

HARVESTING FARMLAND:
AN ANALYSIS OF NATIONAL FACTORS CONTRIBUTING TO THE USE OF
LARGE-SCALE LAND ACQUISITIONS AS A FOOD SECURITY STRATEGY

by
Charles Eric Hintz

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ABSTRACT

This thesis analyzes factors contributing to the recent trend of nations purchasing, leasing, or otherwise acquiring agricultural land abroad as a food production resource. These “large-scale land acquisitions” (LSLAs) have been studied extensively; however, scholars have mainly focused on LSLAs’ effects on “host” nations, providing only cursory explanations of “investor” nations’ motivations. This thesis corrects this deficiency in the literature by investigating drivers underlying the selection of a LSLA food security strategy. It conducts controlled comparisons of four case study nations, China, South Korea, India, and Saudi Arabia, which are diverse in terms of size, economics, politics, and other factors, but which all pursue food security LSLAs; it seeks to establish whether these nations share specific motivations for LSLAs, despite their differences, to determine the extent to which nations employing such a strategy, in general, share such motives. The first two chapters compare direct food security drivers of LSLAs in these states; the third examines if these nations share economic paradigms, to test if such paradigms act as an “underlying” stimulus of LSLAs. Regarding food security drivers, this thesis finds that all four face long-term rising and diversifying food product demand, limited production capacity, and reliance on food imports combined with a national preference for self-sufficiency; thus, LSLAs seem to be a method of reducing import dependence and securing access to food. Regarding economic outlook, this thesis finds that all four share an illiberal paradigm, consistent with these states’ aversion to markets. Given significant projected growth in world food demand, these findings could aid in predicting which nations might pursue such a policy in the future.

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INTRODUCTION

Ensuring access to and production of food is a major objective of nations, and national food security has been a critical challenge for states throughout history. Food security is a vital aspect of national security because if states fail to feed their populations, the outcomes are often revolutionary; one key example of this risk, according to many observers, is the fact that often “underlying the very real political aspirations” motivating the Arab Spring uprisings “was outrage at skyrocketing food prices.”¹ Consequently, states are willing to go to great lengths to secure access to agricultural resources and other essential products demanded by their populations, frequently investing heavily in a diverse array of domestic and international food security strategies and agricultural production tactics.

The challenges of food security were especially highlighted during the Global Food Crisis of 2007-2008, when food prices spiked considerably around the world; since then, prices have remained both high and volatile (see Figure 1).² Largely concurrent with this crisis, a “new” strategy for securing access to agricultural resources rose to prominence, the purchase, lease, or acquisition by nations of large tracts of agricultural land in foreign countries, called “large-scale land acquisitions” (LSLAs). This strategy has been pursued by a highly diverse range of states, including China, South Korea, India, Saudi Arabia, Qatar, Libya, Kuwait, Singapore, and others, and has targeted land in

¹ T.A. Kiefer, "Energy Insecurity: The False Promise of Liquid Biofuels," *Strategic Studies Quarterly* 7, no. 1 (Spring 2013): 133.

² United Nations Food and Agriculture Organization, *FAO Food Price Index*, Rome, March 10, 2013.

often-underdeveloped nations in Southeast Asia, South America, Africa, and the Former Soviet Union.³

Much of the academic literature on food security LSLAs has examined these land acquisitions' negative or positive effects on "host" nations or local populations; this focus is warranted, as there is an abundance of legitimate questions (and consequent debate) over whether such strategies benefit or severely harm such populations. On one hand, LSLAs can provide investment and employment in "host states" while also increasing the overall production of food, potentially reducing global food prices.⁴ However, on the other hand, these acquisitions can displace local populations that rely on the land. Host governments often "desire...a quick fix to deep-seated problems" and, hence, "ask few questions when investors come calling;" in their enthusiasm for investment, host governments often "clear the land of existing inhabitants, and often don't even ask for rent."⁵ In one of many significant examples, Ethiopia utilized a "villigization" program to remove local tribes from land on which it "had granted a sixty-year concession on 25,000 acres" to a Saudi Arabian company, Saudi Star.⁶ Consequently, these investments can "disregard users' rights and further marginalize already vulnerable groups," according to LSLAs' detractors.⁷

In light of LSLAs' propensity to displace local populations in developing nations, academic literature has also focused on comparing LSLAs to prior efforts to secure resources that are traditionally considered deleterious for local populations, such as

³ Fred Pearce, *The Land Grabbers: The New Fight Over Who Owns the Earth* (Boston: Beacon Press, 2012), 29-38, 107-109, 129, 192, 202-205, 277.

⁴ Smita Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," *Stanford Journal of International Law* 49 no. 1 (Winter 2013): 101.

⁵ Pearce, *The Land Grabbers: The New Fight Over Who Owns the Earth*, viii.

⁶ Pearce, *The Land Grabbers: The New Fight Over Who Owns the Earth*, 4-5.

⁷ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 101.

colonialism. Scholars often connect LSLAs to 19th century and earlier attempts at “land acquisition by foreigners,” viewing LSLAs as simply “the most recent phenomenon” of “countries...looking to outsource food, feed, and fuel production to stabilize future supplies.”⁸ Due to this comparison with colonialism, scholars also link LSLAs with “mercantilism,” an economic doctrine closely associated with 19th century colonialism that promotes domestic production and exports over trade and imports; mercantilism also heavily favors using economic power as a tool for national and political power.^{9,10} Thus, if LSLAs are truly derived from mercantilist tendencies, there also appears to be a significant “economic ideology” factor driving LSLAs; however, this factor is only minimally addressed in the literature.

Despite extensive research examining numerous facets of LSLAs, scholars have generally provided limited analysis of the motivations of “investor” nations; they have instead tended to focus more on normative questions regarding the benefit, utility, or value of LSLAs to populations at the local and global level. Although studies do extend beyond normative questions, for example, to compare LSLAs to historical trends such as colonialism or mercantilism, investor nations’ goals, objectives, motivations, and domestic circumstances have not been thoroughly investigated by scholars; further, even when investor motivations are described, the literature does not offer an in-depth country-by-country analysis. Moreover, most research tends to consider food security LSLAs as a response to the Global Food Crisis by wealthy and import-dependent nations. While this

⁸ Alexandra Spielloch and Sophia Murphy, "Agricultural Land Acquisitions: Implications for Food Security and Poverty Alleviation," In *Land Grab: The Race for the World's Farmland*, by Michael Kugelman and Susan L. Levenstein, 39-53 (Washington, D.C.: Woodrow Wilson International Center for Scholars, 2009), 40-41.

⁹ Matias E. Margulis, Nora McKeon, and Saturnino M. Borras Jr., "Land Grabbing and Global Governance: Critical Perspectives," *Globalizations* 10 no. 1 (February 2013): 18.

¹⁰ Eric Roll, *A History of Economic Thought* (Englewood Cliffs: Prentice-Hall, Inc., 1953), 62, 84.

narrative partially explains the LSLA trend, as the Global Food Crisis did contribute to and highlight food security challenges faced by many countries, it is only one of many explanations and does not, on its own, depict the myriad detailed, long-term food security and other conditions influencing investor nations. Considering only a single explanation simplifies the phenomenon and reduces predictive power for determining which countries may pursue this strategy in the future.

In order to correct this deficiency in the literature, this thesis systematically investigates the specific motivations shared by the diverse range of investor nations. To do so, it conducts a controlled case study comparison of four nations that all pursue food security LSLAs but which otherwise differ in terms of economics, political systems, size, borders, regional location, and other factors; the nations selected for examination include China, South Korea, Saudi Arabia, and India. The first two chapters examine and compare the direct food security motivations underlying the selection of a LSLA food security strategy by these nations, specifically comparing their food security concerns and objectives, current food security policies, and LSLA implementation methods to determine the extent of overlap among these countries. In light of the findings of these two chapters and the previously noted connections among LSLAs, colonialism, and mercantilism, the third chapter explores the national economic paradigms of these four states; it seeks to determine whether these countries share economic outlooks and whether such outlooks can be considered a “secondary” motivation of LSLAs. Through this analysis, this thesis establishes factors that, in general, appear to motivate nations to pursue food security LSLAs; the findings should improve the predictive power of current literature.

The first chapter seeks to determine if nations pursuing food security LSLAs share specific food security motivations and objectives potentially contributing to LSLAs; it also explores whether such countries' food security strategies and LSLA implementation styles are similar, to ensure that these countries' behaviors are actually comparable. This chapter hypothesizes that those nations employing food security LSLAs will share many parallels in motivations, objectives, and strategies. To test this hypothesis, the first chapter examines two nations as case studies that both pursue food security LSLAs but are otherwise vastly different, China and South Korea. It compares these states' food security conditions, objectives, responses to food security challenges, and LSLA policies, and then examines whether the factors driving the use of food security LSLAs by these countries overlap.

The first chapter finds significant similarities in the food security conditions, objectives, responses, and strategies of these countries. Both face drastically increasing and changing demand for food supplies driven by rising population growth, urbanization, increases in income resulting in consumption shifts to more agriculturally intensive products, and investment in biofuels that raises demand for a variety of crops. In addition, both have a limited supply base to produce agricultural commodities; each has low levels of arable land, decreasing endowments of such land based on urbanization, industrialization, and environmental degradation, a declining agricultural labor force, and plateauing crop yields. Further, these countries share a dependence on agricultural imports for many crops due to their food security conditions but have a national "wariness" of import markets; historically, both have established national targets for agricultural self-sufficiency and have developed long-term policies to promote this self-

reliance or otherwise mitigate the perceived risks of agricultural import markets. Lastly, both nations implement LSLAs in a similar manner; each encourages domestic private or state-run firms to invest in the land acquisitions, buttressed by financial, diplomatic, or other support from the government, in hopes that the food produced through LSLAs will be made available to the home country in a crisis.

The second chapter attempts to determine if the similar drivers of LSLAs found in the first chapter can be considered general among nations pursuing food security LSLAs. Although the first chapter establishes specific motivations in two highly disparate countries leading both to pursue LSLAs, given that both states are located in East Asia and could therefore share many region-based traits, more research was necessary to determine whether these findings are, in fact, general outside East Asia. Thus, the second chapter analyzes two additional case study nations, Saudi Arabia and India; like those of the first chapter, both nations pursue food security LSLAs but are otherwise nominally quite diverse. This chapter examines the food security concerns, objectives, responses, and strategies of these case study nations, according to the same template as the first chapter, and subsequently compares the findings for all four case study nations to determine if the results of the first chapter can be considered general (beyond the East Asian region). This chapter hypothesizes that the outcome of such an analysis will prove in the affirmative.

The findings for the second chapter are essentially the same as those for the first chapter. Both India and Saudi Arabia face rapidly growing populations that are also urbanizing and rising in income; thus, demand for an ever-increasing variety of foods, as well as for food in general, is quickly expanding. Similar to China and South Korea,

Saudi Arabia and India also face low and falling levels of arable land combined with agricultural sustainability challenges. Additionally, Saudi Arabia and India depend on imports for a variety of food products, but they are also averse to import markets and have historically preferred self-sufficiency, when sustainable; they have likewise each implemented a range of policies to support self-sufficiency or to reduce the risks of import dependence. Finally, both share similar LSLA policies with China and South Korea; both encourage domestic firms to invest abroad, supported by diplomatic and financial resources from the government. Given the evident similarities in food security conditions among all four case study nations, it appears that these factors are general among nations pursuing LSLAs; this “generalizability” is further demonstrated by preliminary findings of these same parallels among other LSLA-pursuing nations (described within the second chapter), such as Qatar, Kuwait, and Singapore.

Fundamentally, the first two chapters find specific food security conditions that motivate parallel behaviors and policies among extremely diverse nations. These results appear to be general among nations employing food security LSLAs and, thus, should provide insights for scholars and policymakers in predicting which nations are most likely to choose such a policy in the future. Given the potential effects of LSLAs, which can range from local investment and reduced global food prices to local displacement, food insecurity, and even political revolutions (for example Madagascar, as described in chapters one and two), understanding the direct food security motivations of nations pursuing LSLAs as well as being able to predict which nations might use such policies is critical; the value of this predictive power may rise in the future, since, by some estimates,

global food demand is expected to increase 100-110% by 2050, which could drive more countries to seek LSLAs.¹¹

While understanding the direct food security conditions that tend to motivate LSLAs is valuable, policy responses to a given set of circumstances can vary greatly among countries, even if the circumstances themselves are the same for each country. Thus, in order to understand why a nation chooses a specific policy or strategy, it is vital to examine the “paradigm” or outlook of that country, which ultimately establishes a political environment delimiting the range of possible policy choices. In light of the connections noted in the literature among colonialism, mercantilism, and LSLAs, as well as the first two chapters’ findings regarding the preference for self-sufficiency and aversion to imports in LSLA-pursuing nations, it appears that the most valuable national paradigm through which LSLAs could be examined is political economics; since LSLAs appear to be a state economic intervention tool used to promote food production self-reliance while circumventing import markets, it is likely that policymakers promoting such a strategy do not trust the “free” market and may subscribe to a common economic ideology or overall outlook.

Therefore, the third chapter investigates the economic outlooks of the four case study nations previously examined to determine if there exist parallels among the outlooks of nations pursuing food security LSLAs; it hypothesizes that all four nations will subscribe to an economic outlook that is “illiberal,” “mercantilist,” or “nationalist” in nature, given LSLAs’ connection with colonialism and mercantilism. To conduct this analysis, this chapter explores the economic histories and current policies of each case

¹¹ David Tilman et al., "Global food demand and the sustainable intensification of agriculture," *Proceedings of the National Academy of Sciences of the United States of America* 108, no. 50 (December 2011): 20260.

study nation and subsequently compares the findings. While this chapter does not attempt to prove that economic outlook is a “direct” motivator LSLAs in the same capacity as food security concerns, it does seek to establish whether a national economic paradigm is shared among all nations pursuing such a strategy. A shared paradigm would indicate that all four have similar policy environments that could influence national decision-making and determine the type of policies that could be considered; this parallel would thus establish whether economic outlook could be considered a “secondary” motivator of LSLAs (with food security concerns as a “primary” motivator”).

The third chapter confirms the hypothesis that LSLA-pursuing nations maintain a generally illiberal economic paradigm. All four nations demonstrate significant histories of economic illiberalism; China has been historically communist, India has been socialist, South Korea’s economic growth has been characterized by heavy state involvement, and Saudi Arabia has used oil revenues to achieve domestic and international political goals. Moreover, each of these nations retains numerous vestiges of its illiberal past, which carry through to modern policies. For example, all four allow a significant role in the economy for state-owned enterprises, utilize a range of trade and investment barriers to promote domestic industry and minimize foreign investment, pursue opaque sovereign wealth funds that can be used for geopolitical goals, and employ “mercantilist” resource security strategies, such as encouraging state-owned companies to purchase or acquire resources abroad (similar to LSLAs). Fundamentally, all adhere to an illiberal paradigm, encouraging the state to intervene in economic matters for national or political benefit; in light of these findings, it seems that, while the primary drivers are food security-based, economic illiberalism can be considered a general “secondary” motivation of LSLAs.

In essence, the purpose of this thesis is to establish both primary and secondary conditions that, in general, motivate nations to pursue food security LSLAs. As described previously, it is structured in three chapters, with each exploring a slightly different aspect of the underlying drivers of LSLAs; because each chapter conducts a unique analysis and, therefore, calls on largely disparate bodies of literature, each chapter in the portfolio conducts its own review of the literature relevant to its investigation. This thesis ultimately achieves two fundamental goals. First, it contributes to the academic literature by correcting a deficiency in the research on LSLA investor nation motivations; second, given anticipated increases in world food demand, it addresses the tangible challenge of providing policymakers and scholars the ability to predict which nations might use a LSLA policy and what conditions may motivate their choice.

CHAPTER 1

Introduction

George Washington once stated, “I know of no pursuit in which more real and important service can be rendered to any country than by improving its agriculture.”¹² Feeding the population is a major national security challenge and objective for nations, and throughout time countries have implemented a wide range of plans to secure access to food and food-producing resources. Whether investing in agricultural development, subsidizing farmers, or directly expanding territory, governments frequently work to strengthen their state’s productive capacity in agriculture to ensure “food security.”

In recent years, however, there has been significant growth of a “new” strategy for ensuring self-sufficient food production: government-supported purchases or long-term leases of agricultural land. These land deals, known as large-scale land acquisitions, have occurred throughout the world sponsored by numerous investor countries; for example, claims have been made that China is poised to lease from Ukraine “three million hectares, an area equivalent to Belgium or Massachusetts” as part of a “50-year plan.”¹³ This strategy, criticized as “land grabbing,” is often cited for deleterious effects on local “host nation” populations, and is hence compared to 19th century colonialism.¹⁴ According to much of the literature, the use of this new strategy appears to be related to attempts by import-dependent countries to hedge against the price volatility experienced acutely during the Global Food Crisis of 2007-2008. However, is this the full story?

¹² Robert Andrews, *The Columbia Dictionary of Quotations* (New York: Columbia University Press, 1993), 319.

¹³ Alex Spillius, "China 'to rent five per cent of Ukraine'," *The Telegraph*, September 24, 2013.

¹⁴ Spillius, "China 'to rent five per cent of Ukraine'."

The types of countries that invest in LSLAs for food security are wide-ranging; claims of “land grabbing” have been made against nations ranging from China and India to South Korea and the Gulf states.¹⁵ Due to the significant differences among these investor countries, this chapter seeks to determine if there are specific national factors shared by investor countries that lead to a strategy of LSLAs for food security purposes; if so, it will identify and examine these factors. Additionally, for those nations that utilize LSLAs, this chapter will investigate how LSLAs fit into the broader context of an overall national food security strategy. In order to conduct this analysis, this chapter will evaluate two widely different countries, China and South Korea (Korea), as case studies.

Literature Review

Throughout history, humanity has struggled with its inescapable need to consume resources scarce in nature. Though many resources are “scarce,” one of the most critical resources for survival and national stability is food. As populations grow and change, “food security” becomes a progressively more substantial challenge for nations, requiring increasingly innovative strategies. One recent national response to the food security issue, discussed at length in this chapter, is large-scale land acquisitions, which involve nations purchasing or leasing tracts of agricultural land abroad. In order to understand this practice, this section first explores the foundations, causes, and responses to the food and resource scarcity issue. After analyzing these, this section examines current literature on LSLAs and determines potential areas of future scholarly investigation.

Food Scarcity Causes and Responses

Academic literature generally agrees that the central driver of the concept of “scarcity” is human demand, coupled with some limit on world supply based on the

¹⁵ Spillius, "China 'to rent five per cent of Ukraine'."

Earth's endowment of a particular resource. As Homer-Dixon explains, "resource scarcity...is determined not just by absolute physical limits, but also by preferences, beliefs, and norms."¹⁶ Additionally, as Daoud explains, "scarcity is a property that emerges in relation to human activity or social provisioning."¹⁷ Based on this human demand-focused view of scarcity, many scholars of food and resource security evaluate the effects of population growth on scarcity.

One of the earliest analyses of population growth and food scarcity is Thomas Malthus' *An Essay on the Principles of Population*, written in 1789. Malthus postulates that because "population, when unchecked, increases in a geometrical ratio" and "subsistence increases only in an arithmetical ratio," food scarcity provides "a strong and constantly operating check on population from the difficulty of subsistence."¹⁸ Although Malthus' argument is often criticized for failing to account for agricultural productivity increases through technology, it has remained central to the food security debate for future academic generations.¹⁹ Throughout the 20th century, neo-Malthusians have predicted shortages due to population growth,²⁰ for example, Paul Ehrlich predicted "a minimum of ten million people...will starve to death during each year of the 1970s" due to overpopulation.²¹ Regardless of individual stances, it is generally agreed that population growth is a key component of food scarcity, especially since Malthusian fears

¹⁶ Thomas F. Homer-Dixon, "Environmental Scarcities and Violent Conflict: Evidence from Cases," *International Security* 19 no. 2 (Summer 1994): 9.

¹⁷ Adel Daoud, "Robbins and Malthus on Scarcity, Abundance, and Sufficiency: The Missing Sociocultural Element," *The American Journal of Economics and Sociology* 69 no. 4 (October 2010): 1207.

¹⁸ Thomas R. Malthus, *An Essay on the Principle of Population* (New York: Oxford University Press, 2008), 13.

¹⁹ Charles H. Eccleston, "Peak Food?" *Environmental Quality Management* 101 no. 9 (Spring 2009): 10.

²⁰ Eccleston, "Peak Food?" 10.

²¹ Paul Ehrlich, *The Population Bomb* (Cutchogue: Buccaneer Books, 1968), 3.

continue to be cited by modern scholars including Siegenbeek van Heukelom, Daoud, and Verpoorten.^{22,23,24}

In conjunction with population growth, an additional cause of food demand and scarcity cited by many scholars is demographic and consumption changes. For example, as Naylor and Falcon explain, “a human population nearing 7 billion, coupled with increased incomes in many developing countries, has created greater demand for meat, vegetable oils, and other high-end food products.”²⁵ Similarly, Gunasekera, Newth, and Finnigan argue, “if developing countries converge to the dietary patterns of developed countries, there will be a significant increase in the consumption of meat and dairy products.”²⁶ The literature suggests that rising incomes shift national consumption tastes to dairy and meat;²⁷ such trends increase food scarcity since cattle (and livestock) “[require] massive amounts of grain for feed.”^{28,29}

Lastly, scholars note environmental drivers of scarcity. For example, Homer-Dixon cites human-based “environmental change” and “unequal distribution of resources” as causing scarcity, in addition to “population growth,” specifically for “renewable

²² Tim Siegenbeek van Heukelom, "A Human Approach to Food Security: Land Grabs in the Limelight," *Journal of Human Security* 7 no. 1 (March 2011): 11.

²³ Daoud, "Robbins and Malthus on Scarcity, Abundance, and Sufficiency," 1208.

²⁴ Marijke Verpoorten, "Leave none to claim the land: A Malthusian catastrophe in Rwanda?" *Journal of Peace Research* 49 no. 4 (July 2012): 1.

²⁵ Rosamond L. Naylor and Walter P. Falcon, "Food Security in an Era of Economic Volatility," *Population and Development Review* 36 no. 4 (December 2010): 698.

²⁶ Don Gunasekera, David Newth, and John Finnigan, "Reconciling the Competing Demands in the Human-Earth System: Ensuring Food Security," *Economic Papers* 30 no. 3 (September 2011): 299.

²⁷ Gunasekera, Newth, and Finnigan, "Reconciling the Competing Demands in the Human-Earth System," 299.

²⁸ Xinhua Zhang, "How China, A Rising World Power Deals with Current Crisis and Challenges Facing the World," *International Security Conference*, Munich: Schoeler Consulting Group/Shanghai Vision Consultants Co., Ltd., 2009, 6.

²⁹ Donald L. Sparks, "Large Scale Land Acquisitions in Sub-Saharan Africa: The New Scramble," *International Business & Economics Research Journal* 11 no. 6 (June 2012): 687.

resources” such as “fresh water” and “fertile soils.”³⁰ Many works, such as by Spieldoch and Murphy and by Dike and Dike have reiterated Homer-Dixon’s findings, for example regarding environmental change and degradation.^{31,32} Taken together, the factors of population growth, demographic and consumption shifts, environmental change or degradation, and the unequal distribution of resources appear to be the major drivers of food and resource scarcity.

LSLAs are one response to resource security concerns; however, nations have utilized myriad strategies to secure access to food and other natural resources. Historically, according to several scholars, colonization was a major response to resource security concerns. As explained by Spieldoch and Murphy, “colonization of farmland by foreign settlers dates back thousands of years” and “the colonizers appropriated much of the most fertile land for themselves;”³³ according to Cotula, “colonial administrators used their control over the land to open up Africa’s resources for settlers and companies.”³⁴ This literature suggests that nations acquiring land abroad for agricultural and resource security is not a new phenomenon.

Additionally, three major interrelated mechanisms for “responding” to food security issues are demographic alterations, consumption changes, and expanded food production. One of the primary works advocating these methods is David Ricardo’s *The Principles of Political Economy & Taxation*, written in 1817 in part as a critique of Malthus’ prediction of population-induced famine. Ricardo argues, “it is only because the

³⁰ Homer-Dixon, "Environmental Scarcities and Violent Conflict: Evidence from Cases," 8.

³¹ Spieldoch and Murphy, "Agricultural Land Acquisitions," 45-46.

³² Enwere Dike and Ngozi I. Dike, "Economics and Environmental Resources: Review," *International Business Research* 5 no. 12 (November 2012): 164-165.

³³ Spieldoch and Murphy, "Agricultural Land Acquisitions," 40.

