminate corruption. In order to improve its food security under the conditions of climate change, Bolivia should formulate an updated Multisectoral Zero Hunger Program and climate change plan of action, continue to limit soybean cultivation area, and enforce these limits, and invest in extension
services and infrastructure. On the right to food front, activists should try to bring cases on the right to food before the constitutional court and OP-ICESCR complaint mechanism.

BIBLIOGRAPHY


Chapter 2: Bolivia


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Nepal, home to many of the world’s highest peaks, is also a fascinating case study of a country hoping to industrialize quickly and move large numbers of its population out of the agricultural sector. I have chosen to study Nepal for several reasons. First, of the four case studies, Nepal has the highest percentage of its population employed in agriculture; as a result, changes in the agricultural sector have the potential to directly and significantly improve the lives of its inhabitants. Like Bolivia, Nepal includes the right to food sovereignty in its constitution, but does so in slightly different ways: it gives the right to food sovereignty to citizens, without presenting the state as the guarantor of this right. While constitution of each case study was negotiated under relatively tense conditions, Nepal’s emerged at the end of a civil war, which will give us insights as to the effects of war on the right to food. Nepal is a net food importer, and is overwhelmingly dependent on India for all of its trade. Although Nepal has close and complicated relations with India, it was never colonized by a foreign power. It faces challenges to all four pillars of food security, although stability and access are those with the biggest gaps. Nepal does not produce major quantities of commodity goods, so income and access rely on quality production of cardamom. As the only lower-income country of the four, Nepal may be able to learn some lessons from the other case study countries about how to increase its wealth and decrease poverty. Through the lens of Nepal’s national context, agricultural context, the 2008 crisis, and climate change impacts on major crops investigated in Part I, I will analyze Nepal’s right to food framework as well as the agricultural and climate change policies to make policy recommendations on reducing hunger in Part II.
In this section, I begin exploring Nepal’s history, politics, and economy in order to better understand the context of agricultural and climate change policies. Nepal, a landlocked country between China and India, has seen its ranking on the Human Development Index increase by over 50 percent since 1990 (United Nations Development Programme 2018). Despite this leap forward, Nepal continues to face problems from its rising population and its lack of sustained growth (World Bank 2018b). Its population of just under 30 million people, most of whom live in rural areas, experience high levels of poverty (N. P. Shrestha 2008, 99). Nepal’s population has risen steadily since the 1990s, with urban populations almost quadrupling in the same period. Emigration for better employment prospects has been on the rise, and remittances continue to be economically important, making up approximately 30 percent of GDP (Central Intelligence Agency 2019). At 1.13 percent, however, Nepal’s population growth is undercut only by Ukraine’s negative rates as the lowest of the four countries (World Bank 2017b). As a post-conflict state, Nepal is still getting its house in order in terms of policies and implementation processes to improve the lives of its citizens. Despite the many challenges that it continues to face, there are also many agricultural development opportunities that the government of Nepal hopes to exploit in order to become a middle-income country in the next fifty years.

The country is divided into three geographical zones: the Tarai (Terai)¹⁸ plain in the south, at about 300 meters above sea level and making up 20 percent of total land; the mountainous region in the north that makes up 24 percent of the total land area; and the lower hills and slopes that make up 56 percent of the country (Food and Agriculture Organization 2011a). The majority of the population lived in the hills zone until the 20th century, when overpopulation pushed people to move to the plains (Hrabovszky and Miyan 1987, 265). The three regions can be distinguished along the lines of poverty and food security, with the most food and least poverty in the Tarai (Pyakuryal, Roy, and Thapa 2010, 22).

Nepal is the second-most water-rich country in the world, with abundant surface and ground water resources (V. P. Shrestha 2007, 55). Its numerous rivers makes Nepal a prime candidate for hydropower, but this source of electricity is underdeveloped (V. P. Shrestha 2007, 57). Transboundary water usage rights pose a challenge to agricultural development in Nepal, as it has been unable to fully benefit from abundant hydro resources. Nepal and India have also sparred over water rights, since both countries rely on water from the Ganges river and its tributaries (Mirumachi 2015, 71–73). India has placed claims on large amounts of the water that flows from the Himalayas into its territory, which Nepal has been unable to contest because of India’s geopolitical advantages (Mirumachi 2015, 73–74; Whelpton 2005, 132). In its position as the “hydro-hegemon” in the Ganges Basin, India has sought control over the region’s water supply through bilateral treaties that disadvantage Nepal and its other smaller neighbors.

¹⁸ Both spellings are used in the literature, as using the Roman alphabet requires works to be transliterated.
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(Mirumachi 2015, 74, 76, 78–80). The landmark Nepal-India Joint Committee on Water Resources, established in 2000, has been criticized for failing to include discourse on issues important to Nepal (Mirumachi 2015, 75–75). Thus, while Nepal has ample opportunity to expand hydropower energy, it faces political restrictions from unequal usage rights under plurilateral treaties.

Home to eight out of ten of the world’s highest peaks, Nepal’s average elevation is 2565m (Central Intelligence Agency 2019). Both Nepal and Bolivia have agricultural production that occurs at extremely high elevations. Nepal is at risk of natural disasters, including earthquakes, floods, and landslides (Central Intelligence Agency 2019). In 2015, a 7.8 magnitude earthquake devastated the country, leaving almost 9,000 people dead and millions more in need of humanitarian assistance. The disaster highlighted the vulnerability of the country, particularly among those living in remote areas (United States Agency for International Development 2015). Recovery from the disaster was slow, and aid groups reported that agricultural systems were highly damaged by the tremors (Mercy Corps 2016).

Nepal’s political past is unique in many respects, notable for its absence of colonization by a Western power and for being the oldest independent state of the four. Arising from a series of city-states and feudal rulers, unified Nepal came into being in the mid-1700s (Whelpton 2005, 35–36). In 1846, the Rana regime, which placed the king and the hereditary prime minister securely under the control of the Rana family, was established (Whelpton 2005, 46–47). In 1951, the king and political parties worked together to oust the Rana rulers, and democracy was instituted for nine years before it was surpressed by the monarchy (Whelpton 2005, 71, 98–99). Starting in 1979, student protests created unrest that then spread, and that finally gave way to multiparty elections in 1991 (Jha 2015, 17; Whelpton 2005, 107–17). Even under the nascent democracy, the rural poor’s vote was frequently co-opted by more influential people in the area, and Communist parties protested the new government (Whelpton 2005, 176–77, 189).

The newly elected government failed to institute a new constitution, leaving many disillusioned with the system. Following the rise and collapse of several political parties’ hold on the government, and the ensuing violence, power struggles, and alleged fraud, the leftist Communist Party of Nepal (Maoist) began the ‘People’s War’ in 1996 (Whelpton 2005, 204). This civil war, which left tens of thousands dead in massacres on both sides, continued for longer than expected given that the Maoists had no international backers (Jha 2015, 30). In 2002, the new king Gyanendra Bir Bikram Shah Dev used a constitutional provision to take control of the government, returning the country to monarchical rule (Whelpton 2005, 221). The Maoist uprising also began seeing more successes because of failures by the state, and by the time of the king’s ascent controlled several districts (Jha 2015, 42). The use of violence escalated on both sides, and rounds of peace talks between the rebels and the king failed repeatedly (Jha 2015, 48, 55). As people fled the violence, agricultural production decreased and food insecurity increased (Baral and Heinen 2005, 3). Leaders of the Nepali Congress, a social-democratic party, realized that a way out of the
turmoil would be to work with the Maoists to abolish the monarchy (Jha 2015, 62). Finally in 2006, an agreement between the Maoists, the Nepali Congress party, and the king resulted in a Constituent Assembly by direct vote, and the official abolition of the monarchy in 2008 (Jha 2015, 3, 65–66).

Although peace did not occur overnight, following 2006 Nepal was much more politically stable due to the end of the civil war. Despite some challenges within parties, strikes, and the failure to pass a constitution on the first go, the government nevertheless finally agreed on a new constitution, which was implemented in 2015. The current Nepali system is a democratic republic, with a president, a prime minister, and a parliament called the Constituent Assembly (CA) (Central Intelligence Agency 2019).

The recent political history of Nepal shows that political stability has not been one of the country’s strong points, which has presented a challenge to agricultural development. The Nepali state began planning its development strategy in 1955, modeled after the Indian system involving somewhat state-supervised development (Whelpton 2005, 125–26). The Rana rulers remained ambivalent about supporting development projects, however, which caused Nepal’s growth to fail to meet these plans, and faced with a devalued currency, a balance of payment problems, and lack of reserves, the government turned to the World Bank for a loan in the mid-1980s (Jha 2015, 9; P. K. Shrestha 2010, 4; Whelpton 2005, 125–27). In 1985-1986, policies around state-owned enterprises and licensing for private business were liberalized as a direct result of the loans in a structural adjustment program similar to those received by Kenya and Bolivia at around the same time (Whelpton 2005, 147). Following two structural adjustment programs, Nepal entered into an “Enhanced Structural Adjustment Facility” with the IMF in 1992 (P. K. Shrestha 2010, 4). Already low after structural adjustment, Nepal’s tariffs decreased further upon becoming a member of the WTO in 2004 (P. K. Shrestha 2010, 6). The success of these programs, like those in the other case study countries, can be called into question: “These programs have actually weakened the government capacity and neither was it able to create institutional mechanism necessary for strong economy,” writes Shrestha, pointing towards poverty and poor living standards as outcomes of the programs (2010, 2, 21).

During the People’s War, security and development were combined into one integrated project to lessen the Communists’ hold on underdeveloped areas (Whelpton 2005, 210). Ruling parties have been largely unable to implement long-term plans because of quick turnover. Corruption has plagued the country, “inhibited development activities, circumscribed enforcement of human rights, hampered the enforcement of directive principles and policies of the State, and constrained in basic infrastructure development,” (Government of Nepal 2011a, 75). Pervasive corruption combined with the lack of state presence in rural areas and with mistrust of the government has meant that efforts to implement much-needed development strategies and projects have struggled to succeed. The poor are largely concentrated
in rural areas: 90 percent of poor Nepali people are rurally-based (Central Intelligence Agency 2019; Government of Nepal 2011a).

Problems that affect society at large present challenges to agriculture and climate change policy in specific. To that end, I will now discuss three main macro-level issues that Nepal must address in order to assure food security. In Nepal, lack of infrastructure to reach remote mountainous villages, relations with India, and land problems are the biggest governance challenges facing the country.

Because of Nepal’s geography, successive regimes have found building transportation infrastructure to be quite challenging: as Shrestha points out, the rivers are too fast and turbulent to navigate, and building roads in the mountains is incredibly costly (2007, 91). In 2018, Nepal was ranked number 123 in regards to its infrastructure, illustrating the need to improve these facilities (World Bank 2018a). Although roads and airports have increased accessibility throughout the country, some remote areas remain outside of the scope of infrastructure projects. Over 40 percent of roads are fair weather roads, or roads that can only be used under good conditions because of lack of paving or other surfacing treatments (V. P. Shrestha 2007, 91). Networks of land transportation, the most important mode of transportation, are more robust in the south and generally the southeast of the country, leaving many districts in the north poorly serviced (V. P. Shrestha 2007, 97). Lack of infrastructure continues to be a problem for expanding agricultural markets, particularly because many smallholders live in remote areas, and thus only sell a small portion of their production on the market, making markets thin and prices high (Rapsomanikis 2015, 7, 27). This is also a problem for redistributing food from food surplus to food deficit regions, so that a surplus does not equal availability everywhere. Access to sanitation services remains low, with only 46 percent of the population having access to sanitation facilities (Food and Agriculture Organization n.d.). Without transportation to move supplies or personnel, education, health and other services are also less available in mountainous and rural areas.

As a landlocked country, Nepal faces problems trading on an international scale, and depends on India as its top trade partner. Although it has special agreements in place with India to allow movement of goods through India to Nepal, these arrangements continue to cause problems for Nepal. There are high costs imposed on transporting goods from India to Nepal, from slow transportation systems to paperwork requirements. Indeed, trade by road and by rail both take over twice as long as they should under optimal efficiency (Taneja, Bimal, and Dayal 2016, 17–18). When India implemented a trade blockage in 2015, for example, medicine prices skyrocketed and access decreased in Nepal (A. Sharma, Mishra, and Kaplan 2017). Both countries are parties to the Trade Facilitation Agreement of the WTO, but have failed to implement measures that might speed up and reduce the cost of trade (WTO 2019). Despite its reliance on India, Nepal has a long and fraught relationship with its southern neighbor. Throughout time, the connection between the two countries has waxed and waned based on Nepal’s political status, its
relationship to China, and trade rules. In trade relations, Nepal tends to export raw materials to India, which India in turn exports to Nepal in the form of manufactured goods (Jha 2015, 21). The agricultural trade balance between the two countries has become increasingly negative for Nepal (R. Sharma, Kumar, and Joshi 2017, 250). Among Nepali people, India is frequently seen as a colonist state, and leftist factions have frequently labeled it the ‘enemy’ (Jha 2015, 39; Whelpton 2005, 174).

Nepal’s growing population has put pressure on land access, despite low density, because of historical ties to feudalism that have not been fully severed through robust reform policies (Central Intelligence Agency 2019). In 1910, a new land tax system was implemented based on the payment of cash salaries, and in 1964, caps were placed on amount of land that could be owned by a given individual (Whelpton 2005, 75, 141). Land registration schemes began under the Land Revenue Act of 1978, which required that land transfer happen formally within the legal system (Acharya 2008, 7). Iterations of multi-year development plans each highlighted different aspects of agricultural development through land policy without making any progress in putting the plans into place (Acharya 2011). The current laws that cap land ownership and regulate registration are not enforced, leading to insecurity for those working the land, and therefore low investment in plots (Wily, Sharma, and Chapagain 2009). Landholdings are unevenly distributed between groups, and feudalism remains, meaning that many who do agricultural labor do not own the land upon which they work (S. R. Sharma, Upreti, and Pyakurryal 2012, 127–28). Farmers have little incentive to invest in their land because of problems with the legal framework around property rights, and lack access to credit even if they wanted to invest. Land reform, although attempted by multiple governments, failed to materialize into redistribution for the landless (Wily, Sharma, and Chapagain 2009). The poor and very poor are usually landless or do not own enough land upon which to subsist, and recent trends show that the average size of land plots is decreasing (Akhter et al. 2018, 621; Government of Nepal, Ministry of Agricultural Development 2015a, 30). The government of Nepal is still working on creating an umbrella land policy to better deal with the landless and increase land productivity, while the current Land Use 2015 policy seeks to zone land so that it can be used for food security purposes (Ministry of Land Reform and Management 2015). Despite being outlawed, bonded labor persists, particularly among landless agricultural workers (International Labour Organization 2013). Many bonded laborers have remained in the service of a landowner because they cannot obtain land that would allow them to make independent livelihoods (Wily, Sharma, and Chapagain 2009). In addition, traditionally marginalized groups including Muslims and Dalit communities experience landlessness more frequently than other groups (Government of Nepal 2011a, 61).

To conclude this background section, I present some macro-level trends in indicators on food security and poverty in Nepal. Nepal’s GDP has risen exponentially since the early 2000s, yet GDP per capita is still the lowest of the three case study countries at $849 in 2017, showing that food accessibility
is a challenge to food security in Nepal (World Bank 2017a). The Gini index, which measures inequality, shows an increase in inequality in the early 2000s, and then a return to just under pre-spike levels. A dearth of data, however, means that long-term trends in inequality are impossible to assess (World Bank 2010a). The latest data on poverty is from 2010, but from 1995 to 2010 poverty was quartered. In terms of food security, Nepal has grown increasingly dependent on imports to feed its population (Vijayan et al. 2014). The prevalence of undernourishment in the population remains stagnant at 10 percent since 2009, while population growth has translated into rising numbers of undernourished people (Food and Agriculture Organization n.d.). By some measures, the availability of food has decreased in the last seven years: the value of food production and the average dietary energy supply adequacy have decreased (Food and Agriculture Organization n.d.). These trends show that while poverty is decreasing and the economy is growing, food availability and accessibility pose challenges to Nepal’s food security in the future.

Agricultural Context
In this section on the agricultural sector, I explore the context and conditions for agriculture in Nepal in order to understand opportunities and constraints to offer better policy prescriptions. Agriculture likely began in Nepal around 2000 BCE, with farmers practicing burn and slash agriculture (Whelpton 2005, 16). Low populations allowed farmers to plant one crop per land plot without the need for intercropping through the 20th century (Whelpton 2005, 18). The Rana rulers became involved in agriculture only in response to growing dissatisfaction of the population in the 1930s (Dhital 1970, 22). Until the end of the Rana regime in 1951, plans for development and support for agriculture were mostly for show (Dhital 1970, 23). Development began in earnest with the first of a series of multi-year plans in 1956 mainly aimed at increasing agricultural production (Dhital 1970, 25, 27). Spending on agriculture and irrigation only totaled 15.7 percent of the total budget of the first plan, with the vast majority of resources going toward transport and communication improvements (Dhital 1970, 31). The first plan did not produce many of the desired results, and so after learning how to plan and mobilize funds, Nepal created its next plan (Dhital 1970, 41). However, funding for agriculture fell by three percent under this new plan, and the agricultural goals were largely unmet (Dhital 1970, 49–54). The third plan from 1965 to 1970 again failed to reach its goals, although it came close to reaching the desired rice production; nevertheless, spending on agriculture did increase (Dhital 1970, 66, 73). The government of Nepal became increasingly involved in the agricultural sector during the Fifth Five-Year Plan (1975-1980), spending on irrigation, chemical inputs, and programs to improve access to credit (Savada, Harris, and Library of Congress, Federal Research Division 1993, 122). Agricultural policy in the 70s through the 90s relied upon

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19 Poverty here is defined as the ratio of people living on $1.90 a day in 2011 dollars (World Bank 2010b).
development aid donors and infrastructure projects, several of which have been widely criticized (Whelpton 2005, 143).

Starting in the 1980s, government support for agriculture declined as the government liberalized trade and cut support for its state-owned enterprises. Structural adjustment phased out the use of subsidies for agricultural inputs, decreasing farmers’ access to inputs that might increase yields (N. P. Shrestha 2008, 116). During structural adjustment, “agricultural output remained almost stagnant,” demonstrating the adverse effects of these programs on the sector (P. K. Shrestha 2010, 10–11). Unlike in Ukraine where the government continued to apply high tariffs at will, Nepal’s agricultural taxes declined to “the lowest in the region” in 2002 (Pyakuryal, Roy, and Thapa 2010, 25). Analyses have showed mixed results of liberalization: there is some indication that food security improved, but these gains were not spread evenly throughout the country, leaving higher levels of poverty for those living in the hills and mountains (Pyakuryal, Roy, and Thapa 2010, 27).

In 1995, the government began implementing the Agricultural Perspective Plan, which put increased production of fruit and vegetables in the spotlight as well as a transition to green revolution-type production (N. P. Shrestha 2008, 101; Whelpton 2005, 230). This plan, however, failed to be implemented as prescribed due to a lack of investment, few step-by-step plans, and little cooperation between government agencies (N. P. Shrestha 2008, 102). Some positive outcomes from the Agricultural Perspective Plan included improvements in rural road infrastructure, horticulture, and the management of community forests (Government of Nepal, Ministry of Agricultural Development 2015a, 44).

Agriculture continues to be the main driving force of the economy, as 69 percent of Nepali people work in agriculture (down from 91 percent in 1981) and one third of GDP comes from the sector (Central Intelligence Agency 2019; Food and Agriculture Organization and United Nations Development Programme 2003, 32). Recent estimates of total land under production shows that around 20 percent of total land is cultivated, most of it in in the Tarai (Food and Agriculture Organization 2011a; V. P. Shrestha 2007, 64). In the hills, agriculture is carried out in terrace systems, in which retaining walls are built to prevent erosion and flatten out the terrain; crops are then planted in these man-made beds (Chapagain and Raizada 2017, 2). Nepali farmers frequently use intercropping and integrated crop systems that include livestock, which tend to be more resilient to pests and natural disasters (Panth and Gautam 1990, 53). Despite the use of these agroforestry methods, Nepal has not produced enough food to meet domestic demand since 2005 (Ministry of Agricultural Development 2013, 11).

As in Kenya, agriculture in Nepal is characterized by smallholder subsistence farming, and also faces geographical constraints limiting where food can be grown (V. P. Shrestha 2007, 66). There is a smallholder farmer paradox in Nepal, as smallholders tend to have access to only small plots of land averaging 0.55 ha (down from 1.23 ha prior to 2007), yet they make up the vast majority of farms and
produce 70 percent of food (Rapsomanikis 2015, 6, 8; V. P. Shrestha 2007, 66). They also continue to produce yields that are twice as high as the yields from larger farms, likely because of the increased labor from family members (Rapsomanikis 2015, 11). Most of these smallholders grow crops only for their own consumption, leaving insufficient and non-producing families to purchase imported food (Government of Nepal, Ministry of Agricultural Development 2015a, 31). At the same time that Nepal requires more imported food to meet its needs, agricultural production has experienced falling terms of trade, or higher import prices compared to export prices (Food and Agriculture Organization and United Nations Development Programme 2003, 79). The sector is not well connected to other industries, and agroindustry and the processing of primary crops to export items of higher value remains limited (Government of Nepal, Ministry of Agricultural Development 2015a, 29).

Farmers’ use of fertilizer, particularly nitrogen, has exploded in the last ten years due to government subsidies, but still falls behind that of neighboring countries (Bista, Amgain, and Shrestha 2013, 44; Food and Agriculture Organization n.d.).

I finish this section by outlining the main challenges to agriculture in Nepal. Agricultural production has not been able to keep pace with population growth, and yields have fallen behind other countries in the region (Bista, Amgain, and Shrestha 2013, 44–45). Although agricultural production has increased, this is due to the expansion of the area under cultivation (Food and Agriculture Organization n.d.; Whelpton 2005, 55,122). Farmers’ use of fertilizer, particularly nitrogen, has exploded in the last ten years due to government subsidies, but still falls behind that of neighboring countries (Bista, Amgain, and Shrestha 2013, 44; Food and Agriculture Organization n.d.). Because of the width of terraces in the hills, mechanization is difficult to use and farmers often utilize home-made tools, which require more labor; overall, Nepali farmers lack access to technology (Chapagain and Raizada 2017, 4–5; Savada, Harris, and Library of Congress, Federal Research Division 1993, 122). Specific challenges in the hills include declining water resources and soil fertility, as well as landsides and a declining labor pool. In the Tarai, shifting land with urbanization, erosion, and flooding challenge farmers’ ability to feed the country (Ministry of Agricultural Development 2013, 20). There has also been out-migration of men, changing the agricultural workforce and decreasing the number of skilled workers in the sector (Tamang, Paudel, and Shrestha 2014, 25).

THE 2008 FOOD CRISIS IN NEPAL: CAUSES, CONSEQUENCES, AND POLICY RESPONSES

In this section, I will investigate the causes, consequences, and policy responses to the 2008 food crisis in order to identify vulnerable populations and suggest policy changes that may ameliorate the government’s responses to hunger, paying particular attention to the stability pillar of food security. In 2008, those living in remote northern districts and rural agricultural wage laborers were the most hurt by higher food
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prices, showing the need for government intervention to decrease vulnerability and increase food security. As in Kenya and Bolivia, domestic factors contributed to food insecurity, while also being harmed by global panic over rice availability. As the government relied heavily on international support to prevent famine, it is clear that there is much room for improvement in Nepal’s response to food instability.

Of the four case study countries, Nepal was hit hardest by the 2008 food crisis. Even prior to it, poor families were not able to afford sufficient food for an adequate diet (Akhter et al. 2018, 625). These poor conditions prior to 2008 meant that the effects of the food crisis devastated Nepal: 3.4 million more people became food insecure, and 5 million people fell into poverty (WFP 2009, 2). Because of the food crisis, the cost of the typical food basket increased by about 20 percent (Akhter et al. 2018, 621). The poorest of the population spend 70 to 75 percent of their income on food, so as prices spiked, they were unable to adjust their budgets to their rapidly decreasing purchasing power (Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 20). Rural agricultural wage workers, the poorest group, bore the brunt of the effects of the food crisis. Their purchasing power decreased, while drought decreased harvests. At the same time, imports of food were stalled because of exporting countries’ trade bans. Protests and strikes prevented the government from distributing aid and slowed trade networks. As transportation of products is essential because of regional food production disparities, which means that as petroleum costs have increased, so too has the cost of food in remote districts (Government of Nepal 2011a, 61). To add to the suffering of poor families, the global financial crisis also likely decreased the amount of money sent home from abroad (FAO 2009, 16–17).

The effects of the food crisis were not spread evenly across the country: the northwest, and generally more northern districts faced greater food insecurity than the east and Tarai zone, and the country was declared to have regional, not country-wide, food shortages (FAO 2008, 18; Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 15). These differences in the location of the effects largely correlate with annual differences in production between districts, leaving some with food surpluses and some with food deficits. As around 18 districts experience food deficits on a yearly basis between June and September, the government regularly supplies foodstuffs to last them until the harvest (Kshetry 2008). As production fell with droughts, many more regions experienced food deficits than usual, and the government expanded its provision of basic food baskets (Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 14).

A drought amplified the international crisis, taking place during the winter between 2008 and 2009, during the period in which the country receives the least precipitation. During these winter months, however, weather stations reported rainfall far below that normally received (Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 6). Crops that are not irrigated, about half of the land under cultivation and in particular wheat, saw large declines in production. Production in relation to the
population growth had been declining for some time, and the drought in 2008-2009 led to even greater shortages as some areas experienced up to 70 percent crop loss (Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 20). This drought meant that Nepal’s normal production levels were not obtained, and families had to rely upon aid or imported foodstuffs.

As a major importer of rice, one of the commodities for which supply on the international market decreased because of panicked export bans, Nepal is the case study country that was most impacted by other countries’ export restrictions (Paarlberg 2010, 23–24). Since 2002, Nepal has become increasingly dependent on agricultural imports, particularly from India, and in return, most of Nepal’s agriculture exports go to India (Gauchan et al. 2015, 250; R. Sharma, Kumar, and Joshi 2017, 249). Nepal’s agricultural imports ballooned from US$157 million in 1995/1996 to US$621 million in 2010/2011, illuminating the extent of Nepal’s dependency on outside sources of food (Government of Nepal, Ministry of Agricultural Development 2015a, 27). During the 2008 crisis, India restricted their exports of rice from 2007 to 2010. This ban had a negative impact on Nepal, as rice is the number one agricultural good it imports from Indian and approximately 96 percent of its rice imports come from India (R. Sharma, Kumar, and Joshi 2017, 255). The price of rice went up 19 percent in 18 months, making imported rice difficult to access for Nepali families with dwindling purchasing power (Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 18). India’s exports of non-Basmati rice to Nepal declined in February 2008, and stopped outright when India’s export ban went into full force in April 2008 (Slayton 2009, 25). India’s rice export ban continued through 2010, and its high minimum export prices for Basmati rice continued through 2010 as well (Shama 2011, 29–30). Indeed, the rice price spikes were caused by slightly different factors than the food crisis as a whole, as export restrictions by major exporters like India thinned and destabilized the market while production remained largely sufficient to meet demand (Slayton 2009, 3–4). At the same time, regional food stocks declined, so there was no buffer to high import prices (Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 23).

The government’s short-term responses to the crisis proved unsuccessful. The governmental Nepal Food Corporation (NFC) began increasing distributions of food to the poor in 30 mostly remote districts, yet these efforts yielded little respite because the government lacked the food stocks to distribute food in the quantities needed (Government of Nepal 2011a, 61; Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 23, 28).20 The government also implemented food for food programs that require food aid-receiving families to produce food for the market, a challenge in times of drought (Government

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20 The NFC has been criticized for being inefficient and failing to improve regional connectivity despite several rounds of reforms, so its lack of success in 2008 is not unexpected (Pyakuryal, Roy, and Thapa 2010, 21).
of Nepal 2011a, 62). Realizing their vulnerability to international market price spikes, in 2008, Nepal introduced policy to increase food storage, but this measure provided little help for those already suffering (Government of Nepal 2011a, 21). The World Food Programme (WFP) and other international organizations stepped in to help fill gaps in the government’s response. The WFP alone provided assistance to one quarter of the population; in addition to its school feeding programs and its food for work programs, the WFP also provided direct food rations during the crisis (Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 27; WFP 2009, 17).

Besides consumer assistance, the government of Nepal also used several trade restrictive measures to keep food in the country. In April 2008, a ban on rice, maize and wheat went into effect, followed by a 35 percent export tax placed on wheat products in May 2008. The government proceeded to apply an export ban on pulses in July 2009 (Shama 2011, 32). Nepal’s agricultural exports sharply declined in 2008-2009 because of the drought and political unrest that decreased what was available for export (R. Sharma, Kumar, and Joshi 2017, 247). These late export bans likely did little to stop the spread of the crisis, as much of the cause of the crisis in Nepal was from internal, rather than external, sources, and Nepal relies on food imports. High prices lingered in Nepal after the decline in other parts of the world, which has largely been attributed to strikes and protests (Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 18). Trading in remote areas of Nepal is difficult, and so simply keeping food in the country was not enough; targeted action to help struggling populations, like the programs implemented by the WFP, might have been more successful (Ministry of Agriculture and Cooperatives, WFP, and FAO 2009, 19).

While a number of factors coalesced in Nepal making the 2008 food crisis the disaster it was, what is clear is that the government was ill-prepared to help vulnerable segments of the population. The 2008 crisis demonstrates how Nepal’s food security is extremely vulnerable to any outside or inside disturbances. Going forward, there are several actions the government can take to decrease the country’s vulnerability to shocks. First, Nepal’s production must increase along with the population, otherwise Nepal will continue to be very vulnerable to the whims of international markets, particularly related to India’s rice exports. Second, food needs to be able to move around the country; increased production on its own will likely not help the northern districts that regularly face food deficit regions. Structural issues with infrastructure and political stability meant that the government was simply unable to provide timely assistance to those who needed it during the crisis. This means that investments in roads to remote communities, although expensive upfront, will allow food to move around the country not only during crises but also on an everyday basis. Third, while the NFC may be able to distribute food packages under normal circumstances, it lacks the funding and storage capacities to provide all of the assistance that the Nepalese need. In the short term, it appears that assistance from organizations like the WFP will need to
continue in Nepal to support food security. In the long-term, however, the government should increase spending on social safety nets and improve the NFC’s capacity to respond to crises. The type of aid given to inhabitants should be carefully targeted. When production fails in remote regions, direct government food provisions will be necessary to prevent starvation. In other areas where economic access is the larger issue, social safety nets, school feeding, and food for work programs will be more effective and prevent production disincentives. Fourth, steps to decrease vulnerability now will help Nepal in the future, as climate change may cause flooding and drought. A drought in 2008 and then a flood in 2009 limited food availability and caused additional humanitarian crises. Irrigation and water managements are thus a worthy investment. Last, Nepal must be politically stable in order for the above-mentioned actions to have the desired effects. In the last fifteen years, Nepal has become progressively more stable; continuing this trend is essential.

**Climate Change Context**

In order to understand the prospects for food security in the future, we must have a general grasp of climate change’s impact on agriculture. To narrow the scope of this inquiry, I will investigate two key crops, rice and cardamom. As Nepal’s number one food crop, rice is incredibly important to ensuring that Nepali people get the calories they need (N. P. Shrestha 2008, 109). Thus, production will serve as an indicator for food availability. Cardamom, the second crop in this study, is Nepal’s most important agricultural export. Thus, cardamom production will stand in for food access, as exports generate revenue and jobs. Like tea in Kenya, cardamom production is also dominated by smallholders. If production declines due to the effects of climate change, not only will the economy suffer, but smallholder farmers will lose access to food. Information on both crops will allow for a fuller picture of climate change’s potential impacts on food security in Nepal.

Rice production was first introduced in the Tarai region likely before the 12th century (Whelpton 2005, 16). The Tarai zone, consequently, is the area in which the majority of rice is grown, with farmers producing over 1,710,277 metric tons of rice in 2016 (Government of Nepal, Ministry of Agricultural Development 2015b). Rice can either be planted in drier fields using seeds, called dry seeded rice (DSR) or in flooded areas using transplanted seedlings, called aerobic rice.21 Because of its high water demands, rice is the crop that receives the most irrigation, with around 710,000 ha of rice production under irrigation schemes (Food and Agriculture Organization 2011a, 7). Smallholders are at a disadvantage compared to other farms in terms of irrigation: 67 percent of smallholder land is irrigated, opposed to 94

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21 There are some grey areas between these general two definitions, as some producers refer to DSR even if the fields are flooded during the growth of the plant.
percent of other-sized farms (Rapsomanikis 2015, 19; S. R. Sharma, Upreti, and Pyakuryal 2012, 131). However, rice still makes up about 36 percent of smallholders’ production (Rapsomanikis 2015). Crop yields across the board have been low, but rice has experienced the most success (S. R. Sharma, Upreti, and Pyakuryal 2012, 132). There are over 73 varieties of rice grown in Nepal, each with different yields and climatic sensibilities (Government of Nepal, Ministry of Agricultural Development 2015b). Yields vary across the country, with farms in eastern Nepal being more productive (Joshi, Maharjan, and Piya 2011, 108). Farmers have reported that challenges to growing rice include lack of irrigation, lack of access to good seeds, fertilizers and credit, and lack of technical know-how (Joshi, Maharjan, and Piya 2011, 111).