³⁴ Lorenzo Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System* (New York/London: Zed Books, 2013), 17-18.

expenditure of the people takes [the form of larger families], that the market price of necessaries (food) exceeds the natural price, and that the quantity of food required is produced.”³⁵ Fundamentally, Ricardo asserts that population and food production levels are directly related; when food becomes scarce, its price will rise and people will farm more or reproduce less.³⁶ Much of the contemporary literature in support of LSLAs implements this reasoning; for example, Hallam contends that agricultural investment abroad based on domestic food demand could lead to “an increase in food supplies for the domestic market and for export.”³⁷ Similarly, Robertson and Pinstrup-Andersen assert, “investment in the agriculture of a developing country has the potential to raise productivity [and] meet the nutritional needs of the population.”³⁸

Other national responses to food security concerns expressed in the literature include, according to Hallam, “the creation of regional food reserves, financial instruments to manage risk, bilateral agreements including counter-trade (barter arrangements), and the improvement of international food market information systems.”³⁹ Further, investment in agricultural technological advancements such as fertilizers may aid in assuaging food security concerns.⁴⁰ Rosenberg, for example, argues, “one of the main economic consequences of scientific progress is to enlarge continually the range of

³⁵ David Ricardo, *The Principles of Political Economy & Taxation* (London: J.M. Dent & Sons Ltd., 1933), 278.

³⁶ Ricardo, *The Principles of Political Economy & Taxation*, 278.

³⁷ David Hallam, "International Investments in Agricultural Production," in *Land Grab: The Race for the World's Farmland*, by Michael Kugelman and Susan L. Levenstein (Washington, D.C.: Woodrow Wilson International Center for Scholars, 2009), 33.

³⁸ Beth Robertson and Per Pinstrup-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" *Food Security* 2 no. 3 (September 2010): 279.

³⁹ Hallam, "International Investments in Agricultural Production," 31.

⁴⁰ Eccleston, "Peak Food?" 11.

substitution possibilities which confront advanced industrial economies.”⁴¹ In sum, the academic literature demonstrates that there are many possible responses to the food and resource security issue, only one of which is the strategy of LSLAs.

Large-Scale Land Acquisitions

Over the past half-decade, there has been significant growth in the practice of large-scale land acquisitions, characterized by Spielfoch and Murphy as “negotiations on the part of governments and private firms looking to sign agreements that would confer ownership of, or long-term leases on, land abroad.”⁴² In the case of leases, the duration, according to Cotula and Vermeulen, “ranges from short terms to 99 years.”⁴³ These land deals, described throughout much of the literature as “land grabs,” have sparked significant controversy in the academic and non-academic community specifically over their scope and effects on local “host nation” populations.⁴⁴ This section focuses on current controversies in the literature, then reviews the general drivers of LSLA strategies, and lastly illustrates LSLAs’ relation to past colonialism and modern economic liberalism.

One significant cause of controversy in the current scholarship involves the scope of LSLAs. Uncertainty regarding scope appears to be based on the fact that, according to Cotula, “most of the estimates of scale...are derived from varying combinations of two types of sources: international review mainly based on media and research reports...and systematic national inventories based on official government records.”⁴⁵ At one end of the spectrum, media reports and those by Non-Governmental Organizations (NGOs) such

⁴¹ Nathan Rosenberg, "Innovative Responses to Materials Shortages," *Natural Resources* 63 no. 2 (May 1973): 118.

⁴² Spielfoch and Murphy, "Agricultural Land Acquisitions," 39.

⁴³ Lorenzo Cotula and Sonja Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," *International Affairs* 85 no. 6 (November 2009): 1240.

⁴⁴ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1233.

⁴⁵ Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System*, 37.

as Genetic Resources Action International (GRAIN), Oxfam, etc. tend to display larger estimates, especially since they may be produced “with the aim of promoting public accountability.”⁴⁶ For example, Oxfam estimated in 2011 that “as many as 227 million hectares of land – an area the size of Western Europe – has been sold or leased since 2001, mostly to international investors.”⁴⁷ On the other hand, inventories of land deals by host nation governments “tend to be lower than [data] based on media reports;” according to Cotula, “in Mozambique, for example, media sources arrived at more than ten million hectares acquired between 2008 and 2010, while a national inventory for the period 2004-09 calculated a figure closer to 2.7 million.”⁴⁸ Other organizations have attempted to include more rigorous estimates, such as the “Land Matrix,” which cross-references “research papers and policy reports by international and local organisations and NGOs,” personal crowd-sourced information, “field-based research projects,” “official government records,” “company websites,” and “media reports.”⁴⁹ The Land Matrix currently estimates that 31.9 million hectares (ha), 123,167 square miles, have been included in LSLAs.⁵⁰

A second major question in the literature is the effect of LSLAs on local “host nation” populations. There tend to be two overarching viewpoints on this subject, based primarily on whether the benefits of LSLAs outweigh the costs. This viewpoint divide is well categorized by Narula, who states, “proponents [of LSLAs] argue that these investments can support economic development in host states while boosting global food

⁴⁶ Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System*, 49.

⁴⁷ Oxfam, *Land and Power: The growing scandal surrounding the new wave of investments in land*, Oxfam Briefing Paper (Oxford: Oxfam GB, 2011), 1.

⁴⁸ Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System*, 42.

⁴⁹ Land Matrix, *About Land Matrix*, 2013, <http://www.landmatrix.org/about/#what-is-the-land-matrix>.

⁵⁰ Land Matrix, *Land Matrix*, 2013, <http://www.landmatrix.org/>.

production,” however, “critics charge that these ‘land grabs’ disregard users’ rights and further marginalize already vulnerable groups.”⁵¹ Most scholars recognize the potential for either outcome and, therefore, argue for a variety of methods to increase benefits to local populations; such scholars include Cotula and Vermeulen, Narula, Telesetsky, and Siegenbeek van Heukelom.^{52,53,54,55} Cotula and Vermeulen assert that “greater transparency, effective regulation, skillfully negotiated contracts, and robust social and environmental impact assessments and management systems” must exist “to promote national and local development.”⁵⁶ Similarly, Siegenbeek van Heukelom suggests, “investments in agricultural land should ultimately feature a clear ethical component aimed at emancipation, for instance, a reciprocity of rights.”⁵⁷

In contrast to LSLAs’ scope and host nation effects, scholars typically agree on the nations and actors involved. According to Robertson and Pinstrup-Andersen, “the most common characteristics of foreign investors in the acquisition of land are capital-rich, natural-resource poor Arab and East Asian governments and corporations.”⁵⁸ Cotula and Vermeulen add to this analysis, asserting, “quantitative inventories suggest that key investor countries are located in Europe and Africa as well as the Gulf and South and East Asia.”⁵⁹ Within this category, according to Sparks, “there are various types of buyers, including state-owned enterprises, sovereign wealth funds, foreign and domestic private

⁵¹ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 101.

⁵² Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1245.

⁵³ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 101.

⁵⁴ Anastasia Telesetsky, "Resource Conflicts over Arable Land in Food Insecure States: Creating an United Nations Ombudsman Institution to Review Foreign Agricultural Land Leases," *Goettingen Journal of International Law* 3 no. 2 (June 2011): 291.

⁵⁵ Siegenbeek van Heukelom, "A Human Approach to Food Security: Land Grabs in the Limelight," 15.

⁵⁶ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1245.

⁵⁷ Siegenbeek van Heukelom, "A Human Approach to Food Security: Land Grabs in the Limelight," 15.

⁵⁸ Robertson and Pinstrup-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" 273.

⁵⁹ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1235.

sector investors, and central government agencies.”⁶⁰ Moreover, according to Cotula and Vermeulen, many states pursuing food security LSLAs are in the “Gulf and East [Asia]” and “heavily dependent on food imports.”⁶¹ Nations hosting LSLAs are often those with “cheap and abundant farmland, particularly in Africa,” though also in Southeast Asia and the Former Soviet Union.^{62,63,64}

There is also overall academic agreement about the general drivers of a LSLA strategy. As described by Borras Jr. and Franco, Spieldoch and Murphy, as well as others, there are fundamentally two interrelated drivers behind land grabbing: biofuel (such as corn and sugar-based ethanol or vegetable oil-based biodiesel) production and food security.^{65,66} In terms of biofuels, the literature agrees that there has been a recent upsurge in demand for biofuels, as well as for the agricultural land to produce them, due to “biofuels support policies that mandate a minimum market for the industry” and “demand for energy to fuel growth in emerging economies.”^{67,68} In terms of food security, there appears to be demand for agricultural investments from “resource-poor but cash rich” nations, especially those with “fast-growing populations” and dependency on “international markets for their food supply.”^{69,70} According to Spieldoch and Murphy,

⁶⁰ Sparks, "Large Scale Land Acquisitions in Sub-Saharan Africa: The New Scramble," 687.

⁶¹ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1235.

⁶² Robertson and Pinstrup-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" 271.

⁶³ Telesetsky, "Resource Conflicts over Arable Land in Food Insecure States," 285.

⁶⁴ Carl Atkin, "Investment in Farmland in Central and Eastern Europe and the Former Soviet Union - Current Trends and Issues," in *Land Grab: The Race for the World's Farmland*, by Michael Kugelman and Susan L. Levenstein (Washington, D.C.: Woodrow Wilson International Center for Scholars, 2009), 110.

⁶⁵ Spieldoch and Murphy, "Agricultural Land Acquisitions," 42.

⁶⁶ Saturnino M. Borras Jr. and Jennifer C. Franco, "Global Land Grabbing and Trajectories of Agrarian Change: A Preliminary Analysis," *Journal of Agrarian Change* 12 no. 1 (January 2012): 37.

⁶⁷ Spieldoch and Murphy, "Agricultural Land Acquisitions," 43.

⁶⁸ Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System*, 72.

⁶⁹ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 112.

⁷⁰ Robertson and Pinstrup-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" 273.

“investing countries for the most part lack arable land and, especially, sufficient fresh water to grow what they need domestically.”⁷¹ Food security has also become an increasing concern since, according to Sparks and Eccleston, crop yields in recent years have been plateauing, which could potentially lead to a Malthusian-type crisis.^{72,73} These biofuel and food security issues are also extensively interconnected, according to Hojjat, because “both compete for the same inputs;” “200kg of maize” could either fill one gas tank with biofuel or “feed one person for a year.”⁷⁴

Research also concurs that a primary factor leading to the recent surge in LSLAs is the Global Food Crisis of 2007-2008. During this period, both oil and food prices increased greatly; according to Naylor and Falcon, “world prices (in dollars) of...wheat, rice, maize, and petroleum – roughly tripled in real terms during the first half of 2008.”⁷⁵ These price increases, according to Spieldoch and Murphy, “were the result of a combination of supply problems, protectionist moves by some of the main suppliers to world markets, and the new demand created by biofuels support policies.”⁷⁶ These causes have been reiterated and expanded upon by additional scholars, for example Conceicao and Mendoza, who discuss the effects of financial speculation, high oil prices, government biofuel policies, and agricultural productivity.⁷⁷ Further, the biofuel, food, and oil price increases appear directly related, since, according to scholars such as Naylor and Falcon, “petroleum prices also serve as a reference point for the profitability of

⁷¹ Spieldoch and Murphy, "Agricultural Land Acquisitions," 41.

⁷² Sparks, "Large Scale Land Acquisitions in Sub-Saharan Africa: The New Scramble," 687.

⁷³ Eccleston, "Peak Food?" 11.

⁷⁴ Tahereh Alavi Hojjat, "Global Food Crisis - Food versus Fuels," *Competition Forum* 7 no. 2 (December 2009): 422.

⁷⁵ Naylor and Falcon, "Food Security in an Era of Economic Volatility," 694.

⁷⁶ Spieldoch and Murphy, "Agricultural Land Acquisitions," 42-43.

⁷⁷ Pedro Conceicao and Ronald U. Mendoza, "Anatomy of the Global Food Crisis," *Third World Quarterly* 30 no. 6 (September 2009): 1168-1171.

maize-based ethanol, and hence affect the demand for and price of maize.”⁷⁸ Therefore, many nations investing in LSLAs appear to be trying to hedge against price volatility “in order to secure reliable food sources for their domestic populations.”⁷⁹ Though the literature has not focused on investors on a country-by-country basis, the above analysis demonstrates that some of the factors that should cause countries to seek land abroad are: rising populations, reliance on imports for food, domestic crop yield stabilization, growing energy needs, biofuel production policies, and shifting or growing food needs.

Lastly, while LSLAs have roots in colonialism, they also rely on modern liberal economic principles and institutions. Thus, many scholars, such as Margulis, McKeon, and Borras Jr., view LSLAs as “a unique world historical event that reveals a nascent shift in the global political economy,” and as a “de-territorialization and commodification of sovereign national territory.”⁸⁰ The literature also sees these deals as differing from historic colonialism. According to Kugelman, “they are concluded on the basis of agreements instead of through the barrel of a gun” and involve “more government-led investment than in the past,”⁸¹ similarly, as described by Siegenbeek van Heukelom, LSLAs are “two-party deals between the investing company and the hosting government,” even if “other affected parties,” such as local inhabitants, are “absent in the majority of deals.”⁸² However, as explained by Margulis, McKeon, and Borras Jr., although LSLAs are “facilitated by the institutions and practices of neo-liberal globalization,” often they

⁷⁸ Naylor and Falcon, "Food Security in an Era of Economic Volatility," 703.

⁷⁹ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 112.

⁸⁰ Margulis, McKeon, and Borras Jr., "Land Grabbing and Global Governance: Critical Perspectives," 18.

⁸¹ Michael Kugelman, "Introduction," in *Land Grab: The Race for the World's Farmland*, by Michael Kugelman and Susan L. Levenstein (Washington, D.C.: Woodrow Wilson International Center for Scholars, 2009), 4.

⁸² Siegenbeek van Heukelom, "A Human Approach to Food Security: Land Grabs in the Limelight," 10.

are conducted for “‘security mercantilism’ that may have illiberal ends.”⁸³ Hence, one possible trait of LSLA investor nations may be the *use* of liberal economic institutions and *adherence* to an “illiberal” national economic outlook.

Shortcomings and Contributions

Most literature on LSLAs appears to focus on these investments’ key controversies. This focus results in an emphasis on host states, since the controversies are mainly centered on these locations; there is detailed analysis of LSLAs’ content and scope, local and global benefits and costs, and “colonial” or economic elements. However, few studies examine individual investor nations and the common traits that might motivate land investments abroad for food security. While scholars do offer cursory descriptions of some factors common to investor states, they do not provide in-depth analyses of these nations or explain why they choose LSLAs over (or in conjunction with) other food security strategies. Thus, this chapter seeks to provide greater insights into common factors in investor states that may lead to the use of LSLAs as a food security strategy; to do so, it examines two nations as case studies that both use LSLAs but are otherwise relatively dissimilar, China and South Korea.

Theory and Hypothesis

This chapter hypothesizes that those countries utilizing LSLAs as a food security strategy share many common characteristics, specifically regarding their food security concerns and response strategies. Further, it hypothesizes that LSLAs play a supporting role in an overall food security strategy, and that among countries using LSLAs for food security these overall strategies are similar. By investigating this hypothesis, it attempts to identify which common national factors, specifically those concerning food and

⁸³ Margulis, McKeon, and Borras Jr., "Land Grabbing and Global Governance: Critical Perspectives," 18.

agricultural resource constraints, might lead to the selection of LSLAs as a food security strategy. Thus, to test this hypothesis, this chapter analyzes two countries as case studies that have, on the surface, very different national circumstances but which both utilize LSLAs: China and South Korea.

As the Literature Review demonstrates, the food security concerns that may be shared, even by vastly dissimilar countries, might include population-based factors, diet and consumption changes, or environmental and land-based factors. These countries, regardless of their differences, will likely share similar natural resource or financial endowments and may be heavily dependent on food imports. Further, nations utilizing LSLAs may share similar overall food security strategies, within which LSLAs will likely play a significant but supporting role. Such strategies might include the use of food reserves, bilateral trade agreements, and technological investment in agriculture. Further, these countries may be likely to combine “realist” with “liberal” economic policies.

Methodology

As discussed in the previous section, this chapter investigates which national factors lead countries to pursue a LSLA food security strategy. To determine this, it compares the food security concerns and responses of two countries as case studies that initially appear to have vastly different national characteristics but which both utilize LSLAs, China and South Korea. This chapter then examines the areas of overlap between these disparate countries and explores which mutual factors are most critical to the choice of a LSLA strategy. Given the different starting points of these countries, a controlled comparison of the areas of overlap, specifically those regarding food security concerns,

should provide insights into the selection of LSLAs as a food security strategy. All main findings are as of November 2013.

This chapter selects China and South Korea as case studies because these states are significantly different by most measures but share their use of food security LSLAs. According to the CIA World Factbook, China is a “Communist State” with 1,349,585,838 people and a total land area of 9,596,961 square kilometers.⁸⁴ The country borders 14 states, Afghanistan, Bhutan, Burma, India, Kazakhstan, North Korea, Kyrgyzstan, Laos, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Vietnam.⁸⁵ It has a Gross Domestic Product (GDP) of \$12.61 trillion, a GDP growth rate of 7.8%, and a GDP per capita of \$9,300, the 124th highest in the world.⁸⁶ In contrast, South Korea is a “Republic” with 48,955,203 people (this estimate varies with World Bank data) and a total area of 99,720 square kilometers.⁸⁷ South Korea borders one state, North Korea.⁸⁸ It has a GDP of \$1.64 trillion, a GDP growth rate of 2%, and a GDP per capita of \$32,800, the world’s 43rd highest.⁸⁹

Although these nations differ greatly in factors such as demographics, size, economics, geography, and politics, this chapter explores similarities in their food security concerns and strategies that lead to the use of LSLAs. Further, it compares these countries’ LSLA implementation methods to ensure that their LSLAs are actually similar. If the results demonstrate significant areas of overlap between Chinese and Korean food security concerns, strategies, and LSLA implementation, then the concerns and strategy

⁸⁴ U.S. Central Intelligence Agency, *The World Factbook - China*, September 10, 2013, <https://www.cia.gov/library/publications/the-world-factbook/geos/ch.html>.

⁸⁵ U.S. Central Intelligence Agency, *The World Factbook - China*.

⁸⁶ U.S. Central Intelligence Agency, *The World Factbook - China*.

⁸⁷ U.S. Central Intelligence Agency, *The World Factbook - South Korea*, September 10, 2013, <https://www.cia.gov/library/publications/the-world-factbook/geos/ks.html>.

⁸⁸ U.S. Central Intelligence Agency, *The World Factbook - South Korea*.

⁸⁹ U.S. Central Intelligence Agency, *The World Factbook - South Korea*.

parallels should play a role in these states' choice of food security LSLAs. If similarities cannot be established, then the choice of LSLAs may be driven by other factors.

Although this chapter tests commonalities between the food security concerns of vastly different countries to determine if these parallels result in similar policies, any results which demonstrate such parallels may not uncover all possible causes of LSLAs as a food security strategy. This chapter primarily serves to determine if common food security factors play a role in LSLAs, however, there may be additional factors beyond this chapter's scope. For example, while the case study nations have been selected specifically for their apparent differences, there may be similarities between these nations not tested by this chapter that contribute to LSLAs, such as social, political, economic, or cultural parallels. Future research into such comparisons may be valuable in uncovering other causes of the LSLA phenomenon.

One key challenge this research faces is data availability, especially due to its case study-based methodology. This chapter individually analyzes countries' conditions and policies; thus, availability of data may vary by nation, largely due to the extent of English-language sources in each state. This chapter seeks comprehensive data for every case study despite this challenge; however, the specific sources used for each may vary.

Lastly, to define terms, food security concerns involve any major factors limiting access to food at the national level. As the Literature Review illustrates, these factors could include demand issues, such as population or diet patterns, or supply issues, such as global import market conditions or domestic endowments of land, water, or other agricultural resources. Food security strategies involve any national response to food supply limits or risks, such as imports, food reserve programs, trade agreements, or

LSLAs. Finally, LSLAs include any land deals conducted via a directed national effort to produce agricultural products within foreign countries for food security, regardless of whether these deals are operationally implemented by governments or private enterprise.

Results

Despite considerable differences, China and South Korea have both pursued LSLA strategies to achieve greater security in food supply sources. Further, these nations have implemented their strategies in a similar manner, encouraging national companies to invest abroad in agricultural land and production. This section will cover, for each nation, the food security circumstances leading to the selection of a LSLA food security strategy and will then analyze how LSLAs fit within an overall food resource strategy context.

China – Food Security Concerns

China faces a number of challenges and concerns regarding its food security. These challenges can fundamentally be divided into two categories, demand-based issues and supply-based issues. This section explores these categories of challenges, both of which contribute to China's selection of specific food security strategies.

As discussed above, scarcity is largely based on human demand; likewise, rising or changing food demand is a major concern for China's food security. China contains approximately 21% of the world's people and its population projected to peak at 1.4 billion by 2025 (a projection that may increase given China's recent relaxation of its "One Child Policy").^{90,91,92} Not only will these additional people need food, but also, due to projected rising incomes and the urbanization of "some 200 million rural residents"

⁹⁰ Brad Gilmour and Bruce Phillips, "China: An Agri-Food Prospectus," *Transnational Corporations Review* 4, no. 1 (March 2012): 56.

⁹¹ Hon-Ming Lam et al., "Food supply and food safety issues in China," *Lancet* 381 (June 2013): 2044.

⁹² Mariano Castillo, "China to ease one-child policy, abolish labor camps, report says," *CNN*, November 16, 2013.

over the next 15-20 years, consumption patterns within China will change to satisfy new diets.⁹³ Over this period, for example, “a more meat-oriented diet will appear;” such a shift will require the production of “an additional 80 to 100 million tons of grain” for animal feed, since production of “one ton of poultry requires two tons of grain while one ton of pork requires four tons.”^{94,95} The trend of increasing meat-based demand has already been demonstrated over the 2000-2010 period, with higher income individuals in China eating “50 per cent more of pork, beef, mutton and poultry meats” and “significantly more dairy products and aquatic products.”⁹⁶

Grain demand has also been driven up by biofuel production to satisfy Chinese fuel needs. According to Koizumi, “from 1990 to 2008, the market for passenger cars grew from 0.51 to 9.38 million” in China, now “the second-largest car market in the world;” China is now “the second-largest petroleum consumer in the world” after the U.S.⁹⁷ To partially satisfy this demand, given its limited oil resources, China has become “the third-largest bioethanol-producing country,” mainly using corn and sometimes wheat as feedstock; it also produces biodiesel from vegetable oil or used cooking oil.⁹⁸ The need for feedstock raises demand and, thus, prices of corn, wheat, and vegetable oil; further, these feedstock crops also compete with food crops for land and agricultural resources.⁹⁹

China also faces significant supply-based challenges to its food security, which limit its agricultural productive capacity. First, although accounting for about a fifth of

⁹³ Yongsong Liao, "China's Food Security," *The Chinese Economy* 43, no. 3 (May-June 2010): 105.

⁹⁴ Liao, "China's Food Security," 105.

⁹⁵ Zhang, "How China, A Rising World Power Deals with Current Crisis and Challenges Facing the World," 6.

⁹⁶ Li-Juan Cao, et al., "Recent Food Consumption Trends in China and Trade Implications to 2020," *Australian Agribusiness Review* 21, no. 1 (2013): 17.

⁹⁷ Tatsuji Koizumi, "Biofuel and food security in China and Japan," *Renewable and Sustainable Energy Reviews* 21 (January 2013): 103.

⁹⁸ Koizumi, "Biofuel and food security in China and Japan," 103-104.

⁹⁹ Koizumi, "Biofuel and food security in China and Japan," 108.

the world's population, China "has only 7-9% of the world's arable land," and its "arable land per person is well below the global average."¹⁰⁰ Further, "the area of China's arable land has been decreasing for the past 50 years" due to environmental degradation, urbanization, and industrialization,¹⁰¹ according to the World Bank, China's arable land area has decreased from approximately 122 million ha in 2004 to 111 million in 2011.¹⁰²

Beyond land availability, land-quality and capacity are also formidable concerns. Much of China's arable land is "subject to environmental stresses such as drought" and, in fact, "only about 40% is classified as the highest grade (most suitable for crop production)."¹⁰³ Further, crop yield increases have diminished as "new seed technology and modern farming practices...have run their course, and overuse of chemical inputs has led to deteriorating soils."¹⁰⁴ Moreover, irrigation is vital to China's crop production, accounting for "75% of the country's grain production" and "more than 60% of the country's total water consumption," making droughts and water scarcity significant challenges.¹⁰⁵ This concern is critical, as China's climate is disaster-prone; "China suffers from crop losses equal to about 10 per cent of the total grain output each year as a result of bad weather and spoilage."¹⁰⁶

¹⁰⁰ Lam et al., "Food supply and food safety issues in China," 2045.

¹⁰¹ Lam et al., "Food supply and food safety issues in China," 2045.

¹⁰² The World Bank, *Data - Arable Land*, 2013, <http://data.worldbank.org/indicator/AG.LND.ARBL.HA/countries/1W-CN?display=graph>.

¹⁰³ Lam et al., "Food supply and food safety issues in China," 2045.

¹⁰⁴ Katherine Baldwin and Joanna Bonarriva, "Feeding the Dragon and the Elephant: How Agricultural Policies and Trading Regimes Influence Consumption in China and India," *Journal of International Commerce and Economics* (United States International Trade Commission), May 2013, 3.

¹⁰⁵ Lam et al., "Food supply and food safety issues in China," 2045.

¹⁰⁶ John Wong and Yanjie Huang, "China's Food Security and Its Global Implications," *China: An International Journal* 10, no. 1 (March 2012): 115.

Demographics are affecting agricultural productivity as well, since between 200 and 300 million rural individuals will become urbanized by 2025-2030.^{107,108} Further, China's farmers are aging as "more young people [are] leaving farming to work in cities."¹⁰⁹ These factors may diminish agricultural labor supply during a period of overall population growth.

China – Food Security Responses: Imports

In light of these food security concerns, one may wonder why China does not simply depend on agricultural import markets. However, China tends to have a reluctance, and to some extent an inability, to rely on these markets; in fact, Chinese agricultural policy targets a "grain self-sufficiency rate of above 95%."^{110,111} One key reason for this import-aversion is based on national history; the massive famines under the "Great Leap Forward" are "still fresh in the collective memory of the present Chinese leadership."¹¹² Moreover, China's experience with 19th century semi-colonialism leads to a belief that the "[world] grain market is controlled by advanced nations, and once we have lost grain security, we are bound to be enslaved by them."¹¹³ This view is somewhat valid, as only four firms dominate the global grain trade: ADM, Bunge, Cargill, and Louis Dreyfus.¹¹⁴

There are also structural reasons for China's import aversion. First, China's sheer size may be prohibitive to total import reliance. In 2010, "global grain trade" was

¹⁰⁷ Liao, "China's Food Security," 105.

¹⁰⁸ Gilmour and Phillips, "China: An Agri-Food Prospectus," 56.

¹⁰⁹ Zhengzhou Yang, "Demographic Changes in China's Farmers: The Future of Farming in China," *Asian Social Science* 9, no. 7 (June 2013): 138.

¹¹⁰ Xinhua, "China Focus: Regions work toward self sufficiency goal in grain supply," *Xinhuanet*, December 24, 2008: 1.

¹¹¹ Central People's Government of the People's Republic of China, "National Food Security and Long-Term Planning Framework (2008-2020)," *www.gov.cn*, November 13, 2008, *www.gov.cn/2008-11/13/content_1148414*, 11.

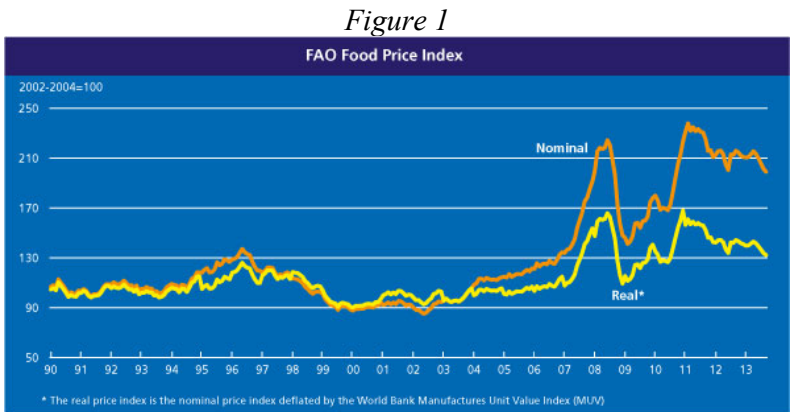
¹¹² Wong and Huang, "China's Food Security and Its Global Implications," 113.

¹¹³ Zhang, "How China, A Rising World Power Deals with Current Crisis and Challenges Facing the World," 7.

¹¹⁴ Javier Blas, "Grain traders set for wave of takeovers," *Financial Times*, March 30, 2012.

“approximately equivalent to 50 per cent of China’s total production (and consumption).”¹¹⁵ Further, if China were to reduce production of pork by 10%, “the amount of imports required to meet Chinese demand would be equivalent to 92 percent of total global pork trade.”¹¹⁶ Therefore, if China were to import only “10 per cent of its annual consumption, its import requirements would seriously [destabilize] world grain markets and drive up world inflation.”¹¹⁷

Price volatility is also a major concern for China. Since the Global Food Crisis of 2007-08, food prices have been high and volatile, as demonstrated by the below figure from the United Nations Food and Agriculture Organization (FAO).¹¹⁸



U.N. Food And Agriculture Organization – Food Price Index 1990-2013

Given that some forecasts project global food demand to increase 100-110% by 2050, this price volatility may continue;¹¹⁹ such a trend may be intensified by the fact that nations often impose export restrictions when food supplies are uncertain, as did “a

¹¹⁵ Wong and Huang, "China's Food Security and Its Global Implications," 114.
¹¹⁶ Baldwin and Bonarriva, "Feeding the Dragon and the Elephant," 15.
¹¹⁷ Wong and Huang, "China's Food Security and Its Global Implications," 114.
¹¹⁸ United Nations Food and Agriculture Organization, *FAO Food Price Index*.
¹¹⁹ Tilman et al., "Global food demand and the sustainable intensification of agriculture," 20260.

number of major producers” during the Food Crisis.¹²⁰ Due to this potential volatility, exacerbated by China’s sheer size, China appears wary of relying on world food markets.

However, China does currently utilize import markets for some agricultural products and non-staple grains, an issue of importance given China’s projected consumption of meat and fuel. While China currently meets its 95% self-sufficiency target for staple or cereal grains, its self-sufficiency is only 88% when soybeans are included in the measure and, in fact, has a “soybean import dependency ratio” of 78.14 (see Appendix 6); soybeans are used heavily as feed in the expanding livestock industry, and imports may rise from 58 million tons in 2010 to 90 million tons by 2030.^{121,122} Further, China’s corn imports for livestock feed and biofuels are expected to increase from 3 million tons in 2012-2013 to 19.6 million tons in 2020, making China the world’s largest corn importer.¹²³ Additionally, China is the “world’s largest importer” of oilseed and imports a variety of other agricultural commodities that compete for limited farmland with staple grains such as wheat and rice.^{124,125}

China – Food Security Responses: Self-Sufficiency Strategy

China is confronting a dilemma. The country faces rising food demand, limits on agricultural supply, a need to import non-staple crops (soy, oilseed, etc.) due to growth and urbanization, and a desire for self-sufficiency in staple crops. Moreover, it is wary of global agricultural import markets and potential price volatility. In light of these concerns,

¹²⁰ Catherine Hornby, "UPDATE 2-Potential grows for food crisis as prices surge-UN," *Reuters*, August 9, 2012.

¹²¹ The Economist, "Feeding 1.36 billion people: Daily bread," *The Economist*, October 26, 2013: 1.

¹²² United Nations Food and Agriculture Organization, *FAOSTAT - Compare Data*, August 7, 2014, <http://faostat3.fao.org/faostat-gateway/go/to/compare/Q/QC/E>.

¹²³ Emiko Terazono, "China sees rising appetite for corn imports," *Financial Times*, September 11, 2013.

¹²⁴ Terazono, "China sees rising appetite for corn imports."

¹²⁵ Carin Smaller, Qiu Wei, and Liu Yalan, *Farmland and Water: China invests abroad*, IISD Report, Winnipeg: International Institute for Sustainable Development, 2012, 3.

China has developed a robust food security strategy, including the pursuit of overseas agriculture.

In response to its food security concerns and the Food Crisis, the Chinese government established the “National food security and long-term planning framework (2008-2020),” which addresses the challenges of rising consumer demand growth, decreasing arable land, water scarcity concerns, regional supply and demand, import dependence, grain yields, and global demand and supply disparities.¹²⁶ To overcome these challenges, the plan sets four main objectives: improve grain productive capacity to reach 540 billion kg of grain by 2020 (from 500 billion kg in 2010), maintain the 95% food self-sufficiency rate, ensure a minimum of 120,000,000 ha of arable land by 2020, provide a secure level of grain reserves containing at least 70% wheat and rice, and improve grain distribution logistics.¹²⁷ The plan offers six methods for achieving these objectives (paraphrased from translations):

1. Increase food production capacity through protecting land and water resources, strengthening agricultural infrastructure, and improving crop yields through technological innovation.
2. Encourage the production of non-grain resources such as grass for livestock consumption, aquaculture and fishing, and biofuel crop production.
3. Strengthen international cooperation in agriculture, for example through domestic enterprises taking advantage of China’s ‘going out’ strategy and investing abroad.
4. Improve the food distribution system in China by strengthening the market and intermediary organizations between farm production and cities.
5. Improve the grain reserve and storage system to ensure national food supply during emergencies, to protect interests of farmers, and to solve regional supply imbalances.

¹²⁶ Central People's Government of the People's Republic of China, "National Food Security and Long-Term Planning Framework (2008-2020)," 1-2.

¹²⁷ Central People's Government of the People's Republic of China, "National Food Security and Long-Term Planning Framework (2008-2020)," 10-11.

6. Improve the food processing system.^{128,129}

The key principle underlying each element of China's food security strategy is self-sufficient food stability; according to Baldwin and Bonarriva, China's "domestic agricultural policy and trade policy" is built to realize "three overarching goals: stability of supplies, stability of prices, and stability of farmer incomes" with a preference for "domestic production if possible."¹³⁰ Thus, in addition to the above initiatives, China subsidizes "farmers involved in grain production" to encourage domestic agricultural employment and production.¹³¹ China also uses trade restrictions, including "tariff rate quotas" and nontariff measures such as "bans on U.S. beef," to limit the "flow of imported agricultural goods."¹³²

However, to lessen trade barrier risks on unavoidable imports, following its goal of agricultural "cooperation," China has initiated several free trade agreements (FTAs); it has established FTAs with the Association of Southeast Asian Nations (ASEAN), Pakistan, Chile, New Zealand, Singapore, Peru, Costa Rica, Iceland, and Switzerland, and is considering or negotiating FTAs with the Gulf Cooperation Council (GCC), Australia, Norway, India, Korea, and Japan.¹³³ These FTAs often have a strong agricultural element, such as the "early harvest program...[requiring] all parties to

¹²⁸ Central People's Government of the People's Republic of China, "National Food Security and Long-Term Planning Framework (2008-2020)."

¹²⁹ David Norse, Yuelai Lu, and Tang Huajun, *The Future of Food and Farming - Foresight Report's Implications for China*, Foresight Report, London: Government Office for Science, 2011, 26.

¹³⁰ Liao, "China's Food Security," 107.

¹³¹ Baldwin and Bonarriva, "Feeding the Dragon and the Elephant," 9.

¹³² Baldwin and Bonarriva, "Feeding the Dragon and the Elephant," 12-15.

¹³³ China Ministry of Commerce, *China FTA Network - China's Free Trade Agreements*, July 22, 2014, http://fta.mofcom.gov.cn/english/fta_qianshu.shtml.

eliminate tariffs on eight categories of agricultural products” and to “[reduce] tariffs on such goods as sugar” and others “to less than 20%.”¹³⁴

China – Food Security Responses: Large-Scale Land Acquisitions

It is against the backdrop of a push for self-sufficiency coupled with rising demand for imported products that China has selected a LSLA food security strategy. China’s overseas agriculture strategy is derived primarily from two sources, the “Go Global” strategy to encourage overseas investment by domestic enterprises and the “National food security and long-term planning framework (2008-2020),” in which China promotes “international cooperation” in agriculture.¹³⁵ China’s “Go Global” strategy was adopted in 2001 as the “first major drive by the government to encourage [domestic] investors to go abroad,” which removed “legal and administrative barriers” and created “generous incentives” for Chinese companies.¹³⁶ This strategy is referenced initially in the food security “framework” plan and is further clarified by the “*Implementing Opinions on Encouraging and Guiding Private Enterprises to Make Active Investment Abroad*,” issued in 2012, which includes agriculture as a key industry in which “private enterprises are encouraged to invest abroad.”¹³⁷

China’s overseas agriculture investment essentially takes two forms, which tend to overlap. First, Chinese private companies invest in “agricultural production” abroad such as “through joint ventures and contract farming as a way to bypass the dominance of

¹³⁴ Ka Zeng, “Multilateral versus Bilateral and Regional Trade Liberalization: explaining China’s pursuit of free trade agreements (FTAs),” *Journal of Contemporary China* 19, no. 66 (2010): 648.

¹³⁵ Central People’s Government of the People’s Republic of China, “National Food Security and Long-Term Planning Framework (2008-2020),” 2.

¹³⁶ Smaller, Wei, and Yalan, *Farmland and Water: China invests abroad*, 4.

¹³⁷ Winston & Strawn LLP, *PRC issues guidelines to encourage private enterprises to invest abroad (Translation of Implementing Opinions on Encouraging and Guiding Private Enterprises to Make Active Investment Abroad)*, Beijing, August 23, 2012.

U.S. and European agribusiness traders.”¹³⁸ This includes, for example, production of soybeans in Latin America, given China’s growing demand; one example of this, according to the International Institute for Sustainable Development (IISD), is “in 2011 a mix of four private and state-owned Chinese enterprises were negotiating a US\$7 billion agreement...to produce 6 million tons of soybeans a year for export to China.”¹³⁹ This type of investment directly corresponds with the “Go Global” strategy discussed previously. The second method by which China invests in agriculture involves state-sponsored investments in “land and water resources,” which can range from “aid and development cooperation” to “contract farming and joint ventures,” “technology demonstration,” and technological investment.¹⁴⁰ According to Xinhua, China plans or has developed “more than 20 agricultural technology demonstration centers around the world, and will double the number of experts to be dispatched overseas;”¹⁴¹ such plans are valuable because, in China’s view, “the seed planted to feed the Chinese is also likely to feed people in other developing countries.”¹⁴²

Regarding the scope of Chinese investment, numeric estimates vary, but investment content estimates are largely similar. The Land Matrix estimates 975,824 hectares of deals for agricultural purposes involving 68 overall contracts, in locations ranging from Latin America to Africa and Southeast Asia (see Appendix 1).¹⁴³ Additionally, with only seven exceptions, each contract includes a corporate investor, although many of these may have ties to the Chinese state such as the “Shaanxi Land

¹³⁸ Smaller, Wei, and Yalan, *Farmland and Water: China invests abroad*, 5.

¹³⁹ Smaller, Wei, and Yalan, *Farmland and Water: China invests abroad*, 6.

¹⁴⁰ Smaller, Wei, and Yalan, *Farmland and Water: China invests abroad*, 6, 17.

¹⁴¹ Xinhua, "From self-sufficiency to grain contribution, China's agriculture passes 60 memorable years," *Xinhuanet*, August 26, 2009: 3.

¹⁴² Xinhua, "From self-sufficiency to grain contribution, China's agriculture passes 60 memorable years," 3.

¹⁴³ Land Matrix, *Get the Detail: China*, November 4, 2013, http://www.landmatrix.org/get-the-detail/by-investor-country/china/?order_by=&starts_with=C.

Reclamation General Corporation,” “China National Corp for Overseas Economic Coop LaoStar Development,” or the “China National Complete Plant Import & Export Corporation.”¹⁴⁴ In contrast, the IISD estimates include “54 projects covering 4.8 million hectares,” in locations ranging from Southeast Asia to Africa, Latin America, and the Former Soviet Union.¹⁴⁵ Similarly, with three exceptions, every investment included a corporate investor, albeit with potential ties to the Chinese state.¹⁴⁶

South Korea – Food Security Concerns

South Korea also faces substantial food security challenges. As with China, South Korea’s domestic food security concerns can be divided into demand and supply factors.

Population-wise, Korea is the 26th most populous nation, with 50,004,000 people as of 2012.¹⁴⁷ Its population is expected to peak at 51,664,000 by 2030, a trend which will require the production of food for an additional 1.66 million people.¹⁴⁸ Additionally, South Korea is “one of the fastest industrializing countries in the world;”¹⁴⁹ according to the World Bank, Korea’s urban population is expected to grow from its current 2012 level of 41,737,638, 83.5% of the population, to 44,032,000 by 2030, equivalent to 87.1% of the population.¹⁵⁰ Although Korea’s gross urban population will peak in 2030, it is expected to grow in percentage terms through 2050 to 89.6% of the population.¹⁵¹

¹⁴⁴ Land Matrix, *Get the Detail: China*.

¹⁴⁵ Smaller, Wei, and Yalan, *Farmland and Water: China invests abroad*, 1.

¹⁴⁶ Smaller, Wei, and Yalan, *Farmland and Water: China invests abroad*, 15-27.

¹⁴⁷ The World Bank, *Data - Population Total*, 2013, http://data.worldbank.org/indicator/SP.POP.TOTL?order=wbapi_data_value_2012+wbapi_data_value+wbapi_data_value-last&sort=asc.

¹⁴⁸ The World Bank, *World Bank Databank - Health Nutrition and Population Statistics: Population estimates and projections*, 2013, <http://databank.worldbank.org/Data/Views/reports/tableview.aspx#>.

¹⁴⁹ Byeong-Seon Yoon, Won-Kyu Song, and Hae-Jin Lee, “The Struggle for Food Sovereignty in South Korea,” *Monthly Review* 65, no. 1 (May 2013): 56.

¹⁵⁰ The World Bank, *World Bank Databank - Population estimates and projections*.

¹⁵¹ The World Bank, *World Bank Databank - Population estimates and projections*.

Given such trends, Korean diets will likely shift. According to Korean National Statistics, these trends have already established themselves over the past 20 years; over this period, rice consumption has declined while meat consumption has risen.¹⁵² In 1990, daily per capita rice consumption was 327.6 grams and beef, chicken, and pork consumption was 11.2 grams, 32.3 grams, and 11.0 grams, respectively; in 2010, daily per capita rice consumption was 199.6 grams and beef, chicken, and pork consumption was 24.1 grams, 52.9 grams, and 29.3 grams, respectively.¹⁵³ According to the U.S. Department of Agriculture (USDA), “recent trends” affecting Korean demand for food imports include the “globalization and Westernization of tastes,” “the high percentage of younger consumers with a growing taste for imported foods,” “an increasing number of working women and two income families who demand more convenience foods,” “the decline in per capita consumption of rice and the moving away from rice-based foods to wheat, corn, meat, and potato-based foods,” and “the spread of conventional ovens, microwaves, and refrigerators.”¹⁵⁴ If such trends continue, they will place upward pressure on food demand.

Given that Korea has experienced 50 years of economic growth and urbanization, many dietary shift trends are already well established since demand for animal products tends rise with “income growth especially in low income regions.”¹⁵⁵ As stated by the CIA World Factbook, “in the 1960s, [Korean] GDP per capita was comparable with levels in the poorer countries of Africa and Asia... and [Korea] is currently the world's

¹⁵² Statistics Korea, *Social Indicators in 2011*, March 15, 2012, <http://www.kostat.go.kr/portal/english/news/1/8/index.board?bmode=read&aSeq=254650>.

¹⁵³ Statistics Korea, *Social Indicators in 2011*.

¹⁵⁴ U.S. Agricultural Trade Office Korea, *General Overview of the Market*, Market Overview, Seoul: United States Department of Agriculture Foreign Agricultural Service, 2013.

¹⁵⁵ Uwe A. Schneider et al., "Impacts of population growth, economic development, and technical change on global food production and consumption," *Agricultural Systems* 104, no. 2 (February 2011): 204.

12th largest economy.”¹⁵⁶ Due to this growth, “increased demands for dairy and meat among an increasingly affluent population encouraged farmers to invest in livestock production,” hence requiring “feed imports.”¹⁵⁷ Thus, for corn and soybeans, “the primary sources of feed for animal production,” demand has “risen steadily in the past 30 years with dramatic increases of meat demand.”¹⁵⁸

Biofuels also drive agricultural demand. Korea is the tenth largest energy consumer, has few domestic energy sources, and is pursuing reduced greenhouse gas emissions, hoping to cut “emissions by 4 percent by 2020 compared to 2005 levels.”^{159,160} Hence, Korea has raised its biofuel production, which usually requires corn for ethanol or oils (vegetable oil or used cooking oil) for biodiesel feedstock, from 200 barrels per day (B/D) in 2005 to 6,300 B/D in 2011.¹⁶¹ These trends may raise agricultural import demand, since in 2009 Korea used “300,000 kiloliters of biodiesel feedstock” of which “75-80 percent was imported soy and palm oil, while the remainder was mainly domestic recycled cooking oil.”¹⁶²

Korea also faces supply-based food security challenges. Korea has only 1,492,000 ha of arable land as of 2011, an amount that has been falling since 2000 from 1,718,000 ha.¹⁶³ Further, Korea’s arable land per person amounts to only .029 ha per person

¹⁵⁶ U.S. Central Intelligence Agency, *The World Factbook - South Korea*.

¹⁵⁷ Su-Kyeong Lee and Anders Riel Müller, *South Korean External Strategy Qualms: Analysis of Korean Overseas Agricultural Investment within the Global Food System*, Global Land Grabbing Conference Paper, Ithaca: Land Deals Politics Initiative, 2012, 14.

¹⁵⁸ Lee and Müller, *South Korean External Strategy Qualms*, 14.

¹⁵⁹ U.S. Energy Information Administration, *Korea, South Analysis*, EIA Country Report, Washington, D.C.: U.S. EIA, 2013, 1.

¹⁶⁰ United States Department of Agriculture, *Republic of Korea Biofuels Production*, GAIN Report, Washington, D.C.: USDA Foreign Agricultural Service, 2010, 2.

¹⁶¹ U.S. Energy Information Administration, *International Energy Statistics*, November 4, 2013, <http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=79&pid=79&aid=1&cid=regions&syid=2005&eyid=2011&unit=TBPD>.

¹⁶² United States Department of Agriculture, *Republic of Korea Biofuels Production*, 3.

¹⁶³ The World Bank, *Data - Arable Land*.

(compared with China, which amounts to .083 ha).¹⁶⁴ Moreover, Korea's grain crop yields have risen slightly over time, but have been relatively volatile; according to the World Bank, Korea's kilogram per ha yield was 6,496.7 in 2004, down to 6,109.3 in 2007, up to 7,265.0 in 2009, back down to 6,539.2 in 2010, and then 7,114.3 in 2012 (compared with China, which in 2004 had a yield of 5,186.7 kg per ha, 5,447.5 kg in 2009, 5,526.7 in 2010, and 5,837.5 in 2012).¹⁶⁵

Lastly, South Korea's agricultural labor force and production capacity have decreased over time as the nation industrialized. In terms of the agricultural labor force, "the percentage of farmers in the total population has reduced from 50 percent in the 1970s to 7 percent (or below) in the 2010s."¹⁶⁶ Moreover, according to the U.S. Department of Agriculture, as the nation "became increasingly industrialized and labor costs rose, South Korean agriculture abandoned production of many crops, such as wheat, millet, sorghum, and cotton."¹⁶⁷ Therefore, in light of the above factors, South Korea has severely limited resources from which to produce crops domestically.

South Korea – Food Security Responses: Imports and Self-Sufficiency

Given its food security conditions and lack of agricultural resources, Korea must rely on global markets. For cereal grains, as of "2007-09" (the most recent FAO data) Korea had a "cereal import dependency ratio" of 73.2, calculated as "Cereal imports/(cereal production + cereal import - cereal export)" (see Appendix 6 for comparison with other states).¹⁶⁸ Korea is Asia's "second biggest grain buyer" and the

¹⁶⁴ The World Bank, *Data - Arable Land*.

¹⁶⁵ The World Bank, *Data - Arable Land*.

¹⁶⁶ Yoon, Song, and Lee, "The Struggle for Food Sovereignty in South Korea," 56.

¹⁶⁷ United States Department of Agriculture Economic Research Service, *South Korea*, ERS Report, Washington, D.C.: United States Department of Agriculture, 2013.