Figure 3.1. Map of rice production in Nepal (International Centre for Integrated Mountain Development, Murray, and Central Bureau of Statistics 2003, 225).

Large cardamom, also called black cardamom, is one of Nepal’s top agricultural exports (Government of Nepal and International Trade Centre 2017; Govindarajan et al. 1982, 230). As the fourth-biggest exporter of cardamom in the world, Nepal earned 23 percent of its agricultural export income in 2018 from cardamom, almost all of which goes to India (Tridge 2018; The Kathmandu Post 2018). Likely endemic to the Himalaya region, cardamom became commercially viable in the 1950s (KC and Upreti 2017, 1; Rao et al. 1993, 1). As perennial herbs, cardamom plants usually stand between 1.5 and 3.0m tall and produce brown fruit pods with the cardamom seeds inside (Rao et al. 1993, 2). After harvesting, cardamom is dried in the sun or in heat-controlled driers before being sold (Govindarajan et al. 1982, 243). The plants themselves are long-term investments: they do not start producing their highest yields until they are eight to ten years old, but the plants can live for 20 to 25 years (Paudel et al. 2018,
As cardamom is harvested by hand in hilly areas, smallholder households can be competitive because of the high average number of hands available to do work (Ajmera et al. 2018, 177; Bhandari and Bhandari 2018, 83; Rapsomanikis 2015, 15; Tangjang and Sharma 2018, 2562). Around 67,000 Nepali families are involved in the production of cardamom (Government of Nepal and International Trade Centre 2017, 27; UNNATI 2016). Challenges to cardamom production include diseases and pests, poor extension services and poor knowledge about the drying process, as well as lack of technology and irrigation systems (Government of Nepal and International Trade Centre 2017, 40–43; KC and Upreti 2017, 2; Tridge 2018).

Figure 3.2. Map of large cardamom production in Nepal (Government of Nepal and International Trade Centre 2017, 14).

After situating the key crops in their context, I now turn to the impact of climate change on them. Nepal has already begun experiencing the effects of climate change. Temperatures are projected to increase by 3.1°C, and precipitation is projected to increase by 0.4 mm/day, the largest increase of the four case studies (Adler and Hostetler 2013). While temperature increases are likely to be relatively regular between months, precipitation changes show more intermonth change. Melting glaciers means
that for now there may be both more water in the glacial-fed rivers and lakes that might flood, but in the long term it may present a different problem as water sources become more unreliable (Government of Nepal 2011b, 3). Nepal has two rainy seasons, one from June to September with most intensity in the southeast, and the other from December to February with more rain in the west; the summer rainy season brings 75 percent of the country’s rain (Food and Agriculture Organization 2011a). There are some signs that these rainfall patterns that determine crop harvests throughout the country have begun to change, and these rainfall changes present the greatest challenges to the production of cardamom and rice.

Figure 3.3. Average monthly temperature observed and projected for Nepalganj, 400masl, part of the Tarai rice growing region (Adler and Hostetler 2013; Merkel n.d.).
Figure 3.4. Average monthly temperature observed and projected for Taplejung, 1441masl, part of the cardamom growing region (Adler and Hostetler 2013; Merkel n.d.).

Figure 3.5. Average monthly precipitation observed and projected for Nepal (Adler and Hostetler 2013).

Although the elevation differences between the two crops are not as extreme as in Bolivia, I still must take into account elevation when calculating precipitation. As other studies have used linear
temperature to elevation conversation, I will adopt a similar approach (Akhtar, Ahmad, and Booij 2009, 1179). To adjust the temperature, I use average data from cities in key production areas in the Tarai for rice and the hills for cardamom, and then add the country-wide projected change in temperature CMIP5 model ensemble mean. This back-of-the-envelope calculation will allow me to better estimate future temperatures, and thus see their potential effects on cardamom and rice.

Most rice varieties require temperatures between 10°C and 40°C to germinate, with optimal germination occurring at 30°C (Vergara 1992, 15). Plants grow best in warm temperatures between 25 and 35°C (Vergara 1992, 23). As these optimal temperatures will be reached during more months of the year, the normal time between planting and harvesting for rice of 110 to 155 days with harvests occurring between September and November in the Tarai, growing seasons may shorten and harvesting may happen earlier, permitting farmers to plant more cycles of rice in a year and increasing production. Precipitation changes, however, might challenge these otherwise positive developments. Dry rice does not need to be flooded, but it does require moisture throughout the growing season, and rice grown in flooded patties requires 1,432 liters of water per kilogram of rice produced (Devkota et al. 2014; IRRI, n.d.). On average, all rice needs approximately 1300-1500mm of water per growing season (IRRI, n.d.). The higher spikes of precipitation during the summer months present both opportunities and challenges: increased rainfall may be stored so that irrigated crops can thrive all year-round, while floods might damage production. The Tarai zone is already vulnerable to floods, so without proper flood management systems and infrastructure, it is unlikely that rice production will benefit from the increased precipitation. Most farmers use improved seeds rather than local rice varieties (Government of Nepal, Ministry of Agricultural Development 2015b, 7). For dry seeded rice, the optimal time for sowing seeds is late May, and requires moist soil to germinate. Seeds that are not germinated in greenhouses can be incubated before planting using DSR production methods, decreasing the water necessary to grow the crop (Vergara 1992, 16).

Cardamom plants thrive in a wide range of temperatures, from 10°C to 30°C, although they prefer cooler temperatures. Increases in temperatures in the hills, where cardamom is primarily grown, may allow for plants to be planted at higher elevations than previously possible. Cardamom plants usually flower between April and June at lower altitudes, and May to July higher up (Rao et al. 1993, 3). Flowering time may decrease with the rising temperatures, leading to shifts in the timing of harvests. Because cardamom is an export crop, the timing of production is more important for the generation of extra income that it will give farmers. If farmers are paid upon harvesting and drying the cardamom, or perhaps earlier through market mechanisms, it is possible that earlier harvests might help farmers who plant cardamom purchase food before the subsistence rice harvest. In terms of precipitation, cardamom requires evenly distributed rainfall of 3000-3500mm per year (Gudade et al. 2013, 64). With increased
precipitation during the summer months, there is a need for water management systems to prevent flooding in the summer and to store water to distribute to plants later in the year. Changes in rainfall patterns might also challenge the production of cardamom by allowing the transmission of disease during wetter periods and the loss of plants during drier times.

Investigating potential changes in temperature and precipitation and the effects of these changes on cardamom and rice production reveal some worrying trends for food security in Nepal. The projected effects of temperature on rice and cardamom show that there may be a shorter time until harvest or flowering, although whether or not this may have a drastic impact on food security is unclear because it depends upon when farmers need food the most throughout the year. In Nepal, unlike in Kenya or Ukraine, precipitation patterns are likely to stay the same, but with added rainfall during the summer. The increase in precipitation during one part of the year may cause a problem for the rice and cardamom plants, as they prefer evenly distributed water; rice in the Tarai is especially vulnerable to flooding. The main problem related to climate change for Nepal, then, is managing floods in order to ensure that food is available and accessible throughout the year. Accordingly, flood management policies should be a top priority for the government of Nepal.

PART II: ANALYSIS

RIGHT TO FOOD FRAMEWORK

In this section, I explore the first question of my thesis on the right to food’s impact on food security in Nepal. Nepal ratified the International Covenant on Economic, Social and Cultural Rights (ICESCR) in 1991 during its second democratic period. The 2015 constitution fails to indicate the status of international treaties vis-à-vis domestic law, leaving unresolved whether ICESCR applies directly or whether there must be a domestication process prior to the application of human rights treaties’ measures. This lack of specificity requires clarification to ensure that all international economic, social, and cultural rights are respected. Nepal has not signed nor ratified the OP-ICESCR.

In 2006, the civil conflict officially ended with the Comprehensive Peace Agreement negotiated between the government of Nepal and the Communist Party of Nepal (Maoist), beginning the process of adopting a new constitution (Farasat and Hayner 2009, 16). A Commission on Disappearances and a Truth and Reconciliation Commission were established to help Nepal to a peaceful post-conflict state, although the actions of the commissions were weak because of little civil society participation (Farasat

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22 In a 2011 court case, the judges used international human rights language to justify a decision in favor of the right to adequate food, perhaps pointing to a monist approach (Food and Agriculture Organization 2011b).
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and Hayner 2009, 25). The 2007 Interim Constitution, written by 16 lawyers, departed from previous governance models in three main ways: “from monarchy to republicanism, from civil conflict to peaceful politics, and from non-inclusive state mechanism to inclusive democracy;” it also included the right to food sovereignty (International Institute for Democracy and Electoral Assistance 2015, 8; P. Sharma and Daugbjerg 2017, 10). Elections for the Constituent Assembly (CA) happened in 2008, and negotiations for the current constitution got underway (Jha 2015, 296; Phuyal 2015). During negotiations for the new constitution, three main areas of disagreement emerged: over state and land restructuring; over which land reform model to use; and over property rights (Shahi and Sapkota 2015, 2). The first CA failed to ratify a constitution by 2012, and a second CA was elected in 2013 (International Institute for Democracy and Electoral Assistance 2015, 19). After the two devastating earthquakes in 2015, the different parties in the CA created a 16-point agreement which led to a draft, a public comment period, and finally the promulgation of the constitution in September 2015 (International Institute for Democracy and Electoral Assistance 2015, 23–28).

The constitution declares Nepal to be a secular, socialism-oriented, federal democratic republican state, marking a shift from past constitutions, which contained the dual pillars of monarchy and democracy. Structured as a federalist state with three levels of government, federal, provincial, and local (under Articles 56–59), the constitution reimagines Nepal’s system of governance. Human rights are a central part of the constitution, despite the remaining issue of the application of international law, an outcome associated with gross violations during the People’s War. The general provision granting people the right to live with dignity can be interpreted as an expansive human right. Within the Directive Principles, the state’s political objective is to ensure that fundamental and human rights are protected, giving the state a human rights mandate.

Article 36 codifies the right to food, stating: “(1) Each citizen shall have the right to food. (2) Every citizen shall have the right to be protected from a state of starvation, resulting from lack of food stuffs. (3) Every citizen shall have the right to food sovereignty as provided for in law.” Like Bolivia, Nepal eschews the language in ICESCR for stronger, choice-related rights. However, in choosing the word citizen to describe who has this right, the constitution effectively limits the application of this right to only certain members of society. Nepal takes a step further than Bolivia in formulating this right,

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23 For a longer discussion of food sovereignty, see the Right to Food Framework section in the case study on Bolivia.

24 This runs contrary to ICESCR which mandates that ESC rights be given to populations without discriminating based on certain characteristics such as nationality. It is likely that Nepal used the term citizen specifically to exclude Indian nationals living within its borders. This response to foreigners is quite different from Kenya’s, which
explicitly granting the right to food sovereignty. This phrasing of the right to food as the right to food sovereignty in the constitution was largely a political statement rather than a fully formed approach to food security, serving as a “coalition magnet” (P. Sharma and Daugbjerg 2017, 12). Various peasant movements promoted the idea of food sovereignty, although there purposefully remained “ambiguity” in what food sovereignty actually meant (P. Sharma and Daugbjerg 2017, 15). Specific issues that are unsettled in Nepal relate to the compatibility of trade and food sovereignty, the importance of self-sufficiency of food, and at what level food sovereignty is given (P. Sharma and Daugbjerg 2017, 15–17). As the right to food is also included alongside the right to food sovereignty, there remains legal backing for the less-vague and more justiciable right. Court rulings and the government’s trade and social assistance policies point to a general disregard for food sovereignty and instead a focus on food security (P. Sharma 2018, 18–19).

There have been several significant court cases related to the right to food in Nepal. In the case Madhav Kumar Basnet v. Prime Minister, Girija Prasad Koirala and Others, writ no. 3341 of the year 2055, the Supreme court ruled that the government had the responsibility to protect the life of the people, including protecting them from starvation, but that the state had shown that it had taken appropriate action (Chapagai 2014, 99). One of the tools that was used to force the government to take action in 2008 was another case on food security: Prakash Mani Sharma and others on behalf of Forum for Protection of Public Interest (Pro Public) v. Office of the Prime Minister and Council of Ministers and others, writ petition No. 0149 of 2065. Before the ruling in favor of the plaintiff in 2011, the court mandated that the government supply food to suffering districts. The 2011 ruling included references to ICESCR, as well as to the food security pillars of access and availability (Chapagai 2014, 100–101; Food and Agriculture Organization 2011b; P. Sharma and Daugbjerg 2017, 20–21). Together, these rulings provide strong jurisprudence in support of the right to food in Nepal, making Nepal the country with the strongest jurisprudence on the right to food of the four case study countries.

Consumers have the right to quality foodstuffs under Article 44, as well as the larger right to social justice under Article 42. To support the right to food, the constitution’s guidelines require increased investment in the agricultural sector for sustainable productivity and effective distribution. The landless, squatters, and former bonded laborers are to be provided with housing and land resources so that they can

specifically states that refugees and vulnerable groups have the same right to food as citizens within the Food and Nutrition Security Policy (42).

Nepal uses a lunisolar calendar system, so the case is from 1998 using the Gregorian calendar.

This case was filed in 2008 using the Gregorian calendar system.
freely make a living. Provincial and local level governments share jurisdiction over agriculture, while all three levels of government work together for land distribution.

In addition to laying the foundation for right to food legislation, the constitution also supports land reform measures. Although Article 25 gives people the right to property, line 4 goes on to note that this provision does not restrict the state from carrying out land reforms to improve productivity and agricultural performance. In the guiding principles section, the document highlights the introduction of scientific land reform to decrease absentee ownership and protect the rights of those actually working the land. Article 42 on social justice gives peasants the right to have access to land for agriculture as well as the ability to use traditional cultivation practices. Women are also guaranteed better access to land than in the past.

The constitution is quieter on the issues of infrastructure and trade, and does not stipulate food sovereignty as a criterion for negotiating trade agreements as Bolivia does. The National Natural Resources and Fiscal Commission is charged with assessing infrastructure and supporting the direction of funds toward districts that need it most in Article 251. Under Article 51, the constitution says the state will pursue policies that mobilize foreign investment for infrastructure projects. Article 236 states that tariffs cannot be applied to trade between provinces, a step toward facilitating the movement of foodstuffs from food surplus to food deficit districts.

Social security is offered to those who work and offered universally to the disabled, elderly, and other vulnerable groups (Constituent Assembly 2015; World Bank 2018c, 34). The state must offer additional and first access to social services to a number of groups, such as women and Dalits, and began a program using identity cards to target members of these groups in 2010 to help offset their exclusion (Holmes and Uphadya 2009, 24). As those who are self-employed or employed in the informal sector are excluded from the state insurance fund, subsistence farmers are likely left out at higher rates than other groups (International Social Security Association 2018). Nepal does spend more than the regional average as a percentage of its GDP on safety nets, but this still measures in at less than half of the average per capita spending (World Bank 2018c, 19–20). Less than five percent of the poorest receive unconditional cash transfers, although about ten percent receive support through food for work or public works programs (World Bank 2018c, 36, 40). Without all-encompassing safety nets, particularly for those living in remote areas that the constitution’s guidelines direct the state to support, the social justice elements of the constitution are likely to fall flat.

In addition to a national monitoring system (Nepal Food Security Monitoring System), Nepal has two major plans on food security: the Food and Nutrition Security Plan of Action (FNSP) and the Zero Hunger Challenge National Action Plan. Because the latter does not have any government funds allocated to it and relies entirely on international support, I will instead analyze the FNSP. The FNSP is built
around food security and not food sovereignty, despite language in the interim constitution granting the right to food sovereignty. The plan aims to implement the right to food articles of the constitution. It seeks to address all four areas of food security: availability, access, utilization, and stability. Stability is the topic least discussed in the plan, as interventions in this area are left for rapid response actions rather than forward planning. While the other three pillars set the stage for stability, without substantial plans for mitigating disaster, there remains a gaping hole in this policy. In addition, the Action Plan is not attentive to climate change, which makes this plan weaker than it could have been as Nepal is already experiencing the effects of climate change.

Under the availability section, the FNSP plans to focus both on increasing production and improving trade. The steps outlined overlap much more with the Agricultural Development Strategy, focusing on getting improved seeds and better extension services to farmers, expanding irrigation, and mechanizing small farms. All four of these areas address concerns in the agricultural sector, particularly as farmers may need improved rice seeds and knowledge to deal with increased flooding in the Tarai. It also points to an expansion of support for spice production like cardamom, which may benefit the smallholders producing this important export crop. As Nepal imports food from other countries and also redistributes from food scarce to surplus domestic regions, trade is an essential part of availability. The FNSP focuses its attention on addressing quality and safety issues in food trade to improve access, mainly through legislation. Overall, the section on food availability appears that it will have positive impacts on this pillar of food security, and improving the components of the plan to improve availability of food will receive just under 70 percent of the funding under this plan.

In terms of access, the FNSP will focus on gender equality and social and geographical inclusion (GESI) to target populations that are particularly vulnerable to food insecurity. The FNSP takes a new approach to the topic, with plans to give funds to groups in order to streamline multi-subsector lending. Access will also be ameliorated by better use of forests to develop livelihood diversification through agroforestry. The weakest part of the plan is that concerned with access, which comes at the detriment of food security as it does not fill the gap left by social safety nets. Strikingly, the FNSP calls for the implementation of policy and legislation on the right to food from a human rights-based approach that has yet to fully come into existence nearly six years later.

The parts of the plan related to utilization center on teaching people about nutrition so that they can enjoy healthier, more nutritious diets. The four key actions under the theme of utilization include sharing information about the ways that local food can be used in nutritious diets, targeting households for special learning sessions about healthy diets, creating healthy snacks that are culturally appropriate and nutritious for communities, and lastly conducting surveys to better understand needs of specific communities. Nutrient deficiency is a problem even in areas with sufficient production, so the utilization
pillar’s programs might help these areas become healthier. While teaching people about nutrition is important, it is irrelevant if families cannot produce or purchase nutritious items. No fewer than 15 bodies and agencies will need to contribute to making the FNSP a reality; the high levels of required coordination likely hurt the plan’s implementation and its ability to help families become more food secure (Ministry of Agricultural Development 2013).

Nepal’s development is led by the 14th Three Year Plan, which was put into place in 2017. This plan envisions Nepal stepping towards self-sufficiency led by high economic growth. Agricultural development plays a key role in the plan, as the plan’s number one strategy is to increase production by modernizing the agricultural sector. Infrastructure, the lack of which is one of the largest challenges to food security in remote regions, stands to be improved under the plan. The growth rates that the plan calls for, now ending its term in 2019, have not been reached: indeed, agricultural growth was only 2.4 percent in 2018 while the plan calls for a 4.7 percent growth rate (Shakya, n.d.; Bank 2017). A new development plan has yet to be realized.

Reviewing the framework on the right to food reveals several important pieces of information about food security in Nepal. The use of the concept “food sovereignty” in both Bolivia and Nepal show how the more ambiguous term can serve political ends, while not significantly changing the policy in place. Nepal’s constitutional provision on the right to food violates ICESCR as it is discriminatory; amending the constitution to grant these rights to all inhabitants appears politically impossible. What Nepal has that the other four case study countries do not is clear jurisprudence supporting the right to food. The litigation helped get immediate support to hungry people, showing a way in which taking the right to food to court can have significant benefits for a whole region. Although there is no evidence that the FNSP emerged directly from the 2011 ruling, the ruling for the plaintiffs probably at least encouraged the government to create the plan. The FNSP is very much lopsided toward the availability of food to the detriment of the other pillars. This is a rather strange choice, as the Agricultural Development Strategy aims to do similar things. Further, as Nepal has limited funds, it would have made more sense to spend more on the other three pillars under this plan. In addition, the FNSP leaves out specific programs to address the effects of climate change and help inhabitants adapt, which is an omission with big consequences for the right to food. Social safety nets do not do enough so that Nepal can simply sideline access. Thus, accessibility is the pillar with the least institutional support overall, and the government should consider putting into place stronger social safety programs specifically targeted to food insecure groups to fill this gap.

**Agricultural Framework**
In this section, I use the criteria from the previous sections in order to analyze Nepal’s agricultural policy. Macro-level problems this plan should take into account include land rights, infrastructure and access to remote areas, and trade. The populations most vulnerable to food insecurity are those in the northern mountainous part of the country, as well as rural agricultural wage laborers, so these groups should be targeted for support under the agricultural policy. Challenges specifically related to agriculture include low yields and production, erosion, lack of technology and inputs, and labor shifts. Rice and cardamom face similar challenges, with producers of both lacking extension services and access to credit, and with cardamom being vulnerable to disease. Under the conditions of climate change, there are risks of increased drought and flood episodes, with changes in precipitation affecting both rice and cardamom production. By using these elements to assess the current policy, I aim to make recommendations about how to improve food security in Nepal.

The Agriculture Development Strategy (ADS) for the period 2015-2035 is the current agricultural development plan. The plan’s vision is: “A self-reliant, sustainable, competitive, and inclusive agriculture sector that drives economic growth, and contributes to improved livelihoods and food and nutrition security leading to food sovereignty.” The formulation of the objective is a clear step toward an agricultural policy that will contribute to the right to food, and also highlights food sovereignty as being related to self-sufficiency in grains. There is some room for applauding the plan, starting with its commitment to involving a diverse set of stakeholders in the preparation of the document. ADS envisions Nepal as moving away from an agriculture-based economy under its tenure, which might occur at some point if rates of emigration and urbanization continue but is unlikely to happen in the next 25 years. In order to remain food secure during this program, yields as well as incomes will have to increase so that people can purchase imported food. The macro-level goals of the plan are lofty, including more than doubling agricultural GDP per capita. Even if reaching these standards may not occur, these goals, however, demonstrate that the government understands the outcomes necessary for food security. The plan is organized around four main outcomes: improved governance; higher productivity; profitable commercialization; and increased competitiveness.

The plan includes language on improving the status of land rights issues under the productivity pillar. This will be done by enforcing the land rules on maximum holding size, reducing land fragmentation, and creating a court to settle land disputes. One of the more interesting actions on land is the creation of a national land leasing corporation scheme and a land lease act to allow farmers to lease land. This might be a powerful way to help the landless poor, who often lack the funds to make a large down payment, gain access to land to improve their standing. In addition, there will be taxes applied to land that is not farmed to encourage absentee owners to sell their land to others who will make the land
productive. Under the commercialization outcome, land reform will be incentivized to increase commercial farming.

Infrastructure and trade are discussed in this strategy, but are less of a focus than land rights issues. Actions related to infrastructure appear in the commercialization outcome, and center on improving policy and on providing support to agricultural roads in the districts. The ADS also envisions the creation of a separate fund to finance road projects and management. Trade measures under the competitiveness component focus on international trade rather than on domestic exchange, with increasing institutional capacity to negotiate better agreements high on the list. Improving international trade is a must for short-term national-level food security, as production does not meet domestic consumption. Focusing on international trade forgets that the primary problem in physical access to food is due to difficulties in distributing food on a domestic level.

Specific vulnerable groups will be targeted for support under the good governance heading through several different mechanisms. The plan initiates the design of a special targeted food and nutrition security plan, and calls for the implementation of the FNSP. It envisions increased coordination between different food and nutrition programs, which does not appear to have been done as the country launched an additional food and nutrition plan (the Zero Hunger Challenge) in 2016 and a multisector nutrition plan in 2017. Coordination between plans would help ensure that there is no overlap or duplicated efforts, as designing more plans does not help vulnerable populations unless they are implemented. While there does need to be some work to improve the FNSP because of gaps relating to access, these holes appear to be filled under the ADS, and so the creation of further plans is unnecessary. Another part of the good governance outcome will strengthen GESI monitoring and statistics, make all extension services sensitive to these issues and improve farmers’ access to all means of agricultural production regardless of gender, location, or identity. These GESI programs are good ones to increase cohesion and promote the inclusion of women and marginalized minority groups in agricultural programs. One of the problems with the targeting part of the plan is that it does not specify which groups it had determined as the most vulnerable, leaving open the possibility that those who need help the most—those in the northwest and agricultural wage laborers—will not receive it. There is one program that does target these groups to be implemented in the western part of Nepal: this program is a step in the right direction, particularly as it denotes smallholders as the beneficiaries to increase production and food availability.

One of the reasons that farmers have low productivity is that they lack chemical inputs, so this strategy will help farmers gain access through better policy and a voucher system to purchase inputs under the productivity component. It will also help them access fertilizer through vouchers and subsidies, while encouraging the use of organic inputs and their effective use so as not to harm the environment. While in the long run, placing heavy subsidies on chemical inputs can harm production due to inefficient
use and pollution, combining these measures with ones to help farmers appropriately use inputs and making them aware of non-conventional alternatives means that this program will be more sustainable, and will support yield increases and food availability.

Labor changes due to emigration and urbanization are discussed in relation to improving women’s access to land and credit through GESI interventions, as well as through improving the agricultural education system under the productivity outcome. The educational programs focus on improving the agricultural universities as well as creating better vocational training centers. The latter initiative will likely have a more positive impact on food security than the former, because the idea that all having all smallholder farmers attend university in the next 25 years is very unlikely, as literacy rates are still only just above 60 percent, and closer to 50 percent for women who are the ones more frequently running farms as men migrate (Central Intelligence Agency 2019). While the aggregate support to agriculture might incentivize people to stay in the sector, the government could implement special programs to encourage people to stay on their land.

Credit is targeted under both outcome two on productivity, outcome three on commercialization, and outcome four on competitiveness. Under the productivity component, programs are aimed particularly at helping farmers gain mechanization capacity. Thus, I will discuss the technology and credit challenges together in this paragraph. To improve credit access, the strategy will conduct workshops to help farmers become more financially literate and to work in groups to create plans to receive community agricultural project funding. It will also provide credit through a special program at the central bank of Nepal to target vulnerable populations. Not only will there be improved credit access, but the strategy also envisions voucher systems and agricultural tool leasing systems to help farmers get access to necessary tools, as well as credit for manufacturers and importers of this technology so that it is more readily available to farmers. The commercialization outcomes related to credit treat such macro-level problems as improving the investment environment and incentivizing private companies to offer more financial services to the agricultural sector. Under outcome four on competitiveness, there is a focus on public-private partnerships (PPP) to support credit access and investment, and to encourage innovation in agriculture. These programs on increasing credit and mechanization access hold promise, as they combine education with both direct government and private sector support.

While not specifically targeted at rice and cardamom, the ADS establishes stronger extension services for farmers. Under the production outcome, there will be the creation of a pilot voucher program targeted at subsistence farmers to work towards improving access to these services. The services themselves will be improved through increasing their internet access, better training staff in marketing and GESI issues, and decentralizing research so it can better support specific areas’ needs. As Nepal has considerable geographical and climatic variation, these agricultural services will be decentralized in order
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for them to be better tailored to fit the local conditions. There is also the targeting of extension services to
the most vulnerable northwestern regions, a good step in improving production to avoid hunger in remote
areas.

Cardamom, despite being a major export crop and source of income for smallholders in the hills,
is not targeted for improvement under the value chain development programs in the commercialization
outcome. Through better drying and processing, Nepali farmers can produce better-quality cardamom and
receive higher incomes from the crop; as a result, failing to help farmers in this respect is a flaw in the
plan. In addition, there is no support for the prevention of disease in cardamom plants. A special program
for cardamom production is listed under other programs, but there is no evidence about what exactly this
might entail and the steps involved. In addition, cardamom is already susceptible to disease, which may
increase in frequency with warmer temperatures. As the strategy does not address disease reduction in
perennial crops, this omission may be detrimental to cardamom production in the future.

In order to increase production and yields, the strategy will implement several other programs in
addition to the ones already discussed. It will increase irrigation and water management systems, although
it is not clear that these steps will be aimed at smallholders. Erosion is marginally targeted under the
outcome on productivity through identifying land that requires rehabilitation; there is supposed to be a
program to rehabilitate the land after it has been identified, but this part lacks detail.

The ADS includes three steps to increase the resilience of farmers, and to help them cope with the
projected effects of climate change. First, there will be better warning systems and weather programs so
that farmers have better ideas about what climatic conditions to expect. Second, those working in
extension services will be trained in climate-smart agricultural practices in order to help farmers get the
information they need to make better crop and planting decisions. There will also be research into more
resilient crop varieties could help rice improve its resilience to flooding and a voucher system to help
farmers get access to these seeds. And third, the strategy will establish a fund to improve farmer welfare,
and also promote insurance schemes to farmers so that they have something to fall back upon when crops
fail. This will be done under both productivity and commercialization outcomes, with the latter creating a
pilot program to support smallholders access to credit, and encouraging new private agricultural insurance
programs. This three-pronged approach means that farmers will have better information, the knowledge to
respond to it, and support when things go wrong. Combined, this approach shows promise in improving
farmer resilience and decreasing vulnerability to climate change.

The ADS mentions the right to food and food sovereignty several times throughout. Under the
good governance outcome, it says it will create legislation on the right to food. I am not entirely
convinced that Nepal needs more legislation, as its right to food framework and jurisprudence is already
strong. The food reserve, administered by the NFC, will be strengthened under the ADS. This step is a
very good one to improve access to food in emergency situations, as in 2008 the corporation did not have the resources to adequately respond to the growing crisis (Government of Nepal, Ministry of Agricultural Development 2015a).

By working in tandem with the FNSP, some of the components of this agricultural strategy, if properly implemented, could have a powerful, positive impact on Nepal’s food security situation. Support to improve mechanization, technology, credit, yields, inputs, climate resilience, and extension services under the strategy is well-developed, showing that the ADS will likely improve agricultural production. However, other areas stand to be improved, notably attention to labor changes, cardamom, and targeting of northern dwellers under the plan. Because of the large portion of the population that is involved in agricultural work, increasing production will also improve the pillars of access and stability. While the strategy does have a focus on expanding commercial agriculture and exporting food, the plan seems to balance the need for increased production for domestic consumption with the need for income from exports by focusing on production, especially for smallholders, in the first three components of the strategy. The language on transitioning from an agricultural economy can be read as aspirational, rather than as something that this strategy is actually going to accomplish. What may help this plan succeed where past plans have faltered is that implementing agencies for each program are indicated in print, so that every agency has a tighter blueprint of what they are supposed to accomplish. The National ADS Coordination Committee is to coordinate the whole policy, giving some national oversight to a decentralized plan and creating a higher likelihood of implementation by the ministries.

**Climate Change Framework**

After analyzing the agricultural policy, I now turn to Nepal’s climate change framework in order to determine whether the policies on the books will support food security in the future, and in what areas they can improve. Based on my assessment of climate vulnerability using CMIP5 and information from the 2008 crisis, it is clear that food security will rely on drought and flood mitigation, as well as water management. As Nepal is ranked the fourth-most vulnerable country to climate change in the world, it is of upmost importance that the government take adaptation measures to help its citizens weather the coming storm (United Nations Development Programme, n.d.). Nepal is a state party to the UN Framework Convention on Climate Change (1994), the Kyoto Protocol (2005), and the Paris Agreement (2016). The constitution offers moderate environmental rights and protection, noting the need to “strike a balance between environment and development” in Article 30. It establishes a National Natural Resources and Fiscal Commission for distributing the revenue from the exploitation of natural resources. Conservation policy, as spelled out in the governance guidelines, should be governed by the norms of intergenerational use and center around the sustainable development of water resources including irrigation systems and renewable energy. There is also an emphasis on forest management and protection,
an essential element for sustainable agroforestry systems and for peasants’ continued use of forest-derived resources.

There are two main documents that I will discuss in this section: the Climate Change Policy of 2011, and the National Adaptation Programme of Action. The Climate Change Policy’s vision is “This policy envisions a country spared from the adverse impacts of climate change, by considering climate justice, through the pursuit of environmental conservation, human development, and sustainable development—all contributing toward a prosperous society” (Government of Nepal 2011b). To this end, the policy establishes a Climate Change Center and a Climate Change Management Division to oversee climate change mitigation and adaptation on a day-to-day basis. Several of the policy’s goals are important for climate change mitigation. Community-level and community-driven adaptation will ensure that the adaptation and mitigation measures taken address the needs of specific areas and populations. The indicated measures on disaster risk management as well as the creation of a special climate change fund for adaptation will be also useful to Nepal’s agricultural sector, as Nepal is vulnerable to natural disasters that harm food security. The policy also indicates that research will focus on developing flood and drought resistant crops and getting them to farmers. Erosion, which is only briefly mentioned in the ADS, is mandated to be prevented through the conservation of soil. Overall, the policy provides positive guidance to improving food security under climate change.