¹⁶⁸ United Nations Food and Agriculture Organization, *FAO Statistical Yearbook 2013 World food and agriculture*, FAO Statistical Yearbook, Rome: United Nations FAO, 2013, 111.

world's "second-largest importer of corn."^{169,170} In addition, to support its "livestock, flour milling, and export-oriented industries of textile, garment, and leather goods," Korea imports "large quantities of feed grains, soybeans, wheat, cotton, and hides."¹⁷¹ Overall, Korea depends on imports for approximately "60-70 percent" of its food needs (and some estimates are as high as 90 percent).^{172,173}

Although Korea does rely on imports for its food supply, it is wary of international import markets and "has tried for more than four decades to strengthen its own agricultural production and avoid imports."¹⁷⁴ The two primary objectives of Korea's "agricultural policy are self-sufficiency and parity between farm and urban household incomes," and it has used "direct payments and import barriers" to realize these objectives.¹⁷⁵ Although Korea's self-sufficiency rates in "wheat, corn, and soybeans" are low at "0.5 percent, 1 percent, and 8.4 percent, respectively," and overall grain self-sufficiency stands at "26.7 percent," the nation strives "to attain rice self-sufficiency."^{176,177} Further, South Korea has asserted that the country "aims to almost double its grain self-sufficiency ratio to 50 percent by 2030."¹⁷⁸

Korea's desire for self-sufficiency seems primarily driven by fear of price volatility in the global market, given the country's reliance on imports. Historically, Korea sustained a model of "subordination of agriculture and food policy to industrial

¹⁶⁹ Sungwoo Park, "S. Korea Boosts Inspection of U.S. Wheat Imports on Gene Concern," *Bloomberg*, May 31, 2013.

¹⁷⁰ United States Department of Agriculture Economic Research Service, *Corn*, ERS Report, Washington, D.C.: United States Department of Agriculture, 2013.

¹⁷¹ United States Department of Agriculture Economic Research Service, *South Korea*.

¹⁷² U.S. Agricultural Trade Office Korea, *General Overview of the Market*.

¹⁷³ Asia Sentinel, "South Korea's Food Security Alarm," *Asia Sentinel*, April 29, 2011.

¹⁷⁴ United States Department of Agriculture Economic Research Service, *South Korea*.

¹⁷⁵ United States Department of Agriculture Economic Research Service, *South Korea*.

¹⁷⁶ Shin Hyon-hee, "Korea strives for agricultural security," *The Korea Herald*, March 24, 2011.

¹⁷⁷ United States Department of Agriculture Economic Research Service, *South Korea*.

¹⁷⁸ Sungwoo Park and Sangim Han, "Korea to Encourage Companies to Farm Abroad to Ensure Supplies," *Bloomberg*, April 2, 2009.

development policy...as long as food could be acquired cheaply overseas.”¹⁷⁹ However, as illustrated sharply by the Food Crisis, “the world’s food supply is currently in transition from an era of persistent surpluses to one of chronic shortages and imbalances.”¹⁸⁰ According to the Samsung Economic Research Institute (SERI), Korean food imports will face a “global population [projected] to reach 9.1 billion by 2050,” causing “global demand for food [to] rise to 3 billion tons;” this demand will require “food production [to] increase by over 70 percent.”¹⁸¹

These challenges are exacerbated by fears of food “weaponization” through protectionist measures and by the grain import market’s structure. According to SERI, “with food producing countries hinting at ‘weaponizing’ food through export restrictions, it is now increasingly likely that food security among importing countries will be threatened.”¹⁸² To exemplify this possibility, SERI cites “Russia and Ukraine,” which in 2010 “imposed restrictive measures on grain exports” as “anxiety over food supplies grew intense.”¹⁸³ Moreover, the global grain market structure is a concern; given that “trading volumes are small in comparison to production volumes” and since the market has a “low ability to rapidly ramp up production to meet external demand,” “supply shortages” may occur.¹⁸⁴ Such conditions are not helped by the fact that the “[world] grain market is subject to an oligopoly” of four firms through which “Korea brought in 72.9% of its total import volume” or that Korean “grain buyers usually purchase on an as-

¹⁷⁹ Lee and Müller, *South Korean External Strategy Qualms*, 18.

¹⁸⁰ Park Hwan-II, Kang Hee-Chan, and Kim Hwa-Nyeon, "New Food Security Strategies in the Age of Global Food Crises," *Monthly Focus - Samsung Economic Research Institute* 4 (April 2011): 1.

¹⁸¹ Park, Kang, and Kim, "New Food Security Strategies in the Age of Global Food Crises," 2.

¹⁸² Park, Kang, and Kim, "New Food Security Strategies in the Age of Global Food Crises," 4.

¹⁸³ Park, Kang, and Kim, "New Food Security Strategies in the Age of Global Food Crises," 4.

¹⁸⁴ Park, Kang, and Kim, "New Food Security Strategies in the Age of Global Food Crises," 5.

needed basis at a fixed price through lowest-price public bids, rather than using the grain futures market or long-term supply contracts” to mitigate price risk.¹⁸⁵

Due to Korea’s wary import dependence, it has pursued several strategies to secure access to food products. One key strategy involves enacting FTAs which “can promote food security by augmenting Korean food supply” by minimizing or eliminating tariffs on or “weaponization” of agricultural imports.¹⁸⁶ Currently, Korea has FTAs with Chile, Singapore, European FTA nations, ASEAN, India, the European Union, Peru, and the U.S.¹⁸⁷ Further, the nation is planning FTAs with Turkey and Colombia, and negotiating FTAs with Canada, Mexico, the GCC, Australia, New Zealand, China, Vietnam, Indonesia, and Japan.¹⁸⁸

Korea has employed many additional strategies to secure food access. It has developed food reserves, for example the “ASEAN Plus Three Emergency Rice Reserve,” a regional reserve with ASEAN nations, China, and Japan, to make “rice available during emergencies, stabilising the price of rice and improving farmers’ income and welfare.”¹⁸⁹ It has also created domestic reserves, such as the “Public Food Grain Stockholding Program” through which the “government will purchase domestic paddy rice during the harvest season (October-December) at the average market price and sell it during the

¹⁸⁵ Park, Kang, and Kim, "New Food Security Strategies in the Age of Global Food Crises," 5.

¹⁸⁶ M. Bruna Zolin and Bernadette Andreosso-O'Callaghan, "The Korea-EU FTA: New Prospects for and Patterns of Agricultural and Agrifood Trade?" *Journal of Global Policy and Governance* 1, no. 2 (January 2013): 141.

¹⁸⁷ Ministry of Foreign Affairs - Republic of Korea, *FTA Status of ROK*, November 5, 2013, <http://www.mofa.go.kr/ENG/policy/fta/status/overview/index.jsp>.

¹⁸⁸ Ministry of Foreign Affairs - Republic of Korea, *FTA Status of ROK*.

¹⁸⁹ Sally Trethewie, "Is the ASEAN Plus Three Emergency Rice Reserve (APTERR) the Answer to Southeast Asia's Food Security Challenges," *NTS Alert* (S. Rajaratnam School of International Studies), February 2013.

non-harvest periods at the prevailing domestic market price.”¹⁹⁰ As of 2013, the program also allows “the government to purchase wheat and soybeans.”¹⁹¹ Furthermore, Korea subsidizes its rice farmers, paying “600,000 won per hectare (about \$600 per hectare) each year,” and “[85%] of the difference” if the price of rice “falls below a target fixed in advance.”¹⁹² Lastly, Korea plans to invest “24.1 trillion won (54 trillion won including tax credits)” between 2008 and 2017 to “support the modernization of agricultural equipment and help find new growth engines through R&D and the seed industry.”¹⁹³

South Korea – Food Security Responses: Large-Scale Land Acquisitions

Given that Korea’s “grain self-sufficiency is very low and there’s limited room to boost production at home,” the nation has also established a substantial overseas agricultural development program to “ensure stable supplies.”¹⁹⁴ Korea’s LSLA program was largely initiated in the wake of the Global Food Crisis, after which South Korea “developed a 10-year plan” to “[assist] companies to farm abroad.”¹⁹⁵ This plan was developed in June 2008 primarily “to provide a framework for supporting overseas agricultural development” and consisted of two major goals: “1. Establishment of overseas trading companies who can secure commodities and stabilize prices through the futures market and 2. Support overseas agricultural production, processing and

¹⁹⁰ United States Department of Agriculture Foreign Agricultural Service, *Korea - Republic Of: Grain and Feed Update*, GAIN Report, Washington, D.C.: U.S. Department of Agriculture, 2013, 12.

¹⁹¹ United States Department of Agriculture Foreign Agricultural Service, *Korea - Republic Of: Grain and Feed Update*, 2.

¹⁹² United States Department of Agriculture Economic Research Service, *South Korea*.

¹⁹³ Business Korea, "Agriculture and Food Policy - Trying to Realize Sustainable, Cutting Edge Industrialization," *Business Korea*, July 29, 2013.

¹⁹⁴ Sungwoo Park, "S. Korea to Increase Overseas Farming on Record Food Costs," *Bloomberg*, March 10, 2011.

¹⁹⁵ Park, "S. Korea to Increase Overseas Farming on Record Food Costs."

logistics.”¹⁹⁶ In 2012, the plan was updated and codified in law in the “Overseas Agricultural Development Promotion Act.”¹⁹⁷

Regarding the first goal, Korea has attempted to “correct” its current process of purchasing food via major grain-trading firms on an “as-needed basis at a fixed price.”¹⁹⁸ It has done so by forming its own “grain trading firm in Chicago for direct importation,” called aT Grain Co., which can purchase grain on the futures market of the Chicago Board of Trade, “the single most important exchange for trading in agricultural commodities in the world.”^{199,200} This firm, “established by the state-run Korea Agro-Fisheries Trade Corp” with a group of private companies, plans to supply “30% of Korea’s grain needs.”²⁰¹ The government intends to develop similar firms in “Brazil, Russia and Ukraine.”²⁰²

The second goal of the overseas development plan is, essentially, Korea’s LSLA strategy. Through this objective, according to Vice Minister of Agriculture, Food and Rural Affairs, Yeo In-Hong, Korea plans “to secure 35% of domestic grain consumption” by 2021.²⁰³ Under the plan, the government supports “private business’ entry into the development of overseas agriculture through loans, investment research, information, and training.”²⁰⁴ These agricultural projects are conducted mainly through private Korean corporations, aided by the state-run “Korean Rural Community Corporation” through the

¹⁹⁶ Lee and Müller, *South Korean External Strategy Qualms*, 20.

¹⁹⁷ Lee and Müller, *South Korean External Strategy Qualms*, 21.

¹⁹⁸ Park, Kang, and Kim, "New Food Security Strategies in the Age of Global Food Crises," 5.

¹⁹⁹ Shin, "Korea strives for agricultural security."

²⁰⁰ Lee and Müller, *South Korean External Strategy Qualms*, 20.

²⁰¹ Lee and Müller, *South Korean External Strategy Qualms*, 20.

²⁰² Lee and Müller, *South Korean External Strategy Qualms*, 20.

²⁰³ Business Korea, "Agriculture and Food Policy - Trying to Realize Sustainable, Cutting Edge Industrialization."

²⁰⁴ Lee and Müller, *South Korean External Strategy Qualms*, 22.

“Overseas Agricultural Development Service” program.²⁰⁵ This program provides “overseas agricultural development” loans to companies wishing to invest in agriculture abroad at 2-3% interest rates “repayable over 10 years with a 5 year grace period,” but requires “crops [to be] available to the Korean government in case of food shortages or crisis.”²⁰⁶ Although beyond the scope of this chapter’s analysis of food security LSLAs, Korea has also initiated similar programs for resource development in energy, minerals, fishery, and forestry.²⁰⁷

In terms of Korean LSLA scope, numeric estimates again vary. According to Vice Minister Yeo In-Hong, the overseas agriculture program raised “the number of companies that entered overseas markets...from 35 in 2009 to 106 in 2012;” this growth increased “grain secured abroad” from “24,700 tons in 2009 to 218,000 tons in 2012.”²⁰⁸ Moreover, according to an analysis of reports by the Korean Ministry of Food, Agriculture, Forestry and Fisheries (now the Ministry of Food, Agriculture, and Rural Affairs), as of 2011 this program had led to “85 projects in 20 different countries,” comprising “42,300 hectares.”²⁰⁹

According to the Land Matrix, however, Korean LSLAs involve 17 different agricultural deals (forestry excluded) comprising 998,422 ha (see Appendix 2); this includes a 2009 690,000 ha deal with Sudan (the veracity of which is questioned by government data and the Lee and Müller study, which states, “only one investment case in Africa has been reported yet,” a failed attempt by the company Daewoo to acquire half

²⁰⁵ Lee and Müller, *South Korean External Strategy Qualms*, 23.

²⁰⁶ Lee and Müller, *South Korean External Strategy Qualms*, 23.

²⁰⁷ Korean Rural Economic Institute, *Agriculture in Korea*, KREI Report, Seoul: Korean Economic Research Institute, 2010, 446.

²⁰⁸ Business Korea, "Agriculture and Food Policy - Trying to Realize Sustainable, Cutting Edge Industrialization."

²⁰⁹ Lee and Müller, *South Korean External Strategy Qualms*, 22.

of Madagascar's arable land).^{210,211} Moreover, only the Sudan deal involves direct acquisition by the Korean state; the rest are conducted via private enterprises and one "unknown investor."²¹² Regardless of which estimates are correct, it appears that Korean LSLAs primarily involve private enterprises sponsored by the state to ensure access to food (and other) resources.

Discussion

Despite their differences, China and South Korea share many parallels regarding food security concerns and responses, and both seem to use LSLAs for comparable reasons and in a similar manner. Thus, based on this chapter's hypothesis, these similar conditions do appear to motivate the selection of LSLA food security strategies. This section analyzes the similarities between Chinese and Korean food security concerns and strategies, as described in the Results section, that contribute to a LSLA strategy.

Food Security Concerns

Regarding food security concerns, both China and South Korea face drastically increasing and changing demand for food supplies. Both nations have growing and rapidly urbanizing populations, expected to peak between 2025 and 2030, which will require expanded food production. Further, both have populations that either have, or currently are, shifting their diets away from traditional staple grains to meat and dairy products, increasing demand for grains used in animal feed. Moreover, both nations have invested in biofuel production, raising demand for feedstock products such as corn for bioethanol or oils for biodiesel. If these trends continue, demand for many grains and

²¹⁰ Lee and Müller, *South Korean External Strategy Qualms*, 22.

²¹¹ Land Matrix, *Get the Detail: Republic of Korea*, November 6, 2013, http://www.landmatrix.org/get-the-detail/by-investor-country/republic-of-korea/?order_by=&starts_with=R.

²¹² Land Matrix, *Get the Detail: Republic of Korea*.

agricultural products in both countries can be projected to increase dramatically in coming years.

These projected increases in agricultural product demand are coupled, in both China and South Korea, with a limited supply base from which to produce these products. Both states possess minimal levels of arable land compared with the size of their populations, far below the world's average of .2 ha per person.²¹³ Further, arable land levels in both states are decreasing, due in part to urbanization and industrialization. While crop yields have risen in both nations over the last decade, research suggests that yields could level off as gains from technological innovation diminish.^{214,215} Lastly, both face a dwindling agricultural labor force from which to produce needed crops due to demographic and urbanization trends.

Food Security Responses

In response to these similar concerns, both China and Korea have selected strikingly similar strategies to address their food security challenges. The core of these strategies, for both nations, appears based on a fundamental “wariness” of world import markets. Many of the shared strategies therefore, appear to be an attempt to satisfy rising demand for agricultural products while minimizing the danger of import dependence.

China and South Korea both rely on world import markets for certain products; although China tends to depend less on agricultural imports due to its ambitious cereals self-sufficiency target (see Appendix 6), both countries appear to share profound concerns about future dependency regardless of their “absolute” import reliance. Vulnerabilities to import markets in both countries were highlighted initially by the

²¹³ The World Bank, *Data - Arable Land*.

²¹⁴ Sparks, "Large Scale Land Acquisitions in Sub-Saharan Africa: The New Scramble," 687.

²¹⁵ Eccleston, "Peak Food?" 11.

volatility of international food prices experienced during the Global Food Crisis. However, both fear that these vulnerabilities could be worsened by projected future disparities between world food demand and supply, coupled with the oligopolistic structure of the world grain market and the possibility of export restrictions or “food weaponization” by food-producing nations.²¹⁶ The “trigger event” of the Global Food Crisis appears to have prompted a change in attitudes towards food in both nations, such that both view the world food market as shifting from an “era of persistent surpluses to one of chronic shortages and imbalances.”²¹⁷

In response to these concerns about global agricultural import markets, both China and South Korea have employed similar food security strategies. These strategies promote domestic agricultural self-sufficiency while reducing the dangers of necessary imports. Both countries have enacted national targets for “self-sufficiency” in grain and specific agricultural commodities, requiring that a certain percentage of these commodities be produced domestically. Further, both have made efforts to subsidize farm production, raise farmers’ incomes, create protectionist trade restrictions, develop reserves, and invest in agricultural infrastructure and technology. Lastly, both countries have worked towards international cooperation, such as through FTAs, to minimize the danger of importing commodities impossible to produce domestically.

Large-Scale Land Acquisitions

In light of the comparable food security strategies implemented to address parallel concerns, both China and South Korea have implemented remarkably similar large-scale land acquisition strategies. Both nations utilize LSLAs to secure access to agricultural

²¹⁶ Park, Kang, and Kim, "New Food Security Strategies in the Age of Global Food Crises," 4.

²¹⁷ Park, Kang, and Kim, "New Food Security Strategies in the Age of Global Food Crises," 1.

resources in foreign nations; both also do so through state-sponsored efforts that nevertheless keep the government at arms' length. In most cases, private or state-run corporations play the major role in acquiring farmland and agricultural resources abroad, sponsored or encouraged by the government. These projects are also usually categorized using "soft" terms such as overseas "development" or "aid," creating a sense of mutual benefit for investor and target nations.

Governments may distance themselves from land deals for several reasons, including political ramifications and costs. As discussed in the Literature Review, many scholars describe negative effects of "land-grabs" on host nation inhabitants. Further, LSLAs can have significant political impacts within target nations; for example, an attempt by the South Korean company Daewoo Logistics to lease "1.3 million hectares in Madagascar," about half of the country's arable land, resulted in "riots and overthrowing of the Madagascan government."²¹⁸ While LSLAs' political ramifications are beyond the scope of this analysis, China and Korea are likely keeping their land investments at arm's length to distance themselves from negative outcomes while still reaping the food security benefits. Moreover, given that domestic companies mostly purchase the LSLAs, albeit with state subsidization, such a strategy may be a cheaper alternative for governments than direct investment.

Analysis

This chapter hypothesized that those nations utilizing LSLAs as a food security strategy share many characteristics, specifically regarding their food security concerns and response strategies. Further, it hypothesized that LSLAs would play a supporting role in an overall food security strategy, which would be similar among countries utilizing

²¹⁸ Lee and Müller, *South Korean External Strategy Qualms*, 14.

LSLAs for food security. To test this hypothesis, it analyzed two countries, China and South Korea, which both employ LSLAs but have substantial differences in factors ranging from population and size to political systems and national borders. This chapter postulated that areas of overlap between these countries regarding food security should provide insights into the national factors that lead to the selection of LSLAs as a food security strategy.

Based on the results of this research, it appears that countries sharing the LSLA strategy also share similar food security concerns and response approaches, specifically in the case studies of China and South Korea. Both countries face projected food demand increases coupled with limits to domestic productive capacity. Further, both are wary of global food import markets and consequently have specific goals and policies to raise domestic agricultural production. These countries rely on imports, when necessary, but have devised methods for circumventing market pitfalls, such as international cooperation and FTAs. Against this backdrop of national factor similarities, LSLAs appear to be a method of satisfying domestic demand while securing greater control over agricultural resource sources.

While further case studies are beyond this chapter's scope, the food security similarities shared by China and South Korea contributing to a LSLA strategy can likely be generalized to other nations. Saudi Arabia, for example, which also uses LSLAs according to Land Matrix data, has until recently held a "longstanding strategy of achieving wheat self-sufficiency... since the early 1990s," even given its agricultural constraints.^{219,220} Though Saudi Arabia began phasing out domestic cultivation efforts in

²¹⁹ Land Matrix, *Get the Detail: Saudi Arabia*, December 8, 2013, http://www.landmatrix.org/get-the-detail/by-investor-country/saudi-arabia/?order_by=&starts_with=S.

2008, it replaced these efforts with “financial incentives” for “Saudi investors” “to invest in foreign countries that have comparative advantage in producing certain crops” and to “re-export their products back to Saudi Arabia.”²²¹ Given the number of states using LSLAs and the similarities among them as described in the Literature Review, future research could determine the extent to which this chapter’s findings can be generalized. Specific nations valuable to test, based on their use of LSLAs and focus on self-sufficiency, may be Saudi Arabia or India.^{222,223}

This chapter’s results demonstrate that its hypothesis is correct that there are specific national factors that may lead to the use of LSLAs as a food security strategy. Further, while many individual works within the literature are correct, to an extent, by describing investor countries as “capital-rich, natural-resource poor,” “heavily dependent on food imports,” and investing abroad due to the Global Food Crisis, these descriptions are only part of the picture; in reality, LSLAs are implemented due to longer-term concerns regarding imports and self-sufficiency that were only initially highlighted by the Global Food Crisis.^{224,225} This analysis contributes to the existing literature by describing and examining these and additional factors that may lead to the implementation of LSLAs for food security purposes, and by determining how such a tactic fits within an overall food security strategy.

²²⁰ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, GAIN Report, Washington, D.C.: USDA FAS, 2013, 1.

²²¹ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, 5.

²²² Land Matrix, *Get the Detail: India*, December 10, 2013, http://www.landmatrix.org/get-the-detail/by-investor-country/india/?order_by=.

²²³ United States Department of Agriculture Economic Research Service, *India*, ERS Report, Washington, D.C.: United States Department of Agriculture, 2012.

²²⁴ Robertson and Pinstrup-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" 273.

²²⁵ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1235.

Finally, there are many areas of future potential research on the topic of LSLAs. Given that this chapter focused on comparing food security concerns and strategies of countries using LSLAs, additional analyses could examine other parallels' contribution to LSLAs such as political, cultural, economic, or social factors. One specific factor noted in this chapter that could be tested is a nation's level of economic "liberalness" and propensity for state intervention. Further, additional case studies such as Saudi Arabia could be studied to confirm if this chapter's findings can be generalized to other nations. Lastly, scholars could investigate the political ramifications of LSLAs on either host or investor nations.

Conclusion

This chapter sought to identify what national factors contribute to the implementation of LSLAs as part of a food security strategy, and how LSLAs fit within an overall food security strategy among those countries utilizing LSLAs. It approached this question by comparing the food security concerns and responses of two significantly different countries that currently use LSLAs, China and South Korea.

By examining the areas of overlap between China and South Korea, this chapter determined that countries choosing LSLAs appear to be those facing both projected increases in demand for food as well as limitations on food production to match this demand. These countries may be dependent on imports to varying degrees but will likely share concerns about relying on import markets and will strive for self-sufficiency. They can be expected to share similar food security strategies in light of these factors, specifically to increase domestic agricultural production and to minimize the "dangers" of import dependence; LSLAs will tend to be a supporting element of this overall strategy.

Based on this analysis, other nations to which these findings could be generalized include Saudi Arabia and India.

The insights of this chapter are valuable because they add clarification to the academic literature both on food security and “land-grabbing” issues. Additionally, they help to further explain why a nation would select a specific food security strategy. Given that nations choosing LSLAs can be dissimilar in many characteristics, such an explanation could aid both the academic and policymaking communities in understanding why these dissimilar nations might choose similar policies. Further, given projected increases in world demand for food, these insights may prove valuable in predicting which nations might be most likely to use a LSLA strategy in the future and will at the very least help to explain their policy choice.

CHAPTER 2

Introduction

Food security is a critical national security concern, affected by myriad interrelated factors such as population growth, demographics, land area, and the environment. To ensure access to agricultural resources governments have developed a wide range of strategies, including colonialism, subsidizing domestic agriculture, trade protectionism, and economic integration. One such strategy, which has become prevalent in recent years, involves nations and national companies leasing or directly acquiring agricultural land abroad.

The first chapter examined the drivers of these acquisitions, called “large-scale land acquisitions;” it sought to determine if “investor” nations face specific food security conditions that contribute to their adoption of a LSLA food security strategy. Thus, it compared two seemingly dissimilar states that both use LSLAs, China and South Korea, and found numerous food security similarities between them that appear to lead to such a strategy.

Despite these parallels, further analysis is required to determine if these LSLA drivers apply generally, especially since a diverse range of nations use LSLAs.²²⁶ Although China and Korea are largely dissimilar, both are located in East Asia and, hence, share similar histories, cultures, security concerns, and economic interests; these regional factors may lead to similar food security concerns, objectives, responses, and strategies. Thus, examining only East Asian states may not isolate general motivations of LSLAs from regional drivers.

²²⁶ Land Matrix, *Land Matrix*, 2014, <http://www.landmatrix.org/>.

Therefore, this chapter seeks to “generalize” the first chapter’s findings by examining two additional nations that use LSLAs and are largely dissimilar, but that are outside East Asia, Saudi Arabia and India, to determine if the similar LSLA drivers found in China and Korea also exist in these states. In so doing, it seeks to establish whether states using LSLAs as a food security strategy, in general, share common traits motivating this strategy choice, thus confirming the explanatory power of the first chapter’s results. To test this hypothesis, it analyzes these countries’ food security concerns, objectives, and strategies, following the first chapter’s template, and then compares these food security conditions to the first chapter’s results. This chapter ultimately finds numerous parallels among all four states, indicating that the LSLA drivers found in the first chapter are general, not regional, trends.

Literature Review

The first chapter examined parallels in the food security conditions of China and Korea to determine if diverse nations that employ LSLAs share common motivations. While many similarities were found, it is possible that these parallels stem from specific East Asian factors and, thus, are not general beyond the region. To establish a foundation for testing the generalizability of the first chapter’s results, this section reviews causes of and responses to food scarcity from the first Literature Review. It then examines research on East Asian cultural, political, and economic traits that might result in similar food security strategies.

Food Scarcity Causes and Responses

Academic literature generally agrees that scarcity is caused by human demand and physical supply restrictions. As Homer-Dixon explains, “scarcity...is determined not

just by absolute physical limits, but also by preferences, beliefs, and norms;²²⁷ Daoud similarly states, “scarcity...emerges in relation to human activity or social provisioning.”²²⁸ Hence, many scholars analyze the effects of “population factors” on food and resource scarcity.

These “population factors” primarily include population growth and demographics. In 1798, Malthus posited that since “population, when unchecked, increases in a geometrical ratio” and “subsistence increases only in an arithmetical ratio,” food scarcity provides “a strong and constantly operating check on population.”²²⁹ Although Malthus fails to consider agricultural productivity, he underscores the risks of population growth, providing a foundation for both neo-Malthusians such as Ehrlich and for scarcity scholars including Siegenbeek van Heukelom, Daoud, and Verpoorten.^{230,231,232,233,234} Demographics are cited as another cause of scarcity; as Naylor and Falcon explain, “a human population nearing 7 billion, coupled with increased incomes in many developing countries, has created greater demand for meat, vegetable oils, and other high-end food products.”²³⁵ Sparks and Gunasekera, Newth, and Finnigan reiterate this sentiment.^{236,237}

Environmental factors are also agreed upon as causes of scarcity, mainly by affecting resource supplies. Homer-Dixon cites human-based “environmental change”

²²⁷ Homer-Dixon, "Environmental Scarcities and Violent Conflict: Evidence from Cases," 9.

²²⁸ Daoud, "Robbins and Malthus on Scarcity, Abundance, and Sufficiency," 1207.

²²⁹ Malthus, *An Essay on the Principle of Population*, 13.

²³⁰ Eccleston, "Peak Food?" 10.

²³¹ Ehrlich, *The Population Bomb*, 3.

²³² Siegenbeek van Heukelom, "A Human Approach to Food Security: Land Grabs in the Limelight," 11.

²³³ Daoud, "Robbins and Malthus on Scarcity, Abundance, and Sufficiency," 1208.

²³⁴ Verpoorten, "Leave none to claim the land: A Malthusian catastrophe in Rwanda?" 1.

²³⁵ Naylor and Falcon, "Food Security in an Era of Economic Volatility," 698.

²³⁶ Sparks, "Large Scale Land Acquisitions in Sub-Saharan Africa: The New Scramble," 687.

²³⁷ Gunasekera, Newth, and Finnigan, "Reconciling the Competing Demands in the Human-Earth System," 299.

and “unequal distribution of resources” as causing scarcity, specifically for “renewable resources” such as “fresh water” and “fertile soils;”²³⁸ many of these factors are restated by other scholars including Spieldoch and Murphy and by Dike and Dike.^{239,240} In sum, population growth, demographic trends, and the environment are major drivers of food and resource scarcity.

States respond to food scarcity using many methods, in addition to LSLAs. Spieldoch and Murphy and Coluta depict colonization as one such response, to show LSLAs’ historical precedent;^{241,242} as Spieldoch and Murphy explain, “colonization of farmland by foreign settlers dates back thousands of years.”²⁴³ Incentive-based responses are championed by Ricardo, a 19th century critic of Malthus, who claims that population and scarcity are directly related; when food is limited, its price rises and people farm more or reproduce less.²⁴⁴ This argument underlies modern scarcity scholarship, such as by Hallam and by Robertson and Pinstруп-Andersen.^{245,246} Scarcity can also be mitigated by market-based methods, such as, according to Hallam, “regional food reserves, financial instruments to manage risk, bilateral agreements including counter-trade (barter arrangements), and the improvement of international food market information

²³⁸ Homer-Dixon, "Environmental Scarcities and Violent Conflict: Evidence from Cases," 8.

²³⁹ Spieldoch and Murphy, "Agricultural Land Acquisitions," 45-46.

²⁴⁰ Dike and Dike, "Economics and Environmental Resources: Review," 164-165.

²⁴¹ Spieldoch and Murphy, "Agricultural Land Acquisitions," 40.

²⁴² Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System*, 17-18.

²⁴³ Spieldoch and Murphy, "Agricultural Land Acquisitions," 40.

²⁴⁴ Ricardo, *The Principles of Political Economy & Taxation*, 278.

²⁴⁵ Hallam, "International Investments in Agricultural Production," 33.

²⁴⁶ Robertson and Pinstруп-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" 279.

systems.”²⁴⁷ Lastly, scholars such as Rosenberg support farming technology investment to combat scarcity.²⁴⁸

Large-Scale Land Acquisitions

LSLAs, defined as “negotiations on the part of governments and private firms looking to sign agreements that would confer ownership of, or long-term leases on, land abroad,” have become a popular food security strategy over the past half-decade.²⁴⁹ Often described as “land grabs,” LSLAs have sparked controversy over their scope and effects on host nations, although there is general agreement on the nations involved and the drivers of LSLAs.²⁵⁰

Debate over LSLAs primarily concerns scale and effects on host nation populations. Cotula attributes debates over scale to the fact that “most of the estimates” are based on “media and research reports...and systematic national inventories based on official government records.”²⁵¹ The former usually display larger estimates, whereas the latter “tend to be lower.”²⁵² The “Land Matrix” has assembled a more rigorous database, which cross-references data from “international and local organisations and NGOs,” crowd-sourcing, field research, “government records,” “company websites,” and the media;²⁵³ it estimates that 35.6 million hectares, 137,627 square miles, have been included in LSLAs.²⁵⁴

Narula describes the two central views regarding LSLAs’ effects on host nations, explaining, “proponents argue that these investments can support economic development

²⁴⁷ Hallam, "International Investments in Agricultural Production," 31.

²⁴⁸ Rosenberg, "Innovative Responses to Materials Shortages," 118.

²⁴⁹ Spieldoch and Murphy, "Agricultural Land Acquisitions," 39.

²⁵⁰ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1233.

²⁵¹ Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System*, 37.

²⁵² Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System*, 49, 42.

²⁵³ Land Matrix, *About Land Matrix*.

²⁵⁴ Land Matrix, *Land Matrix*.

in host states while boosting global food production,” however, “critics charge that these ‘land grabs’ disregard users’ rights and further marginalize already vulnerable groups.”²⁵⁵ Scholars such as Cotula and Vermeulen, Siegenbeek van Heukelom, Telesetsky, and Narula, recognize either outcome’s possibility and thus support methods to benefit locals.^{256,257,258,259}

There is mostly consensus on the nations involved in LSLAs and the core drivers of LSLAs. According to Robertson and Pinstруп-Andersen, investors are typically “capital-rich, natural-resource poor Arab and East Asian governments and corporations.”²⁶⁰ Cotula and Vermeulen expand this view to include nations from Europe, Africa, and Southeast Asia.²⁶¹ LSLA host nations are often those with “cheap and abundant farmland, particularly in Africa,” though also in Southeast Asia and within the Former Soviet Union.^{262,263,264}

The drivers of LSLAs include the related factors of biofuels and food security.^{265,266} In recent years, demand for biofuels, feedstock crops, and related farmland has risen due to “biofuels support policies” and “demand for energy to fuel growth in emerging economies.”^{267,268} Regarding food security, LSLA demand has mainly come

²⁵⁵ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 101.

²⁵⁶ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1245.

²⁵⁷ Siegenbeek van Heukelom, "A Human Approach to Food Security: Land Grabs in the Limelight," 15.

²⁵⁸ Telesetsky, "Resource Conflicts over Arable Land in Food Insecure States," 291.

²⁵⁹ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 101.

²⁶⁰ Robertson and Pinstруп-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" 273.

²⁶¹ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1235.

²⁶² Robertson and Pinstруп-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" 271.

²⁶³ Telesetsky, "Resource Conflicts over Arable Land in Food Insecure States," 285.

²⁶⁴ Atkin, "Investment in Farmland in Central and Eastern Europe and the Former Soviet Union," 110.

²⁶⁵ Spieldoch and Murphy, "Agricultural Land Acquisitions," 42.

²⁶⁶ Borras Jr. and Franco, "Global Land Grabbing and Trajectories of Agrarian Change," 37.

²⁶⁷ Spieldoch and Murphy, "Agricultural Land Acquisitions," 43.

²⁶⁸ Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System*, 72.

from “resource-poor but cash rich” nations, especially with “fast-growing populations,” dependency on “international markets for their food supply,” as well as limited “arable land” or “sufficient fresh water.”^{269,270,271} Both factors have been aggravated since, according to Sparks and Eccleston, crop yields have been plateauing.^{272,273}

The most crucial LSLA driver noted in the literature is the Global Food Crisis of 2007-08, during which fuel (and hence biofuel) and food prices soared; as Naylor and Falcon describe, “wheat, rice, maize, and petroleum” prices “tripled in real terms during the first half of 2008.”²⁷⁴ The crisis was caused, according to Spieldoch and Murphy, by “supply problems,” “protectionist moves” by producers, and biofuel demand;²⁷⁵ Conceicao and Mendoza expand on these causes, including financial speculation, high oil prices, and agricultural productivity.²⁷⁶ Thus, states are thought to use LSLAs “to secure reliable food sources” and hedge against food price volatility.²⁷⁷

Finally, while LSLAs have roots in colonialism, they are also unique; Margulis, McKeon, and Borras Jr. portray LSLAs as “a unique world historical event that reveals a nascent shift in the global political economy,” and as a “de-territorialization and commodification of sovereign national territory.”²⁷⁸ Further, although LSLAs are “facilitated by the institutions and practices of neo-liberal globalization,” they are often

²⁶⁹ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 112.

²⁷⁰ Robertson and Pinstrup-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" 273.

²⁷¹ Spieldoch and Murphy, "Agricultural Land Acquisitions," 41.

²⁷² Sparks, "Large Scale Land Acquisitions in Sub-Saharan Africa: The New Scramble," 687.

²⁷³ Eccleston, "Peak Food?" 11.

²⁷⁴ Naylor and Falcon, "Food Security in an Era of Economic Volatility," 694.

²⁷⁵ Spieldoch and Murphy, "Agricultural Land Acquisitions," 42-43.

²⁷⁶ Conceicao and Mendoza, "Anatomy of the Global Food Crisis," 1168-1171.

²⁷⁷ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 112.

²⁷⁸ Margulis, McKeon, and Borras Jr., "Land Grabbing and Global Governance: Critical Perspectives," 18.

based on “security mercantilism” and “may have illiberal ends.”²⁷⁹ Hence, nations seeking LSLAs may adhere to an “illiberal” economic outlook, while using or exploiting liberal institutions.

East Asian Cultural and Economic Similarities

The first chapter observed strong parallels between Chinese and South Korean food security conditions and strategies, suggesting that states using LSLAs share common drivers. However, these drivers may be based on factors specific to East Asia, and would thus not be general trends. This section explores academic research examining parallels in East Asian nations’ cultures, economics, and politics that may motivate similar food security strategies.

A key advocate of cultural traits specific to East Asia is Lee Kuan Yew, former prime minister of Singapore. According to Yew, “people develop different characteristics when they have evolved for thousands of years separately... particularly in their neurological development, and their cultural values.”²⁸⁰ He asserts that East Asia is “fortunate” to have a “cultural backdrop” of “thrift, hard work, filial piety, [family loyalty], and... respect for scholarship and learning.”²⁸¹ Yew’s emphasis on intrinsic “Asian values” is controversial; according to Jenco, “‘Asian Values’ discourse was... condemned for its instrumentalism and lack of cultural authenticity.”²⁸²

Lew’s view of “Asian values,” albeit controversial, has stimulated considerable scholarly analysis. Thompson, for example, portrays “‘Asian values’ as a doctrine of developmentalism” claiming, “until prosperity is achieved, democracy remains an

²⁷⁹ Margulis, McKeon, and Borrás Jr., "Land Grabbing and Global Governance: Critical Perspectives," 18.

²⁸⁰ Lee Kuan Yew, interview by Fareed Zakaria, *A Conversation with Lee Kuan Yew*, Foreign Affairs, (March/April 1994).

²⁸¹ Yew, interview by Fareed Zakaria, *A Conversation with Lee Kuan Yew*.

²⁸² Leigh Jenco, "Revisiting Asian Values," *Journal of the History of Ideas* 74, no. 2 (April 2013): 237.

unaffordable luxury.”²⁸³ He further explains, “although thoroughly discredited internationally, ‘Asian values’ face a more complex fate at the domestic level,” especially since “authoritarian advocates” can claim that “only a ‘disciplined’ (that is, authoritarian) regime” will “promote fast economic growth.”²⁸⁴ More recent scholarship has revived the debate; Parfitt and Wysocki argue that Asian values are not “intrinsic and unchanging” but “can be seen as influencing behaviours, which create outcomes.”²⁸⁵ They assert that the region “is characterised by values of community and social organisation together with hard work” and “Asian development reflects the influence of such values,” for example through “a much more economically activist role to the so-called developmental state.”²⁸⁶

Finally, beyond “Asian values,” scholars suggest that history and culture distinctly contribute to East Asian geopolitics. Moore argues that “unresolved old security issues,” such as territorial or Cold War disputes, “daunting new security issues,” such as “rising China” and resource conflicts, growing “nationalism,” unsettled enmity with Japan, a “cultural proclivity for ‘face politics,’” and a “trust/social capital deficit” are “obstacles to greater Northeast Asian regional cooperation.”²⁸⁷ Overall, the literature implies that cultural or historical factors do, at the very least, influence the actions or perceptions of Asian nations.

There is also extensive literature on East Asian economic and political similarities.

This research is embodied in the concept of an East Asian development model, often

²⁸³ Mark Thompson, "Whatever Happened to Asian Values," *Journal of Democracy* 12, no. 4 (October 2001): 155.

²⁸⁴ Thompson, "Whatever Happened to Asian Values," 155-56.

²⁸⁵ Trevor Parfitt and Jay Wysocki, "The Meaning of Work in Neoliberal Globalisation: the Asian exception?" *Third World Quarterly* 33, no. 1 (2012): 44-45.

²⁸⁶ Parfitt and Wysocki, "The Meaning of Work in Neoliberal Globalisation: the Asian exception?" 45.

²⁸⁷ Gregory Moore, "Constructing Cooperation in Northeast Asia: historical Northeast Asian dyadic cultures and the potential for greater regional cooperation," *Journal of Contemporary China* 22, no. 83 (May 2013): 890.

called the “Developmental State” (DS).²⁸⁸ Initial descriptions of such a model focused on parallels among Japan, Taiwan, and Korea; Kuznets portrays this model as involving “high investment ratios, small public sectors, export orientation, labor-market competition, and government intervention in economic matters.”²⁸⁹ More recent theorists expand on this definition; Stubbs proposes “four conditions...crucial to the formation of a DS in East Asia,” including “a weak society...unable to [resist]” a “strong state,” “ideas circulating within the society or region [promoting]...the DS,” and a DS-supporting “security” and “economic environment.”²⁹⁰

China is often included in more recent analyses of East Asian models, albeit with some debate. As Stubbs explains, “China appears to have some relevance for discussions of...the DS” since “state authority structures in China appear to mirror the many types of DS...in the rest of East Asia.”²⁹¹ Kim likewise asserts, “it seems to be now ‘generally accepted’ that the success of the East Asian tigers,” including “China as a tiger still waking up,” “was largely a result of the crucial role played by the state.”²⁹² Similarly, Kwon and Kang propose an “East Asian model,” including China, based on three elements, “policy-augmented human capital,” “political stability,” and a claim that “democracy is not necessarily a precondition of economic growth.”²⁹³ In contrast, however, Hayashi depicts “serious obstacles to...the [DS] in China,” specifically “economic decentralization” and “the lack of coordination in policymaking...between

²⁸⁸ Richard Stubbs, "What ever happened to the East Asian Developmental State? The unfolding debate," *The Pacific Review* 22, no. 1 (March 2009): 2.

²⁸⁹ Paul Kuznets, "An East Asian Model of Economic Development: Japan, Taiwan, and South Korea," *Economic Development and Cultural Change* 36, no. 3 (1988): S17.

²⁹⁰ Stubbs, "What ever happened to the East Asian Developmental State? The unfolding debate," 6-7.

²⁹¹ Stubbs, "What ever happened to the East Asian Developmental State? The unfolding debate," 17.

²⁹² Wonik Kim, "Rethinking Colonialism and the Origins of the Developmental State in East Asia," *Journal of Contemporary Asia* 39, no. 3 (August 2009): 383.

²⁹³ Jene K. Kwon and Jung Mo Kang, "The East Asian model of economic development," *Asian-Pacific Economic Literature* 25, no. 2 (2011): 118.

central government and local government.”²⁹⁴ Parfitt and Wysocki support this view, arguing, “the Chinese state and the [DSs] of Asia have quite different origins and different approaches to governance.”²⁹⁵

Regardless of whether China is considered a DS, most East Asian development scholars emphasize the state’s primacy in promoting economic growth. According to Parfitt and Wysocki, “neither [China nor East Asian DSs] conceive the economy as a field of conflict between individual entrepreneurs, regarding it as an area where state guidance is necessary.”²⁹⁶ Likewise, as described by Breslin while discussing Chinese development, “a strong state controlling economic activity...sounds somewhat familiar—not least to students of development in other parts of Asia.”²⁹⁷ Numerous additional scholars have echoed this view of East Asia’s propensity for state-led economic growth, including Kennedy, Hayashi, Kim, Stubbs, and Wong.^{298,299,300,301,302}

Scholars also tend to agree that East Asian states share similar resource security policies. As Lee explains, “energy relations in Northeast Asia [have] been essentially competitive, reflecting the region’s economic and geopolitical constraints;”³⁰³ he cites Cold War-based “political and security environments,” uncertain “political trust,”

²⁹⁴ Shigeo Hayashi, "The developmental state in the era of globalization: beyond the Northeast Asian model of political economy," *The Pacific Review* 23, no. 1 (March 2010): 55.

²⁹⁵ Parfitt and Wysocki, "The Meaning of Work in Neoliberal Globalisation: the Asian exception?" 48.

²⁹⁶ Parfitt and Wysocki, "The Meaning of Work in Neoliberal Globalisation: the Asian exception?" 48-49.

²⁹⁷ Shaun Breslin, "The 'China Model' and the global crisis: from Friedrich List to a Chinese mode of governance?" *International Affairs* 87, no. 6 (2011): 1331.

²⁹⁸ Scott Kennedy, "The Myth of the Beijing Consensus," *Journal of Contemporary China* 19, no. 65 (June 2010): 471.

²⁹⁹ Hayashi, "The developmental state in the era of globalization," 51.

³⁰⁰ Kim, "Rethinking Colonialism and the Origins of the Developmental State in East Asia," 384.

³⁰¹ Stubbs, "What ever happened to the East Asian Developmental State? The unfolding debate," 6.

³⁰² Joseph Wong, "The Adaptive Developmental State in East Asia," *Journal of East Asian Studies* 4, no. 3 (2004): 351-52.

³⁰³ Jae-Seung Lee, "Energy Cooperation in Northeast Asia," *The Korean Journal of Defense Analysis* 22, no. 2 (June 2010): 218.

“historical antipathy” as well as “unilateral pursuit of energy supply and development.”³⁰⁴ Dent also describes this unilateralism, asserting, “energy diplomacy objectives of East Asian states are still predominantly subordinated to national interests rather than those of the regional or other multilateral collective.”³⁰⁵

Lastly, scholars often describe East Asian resource security goals as “mercantilist” or striving for “self-sufficiency.” As Dent explains, “due to the region’s developmental statist and socialist market traditions,” East Asian states tend to use “mercantilist approaches to energy diplomacy” such that they “seek to extend control...over foreign sources of energy.”³⁰⁶ Likewise, Wilson argues that the region “[shares] a strong mercantilist preference to import resources from nationally-controlled suppliers,” using “interventionist financial assistance policies to ensure their firms” can “compete with third parties;”³⁰⁷ East Asian nations will even “compromise broader reputational concerns in their quest for resource security.”³⁰⁸ He asserts that East Asia promotes “mercantilist self-reliance,” doubting “the liberal belief that international markets provide the best guarantee of resource security.”³⁰⁹ Barclay and Smith reiterate these points, depicting East Asia as trying “to maintain food self-sufficiency” and “[developing] infrastructure for resource extraction/production and transport in resource-extracting countries” for “purported [altruistic]” purposes.^{310,311}

³⁰⁴ Lee, "Energy Cooperation in Northeast Asia," 226.

³⁰⁵ Christopher Dent, "Understanding the Energy Diplomacies of East Asian States," *Modern Asian Studies* 47, no. 3 (May 2013): 951.

³⁰⁶ Dent, "Understanding the Energy Diplomacies of East Asian States," 965.

³⁰⁷ Jeffrey D. Wilson, "Northeast Asian Resource Security Strategies and International Resource Politics in Asia," *Asian Studies Review* 38, no. 1 (2014): 24.

³⁰⁸ Wilson, "Northeast Asian Resource Security Strategies and International Resource Politics in Asia," 27.

³⁰⁹ Wilson, "Northeast Asian Resource Security Strategies and International Resource Politics in Asia," 29.

³¹⁰ Kate Barclay and Graeme Smith, "Introduction: The International Politics of Resources," *Asian Studies Review* 37, no. 2 (2013): 131.

³¹¹ Barclay and Smith, "Introduction: The International Politics of Resources," 126.

Shortcomings and Contributions

Most studies on LSLAs focus on “host” nations; scholars analyze the content and scope of LSLA deals, the benefits and costs to local populations, and LSLAs’ links to colonialism. However, the literature offers only a limited overview of investor nations’ motivations for seeking food security LSLAs. While the first chapter discovered common food security conditions driving LSLAs in China and Korea, the general nature of these drivers is called into question by the abundance of scholarship describing cultural, political, historical, and economic traits specific to East Asia. Thus, to generalize the first chapter’s observations and ensure that regional factors are not their cause, this chapter examines two additional case study nations outside East Asia that use LSLAs, Saudi Arabia and India.

Theory and Hypothesis

This chapter hypothesizes that the results from the first chapter, which found that China and South Korea share specific food security concerns and objectives contributing to their mutual use of a LSLA food security strategy, are generalizable among countries using LSLAs. More specifically, it postulates that states using food security LSLAs share common food security concerns and response strategies, regardless of region, culture, government, or location. Since the first chapter established common food security factors motivating LSLAs in East Asia, this chapter tests if states outside this region that use LSLAs share such factors.

As the Literature Review describes, East Asia shares many attributes, such as value systems, development models, histories, and resource security policies promoting self-sufficiency and mercantilism. These traits appear supportive of food security LSLAs;

hence, the similarities found between China and Korea motivating LSLAs could be due to regional factors, instead of indicating a general trend. Thus, to test this chapter's hypothesis, this analysis examines the food security concerns, objectives, and strategies of two states as case studies that are dissimilar, outside East Asia, and employ LSLAs, Saudi Arabia and India.

The first chapter found common food security traits between two nominally different states that both use LSLAs, China and Korea. Regarding food security concerns, it found that both nations face drastically increasing and changing demand for food based on population growth, urbanization, rising incomes, and biofuel investment, as well as limits to agricultural production and supply based on low and decreasing arable land per person, plateauing crop yields, and a dwindling agricultural labor force. In terms of food security objectives, both rely on imports but are “wary” of this reliance, preferring self-sufficiency; during the Global Food Crisis of 2007-08, both countries' experiences highlighted vulnerabilities to food imports, exacerbated by projected future disparities between world food demand and supply, the oligopolistic world grain market structure, and food-producing nations' export restrictions. Lastly, both employ LSLA food security strategies to secure food resources in foreign nations in a comparable manner, by financially incenting private companies to invest in agriculture abroad; they also publicly minimize the government's role, classifying LSLAs as “development aid” and as helpful to host nations. This chapter examines whether Saudi Arabia and India share these traits.