The National Adaptation Programme of Action (NAPA), established in the same period as the Climate Change Policy, articulates the steps the government will take in order to prepare for climate change and identifies the key vulnerabilities facing the country. The NAPA identifies food security and agriculture as most vulnerable to climate change. Its action steps are designed around nine cross-sectoral activity components, which will be implemented by sectoral ministries. As climate change will likely have differential impacts on individual communities and districts, the NAPA also identifies the specific regions that need immediate attention for adaptation measures.

There are several activities that improve flood and drought (disaster) management. In the first activity component, early warning systems and disaster reduction plans will be created. The second activity will help farmers develop the technology to manage the more intense rainfall. Activity three focuses on this area, calling for community-level adaptation, the development of better infrastructure to reduce risks, and the creation of safety nets to help those affected by disasters. There will be better monitoring of glacial melt and of lakes and rivers to help communities mitigate and prepare for floods under activity four. Water management, in the form of irrigation facilities, is supported under activity one. Adding to this, activity eight will focus on sustainable use of water and the creation of support to better manage these resources. The disaster management activities under the NAPA are the strongest of the
programme, which demonstrates that agriculture may become more resilient to disasters like those in 2008.

Although not explicitly addressed in the NAPA, rice and cardamom will receive some support through the NAPA’s activities. Rice, which is susceptible to flooding, will be targeted for support through the second activity from improved seed varieties. Cardamom production, which is left behind in the ADS, will receive support from integrated pest management systems in this NAPA under activity one. If smallholder farmers can access support under NAPA to actually implement some of these activities, rice availability and food access through incomes from cardamom production may not be as impacted as they could be by climate change.

Soil degradation will also be targeted for improvement and rehabilitation under activity one. It will also receive attention under activity seven, which specifically targets the most degraded land in the hills. This attention is important in relation to climate change because natural disasters can damage soils, so supporting soils as the basis of production will ensure that there is still land upon which to grow crops. Several other parts of the NAPA will help maintain food security under the conditions of climate change. Activity two calls for increasing the connections between food surplus and deficit regions, an important addition to the ADS. The creation of safety nets is encouraged under activity three. While these two elements are arguably the most important to food availability and food accessibility now as well as in the future, leaving them unclear is detrimental to Nepal’s climate change preparation.

Although the NAPA includes an annex on gender relations, it has become increasingly clear throughout the agriculture and climate change documents that the gendered aspects of agriculture and food security under climate change have not been fully integrated into the government’s plans. As men migrate for better employment opportunities, new female farmers and heads of household should receive support to maintain production. How to address issues of changing agricultural households with out-migration, and how the government might approach newer farmers, is not outlined in the NAPA. It also does not specifically target those in northern districts or rural agricultural workers, meaning that the most vulnerable populations do not get special support under the NAPA.

Overall, the Climate Change Policy and the NAPA create a solid framework to improve food security with climate change. They mostly focus on key issues; nevertheless, there is a need to target vulnerable groups and create specific adaptation programs for key food and export crops. Where both documents fall short, however, is in the details: how programs will be implemented: even the NAPA, with its program of actions, is not specific enough with its goals to be optimistic. There are many ministries that are supposed to collaborate on each section of the NAPA, and without enough direction or guidance, important components may fall through the cracks. Climate change policies in the future should focus on
vulnerable populations as well as improving climate change-related safety nets and climate-resilient infrastructure for the transportation of foodstuffs.

**CONCLUSION**

In this chapter, I investigated food security through Nepal’s right to food, agriculture, and climate change frameworks. All four pillars of food security are weak in Nepal, but it struggles especially with availability of food in remote areas. My exploration of Nepal’s history and political and economic context revealed that land rights, poor infrastructure limiting domestic trade, and international trade present macro-level challenges to the country. The agricultural policy as well as the constitution address land rights, while infrastructure and trade get less support from current policy, illustrating areas in which Nepal could improve. Infrastructure development is especially important, as remote areas were most hurt by the 2008 crisis, and rural communities are the most food insecure. During the 2008 crisis, one of the driving forces of high food prices in Nepal was India’s export restrictions on rice, upon which it relies too heavily. As a net food importing country that also has regional food insecurity, Nepal will likely continue having to import food in the foreseeable future. Not only should production of agricultural goods increase, but markets and infrastructure might also be improved so that regional disparities in food security are decreased. Because Nepal is landlocked, it is essential that the country increase its production in order to decrease dependence on India for food availability. Pursuing trade with other countries and supporting infrastructure development are two key activities that the government should pursue. As Nepal as become more politically stable, its ability to move food around and prevent famines due to political strife has increased, a positive sign for future food security.

Unlike Kenya, Nepal has abundant water resources, but it also faces increasing flooding due to climate change. The model ensemble mean for precipitation show increased rainfall in the summer months, increasing the chances of floods. In addition, as the glaciers in the Himalayas melt, there may be higher rivers adding to the flood risk. For these reasons, flooding is the biggest concern for Nepal in terms of food security under climate change. The ADS’s three-pronged approach to flood mitigation, as well as the NAPA’s support of flood resilience programs show that Nepal is taking serious and useful steps towards mitigating this risk. In addition, irrigation systems that allow farmers to store water for drier times of the year may help mitigate droughts, and rainwater collection systems may improve farmers’ resilience to flooding.

A changing labor force due to out-migration is not addressed as fully as it should be by the agricultural policy. Increasingly, male family members have been leaving the country in order to pursue higher wages as the non-agriculture sector remains underdeveloped. Women in Nepal continue to face
gender-based violence and discrimination, despite prohibitions on such acts (Whelpton 2005, 163). At the same time, women have begun playing an even more essential role in agriculture, as male family members have been leaving to do outside work (S. R. Sharma, Upreti, and Pyakuryal 2012, 138). As women are less likely to have an education, and as mechanization is generally designed for male bodies, they face additional challenges in the field. While the ADS includes many references to gender-targeted interventions, gender fails to be fully integrated into the strategy. As more women become heads of agricultural household, the government might consider implementing an aggressive retraining program for new female farmers. Helping female farmers to stay on their land and have the skills to increase yields may help the smallholders themselves, as well as the country at large.

However, much of the ADS’s support for agriculture does address challenges to agriculture identified in this thesis. Farmers access to inputs, technology, extension services, and credit should increase under the plan. Erosion is addressed briefly in the agricultural policy and the climate change policies, although soil rehabilitation could stand to receive more government support.

Specific challenges to cardamom and rice include poor extension services, lack of credit, flooding for rice, and disease for cardamom. Rice is targeted for expansion as a grain crop under the ADS, and will also be given support through research and extension services into improved varieties. Through these actions, the government of Nepal can support food production in the Tarai, therefore improving food availability at the national level. Cardamom does not receive as much support as it should, given its vital roles both in the economy at large and in assuring that farmers have the economic access to purchase food. Integrated pest management schemes as described by the NAPA will be beneficial, as might the increased access to chemical inputs under the ADS. What the ADS leaves out, however, is ways to help farmers improve the quality of their cardamom production in the drying phase; this omission is detrimental to incomes and food access.

Nepal has a strong constitutional right to food sovereignty and food security, a result of the former’s usefulness at bringing together disparate factions in the immediate post-war period. That said, the ADS and the FNSP focus on elements more closely related to food security, showing that food sovereignty is more of a political term than it is a concrete tool for decreasing hunger. Through the two cases related to food security in Nepal, we learn several important facts that add to the evidence of how the right to food contributes to the fight against hunger. First, if there is a natural disaster and the government fails to adequately respond, filing litigation may not only support jurisprudence to the right, but may also produce immediate remedies to those harmed. That is, the right to food in the courts is useful in emergencies, and litigation on this issue should be tried in other case study countries. Also, if there are blatant policy gaps as there are in Ukraine, litigation can force the government to fill these holes. Third, having food sovereignty does not necessarily make the right to food non-justiciable. As Nepal’s
courts referenced ICESCR in their rulings, it is clear that ICESCR does have an impact on at least the courts, and its presence should not be completely discounted.

Looking forward, Nepal has room for improvement to assure food security. While many of the challenges are covered by the policies in place, several are not. Even for issues with strong support in the policies, implementation may prevent them from being realized and thus jeopardize food security: as several authors have pointed out (Acharya 2011; Wily, Sharma, and Chapagain 2009), policy in the land reform area has failed to be implemented, which shows that even the projects with the most government attention are not fail-proof. Ensuring that Nepal has both the funding, human resources, and coordination capacity to fulfil the agricultural and climate change plans will be key to whether food security improves under climate change. To better prepare itself for the effects of climate change on food security, the government of Nepal should create more agricultural development programs aimed at those in the northeast of the country to increase their resilience through better food availability, it should invest heavily in flood mitigation and prevention practices and infrastructure as well as infrastructure to reach remote villages. Finally, Nepal should strengthen food access through special feeding programs and social safety nets.

**BIBLIOGRAPHY**


Chapter 3: Nepal


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Kenya, a regional economic powerhouse, has both high rates of undernourishment and engagement in agricultural livelihoods. Kenya is an interesting case study for several reasons. First, the constitutional provisions on the right to food neither copy the text of the International Covenant on Economic, Social and Cultural Rights, nor do they lend themselves to be read as granting the right to food sovereignty. Second, Kenya does not produce enough food to meet its population’s needs, particularly in the production of maize, which is the most-consumed staple crop. This means that Kenya is a net food importer, and in order to reach any sort of food self-sufficiency, it will need to greatly expand production. However, because of arid conditions, much of the land in Kenya is not arable, and droughts pose a considerable challenge for farmers as well as for pastoralists. While Kenya faces challenges to all four pillars of food security, food availability through adequate production has fallen behind the others. In Part I of this chapter, I explore Kenya’s political and geographical context, characterize the agricultural context, illustrate weaknesses in the food system through a study of the 2008 food crisis, and determine climate change’s potential effects on two key crops. In Part II, I use key factors elucidated in Part I to analyze the current right to food framework, agricultural framework, and climate change framework for their contributions to food security under climate change.

PART I: CONTEXT

NATIONAL CONTEXT
To begin unpacking complexities around agriculture and food security in Kenya, this first section will investigate the politics, economy, and history of the country. Key issues facing government and society will also be discussed in order to place agricultural and climate change policies in their context. Kenya is situated in eastern Africa between Lake Victoria and the Indian Ocean. Kenya benefits from extensive
access to transportation networks via the sea, making international trade more efficient and less costly than for Bolivia and Nepal. Almost 90 percent of Kenya’s land is semi-arid to arid, making agriculture without irrigation systems difficult in much of the country (Sindiga and Burnett 1988, 232). It is estimated that only 16 percent of the country has conditions that are suitable for any kind of agricultural pursuit (Government of Kenya 2010, 9). With a rapidly growing population of roughly 48 million people, pressure on land and water resources are increasing.

Geographically, Kenya is divided into lowland Kenya with an equatorial climate and upland Kenya in the east by the Great Rift Valley and series of plateaus with a tropical continental climate; the highlands are most suitable for agriculture (Ojany and Ogendo 1973, 38, 67). The highlands themselves are divided by the Great Rift Valley into the western highlands and the eastern highlands. The Great Rift Valley is a series of smaller valleys and ridges that make up a rift system (Ojany and Ogendo 1973, 34–35). Within the basins are smaller lakes, whose water can be used for irrigation throughout the year (Ojany and Ogendo 1973, 53). The smaller lakes and rivers often cease to exist during the dry season, exacerbating droughts and causing famines (Ojany and Ogendo 1973, 63–65). Unlike in Bolivia and Nepal where most irrigated land is owned by large farms, in Kenya large and smallholder farms have about the same amount of land under irrigation (Government of Kenya 2010, 11). The government of Kenya separates the country into three agricultural production zones based on rainfall: the high-rainfall zone where all of the country’s tea is produced, the medium-rainfall zone, and the low-rainfall area (Government of Kenya 2010, 9–10).

While Kenya has few lakes and rivers, subterranean water has recently been shown to be larger than originally thought but are mostly untapped (Ojany and Ogendo 1973, 72; UNESCO n.d.). The great challenge of lack of water can be seen in the distribution of rainfall throughout the country: Madera, one of the northeast most points of the country, usually receives under 200mm of rain a year, and in Kakamega, near Lake Victoria, rainfall can reach 1845mm (Ojany and Ogendo 1973, 58–59; Government of Kenya 2010, 9–10). Although water access is the largest limiting factor in agricultural production, poor soil quality places additional boundaries on production (Ojany and Ogendo 1973, 101).

The Rift Valley region is well-known for its paleoanthropological finds that cast light on the evolution of the human species. Skipping forward a couple of million years to the 17th century, the ruler of Oman pushed out the Portuguese. Omani rule continued, during which the rulers participated in the slave trade (Kaplan et al. 1984, 13–14). Europeans were present in modern-day Kenya throughout the 18th and 19th centuries: parts of Kenya first came under German control, and then part of the East Africa Protectorate of England in the 1880s and 1890s, with full control by the British occurring in 1905 (Kaplan et al. 1984, 14–16). Colonists and Kenyans alike sought political rights, although the latter group saw many of its members imprisoned following protests in the early 1950s (Kaplan et al. 1984, 29). Although
brutally suppressed, this rebellion made room for the Lyttleton Constitution that included African representatives in its legislature; after protests of low representation, the Lennox-Boyd Constitution with equal representatives for European and African groups, and finally the Macleod Constitution with majority African representatives, were put into place (Kaplan et al. 1984, 31–32). In the 1961 election, parties ran on platforms including the release of Jomo Kenyatta, one of the rebels imprisoned during the Mau Mau crackdown. When they were able to form a coalition, and the independence process began. A new constitution was finally agreed upon in 1963 despite tensions over access to power between ethnic groups (Kaplan et al. 1984, 33–34). Jomo Kenyatta quickly rose as the country’s new president after it was declared a republic in 1964 (Ogot and Ochieng 1995, 28–30).

When it gained its independence in 1963, the new leaders of Kenya had to contend with the legacy of colonialism that had placed most of the best land in the hands of colonists. Following independence, the Million Acre Scheme worked to settle squatters, but actually created new class divisions with land going to the elite, as Europeans and middle class Africans were those with the ability to benefit from it (Ogot and Ochieng 1995, 64; Leo 1981). Europeans were allowed to maintain control of their land until the mid-1970s, and redistributive politics failed to distribute land to the poor (Branch 2011, 9–10; Kaplan et al. 1984, 43).

The economy grew rapidly in the ten years following independence, during the so-called the “Golden Years” (Rono 2002, 82). While there were some attempts to create social equality, Kenyatta did not believe in strong redistributive policies, which meant that socialistic elements were tempered by protection of private property (Branch 2011, 10). Kenyatta established himself as a force against Soviet and communist influence, causing contention with other government officials (Kaplan et al. 1984, 38). He did, however, take up a series of reforms called Kenyanization in order to put businesses into the hands of Kenyans which helped to reestablish Kenyan control of industry and services (Kaplan et al. 1984, 42).

Through the 1980s, non-citizens were not allowed to trade in rural areas, with lists of goods that could and could not be traded by foreigners, in order to allow Kenyans to become owners of their manufacturing and industry (Ogot and Ochieng 1995, 86–87). These pro-Kenyan, pro-poor policies, however, were unable to bring about national unity or keep the country from falling into a devastating economic crisis in the 1980s.

Many of the factors contributing to the recession in the early 80s, such as high oil prices and interest rates, combined with domestic declines in exports of manufactured goods, a growing population, and food production challenges slowed growth and pushed Kenya into an economic crisis (Kaplan et al. 1984, 137). Because of problems with its balance of payments, Kenya sought external loans with high interest rates which greatly increased the national debt (Kaplan et al. 1984, 178–79). The economic crisis
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had severe effects on the country: from 1980 to 1987, the GNP per capita fell from US$420 to US$330, and the GDP growth fell from 6.9 percent to 3.8 percent (Ogot and Ochieng 1995, 151).

Because of this crisis, the country adopted liberalizing policies which removed the state from its role in setting prices and directly purchasing primary goods and instead turned to emphasizing the role of the private sector (Gibbon 1992, 53). Kenya received its first structural adjustment loan in 1980, which required domestic agricultural goods to have their prices based on the international market (Gibbon 1992, 61). The results of the structural adjustments in Kenya have been a source of controversy both within the country and between the government and the World Bank (Rono 2002, 84–85). The Kenyan government accused the World Bank of shifting focus from the economic to the political sphere during the program so popular participation, decentralization, and reduced role of the government in the economy were at the top of the list of priorities over economic issues (Rono 2002, 85). Indeed, the 2010-2020 agricultural sectoral plan points to structural adjustment as a cause of continued problems in the sector (Government of Kenya 2010, 2). Fertilizers, which contributed to increased yields, rose in price and decreased in usage following the adjustments (Gibbon 1992, 69). The government of Kenya challenged the implementation of the structural adjustment programs, perhaps due to disagreements over its purpose (Gibbon 1992, 61–62). Another problem with the structural adjustment program was that it cut funding for social programs, exacerbating inequality and suffering (Rono 2002, 87). At the same time, the country began implementing policies that aimed to achieve self-sufficiency in food production in 1982, with little success (Ogot and Ochieng 1995, 156–57).

As the Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security outline, in order for food security to exist, states must practice good governance and work towards creating a just and fair society. In Kenya, racial and out-group discrimination, population growth and urbanization, and land rights are some of the biggest challenges to good governance. The following paragraphs explain in more detail the threat that these problems pose to food security.

Kenya’s diverse population has challenged the country’s leaders historically, and ethnic conflicts have occurred occasionally. Under colonial rule, the country was largely divided by race (Ogot and Ochieng 1995, 111, 114). After colonization, however, stratification became based on wealth and ethnicity (Ogot and Ochieng 1995, 115). There are over 30 ethnic groups, with the Kikuyu, Luhya, and Luo making up the top three (Kaplan et al. 1984, 90). Although Swahili and English are the two national languages, there are also linguistic divisions; indigenous languages can be grouped into Bantu languages, Nilotic languages, and Cushitic languages (Kaplan et al. 1984, 89). This is not to say that differences in language and ethnic group caused problems per se, but rather that power differentials relegated to different groups under colonialism and after independence have created groups with special privileges,
leading to tensions between groups. While president, Jomo Kenyatta’s policies served to place the majority of land in the hands of his own Kikuyu group, which continues to cause problems for Kenya, most recently leading to violence in the 2017 elections (Obala and Mattingly 2014, 2736; Burke 2017). Ethnic groups have asserted conflicting claims over fertile lands, and national unity remains difficult to attain because individuals often view themselves as members of ethnic groups first and as Kenyans second (Branch 2011, 13, 15). On top of its own diverse groups, Kenya is also the home to refugees from surrounding countries; in 2017, 300,000 Somali refugees were in Kenya (Central Intelligence Agency 2018).

Population growth and urbanization have proven a large challenge to Kenyan policymakers: in the 15 years after independence, Kenya’s population doubled to 15 million people, and has been growing rapidly ever since (Ogot and Ochieng 1995, 123; Food and Agriculture Organization n.d.). While population has been rising, the percentage of the population living in rural areas has fallen from 93 percent of people in 1960 to 73 percent in 2017; Bolivia, Nepal and Ukraine experienced similar declines in rural populations (World Bank 2017). It has a youth bulge as 40 percent of its population is under 15 years old (Central Intelligence Agency 2018). Life expectancy dropped significantly during the 1990s due to the AIDS crisis which impacted an estimated 1.5 million people in 2012 (Lupia and Chien 2012; Central Intelligence Agency 2018). Economic growth has not been able to keep pace with the population, leading to high rates of poverty, particularly in urban areas: 49 percent of urbanites are impoverished. Those in living in urban areas are more likely to be involved in the informal sector, from which they receive lower pay than those working in the formal sector (Government of Kenya and Agricultural Sector Coordination Unit 2011, 18).

Issues within the structure of land rights law left over from colonialism facilitate foreign acquisition of territories or land grabbing. Starting in 1897, the British took aggressive legal and other action to acquire the lands in use by Kenyans (Karari 2018, 3). Uncultivated and unsettled lands also became the property of colonists because they were seen as terres sans maîtres, or wastelands (Wily 2011, 741). Land titling became compulsory after independence, which harmed those living and working on communal lands (Wily 2011, 743). Communal lands became a legal designation in the 1980s, but this designation did not prevent the lands from being taken (Wily 2011, 742). Rural and indigenous communities often consider not just their farmlands but other surrounding lands to be their property, and customary land tenure is often based on communal use. An estimated 77 percent of total land area is held by customary users without titles (Wily 2011, 735–36). When large-scale land acquisitions take place, those without titles can lose their land without consenting or receiving compensation (Wily 2011, 736).
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Distribution of land has been marred by corruption,27 and unequal distribution between ethnic groups has created ethnic tensions (Akech 2010, 17–18). The 2010 constitution helped strengthen the claim to communal lands. It leaves a loophole, however, that allows the government to give lands to investors as long as they consider the views of communities; government ministries do not need the prior informed consent of communities in order to sign away their lands (Wily 2011, 746).

Ending this section, I lay out macro-level trends that are relevant to my analysis of Kenya’s policies. Macroeconomic indicators show positive trends. Since the 2008 food and financial crises, the GDP growth rate has been above 4 percent per annum. GDP per capita has been steadily rising since the early 2000s, with only a small dip in 2007-2009 (Food and Agriculture Organization n.d.). The Gini index has also been falling, sitting at 40.8 in 2015 as opposed to 46.5 in 2005, but still shows higher inequality than Nepal and Ukraine (World Bank 2015a). Trends in nutrition data, however, are worrisome. Undernourishment has been rising in Kenya since 2014 following decades of decline, with 2.3 million more people classified as severely insecure in 2017 as compared to 2014. After falling to 20.8 percent in 2012 through 2015, there has also been an uptick in the prevalence of undernourishment, showing that population growth alone does not account for this increase in hunger. The prevalence of severe food insecurity has also increased to 35.6 percent from 31.8 percent in the three-year period from 2015 to 2017. Measures of availability of food show much year to year variation, with a decline since 208 of the average value of food production and the average dietary energy supply (Food and Agriculture Organization n.d.). These larger trends show that while incomes may be increasing, there are still large swaths of the population for whom food insecurity is an existential problem. This situation highlights a key issue for Kenya: economic growth is not enough to assure food security; who gains wealth and what government income is used for has greater effects on hunger than economic growth in the aggregate. In addition, this highlights that in Kenya, not only are there issues of accessibility, but also availability, stability, and usage are challenges.

**Agricultural Context**

In this section, I seek to explain the setting and conditions for agriculture in Kenya with the goal of using this analysis to understand constraints on and stakeholders in agricultural policies. The British began undertaking agricultural policy in Kenya and moderate land policy reforms in response to growing

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27 Corruption is a significant impediment to change-making in Kenya. Scandals have plagued the country’s elected officials and bureaucrats, all the way up to the president (Branch 2011, 285). Although the 2010 constitution implements stronger human rights standards, many who committed past human rights violations remain in power (Akech 2010, 8).
discontent among the population. In the 1950s, the Swynnerton Plan created small subsistence farms as the basic unit, doling out land and grants that was supposed to help 600,000 families (Ogot and Ochieng 1995, 48). It also removed restrictions on African production of important cash crops, thereby allowing for people to gain access to important sources of income (Ogot and Ochieng 1995, 48–49). These goals were secondary, however, to squashing the Mau Mau rebellion and confiscating land from the fighters (Ogot and Ochieng 1995, 50). Under the colonial state, European-owned farms had dominated exports and controlled the vast majority of arable lands (Ogot and Ochieng 1995, xv). Policy (primarily in the form of taxes) compelled Black Kenyans to work for these large farms for low wages, increasing profit but destabilizing smallholder agriculture (Ogot and Ochieng 1995, xvi). Agriculture squatters and forest dwellers aired their grievances in the struggles after World War II and during the Mau Mau rebellion. Yet land tenure issues continued to be at the base of revolution and dissent, with enclosure and registration viewed as the solution to this problem through 1963 with the Registered Land Act (Ogot and Ochieng 1995, 87). Government and international support to agriculture coupled with the abolishment of regulations on what Kenyans could produce boosted the system post-independence, allowing the gross farm revenue of smallholders to grow 420 percent in the period from 1958-1968 (Kitching, 1980, as cited in Ogot and Ochieng 1995, 90).

Agricultural sectoral policy has evolved since the country’s independence. From 1963 to 1983, planning was done in the capital, Nairobi, using a highly centralized planning system (Sindiga and Burnett 1988, 235). This changed to a system that relied on district-level planning to increase the participation of local communities in the process, particularly after the 1963 constitution gave planning rights to county officials (Sindiga and Burnett 1988, 235–36). This decentralization of agricultural planning continues today. For much of Kenya’s history, national agricultural policies tended to favor cash crops over food crops, putting farmers that produce non-export crops both to feed their families and for local markets at a disadvantage (Ogot and Ochieng 1995, 15). As continues today, the Kenyan economy is geared toward the export market, and dependent on foreign investors and multinationals (Ogot and Ochieng 1995, 90). The World Bank’s approach to agriculture during the 1980s was focused on large projects to modernize the country’s agricultural systems (Gibbon 1992, 51). During structural adjustment, agriculture spending was cut, harming the 80 percent of the population who live in rural areas and work in the sector (Rono 2002, 88). More recent sectoral plans, including the Economy Recovery Strategy in 2003 and the Strategy for Revitalizing Agriculture in 2004, established a sectoral coordination unit and helped to revive agricultural institutions sidelined by structural adjustment. They set lofty goals of eliminating large swaths of poverty and food insecurity, which remain unmet today (Government of Kenya 2010, 3–4).
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Approximately 80 percent of the population is engaged in agricultural activities (Central Intelligence Agency 2018). Kenyan smallholders produce between 63 and 75 percent of the food despite difficult conditions of production, and about 70 percent of agricultural goods sold on the market (Rapsomanikis 2015, 8; Central Intelligence Agency 2018; Government of Kenya 2010, 11). The highest agricultural potential exists alongside Lake Victoria (Ojany and Ogendo 1973, 101). The Rift Valley highlands have the potential to be used for grazing animals, while the highland forest and grasslands have historically the location of most of the country’s largest agricultural estates (Ojany and Ogendo 1973, 102–3). Other crops such as groundnuts, coconuts, and coffee can grow in other pockets of the country depending on local soil, water, and vegetation conditions.

Agriculture in Kenya is characterized by rain-fed smallholder farms, which produce over 75 percent of agricultural production (Central Intelligence Agency 2018). On the average smallholder farm, seven family members work together to farm an average of 0.47 hectares of land in 2015, a decrease from the 0.53 hectares in 2005 (Rapsomanikis 2015, 5; Food and Agriculture Organization n.d.). Because of frequent droughts, crops fail on average once every three seasons, and the population is forced to rely on food aid (Hickey et al. 2012, 333). Even in good production years, about 24 percent of the population was undernourished due to largely unsolved, macro-level problems caused by rapid population growth and urbanization, and poverty (Emongor 2014, 6–9; World Bank 2016). Population growth has exceeded agricultural productivity, resulting in food shortages (Emongor 2014, 14). Nutritional shortages also occur, and about 35 percent of children are stunted from lack of proper nutrition (Government of Kenya and Agricultural Sector Coordination Unit 2011, 2).

The main challenges to expanding agricultural production in Kenya include low productivity, underdeveloped and inefficient markets, lack of agroindustrial processes to add value to primary goods, and ineffective land use (Olwande 2012). The lack of infrastructure, particularly in rural areas, constraints market access and exportation. Because of arid conditions, irrigation systems are important to the success of crops, yet many smallholders do not have access to the credit that would allow them to make investments in mechanization (Emongor 2014, 15). Indeed, only about 3 percent of total land in Kenya is irrigated, and of that, only 42 percent is held by smallholders (Rapsomanikis 2015, 18; Government of Kenya 2010, 11). Low soil quality restricts where planting can occur, and mismanagement of soils over the years has further degraded lands (Ojany and Ogendo 1973, 110). Because of these challenges, agricultural policies in Kenya should address low productivity and water management, while legal frameworks should work towards better land management, market development, and infrastructure building.
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*The 2008 Food Crisis in Kenya: Causes, Consequences, and Policy Responses*

Another pillar of food security is that of stability, or whether people have enough nutritious food throughout the year. In this section, an analysis of the 2008 food crisis in Kenya will speak to several stability-related concerns with which to assess policy and offer policy recommendations. First, the 2008 crisis showed which groups of the population in Kenya are particularly vulnerable: pastoralists and the rural poor. This information is useful because it will allow the recommendations to better target these vulnerable groups. Second, the 2008 crisis illuminated the impact of domestic issues on hunger, further revealing weaknesses in food systems. Last, by noting the government’s response to the crisis in 2008, we learn what was useful and what was not in order to improve responses in the future. All three pieces of the analysis provide support for policy recommendations as to what Kenya should and should not consider doing in order to help its population become food secure the conditions of climate change.

During the 2008 food crisis, increases in food prices hit the urban poor and pastoralists hardest (Kenya Food Security Steering Group 2008, 26–27). Prior to 2008, the purchasing power of urbanites had increased, making it easier for them to access staple foods (Mason et al. 2011, 355). During the crisis, however, the value of the Kenya Shilling declined by 25 percent relative to the US dollar, further driving down purchasing power of foods priced at the international markets (Emongor 2014, 5). This proved particularly devastating when the real price of staples on the international market rose 57 percent from March 2007 to March 2008 (Kenya Food Security Steering Group 2008, 9). In urban areas, households spend between 31 and 49 percent of their income on food (Mason et al. 2011, 352). As urbanites largely lack their own production of foodstuffs, they must rely on the market and have no other options when prices increase. Urban dwellers included in the food poor category rose by 31 percent from November 2007 to June 2008 (Kenya Food Security Steering Group 2008, 31). A full 75 percent of pastoralists were considered to be in the food poor group by summer 2008 (Kenya Food Security Steering Group 2008, 32). Smallholders, though, were not spared either. Because of the increased cost of fertilizers during the crisis, higher prices failed to translate into elevated revenues for farmers (Emongor 2014, 18). Smallholders sell less than a quarter of their production, yet over half of them are net food buyers, leaving them vulnerable to rising prices (ReSAKSS 2009, cited in Emongor 2014, 18). Data on undernourishment shows that the number of people overall who were undernourished increased from 9.7 million in the period from 2006 to 2008 to 9.9 million in the period from 2007 to 2009 (Food and Agriculture Organization n.d.).

As in Nepal, the 2008 crisis was further complicated by violence from the 2007 election and a drought, which highlighted weaknesses within Kenya’s food security complex and exacerbated the effects of the price spike in international markets (Hickey et al. 2012, 334). During the 2007 long rains period, rainfall was irregularly distributed, causing floods in some areas and droughts in others. Rift Valley Fever
spread because of these abnormal rains, sickening people and animals alike and preventing Kenyan meat from being exportable (Kenya Food Security Steering Group 2007). Maize production decreased by about 300,000 tons from 2006 to 2007, and by an additional 600,000 tons between 2007 and 2008 because of the drought (“Kenya Maize Production” 2017). While domestic production decreased, demand for corn-based ethanol from the United States and the European Union (for a longer discussion, see chapter 1) contributed to a rise in maize prices of 134 percent between 2003 and 2008, and 59 percent between 2007 and 2008 alone (Masters 2008; Gandure 2008, 25). This decline in production and droughts and floods in pastoral lands drove hunger in Kenya beyond that of international markets. In addition, the 2008 elections served as the spark that set a flame anger over structural problems that had simmered since before independence (Branch 2011, 274–75). During riots over the election results, protesters set granaries and fields on fire, destroying important sources of food in a year where production was crippled by drought (Kanina 2008). Combined, the violence and rainfall issues made Kenya’s domestic conditions ripe for hunger.

Kenya took urgent measures to provide reduced-cost food to its urban and pastoral populations. The National Cereals and Produce Board (NCPB), long villianized because of its status as a semi-state-owned enterprise, was able to react quickly by coordinating the sale of subsidized corn flour in urban areas. At the same time, however, NCPB’s practices of buying maize at above market price likely exacerbated the crisis (Gandure 2008, 26). In June 2011, the Kenyan parliament passed a bill that placed direct price controls on food items (Emongor 2014, 19). Support to the most vulnerable parts of the populations—children and the elderly—came from the newly founded Cash Transfer Fund and school nutrition programs (Emongor 2014, 20; AllAfrica 2012).

International groups increased their presence in Kenya, fearing famines. Although Kenya regularly receives food aid packages valuing in the thousands of tons, these numbers increased at points during the crisis, with the top shipment arriving in 2009 (550,122 tons of foodstuffs) (Food and Agriculture Organization 2015b). Large donations began rolling in in 2007, including over US$11 million in 2007 contribution from the US for small farmers (World Food Programme 2007b, 2007a). The Kenya Red Cross Society distributed food relief throughout the country, focusing on providing pastoralists with food, water, and restocking, and urban dwellers with food aid (International Federation of Red Cross and Red Crescent Societies 2009, 10–13). Other NGOs operated food for work and food for training programs in hunger zones (Emongor 2014, 20).