Methodology

As previously described, this chapter seeks to determine if the first chapter's findings are generalizable outside East Asia, among states using a LSLA food security

strategy. To do so, it investigates the food security conditions and strategies of Saudi Arabia and India to establish whether they are similar to those of the countries analyzed in the first chapter, China and South Korea; it also compares these countries' LSLA implementation methods to confirm whether similar food security conditions, in general, result in similar LSLA strategies. Hence, this chapter first analyzes the food security concerns, objectives, strategies, and LSLAs of Saudi Arabia and India individually. It then compares these characteristics with those found in the first chapter to examine overlap, thus determining the extent to which these attributes are generalizable outside East Asia. If the results demonstrate significant parallels in these attributes among all four countries, then the drivers found to lead to similar LSLA strategies in the first chapter can be considered generalizable outside East Asia. If parallels cannot be found, then it is likely that the first chapter's results are not general; thus, "East Asian" factors presumably explain these results. All key findings are as of May 2014.

Saudi Arabia and India have been selected for analysis because these nations are outside the East Asian region, are dissimilar from each other as well as China and Korea, and use LSLAs as a food security strategy. According to the CIA World Factbook, Saudi Arabia is a "Monarchy" located in the "Middle East," with a population of 27,345,986, and a land area of 2,149,690 square kilometers.³¹² The Kingdom borders seven states, Iraq, Jordan, Kuwait, Oman, Qatar, the UAE, and Yemen.³¹³ Economically, it has a GDP of \$927.8 billion, a GDP growth rate of 3.6%, and a GDP per capita of \$31,300, the 44th highest worldwide.³¹⁴ India is a "Federal Republic," regionally in "South Asia," with a

³¹² U.S. Central Intelligence Agency, *The World Factbook - Saudi Arabia*, March 12, 2014, <https://www.cia.gov/library/publications/the-world-factbook/geos/sa.html>.

³¹³ U.S. Central Intelligence Agency, *The World Factbook - Saudi Arabia*.

³¹⁴ U.S. Central Intelligence Agency, *The World Factbook - Saudi Arabia*.

population of 1,236,344,631 and land area of 3,287,263 square kilometers.³¹⁵ It borders six states, Bangladesh, Bhutan, Burma, China, Nepal, and Pakistan.³¹⁶ The country has a GDP of \$4.962 trillion, a GDP growth rate of 3.8%, and a GDP per capita of \$4,000, the 168th highest.³¹⁷

Saudi Arabia and India have also been selected as a representative sample of nations pursuing LSLAs as part of an overall food security strategy. As Appendix 5 shows, China, Korea, Saudi Arabia, and India are all among the top 15 states using LSLAs, making them key actors in the LSLA trend.³¹⁸ Moreover, only food security LSLAs are within this study's scope, not other types used by some "top 15" nations such as those based on "renewable fuel" or "investment opportunities" for firms and governments.³¹⁹ Thus, each selected nation has been chosen based on its active use of LSLAs as a *national food security strategy*.

Based on these criteria, many nations have been excluded from analysis. European states must be excluded, since they "[lack] policies directly concerned with foreign land acquisition for agriculture."³²⁰ Likewise, U.S. LSLAs are driven by "mainly private equity and hedge funds... financing agribusiness companies," making them irrelevant for examining national food security LSLAs;³²¹ this is also true for Canadian LSLAs, initiated primarily by "companies, universities, pension funds, banks and

³¹⁵ U.S. Central Intelligence Agency, *The World Factbook - India*, March 11, 2014, <https://www.cia.gov/library/publications/the-world-factbook/geos/in.html>.

³¹⁶ U.S. Central Intelligence Agency, *The World Factbook - India*.

³¹⁷ U.S. Central Intelligence Agency, *The World Factbook - India*.

³¹⁸ Land Matrix, *Get the Detail: By Intention of Investment*, April 11, 2014, http://www.landmatrix.org/en/get-the-detail/by-intention/agriculture/?order_by=-investor_country.

³¹⁹ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1236.

³²⁰ Cotula and Vermeulen, "Deal or no deal: the outlook for agricultural land investment in Africa," 1236.

³²¹ Emmanuel Tumusiime, *Sector-Wide Analysis of U.S. Investment in Large-Scale Land Acquisitions*, Global Land Grabbing Conference Paper, Ithaca: Land Deals Politics Initiative, 2012, 1.

insurance companies.”³²² Similarly, South Africa does not appear to use food security LSLAs, as its investments usually involve “commercial farmers...negotiating access to farmland beyond national boundaries” to counter “growing barriers to accessing farmland at home.”³²³ Finally, other “top 15” countries such as Malaysia, Viet Nam, and Thailand, are unrepresentative, as their land deals are mainly for not food-specific crops.^{324,325,326}

Among “top 18” LSLA nations, those using food security LSLAs are China, Singapore, India, South Korea, Saudi Arabia, the UAE, and Japan.^{327,328,329,330} Outside the top 18, numerous other nations have pursued food security LSLAs, such as Qatar, Bangladesh, Kuwait, and Oman.^{331,332,333,334} Saudi Arabia and India, along with China and Korea, are illustrative of this group; they are major investors in LSLAs, exemplify the range of official “institutionalization” of LSLA food security strategies, and are

³²² Jasmine Bélanger-Gulick, *Canada and the global land rush*, Research Report, Ottawa: Canadian Food Security Policy Group, 2013, 3.

³²³ George C. Schoneveld, *The anatomy of large-scale farmland acquisitions in sub-Saharan Africa*, Working Paper 85, Bogor Barat: Center for International Forestry Research, 2011.

³²⁴ Land Matrix, *Get the Detail: Malaysia*, April 11, 2014, http://www.landmatrix.org/en/get-the-detail/by-investor-country/malaysia/?order_by=&starts_with=M.

³²⁵ Land Matrix, *Get the Detail: Viet Nam*, April 11, 2014, http://www.landmatrix.org/en/get-the-detail/by-investor-country/viet-nam/?order_by=&starts_with=V.

³²⁶ Land Matrix, *Get the Detail: Thailand*, April 11, 2014, http://www.landmatrix.org/en/get-the-detail/by-investor-country/thailand/?order_by=&starts_with=T.

³²⁷ Government of Singapore: Agri-food & Veterinary Authority, *AVA Vision - AVA's Food Security Roadmap for Singapore*, April 12, 2014, http://app.ava.gov.sg/data/Publications/ListOfPublications/ava_vision_issues3-4_2013/food-security-roadmap.html.

³²⁸ aldahra agriculture, *aldahra Vision, Mission & Values*, April 12, 2014, <http://www.aldahra.com/aldahra-mission-values.html>.

³²⁹ Aya Takada, "Japan to Promote Farm Investment Overseas for Food Security," *Bloomberg*, April 26, 2009.

³³⁰ Robertson and Pinstrup-Andersen, "Global Land Acquisition: neo-colonialism or development opportunity?" 273-274.

³³¹ Eckart Woertz, "The Governance of Gulf Agro-Investments," *Globalizations* 10, no. 1 (2013): 92.

³³² Guardian Development Network, "Bangladesh government goes shopping for farmland," *The Guardian*, November 17, 2011.

³³³ John Irish and Martina Fuchs, "Kuwait firm eyes Asia farmland investments," *arabianbusiness*, October 8, 2009.

³³⁴ Swapna Tarafdar, "Oman Looking to Invest Abroad for Food Production," *Muscat Daily*, January 5, 2014.

located in diverse regions.³³⁵ Thus, these four nations are valuable case studies to represent this group of states.

As noted in the previous chapter, one difficulty inherent in this study is data availability. This chapter examines the conditions and policies of multiple nations and, thus, the availability of information in each nation may not be uniform, especially if English-language sources vary. As in the first chapter, this chapter attempts to correct for any data limits; however, the specific sources used for each nation differ to some extent.

Finally, to clarify and reiterate definitions, food security concerns involve any major factors limiting national access to food. These can include demand factors, such as population or diet trends, or supply factors, including import conditions or endowments of land and water. Food security objectives involve national food security goals, indicated by policies or statements targeting production self-sufficiency, overseas investment, or food price stability. Food security strategies include any state-led response to food security concerns, such as imports, food reserve programs, trade agreements, or LSLAs. Lastly, LSLAs include any land deals conducted as part of a national effort to produce agricultural products abroad to enhance state food security and secure food resources, regardless of whether governments or companies are the “primary” investors.

Results

The first chapter’s results suggest that the similar food security conditions in China and Korea are key factors leading to the pursuit of LSLAs. However, to determine if these findings are generalizable beyond East Asia, this section examines the food security concerns, objectives, and strategies of two additional nations, Saudi Arabia and India; both use LSLAs, differ from each other as well as China and Korea, and are

³³⁵ Woertz, "The Governance of Gulf Agro-Investments," 88.

outside East Asia. This section describes food security traits motivating the choice of LSLA strategies by both Saudi Arabia and India, and illustrates how LSLAs fit within overarching national food security objectives.

Saudi Arabia – Food Security Concerns

As a desert nation, Saudi Arabia faces immense challenges in securing and producing adequate food supplies. As with the previously analyzed nations, these challenges contribute to Saudi Arabia’s selection of a LSLA food security strategy and can be divided into two categories, demand and supply-based concerns.

Regarding demand-based concerns, one key issue for Saudi Arabia is population growth. Saudi Arabia’s population “has grown from 5 million in 1970 to 26 million in 2010” and is currently “[growing] at a rate of 2.6% per annum.”³³⁶ Although this total population level is low compared to many countries, its growth rate is relatively high; for comparison, according to World Bank data, the Saudi population growth rate outstrips both China and Korea’s rate of 0.5% (even if this data notes only a “1.9%” Saudi growth rate).³³⁷ The Saudi population is expected to reach 40.388 million people by 2050 and peak at 41.253 million by 2061.³³⁸ These trends “will drive future growth in [food] demand” and require securing food resources to support an additional 15 million people over the next 40-50 years.³³⁹

Demographics also affect Saudi food demand. The nation “urbanized over a very short timescale” and currently, “more than 80% of the population lives in urban areas,”

³³⁶ Farrelly & Mitchell, *Agri-Food Policy in the Kingdom of Saudi Arabia*, White Paper, Dublin: Farrelly & Mitchell: Agri-Food Specialists, 2013, 2.

³³⁷ The World Bank, *Population Growth (annual %)*, March 17, 2014, http://data.worldbank.org/indicator/SP.POP.GROW?order=wbapi_data_value_2012%20wbapi_data_value%20wbapi_data_value-last&sort=asc.

³³⁸ United Nations Department of Economic and Social Affairs, *Saudi Arabia - Population by sex (thousands)*, March 17, 2014, <http://un.org/unpd/wpp/unpp/p2k0data.asp>.

³³⁹ Farrelly & Mitchell, *Agri-Food Policy in the Kingdom of Saudi Arabia*, 3.

increasing “at...2% per annum;” this trend is critical because “the urban population is dependent upon the agri-food supply chain for all of its food requirements.”³⁴⁰ Further, the median age is 26.4 and 46.9% of Saudis are under 25 (and 70 percent are younger than 30), which affects food needs because “young Saudis are quick to adopt new dietary trends,” and “the young population continues to grow at a rate that outpaces [food] production.”^{341,342,343}

Additionally, Saudi GDP per capita is rising, from \$10,854 in 2004 to \$25,136 in 2012; since “middle and high income families” in Saudi Arabia tend to “substitute rice with other higher value food items such as meat, vegetables and fruits,” demand for such foods, as well as livestock feed, is expected to grow as incomes increase.^{344,345} Further, due to a rising population and “higher disposable income,” an “increased number of retail outlets” have led to “growth in the Saudi retail food sectors.”³⁴⁶ Lastly, expansions in “workforce participation” and youth population are anticipated to raise “processed and fast food industry” demand.³⁴⁷ These trends will cause major diet shifts, requiring more food and livestock feed production.

Saudi Arabia also faces severe food supply constraints. Despite having a low population relative to other nations, “only about 2 percent of the country’s enormous land

³⁴⁰ Farrelly & Mitchell, *Agri-Food Policy in the Kingdom of Saudi Arabia*, 3.

³⁴¹ U.S. Central Intelligence Agency, *The World Factbook - Saudi Arabia*.

³⁴² United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Exporter Guide Annual*, GAIN Report, Washington, D.C.: USDA FAS, 2013, 11.

³⁴³ Thomas W. Lippman, “Saudi Arabia’s Quest for ‘Food Security’,” *Middle East Policy* 17, no. 1 (Spring 2010): 90.

³⁴⁴ The World Bank, *World Bank DataBank - World Development Indicators*, March 17, 2014, <http://databank.worldbank.org/data/views/reports/chart.aspx>.

³⁴⁵ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, GAIN Report, Washington, D.C.: USDA FAS, 2014, 15.

³⁴⁶ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Exporter Guide Annual*, 2.

³⁴⁷ Alpen Capital, *GCC Food Industry*, Industry Report, Doha: Alpen Capital Investment Banking, 2013, 60.

mass is arable, even with extensive irrigation and farming technology.”³⁴⁸ Consequently, Saudi Arabia has only 0.11 hectares of arable land per capita, which, while higher than China and Korea, is much less than the world average of 0.2 hectares per person.³⁴⁹ Moreover, according to the World Bank, the country’s arable land has been decreasing, from 3.5 million ha in 2004 to 3.11 in 2011.³⁵⁰

Agricultural input limits also restrict production. Saudi land requires “major irrigation” to sustain agriculture; for example, Saudi wheat and barley crops are “100 percent irrigated.”^{351,352} Further, since the country has “no permanent rivers or lakes and very little rainfall,” it relies on “aquifers...vast underground sources of water,”³⁵³ as of 2008, “81% of [Saudi] water came from fossil aquifers,” which “[are] not renewable” via “rainfall or other sources,” unlike “shallow, alluvial/fluvial aquifers,” which can undergo “recharge events.”^{354,355} This reliance on “deep fossil aquifers” limits food production because Saudi “water is like the country’s oil – when it is used up, it is gone.”^{356,357} Hence, irrigation diminishes freshwater supplies, which must be supplemented by “desalinization,” “dams...to capture surface water after frequent flash floods,” and

³⁴⁸ Lippman, "Saudi Arabia's Quest for 'Food Security'," 90.

³⁴⁹ The World Bank, *Arable Land (hectares per person)*, March 17, 2014, http://data.worldbank.org/indicator/AG.LND.ARBL.HA.PC?order=wbapi_data_value_2011+wbapi_data_value+wbapi_data_value-last&sort=asc.

³⁵⁰ The World Bank, *World Bank DataBank - World Development Indicators*.

³⁵¹ Dina Al-Kandari and David J. Jukes, "The food control system in Saudi Arabia - Centralizing food control activities," *Food Control* 28 (2012): 35.

³⁵² United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, 5, 8.

³⁵³ Royal Embassy of Saudi Arabia Washington, D.C. *About Saudi Arabia - Water Resources*, March 17, 2014, http://www.saudiembassy.net/about/country-information/agriculture_water/Water_Resources.aspx.

³⁵⁴ Gregory McQuie, Yueh-ya Hsu, and David Thomas, "Sustainable Water Management for Saudi Arabia in 2025 and Beyond," *The UMAP Journal* 34, no. 2 (2013): 174, 182, 172.

³⁵⁵ Thomas M. Missimer et al., "Restoration of Wadi Aquifers by Artificial Recharge with Treated Waste Water," *Ground Water* 50, no. 4 (July-August 2012): 514-515.

³⁵⁶ McQuie, Hsu, and Thomas, "Sustainable Water Management for Saudi Arabia in 2025 and Beyond," 169.

³⁵⁷ Lippman, "Saudi Arabia's Quest for 'Food Security'," 91.

“shallow aquifers” that can only be used “when there has been sufficient recharge to allow water use without fully depleting the resource or [changing] water quality.”^{358,359} The government’s resultant “strong concern over the depletion of . . . non-renewable water reserves” has led to efforts to reduce wheat, barley, and “cattle feed” production.^{360,361} Thus, “scarcity of water and fertile soil” creates “major [cultivation] constraints” at the same time that the country is facing food demand growth.³⁶²

Saudi Arabia – Food Security Responses: Imports and Self-Sufficiency

Due to limited food security resources and rising food demand, Saudi Arabia relies on imports for “most of its food products (around 60% from over 150 countries).”³⁶³ Some estimates claim that Saudi reliance on imports is even greater; according to the USDA, “Saudi Arabia depends on imports to meet about 80 percent of its food needs” and, based on FAO data, the country has an “import dependency ratio” of 82.9 for cereals, 92.84 for “pulses,” and 107.56 for vegetable oils (suggesting the nation exports more than it produces, supplemented by imports) (see Appendix 6).^{364,365} This reliance is exacerbated by the fact that many “food industries” in Saudi Arabia “cannot function without . . . imported raw materials.”³⁶⁶ The nation is “the largest importer of agricultural products” in the GCC and its imports are expected to increase; the country’s

³⁵⁸ Royal Embassy of Saudi Arabia Washington, D.C. *About Saudi Arabia - Water Resources*.

³⁵⁹ Missimer et al., “Restoration of Wadi Aquifers by Artificial Recharge with Treated Waste Water,” 515.

³⁶⁰ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, 5, 8.

³⁶¹ Lippman, “Saudi Arabia’s Quest for ‘Food Security,’” 91.

³⁶² Al-Kandari and Jukes, “The food control system in Saudi Arabia - Cenralizing food control activities,” 36.

³⁶³ Al-Kandari and Jukes, “The food control system in Saudi Arabia - Cenralizing food control activities,” 35.

³⁶⁴ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Exporter Guide Annual*, 3.

³⁶⁵ United Nations Food and Agriculture Organization, *FAOSTAT - Compare Data*.

³⁶⁶ Al-Kandari and Jukes, “The food control system in Saudi Arabia - Cenralizing food control activities,” 35.

food product imports were \$21.7 billion in 2012, and are “expected to exceed \$35 billion annually by 2020.”³⁶⁷ Saudi 2011 barley imports “[accounted] for more than 40% of the annual barley trade,” its rice imports are “more than three times the level of China’s,” and its poultry imports are “only one-fifth less than the total poultry imports into the EU.”³⁶⁸

Despite Saudi reliance on imports, the nation has historically been averse to import dependency for food. Starting in “the early 1990s” the country established a “longstanding strategy of achieving wheat self-sufficiency,” and ultimately attained “self-sufficiency in wheat and poultry,” as well as potatoes, eggs, milk, and dates, and “impressive harvests of figs, grapes, and citrus fruits, [and]...olive oil.”^{369,370,371} These efforts were meant largely “to reduce the dependence on oil and to encourage...development,” “reduce food import costs,” and to “provide employment,” thus “keeping village and farm populations in place.”^{372,373}

Saudi self-sufficiency efforts are also based on the country’s geopolitical history. During both World Wars, the Gulf “region was at the mercy of respective world powers for crucial food imports” and during “the 1970s, the US threatened to use the ‘food weapon’ in retaliation” to “the Arab oil boycott.”³⁷⁴ Although the U.S. did not execute its threat, “the mere threat of a food embargo was enough to worry Gulf policymakers,”

³⁶⁷ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Exporter Guide Annual*, 2.

³⁶⁸ Oxford Business Group, *Investing Overseas: Private firms encouraged to look abroad to ensure food security*, Saudi Arabia 2013, London: OBG, 2013.

³⁶⁹ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, 5.

³⁷⁰ Lippman, "Saudi Arabia's Quest for 'Food Security'," 90.

³⁷¹ Al-Kandari and Jukes, "The food control system in Saudi Arabia - Centralizing food control activities," 35.

³⁷² Al-Kandari and Jukes, "The food control system in Saudi Arabia - Centralizing food control activities," 35.

³⁷³ Lippman, "Saudi Arabia's Quest for 'Food Security'," 95.

³⁷⁴ Woertz, "The Governance of Gulf Agro-Investments," 88.

including those in Saudi Arabia.³⁷⁵ Thus, Saudi policymakers promote domestic production, when possible.

However, despite this wariness of agricultural import markets, food self-sufficiency has been considered unsustainable in recent years, largely due to the finite nature of Saudi water resources; consequently, Saudi Arabia has been reducing domestic agricultural production to “conserve its water,” resulting in rising imports.³⁷⁶ The country developed a policy “to phase-out wheat cultivation by 2016” and “[rely] on imports to satisfy the Kingdom’s wheat requirements;” it has also worked to end production of other highly irrigated crops, thus “[terminating] its barley production subsidy program in 2003” after “two decades of commercial barley production.”³⁷⁷ Saudi Arabia has continued to invest in domestic agriculture, but “is changing the mix of crops and products it will support to emphasize those that consume less fresh water;” for example, “vegetable production is shifting from open fields, where water evaporates, to greenhouses.”³⁷⁸

In light of Saudi import circumstances, the Global Food Crisis of 2007-08 raised major food security concerns and “evoked memories of threatened food supplies.”³⁷⁹ Unlike many countries, Saudi Arabia seemed well-positioned for the crisis given “the amount of cash per unit of population at its disposal;” however, despite Saudi “oil wealth,” the country faced “export restrictions imposed by food suppliers such as Argentina, Russia, India, and Vietnam.”^{380,381} Thus, although “oil revenues” should have “ensured

³⁷⁵ Woertz, "The Governance of Gulf Agro-Investments," 88.

³⁷⁶ Al-Kandari and Jukes, "The food control system in Saudi Arabia - Centralizing food control activities," 36.

³⁷⁷ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, 1, 8.

³⁷⁸ Lippman, "Saudi Arabia's Quest for 'Food Security'," 95.

³⁷⁹ Woertz, "The Governance of Gulf Agro-Investments," 88.

³⁸⁰ Lippman, "Saudi Arabia's Quest for 'Food Security'," 91.

³⁸¹ Woertz, "The Governance of Gulf Agro-Investments," 88.

that imports remained affordable,” export restrictions “have become a very serious concern,”³⁸² during the crisis, “food-driven inflation imposed real hardship on the millions of Saudis who live below the official poverty line,” which “became a political issue, to the extent that there are political issues in the kingdom.”³⁸³ These issues will likely worsen as global food demand may rise 100-110% by 2050 and “competition for commodities is...being stoked by [crop] conversion to biofuel production” worldwide, potentially leading to continued price volatility, high import costs, and export restrictions.^{384,385}

In light of Saudi concerns over import markets, the nation has developed numerous strategies to ensure access to food resources. After the “[Global Food Crisis], Gulf states,” including Saudi Arabia, “have taken a more vocal role in advocating for the interest of food importers at the multilateral level;” for example, they “have backed proposals by Japan and Switzerland at the WTO to discipline export restrictions” and potential “food weaponization.”³⁸⁶ Additionally, the country is striving to “diversify its sources for importing wheat and...not rely on a particular supplier” in order to “guard against shortages of wheat supply in the world markets” and import “at best prices.”³⁸⁷ Further, Saudi Arabia has also developed FTAs to limit potential restrictions on imports and, for example, is a member of the GCC and Pan-Arab FTA,³⁸⁸ the GCC itself, in turn, has entered or initiated FTAs, “with Arab Countries,” the EU, China, Pakistan, India,

³⁸² Woertz, "The Governance of Gulf Agro-Investments," 88, 96.

³⁸³ Lippman, "Saudi Arabia's Quest for 'Food Security'," 91.

³⁸⁴ Tilman et al., "Global food demand and the sustainable intensification of agriculture," 20260.

³⁸⁵ Lippman, "Saudi Arabia's Quest for 'Food Security'," 94.

³⁸⁶ Woertz, "The Governance of Gulf Agro-Investments," 96.

³⁸⁷ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia to Diversify Sources for its Wheat Imports*, GAIN Report, Washington, D.C.: USDA FAS, 2013, 2.

³⁸⁸ World Trade Organization, *Kingdom of Saudi Arabia*, March 18, 2014,

<http://rtais.wto.org/UI/PublicSearchByMemberResult.aspx?MemberCode=682&lang=1&redirect=1>.

Turkey, MERCOSUR, EFTA, Japan, Singapore, Australia, New Zealand, and ASEAN.³⁸⁹

Moreover, in 2010, Saudi Arabia “announced plans to increase its strategic reserves of wheat from six months to 12 months of consumption by 2016,” through the government-based “Grain Silos and Flour Mills Organization” (GSMFO), responsible for “logistics and stocking in wheat.”³⁹⁰ Although this effort has resulted in “Saudi milling wheat imports” rising “58 percent” between “2012/13” and “2013/14,” this grain will be stored in “several new wheat silos...under construction” that will raise “GSFMO wheat storage capacity to about 3.7 million [metric tons] by the end of 2015.”³⁹¹ Lastly, while Saudi Arabia does not disseminate “barley imports and stock” data, the USDA estimates its “strategic barley reserves” can support “three months of...consumption.”³⁹² Hence, the nation is developing improved strategic food reserves, which may offer relief during food supply crises.