Throughout the crisis, the government took market-oriented actions to combat price increases and assure the maize supply. It banned maize exports in October 2008, which prevented farmers from profiting from the crisis while keeping the limited maize available in the country (Shama 2011, 31). It eliminated import tariffs for a wide range of foodstuffs including maize from June 2010 through 2012.
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(Emongor 2014, 20). It also established subsidies for agricultural inputs such as seeds and fertilizers to increase domestic production and to prevent the crisis from persisting into the next production season (Emongor 2014, 20). These trade measures may have helped some residents, but did not improve the domestic causes of the crisis, and food prices remained high in Kenya while falling in the international market (Emongor 2014, 4).

Evidence from the 2008 crisis points to several areas that governmental policies should pay particular attention to in order to stem future food crises, particularly as climate change progresses. First, drought mitigation and adaptation should be the number one priority for sectoral policy. A drought caused maize production to fall during the crisis while at the same time pastoralists lost their animals for lack of water, so putting into place irrigation systems for farmers, water collection and storage systems for pastoralists would be helpful regardless of climate change. Second, overall Kenya took a number of steps during the crisis that likely had a positive impact on hunger, including cash transfers and school nutrition programs, eliminating import tariffs temporarily, and subsidizing agricultural inputs to help farmers increase their yields during the next crop cycle. Third, the government should put into place more specific programs targeting the most vulnerable groups, the urban poor and pastoralists. What the World Food Programme and other NGOs did that Kenya should learn from are the targeted food aid programs for both of these groups. Providing both longer-term support (e.g. stronger safety nets) and short-term support (e.g. subsidized food baskets and food for work programs where there is market failure) buffers these populations from both domestic and international price shocks. Kenya began a program specifically targeting the urban poor in Mombasa in 2012 called the Urban Food Subsidy Cash Transfer Program, which was an important step toward supporting the urban poor nation-wide. Fourth, political stability is a must to assure food security. As the violence that occurred before and during the food crisis in 2008 amplified the effects of the crisis, the actions suggested above will likely fall flat if violence or political instability prevents the government from taking strong and immediate action on food price hikes and shortages.

CLIMATE CHANGE CONTEXT

In this section, I will provide background information on the two key crops that were chosen for study in this thesis, and then investigate changes to their production under climate change. Black tea is the first crop to be studied. It was selected because of its importance not only as an export crop, but also as a crop with high smallholder engagement. Tea production can be related to the food access pillar, as 26 percent of Kenya’s export earnings and four percent of its GDP come from tea (Intergovernmental Group on Tea 2016). This means that any change in tea production due to climate change will directly impact smallholders’ ability to access food through income from tea, while also having detrimental effects on the economy at large. The second crop surveyed is corn, Kenya’s top food crop. As the staple crop in most
Kenyans’ diets, maize production determines how much of this food is available for consumption. Together, assessing these two crops helps give us a picture of potential changes in access and availability of food under the conditions of climate change.

Kenya is a top producer and exporter of black tea. In Kenya, tea is grown in the west near Lake Victoria and the Rift Valley. Colonists brought tea with them to Kenya, where it was first planted in 1903 (Gesimba et al. 2005, 335). Most of the tea grown in Kenya comes from seeds originating from India (Carr 2010b, 3). Both large estates and smallholder grow tea, with large estates benefiting from higher yields while smallholders produce higher quality leaves (Gesimba et al. 2005, 335). Smallholders produce approximately 50 percent of the country’s tea production (Government of Kenya 2010, 12; Kinyua 2004).

Tea yields vary by year based on the amount of rainfall crops receive, but they have failed to increase significantly since the early 2000s (Food and Agriculture Organization 2017). Tea plants require approximately 1150 and 1400mm of rain annually, and water should be evenly spaced throughout the growing season (Carr 2010a, 3). The crop has been particularly successful in Kenya because of government support of smallholder tea growers’ integration into the market, efficient colonial state management, and the research into high yield varieties undertaken by the Tea Research Foundation of Kenya (Gesimba et al. 2005, 335). Tea is a labor-intensive crop as plants need to be modified so that they become wide and short for maximum production and the best quality tea is harvested by hand, giving smallholder families with many workers a competitive advantage (Carr 2010b, 4). One of the largest constraints on production is lack of water: drier districts do not have the rainfall or irrigation technology necessary for ample production. Moderate temperatures, however, allow tea to be harvested all year-round, with spikes in production during the warm, wet season (Carr 2010b, 7).
There are several hypotheses about how and when maize was first introduced to Africa: by the Portuguese, probably in the 16th century; by Arab traders as far back as the 12th century (Miracle 1965, 39–42). Its production spread because of demand from European slave traders during the 17th-19th centuries, and was well-known in Kenya by the 1880s (Miracle 1965, 43,51). Maize in Kenya makes up more than half of what smallholders produce, and is the main staple in the diet of over 85 percent of people (Rapsomanikis 2015, 8; Onono, Wawire, and Ombuki 2013, 2). What demand cannot be met by domestic production is substituted with imports coming mainly from Mexico and South Africa (Simoes and Hidalgo 2011). Smallholders are the main producers of corn, producing 70 percent of total production (Olwande 2012). Maize can be grown at altitudes ranging from 0 to 2200 m above sea level, and requires rainfall or irrigation of 600-900mm per growing season (National Farmers Information Service 2018). Smallholder maize yields have increased in recent years, yet it remains unable to approach the yields of other countries because they lack technical efficiency (Olwande 2012). Because of the wide range of growing conditions, different varieties of corn have been perfected to fit local conditions (TopFarmer 2018). Corn remains, however, highly susceptible to yearly changes in rainfall, and production does not meet the country’s growing demand for the crop (USDA Foreign Agricultural Service 2009). Therefore, specific challenges to maize production are low yields and lack of water.
By continuing the study of maize and tea and adding the lens of climate change, I hope to understand how these crops might undergo production changes under the conditions in climate change to speak to food security in the future. I will do this by comparing temperature and precipitation needs of the crops with projected values given from the CMIP5 model. The CMIP5 model ensemble mean, which assumes business as usual, predicts temperature in Kenya to increase by an average of 2.4°C, and rainfall to increase by 0.2mm/day. A disaggregation of values per month can be seen in Figures 3 and 4. These changes are not as significant for their numbers as they are for the seasonal changes they might bring: both maize and tea require rains early in the year, when CMIP5 predicts that rainfall will decrease.
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Figure 4.3. Average monthly temperatures observed and projected for Kenya (Adler and Hostetler 2013).

Figure 4.4. Average monthly precipitation observed and projected for Kenya (Adler and Hostetler 2013).

The optimum temperature for tea plants to grow is between 24 and 26 degrees Celsius, and optimum leaf photosynthesis occurs between 25 and 30 degrees Celsius, with noted declines as temperatures increase above 30 degrees Celsius (Carr 2010b, 6, 2010a, 18). Although temperatures are likely to rise under the conditions of climate change, they are not predicted to rise to levels that would destroy crops. Some decline in production might occur during the hottest times of the year, yet it is water that will likely become even more of a limiting factor. Rainfall from January to March is essential for a productive crop, precisely the period in which climate change predictions show that precipitation might increase by several mms (Carr 2010a, 3). These gains, however, may be rendered null by less rain during
subsequent months, including a projected decline from 4.3mm/day to 2.1mm/day in April. As replacement cycles, or the time it takes for new shoots to grow, decrease with warm, wet seasons and the use of fertilizers, irrigation and increased fertilizer use could make up for increased variability in water returns over the year (Carr 2010b, 7).

The optimal temperature for maize to grow is 30° Celsius, as higher temperatures lower productivity (National Farmers Information Service 2018). Although temperatures are predicted to rise by 2.4°C on average, no one month is expected to see temperatures above 30 °C. Maize is typically planted during March and April, left to grow to September, and harvested in October and November (Food and Agriculture Organization 2018). This time is considered the “long rains” period, and lack of rainfall during the period is extremely detrimental to maize production (USDA Foreign Agricultural Service 2009). Climate change predictions show that there is likely to be less rain during the long rains period, with more rains occurring later in the year. While aggregate rainfall might increase slightly, these changes in patterns will offset any benefit by increased rain. This change may pose a considerable threat to maize production, especially considering that smallholders grow most of the country’s maize without the help of irrigation systems. As maize production already fails to meet domestic consumption as is, any reduction of production caused by climate change will be challenging to substitute (Onono, Wawire, and Ombuki 2013, 2).

Based on the CMIP5 model ensemble mean for Kenya, it is clear that changes in the timing of precipitation are likely to become the largest barriers to production in the future for both tea and maize. This pattern can also be seen in Ukraine, where the rainy season is projected to switch seasons, challenging sunflower production. For Kenya, the effects on food security from these precipitation changes will likely be more detrimental than in Ukraine, however, as maize is the number one food crop in Kenya, and will thus impact food availability. Maize seems poised to be particularly affected by changes in precipitation patterns. While in 2008 drought was a main contributor to the food crisis, it appears that the lack of water will pose even greater threats to food security in the future. Policies that prepare Kenya for climate change should have as a top priority the mitigation of drought, as well as the implementation of irrigation and water capture and storage systems.

PART II: ANALYSIS

RIGHT TO FOOD FRAMEWORK
In order to understand how Kenya’s specific commitments to the right to food influence agricultural and climate change policy, as well as the consequences of this approach to hunger alleviation, this section will lay out the right to food framework currently in place. Kenya ratified ICESCR in 1972, and because of
how international law is integrated under the constitution, ICESCR is part of the law of Kenya (“The Constitution of Kenya” 2010, pt. 2). Domestic legal support for human rights and the right to food has strengthened over time in Kenya. The 1963 constitution gave the president almost complete control over the country’s natural resources and ability to make changes to keep power in his own hands, flaws perpetuated inequalities and injustices (Akech 2010, 12). During Jomo Kenyatta’s presidency, ethnic tensions were amplified by the lack of land reform policy and corruption that tended to favor Kenyatta’s own Kikuyu group (Branch 2011, 98–99). Efforts to amend the constitution began in 2001 with the Constitution of Kenya Review Act of 2001; they were succeeded by a series of ethnically charged revisions and violent opposition. The 2007 presidential election ignited unexpectedly violent protests that had been brewing since the reintroduction of the multiparty system in the 1990s (Akech 2010, 17). Many Kenyans saw a constitutional change as the only way to prevent violent power grabs and election violence in the future, so the Constitution of Kenya Review Act of 2008 was treated with urgency and resulted in the referendum approving the current constitution in 2010 (Akech 2010, 12–13, 17; Branch 2011, 278). These hopes about the new constitution’s ability to solve decade-long problems with the sweep of a pen were mostly unfounded, as no significant changes were observed in the country (Branch 2011, 284). The new constitution does provide more support for human rights and decentralizes the government to facilitate local participation in politics (Akech 2010, 20–24). During negotiations, progressives and conservatives went head to head, with progressives successfully advocating for the bill of rights which includes the right to food (Murunga, Okello, and Sjogren 2014, 145). Because the bill of rights was such a contention issue, it follows that the right to food was probably carefully crafted, although marriage equality, Islamic courts, and the power of the state to take discretionary action for security purposes were the items most hotly debated (Murunga, Okello, and Sjogren 2014, 159). However, civil society organizations did have a much bigger role to play in constitutional negotiations than in Ukraine, contributing to the presence of a strong bill of rights (Murunga, Okello, and Sjogren 2014, 108).

The 2010 constitution lays out the right to food within the basic rights given to all persons. In Article 43, it states, “every person had the right to be free from hunger, and to have adequate food of acceptable quality,” showing that Kenya takes a strong dual perspective on right to food (“The Constitution of Kenya” 2010, pt. 43). The constitution appears to qualify ICESCR’s Article 11: although the “to be free from hunger” and “adequate food” language mirrors the Covenant, the language both on the right to adequate food and on hunger demonstrates the “progressive character” of the bill of rights in Kenya’s constitution (Murunga, Okello, and Sjogren 2014, 6). The language in the constitution expands from the negative right of freedom from hunger to include food security ideas about usage with acceptable quality. In addition, in the Kenya Law’s database of jurisprudence, 205 total cases involving ESC rights make reference to ICESCR, a sign that ICESCR has had an influence on domestic law
Indeed, Kenya’s right to food law appears to be the most justiciable of the four cases based on constitutional language alone because it provides a modern definition of the right to food, while also avoiding food sovereignty, which has its own baggage.

The right to food and other social, economic and cultural rights have been heard in court, making it clear that the right to food is justiciable in Kenya. This constitutional provision has been litigated in Petition 88 of 2011 of the Consumer Federation of Kenya v. Attorney General et al. (which also named the Finance and Energy ministers, Energy Regulatory Commission, and National Oil Corporation as respondents) for the government’s alleged failure to stop living costs, including food, from rising. This case was heard by the High Court, who ruled for the defendants as the judge determined that there needs to be a standard of reasonableness per Article 20 of the constitution in determining whether the state has met its economic, social and cultural obligations. The judge wrote:

More importantly, it must be stated that in bringing matters such as this before the court, which have a critical bearing on the rights, lives and livelihoods of citizens, it is not enough to make bare statements with regard to the violation of rights without seriously addressing oneself to the manner in which the violations have occurred and the reasonableness or otherwise of the measures taken to avert or ameliorate their impact. At this nascent stage in the implementation of the new Constitution, parties in the position of the petitioner, should they determine to take on cases which have a bearing on the public interest, must take them on with all due seriousness (Ngugi 2012, 88).

However, in Petition 164 of 2011 involving resettlement to build an airport, the same judge, Mumbi Ngugi of the High Court of Kenya at Nairobi ruled more strongly in favor of ESC rights, saying:

“The argument that social economic rights cannot be claimed at this point, two years after the promulgation of the Constitution, also ignores the fact that no provision of the Constitution is intended to wait until the state feels it is ready to meet its constitutional obligations. Article 21 and 43 require that there should be ‘progressive realization’ of social economic rights, implying that the state must begin to take steps, and I might add be seen to take steps, towards realization of these rights,” emphasis in the original text (Ngugi 2013).

These two rulings, both on ESC rights by the same judge but a year apart, present a clear change in the court’s view on ESC rights. Several other cases, such as Petition 11 of 2013 that primarily deals with housing, also have as secondary claims the right to food. There have been several cases related to the right to adequate housing under economic, social and cultural rights in the bill of rights that have been ruled for the petitioners, showing that it is not impossible to gain these rights through litigation in Kenya.
Although there have been no attempts to seek legal recourse for the right to food since the 2011 case previously cited, I believe that with current jurisprudence, plaintiffs invoking Article 43 may have a better chance of having their case decided in their favor, provided that they can demonstrate that the state’s actions or policies (or lack thereof) contributed to their food insecurity.

The language in the constitution of Kenya in Article 21 spells out how the country will assure the right to food: through legislation that will allow the progressive realization of economic, social and cultural rights. The creation of social safety nets and social security for those unable to support themselves is another way that these rights will be fulfilled under article 43. Kenya spends about 2.7 percent of its GDP on social sets, higher than the global average, and has safety nets specifically for hungry populations that are already operational (World Bank 2015b). The role of overseeing agricultural production and food distribution is given to the county governments, decentralizing the forces governing the livelihoods of the majority of the population (“The Constitution of Kenya” 2010, sec. Fourth Schedule).

The 2010 constitution attempts to remedy some of the problems with land rights in the country. It lays out the definitions of the three classes of land it creates: public land, administered by the National Land Commission trust; community land, held by communities with shared characteristics or interests; and private land, registered by an individual (“The Constitution of Kenya” 2010, pts. 61–64). Not only does the National Land Commission administer pubic land, it is also responsible for recommending land policy to the government, investigating land injustices, and monitoring land use planning in the country (pt. 67). Article 66 allows the state to regulate the use of land in the interest of local communities and their economies. Article 68 allows parliament to determine maximum amounts of land that may be held by private individuals, ostensibly preventing land monopolies. As issues of land rights have been tied to issue of minority rights, resolving land rights conflicts may also help with some of the larger governance issues in terms of tensions between ethnic groups (Akech 2010, 26).

On the issues of urbanization and population growth, as well as corruption, the constitution is relatively quiet. Although it calls for the creation of a commission on corruption and ethics, and the establishment of an electoral and political party system free from corruption, it does not provide specific rules to prevent corruption. In regards to population growth and urbanization, the constitution does not call for the creation of any legislation on this front, although it does give people the right to reproductive health care under article 43.

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28 Indeed, a quick assessment of cases in Kenya related to ESC rights deal with issues of housing and eviction.
As Kenya is a net food importing country, its trade relationships and agreements significantly contribute to nation-wide food security. In addition, under Article 11 of ICESCR, countries are tasked with equally distributing food in relation to need, so understanding Kenya’s trade relationships will help our understanding of avenues through which it could improve food security. Kenya belongs to several trade blocs, including the Common Market for Eastern and Southern African, with 21 member states; the Community of Sahel-Saharan States, with a focus on inter-state cooperation; and the East African Community, a customs union, in which a common tax is applied on all goods that enter the bloc. Kenya’s immediate neighbors, Uganda and Tanzania, dominate exchanges on the continent, while the top import countries of origin are China, India, and the United Arab Emirates (Tralac Trade Law Center 2018; Simoes and Hidalgo 2011). Unlike the other case study countries, Kenya’s trade with its neighboring countries is minimal compared to trade with farther away states. Kenya has ratified the African Continental Free Trade Area, which requires it to liberalize along 90 percent of tariff lines, but the agreement has yet to enter force. If ratified and implemented, this trade agreement could provide the framework for increased intra-continental trade, which could help Kenya reach its food security goals (Signé 2018).

The National Food and Nutrition Security Policy fills in details on food security not included in Vision 2030, Kenya’s blueprint for development. The policy itself is “framed in the context of basic humans rights … including the universal ‘Right to Food’” (Government of Kenya and Agricultural Sector Coordination Unit 2011). The existence of this policy with a specific rights-based approach to food security is a substantial step in legislating for the right to food beyond the constitution, especially because the Policy takes food security to include nutritious diets and special attention to vulnerable groups, which the constitution does not specify. Kenya uses the part of the framework established by the United Nations in their approach to food security, addressing availability, accessibility, stability, and meeting nutritional requirements. Food security has been deemed an issue of national security, citing the propensity for violence to occur in the face of food shortages. Climate change is also mentioned throughout and integrated into the whole policy, something that the other case study countries could learn from. The policy presents three broad policy objectives: to achieve good nutrition for optimum health of all Kenyans; to increase the quantity and quality of food available, accessible and affordable to all Kenyans at all times; and to protect vulnerable populations using innovative and cost-effective safety nets linked to long term development. The first set of actions run in parallel with the Agriculture Development Strategy in order to increase production; low yields is one of the key challenges to producing enough food for

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29 This was not always the case: as late as the mid-1970s, Kenya was self-sufficient in food production (Kaplan et al. 1984, 140).
people, so this part of the policy will likely have a positive impact on the availability pillar of food security. There is also attention to urbanites in the policy, one of the key groups impacted by the 2008 crisis. Urban zones are to be targeted for employment creation mechanisms such as educational programs, with the goal of increasing participation in the formal sector. Pastoralists, the other vulnerable group in 2008, also receive special attention in order to avoid loss of livestock during droughts. Within the policy, Kenya clearly differentiates between populations who would benefit from food aid, and populations that would be better off being targeted for cash transfers or public works programs.

Vision 2030, focuses on the pillars of the economic, the social, and the political. Specific projects and plans are outlined in subsequent-medium term implementation plans, each of which focuses on a period of five years. Vision 2030 focuses on the big picture governance and society-level changes needed for food security and agricultural development, including anti-corruption measures. The plan emphasizes the creation of new infrastructure to eliminate this high barrier to trade, land reform, and the development of human capital. While the pillars indicate an interest in a society-level push, Vision 2030 remains economic growth focused. To this end, all projects must contribute to macroeconomic stability and be reviewed by the Ministry of Finance and the Central Bank of Kenya (Government of the Republic of Kenya 2007, 6). It calls for GDP growth of 10 percent, which the country remains far from achieving. The entire agricultural sector is targeted for growth and expansion. High on the list of priorities is adding value to primary production with priority to agroindustrial processing, innovation, and decreasing fertilizer costs. The Vision acknowledges the importance of the informal sector to the economy, and plans to support the sector while integrating it more fully into the formal economy; this formalization of the workforce will be helpful for the urban poor, as it is likely to increase their wages. This goal is also important for both women and smallholders alike, as they often engage in informal trade and unremunerated labor. For products commonly imported, the government will begin an import substitution plan to increase competitiveness, particularly in agroindustrial goods.

Together, the constitution, the National Food and Nutrition Security Policy, and Vision 2030 provide the foundation for the state’s approach to food and development. The constitution and a key decision from the Constitutional Court make it so that the right to adequate food is enforceable by courts in Kenya, although there remain some challenges about how to determine when the state’s actions are a reasonable response or whether the state can be held liable for hunger because of this right. Because of the high burden placed on the petitioner, the ability to seek assistance in cases of gross violations, and the remedies limited to petitioners, it seems that in Kenya at least, approaching food security from a right to food perspective misunderstands the problem, and is thus only slightly effective at dealing with the eight million people who are hungry. Therefore, while the right to food is justiciable in Kenya, sectoral plans and policy are more useful in the everyday work of supporting a hunger-free population. What the article
on right to food in Kenya’s constitution shows us is a third way, beside angling for food sovereignty or perhaps outdated languages from ICESCR, to incorporate the right to food into a constitution. Vision 2030 deals with the larger general issues involving economic and wage growth to make sure that food can be moved around the country and that people have the means to purchase it. The NFNSP seeks to solve many of the main challenges to food security identified by this thesis, although it does not do enough to provide support for drought mitigation in arid regions, nor does it create clear guidance for a universal safety net beyond those targeting specific populations. Kenya stands out among the case studies for its lack of regional trade, something that it could certainly increase in order to make food available for the population; several trade agreements in the works may help Kenya do this. A key take-away from the NFNSP is that the government of Kenya seems to have learned from its responses to the 2008 crisis because it plans to implement many of the targeting programs that it failed to implement properly during the crisis.

**Agricultural Framework**

In this section, I draw together the issues elucidated in the previous sections to analyze Kenya’s agricultural policies. Macro-level problems that these policies must account for include population growth, minority-majority tensions, and land organization. The populations most vulnerable to food insecurity are pastoralists and the rural poor, so the policy should find ways to increase access, availability, and stability of food supplies for these groups. Food crises are more likely to arise domestically because of political instability and droughts, which is another factor for the policy to consider. General challenges to agriculture include poorly developed markets and export infrastructure, lack of access of credits, low productivity from lack of mechanization and inputs, and arid conditions. Under the conditions of climate change, tea production may decrease because of drought, and rainfall pattern changes may decrease maize yields. Using these country-specific factors, I will assess the agricultural policy and make recommendations to support the agricultural sector and food security in Kenya.

The 2010-2020 Agricultural Sector Development Strategy’s (ASDS) vision is “a food-secure and prosperous nation,” while its mission is “innovative, commercially oriented and modern agriculture” (Government of Kenya 2010, 28). The plan divides up the overall sectoral policy into various subsectors, including crops and livestock, and then turns its focus on production factors that contribute to the sector. This policy is comprehensive in terms of the topics it covers, but it is sparse on details and indicators, which would make the plan’s statements assessable. As there has yet to be a comprehensive review of the plan’s implementation, it is difficult to know how much progress has been made toward accomplishing the plan’s goals. Nearing the end of the strategy’s term, the growth rates, added value growth rates, and government expenditure rates on agriculture remain on the decline (ReSAKSS 2017).
Of the three overarching issue areas, most attention is focused on land. Proposed interventions for land use lack depth within the crops and land development subsector, only calling for increased sustainable agriculture and technology for the arid and semi-arid zones. As land reform and land rights are dealt with in the Vision 2030 and the constitution, this hole does not raise an alarm. The land production factor section aims to improve agricultural land use. The government plan includes a GIS-based land registry to keep track of parcels and titles. Registering land and issuing land titles alone are unlikely to solve the larger problems around land rights, and might exacerbate tensions. What Kenya needs is not more titles, but rather a better way to allocate land than distribution based upon the ethnicity of whichever group is in power. Instead, attempts to reform land rights must take into account from whom land has been taken and to whom it has been given, in order to reconcile the past with the current population’s needs. This plan does say that it will end government resettlement, which is a step in the right direction. Population growth gets mentioned only as a factor that is causing problems for soil quality, water management, and wildlife, and minority-majority tensions do not appear to be addressed at all.

Improving market access and export infrastructure will be done through the building of infrastructure for safety and health standard compliance and generating and disseminating market information under the crop and land development subsector. Infrastructure is lumped in with land titling measures, but there are no discussions about what exactly government investment in infrastructure might look like. Pastoralists are targeted as a group for which market access should increase, and this will hinge upon better sanitation and safety procedures, so the ASDS focuses on these measures. These steps do not seem to do much more than acknowledge that there is a problem, as there is not a clear mechanism or action plan for the state to ameliorate the situation.

Tea and maize do not receive much attention under the ASDS. While Kenya has the strongest research out of the four case studies, improving production will depend upon bringing new techniques to farmers through extension services, which the Strategy details. Tea is targeted for productivity increases under the crops and land development subsector. This plan, however, values demand-driven research centered on export crops, and does not include an emphasis on maize, the main food crop. Kenya might consider spending more on extension services for food crops rather than export crops, as it already does not produce enough to feed its population under current status quo conditions.

There is a separate law, the Land Act of 2012, that deals with issues such as urbanization and land disputes courts. While analyzing this piece of legislation is outside of this thesis’s scope, determining how the government plans to tackle urbanization through land use outside of the agricultural sector would be a direction for further research.
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Hoping to increase access to inputs and credit, the policy outlines a plan to work with the private sector while importing fertilizers in bulk to distribute to farmers at reduced costs. Credit packages will be centered on private lending opportunities, which have typically excluded smallholders because of high credit rates. If credit access for smallholders increases over the tenure of this plan, this step could make a real difference in the lives of farmers, but it is unlikely to do so because of the lack of incentives from the government to propel the private sector to lend to smallholders.

Pastoralists, one of the two vulnerable groups in 2008, will be given more support under this plan. The developing northern Kenya production component is key for improving the resilience of pastoralists, who have some of the highest rates of poverty in the country and who were one of the two groups most impacted by the 2008 food crisis. In the ASAL areas specifically, lack of water will be addressed through better rainwater management and collection projects. The pastures themselves have degraded from overgrazing in recent years, so that when there is little rainfall, little grass grows for grazing. Restoring pastures, then, is an important drought-prevention tool to keep pastoralists from losing their livestock. Restoring pastures partially fills the gap in the NFNSP about non-irrigation drought prevention measures. Another way the ASDS supports drought prevention in arid- and semi-arid areas is through a borehole program, or well-drilling program, to access untapped groundwater. The Strategy places a caveat on this, saying that the program must be well-planned, essential in order to avoid disputes over water rights or overexploitation that would prevent future pastoralists from accessing water. The ASDS calls for increasing the area under cultivation in the ASAL area for drought resistant crops. While some subsistence agriculture may help pastoralists balance their food basket, a focus on cash crops in this area as spelled out by this plan may do further damage to the land and put increased pressure on fragile water resources. It is also not clear whether the Strategy envisions those already living in ASAL doing agricultural work, or whether people from other regions would be settled there. Pastoralists have spoken about their reluctance to switching their livelihoods completely because of the cultural relationship they have with their work, which may provide another barrier to purely agricultural pursuits. Likewise, in the case of the latter situation, there may be minority-majority group tensions caused by resettlement. The diversifying sources of income for pastoralist communities section, however, holds more promise. It calls for community-level wildlife conservation, which can create income from tourism. The planting of trees that produce fruits and spices is encouraged by the ASDS, which will not only provide additional income but also ground cover and water retention. By having pastoralists participate in activities like soap making that process animal parts, pastoralists can gain increased income and have stores of wealth besides their livestock. On the other hand, much of the work around breeding livestock falls on farmers because the government has determined that livestock breeding is not one of its priority tasks. As the private sector has not stepped up to invest in this area, it is unclear who will do breeding work other than the farmers.
themselves. This is an area in which this policy admits that will not get government attention, despite the need for help in breeding, particularly in ensuring that animals are healthier and more resilient to extreme weather. In 2008, disease made much of Kenya’s livestock unable to be sold, so controlling diseases and pests and making sure they do not spread under this Strategy is an important step toward ensuring that hardships do not pile up for pastoralists. While the government may shy away from implementing its own breeding programs, it needs to incentivize the private sector to engage with this area in order to assure that farmers have quality animals.

This policy gives considerable attention to water management and storage. The ASDS calls for the implementation of framework legislation on water management, which passed in 2016 (Water Act, 2016, No. 43 of 2016). This law is significant: interventions to prevent drought and manage water resources cannot be done in a piecemeal way, and having a comprehensive piece of legislation in place will create streamlining and avoid conflict. It also mandates water storage, which the government’s support for developing systems that accomplish this. By combining legislation and government support for implementation on the ground, it is more likely that these beneficial plans will actually be realized (Government of Kenya 2010). Climate change projections show that maize production will decrease because of changes in precipitation patterns unless there are significant interventions to stabilize water availability throughout the year; because of this legislation, maize production may not decrease in significant ways. The water plan for agriculture reiterates the Vision 2030 goal of adding 32,000 new hectares of irrigated land per year, with a baseline of 144,100 ha equipped for full control irrigation in 2010 (Food and Agriculture Organization 2015a). Rivers and lakes will also receive attention for depollution efforts, thus making this water safer for both human and agricultural use. While drought and lack of water are problems that may never be solved, the steps outlined in the ASDS put the country on a positive track to minimizing the effects of drought and building resilience (Government of Kenya 2010).

Several parts of the policy appear that they will work toward meeting the county’s goals of decreased hunger and poverty. It is strongest when dealing with water, pastoralists, and also includes some elements to improve yields. It leaves behind credit, market access, and infrastructure, however. The policy itself acknowledges that these gains depend on economic, political, and social stability that cannot be counted upon. Structural governance issues may thwart even the best plans, turning something as positive as a social safety net into a site of corruption. The different government ministries and organizations would be required to collaborate fully, and monitoring and evaluation should not be left as an afterthought. If several of the policy’s aims meet their goals, then the policy can be deemed a success without its full implementation, as the latter is highly unlikely to occur.
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CLIMATE CHANGE FRAMEWORK

In this section, I transition to examine the climate change policies in Kenya in order to determine what actions it already takes and policy recommendations I can make to improve food security. Kenya has taken action at the national and local action to mitigate and adapt to climate change. In addition to its domestic legislation, the country is also party to the Paris Agreement (2017), the Kyoto Protocol (2005) and the UN Framework Convention on Climate Change (1994). The 2010 constitution sets the stage for strong environmental laws by granting every person the right to a clean and healthy environment (“The Constitution of Kenya” 2010, pt. 42). Kenyans can bring complaints about environmental degradation without the need to prove injury or loss, which enables those affected by climate change to come forward without the traditional barriers to such lawsuits (“The Constitution of Kenya” 2010, pt. 72). Vision 2030’s social pillar specifically calls for a “just and cohesive society enjoying equitable social development in a clean and secure environment,” (Government of the Republic of Kenya 2007, 1, emphasis added).

Kenya’s National Food and Nutrition Security Policy lists climate change as a threat, calling adaptation interventions critical (Government of Kenya and Agricultural Sector Coordination Unit 2011, 3). To respond to increased threats to food security because of extreme weather events, the policy mandates that the National Cereals and Produce Board retain four million bags of maize and a matching cash equivalent. This mandate aims to ensure that if there are food shortages or price spikes the government can release grain and stabilize the situation. As 30 to 40 percent of maize is lost in storage, and this plan does not include investments in granaries and storage systems to reduce losses, increasing stocks is only part of the solution (Government of Kenya and Agricultural Sector Coordination Unit 2011, 11, 14). The policy calls for the enhancement of regional trade and local circulation of crops, realistic goals in face of the extreme barriers faced by international trade from the lack of infrastructure. Regional trade may become even more important under the conditions of climate change, as Kenya might experience changes in its agricultural sector that shift or decrease production, which would necessitate the procurement of food from external sources. Drought, the most factor most likely to impact production and food security, particularly in terms of maize availability, is acknowledged as one of the biggest threats facing the country. The NFNSP sets targets to support water collection, storage, and irrigation technologies and promote sustainable use of water sources. The Policy provides few details, however, on the specific mechanisms of preventative drought management through measures beside irrigation, calling for exploring the creation of special funds and agencies to address drought. It imagines a preventative response to climate change-induced drought, particularly in the ASAL areas through sinking boreholes and creating capacity building programs. It does not specifically mention maize and adaptation mechanisms for the country’s main food crop, a considerable oversight as the model ensemble mean shows that changes in precipitation patterns may have a negative effect on maize production. The creation
of these institutions and funds is necessary to assure food security, and failing to provide for them fully within the strategy leaves doubts as to Kenya’s ability to prevent drought. The NFNSP provides evidence of movement in areas that have shown to be weaknesses for Kenya in the past and that are likely to become larger problems in the future, notably food trade and drought management.

Kenya’s Climate Change Act of 2016 serves to both encourage resilience and spur low-emission development. One of its biggest independent achievements is the establishment of the National Climate Change Council, tasked with implementing the action plan, setting greenhouse emissions targets, and administering the Climate Change Fund, among other tasks. The Climate Change Fund can be applied to research and innovation, grants, implementation of adaptation and mitigation techniques, and technical assistance. As investment in agricultural research and extension services will become more important as conditions change due to climate change, this part of the Climate Change Act may contribute to food security (Government of Kenya 2016). While parts of the Act show potential, there remains much institutional work to be done to translate its mandates into action, showing that climate change mitigation and adaptation are not the government’s top priorities.

In light of this general legislative framework, the National Climate Change Action Plan: 2018-2022 seeks to put into place “low carbon climate resilient development in a manner that prioritises adaptation” (Government of Kenya 2018, 1). Within this plan, the government has prioritized disaster risk management, food and nutrition security, and water and the blue economy, the three areas of concern for this thesis. In terms of drought management, the plan recognizes that reactive aid is costly, and thus will focus on increasing beneficiaries under the National Safety Net Programme while also distributing grants from the Climate Change Fund to target vulnerable populations. Drought infrastructure, early warning systems, and agency coordination will be improved under the plan to assist in emergencies. This dual approach of increasing the spread of the safety net while also putting into place drought management mechanisms is an excellent approach to ensuring food security. The food and nutrition security part of the plan revolves around increasing production through the use of inputs, irrigation, and sustainable crop systems. Furthermore, it calls for the increased use of livestock insurance and replanting in ASAL to support pastoralists. To prevent farmers and pastoralists from relying solely on agricultural pursuits for their livelihoods, the plan aims to transition over 500,000 households to more diversified sources of income. Finally, a focus on water and the blue economy imagines the construction of 12 new dams, water storage infrastructure, and farm ponds to bring water to more people. These water production measures are closely followed by actions to increase water efficiency and water quality (Government of Kenya 2018). The NCCAP is a very strong plan to combat the effects of climate change and ensure food security. It pays attention to the key challenges facing the country in terms of changes in rainfall and production, and also includes support for both farmers and consumers through safety nets. With clear
financial obligations, monitoring tools, and an outline of who should be implementing parts of the plan, this NCCAP is one of the strongest policies both in content and implementation potential analyzed in this thesis.

In addition to its agricultural strategy plan, Kenya also has a Climate Smart Agricultural Strategy (CSAS). This strategy includes three main issue areas: vulnerabilities from temperature and precipitation changes, vulnerabilities from extreme weather events, and vulnerabilities from unsustainable usage of natural resources. The first issue area addresses many of the concerns raised by analysis on effects of temperature and precipitation on tea and maize through improved crop varieties and technologies as well as livelihood diversification. The vulnerabilities to extreme weather area is primarily concerned with early warning systems and insurance. Agricultural insurance is an essential way that farmers can receive assistance if crops fail, preventing them from going hungry. It is also something that Kenya has not explored in its other policies, and other countries might emulate. The natural resource use strategic area is concerned with taking stock of the state of natural resources and promoting better usage. While this strategy does have some value-added features, particularly the agricultural insurance idea, it is unclear what gaps this strategy really seeks to fill. As this document was created under sponsorship by a UN program, it is likely that it arose from outside rather than internal demand.

Overall, Kenya’s climate change policies and planning documents take into account the key issues facing agriculture and climate change, and support vulnerable populations identified in 2008. As we have seen with past agricultural policies, what is written does not always translate into change on the ground. Specific areas of concern for implementation include minority/majority group tensions and corruption. If implemented as spelled out, the climate change preparation that Kenya has will boost production, improve water management, and increase food security. If even partially implemented, this plan still has the potential to support Kenyans’ food security under the conditions of climate change.

CONCLUSION

In this chapter, we explored the food security, agriculture and climate change frameworks in Kenya to understand how Kenya, as a country with right to food provisions in its constitution, is working to provide its citizenry with food in the future. Because Kenya struggles with all four pillars of food security, especially food availability because of its limited production, agricultural policy that increases production is a clear way to improve food security. Looking at Kenya from a historical, economic, and political context reveals three general challenges that might prevent it from obtaining food security: majority/minority group tensions, rapid population growth, and land rights. While agriculture and climate change policies do not directly address these issues, many of the instruments acknowledged that good
governance and political and economic stability are key to their success. Granting equitable access to land and water resources will likely be of paramount importance to maintaining peace, and better enforcement of titling schemes in place will help communities and individuals profit from their land. Land reforms, which should proceed under Vision 2030 and the National Land Use Policy of 2017, may help prevent tensions arising over land rights and minority-majority group land-related disagreements. Dealing with corruption at all levels, including that of the president, should be high on the priority list of any reformers hoping to prepare the country for climate change. This is particularly important because of the links between violence over political issues and hunger. Political violence has preceded hunger in the country in the 1990s and 2008; most recently, food shortages occurred in 2018 because of droughts and political unrest (Andae and Kubania 2018). Likewise, cooperatives, parastatals, and private enterprises alike have profited from smallholder farmers’ vulnerability to make a profit (Gibbon 1992, 88–89).

Population growth is dominantly in urban areas, and urban people were one of the two main groups impacted by the 2008 crisis. This group will be targeted for better employment opportunities in the formal sector under Vision 2030 in order to decrease poverty. The provision of more expansive social safety nets should seek to enroll more urbanites as well as pastoralists. Pastoralists are the second group identified as vulnerable to food insecurity, mainly due to droughts that kill what few crops grow in ASAL areas and the storage of its wealth, livestock. Both agriculture and climate change policies point to drought and water management as key priorities, which will help support pastoralists.

Drought is the most serious concern for agriculture in Kenya. The CMIP5 model ensemble mean for precipitation shows that changes in month to month rainfall distribution might have significant negative effects on the production of tea and maize. The 2010-2020 agriculture sectoral plan, coupled with the NFNSP, provide for a two-pronged approach to dealing with this issue. One, the government has significant plans to increase water collection, storage, and irrigation systems throughout the country. These plans show great promise, as long as they are implemented in a systematic way that does not favor specific majority groups or exclude smallholders. The second approach deals with social safety nets and insurance for crops. Together, these two elements should provide both a boost in resiliency of crops and production, as well as mechanisms of support when the first plan of action fails. Not only will this two-step system support the food producers themselves, it will also help the country maintain and increase its agricultural production as a whole by giving farmers the flexibility to make new investments in their fields without fear of losing everything from one bad season. Of course, there will be instances in which both steps may be ineffective, but on the whole, this system is a vast improvement over simply choosing one or the other.

As Kenya is a net food importing country with big limitations on production due to lack of water resources, it appears unlikely that it will become food self-sufficient even without changes to precipitation
and temperature because of climate change. The reality is that Kenya will have to continue importing food from abroad to meet its population’s caloric needs. This situation creates incentives for Kenya to invest in infrastructure to improve its ability to move food around the country, particularly to the ASAL zones. Increasing trade with its neighboring countries can also help Kenya make food available to its population.

While there is a strong rights-based approach to food security in Kenya’s legal framework, it is clear that this right has had little impact on its own on food security. There is a strong normative basis for people being hunger-free, and the government is also incentivized to take action on this issue because of fear of regime change or protests staged by hungry citizens. There is no evidence, however, that the right to food in Article 11 of ICESCR or Article 43 in the constitution have had significant effects on curbing hunger or ensuring people are fed. While litigation on the matter should be reattempted to create stronger jurisprudence on the right to food specifically and aid grossly wronged individuals and communities, this should not be considered the be-all-end-all solution. Because of the sheer scale of hunger in Kenya, food security should rather be pursued through sectoral policy that works to create the conditions under which everyone can be fed. In this way, ending hunger will not seem contingent on one specific ruling, but rather on a whole host of policies and plans that help increase production, improve economic conditions, and provide support when prices rise or families face crises that prevent them from purchasing food.

Other challenges to agriculture, and specifically to tea and maize production, included low productivity, poor market and credit access, ineffective land use, and lack of infrastructure. Each of these problems is addressed to varying degrees within the agriculture policies. Improving infrastructure is a larger structural issue that would nevertheless impact many of the other agriculture challenges: for example, better infrastructure would allow food to travel more easily from the farm to different regions and even other countries.

Looking forward, there remain both opportunities and challenges for Kenya to become food secure, especially under changing climatic conditions. Overall, Kenya’s policies cover some of the challenges to production and food security under changing conditions, but are strongest for their approach to drought and water management. Whether there will be substantial changes in the agricultural system based on the strategies and policies in place appears to be a challenge: corruption and lack of sufficient funds make implementing these plans difficult. Indeed, the value of the plans depends on their implementation. Kenya has struggled to make its agricultural goals a reality in the past because of issues ranging from internal government disagreement, lack of oversight, and lack of funding. In order to make food security in Kenya more robust under climate change, Kenya should consider expanding and scaling up its Urban Food Subsidy Cash Transfer Program, there should be significant investments made by the government in irrigation and water collection systems, and a domestic food security steering organization
should be created. Right to food advocates should consider testing the courts’ new opinion on ESC rights by bringing more right to food cases.

**BIBLIOGRAPHY**


Chapter 4: Kenya


Naivasha, Kenya: Committee on Commodity Problems, FAO.


https://pdfs.semanticscholar.org/0c62/04c209116df72b156b4c3de2d067f1e1c9ebe.pdf.


https://doi.org/10.1016/j.jecm.2012.06.007.
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CHAPTER 5: UKRAINE

Ukraine, a large eastern European country, contributes to our understanding about agricultural policy, international law, and climate change in several ways. Ukraine is an example of a country that has rapidly industrialized, under Soviet rule and then continuing post-independence, something which Nepal and to a lesser extent Bolivia are attempting to do. After wavering on which of its powerful neighbors to join, Ukraine signed legislation to bring it closer to the EU, with an eye toward joining the bloc. Although incomes are higher in Ukraine than the other case study countries, it remains plagued by similar challenges: lack of mechanization in farming, corruption, violence, and land reform needs. As most farmers are no longer subsistence farmers and the country is a net agricultural exporter, it has greater control over food security and was able to quickly respond when prices increased in 2008. Ukraine is also important to study because some researchers have suggested that its agricultural production may benefit under climate change, illustrating the diverse effects that might be felt around the globe. Ukraine’s constitution includes a right to food clause, and the country has ratified ICESCR and signed its Optional Protocol (which it has not yet ratified). In Part I of this case study, I will explore the national context, the agricultural context, the 2008 food crisis, and the climate change context. Then, in Part II, I will analyze the right to food framework, as well as agricultural and climate changes policies, using elements from Part I.

PART I: CONTEXT

NATIONAL CONTEXT
In this background section, I will investigate the history, geography, politics, and economy of Ukraine to place the country’s agricultural and climate change policies in their domestic context. Ukraine, second only in size to Russia in Europe, is a flat country with good agricultural land. Approximately 56 percent
of land area in Ukraine is arable, giving it high agricultural production potential (Central Intelligence Agency 2019). Ukraine’s name derives from its central location, coming from the word “borderland” (Yekelchyk 2007, 4). The neighbor of seven eastern European countries, Ukraine also has access to the Black Sea and the Danube and Dnieper rivers allowing easy trading routes. Current international borders are relatively recent, having only been put into place in 1991. Ukraine’s population of 44 million has been in decline since the early 1990s, posing a different set of challenges than that of Bolivia, Kenya, and Nepal that all have more rapidly expanding populations (Central Intelligence Agency 2019).

In terms of geography, Ukraine has few variations in its 579,330km² land area. There are mountains in the west and in the Crimea, but the majority of Ukraine is made up of open plains and plateaus (Magocsi 2010, 5). Ukraine has a cool to moderate climate, and up to two-thirds of the country’s soil is classified as chernozems, a type of soil with high agricultural potential because of its capacity to store water (FAO 2017; Magocsi 2010, 6). Unlike the other case study countries, Ukraine generally has good access to water resources. It receives on average 565 mm of rainfall each year and has abundant river and ground water sources. In addition, water use has actually been decreasing in Ukraine, leaving room for scaling up of irrigation and other water management systems (Food and Agriculture Organization 2015).

Present-day Ukrainian land came under the control of the Habsburgs and the Russians, with the idea of Ukrainian independence first gained traction during the First World War (Yekelchyk 2007, 65). Two separate Ukrainian states announced their independence, and then tried to unite, but were quickly crushed by greater powers (Yekelchyk 2007, 72, 77). By the end of 1919, eastern Ukraine was under the control of the Bolsheviks as a part of the Russian Soviet, and western Ukraine was divided between Czechoslovakia, Romania and Poland (Yekelchyk 2007, 82–83, 121). The peasantry under Russia was decimated by oppression and famine in the 1930s, as Stalin pushed a hardline industrialization program and pushed high grain quotas in low production years (Yekelchyk 2007, 103). During World War II, Russia invaded western Ukraine to create the Ukrainian Soviet Socialist Republic, uniting ethnic Ukrainians formerly controlled by different states (Yekelchyk 2007, 134).

This step toward nation-statehood was short-lived, as Ukraine became a World War II battleground (Yekelchyk 2007, 136). Germany controlled Ukraine from 1941 to 1943, conducting mass executions, forced labor, and extracting agricultural goods (Yekelchyk 2007, 139–40). Russian forces advanced, and recaptured Ukraine in 1943; they espoused a discourse of independence for their new

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31 An estimated 3 to 3.5 million people died during the famine which continues to be denied by Russia and for which foreign aid was not accepted (Yekelchyk 2007, 112).
Chapter 5: Ukraine

Soviet in order to get another seat in the United Nations, but Ukraine remained securely under Russian control (Yekelchyk 2007, 146).

Mikhail Gorbachev’s reforms in the 1980s and 1990s created the space for Ukrainian independence. While Kenya, Bolivia and Nepal were liberalizing through structural adjustment programs, Ukraine was opening more radically. When Gorbachev came to power in 1985, he started reforms centered around restructuring and “openness” in order to boost the USSR’s economy (Yekelchyk 2007, 179). By 1990, reforms and student protests forced the state to allow non-Communist parties (Yekelchyk 2007, 187). As Moscow failed to negotiate a new treaty with the Soviet states, Ukraine voted for independence on 1 December 1991 (Yekelchyk 2007, 191). Despite this monumental change in status, much remained the same in Ukraine, as the governing elites largely remained in power (Yekelchyk 2007, 193). By 1995, Ukraine was more willing to align with the West, and entered into a cooperative agreement with NATO, followed by a special partnership agreement in 1997 (Yekelchyk 2007, 202). Questions over territory, particularly regarding ownership of the Crimea and the Black Sea Fleet became highly politicized, with the Crimean legislature voting to become independent from Ukraine (Menon and Rumer 2015, 3).

Ukraine was rocked by election fraud and corruption following voting on referendums to decrease the power of the Supreme Rada, the Ukrainian parliament, in 2000, followed by the poisoning of Viktor Yushchenko, then-president Leonid Kuchma’s major opponent, in the 2004 election (Yekelchyk 2007, 208–16). The 2004 election was deemed invalid and protesters mounted the famous Orange Revolution. A package of reform measures was agreed to by both sides, and a runoff put Yushchenko in power (Yekelchyk 2007, 218). During his presidency, Yushchenko closely aligned Ukraine with the West, but by the 2010 elections, people had lost faith in Yushchenko and elected the pro-Russian Viktor Yanukovych (Menon and Rumer 2015, 44–45; Yekelchyk 2007, 221–222). Corruption increased, as the giant state bureaucracy functioned on bribes and “special payments” (Menon and Rumer 2015, 47–48).

Ukraine’s economy has oscillated between capitalism and communism, with varying levels of commitment for each economic system. Incomes rose in the 1970s, but people (mostly women) had to wait in line to get food and other household goods through ration programs (Yekelchyk 2007, 171). Following independence, inflation rendered the new currency worthless in 1993, and the economy came to a standstill (Yekelchyk 2007, 198). Extreme cronyism between the government and rich businessmen further depressed the economy and prevented crucial reforms from being implemented. The IMF stepped in with conditional loans in 1994, requiring inflation control, interest rate benchmarks, and tax collection for Ukraine to continue to receive funds (Yekelchyk 2007, 205). It is interesting to note that the conditional loans received by Bolivia, Kenya and Nepal in the 1980s and the loans that Ukraine got in the
1990s (and still continues to receive) have similar structures, focusing on stabilization, liberalization, deregulation, and privatization as their key goals (Summers and Pritchett 1993, 383). These reforms, however, met resistance and ambivalence from within the government that prevented them from being implemented properly (Menon and Rumer 2015, 30). Even the introduction of a new currency in 1996 did little to change Ukraine’s economic outlook (Dabrowski 2014, 2). Yushchenko, then the prime minister, implemented some reforms to help the middle class, but they were short-lived, and the system of “oligarchic capitalism” remains in place, so that the average Ukrainian has not benefited much from economic growth (Dabrowski 2014, 2; Magocsi 2010, 737; Yekelchyk 2007, 207–28). The IMF’s pressure on Yushchenko to reduce the deficit coupled with pressure from his own administration to expand social programs led to fluctuations in real wages and GDP, but in the first eight years of the new millennium the economy did expand (Dabrowski 2014, 3; Menon and Rumer 2015, 38). Ukraine finally managed to join the World Trade Organisation, the global trade club, in 2008 (Dabrowski 2014, 3). In 2008, Ukraine received emergency loans from the IMF to help pull it out of a financial crisis (Åslund 2009, 377). Ukraine continued to receive IMF loans into the 2010s, but funds were frequently withheld because the state did not meet the IMF’s conditions (Menon and Rumer 2015, 60). It has been suggested that some of the international interest in pushing through these reforms is related to Ukraine’s agricultural lands, which have already seen big investments from foreign enterprises (Word, Martin-Prével, and Mousseau 2014, 3–4).

The same cycle of half-hearted reforms to fulfill WTO and EU requirements, which were stymied by corruption, continued under Yanukovych, and Ukraine appeared on the brink of another financial crisis in 2013 (Dabrowski 2014, 4). The International Monetary Fund and the EU both provided significant aid to Ukraine following the crisis; GDP has recovered slightly since 2015, but has not yet regained pre-2013 levels (Dabrowski 2014, 5). Conditions attached to the aid package likely did little to help with the larger structural issues of corruption and poor fiscal policy (Dabrowski 2014).

Ukraine’s policies and laws since independence have been deeply impacted by both Russia and the EU. Because of current trends to partner with the EU after the annexation of Crimea, an exploration of Ukraine’s relationship with the EU will be more revelatory for understanding future policy possibilities. Ukraine first formally partnered with the EU in 1998 through a bilateral Partnership and Cooperation

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32 Indeed, even before Ukraine received its first loan there was debate about the effectiveness of structural adjustment lending.

33 Ukraine is a good example of Easterly’s findings that countries that received structural adjustment loans tended to receive multiple of such loans did not change how policy distorted the economy, or benefit economic growth (Easterly 2005).
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Agreement which included economic and technical support (Dabrowski 2014, 4). In 2005, both parties signed the EU-Ukraine Action Plan, which put Ukraine on the path towards an association agreement (Dabrowski 2014, 4). Negotiations over a comprehensive trade agreement with the EU began in 2007, but then-president Viktor Yanukovych shelved the deal in 2013 because it would have required reforms that would have hurt his and his cronies’ wealth (Menon and Rumer 2015, 51–52). After the protests and change in government, however, the association agreement was signed in June 2014 (Dabrowski 2014, 4).

In order to think more carefully about challenges to realizing food security in Ukraine, we must also account for society-level issues. In Ukraine, ethnic tensions and hostilities with Russia, a declining population, and land rights issues related to Ukraine’s time as within Soviet Russia are the most important areas of concern. In the next section, I pivot from general information to focus in on these specific problems.

Ukraine is home to a multiethnic population, although ethnic Ukrainians make up the majority. Divisions between the eastern and southern regions, which are linguistically and culturally connected to Russia, versus the central and western part of Ukraine that is more ethnically Ukrainian and connected to the West, remain (Magocsi 2010, 749). These divides have allowed Moscow room to push its agenda in sympathetic regions, with the annexation of Crimea as the most notable example of the country’s ethno-divisions leading to significant governance challenges. The constitution, which calls for the government of Ukraine to protect and support all ethnic groups, has had a “positive impact” on unity but there remains room for growth in this area (Magocsi 2010, 474).34

Connected to Ukraine’s population make-up is Ukraine’s relationship with Russia. Ukraine has historically depended upon natural gas and oil exports from Russia (purchased at a reduced cost), which it also transports to the rest of Europe (Menon and Rumer 2015, 41–42). Russia repeatedly retaliated against Ukraine from 2006 on by increasing natural gas prices, damaging Ukraine’s ability to produce heat and to power industry (Menon and Rumer 2015, 42–44). The presence of extensive gas lines makes Ukraine an important gatekeeper for the EU, incentivizing the EU to form closer bonds with Ukraine. Russia, however, has made bold moves to prevent such cooperation, particularly with its military activity.

Russia has a long history of involvement in Crimea, first annexing it in 1783 (Yekelchyk 2007, 34). It gave the Crimea to Soviety Ukraine in 1954, but much of the cultural remains more closely tied to Russia (Yekelchyk 2007, 154–55). Prior to the crisis in 2014, Yanukovych had monopolized power

34 There are also ethnic Hungarians in the West, which has caused another problem for Ukraine. After it adopted a law making Ukrainian the language of instruction in schools in 2017 in response to Russia’s invasion, Hungary has moved aggressively to block Ukraine’s integration into both NATO and the EU. Ukraine has accused Hungary of illegally distributing passports and supporting Russia, and the area of Transcarpathia has become another region in which ethnic tensions are running high (Krekó and Szicherle 2018).
within his own hands, and the public was fed up with politics (Menon and Rumer 2015, 58). An economic crisis connected to Ukraine’s growing debt to Russia for natural gas, and poor relations with Putin himself put Yanukovych in a difficult position as Russia intensified its efforts to keep Ukraine within its sphere of influence (Menon and Rumer 2015, 61, 64, 75). As Ukraine came closer to finalizing a trade deal with the EU, Russia banned certain products from Ukraine and stalled imports at the border which had serious economic repercussions on Ukraine (Menon and Rumer 2015, 77). When Yanukovych announced in November 2013 that negotiations with the EU were suspended, protesters took to the main square in Kiev and were met with increasing violence from state security forces.\(^{35}\)

Finally, an agreement brokered by the EU ended the violence and restored power to the prime minister; Yanukovych fled the country (Menon and Rumer 2015, 79–81). In the wake of instability in Ukraine, Russia quickly took advantage of the situation and annexed the Crimea (Menon and Rumer 2015, 83). It took Russia\(^{36}\) shooting down a civilian aircraft, MH-17, for the US and the EU to begin large-scale sanctions on Russia for its behavior in Ukraine (Menon and Rumer 2015, 128). Instability took an economic toll on Ukraine, lowering its GDP and increasing the national debt (Dabrowski 2014, 5). The situation has changed little since 2014, with continued skirmishes between the two countries. Indeed, while much attention has been placed on US President Donald Trump’s attempt to build a border wall along the southern border of the United States, Russia has proceeded to put in place a fence with elaborate sensors along Crimea’s border with Ukraine (Hackwill 2018). On February 18 2019, the president of Ukraine signed a constitutional amendment committing the country to joining the EU and NATO, drawing Ukraine closer to the EU and the Common Agricultural Policy (CAP) that governs the EU’s agricultural sector (Associated Press 2019).

Low birth rates and emigration have caused Ukraine’s population to decline since independence, with the Russian and Jewish population declining at especially high levels (Magoesi 2010, 745). Unlike Nepal, Bolivia, and Kenya which are experiencing high levels of urbanization, the majority of Ukraine’s urbanization occurred during the late 19\(^{th}\) and 20\(^{th}\) century (Yekelchyk 2007, 66). As of 2017, 70 percent of Ukrainians live in cities and have since 1992 (Food and Agriculture Organization, n.d.). With a declining population, there will be fewer people paying into Ukraine’s four social insurance funds; furthermore, there will also be a smaller supply of qualified workers, which may be particularly detrimental in Ukraine because this dearth already poses a challenge to agricultural production (Demyanenko 2008, 11).

\(^{35}\) These demonstrations are commonly referred to as the Euromaidan demonstrations or the Maidan revolution.

\(^{36}\) While Russia disputes this fact, independent exports have verified that it likely was Russian forces that shot down the plane (Walker 2018).
Land rights issues have been occurring since before Ukraine was a unified state, but accelerated under Russian control. Agriculture country-wide was collectivized in 1948 under Russian control (Yekelchyk 2007, 148). Land reform was slow at the beginning of Ukraine’s years as an independent country, but accelerated in 1999 with a decree to privatize agricultural lands immediately (Lerman et al. 2007, 19–20). Since 2001, Ukraine has had a moratorium on land sales, despite a ruling from the European Court of Human Rights that it violated Ukrainians human rights. This moratorium was recently extended to 2020, at which time the Supreme Rada will have the opportunity to repeal the ban (Sorokin 2018). Leasing land is permitted, however, which allows both international groups and Ukrainians to gain land for agricultural purposes despite the ban (Schmitz and Meyers 2015, 9). In addition, after Ukraine gained its independence, much land that had previously been used to crop crops went out of production use, so there remain big opportunities to put land into production without clearing untouched areas (EBRD and FAO 2008a, 2).

In this final paragraph of the section, I discuss current macro-level trends relating to food security and poverty. Macroeconomic, nutritional, and political trends tell a mixed story about Ukraine’s future food security. The conflict with Russia over the Crimea as well as territory on the eastern border continues to “simmer,” with no clear way of ending it in sight (Pifer 2019). After the recovery from the financial and food crises, Ukraine’s GDP spiked. Since 2013 and the war with Russia, however, GDP has been on a downward trend, although it recovered slightly in 2017. GDP per capita (PPP) has followed similar trends: as of 2017, GDP per capita stood at $2,639.82 in current US dollars (World Bank 2017b). Ukraine is one of the world’s most economically equal countries, with a Gini index of 25.6 in 2013 (UNDP 2013, 2013). It is difficult to assess how undernourishment has changed in the last 30 years, as there is no accessible data from 2003 to 2015. The average dietary energy supply adequacy, a measure of food availability that accounts for the population’s estimated calorie requirements compared to food supply, although still above 100 percent, has been in decline since 2007, suggesting that food availability is decreasing. From 2015 to 2017, however, prevalence of undernourishment increased by 0.4 percent to 3.3 percent. Although the estimated 1.5 million people undernourished from 2015 to 2017 (800,000 of which live in conflict-impacted oblasts) is significant, this number is dwarfed by Kenya’s 8.8 million people (Food and Agriculture Organization, n.d.; Food Security and Livelihoods Cluster Technical Working Group 2017). Ukraine does have widespread hunger throughout the country, but the conflict has created severe localized hunger. While generally, whole lower-middle-income countries have seen positive change in the number of people who are undernourished, Ukraine is struggling to meet the needs of people in the conflict zones (FAO 2013, 42).
AGRICULTURAL CONTEXT

As the setting and conditions for agriculture, as well as the historical development of the sector, both greatly impact current policy prospects, I will set the scene for Ukraine’s agriculture in this section. Agriculture has an ancient history in Ukraine, developing in around 5,000 BCE (Yekelchyk, 2007, pp. 156, 166). Due to good agricultural production in Ukraine because of favorable climatic and soil conditions, innovation in the agricultural sector has been slow (Magocsi 2010, 6). However, Ukraine has been, and continues to be, the world’s breadbasket: in 1914, Ukraine’s wheat production accounted for 20 percent of global production, and since 2001 it has become an even greater wheat producing powerhouse (Schmitz and Meyers 2015, 55; Yekelchyk 2007, 55). Agriculture in Ukraine is characterized by large farms with low productivity owning most of the agricultural land that focus on commodity crops, with household plots producing high-value products (Schmitz and Meyers 2015, 8). The agricultural sector has gone through a number of important transitions, and still bears the mark of Soviet-era agricultural policies.

During the post-World War II years, the agriculture sector did not receive significant government investments, stalling production (Yekelchyk 2007, 149). Under the leadership of Nikita Khrushchev in the 1950s and 1960s, this pattern of state disinterest in agriculture reversed, and the state began purchasing crops and livestock from farmers at much higher prices, giving farmers the opportunity to invest in their farms. The USSR provided significant subsidies to agricultural production and also placed price controls on both farm gate and consumer prices (Schmitz and Meyers 2015, 4). Productivity in collective farms remained low, and private plots, which made up 3 percent of land under cultivation, were the source of a third of production (Baran, 1996, cited in Yekelchyk 2007, 170).

After independence in 1991, most agricultural subsidies and price controls were removed, which sent domestic prices down while also making farmers less competitive on the global market; production decreased substantially and has yet to recover (Schmitz and Meyers 2015, 4–5). Since 2000, however, subsidies for agriculture have been increasing, a trend that is likely to continue if Ukraine’s agricultural sector comes under the CAP: in 2004-2005, Ukraine’s support to producers was 3 and 12 percent respectively of gross farm income, while in the same years, the EU provided 36 and 33 percent of income through support (EBRD and FAO 2008b, 5; Food and Agriculture Organization n.d., 13; Schmitz and Meyers 2015, 6). Changes in the mode of support have been frequent, with Ukraine most recently moving away from a value-added tax (VAT) scheme in which farmers could keep the VAT from goods they sold to a direct subsidy for inputs in 2018 (FAS/Kyiv staff 2017; Nivievskyi and Neiter 2018). Similarly, under the WTO, Ukraine is to decrease its import tariffs and cap trade-distorting (Amber Box) domestic support to agriculture at $613 million a year (Food and Agriculture Organization n.d., 10; Schmitz and Meyers 2015).
Currently, farms in Ukraine can be broken down into three categories: corporate farms, household plots, and smallholder farms. Ukraine reorganized its collective farms into cooperative associations, or corporate farms which the state usually at least partially controls, after independence, and former collective members often remain at the same farm, becoming paid workers (Schmitz and Meyers 2015, 8). Household plots refers to community gardens and small amounts of land that laborers on corporate farms keep privately, and mostly produce high-value fruits, vegetables, and livestock. Household plots do not receive support from the state, while smallholder farms do (Lerman et al. 2007, 26). Smallholder farms are usually “break away” farms from corporate farm divisions that focus on producing commodity crops (Schmitz and Meyers 2015, 8–9). The smallholder/large farm dichotomy that can be seen in Nepal, Bolivia, and Kenya is thus complicated by remnants from the Soviet era. Smallholder farms in Ukraine are more easily compared to medium-sized farming enterprises in other countries, whereas household plots might be more directly compared to smallholders in other areas this comparison, however, is imperfect because the divide between exporting and non-exporting farms is not as firmly drawn.

Despite the large quantity of high quality agricultural land in Ukraine, only about 15 percent of the total workforce is engaged in agricultural activities (Schmitz and Meyers 2015, 2). Most agricultural land is concentrated in the hands of corporate farms (Schmitz and Meyers 2015, 8). These farms have been shown to be productive not because of their size, but rather due to their ability to access high-quality labor and infrastructure, which poses a challenge to the vision of expanding large farms to increase agricultural output in Ukraine (Deininger, Nizalov, and Singh 2013, 16). The average size of land plots in Ukraine is 4.2 hectares, two to almost six times as much land as the other case study countries (Lerman et al. 2007, 22). While plot sizes have been declining in Kenya and Nepal, plot size has actually been increasing since 1991 in Ukraine (Lerman et al. 2007, 27–28). Household farm’s share in agriculture production increased to 65 percent of gross agriculture production in 2004; since then, the gross agricultural output of agricultural enterprises has overtaken household farms, likely due to increased mechanization and an expansion in land under cultivation by these big farms (Lerman et al., 2007, p. 30) (Iryna, Zhygadlo, and Sikachyna 2015, 18). Household farms also tend to produce higher value items like vegetables, while corporate farms produce commodity crops (Iryna, Zhygadlo, and Sikachyna 2015, 22; Schmitz and Meyers 2015, 8).

Since there are few purely subsistence farmers in Ukraine, food security revolves around having the economic means to purchase foodstuffs (World Food Programme 2017, 2). As incomes have risen in Ukraine, consumption patterns have begun favoring dairy and meat products instead of wheat-based products (Sobolev 2018a, 4). However, rural populations have not had the same access to social services as urbanites, which the conflict with Russia has exacerbated (World Food Programme 2017, 1–2). Wages in agricultural work are only 69 percent of the national average, leaving 39 percent of rural households...
impoverished (Ministry of Agrarian Policy and Food of Ukraine 2015, 16–17). Looking forward, challenges to the agricultural sector in Ukraine include skilled labor imbalances, poor infrastructure, and lack of extension services to increase productivity (Schmitz and Meyers 2015, 13; EBRD and FAO 2008a, 6). Because of corruption and economic instability, farmers and agribusinesses have been unable to get sufficient credit to meet their investment needs (Ministry of Agrarian Policy and Food of Ukraine 2015, 14).