Saudi Arabia – Food Security Responses: Large-Scale Land Acquisitions

Saudi Arabia faces considerable food security challenges; it has a rising population, changing dietary trends, and severe limits to domestic agricultural production, coupled with both an increasing dependency on and historical aversion to world import markets. It also has developed overall food security strategies that “exemplify mistrust in

³⁸⁹ The Cooperation Council for the Arab States of the Gulf Secretariat General, *Regional Cooperation and Economic Relations with other Countries and Groupings*, March 18, 2014, <http://www.gcc-sg.org/eng/indexbd78.html?action=Sec-Show&ID=71>.

³⁹⁰ Chatham House, *Global Food Insecurity and Implications for Saudi Arabia*, Energy, Environment and Resources Summary, London: Chatham House, 2013, 8.

³⁹¹ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, 4.

³⁹² United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, 10.

the reliability of markets” and “[reflect] a strategy of security mercantilism.”³⁹³ Against this backdrop, Saudi Arabia has implemented, as part of its food security strategy, a substantial LSLA program.

The Saudi LSLA program was initiated “in January 2009” “to facilitate land leases and investment opportunities for the Saudi private sector by political support and co-financing.”³⁹⁴ Named “the King Abdullah Initiative for Saudi Agricultural Investment Abroad” (KAISAIA), the program is designed “to support investment by private sector Saudi companies in agricultural projects abroad,” so that agricultural goods “would be exported, in whole or in part, to Saudi Arabia.”³⁹⁵ Some of these goods are earmarked “to establish... ‘a strategic reserve for basic food commodities,’ including rice, wheat, and barley.”³⁹⁶ KAISAIA was developed, essentially, as a “long-term attempt to deal with future food price volatility,” and will sponsor many “investment arrangements, including joint ventures, contract agreements and outgrower schemes.”³⁹⁷

KAISAIA is “a public-private partnership,” led by “the Saudi Company for Agricultural Investment and Animal Production,” and supported by a “capital investment of \$800 million.”³⁹⁸ Fundamentally, KAISAIA involves the government “[negotiating] agreements with host countries setting the terms of investment and specifying the conditions under which the host country could cut off exports in emergencies” and “[offering] aid to the host countries to build roads and other infrastructure projects needed to facilitate farm development,” while “providing financial incentives to

³⁹³ Woertz, "The Governance of Gulf Agro-Investments," 96-97.

³⁹⁴ Woertz, "The Governance of Gulf Agro-Investments," 93.

³⁹⁵ Lippman, "Saudi Arabia's Quest for 'Food Security'," 92.

³⁹⁶ Lippman, "Saudi Arabia's Quest for 'Food Security'," 92.

³⁹⁷ Oxford Business Group, *Investing Overseas: Private firms encouraged to look abroad to ensure food security*.

³⁹⁸ Woertz, "The Governance of Gulf Agro-Investments," 92-93.

encourage Saudi investors” to “invest overseas;” regarding the investment itself, “private companies” would “lease the land, hire local workers, provide equipment and fertilizer, and move the crops to market.”^{399,400} According to Dr. Saad Esa, Director of KAISAIA, Saudi Arabia “[lends] to private companies on an interest-free basis and [supports] them with the required facilities and logistics to invest in agriculture abroad.”⁴⁰¹ Overall, the Saudi government requires the “maximum government share” to be “60% in the financing of projects.”⁴⁰²

Regarding food security, KAISAIA “target countries must allow at least 50% of the crops for export back to Saudi Arabia,” and the Kingdom plans to “sign framework agreements” with target states, such as “Bilateral Investment Treaties,” “to protect these investments from the negative impact of political instability, civil wars, unrest and strikes.”^{403,404} According to Dr. Esa, “wheat, barley, corn, sorghum, soyabeans, rice, sugar, oilseed, green fodder, livestock and fisheries” as well as “dairy products” are the “targeted commodities.”⁴⁰⁵ In addition, the Saudi government does consider, or at least describe, KAISAIA as a method to “increase global food production and provide an example of responsible international investment in agriculture,” since the leftover “50 per cent [of crops will be] available to the country of origin.”⁴⁰⁶

³⁹⁹ Lippman, "Saudi Arabia's Quest for 'Food Security'," 94.

⁴⁰⁰ United States Department of Agriculture Foreign Agricultural Service, *Saudi Arabia Grain and Feed Annual*, 6.

⁴⁰¹ Oryxsa, "Interview: Dr. Saad A. Khalil Esa, King Abdullah Initiative for Agricultural Investment Abroad," *Oryx: Saudi Arabia News*, March 13, 2014.

⁴⁰² Woertz, "The Governance of Gulf Agro-Investments," 93.

⁴⁰³ Arab News, "Portal to facilitate investments in agriculture abroad," *Arab News*, December 28, 2013.

⁴⁰⁴ Woertz, "The Governance of Gulf Agro-Investments," 93.

⁴⁰⁵ Oryxsa, "Interview: Dr. Saad A. Khalil Esa, King Abdullah Initiative for Agricultural Investment Abroad."

⁴⁰⁶ Oryxsa, "Interview: Dr. Saad A. Khalil Esa, King Abdullah Initiative for Agricultural Investment Abroad."

Quantitative estimates of Saudi LSLA scope vary; however, investment content appears similar across reports. The Land Matrix estimates that Saudi Arabia has acquired 1,568,218 ha of agricultural land in 11 locations ranging from the Middle East to Eastern Europe, Africa, and South America through 21 overall contracts, each including a corporate investor (see Appendix 3).⁴⁰⁷ These findings are generally supported by Dr. Esa, except for land investments in South America, Turkey, and some African countries; according to Dr. Esa, the Saudi government has “identified 31 countries for potential investment and negotiated the relevant agreements such as double taxation with them” and “has already invested in Sudan, Ethiopia, Ukraine and Australia.”⁴⁰⁸ In contrast, a Georgetown University study asserts that, as of 2012, the country had invested in 1,713,357 ha of land through 16 deals in 14 countries, including “Ethiopia, Sudan, Senegal, South Sudan, Russia, Philippines, Argentina, Egypt, Mali, Mauritania, Nigeria, Niger (Suspended by host in 2009), Pakistan, [and] Zambia,” only some of which are noted by the Land Matrix and Dr. Esa.⁴⁰⁹

India – Food Security Concerns

India also faces extensive food security and agricultural resource concerns. As with Saudi Arabia, this section examines these issues from both a demand and supply standpoint.

⁴⁰⁷ Land Matrix, *Get the Detail: Saudi Arabia*, March 12, 2014, http://www.landmatrix.org/get-the-detail/by-investor-country/saudi-arabia/?order_by=&starts_with=S.

⁴⁰⁸ Oryxsa, "Interview: Dr. Saad A. Khalil Esa, King Abdullah Initiative for Agricultural Investment Abroad."

⁴⁰⁹ Benjamin Shepherd, *GCC States' Land Investments Abroad: The Case of Cambodia*, Summary Report, Doha: Georgetown University School of Foreign Service in Qatar: Center for International and Regional Studies, 2012, 4.

India has the world's second largest population, at 1,236,686,732 as of 2012, surpassed only by China.⁴¹⁰ India's population is growing at 1.3% per year, a massive rate for its population size, and is expected to peak at 1,644,750,000 in 2065; in fact, by 2030, India is expected to exceed China, with 1,476,378,000 people.^{411,412} This projected growth will require India to ensure food supplies for 400 million more people over the next 50 years.

India also faces demographic trends increasing food demand. India's GDP per capita has risen considerably, from \$457.30 in 2000 to \$1,489.20 in 2012.⁴¹³ The country is also rapidly urbanizing at a rate of 2.4% per year, and India's urban population has risen from "27.7 percent of the total in 2000 to 31.7 percent in 2012;"⁴¹⁴ by some projections, this level will reach 50.4% by 2040 and 55.9% by 2050.⁴¹⁵ Despite India's "preponderance of vegetarianism...[limiting] its demand for meat and feedgrains," due to rising incomes, urbanization, and economic development, India faces a "changing national [diet];" specifically, India faces rising demand for "vegetable oils, sugars, sweeteners, animal products (including meat and dairy), and fruits" and falling demand for "rice and wheat."⁴¹⁶ Urbanization is vital to this shift, since "urban dwellers have

⁴¹⁰ The World Bank, *Data - Population (Total)*, 2014, http://data.worldbank.org/indicator/SP.POP.TOTL?order=wbapi_data_value_2012+wbapi_data_value+wbapi_data_value-last&sort=asc.

⁴¹¹ The World Bank, *World DataBank - World Development Indicators*.

⁴¹² United Nations Department of Economic and Social Affairs, *Population (thousands)*, March 20, 2014, <http://esa.un.org/unpd/wpp/unpp/p2k0data.asp>.

⁴¹³ The World Bank, *World DataBank - World Development Indicators*.

⁴¹⁴ The World Bank, *World DataBank - World Development Indicators*.

⁴¹⁵ Elfie Swerts, Denise Pumain, and Eric Denis, "The future of India's urbanization," *Futures* 56 (February 2014): 51.

⁴¹⁶ Baldwin and Bonarriva, "Feeding the Dragon and the Elephant," 5-6, 8.

higher average incomes and different food consumption patterns than their rural counterparts,” “[consuming] fewer staples, such as grains, [and] more food overall.”⁴¹⁷

Finally, biofuel demand raises India’s agriculture production requirements, although the effect of this factor is somewhat limited. India is the fifth largest oil consumer, using “petroleum products to meet 95% of its transportation energy needs,” and has become “increasingly reliant on imports to meet this demand.”^{418,419} Thus, in 2001, the country “initiated biofuel production...to reduce its dependence on imported oil and thus improve energy security,” which, as codified in a 2009 policy, “envisages 20% blending of both biodiesel and bioethanol by 2017.”⁴²⁰ However, given biofuel production’s tendency to conflict with food production, India “requires...feedstock [to be] grown on marginal lands, unsuitable for [agriculture].”⁴²¹ According to Gunatilake et al., “if about 32 million hectares of waste lands can be cultivated as oilseed plantations, together with modest productivity improvements,” the “national petroleum diesel requirement in 2017 is attainable;” however, “at the current level of productivity, the bioethanol target cannot be met without compromising food production.”⁴²² Further, rising biofuel demand inherently places “additional pressure on land and other resources, such as water;” thus, even if only non-agricultural lands are used for biofuel, they may still burden Indian agricultural production.⁴²³

⁴¹⁷ Baldwin and Bonarriva, "Feeding the Dragon and the Elephant," 5.

⁴¹⁸ U.S. Energy Information Administration, *International Energy Statistics*, March 17, 2014, <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=79&pid=79&aid=2>.

⁴¹⁹ Herath Gunatilake, David Roland-Holst, and Guntur Sugiyarto, "Energy security for India: Biofuels, energy efficiency and food productivity," *Energy Policy* 65 (2014): 761.

⁴²⁰ Gunatilake, Roland-Holst, and Sugiyarto, "Energy security for India," 762.

⁴²¹ Gunatilake, Roland-Holst, and Sugiyarto, "Energy security for India," 762.

⁴²² Gunatilake, Roland-Holst, and Sugiyarto, "Energy security for India," 762.

⁴²³ N.H. Ravindranath et al., "Biofuel production and implications for land use, food production and environment in India," *Energy Policy* 39 (2011): 5740.

India also faces stark agricultural supply restrictions. Nominally, India has abundant arable land, 157,350,000 ha, “second only to the [U.S.]”^{424,425} However, given India’s large population, the country has only 0.1 ha per person, less than Saudi Arabia and half the world’s average.⁴²⁶ India’s levels of arable land have also been falling, since in 2000 India had 162,717,000 ha total and 0.2 ha per person. Further, Indian land is less productive than other nations’, since “only 42 percent of [Indian] arable land” is “equipped for irrigation,” India has fewer agricultural workers than other states such as China, and India uses less fertilizer.⁴²⁷ Thus, India’s “cereal yield” (kilograms/ha) is 2,953.6, which is lower than Saudi Arabia (5,166.2 kg/ha), China (5,837.5 kg/ha), and South Korea (7,114.3 kg/ha).⁴²⁸

India’s supply limits are exacerbated by land and demographic-based conditions. According to the USDA, in India “unscientific irrigation practices and over-exploitation of ground water are increasingly causing water table depletion and soil salinity,” temperature rises of “one-degree Celsius...can result in a 3-to-7 percent decrease in grain yield,” and about “three-fourths” of “Indian wheat [faces] the threat of the dreaded wheat rust Ug99.”⁴²⁹ Further, “current [Indian] rice production techniques...have serious environmental implications and cannot sustain projected food demand,” rice is often “produced in coastal regions...susceptible to a rise in sea level,” and “monsoon rains” can “decide the planting and productivity of coarse grain crops” as well as “pulses.”⁴³⁰

⁴²⁴ The World Bank, *World DataBank - World Development Indicators*.

⁴²⁵ Baldwin and Bonarriva, "Feeding the Dragon and the Elephant," 3.

⁴²⁶ The World Bank, *World DataBank - World Development Indicators*.

⁴²⁷ Baldwin and Bonarriva, "Feeding the Dragon and the Elephant," 4.

⁴²⁸ The World Bank, *World DataBank - World Development Indicators*.

⁴²⁹ United States Department of Agriculture Foreign Agricultural Service, *India - Grain and Feed Annual*, GAIN Report, Washington, D.C.: USDA FAS, 2014, 3-5.

⁴³⁰ United States Department of Agriculture Foreign Agricultural Service, *India - Grain and Feed Annual*, 15, 22, 29.

Moreover, falling crop “productivity growth has been particularly acute in India” since “expenditures on input support programs and migrant farm labor payments have crowded out public funding for agricultural research, extension services, irrigation, and other rural infrastructure projects that would support agricultural sustainability.”⁴³¹ Lastly, the farm “workforce has been declining” and “between 2004-05 and 2009-10, 23 million workers left agriculture;” hence, India may have reduced agricultural labor to produce food products.⁴³²

India – Food Security Responses: Imports and Self-Sufficiency

Despite rising demand and limits to domestic supply, India maintains a longstanding wariness to and avoidance of import markets. In agricultural policy, “India has pursued a policy of food self-sufficiency,” especially in “its major food staples: rice and wheat,” “since it gained independence in 1947.”⁴³³ Much of this drive for self-sufficiency is based on historical food insecurity; from 1875 to 1919, “one of the worst strings of famines in recorded history” occurred in India, “with an estimated death toll of between 15 and 30 million people.”⁴³⁴ Subsequently, India suffered the “Bengal Famine of 1943-4,” which “killed over two million people out of a population of around 60 million.”⁴³⁵ This history led to “a policy of food control, including over food prices and distribution of foodgrain, more particularly to the vulnerable sections of the community;” after gaining independence, “large numbers of programs were started with the objectives

⁴³¹ Baldwin and Bonarriva, “Feeding the Dragon and the Elephant,” 3.

⁴³² Santosh Mehrotra, “In India, non-agricultural sectors are driving employment; more workers deserting farms,” *The Economic Times*, February 10, 2014.

⁴³³ United States Department of Agriculture Economic Research Service, *India*.

⁴³⁴ Robin Burgess and Dave Donaldson, “Can Openness Mitigate the Effects of Weather Shocks? Evidence from India’s Famine Era,” *American Economic Review: Papers & Proceedings* 100 (May 2010): 450.

⁴³⁵ Cormac O. Grada, “The ripple that drowns? Twentieth-century famines in China and India as economic history,” *Economic History Review* 61, no. S1 (2008): 20.

to win freedom from foreign bread and [achieve] self-sufficiency.”⁴³⁶ Thus, “the goal of maintaining self-sufficiency in important food grains is a national political issue;” even today, the country’s “agricultural policies seek to: a) attain a higher level of food self-sufficiency; b) ensure remunerative prices to farmers; and c) maintain affordable prices to consumers.”^{437,438}

India has been relatively successful in staple grain self-sufficiency, attaining a 0.5 “cereal import dependency ratio” (see Appendix 6).⁴³⁹ In rice and wheat, this “goal has been achieved,” “by developing and adopting high-yielding varieties, expanding irrigation, and increasing fertilizer use—all aided by supportive output price and input subsidy policies.”⁴⁴⁰ To encourage “domestic production,” India also employs “subsidies on the purchase and use of fertilizer, seeds, fuel, irrigation water,” “minimum support prices,” and “high import tariffs on foreign agri-food products.”⁴⁴¹ Thus, India imports little wheat (2,940 tonnes in 2013), rice (700 tonnes in 2013), milk & cream (5,340 tonnes in 2013), and vegetable or animal fats (1,160 tonnes in 2013).⁴⁴² Further, according to the USDA, “India currently does not import corn or other coarse grains” (including “millet, sorghum, or barley”), rice has not imported since 2008, and “imports of wheat...have been precluded due to subsidized sales of wheat” (these facts somewhat

⁴³⁶ Ali Mohammad, *Fifty Years of Indian Agriculture*, Vol. 1, in *Fifty Years of Indian Agriculture: Production and Self-Sufficiency*, edited by Ali Mohammad, Hifzur Rehman and Abdul Munir, 26-45, New Delhi: Concept Publishing Company, 2007, 29-30.

⁴³⁷ Baldwin and Bonarriva, “Feeding the Dragon and the Elephant,” 2.

⁴³⁸ Brad Gilmour, Sudarma Samarajeewa, and Rajendra Gurung, “India: An Agri-Food Prospectus,” *Transnational Corporations Review* 4, no. 1 (March 2012): 67.

⁴³⁹ United Nations Food and Agriculture Organization, *FAOSTAT - Compare Data*.

⁴⁴⁰ United States Department of Agriculture Economic Research Service, *India*.

⁴⁴¹ Gilmour, Samarajeewa, and Gurung, “India: An Agri-Food Prospectus,” 67.

⁴⁴² Directorate of Economics and Statistics, *Consumption and Stocks, Imports/Exports/Inflation Rates, Land Use Statistics, Inputs and Agricultural Census*, Agricultural Statistics At a Glance 2013, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, 2013, 5.

conflict with official Indian statistics).⁴⁴³ Overall, “India’s domestic agricultural production currently supplies nearly 97% of its food demand.”⁴⁴⁴

However, while India has remained self-sufficient in certain agricultural products, especially staples, the country’s shifting demographics, changing demand, and required trade liberalization under the World Trade Organization (WTO), have caused India to rely on imports for many goods. Currently, “India’s major agri-food imports include vegetable oil, pulses, fruits and nuts;”⁴⁴⁵ according to Indian national statistics, in 2013 India imported 11,012,730 tonnes of vegetable oils, 3,837,560 tonnes of pulses, 892,160 tonnes of cashew nuts (fruit was tracked by value, not weight).⁴⁴⁶ Moreover, the nation is now the “world’s leading buyer of edible oils,” and is the “world’s largest producer, consumer and importer of pulses.”^{447,448} Hence, as of 2010, India had “import dependency ratios” of 14.3 for “pulses” and 46.85 for “vegetable oils,” which is incongruous with its drive for self-sufficiency.⁴⁴⁹

Demographics largely drive these imports, “since as countries develop economically and urbanize, traditional diets heavy in staples (such as grains and tubers) gradually shift to more meats, vegetable oils, dairy, aquatic products, fruits, vegetables, and processed foods.”⁴⁵⁰ Thus, wheat, pulse, vegetable oil, and non-beef meat demand is expected to grow, and, according to “food and agriculture minister, Sharad Pawar,” India

⁴⁴³ United States Department of Agriculture Foreign Agricultural Service, *India - Grain and Feed Annual*, 9, 20, 28.

⁴⁴⁴ Gilmour, Samarajeewa, and Gurung, "India: An Agri-Food Prospectus," 66.

⁴⁴⁵ Gilmour, Samarajeewa, and Gurung, "India: An Agri-Food Prospectus," 68.

⁴⁴⁶ Directorate of Economics and Statistics, *Consumption and Stocks, Imports/ Exports/ Inflation Rates, Land Use Statistics, Inputs and Agricultural Census*, 5.

⁴⁴⁷ The Economic Times, "Import duty on edible oil raised to 10 per cent," *The Economic Times*, January 10, 2014.

⁴⁴⁸ United States Department of Agriculture Foreign Agricultural Service, *India - Grain and Feed Annual*, 31.

⁴⁴⁹ United Nations Food and Agriculture Organization, *FAOSTAT - Compare Data*.

⁴⁵⁰ Baldwin and Bonarriva, "Feeding the Dragon and the Elephant," 5.

will “remain import dependent [in] pulses and edible oils” until 2020.^{451,452} However, India is promoting domestic production, for example, “[boosting pulse] output through diversion of land to pulse cultivation,” using “sharply higher” minimum price supports, and raising the “refined edible oil” import duty to 10 percent.^{453,454}

India has also been required to partially open its economy as a WTO member, raising its import reliance. After joining the WTO in 1995, “India had to revamp its policy of import substitution to an open economy with export-oriented growth in agriculture.”^{455,456} This change especially affected edible oils, for which “import dependency” grew “from 15.2 per cent of the total edible oil consumption in 1995-96 to 52.6 per cent in 2009-10.”⁴⁵⁷ Moreover, imports of “pulses, spices, cotton, [and] wood products” have also risen considerably.⁴⁵⁸

Despite reliance on imports for certain goods and required economic integration, India’s agricultural policies continue to emphasize consumer protection and “domestic price stability at relatively low price levels.”⁴⁵⁹ Hence, India employs many strategies to ensure self-sufficiency and price stability; although the country “has replaced quantitative restrictions on imports of all agri-food products with import tariffs” due to WTO rules,

⁴⁵¹ Gilmour, Samarajeewa, and Gurung, "India: An Agri-Food Prospectus," 68.

⁴⁵² The Times of India, "Food prices to ease, but India to remain import dependent: Pawar," *The Times of India: India Business*, January 29, 2010.

⁴⁵³ United States Department of Agriculture Economic Research Service, *India*.

⁴⁵⁴ The Economic Times, "Import duty on edible oil raised to 10 per cent."

⁴⁵⁵ World Trade Organization, *Member Information: India and the WTO*, March 21, 2014, http://www.wto.org/english/thewto_e/countries_e/india_e.htm.

⁴⁵⁶ V.P.S. Arora, "Agricultural Policies in India: Retrospect and Prospect," *Agricultural Economics Research Review* 26, no. 2 (July-December 2013): 146.

⁴⁵⁷ Lijo Thomas, Girish Kumar Jha, and Suresh Pal, "External Market Linkages and Instability in Indian Edible Oil Economy: Implications for Self-sufficiency Policy in Edible Oils," *Agricultural Economics Research Review* 26, no. 2 (July-December 2013): 185-186.

⁴⁵⁸ Surinder Sud, "Post-WTO, farm imports in India outdo exports," *Business Standard*, October 15, 2005.

⁴⁵⁹ Ashok Gulati and Shweta Saini, *Taming Food Inflation in India*, Discussion Paper, Government of India: Ministry of Agriculture, Department of Agriculture and Cooperation, New Delhi: Commission for Agricultural Costs and Prices, 2013, 27.

“average tariff protection for agricultural products in 2010 was 33.2%.”⁴⁶⁰ In response to food price shocks, India frequently “[adjusts] tariffs substantially to balance competing producer and consumer interests while complying with its WTO commitments.”⁴⁶¹ India also uses “border measures such as tariffs, quotas, and non-tariff measures” as well as “domestic subsidies to inputs, outputs, transportation, storage, and consumption,” thus “[protecting] domestic producers from import competition, [managing] domestic price levels, and [guaranteeing] domestic supply.”⁴⁶² India also responds to “estimated [shortfalls] in domestic production” with “export controls” to prevent rising prices.⁴⁶³

Beyond trade barriers, India employs numerous strategies for ensuring food security. India has a longstanding “grain reserve” system, which “purchases grain from farmers at a Minimum Support Price” and transports it “from the states with excess production to states” with “deficits.”⁴⁶⁴ It has also signed or is presently negotiating 34 free trade agreements, which can protect against trade restrictions in the event of a food crisis.⁴⁶⁵ Therefore, India uses a combination of economic integration and protectionism to ensure food security.

Due to India’s self-sufficiency and price-stability goals, the Global Food Crisis provoked considerable food security worries and relatively extreme responses. Thus, when food prices “[peaked] in May-June of 2008,” food exports, “most notably of common rice and wheat, were halted while imports of several food items were liberalized;” for example “tariffs on edible oils” were reduced “from almost 80 percent in

⁴⁶⁰ Gilmour, Samarajeewa, and Gurung, "India: An Agri-Food Prospectus," 68.

⁴⁶¹ Gilmour, Samarajeewa, and Gurung, "India: An Agri-Food Prospectus," 68.

⁴⁶² Arora, "Agricultural Policies in India: Retrospect and Prospect," 147.