**The 2008 Food Crisis in Ukraine: Causes, Consequences, and Responses**

Investigating hunger in 2008 in Ukraine reveals slightly different but nevertheless important information from that obtained from the other case study countries. Like the other case studies, information about vulnerable populations and the government’s response will be important to further policy analysis. An added element here, however, is that Ukraine is a net food exporter, so its responses to food price hikes will have a greater impact on other countries, especially if it restricts exports. As the crisis in Ukraine was more closely related to changes in international prices and less with domestic availability changes, the patterns here are more useful for understanding Ukraine’s potential weaknesses because the access pillar is the one where Ukraine has the largest gaps.

In Ukraine, unlike in Bolivia, Kenya, and Nepal, the 2008 food crisis was more intimately linked to the financial crisis in the same period, with food access being the main issue rather than food availability. Prior to 2008, Ukraine’s economic standings were improving with rapid GDP growth. While there were warning signs that the economy was overheating with rampant inflation, the government’s poor policies prevented action to prevent negative consequences (Åslund 2009, 372). Because Ukraine was not a member of the EU, it relies heavily on exports of primary products, and foreign investors do not trust Ukraine’s policymakers, Åslund notes that Ukraine’s economy was particularly vulnerable to economic shock, which came in the form of a lending or liquidity freeze due to the bankruptcy of major financial institutions in the United States (Åslund, 2009, 374-375). Ukraine’s GDP fell by 14.8 percent in 2009 and the currency devalued by almost 60 percent in fall and winter 2008 (Dabrowski 2014, 3).

On average, households in Ukraine spend 50 percent of their earnings on food, and 56 percent in rural areas, the highest among its neighbors (EBRD and FAO 2008b, 3; World Food Programme 2017, 1). When food prices began to rise, Ukrainians were less able to adjust their household budgets and reallocate funds than other households in other countries. In Ukraine, producer wheat prices began increasing in 2002, but spiked up from just above US$100 per ton in 2005 to almost US$200 per ton in 2007 (EBRD and FAO 2008b, 2). During the 2008 crisis, export-oriented farmers benefited from higher world prices and the deflation of Ukraine’s currency that made their production more competitive on the world market (Food and Agriculture Organization n.d., 13).
Grain storage patterns in Ukraine show that stocks for wheat, barley and rye are fullest in August, and decline for the rest of the year in a cycle that mirrors domestic production (Sobolev 2018a, 6–7). At the peak of the food crisis in winter 2007-2008, Ukraine would have had the fewest grain stocks to stabilize the market internally. The flurry of export restriction activity at this time can be understood in relation to low grain stocks, as well as a sharp decline in Ukraine’s 2007-2008 harvest due to drought (Sustainable Development Department of the Europe and Central Asia Region and von Cramon 2008, 8). At the same time that domestic production was declining and stocks were low, international prices continued to increase.

The food crisis in Ukraine did not have the same large detrimental impact that it did in Nepal and Kenya, as Ukraine is a net food producer and reacted quickly with trade measures and consumer support when world prices began to rise. It probably is not appropriate to call the period of rising consumer prices in Ukraine in 2008 a food crisis, but instead the consequences of a financial crisis. During the period from 2008 to 2011, Ukraine did not appear on FAO’s countries requiring outside intervention, pointing towards Ukraine’s ability to respond to hunger on its own during this period. The poverty headcount actually fell from 2006 to 2009, before increasing slightly and then decreasing again to 3.8 percent in 2016 (World Bank 2017a). The Global Hunger Index registered a decrease in hunger from 2005 to 2010, providing more evidence for the crisis’s marginal impact on hunger (Concern Worldwide and Welthungerhilfe 2019).

Both the rural poor and the urban poor spend heavily on food products, although not nearly as much as in Nepal where up to three-fourths of households’ budgets go to food. Those in rural areas likely suffered more than their urban counterparts for several reasons. First, pay in rural areas is lower than pay in other areas, meaning that price increases decreased their real purchasing power more than for other groups (Chreneková et al. 2016, 139). Second, accessing support like reduced-cost bread was likely more difficult for rural households, as poor infrastructure limits both mobility and service availability. In addition, many of the poorest groups live in areas that are not agricultural zones (in the eastern part of the country), so they did not benefit the agricultural boost prior to the crisis (Chreneková et al. 2016, 138–39). The price of Ukraine’s imported food items, including pork, poultry, oranges, and bananas, rose as consumers’ money was able to buy fewer goods (Food and Agriculture Organization n.d., 5, 14).

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37 As the FAO does not have data for prevalence of undernourishment between 2003 and 2014, it is difficult to assess whether there was any movement on this measure during the 2008 crisis. As none of its State of Food Insecurity in the World publications from the period point to Ukraine as experiencing increased food insecurity, it is likely that there was not a significant change in conditions in Ukraine.
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A 2003 decree permitting the government to intervene in commodity markets and to purchase grain at the regional level set the stage for Ukraine’s response to the 2008 crisis (Lerman et al. 2007, 16).\textsuperscript{38} Indeed, the export of certain categories of grains was restricted starting in fall 2006 before the peak of the crisis (EBRD and FAO 2008b, 4).\textsuperscript{39} During the 2008 crisis, Ukraine first banned wheat exports, and then placed restrictive export quotas on wheat, maize, and barley (Schmitz and Meyers 2015, 7). Restrictions were also placed on sunflower seed exports (Sustainable Development Department of the Europe and Central Asia Region and von Cramon 2008, 11). From August 2007 to February 2008, Ukraine did not export any wheat at all, and the export of other cereals also took a nosedive; approximately US$1.6 billion in wheat sales were lost during these bans (Sustainable Development Department of the Europe and Central Asia Region and von Cramon 2008, 8, 10). Ukraine’s interventions in the market were decried as hurting producers while providing only marginal benefits to consumers, although they did contribute to lowering domestic prices below international prices (EBRD and FAO 2008b, 5; Götz, Glauben, and Brümmer 2013, 225). The necessity of implementing these bans can be questioned, particularly because Ukraine’s wheat production expanded by about 12 million tons between 2007 and 2008 to more than double average domestic demand (Food and Agriculture Organization, n.d.). Ukraine’s grain restrictions also caused instability on both domestic and international markets, contributing to panic and high prices (Goetz, Glauben, and Brümmer 2010). After joining the WTO, Ukraine continued to place export quotas and bans on wheat, barley, and corn claiming that doing so was within its rights, as its actions were to in response to high world prices and lower production (Food and Agriculture Organization n.d., 11–12). This situation brings to light an important challenge that Ukraine might face if it decides to abide more closely with WTO rules in the future, or if enforcement mechanisms at the WTO become more effective. Using these quota and tariff-based measures has served as Ukraine’s main response to changes in food prices on the global market.

Subsidies and pricing policies that had been put into place before the 2008 crisis helped stabilize domestic prices in 2008. The state agency Agrarian Fund had stocks ready to stabilize supply while also placing restrictions on consumer pricing (Food and Agriculture Organization n.d., 8). Local authorities put a limit on the amount of profit that could be earned from bread sales in several regions throughout the crisis (EBRD and FAO 2008b, 4). In 2009 to 2011, the Agrarian Fund was also involved in directly

\textsuperscript{38} It is possible to find correlation between then-president Yushchenko’s push to acknowledge the 1932-1933 famine and his government’s strong response to preventing another one from occurring in Ukraine.

\textsuperscript{39} Ukraine has placed export quotas on key crops sporadically for some time, so this 2006 restriction is not out of character for the country’s policy.
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purchasing grain, milling it, and redistributing it at reduced prices to special bakeries to lower the cost of bread (Working Party on Agricultural Policies and Markets 2011, 166).

The 2008 food crisis in Ukraine had significantly fewer impacts on the country than it did in Bolivia, Nepal, or Kenya for several reasons. First, the poverty headcount in Ukraine, even at its highest point at 8.6 percent in 2010, is much lower than the other countries. Less poverty meant that Ukraine had fewer vulnerable people to begin with, so there were simply fewer people severely impacted when food prices rose. Second, Ukraine’s control over its food sources is greater than Bolivia, Kenya, or Nepal’s, as Ukraine is a large net food exporter. Ukraine is also almost completely self-sufficient in terms of agricultural production, so it relies less on the global market to meet internal demands (Iryna, Zhygadlo, and Sikachyna 2015, 23). Not only did these conditions help Ukraine maintain food security through having more food that it could keep in the country through export restrictions in the first place, but also because there was less internal demand being met by international imports. In Bolivia, domestic potato production was able to stem the crisis somewhat, but not to the same levels as in Ukraine. When Bolivia placed export restrictions on soybeans, this action did not have the same effect on food security as Ukraine’s wheat restrictions because soybeans are not primarily for human consumption. What set Ukraine apart, however, was its ability to respond with restrictions that kept grain in the country. While there has been considerable criticism of Ukraine’s restrictions because of the effect they likely had on increasing international prices and slowing investment in agriculture domestically, they did manage to prevent complete price transmission and therefore protected Ukrainians from price spikes.

Fourth, Ukraine’s response was highly regionalized, permitting regional governments to directly support their consumers. This regional response allowed the government to respond more effectively to more remote and rural areas, so that specific regions of the country were not as affected as occurred in Nepal. The fifth and final way that Ukraine’s experience in 2008 differed from that of its peer case study countries can be found in the causes of the crisis. In Ukraine, the financial crisis was particularly devastating, decreasing people’s purchasing power. There was not significant violence that contributed to fueling high food prices domestically, so the only response needed was that in relation to the outside world. This point also brings up an important element of food security in Ukraine: because of good production, the food security pillar of accessibility (and to a smaller extent stability) rather than availability is the one that must be worked on to make sure the population is fed.

In addition to questions about the usefulness of wheat export restrictions, the case of sunflower seed exports is rather mystifying. Even in 2007-2008, most of Ukraine’s production was for export, and there was very little domestic consumption (Polevoy, Lukashchuk, and Peskovski 2013, 5). It is likely then that export restrictions on sunflower seeds had a negative impact both on producers and exporters, hurting the income of those whose livelihoods depend on the industry. These export restrictions show that
perhaps the state was acting in a panic like many states did during the crisis. Whether these export restrictions were entirely necessary given the economic and social context in Ukraine is up for debate, as actions that target vulnerable rural and urban groups for social safety nets and cash transfers might have similar effects on hunger with fewer impacts on the market.

**Climate Change Context**

In order to understand the consequences of climate change on food security in Ukraine, and the areas to which policy should be attentive, I have chosen two key crops to analyze. Sunflower seed is an important export crop, with Ukraine landing among the top ten producers globally. Ukrainians, however, consume little of the sunflower products that they produce, so sunflower seed production’s contribution to AgGDP (36 percent) speaks to the access pillar of food security (Food and Agriculture Organization n.d., 4). If sunflower production falls due to climate conditions in the future, this may have a negative impact on both the economy as a whole and the ability for people to access food. While Ukraine is also a top producer of wheat, it consumes a higher proportion of total production in-country. This means that wheat production can give us a picture of the availability of food in Ukraine. By looking at sunflower and wheat production, we can better understand how climate change might impact hunger in the future.

Ukraine is the world’s largest producer of sunflower seed, with a 23.5 percent share of global production (Food and Agriculture Organization n.d., 3). Although native to North America, sunflowers spread to Europe by 1580 (“Sunflower Production” 2007, 1–2). Sunflower is also the crop with the highest net earning potential for producers in Ukraine (Sobolev 2018c, 2). Large farms have dominated their production: a full 86 percent of sunflower seeds were produced by agricultural enterprises in 2014 (Ministry of Agrarian Policy and Food of Ukraine 2015, 13). Sunflower seed yields have been increasing: in 2003, yields were at 1.2 tons per hectare, and in 2017, they were above 2.3 tons per hectare, reaching yields similar to that produced by EU countries (Krautgartner et al. 2017, 24; Lerman et al. 2007, 38; Sobolev 2018c, 7). Yet as demands for ethanol sources from the EU increased, Ukraine has transitioned land from grain production to oilseed production (EBRD and FAO 2008a, 3). Indeed, the EU is the destination for about 70 percent of Ukraine’s sunflower seeds (Sobolev 2018c, 6). Sunflower seed exports have been taxed at high rates, and currently a 10 percent tariff is applied (Polevoy, Lukashchuk, and Peskovski 2013, 5). This tax has incentivized sunflower seeds to be crushed domestically, leading to the majority of domestic production also being crushed in-country before being exported as oil (Sobolev 2018c, 5). Under the Deep and Comprehensive Free Trade Agreement with the EU, Ukraine is scheduled to bring export tariffs on sunflower seeds down to zero by 2026 (Sobolev 2018c, 24). Domestic consumption trends of sunflower and other vegetable oils in Ukraine show decreasing consumption since 2010, correlated with population decrease (Sobolev 2018c, 14). No genetically engineered sunflowers are allowed to be grown in Ukraine, but there are over 350 hybrids in use (Polevoy, Lukashchuk, and
The main challenges to sunflower production include poor crop rotation practices, lack of access to hybrid seeds, fertilizers, and technology, and diseases (Polevoy, Lukashchuk, and Peskovski 2013; Sobolev 2018c, 2, 4).

Figure 5.1. Map of sunflower production in Ukraine.\textsuperscript{40} Map from the United States Department of Agriculture.

Wheat has been a staple in eastern European diets for some time. Between 2003 and 2005, Ukrainians ate an average of 226kg of wheat products per year (“Overview: Transitioning Wheat Research to Serve the Future Needs of the Developing World” 2009, 90). Grain consumption in Ukraine has been declining since the 2000s, yet compared to the other main cereals crops (barley and corn), Ukraine’s domestic wheat consumption goes overwhelmingly to food in the form of flour (Iryna, Zhygadlo, and Sikachyna 2015, 19; Sobolev 2018b, 5). In Ukraine, winter wheat, named for the time of year that it grows, makes up around 95.3 percent of all wheat production; wheat crops are planted once per year (Kobuta, Sikachyna, and Zhygadlo 2012, 4). Over 98 varieties of commercial wheat are grown in Ukraine, although several dominate in the acreage they cover (CIMMYT 2014). Wheat exports from Ukraine have been declining over the past 30 years, but the country still ranks among the top ten wheat exporters in the world (Kobuta, Sikachyna, and Zhygadlo 2012, 5). Its yields trail its neighbors, however,

\textsuperscript{40} Sunseed refers to sunflower production intended to make sunflower seed oil.
leaving room for increased production through yield increase without area expansion (Ministry of Agrarian Policy and Food of Ukraine 2015, 5). Exported wheat goes to Indonesia, Egypt, Bangladesh, and Turkey; the United Kingdom has also increased its imports of Ukrainian wheat flour in recent years (Sobolev 2018b, 10–11). Like sunflower seeds, wheat production is dominated by agricultural enterprises (Ministry of Agrarian Policy and Food of Ukraine 2015, 13). Large transnational corporations dominated Ukraine’s wheat trade through 2007, at which time the balance shifted as more companies (including Ukrainian) began producing wheat as well as exporting it (Kobuta, Sikachyna, and Zhygadlo 2012, 4). Seed research and breeding are also dominated by international companies and research institutes (Morgounov et al. 2011, 299). Despite its large share in the world markets, infrastructure challenges mean that Ukrainian producers lose about 40 percent of the export price because of infrastructure and logistics problems, whereas the US and EU only lose about 10 to 15 percent (Ministry of Agrarian Policy and Food of Ukraine 2015, 49). Challenges to wheat production in Ukraine include rust disease, lack of infrastructure and high transportation costs, crop rotation issues, and lack of access to chemical inputs (Deppermann et al. 2018; Morgounov et al. 2011).

Figure 5.2. Map of wheat production in Ukraine. Map from the United States Department of Agriculture.

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41 Sunseed refers to sunflower production intended to make sunflower seed oil.
Next, I will discuss the implications of projected temperature and precipitation increases on agricultural production as illustrated through the two key crops, wheat and sunflowers. Although the agriculture sector only produced 14 percent of GHG emissions in 2015 the sector may see big changes because of the effects of climate change (2017, 21). The CIMP5 model ensemble mean increase in temperature is projected to be 3.4°C, and there is no projected annual change in precipitation (Adler and Hostetler 2013). Although not studied in this thesis, increased CO2 in the atmosphere might also lead to some wheat yield increases, provided that the temperature does not get too warm (Wheeler et al. 1996).

![Figure 5.3. Average monthly temperature observed and projected for Ukraine (Adler and Hostetler 2013).](image)

![Figure 5.4. Average monthly precipitation observed and projected for Ukraine (Adler and Hostetler 2013).](image)
Looking at how wheat production might change in the future allows for us to better understand how Ukraine might need to adjust its agricultural policies to support production of the crop to assure the availability of food. Ukraine’s winter wheat is planted between mid-August and mid-October, grows throughout the winter, and is harvested the following July and August (Food and Agriculture Organization 2019). Wheat plants require about 10mm of water per week during from planning until mid-October, when they enter their dormancy phase. As rainfall is projected to decrease during the planting period to an average of one mm a day, which is less than usually required during this time, yields may slightly decrease. Since the change is not dramatic, however, losses may not be significant. When the weather warms up in the spring, plants can require between 10mm and 40mm of water per week though harvesting, depending on the temperature, but totaling approximately 560mm per growing season (Yonts et al. n.d., 4–5). More precipitation during the spring months, then, might offset any decreases during the planting season to increase yields. As precipitation is also projected to increase during the winter, the moister soil might protect crops from quicker soil freezes and thaws, as wheat is most resistant to cold temperatures during its dormancy phase between December and February, especially when soils are moist (Klein 2015). Indeed, the temperature increases projected for Ukraine indicate that climate change might aid yields by decreasing production lost to freezes. Wheat grows best in steady temperatures between 17°C and 23°C, and a minimum temperature of 0°C (Porter and Gawith 1999, 25). While the temperature at the time that wheat is planting is higher than the optimal 22°C, winter wheat can usually withstand higher sowing temperatures up to 32.7°C, so temperature changes are not slated to have a significant impact on sowing results (Porter and Gawith 1999, 25, 31). The biggest challenge, then, will be mitigating the impact of higher temperatures before harvesting: grain filling, or the shriveling of wheat grains, happens above 20°C (Gooding et al. 2003, 304). This could be done by harvesting earlier, which would be beneficial for food security because it would decrease the time between harvests. Based on this assessment, it appears that the net effects of climate change on wheat production and food availability are likely to be minimal.

Sunflowers follow a different growing season, as they are planted in April and harvested between mid-September to mid-October (Rogovska, n.d.). Planting sunflower seeds should be done when soil temperature reaches about 10°C, and sunflowers need air temperatures of at least 6.7°C to grow (Myers 2002, 2; North Dakota Agricultural Weather Network n.d.). Sunflowers like warmer temperatures around 23°C; as temperatures are projected to rise, there will be more days with the heat conditions that optimize sunflower growth, so production might increase with temperature. Sunflowers require about 480mm of water over a growing season (“Sunflower Production” 2007, 15). Sunflower water requirements increase with temperature, and there is also a bell-shaped curve for consumption throughout the growing period, meaning that more water is required between weeks five and eleven of production (“Sunflower
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Production” 2007, 17). The changes in precipitation for Ukraine might hinder sunflower seed production not because of changes in net rainfall, but rather because of changes in when rainfall occurs during the year. Week five through week eleven of growth takes place approximately in May through July, precisely when projected precipitation is shown to decrease compared to observations. As lack of water in parts of the southern steppe currently puts limits on where sunflowers can be grown, the area suitable for sunflower production may decrease due to rainfall constraints (Polevoy, Lukashchuk, and Peskovski 2013, 4, citing Andrienko et al., 2011 & Kirichenko et al., 2010). As the temperature increases, sunflowers will also likely need additional water to grow, which will then need to come from irrigation or human intervention rather than rainwater sources. The limiting factor for increasing sunflower production under climate change is when water is distributed to the plants throughout the growing season.

Examining the projected temperature and precipitation changes for Ukraine reveal sunflower production may decline due to limitations on water resources, while changes in wheat production will likely be minimal. As domestic wheat consumption has been declining because of rising incomes and shrinking population, wheat has the potential to become a bigger export crop. This in turn could aid in advancing accessibility of food through employment opportunities. The story, however, is different for sunflowers. As a key export crop, this decrease in production will limit food accessibility and require changes in what crops are produced. Policies that help farmers with irrigation and water storage may help negate some of the future challenges for sunflower production. The potential for sunflower production to decline has implications for biofuel consuming countries, as the supply of such fuel may take a hit in the future. Considering other clean and renewable energy sources for investment may be a better idea than putting all of the eggs in the biofuel basket. External demand for these oils also has an impact on Ukraine: in 2008, Ukraine faced rising food costs mainly due to outside economic forces. These costs were especially high on products like bananas and oranges, which points for the need for increased fruit tree planting to meet some of the demand with domestic production.

PART II: ANALYSIS

RIGHT TO FOOD FRAMEWORK
In this section of the case study, I will study the specific ways that Ukraine has integrated the right to food into its legal system with two main objectives: first, to see how the constitutional wording impacts its agricultural and climate change policies; and second, to determine what the implications of this framework are to the battle against hunger. Ukraine ratified the International Covenant on Economic, Social and Economic Rights in 1973, and signed the Optional Protocol to ICESCR in 2009, but has yet to ratify it. The state has not given an official response as to the hold up in signing the agreement, despite
NGOs calling for action (Coalition for Personal Autonomy 2018, 5). As Ukraine moves closer to the EU, it will be interesting to see whether it takes the path of France, Italy, and other pro-right to food states that have ratified the Optional Protocol, or other states that are more hesitant about this right (Pol and Schuftan 2016). I remain cautiously optimistic about the prospects for Ukraine’s ratification of this Optional Protocol, as it might be seen as a way for Ukraine to demonstrate to the EU that it does indeed plan on respecting human rights. With the number of high-politics issues that the country is dealing with currently, however, the ratification of this protocol does not appear to be at the top of the government’s to-do list. International agreements are integrated into Ukrainian domestic law by article 9 of the constitution, which deem them part of Ukraine’s national legislation provided that they do not conflict with the constitution.

It took Ukraine five years of negotiation after its independence to produce and ratify the 1996 constitution. Rather than being carefully prepared throughout that time, however, the constitution was crafted rather rapidly by a group of legal experts in collaboration with the president (Wolczuk 2013, 11). Contentious issues included property rights, the country’s symbols, and the status of both the Russian language and of Crimea (Wolczuk 2013, 20). Since the implementation of this foundational document, there have been several key changes to the supreme law of the land. In 2004, constitutional reform restricted the power of the president, and making Ukraine a parliamentary republic. The Constitutional Court, which has jurisdiction over ensuring the primacy of the constitution, ruled the 2004 changes unconstitutional, returning the country to a presidential-parliamentary system. In 2014, following anti-government demonstrations and Russian’s annexation of the Crimea, the Supreme Rada reversed the 2010 ruling to return to the 2004 reformed version of the constitution (Mishina 2014).

The constitution of Ukraine guarantees the right to adequate food through a general provision on the standard of living.42 The wording of article 48 is of particular interest, because it mirrors almost exactly the language in ICESCR’s Article 11, indicating that ICESCR influenced Ukraine’s perspective on right to food. It is important to note that the constitution uses the word nutrition instead of food, so that the article reads that everyone has the right to “adequate nutrition.” The choice of the word nutrition is may be in response to the conditions in Ukraine in which food is plentiful but access and usage (nutrition) are weak points. While Ukraine’s version of the right to food is closest to that of ICESCR out of the four case study countries, it also is the only country without a provision solely related to food. Adding to this,

42 In order to use the version as close to the original document in Ukrainian, I analyze the English translation submitted by the Ukrainian authorities to the European Commission for Democracy through Law (Venice Commission) on 13 March 2014.
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Article 50 says that everyone has the right to information about the quality of food, so that people have the proper information to make nutritional decisions.

Starting in 2016, individuals and companies that have been able to access the Constitutional Court of Ukraine, the legal mechanism through which they could challenge that their constitutional right to an adequate standard of living had been violated if lower courts rule against them (Orlyk 2016). This rule change opened up the possibility for Ukrainians to file cases on the right to food. Reviewing the decisions passed down by the court as of April 2019 shows that the Constitutional Court has yet to decide upon a case relating to the right to an adequate standard of living. In addition, if the court were to rule in favor of those alleging a violation of their constitutional right, it is unclear how it would be enforced. As the European Court of Human Rights has ruled against Ukraine on several occasions because of its poor enforcement of domestic rulings, it is unlikely that courts would be able to make a significant difference in terms of implementing the right to food. This lack of enforceability is pervasive throughout the articles on economic, social and cultural rights in constitutions in this thesis.

Ukraine lacks, however, an independent and comprehensive food and nutrition security plan, instead relying upon stopgap policies that focus on nutrition for children (World Health Organization n.d.). This dearth of comprehensive food programs can be traced to two sources: one, that the prevalence of undernourishment in Ukraine is low (about three percent from 2015 to 2017); and two, as there is not an article solely dedicated to the right to food, efforts toward fulfilling the right to an adequate standard of living can focus elsewhere. The constitution does, however, provide a constitutional guarantee to social protection in Article 46. Specifically, it gives citizens the right to support in cases of disability, the loss of a household’s principle wage-earner, unemployment, and old age. To facilitate the provision of this public good, there is mandatory state social insurance for all. Health insurance and medical care is also provisioned by the state in Article 49. Together, these provisions make Ukraine the country with the strongest constitutionally enshrined social safety net of the countries surveyed in this thesis. Accordingly, Ukraine spends almost double the world average on social safety nets as a percent of its GDP, and the most of all of the case study countries (World Bank 2015, 22).

The constitution of Ukraine provides some guidance as to problems with land rights and minority populations. Article 14 protects private lands, while Article 13 states that all land is the property of the people of Ukraine. Article 11 states the dual goals of both consolidating the nation and protecting minorities. Article 10 guarantees the “use and protection of Russian and other languages of national minorities,” and Article 53 guarantees that national minorities have the right to schooling in their language although these rights have been rolled back in the last five years (Radio Free Europe/Radio Liberty 2017). On crucial issues facing the country currently, the constitution has regrettably too little
clarity to provide strong guidance for legislators. On issues of the declining population the constitution is understandably silent.

Overall, Ukraine’s right to food framework is the weakest of the four case study countries, with no individually delineated right or sweeping food and nutrition security agenda. The language appears moderately tailored, however, to Ukraine’s national context from the ICESCR text because of the importance of nutrition to the population. Ukraine’s constitution is the earliest of those surveyed, which shows that there has been progression on how the right to adequate food becomes integrated into domestic constitutions. This change in how countries legislate for the right to food is an important one in two respects. One, it shows progress made in establishing the right to food as an international norm, as it shows up in even the oldest of the “modern” constitutions. Although the enforcement or even fulfillment of this obligation may not be met in states like Bolivia that give the people the largest breadth of rights, it is clear that there has been a significant shift toward states making the right to food justiciable. Second, the case of Ukraine also reveals how these rights can evolve to become stronger within a country. While originally individuals and companies could not access the Constitution Court, since 2016 there has been the possibility for civil society to bring to it cases in which they allege their constitutional right to an adequate standard of living is being harmed. As Ukraine’s major food security issue is related to food access, or having the economic means to buy food, Ukraine’s spending and the percent of people covered by social safety nets (about 54 percent), show that the state is moving toward assuring the accessibility pillar of food security (World Bank 2015, 47). As there have been no cases at the Constitutional Court involving the right to food or an adequate standard of living, it is unclear how justiciable the right is in practice. This situation lends credence to the conclusion that sectoral plans and policies are more effective ways to combat hunger than simply granting the right to food.

Agricultural Framework
By looking at the country background, the agricultural background, the 2008 crisis, climate change projects, and the right to food framework, I have identified the elements that agricultural policy should address in order for Ukraine to be on a stable footing vis-à-vis food security in Ukraine. I recall the key issues: relating to overarching societal problems, there is the declining population, minority-majority conflict and conflict with Russia, and land problems; in terms of general agricultural problems, Ukraine faces poor storage and export infrastructure, poor access to credit, labor imbalances, and poor extension services; specifically related to wheat there are questions about disease, and for sunflowers about both disease and lack of rainfall; vulnerable populations are mainly the rural poor. These country-specific factors will allow me to assess the agricultural policy and produce recommendations to better support agriculture and food security in Ukraine.
Prior to 2015, the government formulated policy objectives through the 2005 Law on Basic Principles of the State Agrarian Policy up to 2015. This law was followed by the 2007 State Targeted Programme for Development of the Ukrainian Countryside to 2015. Together, these laws set the stage for a combined push towards rural and agricultural development (Working Party on Agricultural Policies and Markets 2011, 165). In 2015, the government, with the help of international experts and donors, created the Single and Comprehensive Strategy and Action Plan for Agriculture and Rural Development 2015-2020 (SCS). As its name illustrates, SCS is comprehensive in that it combines traditional agriculture sector areas of interest with other areas that need reform in order to facilitate agricultural production. It is structured around ten priority areas, with subpriorities and specific measures, and expected outcomes. The Strategy has ten priority areas, including fighting corruption, land and institutional reform, taxation, and food security. What is most interesting is the way that this Strategy aims to set Ukraine up to join the EU; indeed, this document might be seen as setting the stage for Ukraine’s post-Crimea annexation courtship of the EU. It plans to harmonize its sanitary standards, institutional framework, environmental standards, and use the OECD’s classifications of rural development to inform its development work.\(^{43}\)

To increase credit options and foreign investment, the strategy sees Ukraine gutting regulatory acts that might limit business under priority one. It will decrease the number of permissions to do business, limit the power of the state to regulate, clarify the tax code, and get rid of any acts that do not support safety or “fair competition.” This suite of items on the list may attract more foreign business to the detriment of Ukrainian producers. Unless foreign businesses pay better wages or help train employees, these actions that gut state oversight might instead serve to harm Ukrainian food security. Under sub-priority six on the access to financial resources, the Strategy lists several measures with positive impacts on credit. A sign of the poor state of credit access is that this subpriority starts by calling for the state to determine its priorities and the type of support to give to farmers. Other parts of the subpriority are more precise and useful. The creation of a system to ensure that smaller farms have opportunities to borrow is a good place to start because smaller farms tend either to be excluded from traditional agricultural lending systems or to be given interest rates that make borrowing almost impossible. Helping in the creation of cooperatives, and creating regulations so they can run effectively is another area in which the Strategy will help smaller farms get access to banking resources. Overall, the measures that are focused on improving access to credit have the right idea, but because they are not fully fleshed out, it is unclear how exactly they are to be implemented. The expected results are also vague, so they do not shed light on actual state priorities and actions.

\(^{43}\) Ukraine signed a Memorandum of Understanding with the OECD is 2014 (OECD 2014).
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This policy envisions the rebooting of the state insurance program for agriculture, which is one of the strongest elements of the policy in terms of action to mitigate the effects of climate change. Though it is not projected that Ukraine will have drastic negative impacts like Kenya or Nepal, its farmers will still benefit from having somewhere to turn if droughts or floods occur. In turn, this will prevent farms from going out of business and support production for the next year so that any decline is not lasting. It also will re-assess and reorganize the support for agriculture to orient it to be more transparent and less trade distorting. Ukraine has made some progress on this front with changes in its VAT refund policy. Changing the support system will be necessary if Ukraine wants to join the EU and the CAP, and the measures outlined here will help Ukraine accomplish the former. The bigger question about how to increase agricultural spending remains, however, and there are also trade-offs in Ukraine between investing in agriculture and investing in social safety nets that is not as much of a problem in the other case study countries in which most people are involved in the agricultural sector.

The SCS has language on infrastructure, one of the key impediments to exportation. It is not clear whether the state will fund infrastructure projects itself, as it uses the words “encourage,” “ensure,” and “stimulate;” as the risks talk about budget deficits, however, it seems that the state will provide in at least some amount of funding toward the project. Infrastructure areas targeted include storage, waterways, and land transport systems. Much of how SCS says Ukraine will do this is through liberalization, ensuring competition, and creating regulations that incentivize private investments. One part of the infrastructure plan that will be important for both sunflower seed and wheat production in the future is the expansion of irrigation systems, which are to be expanded by 2.5 times or to 1 million hectares by 2020. It is unclear how the writers of this document obtained this number as the FAO estimates that there is already about 2.5 million hectares of land under irrigation (Food and Agriculture Organization 2015). Expanding irrigation overall will be beneficial for production in the future, so these discrepancies in hectarage are not very important. The performance targets illustrate how difficult it will be to improve infrastructure, as they do not have specific infrastructure goals (e.g. 20 miles of roads built) except for irrigation. Ukraine should plan to invest heavily in infrastructure, particularly in projects that take into account climate change. I am not convinced by this plan that the action on infrastructure will be what it needs to be to significantly increase exports, increasing GDP. Outlining priority projects would be a step in the right direction.

Irrigation, however is tricky: the Strategy calls for 2.5 times expansion of irrigated areas up to 1 million hectares by 2020, yet AQUASTATS, FAO’s database on all things water-related, shows that there were already about 2.6 million hectares equipped for irrigation in 2013. It is unclear what the source of this discrepancy is, but it could be possible that the document’s writers underestimated the land in order to call a win at the end of the period.
In order to target the rural poor, the Strategy’s fourth priority calls for specific food support programs, several of which have made their way into law (see the section on the right to food framework). The Strategy also wants to see Ukraine move toward a situation in which there is no consumer price support. I foresee two main problems with this approach. Given that the main challenge to food security is accessibility, anything that changes prices may have a negative impact on food security in the country as prices that are artificially lowered rise. If this measure is not accompanied by wage increases, which the Strategy does not couple it with, then there is the possibility that purchasing power will decrease. The ultimate effects of this component also depend on the speed and care with which it is undertaken, as mitigating negative impacts is not impossible. While there is significant pressure on Ukraine from outside organizations to liberalize its economic policies, what is interesting is that Ukraine was able to respond in 2008 to rising prices because of its ability to control domestic prices and exports. This is to say that if the government can continue to afford to subsidize food, this thesis has not shown any reason that this action would be detrimental in the face of a crisis in the future. Reforming taxation in the agricultural sector under priority five might help increase tax revenues by cutting fraud and corruption, which could improve the budgetary situation. In addition, consumer food subsidies illuminate a crucial tension in agricultural policies: producers want prices to be high, while consumers want them to be low. Subsidies and other forms of state support can help bridge the gap between the two. Monitoring the food security situation and improving emergency interventions are good additional steps, but because hunger is largely due to food inaccessibility, consumer support programs will be more effective in most situations.

Another way the SCS plans to help the rural poor is through rural development under priority seven. Because of limitations on funds, the plan says that interventions under this priority will be establishing a legal and policy framework for rural development, creating the investment framework from priority six, helping create non-agricultural livelihood opportunities, and supporting communities to organize themselves for development. A “community partner scheme” wherein different parts of the rural community come together to support a community’s development goals is a goal under subpriority 7.2. Such a scheme may provide an innovative way to bring together all stakeholders so that development serves the community’s needs best. A problem with the rural development section of this plan, however, is that it does not have the state taking the lead or having a strong role in actually implementing rural development projects. Larger public goods programs seem to be excluded from what will happen under this plan. Rural people do need support for local business improvement, but they also need larger-scale investments. Developing support programs at local levels is a good start to assessing the needs, and could guide the implementation of large projects.

Ukraine plans to facilitate exports through several methods. Under strategic priority one, the government of Ukraine hopes to increase investment, upgrade its sanitary and phytosanitary (SPS)
system, and make the rules more transparent. Focus is placed on SPS measures because Ukraine does not meet all EU requirements for all of its products, hindering trade. The Strategy outlines a multipronged approach to meeting these regulations through creating a special oversight authority, creating necessary policy changes, and helping farmers access the EU market for products that do pass muster. The country did implement Law 2264-VIII with the goal of increasing safety and sanitation of foodstuffs, which is a step in the direction toward meeting the SPS targets. Priority one also wants Ukraine to create legal framework related to GMO and quality indicators; whether or not it has prepared the legal acts is unclear, but they have not been ratified.

Strategic priority two on land reform is important to mention briefly as an example of how implementation can fail. The main priority of land reform under this priority is to create an agricultural land market; at the same time, Ukraine extended their moratorium to 2020, meaning that it will be impossible for the country to meet its goals. Issues of land holdings and structure, which is a crucial area for change in order to increase food security, fell to the wayside not at the policy phase but rather in implementation. While land reform is a particularly high profile issue in Ukraine, it is not unlikely that other parts of this Strategy met similar fates, but only not as publically so the discrepancies are more difficult to find.

Rural people need support to improve their technical and specialized skills, as there is a severe lack of skilled workers, particularly in the agricultural sector. The plan offers education and training to small farmers in order to improve their agricultural skills and knowledge, which is an important step to increase the number of skilled agricultural workers from amongst those already participating in the sector. Attentive to the population shift, the SCS aims to create programs to support young farmers in order to keep up the agrarian workforce under priority six. It wants to improve rural people’s skills in order to spur non-agricultural economic activity. To this end, it hopes to see training events and participants increase by 30 percent. As this target does not provide a baseline, it is incredibly difficult to determine whether this goal has been met or even if there has been any progress towards meeting it. Under priority 9.2, the SCS looks at ways to improve formal education programs such as vocational training, bachelor’s and master’s programs. Again, we see this part of the plan revolving around legislative changes rather than state investment in agricultural education. There is also a trend towards internationalization of the education system, with English language proficiency and the development of collaborations with international partners as key goals. It is clear that here too Ukraine’s agricultural plan relies heavily on support from outside groups, which makes meeting its goals unlikely.

Sunflower production will receive a boost from this plan, as it will support biofuel and bioenergy sources. Increasing the use of bioenergy domestically will help Ukraine remove itself from Russia’s control due to natural gas dependencies. Increasing production of biofuel crops may be helpful for
Ukraine because it can gain additional export income from these crops. Balancing production between wheat and sunflowers, however, will need to be done, as wheat production has already been declining as more land goes to biofuels. In order for Ukraine to continue to be a breadbasket country, it will need to also invest in food crops.

Poor extension services will be improved in several ways by the policy. First, under component 3, regional and local-level relationships between local administrators and the Ministry of Agrarian Policy and Food will be established and strengthened, bringing better services and understanding of farmers’ and individuals’ rights and responsibilities to them. Under strategic priority nine on education and research, the SCS elaborates how it will use institutional changes such as regulating intellectual property and reforming the agricultural institutions to improve research. The performance goals all seek increases in international investments in research and internationally-funded research projects, showing that Ukraine is not planning on investing in research itself. As long as these international projects are attentive to Ukraine’s needs and not fully controlled by foreign agribusiness interests, international support may be useful. To get this information to the farmers who need it, section 9.3 creates the plan for disseminating this agricultural knowledge. The creation of a National Coordination Centre for Extension Services as well as local and oblast level programs will help spread information, while better programming and information gathering platforms will create the content. Here the state acknowledges that it will spend money to implement these services, which is a necessary expenditure in order to ensure that knowledge actually reaches the farmers who need access to it.

Overall, the SCS has some elements that may improve conditions for farmers and the rural people, but because of its vague formulation of targets and the lack of clear allocation of funding per each component, it seems that the plan has had poor implementation a year from its completion. The plan is strongest in its approach to extension services and research, which will contribute both to yield increases and support for farmers to get better seeds and use more climate-resilient production methods. Access to credit might see a boost if the implementing ministry takes the idea in the SCS and implements them properly. In terms of infrastructure and rural development, this strategy places the onus on communities and the international community to get projects done. It should instead consider investing in key projects itself or in tandem with development institutions to make sure that infrastructure projects actually serve the needs of communities and Ukraine at large instead of the immediate needs of foreign companies. Exporting will become more cost-effective with better infrastructure, and paired with the plans to harmonize Ukraine’s regulations with EU standards, could lead to an increase in AgGDP and hopefully more employment opportunities and better wages (Ministry of Agrarian Policy and Food of Ukraine 2015).
This agricultural policy, like Nepal and Kenya’s, has been shaped largely by outside demands. It caters to the EU in terms of its obligations and requirements, which is perhaps more optimistic than it should be about Ukraine’s ability to implement facilitating reforms (or its ability to gain entry into the EU, for that matter). What is interesting is that the role of the state in agricultural development is almost entirely removed outside of its role in legislating. Ukraine’s business atmosphere is still poorer than it should be in order to attract the amount of support that would be needed to make the changes in agriculture that are laid out within the SCS. While the current administration attempts to implement change from the top, in order for Ukraine’s agriculture sector to align with EU rules and regulations, there must be buy-in at the grassroots level. From afar it is difficult to assess how rural people and agricultural sector workers feel about these changes, but I hypothesize that many local stakeholders are either unaware of policy changes or they do not have the means to make on-the-ground changes, which also reflects the lack of change in the agriculture sector under this Strategy. Another problem with the agricultural policies investigated in this thesis is that they create sky-high goals without the necessary transition periods and human and economic resources to match. A policy can be as thoughtful and well-constructed as possible, but without implementation, it is still as useless as a carelessly constructed policy.

Compared to Nepal’s policies, Ukraine’s lacks attention to climate change and the key crops (besides sunflower’s use as a biofuel). It also puts much more of the onus for development and investment on the private sector, particularly international business. There is nothing inherently wrong about this approach, but it demonstrates a lack of understanding of the Ukrainian context in which the business environment is such that foreign investors are disinclined to do take the risk of putting their money into Ukraine. Inflows of foreign direct investment (FDI) have also declined since their peak in 2012, showing that the potential for these plans to be realized through foreign backing is small (Trading Economics 2019). While the concept of a single and comprehensive plan is a good one, in this case it has created overly vague targets and much room for implementing ministries to interpret the document favorably for their own work and incomes. Supporting agriculture in Ukraine will help not only Ukrainians have food available but increase their access through better economic conditions. This SCS, however, is unlikely to create significant change to do this.

**Climate Change Framework**

In this section, I will analyze Ukraine’s climate change framework using the specific crop weaknesses and agricultural sector vulnerabilities elucidated in Part I. Ukraine has participated in international climate change meetings since 1997, when it became a party to the UNFCCC. It became a party to the Kyoto Protocol in 2004 and to the Paris Agreement in 2016. The constitution grants citizens the right to an environment that is safe for life and health in Article 50, and goes one step further to guarantee
compensation for violations of this article. The main document overseeing environmental and climate change action in Ukraine is the Underlying Principles (Strategy) of the State Environmental Policy of Ukraine for the period until 2020, which went into effect in 2020. The policy’s aim is not so much climate-focused as it is environmental preservation for human health-focused; while the latter does contribute to the former, the lack of a cleared delineated plan for climate adaptation

The Concept of State Climate Change Policy Implementation until 2030 sets the state’s climate change agenda for the next ten years with broad objectives. These include strengthening institutional capacity, increasing resilience, decreasing emissions, making sure that Ukraine’s policies are in line with the EU’s, creating a domestic greenhouse gas emissions trading scheme, and collaborating with neighbors on this issue. This Concept does not mention agriculture at all, which is concerning because the sector is both a contributor and vulnerable to climate change. The Action Plan, which takes this schematic document and turns it from rhetoric to action, centers on the governmental and policy action needed to support work on climate change. It begins with a number of things for ministers to do, such as review the emissions trading system and approve Ukraine’s NDC under the Paris Agreement. Contributing to work on climate change in the international arena, as well as submitting necessary documents, are also top action item under the Concept. Although the ministry for agrarian policy will be involved with many of these items, here again there is no specially targeted action for agriculture.

While the Concept and Action Plan are more administrative-level documents, the Ukraine 2050 Low Emission Development Strategy (LEDS) lays the foundation for Ukraine’s development plans vis-à-vis the environment. LEDS acknowledges that Ukraine’s economy will need to grow in order to reduce poverty, and plans a green strategy to get there. Ukraine will need growth to help with food security so that people can have the economic resources to purchase food; growth alone, however, is probably not enough to make considerable changes, as there must also be an increase in the minimum wage and better social programs to go along with higher revenues. The goal of LEDS is to determine ways that the country can develop sustainably with an eye towards low emissions. The strategy’s three main objectives are to transition to a low-carbon energy system, increase carbon uptake with specific focus on the agricultural and forestry sectors, and reduce greenhouse gas emissions including those from agriculture. Unlike the Action Plan and concept, LEDS does place some emphasis on agriculture. The agricultural sector is targeted for the use of energy efficient technology and renewable energy usage, the use of agricultural products for heat and bioethanol, improving animal feeding and waste management practices, and enhancing targeting and efficiency of fertilizer use. In tandem with the increases of biofuel

45 Like the right to food, it appears that this right has only recently become justiciable with new access for individuals and firms to the Constitutional Court.
production under the SCS, LEDS plans to promote the use of biofuels in all transportation methods. Focusing on transitioning the economy to more climate friendly technologies, but there will have to be new education programs to help people gain access to employment in the sector. Within the SCS, part of priority 10 is to mitigate and adapt to climate change, with a goal of reducing agriculture’s contribution to emissions by 20 percent. Increasing forest coverage will help with carbon uptake, but will not do much for wheat and sunflower production because neither of these crops are shade crops. These measures are important for mitigation of the effects of climate change, but do not speak to adaptation to changes in rainfall patterns and increased heat that are projected by CMIP5.

Ukraine’s climate change policy is quite weak compared with the other case study countries’. While it does have language on lowering emissions, there is little support for farmers besides transitioning from agriculture into other industries, something that cannot happen at high levels if Ukraine (and other parts of the world that import Ukrainian agricultural goods) wants to retain its food availability. Ukraine might be strongly pushing for green and renewable energy sources to fuel its development in order to limit Russia’s ability to assert control over the country through natural gas prices; as Ukraine prepares to enter the EU, Russia may retaliate through this method. As energy made up 65 percent of GHG emissions in 2015, it is clear that targeting the sector for priority action no matter what the reason will be useful in overall climate mitigation (2017, 21, 56). For sunflower production, which is supposed to increase under the SCS and have higher domestic demand through the LEDS, without strong adaptation particularly around water storage and irrigation, there could be problems even maintaining production to meet current levels. Because it currently produces more food than it consumes, it is understandable why investing in adaption for the climate change sector would not be a top priority. Taking proactive action, however, would be a good step to ensure food security in the future.

CONCLUSION
The case study on Ukraine showed the ways in which the government is working toward food security through agricultural policy and the right to food. Most people who are food insecure in Ukraine are so because of lack of accessibility to food, and there are elements of stability at play currently in the conflict-affected regions. Investigating how Ukraine’s history, political, and economic structure influence policies today revealed that a declining population, minority-majority tensions and conflict, and land issues were key problems, and that corruption also prevented effective regulation and robust investment. All of the policies address the conflict with Russia by trying to bring Ukraine closer to the EU and with less of a reliance on Russia for energy. Land reform was also a reoccurring theme, but effective lobbying has made land reform impossible despite robust policy to support its actualization. Ukraine’s population is
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projected to decline by about 5.5 million people by 2050, posing problems for food security and agriculture, similar to the situation of out-migration in Nepal (UN, Department of Economic and Social Affairs, Population Division 2018). The declining population is addressed in passing through rural development and incentivizing young people to stay in agriculture, but larger programs to ensure that there are enough people left to do the agricultural work necessary are not in place.

The 2008 crisis in Ukraine was different from that in the other case study countries in that it might better be referred to as a general price hike instead of a food crisis. Ukraine was much more affected by the global financial crisis, which also decreased purchasing power, illuminating the fact that accessibility is the soft spot in Ukraine’s food security. Rural people in non-agricultural zones in the west of the country are the most vulnerable group, who will tangentially be targeted by rural development but have no special programming under the agricultural policy.

While Ukraine will likely experience the least negative impact of climate change on agriculture, there is still room for concern about water and sunflowers, as well as wheat and heat. Neither the agriculture policy nor climate change policies address adaptation for the agricultural sector, a big gap in Ukraine’s preparedness. If Ukraine can harness its water resources effectively, and implement the strong research and extension services plan within the SCS, it might be possible for the country’s agricultural sector to benefit from climate change. These ifs, however, are rather large, and will require both legislative and programmatic action from the government.

As Ukraine faces large challenges with only one pillar of food security (economic accessibility), litigating the right to food for specific groups might actually be more effective than in other case study countries. The legislation on the right to food in the constitution in the weakest of the four case study countries, and the right to food only became effectively justiciable in 2016. I look forward to reviewing the decisions that the court passes down on ESC rights in the future, as I hope that cases are brought that could set a stronger jurisprudence on the issue. Ukraine’s total number of hungry people is much smaller, so grouping them and creating class action suits will be more feasible. As the key issue is the lack of social safety nets to provide people with money to buy food, over which the government has direct control (unlike agriculture in which individual firms determine their production), forcing the government’s hand through the courts might have some positive impacts. Ukraine does have robust social safety nets generally, but does not have specific support for food in place despite alluding to more comprehensive work under the SCS. Implementing this program will be extremely helpful to provide poorer households with added support to purchase food throughout the year. The decentralization outlined in the constitution and the SCS could help Ukraine bring these services to the most vulnerable rural areas.

Likewise, infrastructure projects could improve food security by decreasing the profits lost during transport, increasing people’s ability to move around the country, and ensuring that proper social services
are located near enough for people to access them. Community input as outlined by the SCS is good in principle, but the language in the document puts the onus on the communities for their own development and decreases the state’s responsibility. The infrastructure projects are mainly supposed to be funded by foreign investors, but in the current political environment, it seems unlikely that the funds needed will be procured. Instead, the state should consider funding some of the most needed projects associated with grain transport and public services.

Since 2014, Ukraine has sought to be more closely aligned with Europe in response to Russian aggression. Within the agricultural policy and climate change policy, entering the EU seems to be the main driver behind its proposed actions. While in the long run joining the EU will likely bring increased economic, political, and social stability, these adjustments might also cause some growing pains. For example, land reform must be undertaken according to the EU, but there has been much lobbying against such policies by large agriholdings. Ukraine needs the export revenue from agriculture exports, so it might consider finding a middle ground between the demands of the EU and internal demands. In this balancing act between local needs and the EU’s demands, so far the EU has gotten much lip service while domestic demands are largely met. There have been some steps toward EU integration, like elimination of VAT rebates, but not enough progress has been made. In terms of agriculture, Ukraine will have to increase its spending on green box support, but it will likely need budgetary support from the EU to do so (Food and Agriculture Organization n.d., 14).

The crisis in southeastern Ukraine and Crimea are causing significant problems for Ukraine. Getting aid to these groups while maintaining business as usual conditions in other parts of the country has proven challenging. Those living in conflict areas experience higher rates of hunger because of quickly rising food prices compared to wages while humanitarian assistance declined (Food Security and Livelihoods Cluster Technical Working Group 2017, 8–9). As the conflict drags on, the World Food Programme and other food aid groups have struggled to attain the funds necessary to continue their operations in Ukraine. The most vulnerable groups in areas directly affected by the 2014 conflict that continues to drag on are single-headed households with children, elders, unemployed households, and female-headed households (Food Security and Livelihoods Cluster Technical Working Group 2017, 8). The government of Ukraine, especially in areas it controls, has a geopolitical and humanitarian imperative to help provide food to vulnerable populations.

Looking forward, Ukraine’s climate change and agricultural policies have room to improve. The conflict with Russia is looming large over the policies, to the detriment of their effectiveness in the fight against hunger in the society at large. While there are external pressures to cut public expenditures, investments in infrastructure could provide big returns in the form of agricultural exports. There are some positive elements of the policies, such as the research and extension services and reducing agricultural
emissions, and implementation of these should happen without delay. In order to improve its policies and create a more food secure environment, Ukraine should create policies on agriculture and climate change, as well as a food and nutrition plan. Nutrition programs should be added to the social safety fabric, and investments in export infrastructure will help Ukraine gain income from its agricultural exports. Right to food advocates should try to bring cases on the right to food in the Constitutional Court.

BIBLIOGRAPHY


———. n.d. “FAOSTAT-Ukraine.”


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Rogovska, Natalia. n.d. “Crop production in Ukraine.”

Schmitz, Andrew, and William H. Meyers. 2015. Transition to Agricultural Market Economies: The Future of Kazakhstan, Russia and Ukraine. CABI.


http://books.openedition.org/ceup/1743.

TAD/CA/APM/WP(2011)15/FINAL. Agricultural Policies in OECD Countries and Emerging
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This thesis analyzed four case studies in order to answer three main questions: In what ways does a rights-based approach to food security help prepare Bolivia, Kenya, Nepal, and Ukraine for the fight against hunger under the conditions of climate change? How do current agricultural and climate change policies contribute to food security? What should these countries do to improve food security domestically both now and in the future? These questions were based on two premises: one, that the agricultural sector is the most important to target to improve food security in middle- and low-income countries because many of them are food deficit and many of the poor work in the sector; and two, that international right to food law not only establishes the right to food as an institutionalized international norm but also offers a pathway for legal action when citizen’s rights are not upheld, as in when their government’s actions or policies have failed them.

In order to investigate these strategies, I started by seeking a better understanding of the country situation from gathering background information on the historical, political, geographical and economic context of each country in order to answer the second question. Investigating the agricultural context gave me insights into the constraints and challenges facing the agricultural sector in each country. I further identified vulnerabilities in their agricultural systems by investigating the causes, consequences, and responses to the 2008 crisis; this rupture showed the domestic soft points in the domestic food system, (in)adequacy of countries’ emergency responses, as well as vulnerable groups and regions. Next, I looked into the key food and export crops, and compared growing requirements temperature and precipitation projections from the Coupled Model Intercomparison Project Phase 5 in order to gain an understanding of potential impacts of climate change on food security. This research laid the foundation for analyzing how the right to food is advanced through each countries’ agricultural and climate change policies and what opportunities there are for improving such practices and policies.

In this conclusion, I bring together the pieces of my thesis, return to my initial questions, and provide some larger takeaways that may be of interest to those working to improve food security not only in these case study countries, but in other areas as well. This chapter is organized into three main sections.
based on the three questions where I present comparisons and my best answers to the questions. Finally, I conclude with offering some final observations and future research directions.

**QUESTION 1: HOW DO CURRENT AGRICULTURAL AND CLIMATE CHANGE POLICIES CONTRIBUTE TO FOOD SECURITY?**

This question is answered in detail in each of the case study sections on agricultural and climate change policy. Here I draw out overarching concepts and trends that emerge from the analyses that suggest best practices to improve food security under climate change.

In agricultural policy, context matters. To illustrate this point, I present a somewhat exaggerated example: say one has just finished studying Nepal’s agricultural policy, which they thought was very well written, and wanted to apply what they learned to Wisconsin’s agricultural policy. They would probably suggest that smallholder farmers should be the target group, because in Nepal smallholders make up most of the agricultural production. Unlike in Nepal, however, small farms in Wisconsin only make up about 40 percent all of farms, and they are also much larger: a small farm in Wisconsin is on average 85 ha, while the average small farm in Nepal is only 0.55 ha (Rapsomanikis, 2015, pp. 6, 8; Schultz, 2015). This person’s policy recommendations would likely fall flat because they did not properly take into account the context of the two different places. Thus, the short answer to the second question posed by this thesis is simple: by addressing challenges in the agricultural sector, agricultural and climate change policies support food availability and stability, as well as access for those who earn their living through agriculture. Only by discovering the specific challenges facing a given country, however, can we hope to properly evaluate the agricultural policy. In this section, I will explore some of the key differences, strengths, and weakness of the agricultural policies in each of the four case studies, beginning with a discussion of the assessment criteria.

I start this overview the same way as each of the case studies: with an overview of the macro, societal-level problems. In the table below, I summarize the three of the most important factors affecting each case study country.
I found that in Bolivia the larger problems at hand are inequalities between indigenous groups and the population at large. Indigenous groups experience higher levels of poverty and have worse access to social services, making them vulnerable to food insecurity. Because the Andes divide the country and it is landlocked, Bolivia faces difficulties trading internationally. It also lacks important infrastructure to support rural areas accessing social services and food markets. In addition, issues with land access and land grabbing make Bolivia’s land titles unstable despite multiple attempts at reform. As a landlocked and mountainous country, Nepal faces similar structural issues to those of Bolivia. Remote areas are typically the most insecure regions because there is simply no easy way to get food to people when there is a natural disaster or when crops fail because of poor infrastructure. One advantage Bolivia has is that it does not rely almost entirely on one neighboring state for access to the sea and trade as Nepal does. Nepal’s relationship with India, and limited amount of geopolitical and military power it finds itself with compared to its giant neighbors, complicates its trade situation. Instable land rights and ownership discourage investment and continue the feudal pattern in Nepal, which also contributes to continuing
inequalities between majority and minority groups. In Kenya, rapid urban population growth has put additional pressure on natural resources and social services. Land rights issues with their root in the land tenure system under colonization threaten the tenure of communal land users and even the 2010 constitution did not provide significant protection from land grabbing. These land structure issues have also exacerbated tensions between minority and majority groups, as groups seek land for their use and others decry the granting of land to minorities, like the Nubians. Land is also a source of tension in Ukraine, whose rich agricultural lands have attracted foreign investors while a slow transition from collectives under Soviet rule has turned many rural people into agricultural wage laborers instead of landholders themselves. While there has been periodic violence in Bolivia, Kenya, and Nepal since the adoption of their new constitutions, Ukraine is the state with the most active conflict, relating to its history as part of the USSR. Russia’s annexation of Crimea in 2014, and fighting in the south of the country has pushed Ukraine toward the EU, while creating problems for Ukraine’s other minority groups through backlash against Russian interference. Ukraine is also the only case study country facing major population decline, which has reduced the labor pool and shrunk Ukraine’s rural communities.

From this survey of the macro issues facing Bolivia, Kenya, Nepal, and Ukraine, several trends appear. First, they face many similar problems. Six main issues—land rights, minority-majority group tensions and indigenous rights, population changes, trade, infrastructure, and conflict—are the hindrances to food security and development out of the twelve individual issues I identified in the four case study countries combined. Historical roots show just how pernicious these problems are: all four case studies are challenged to some extent by land rights issues, so taking a deeper look into land rights will illustrate the vast differences between the cases even on this shared problem. Under colonial rule in Kenya, many groups were displaced from their land. Following independence in 1963, some progress towards Kenyanization of industry, redistribution of whites’ land, and the creation of a national identity occurred, yet powerful leaders continued to favor their own majority group while in power, leading to land distributions skewed toward the Kikuyu group and violence in resettlement areas. In the agricultural sectoral policy, there is much emphasis on the arid- and semi-arid lands to avoid further displacement and conflict, as well as a call to end resettlement. In Nepal, land rights were tied to the caste system, with the lowest castes serving as landless bonded laborers. While feudalism and caste-based discrimination are illegal, many former bonded laborers and their families continue to work the land that they did while bound. Thus, Nepal’s constitution supports the landless getting land rights, yet the agricultural policy does not target this group for support, although it does establish a land leasing program that may facilitate access. Ukrainian farmers were forcefully collectivized during the Soviet era, leaving large but rather unproductive farms as well as creating exiles and hunger. The current agricultural policy notes that collectives have little strength now, and wants to increase collectives to help small household farmers
compete. While I have not talked to Ukrainian farmers about this issue, it is possible that reluctance to collectivize under state control might stem from this history. Thus, other forms of government support to small farmers may be more appropriate and better received, such as creating marketing classes and better extension services. Finally, indigenous people in Bolivia have worse access to social services and are more impoverished than their non-indigenous counterparts. Bolivia’s agricultural policy targets indigenous groups to receive land and better support, making Bolivia’s the strongest in relation to land rights.

Not all aspects of agricultural policy are as politically charged as land rights, yet examining the importance of land rights illuminates several key points. First, considering how successful an agricultural policy is devoid of historical context can lead to flaws in evaluation. Take, for example, Kenya’s innovative land registration scheme. Upon first glance, using technology to create a solution to the issue of land titling appears to be an innovative approach to a current challenge. However, while Kenya’s GIS land registration scheme might help give titles to those currently on the land, there is a real possibility that if this program does not take into account the majority and minority groups that have current and historical claims to the land there will be political unrest. Therefore, GIS land registration becomes a blunt instrument for dealing with these problems, and requires further refinement to determine upon what basis land can be registered using this scheme. Second, appropriate land rights are the backbone of agricultural policy as they determine who farms where and what they produce. As states must make trade-offs in determining what programs will get funding and how much will be allocated to what, state investment into programs that facilitate land rights in the country context may have the biggest production and stability payoff. Land rights issues often both cause and exacerbate tensions between minority and majority groups, so effective handling of this issue is paramount. This is not to say that governments should all invest in titling schemes as this is costly and may not be the most effective option in all cases (Atwood, 1990). What is most important in solving land issues is that they are done equitably and carefully, and that templates on titling mechanisms are used sparingly or are highly adapted to the country context. At a larger level, what we learn from the example of land rights is that in order to assess policy (and to create better policy), we must look at the historical and sociopolitical context at play to avoid costly mistakes and ineffective policy.

Moving in from a macro-level, I focused on challenges in the agriculture sector specifically. Here, I chose the criteria that other studies and reports on the agricultural systems in each country deemed as the most significant. As with the macro-level criteria, we see some overlap. Again, at this level it

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46 Let us recall that Ukraine became independent in 1991, so it is still memory not just history for many inhabitants.
becomes increasingly evident that investigating the agricultural context matters when drafting agricultural policy.

Table 6.2. Challenges to agricultural production in each of the case study countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>Agricultural challenges</th>
<th>Quality of policy response$^{47}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolivia</td>
<td>Credit access</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Erosion</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Low yields</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Poor irrigation systems</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Technology/mechanization access</td>
<td>Low</td>
</tr>
<tr>
<td>Kenya</td>
<td>Credit access</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>Little water</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Market access</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Poor export infrastructure</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>Poor irrigation systems</td>
<td>High</td>
</tr>
<tr>
<td>Nepal</td>
<td>Chemical input access</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Erosion</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Labor transitions</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Low yields</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Technology/mechanization access</td>
<td>High</td>
</tr>
<tr>
<td>Ukraine</td>
<td>Credit access</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Labor imbalances</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Poor export infrastructure</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Poor extension services</td>
<td>High</td>
</tr>
</tbody>
</table>

$^{47}$ These ratings were chosen based on results from the case study analysis, and they aim to represent not a definitive ranking but rather a way to think about areas to improve and relative policy strength.
Starting with Bolivia, I learned that the poor soil in the highlands where many smallholders live is susceptible to erosion over time. Farmers have little access to credit or to mechanization, particularly in the poorer highlands. Overall, the percent of the agricultural lands covered by irrigation systems is minimal, and both smallholders and larger soybean farmers struggle to produce the yields seen in neighboring countries. Nepal faces similar challenges due to its elevation, with soil erosion in the hills and poor mechanization in its terraced growing systems. Nepal’s irrigation systems are much better than Bolivia’s, however, but it struggles to get farmers the chemical inputs they need, and there is also outmigration of men who are usually the head of household, which presents a challenge to production as knowledge is lost. Ukraine is also experiencing problems with agricultural labor, particularly related to not having enough skilled laborers as the population declines. Its extension services are minimal, and credit access for smallholders is almost non-existent because of the poor business environment and corruption. While it has an agricultural export-focused economy, the infrastructure to physically carry goods as well as the standards to certify their safety is lacking. Kenya too is challenged by the lack of export infrastructure, which is a particular challenge to tea producers. Credit access for farmers is poor, as is market access. Kenya’s biggest challenge to agricultural production, however, is lack of water and irrigation systems, which mean that about one in three harvests are lost to drought.

Here, it becomes clear that knowing that there is a problem with credit access does not tell us enough to fix it; instead, we must understand the issues characteristics and the cause of the problem. I posit that there are generally two broad types of issues: those that are a result of geography and climate and those that reflect policy failures. While the latter category can exacerbate the former, it is important to realize that many of the problems facing agriculture are ones over which policymakers have more control. By learning from past policies and the problems that remain, it becomes clear where there can be improvement. In order to understand this point, we will compare erosion in Bolivia with poor extension services in Ukraine. In Bolivia, many farmers farm between 2,500 and 3,500 masl, where there is poorer soil quality to begin with because of geographical characteristics of mountains. Policies dealing with erosion need to both help farmers gain skills and mechanisms to prevent erosion, and also rehabilitate soil that is eroded. In Ukraine, poor extension services reflect a dominance of international firms in agricultural research who have different incentives than to improve food security, as well as the result of pressure to decrease government spending. In Bolivia, policymakers cannot replace all of the soil on the mountains, but in Ukraine, policymakers can designate money to open up extension offices and employ extension agents, thus enhancing extension services. This is not to say that challenges related to policy failures are inherently easier to solve than geographical and climate ones, but rather that policy tools are
better suited to solve problems originating in policy failures. Thus, in developing and assessing policy, not only must we look at the macro-level factors, but we would be wise to consider the current challenges and their origins.

All crops are not created equal in the context of climate change or food security. In order to understand how climate change may affect food security, I focused on two crops, one relating to accessibility and the other to availability pillars of food security. The main export crop was the crop in each country that contributes the most to AgGDP, which I used as a stand-in for access, or the ability for people to exchange money or labor for food. The main food crop on the other hand was used as a proxy for availability, because its domestic production directly effects consumption. This export-access and food crop-availability dichotomy does not exist as clearly in Ukraine as pure subsistence farming is infrequent, yet wheat is the crop that is consumed the most domestically, so it is the crop I assessed.

Table 6.3. Key crops and projected effects on their production based on temperature and precipitation data from CMIP5.

<table>
<thead>
<tr>
<th>Country</th>
<th>Crops studied</th>
<th>Negative effects of climate change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolivia</td>
<td>Potatoes</td>
<td>Too hot</td>
</tr>
<tr>
<td></td>
<td>Soybeans</td>
<td>Pests and disease</td>
</tr>
<tr>
<td>Kenya</td>
<td>Maize</td>
<td>Changing rainfall patterns</td>
</tr>
<tr>
<td></td>
<td>Tea</td>
<td>Ambiguous</td>
</tr>
<tr>
<td>Nepal</td>
<td>Cardamom</td>
<td>Pests and disease</td>
</tr>
<tr>
<td></td>
<td>Rice</td>
<td>Too much water</td>
</tr>
<tr>
<td>Ukraine</td>
<td>Sunflower seed</td>
<td>Changing rainfall patterns</td>
</tr>
<tr>
<td></td>
<td>Wheat</td>
<td>Ambiguous</td>
</tr>
</tbody>
</table>

Starting with Bolivia, it was determined that potatoes are the most-consumed crop, and soybeans are the main export crop. Here, availability will be challenged by temperature, while neither temperature nor precipitation will have direct effects on access (pests and disease might pose secondary challenges). In Kenya, food availability is also under threat from climate change, as changing rainfall patterns may affect maize productivity. The potential impact on tea is more ambiguous, and requires further study. Like soybeans in Bolivia, Nepal’s cardamom production might also experience secondary impacts, limiting
food access. Rice production may decline because of flooding, jeopardizing food availability. Finally, Ukraine’s soybean production may decrease because of changes in rainfall patterns while the effects on wheat require more research. All of the case study countries except Ukraine may see their food availability decrease under climate change. In order to mitigate these effects, we must be able to trace the cause of the decline, and then take appropriate actions in the right part of the country. Comparing Bolivia and Nepal, two countries with similar geographical features, reveals why the specific crop and where it is grown matters. In Bolivia, potatoes are grown in the highlands, while in Nepal, rice is grown in the lowlands. These two food crops serve similar roles in both countries’ food security and food systems, yet because of their temperature and precipitation needs, they are grown in different locations and thus face different risks from climate change. Bolivia’s climate change policy includes some language on extension services, but far less than needed: temperature is something that can be managed with different varieties, higher planting locations, and changing planting cycles. While soil conservation is important, having good soil will be rendered useless by temperatures that prevent plants from growing. In Nepal, however, there needs to be active mitigation of flooding in addition to extension services to help farmers grow flood-resistant crops; Nepal’s policies are more comprehensive in this respect, with support for both activities. To make effective policy, policymakers should take into account the key crops, where they are grown, and the specific climate risks faced by each of them.

In order to assess the climate change policies, I looked not only at the specific crops discussed above, but also at emergency situations. As the introduction details, 2008 was a rupture in the global food systems, but overall the system has not changed in significant ways to prevent similar crises. These factors are connected to the stability of food security to determine vulnerability, and are useful considering that climate change may cause more extreme weather events (IPCC, 2018; Schmidhuber & Tubiello, 2007). Here again, context is important: it becomes clear that looking at the 2008 crisis as a global crisis ignores many of the domestic factors that contributed to its effects. Two factors are most important to pull out: first, the causes of the crisis, and second, the vulnerable populations.
### Table 6.4. Vulnerabilities in agricultural and food security systems as revealed by the 2008 crisis.

<table>
<thead>
<tr>
<th>Country</th>
<th>Primary causes</th>
<th>Decrease in standards of living</th>
<th>Vulnerable populations</th>
<th>Response</th>
</tr>
</thead>
</table>
| Bolivia | • Extreme weather events  
• International commodity price increase  
• Political violence | Moderate                        | • Rural indigenous communities in the highlands  
• Urban poor | • Export restrictions  
• Safety net (already in place)  
• Import tariff removal  
• Subsidized consumer products  
• Subsidized farm inputs |
| Kenya   | • Extreme weather events  
• International commodity price increases  
• Political violence | Moderate-High                    | • Pastoralists  
• Urban poor | • Direct price controls  
• Export restrictions  
• Import tariff removal  
• International assistance  
• Safety net (already in place)  
• Subsidized consumer products in urban areas |
| Nepal   | • Extreme weather events  
• India’s export restrictions on rice  
• International commodity price increases  
• Political violence | High                            | • Northeastern rural poor  
• Rural agricultural wage laborers | • Export restrictions  
• Food ration distribution  
• Food for food programs  
• International assistance |
| Ukraine | • Extreme weather events  
• International commodity price increases  
• International financial crisis | Low                             | • Rural areas in the northwest  
• Urban poor | • Export restrictions  
• Regional price ceilings on bread  
• Direct purchasing of grain |

In all four case studies, local factors contributed to the 2008 crisis, and thus should be targets for government intervention under the climate change policy. In Bolivia, Kenya, and Nepal, political instability and extreme weather events contributed to creating a national crisis, whereas in Ukraine the main domestic source was limited to extreme weather events. What this tells us is that all of these countries are vulnerable to the extreme weather events that may increase in frequency and intensity under the conditions of climate change. This means that in order to assure food security, stability is a pillar that
should be addressed with attention to both adaptation and emergency relief efforts. All of the climate change policies in place address extreme weather in the agricultural sector, but similarly to the factors affecting production, they do so with various degrees of commitment. Kenya’s policy includes the best program to support drought victims, likely because it already struggles with the issue and thus policymakers have a better understanding of ways to deal with the problem.

The 2008 food crisis also allowed me to understand the populations vulnerable to food insecurity due to accessibility (decreased purchasing power and physical access due to disasters) and due to availability (limited supply). In Ukraine, the crisis was largely one of rising prices, not lack of food availability. Thus, those who were hurt most were the already-poor rural and urban groups. In Kenya where the crisis was both one of high prices and failed crops, urban people and pastoralists suffered from both accessibility and availability. In Nepal, some areas suffered from availability, particularly the northwest, while other groups of rural poor suffered because of lack of economic access. In Bolivia, indigenous groups in the highlands saw problems with availability and access, while the urban poor suffered more from lack of access. This understanding of the geographical distribution of hunger is a useful addition to the climate change projections on specific crops, as having enough food in a country does not translate to their being enough food in all parts of the country, a phenomenon particularly notable and devastating in Nepal.

In order to tailor responses to food crises no matter what the cause, governments need to understand why people are hungry in the first place before they respond. Comprehensive safety nets and overall high social spending as in Bolivia can support access, while direct food aid to regions lacking food even for purchase as in remote areas of Nepal can help with urgent problems of availability. Making social safety nets more robust can help vulnerable populations under both status quo and emergency situations, as the negligible effects of the crisis in Bolivia demonstrates. However, with more extreme weather events, governments should also consider maintaining more stocks in order to respond to crises of availability. When choosing their policy response, especially market interventions, governments should consider whether crops are for domestic consumption or export. In Ukraine, the government placed export restrictions on vegetable oils despite Ukrainian consumption being low, which therefore had a negative impact on income earned and no impact on food security. Domestic contexts should guide not only agricultural and climate change policy, but also government’s responses to food insecurity. While the case studies do not show that export restrictions are harmful in every situation, countries should be judicious about their application and make sure that the products they are targeting are actually those that are eaten in the country.

Each of the case study countries’ policy responds to the particular context to moderately well, yet there is no policy that could be held up as a model. Agricultural and climate change policies actively contribute to
food security not only through availability of food, but also through the income that they generate for farmers and agricultural workers that allows them to purchase food. How to use agricultural and climate change policy to support food security, however, depends very much on context. The answer to this question provides a defense of the work done in this thesis; that is, in-depth country and context study are necessary in order to find solutions to future food security problems. In order to improve these policies, policymakers should improve their understanding of the context and history impacting the sectors, and then apply policy solutions that answer directly to the cause of the problem.

**QUESTION 2: IN WHAT WAYS DOES A RIGHTS-BASED APPROACH TO FOOD SECURITY HELP PREPARE BOLIVIA, KENYA, NEPAL, AND UKRAINE FOR THE FIGHT AGAINST HUNGER UNDER THE CONDITIONS OF CLIMATE CHANGE?**

There are two primary ways in which actors tend to force states to take action on economic, social and cultural rights that having the normative framework in support of the right to food facilitates. First, by making food into a right, it creates a normative framework in which people should have food, and when they do not, there is someone – a government, a company, another individual – who can be blamed for not having food. Second, making adequate food into a right makes it justiciable in a court of law. Having food be something that people have the right to provides a framework in which there can be some sort of legal claim by those who feel that they have not received adequate food as required by law. By integrating the International Covenant on Economic, Social, and Cultural Rights’ language on the right to adequate food into national constitutions, those harmed can bring legal suit against their government and allege a human rights violation. What we see in these case studies, however, is that being a state party to ICESCR and having the right to food in the constitution does not mean that this right is justiciable in practice. In this section, I will first discuss the normative value of the right to food before turning to the issue of whether the right to food is justiciable in order to answer question one.
Table 6.5. Status of the right to food in the legal systems of the four case study countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>Constitutional provision on the right to food</th>
<th>Constitution ratification year</th>
<th>Jurisprudence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolivia</td>
<td>Article 16:</td>
<td>209</td>
<td>None.(^{48})</td>
</tr>
<tr>
<td></td>
<td>“I. Every person has the right to water and food. II. The State has the obligation to guarantee food security, by means of healthy, adequate and sufficient food for the entire population.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>Article 43(1):</td>
<td>2010</td>
<td>Yes, ruled against the plaintiff. Several cases on economic, social and cultural rights have been successful, and judges have expressed a willingness to hear more cases on the right to food.</td>
</tr>
<tr>
<td></td>
<td>“Every person has the right: (c) to be free from hunger, and to have adequate food of acceptable quality.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nepal</td>
<td>Article 36:</td>
<td>2015</td>
<td>Yes, two cases have been decided in favor of the plaintiff. Outcomes were the provision of food aid and an additional push towards establishing a food and nutrition plan.</td>
</tr>
<tr>
<td></td>
<td>“(1) Each citizen shall have the right to food. (2) Every citizen shall have the right to be protected from the state of starvation, resulting from lack of food stuffs. (3) Every citizen shall have the right to food sovereignty as provided for in law.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ukraine</td>
<td>Article 48:</td>
<td>1996</td>
<td>None.(^{49})</td>
</tr>
<tr>
<td></td>
<td>“Everyone shall have the right to a standard of living sufficient for themselves and their families including adequate nutrition, clothing, and housing.”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How the right to food is presented in constitutions is highly dependent on the context in which the constitution was negotiated. Of the four case studies, Ukraine’s constitutional provision on the right to food follows ICESCR’s language most closely for several reasons. Ukraine’s constitution was written by a group of legal experts who drew many of the rights in the bill of rights from ICESCR and ICCPR. As Ukraine’s constitution was written prior to the World Food Summit and the expanded definition of food security that it produced in 1996, there was not a strong international backing for the four pillars of food security. As civil society organizations did not have the kind of influence they that they did in other countries, which might explain the lack of jurisprudence.\(^{48}\)

\(^{48}\) Searches into cases in Bolivia’s Constitutional Court did not turn up any results, and there is no evidence in secondary sources that there have been cases in Bolivia.

\(^{49}\) The Constitutional Court only opened up to civilian petition in 2016, so there has not been as much time to allow for petitions as in other countries, which might explain the lack of jurisprudence.
countries’ negotiation processes, the language in ICESCR was probably as progressive as Ukraine’s constitution could have included. In contrast, Kenya’s constitutional provision reflects a battle between conservatives and progressives in the negotiation process, with progressives ultimately prevailing in the bill of rights. It reflects Article 11(2) of ICESCR in saying that everyone has the right to be free from hunger, but qualifies this with wording on supply and quality, reflecting some of the changes in thought on hunger since 1996. Similarly, Bolivia’s constitution was negotiated during what could be called a culture war between the eastern districts who favored liberal capitalism and the western regions that were more committed to Morales’ socialistic policies. Both of these sides appear in the language in the constitution, in which the right to food security is guaranteed by the state in the bill of rights, and later on the state is to pursue food sovereignty — language that places a higher obligation on the state than the other case studies. In Nepal, the article on the right to food violates ICESCR because of its discriminatory language excluding non-citizens from having the right, probably to purposefully exclude Indian nationals from benefiting. During the constitutional negotiation process in Nepal, the right to food sovereignty was vague enough to bring many groups together, serving as a “coalition magnet” (Sharma & Daugbjerg, 2017). This was particularly important because Nepal had struggled to ratify a constitution after the end of its civil war in 2006, so negotiators were willing to be vague in order to create the document. While the language was useful in the negotiation process, since then most government documents have instead relied upon a food security framing for food and nutrition policies.

Based on these four examples, it is clear that the situation in which food rights were negotiated has consequences for how inhabitants can exercise the right, and who is responsible for fulfilling it. On its face, the constitutional right in Bolivia is strongest because the state has the obligation to provide food security, while the other three countries’ constitutions do not name the state. In addition, inhabitants have the right to food security which means they should have access, availability and proper usage all year-round. These two factors put the highest burden on the Bolivian state, and explicitly describe what the actions the state must take to fulfil the right. Kenya’s constitutional provision is weaker, with only an allusion to food security and including the negative right (freedom from hunger) as well as the positive (right to food). Ukraine and Nepal are weakest. The former lacks a specific mandate to the right to food and the latter discriminates on who has the right. Civil society had a bigger role to play in Kenya’s constitution, and social movements pushed for sovereign rights in Bolivia, so the robust participation of civil society members in the constitutional process may explain the stronger language on the right to food in those countries.

In practice, however, the strength of constitutional language does not determine countries’ agricultural policies or legal systems. In fact, the country with the strongest agricultural policy framework for food security in an era of climate change is Nepal, followed by Kenya and Ukraine. Surprisingly,
Bolivia is weakest. The specific food sovereignty wording had the biggest impact on Bolivia, in which policies not only named food sovereignty as a goal (as does Nepal), but also supports smallholder production and nutrition as a way to get there. However, this variation could also be attributed to Bolivia’s agricultural policy being the only one without international co-authors, giving Bolivia more room to choose its own priorities. Thus, while the language in right to food articles in the constitution may have effects on states’ rhetoric about food, and the language in the constitution depends on country context, these two elements do not appear to have significantly shaped sectoral policy in any of the four case study countries.

Insofar as it creates the international norm that the right to food should be a right, and that countries should include it in their domestic legislation, ICESCR is useful. There is no evidence in any of these case studies that states took action, whether it be programmatic or legislative, to stem hunger specifically because of their obligations under ICESCR, although rulings in Kenya and Nepal’s domestic courts do mention ICESCR. Being a party to ICESCR and having to submit reviews that could be scrutinized by the international community might have pushed states to begin pursuing food and nutrition policies more aggressively, but because this study did not include any non-right to food states, it is impossible to make any definite conclusion. A preliminary answer to the question one, then, is that the right to food has little effect on government policy, and thus a right to food framework is not helping countries prepare for climate change.

Next, I consider how citizens have pursued the right to food in domestic courts as well as international mechanisms as the second avenue in which the right to food law can improve food security. Between the four case study countries, there have been three high-level rulings on the right to food between 1998 and 2019. The first case from Nepal and the case from Kenya share very similar rulings. Looking at the cases on their merits gives some tentative evidence as to when the right to food is most successful at addressing hunger. In the first case in Nepal, the plaintiffs alleged chronic mass starvation due to government inaction. The courts affirmed the right to food as well as the government’s role in fulfilling this right, but determined that the government had been doing its best to improve the situation (Chapagai, 2014, p. 100). In Kenya, the case that was brought was about holding fuel companies and the government responsible for failing to reduce oil prices that had increased food prices and caused hunger (Ngugi, 2012, p. 88). Similar to the first case in Nepal, the judge ruled that while the state did have a constitutional obligation to fulfil ESC rights, the actors named in the suit had taken reasonable actions to prevent food prices from rising. In the second case in Nepal, the ruling was stronger and provided immediate support to those suffering. As the case made its way through the courts, the lower court ordered the government to provide emergency rations to prevent the problem from continuing (Chapagai, 2014, pp. 100–101).
Thus, the outcomes in these cases can be traced to whether or not the judge determines the action that the government says it has taken is reasonable. In the second case in Nepal, it was probably easier to obtain a favorable ruling the situation was one of emergency hunger, not of chronic undernourishment. Thus, preliminary results from the cases on the right to food in Kenya and Nepal show that courts may be more inclined to force the government’s hand in cases that involve acute hunger rather than chronic hunger. It may also be easier for judges to support the right to food in cases in which there is a clear and limited solution to the problem, such as providing rations to specific areas in the second case in Nepal. In addition, plaintiffs must be able to show that the government has not taken appropriate steps (and it is probably easiest if they have taken no steps) to support the right in the specific case of hunger. Another avenue that I posit might yield similar favorable results relates to instances in which there is a clear policy gap. As Ukraine lacks a food and nutrition plan, right to food advocates could force government action on this issue through their new access to the constitutional court.

This evidence qualifies my conclusion that the right to food is not useful in preparing for climate change. Rather, the usefulness of the right to food to those suffering because of climate change will likely be determined by the type of hunger they are experiencing. If groups are facing acute hunger because of a specific natural disaster like a flood, such as that that took place in Bolivia in 2008, using domestic legislation may help provide emergency support to those harmed. However, if production decreases in general because of climate change as may happen with corn in Kenya creating more chronic hunger, then the right to food will likely be a less useful tool to improving food security.

We can also learn from Bolivia and Ukraine, which have not had any high court rulings on the right to food, about potential barriers to justice on right to food issues. In Ukraine, until recently it was unclear how one would seek recourse in domestic courts due to the limitations on who could bring cases on constitutional issues. By including the right to food in the constitution, but blocking access to the courts, countries can dampen the right to food. In Bolivia, it appears while there is no institutionalized barrier to pursuing legal action, corruption, physical inaccessibility for rural people, and long wait times disincentivize Bolivians from using the justice system in general. Based on these limited examples, it becomes clear that there can be many barriers to making the right to food justiciable. For those working to improve the right to food, attention to overall problems within the legal system will have to be addressed in tandem with advancing food security.

This study can also shed some light on the usefulness of international mechanisms of right to food justice, particularly the 2013 Optional Protocol to ICESCR (OP-ICESCR) adopted by Bolivia. The OP-ICESCR is important theoretically because it brings ICESCR up to speed with the ICPPR and creates an international individual complaint mechanism for individuals who allege their ESC rights have been violated and have exhausted domestic legal systems. As Bolivia has not been involved in any proceeding
Chapter 6: Conclusion

(individual complaint, inquiry mechanism, or inter-state complaint) under OP-ICESCR, determining what, if any impact it has had is impossible. Examining legal action in other countries that have ratified OP-ICESCR show some interesting trends. In total, there have been 21 cases, none of which focused on food security. The majority were housing claims against Spain. Of the 21 cases that the Committee on Economic, Social and Cultural Rights reviewed since the Optional Protocol’s entry into force, only five were deemed admissible, and of these five, in four cases the committee supported the plaintiff. Because there are so few cases so far, it is difficult to know whether the cases deemed inadmissible were truly flawed cases, or whether this is a structural problem within the Optional Protocol that favors the state. The most useful part of the rulings are the general suggestions that the Committee on Economic, Social and Cultural Rights (CESCR) makes such as x, y, and z[WC1]. Research into states’ response to these rulings is a further avenue of research that may help illuminate the consequences of enforcing OP-ICESCR. Not having any cases so far on the right to food despite evidence from Bolivia that there could be such cases, however, may point to difficulties in bringing such cases to the Committee. As complainants need to show that they have exhausted all avenues of recourse in the domestic legal system, countries like Bolivia and Ukraine with poor access to the judiciary or poor enforcement of rulings might have their cases deemed inadmissible by CESCR despite violations.

The role of right to adequate food as a constitutionally or otherwise domestically recognized right does not exclude developed countries, as they still have food insecure populations. Those living in food deserts in the United States might be better able to find solutions within the domestic legal system if the United States recognized the right to food as a fundamental right. Right to food advocates in both developed and developing countries should continue to bring cases through their domestic legal systems as well as to the OP-ICESCR. The only way that the OP-ICESCR will prove its usefulness to advancing the right to food is through cases being brought to the CESCR for adjudication. As it stands, the right to food on the international level is only useful in creating a normative framework for the right to food and providing countries with inspiration to include articles in their domestic legislation on this right. In order for international right to food law to fulfil its promises as a right that is justiciable, cases need to be brought to CESCR and states need to ratify the OP-ICESCR.

QUESTION 3: WHAT SHOULD THESE Countries DO TO IMPROVE FOOD SECURITY DOMESTICALLY BOTH NOW AND IN THE FUTURE?

After spending much time analyzing the ways that agricultural and climate change policy as well as the right to food can be used to improve food security now and in the future, I can offer some policy guidance on the topic. I will first reiterate the country-specific policy recommendations from the case studies, and
then I will offer some guidelines for both policymakers and right to food advocates to consider in their work on food security.

**POLICY RECOMMENDATIONS FOR BOLIVIA**

- **Right to food activists should try to bring cases on the right to food before the constitutional court and OP-ICESCR complaint mechanism.** While setting jurisprudence in the other case study countries for the right to food is defensible in and of itself, in Bolivia court cases could push the government and Consejo Nacional de Alimentación y Nutrición to implement a food and nutrition security action plan, thus creating an implementation document for food security or food sovereignty. There is a clear policy gap, and having a concrete goal could help guide litigation. In addition, such a plan would help not just those bringing the case, but the entire population.

- **Bolivia should consider investing in extension services and infrastructure.** One advantage that Bolivian farmers have is the wide range of varieties of potatoes that they grow (Theisen, 2009). This variety means that some are better suited to different temperatures and precipitation, and there is genetic diversity that can decrease disease prevalence. In order to ensure that the right varieties get into the hands of the farmers who need them, and that they know how to properly grow the varieties, strong extension services must bring the knowledge directly to the farmers who need it. This is particularly important for food availability as a way to maintain production under changing climatic conditions, and also food access, as many of the rural poor live in potato growing areas and rely on farming for their livelihoods. Based on the sectoral agricultural plan as well as projections for climate change’s impact on key crops, it becomes clear that Bolivia will likely have to continue to import food in the future. To make sure that it can be imported efficiently, transportation infrastructure should be improved.

- **Bolivia should continue to limit soybean cultivation area, and enforce these limits.** Soybeans, while the country’s top export crop, only indirectly support food security because there is strong international control of the lowlands agricultural lands by foreigners. Soybean production contributes little to food security in Bolivia. Although it is impossible to assess how much of profits earned by foreigners is reinvested into the local economy, there are some signs that most money leaves the country (Urioste 2012, 452–53). While there may be some job creation, as a poor and net food importing country, Bolivia needs to put more thought into expanding agricultural production for human consumption. One way to do this is to more strictly designate land upon which oilseed crops can grow and upon which food must be grown.

- **Bolivia should formulate an updated Multisectoral Zero Hunger Program and climate change plan of action.** Bolivia is lagging behind the other case studies in terms of its implementation of
specific programs to increase food security and climate change resilience. While it has legislation to support the right to food, it lacks many of the supporting and sectoral-level documents that would make the step between law and practice. Two key documents missing are an overarching nutrition program (which Ukraine is also missing) and a climate change plan of action. Bolivia also has not submitted a National Adaptation Programme of Action, which limits its ability to receive international funding for climate change adaptation.

**Policy Recommendations for Kenya**

- **Kenya should put into place a domestic food security steering organization.** Kenya has good policy and strategies. However, there are a number of different policies and agencies tasked with implementing them. A central planning organization should be created to make these policies cohesive and streamline efforts. Part of the reason why agencies are involved is because of a policy of devolution. The Kenya Food Security Steering Group is useful because of the international experts that are involved, but a fully domestic coordination unit will increase ownership and help ensure implementation.

- **The government should invest heavily in irrigation and water collection systems for drought management.** The country in general and ASAL regions in specific already suffer food insecurity because of droughts. As rainfall patterns shift with climate change, managing both floods and droughts will be of utmost importance. The insurance program for agricultural crops should be expanded for livestock as part of the drought management strategy in that region so that households do not lose everything if their livestock die. Kenya has untapped ground water, and at times experiences floods, so harnessing water from both sources and storing flood waters for drier times can help crops and livestock flourish.

- **Kenya should consider expanding and scaling up its Urban Food Subsidy Cash Transfer Program.** Urban areas respond better to non-food aid because there usually is food available but the urban poor lack the funds to purchase it (Hickey, Pelletier, Brownhill, Kamau, & Maina, 2012, p. 337). As the urban poor were one of the two groups hit hardest by the 2008 crisis, ensuring that there is a specific and robust food and nutrition safety net will help this group not only during times of crisis but all year-round. Emergency aid is better suited for the arid- and semi-arid regions, because the area has little development and low ability to grow its own food.

- **Right to food advocates should file more cases concerning Article 43 and the right to food.** While in the 2012 ruling, the judge ruled against the plaintiff because of the reasonableness standard embedded in the constitution, the judge himself has had an about-face on ESC rights. This gives
an opening for cases to be tried and won supporting the right to food. Because generally the policy is good and implementation is lacking, such action should not attempt to force through legislation like in Ukraine, but rather establish jurisprudence particularly for action in emergency situations.

**Policy Recommendations for Nepal**

- **Nepal should implement more agricultural development programs targeted at those in the northeast of the country.** Most of Nepal’s hungry people live generally in the north, and more specifically in the northwest of the country. While these districts receive moderate attention under the ADS, there is much work to be done to support the region’s agricultural development. These services should aim to increase yields and production overall, making remote areas less vulnerable to food security.

- **The government should make flood control its top priority.** The CMIP5 model ensemble mean projects that there will be more precipitation in the summer months, causing floods. In 2008, flooding in the Tarai decreased rice production and increased hunger. The two key ways that the government should do this is through research into rice varieties and support to get services to smallholders, and also supporting water management systems at the community level. As there is already significant language on the former strategy in the ADS and the NAPA, the government should focus on providing support to communities for the latter method, instead of leaving most of the funding sources up to the private sector. In addition, Nepal should increase the funds it has earmarked for disaster relief in order to better prepare for emergency situations than it has in the past.

- **Nepal should invest in infrastructure to increase access to remote rural areas.** While increased production through the measures in the first policy recommendation is important for long-term food security, it is important that these areas also have access to social services and that they are accessible in most emergency situations. Creating road systems may have high upfront costs, but they will help goods reach remote areas, not only boosting the local economy through trade but also decreasing the amount of costly aid operations needed for these areas. In addition, providing transportation infrastructure will allow farmers to market their products outside of their immediate villages, thus helping them expand their market access and earn more income.

- **Nepal should strengthen access to food through special feeding programs and social safety nets.** Much of the content of the Agriculture Development Strategy and the Food and Nutrition Security Plan focuses on increasing production, to the detriment of the access or usage pillars of food security. To this end, the government should fill this gap by implementing specific feeding
programs in schools and for other vulnerable groups. In addition, Nepal should work to increase its per capita spending on social safety nets to ensure that support is not limited to those in the formal sector or the young or old. Promoting insurance schemes, as the ADS says it will do, is not enough to support Nepal’s many hungry people. The government should take an active role in agricultural insurance schemes as well as the provision of cash transfers.

**Policy Recommendations for Ukraine**

- **Policymakers should put a comprehensive food and nutrition strategy, including a steering group, into place.** Out of the four case study countries, Ukraine is the only one without a specific government policy or strategy on food security. Like in Kenya, there are a multitude of agencies and ministries with responsibility for some aspects of food security. The Single and Comprehensive Strategy envisions the creation of a food security committee, which could also be in charge of the food and nutrition policy, but the former needs to be implemented. Having a specific agency tasked with food security oversight and coordination would have two benefits: one, it would improve implementation by creating clear chains of command and oversight, and two, it would harmonize action across sectors to ensure that there is no duplication or undermining of efforts. Having a comprehensive plan in place would help Ukraine prepare for emergencies, while also providing day to day support to those struggling with food access.

- **Ukraine should consider creating specific legislation on climate change and agriculture.** Its climate change policies at the moment focus on environmental protection and mitigation rather than on adaptation, leaving a policy gap. Rebooting the state agricultural insurance program is a good step toward adaptation, but research and extension services should also focus on getting more resilient crop varieties and climate change information to farmers.

- **Ukraine might consider adding a nutrition program to its constitutionally guaranteed social safety net.** Such a program is proposed under the Single and Comprehensive Agricultural Strategy, yet its implementation is lacking as the country has been focusing on emergency food aid to conflict regions. In addition, safety nets will be more useful to Ukraine in crisis as it adopts more restrictions on the policy responses it can take toward rising food prices. In 2008, it used a number of export restrictions to keep food in the country, but under the WTO and as a future member of the EU, these measures will be less politically feasible.

- **Ukraine should invest in key infrastructure projects.** The agriculture sector currently loses out on profit from transportation costs, so better infrastructure could help increase the incomes from
agricultural exports. In addition, irrigation and other water management projects are worthy investments in the face of climate change, as water may limit sunflowers and other crops as well.

- Food security advocates should consider filing cases on the right to food issue. Since Ukraine’s constitutional court opened up in 2016, there is the opportunity for individuals and civil society at large to try to encourage Ukraine to put into place both the food-oriented social safety net outlined in the SCS and a food and nutrition plan, as well as implement higher wages for agricultural and other rural works through the courts. Because Ukraine is spending so much of its human and capital resources on the conflict with Russia, advocates may have a better shot as showing that the government’s actions are not reasonable and there has been a violation of the constitution.

**GENERAL POLICY RECOMMENDATIONS**

Here, I outline some general guidelines for policymakers who want to improve the right to food in their country through agricultural policy:

- If land rights are a flash point, there needs to be policy put into place that reflects understanding of historical inequalities.
- Policymakers should be sensitive to the issue characteristics of any given problem, and try to understand its origin before putting policy into place.
- Taking into account who farms what and where will help policies be responsive to farmers’ needs as well as to climate change.
- Determine who is vulnerable to food insecurity, and whether they face seasonal, chronic, or acute hunger. Apply policies accordingly.
- Social safety nets and food and nutrition policies that improve access should be included alongside efforts to increase productivity.
- For climate change, early warning systems on natural disasters, agricultural research and extension services, as well as agricultural insurance can support both farmers and consumers.

In order to answer question three, I relied upon the results of question two which pointed to the importance of context in creating better policy. The case study country policy recommendations directly reflect my research into the factors necessary to improve food security; however, there general policymaker guidelines reflect the bigger takeaways about factors that are important to consider when formulating agricultural and climate change policy. Policymakers in Bolivia, Kenya, Nepal, and Ukraine should first learn more about the agricultural system, and then they should create policies that correct past policies or fill policy gaps on key challenges.
FUTURE RESEARCH DIRECTIONS

While this thesis has already gone on for some 200 pages, it could have been at least four times the length given all of the questions remaining. The findings on the conditions in which the right to food is more likely to be upheld in court and create useful support to those suffering is still very much in its infancy. More research is needed to determine whether acute hunger and policy gaps are the conditions that have led to rulings in favor of the plaintiffs in other countries. There are many outstanding questions about OP-ICESCR, including under what conditions countries adhere to the guidance of the rulings and whether it creates a useful mechanism to improving the right to food. We know that generally Nepal’s agricultural and climate change policies are the strongest of the four, but we do not know what about the policies’ creation made it so. Were there important stakeholder negotiations? Were the international experts that helped particularly gifted? Did Nepal’s policymakers have a better understanding of the issues than those in other countries? The answers to these questions has important connections to the conclusion in this thesis about the importance of context to good policy, as it would help us better create the conditions that will produce the best policy.

CONCLUSION

To conclude, I summarize the main findings from this thesis. First, the human right to food is more useful in creating the normative framework in which food insecurity becomes a state failure rather than an individual failing. The influence of ICESCR’s text on national constitutions depends on the circumstances in which the constitution was negotiated, meaning that the constitutionally guaranteed right to food depends more on the country context than it does on ICESCR itself. Agricultural and climate change policies as well as courts’ willingness to create jurisprudence on the right to food do not appear to be clearly connected to the specific constitutional language on this right. The right to food is more justiciable in cases of acute hunger and where there is a policy gap, although there needs to be more research to determine whether this preliminary finding holds across countries. General barriers to justice limit peoples’ ability to seek recourse from the courts in right to food cases; OP-ICESCR has not had any right to food cases, suggesting that there are high barriers here as well.

Thus, while right to food law may be helpful in cases of acute hunger and gross government neglect, agricultural and climate change policies as well as food and nutrition plans do more to fight food insecurity on a daily basis. In order for policymakers to make robust policy, they must know not only how the policy process works in their country, but also the deep historical drivers of current problems. Land rights is an essential area that needs attention for good policy, although what land policy should look like depends on the specific country. Policymakers need to know what the key problems facing agriculture are, as well as the ways they have been addressed in the past and the root of the problem. Understanding
who grows what and where will help target climate change action and agricultural policy interventions. Key crops effecting availability and accessibility should receive support to mitigate and adapt to climate change. In addition, policymakers should understand who makes up the populations vulnerable to disasters, as well as soft points in the system that could lead to acute hunger. As the projections on the effects of climate change become dire as we fail to take strong action to curb greenhouse gas emissions, policymakers and governments cannot afford to wait to act to improve agricultural and climate change policies.

This thesis spent much time investigating in detail the policy and context relevant to each case study. This approach, although initially time consuming, can help strengthen agricultural policy and, ultimately, prevent chronic hunger. While applying templates to improve agricultural policy is useful to an extent, climate change projections show that “to an extent” will likely not be good enough to prevent rising hunger in the future. In the right to food, in climate change and agricultural policies, and in emergency responses, context matters, and should serve as a guiding principle for all of those working to prevent hunger worldwide.

**BIBLIOGRAPHY**