⁴⁶³ Arora, "Agricultural Policies in India: Retrospect and Prospect," 150.

⁴⁶⁴ Ian McCreary, *Food Reserves in India*, Canadian Foodgrains Bank Occasional Paper, Winnipeg: Canadian Foodgrains Bank, 2012, 4.

⁴⁶⁵ Asian Development Bank: Asia Regional Integration Center, *Free Trade Agreements*, March 21, 2014, <http://aric.adb.org/fta-country>.

2006/7 to zero in 2007/8.”⁴⁶⁶ These efforts “to ensure abundant food supplies” and curb “food inflation” were, at first, effective; India suffered “less than ten percent” food inflation “in 2008/09, while in most of the developing countries of the region, food prices [rose] more than 20 percent.”⁴⁶⁷ However, “due to one of the severest droughts since 1972/73” in India, “food prices surged in 2009/10;”⁴⁶⁸ hence, from 2008 to 2014, annual “average food inflation rose sharply to 10.3 [percent],” which has continued despite post-crisis “moderation in global food prices.”⁴⁶⁹ Further, as “protein, fruits and vegetables” demand grew over this period, India’s “supply response has not been adequate,” exacerbating food inflation.⁴⁷⁰

India – Food Security Responses: Large-Scale Land Acquisitions

Due to India’s rising food demand and food inflation, the risks of food crises, and a drive for self-sufficiency and price stability, the nation has enacted a LSLA food security strategy. While its LSLA efforts are similar to those of other states, for example encouraging private investment in overseas agriculture, India is more cautious in these efforts, which are not codified in official government policy. Nevertheless, Indian LSLAs are supported by government entities and state officials have endorsed official LSLA policy actions.

India’s LSLA efforts became a serious government initiative following the Global Food Crisis, “as a long-term answer to keep prices of farm products under control.”⁴⁷¹

After the “food price hikes of 2008, the Indian government established a Working Group

⁴⁶⁶ Ashok Gulati, "The Global Food Crisis and India's response to it," *Rural 21* 45, no. 3 (March 2011): 20.

⁴⁶⁷ Gulati, "The Global Food Crisis and India's response to it," 21.

⁴⁶⁸ Gulati, "The Global Food Crisis and India's response to it," 21.

⁴⁶⁹ Deepak Mohanty, *Why is recent food inflation in India so persistent?* Speech by Mr. Deepak Mohanty, Executive Director of the Reserve Bank of India, Mumbai: Bank for International Settlements, 2014, 3.

⁴⁷⁰ Mohanty, *Why is recent food inflation in India so persistent?* 6.

⁴⁷¹ G. Ganapathy Subramaniam, "Govt, India Inc plan to farm land abroad," *The Economic Times*, September 3, 2008.

on agricultural production,” which recommended that “Indian companies... be encouraged to buy lands in foreign countries for producing pulses and oilseeds under long term supply contracts to Indian canalising agencies.”^{472,473} Further, India’s “Ministry of External Affairs suggested that the purchase or lease of overseas land for cultivation by firms should be supported with new policy incentives, lifting restrictions on outward foreign direct investment.”⁴⁷⁴ The government’s initial LSLA strategy involved a “grand plan” for “acquisition of large tracts of land in neighbouring countries like Myanmar and far off places like Paraguay,” Canada, Australia, and Africa.⁴⁷⁵

Eventually, however, India’s explicit strategy grew ambiguous. In 2012, reports appeared suggesting “the government has decided to throw its might behind private purchases of farm land overseas to ensure food security for India,” they claimed, “the agriculture ministry...sought views from other ministries on an institutional mechanism to extend sovereign support to [Indian companies’] acquisition of farmland abroad that could include guaranteed [crop] buyback.”⁴⁷⁶ However, “agriculture secretary PK Basu” contradicted these reports, asserting, “the proposal is in a nascent stage,” “there is a debate going on whether the government should get into it or not,” and the government had only “asked the Indian Institute of Foreign Trade to conduct a study.”⁴⁷⁷

Additionally, on the same day as this report, “Agriculture Minister Sharad Pawar” stated, “the Indian government has no plans to buy farmland abroad or help private

⁴⁷² Rick Rowden, "How India facilitates land-grabbing trend in Africa," *millenniumpost*, December 22, 2013.

⁴⁷³ Ministry of Agriculture: Working Group on Agriculture Production, *Working Group on Agriculture Production Submits Report to Prime Minister: Calls for Cheaper Farm Loans and Higher MSP*, Press Release, New Delhi: Press Information Bureau, Government of India, 2010.

⁴⁷⁴ Rowden, "How India facilitates land-grabbing trend in Africa."

⁴⁷⁵ Subramaniam, "Govt, India Inc plan to farm land abroad."

⁴⁷⁶ Dheeraj Tiwari and Rituraj Tiwari, "Food Security: Government mulls private purchase of farm land abroad," *The Economic Times*, March 5, 2012.

⁴⁷⁷ Tiwari and Tiwari, "Food Security: Government mulls private purchase of farm land abroad."

companies do so.”⁴⁷⁸ However, Pawar’s aversion contradicts a previous statement in which he “made it clear that while the government would not invest in buying land abroad, his ministry would act as a facilitator ‘if the private players show interest in this.’”⁴⁷⁹ Moreover, even government research organizations such as the “Indian Institute of Pulses Research” (IIPR) exhibited support for the “innovative idea” “of leasing land abroad for growing pulses and [bringing] the produce back to India;” the IIPR report supporting this initiative was praised by Minister Pawar as “a pragmatic assessment of the agricultural production and food demand scenario by the year 2050.”⁴⁸⁰

Despite India’s ambiguous public claims, as recently as 2014, according to the USDA, the Indian government is “encouraging Indian companies to explore opportunities to produce [crops such as] pulses overseas.”⁴⁸¹ While India has no formal LSLA policy, the Land Matrix documents 36 Indian agricultural land deals abroad covering 927,266 ha, excluding four of “unknown size” (see Appendix 4).⁴⁸² Although Indian companies execute the deals, the state “plays a prominent role...implementing reforms that facilitate direct foreign investments and providing trade diplomacy assistance and credit lines through the Exim Bank.”⁴⁸³

The Indian Export Import Bank (Exim), with trade diplomacy support from the Indian government, provides substantial assistance to companies investing in agriculture

⁴⁷⁸ Ratnajyoti Dutta, "India has no plans to buy farmland abroad - agriculture min," *Reuters India*, March 5, 2012.

⁴⁷⁹ The Telegraph, "Daal not enough? Grow them abroad, says Pawar," *The Telegraph*, December 6, 2010.

⁴⁸⁰ P.S. Basu, *Vision 2050*, IIPR Report, Kanpur: Indian Council of Agricultural Research: Indian Institute of Pulses Research, 2013, 15.

⁴⁸¹ United States Department of Agriculture Foreign Agricultural Service, *India - Grain and Feed Annual*, 36.

⁴⁸² Land Matrix, *Get the Detail: India*, March 21, 2014, http://www.landmatrix.org/get-the-detail/by-investor-country/india/?order_by=.

⁴⁸³ Natasha Travnicsek, *Land acquisitions: India's investments in Africa*, Discussion Paper, Lynnwood Ridge: Consultancy Africa Intelligence, 2012.

abroad and is a key facilitator of India's LSLA strategy. The Exim Bank provides two services contributing to LSLAs, "overseas investment finance" and "lines of credit."⁴⁸⁴ Regarding the former, the bank offers "finance for Indian [companies'] equity participation in the overseas Joint Venture (JV)/ Wholly Owned Subsidiary (WOS)."⁴⁸⁵ The agriculture industry is clearly supported by this service; the example on the bank's website is "'Advanta Semillas,' a company producing hybrid seeds of sunflower, corn, sorghum, etc.," with facilities in Argentina, Australia, and Thailand, which was acquired by Mumbai-based "United Phosphorous, with support from the Exim Bank."⁴⁸⁶

The Exim Bank also provides lines of credit (LoCs) to "foreign governments," "national or regional development banks," "overseas financial institutions," "commercial banks abroad," and "other suitable overseas entities."⁴⁸⁷ These LoCs "enable buyers in [foreign] countries to import developmental and infrastructure projects, equipment, goods and services (such as farming) from India," facilitating Indian private investment.⁴⁸⁸ Moreover, "as a rule, goods and services for minimum 75% value of the contracts covered under these [LoCs] must be sourced from India," so, therefore, "Indian foreign investors stand ready to win concessions and contracts for agricultural development in the form of foreign direct investment."^{489,490} As of January 2014, the Exim Bank had initiated

⁴⁸⁴ Export-Import Bank of India, *Our Services*, March 21, 2014, <http://www.eximbankindia.org.in/oif.asp>.

⁴⁸⁵ Export-Import Bank of India, *Overseas Investment Finance*, March 21, 2014, <http://www.eximbankindia.org.in/oif.asp>.

⁴⁸⁶ Export-Import Bank of India, *Overseas Investment Finance*.

⁴⁸⁷ Export-Import Bank of India, *Government of India supported Lines of Credit*, March 21, 2014, <http://www.eximbankindia.in/?q=loc>.

⁴⁸⁸ Rick Rowden, *India's Role in the New Global Farmland Grab*, Report, New Delhi: GRAIN and the Economics Research Foundation, 2011, 15, 17.

⁴⁸⁹ Department of Economic Affairs, *Terms and Conditions and Procedure to be adopted in respect of Government of India (GOI) Supported Exim Bank Lines of Credit (LoC's)*, Lines of Credit Detail, New Delhi: Government of India: Ministry of Finance, 2010, 3.

⁴⁹⁰ Rowden, *India's Role in the New Global Farmland Grab*, 15.

over 20 LoCs to develop agricultural industries in a range of nations, mostly in Africa.⁴⁹¹ LoCs also often overlap with Indian LSLAs; states with both Indian LSLAs and LoCs include Tanzania, Cambodia, Madagascar, Mozambique, Ethiopia, Sudan, Sierra Leone, and Ghana, and to an extent Kenya, Brazil, Zambia (these three LoCs are not specifically for agriculture, but may nevertheless support agricultural investment).^{492,493} In fact, the only Indian LSLA host nations that do not concurrently have LoCs are Uganda, Indonesia, and Malaysia.^{494,495}

One key example of the Exim Bank and Indian trade diplomacy facilitating LSLAs is India's investment in Ethiopia. Ethiopia received "[\\$65 million] for rural electrification" in 2006, \$640 million "in 2007 to [revitalize the] state-run sugar industry," and "at least four tranches of funding, ranging from [\$90 million] to [\$200 million]" from 2007 to 2011.⁴⁹⁶ Ethiopia "exports agricultural...products, such as tanned sheepskins, dried legumes, oil seeds, and ginger to India," many of which are products contributing to India's import dependency.⁴⁹⁷ Further, "Ethiopia has agreed that 85% of the Indian financing for sugar production" "should be used to hire Indian companies;" India also faces rising sugar demand and import reliance.⁴⁹⁸ Moreover, 14 Indian LSLAs are in Ethiopia, comprising 285,912 ha, many for crops vital to India such as cereals, oil seeds, rice, pulses, and sugar.⁴⁹⁹ Indian trade diplomacy protects these deals, such as through "a

⁴⁹¹ Export-Import Bank of India, *Exim Bank's Operative Lines of Credit*, Lines of Credit Report, Mumbai: Export-Import Bank of India, 2014.

⁴⁹² Export-Import Bank of India, *Exim Bank's Operative Lines of Credit*.

⁴⁹³ Land Matrix, *Get the Detail: India*.

⁴⁹⁴ Export-Import Bank of India, *Exim Bank's Operative Lines of Credit*.

⁴⁹⁵ Land Matrix, *Get the Detail: India*.

⁴⁹⁶ John Schellhase, *A subtle engagement: Ethiopia and India*, Discussion Paper, Consultancy Africa Intelligence, 2013.

⁴⁹⁷ Schellhase, *A subtle engagement: Ethiopia and India*.

⁴⁹⁸ Schellhase, *A subtle engagement: Ethiopia and India*.

⁴⁹⁹ Land Matrix, *Get the Detail: India*.

bilateral Investment Promotion and Protection Agreement” and a “Duty Free Tariff Preference Scheme for Less Developed Countries,” which Ethiopia “was among the first” to join.⁵⁰⁰

Lastly, India promotes “outward FDI” for Indian companies, which facilitates land acquisition and overseas agriculture investment.⁵⁰¹ Initially, “rules for outward FDI began to be liberalized in the 2000s,” and in 2003 the Indian government enacted “liberalisation measures” allowing “Indian corporates” and “registered [partnerships]... to undertake agricultural activities” overseas.⁵⁰² Additionally, in May 2011, India “further increased the limit within which Indian companies are allowed to invest abroad;”⁵⁰³ the Reserve Bank of India (RBI) allowed “Indian companies” to make “financial commitments in overseas ventures up to 400 per cent of their net worth.”⁵⁰⁴ Although the RBI curtailed this expansion to 100 percent in August 2013, it relaxed this limit to 400 percent again in September 2013.⁵⁰⁵ This promotion of overseas investment has “been crucial [for] Indian agricultural companies investing in foreign agricultural land.”⁵⁰⁶

Although India has no explicit LSLA policy, it clearly strives to secure agricultural resources abroad, specifically by encouraging investment by private firms. Further, India has strongly considered codifying these efforts in official policy and, even if it has not yet done so, state officials and research organizations have promoted such a

⁵⁰⁰ The Embassy of India - Addis Ababa, Ethiopia, *India-Ethiopia Commercial Bilateral Relations*, March 21, 2014, <http://indembassyeth.in/commercial-bilateral-relations/>.

⁵⁰¹ Rowden, *India's Role in the New Global Farmland Grab*, 18.

⁵⁰² Government of India: Business Knowledge Resource Online, *Doing Business Abroad: Overseas Investment Policy*, March 21, 2014.

⁵⁰³ Rowden, *India's Role in the New Global Farmland Grab*, 18.

⁵⁰⁴ The Economic Times, "RBI eases norms to help India Inc increase global footprint," *The Economic Times*, May 23, 2011.

⁵⁰⁵ The Hindu, "RBI eases overseas investment norms for Indian corporates," *The Hindu*, September 4, 2013.

⁵⁰⁶ Rowden, *India's Role in the New Global Farmland Grab*, 18.

policy. Thus, despite official policy, India has, in practice, developed an implicit LSLA strategy, which operates similar to other nations' and secures access to the agricultural resources India demands.

Discussion

In the first chapter, numerous similarities were found between China and Korea's food security concerns, objectives, and strategies, which appear to contribute to their mutual use of LSLAs. However, given the nations' location, their parallels may have been due to regional factors instead of general trends. Nevertheless, by analyzing these same food security conditions in Saudi Arabia and India, it appears that these states share considerable similarities with China and Korea; thus, based on the second chapter's hypothesis, the first chapter's findings are likely generalizable. This section compares similarities in the food security traits found in the first chapter with those of Saudi Arabia and India.

Food Security Concerns

As the first chapter describes, China and Korea must contend with rising and shifting food demand due to urbanization, population growth and change, and increasing incomes. This chapter found that these are also key trends in Saudi Arabia and India; both face growing populations, rising incomes, and rapid urbanization, which increase long-term food demand and shift diets away from traditional staple foods. Further, although Saudi Arabia is an exception due to its oil resources, India, China, and South Korea all invest in biofuels, raising demand for "feedstock" such as corn for ethanol or edible oils for biodiesel; while India aims to produce such crops on non-farm lands, such production may nonetheless strain agricultural resources and raise feedstock demand. Thus, these

states face strikingly similar food demand concerns, requiring future access to greater and more varied food resources.

Additionally, all four countries face substantial agricultural supply constraints. Each has a steadily decreasing level of arable land per person, already well below the world's average.^{507,508} Further, these countries all contend with agricultural sustainability difficulties due to environmental challenges, demographic trends, and, as the Literature Review describes, plateauing crop yields.^{509,510} Lastly, a decreasing agricultural labor force exacerbates food security concerns in India, China, and South Korea, although this is less of a challenge for Saudi Arabia. While specific supply constraints are somewhat different for each nation, notably Saudi Arabia's non-renewable water limits and India's risk of monsoons and temperature change, all face stark agricultural production limits, especially in terms of meeting rising domestic demand.

Food Security Responses

Due to these food security concerns, Saudi Arabia and India have implemented responses that closely mirror those of China and Korea. Most notably, all four countries share an aversion to world agricultural import markets, based on national experiences, histories, past colonialism, or desire for independence. Therefore, as with China and Korea, many of Saudi Arabia and India's food security goals and strategies seem driven by a desire to satisfy rising demand for agricultural products while avoiding import markets, when practicable.

⁵⁰⁷ The World Bank, *Arable Land (hectares per person)*.

⁵⁰⁸ The World Bank, *Data - Arable Land*, 2013.

⁵⁰⁹ Sparks, "Large Scale Land Acquisitions in Sub-Saharan Africa: The New Scramble," 687.

⁵¹⁰ Eccleston, "Peak Food?" 11.

Despite this aversion, all four nations do depend on imports for specific agricultural products; while each country relies on imports to varying “absolute” degrees and for different products (for examples, see appendix 6), each faces some level of dependency, intensified by projected future demand and changing demographics. However, in large part due to the Global Food Crisis, these nations have exhibited significant vulnerabilities to import markets; Saudi Arabia realized that its oil wealth is not sufficient to secure food supplies and India faced high and unrelenting food price inflation. These vulnerabilities have been exacerbated by fears of “food weaponization,” prompting each country to limit or advocate against export restrictions (at least concerning *other* countries employing them).⁵¹¹ Therefore, all four states appear to have been significantly influenced by the Global Food Crisis, particularly in terms of prompting national worries about import dependence and longer-term food insecurity.

In reacting to these worries, all four countries have implemented comparable response strategies. Specifically, they attempt to promote self-sufficiency and lessen reliance on imports, or at least mitigate the dangers of this dependency. For example, each has engaged in FTAs, developed strategic grain reserves, or attempted self-sufficiency in production of certain agricultural goods such as staple grains; although total self-sufficiency became unsustainable in the case of Saudi Arabia, its current reliance on imports seems due to necessity, not a desire for economic liberalism. Additionally, for the most part, each country has subsidized grain production, raised farmers’ incomes, and used trade protectionism or other “mercantilist” measures to ensure domestic supplies.⁵¹² Finally, despite aversion to imports, all four countries have

⁵¹¹ Woertz, "The Governance of Gulf Agro-Investments," 96.

⁵¹² Woertz, "The Governance of Gulf Agro-Investments," 96-97.

engaged in international cooperation, through WTO or FTA agreements, to secure access to commodities difficult to procure domestically.

Large-Scale Land Acquisitions

In light of the similar food security concerns, objectives, and strategies shared by Saudi Arabia, China, India, and Korea, it is not surprising that they employ markedly similar LSLA food security strategies. All four use this strategy to secure food resources abroad, while distancing the state's role in the process by conducting LSLAs through private firms. While the Saudi policy is more institutionalized than India's, and China and Korea fall in between, each state gives private enterprise the lead, encouraging investment financially or through supportive regulation.⁵¹³ Further, all nations promote the benefits available to target nations through these investments, classifying LSLAs as "development" or "aid."

As the first chapter describes, governments likely distance themselves from LSLAs for a number of reasons, specifically political ramifications and costs. LSLAs are disparagingly called "land grabs" in academic and activist literature, and are criticized for harming local populations; thus, LSLAs can have appreciable political effects on host nations.⁵¹⁴ For example, an attempt by South Korean company Daewoo Logistics to lease "1.3 million hectares in Madagascar," about half of the country's arable land, resulted in "riots and overthrowing of the Madagascan government."⁵¹⁵ India faced a similar scandal in 2008 when Karuturi Global, an Indian company, "leased 300,000 hectares (ha) of land in southern Ethiopia" to "[become] the world's largest food producer."⁵¹⁶ This "made

⁵¹³ Woertz, "The Governance of Gulf Agro-Investments," 88.

⁵¹⁴ Narula, "The Global Land Rush: Markets, Rights, and the Politics of Food," 101.

⁵¹⁵ Lee and Müller, *South Korean External Strategy Qualms*, 14.

⁵¹⁶ The Hindu, "Karuturi debacle prompts Ethiopia to review land policy," *The Hindu*, June 1, 2013.

international headlines” and prompted the Ethiopian government to “[take] control of land allocation from the regional governments,” “[subject] potential investors to greater scrutiny and [lease] out land in incremental plots of 5,000 to 10,000 ha rather than vast tracts.”⁵¹⁷ Therefore, as described previously, nations may distance themselves from LSLAs to mitigate geopolitical or media ramifications. Moreover, since financial costs of LSLAs fall primarily on corporations, this strategy is likely cheaper for governments than direct investment.

Analysis

The first chapter found common food security conditions in two dissimilar countries, China and South Korea, that appear to contribute to these countries’ use of food security LSLAs, and that LSLAs in these countries are used to support a broader food security strategy. This second chapter hypothesized that the first chapter’s findings are generalizable to nations beyond East Asia, to all nations utilizing LSLAs for food security purposes. To test this hypothesis, it analyzed two diverse countries that both use LSLAs but are outside East Asia, Saudi Arabia and India. By determining if these nations share the traits contributing to LSLA strategies in China and South Korea, this chapter intended to establish the extent to which these motivations are generalizable.

The results of this study demonstrate that Saudi Arabia and India share many food security concerns, objectives, and response approaches with China and South Korea. Each faces rapidly growing and changing populations, contributing to projected increases and shifts in domestic food demand, coupled with limits to agricultural production capacity. These nations are wary of imports and support policies promoting agricultural self-sufficiency; when necessary, they rely on imports, but work to mitigate the risks of

⁵¹⁷ The Hindu, "Karuturi debacle prompts Ethiopia to review land policy."

import markets through international trade agreements. As described in the first chapter, in China and South Korea LSLAs seem to be yet another method of satisfying domestic demand while securing greater self-sufficient control over agricultural resource sources; this also appears to be the case for Saudi Arabia and India.

This chapter's results support the hypothesis that the food security factors contributing to LSLA strategies in China and South Korea are generalizable to nations outside East Asia. While China and South Korea may share many region-based factors such as state-led growth, security concerns, or similar histories, these similarities do not limit the applicability of the first chapter's results or diminish the food security conditions that might motivate a LSLA food security strategy. Therefore, it appears to be a generalizable trend that states demonstrating rapid and long-term rising food demand for a growing variety of products, limited agricultural supply capacity, a wariness of import markets, a dependency on agricultural imports, and strategies promoting agricultural self-sufficiency are most likely to choose a LSLA food security strategy.

However, the similarities described in the Literature Review regarding the East Asian propensity for "a strong mercantilist preference to import resources from nationally-controlled suppliers," using "interventionist financial assistance policies to ensure their firms" can "compete with third parties," may still provide wisdom regarding LSLAs, since both Saudi Arabia and India also share such a propensity.⁵¹⁸ According to Woertz, Saudi Arabian food security strategies "exemplify mistrust in the reliability of markets" and "[reflect] a strategy of security mercantilism;"⁵¹⁹ similarly, India is known for using protectionist food security strategies, for example, "[adjusting] tariffs

⁵¹⁸ Wilson, "Northeast Asian Resource Security Strategies and International Resource Politics in Asia," 24.

⁵¹⁹ Woertz, "The Governance of Gulf Agro-Investments," 96-97.

substantially to balance competing producer and consumer interests.”⁵²⁰ Thus, an additional generalizable trait that may lead to a LSLA strategy is an overall mercantilist economic outlook in regards to agriculture. Although this characteristic is shared among many East Asian countries, it is also shared by other countries throughout the world and, combined with the previously described food security factors, likely contributes to LSLAs.

This topic offers many areas of future research. While these first two chapters have established general food security conditions leading to LSLAs, they have not examined cases in which a nation faces these conditions but does not choose LSLAs. Hence, future research could determine whether such cases exist, and, if so, why LSLAs do not occur. Such research may explain *why* the food security conditions examined in these chapters lead to LSLAs and why states might forego this strategy. Additionally, other elements of LSLA-pursuing nations, such as national economic outlook, political structure, etc., could be explored to determine if such factors also contribute to or motivate the use of food security LSLAs. Lastly, given that water use and availability appear to be major food security factors in many of these nations, the role of water or other agricultural inputs in influencing food security conditions or LSLAs could be more thoroughly examined by future scholars.

Conclusion

This chapter sought to generalize the findings from the first chapter of this thesis by examining whether these results applied to two diverse nations located outside the East Asian region, Saudi Arabia and India. By comparing these nations’ food security concerns, objectives, and strategies with each other and with the findings from the

⁵²⁰ Gilmour, Samarajeewa, and Gurung, "India: An Agri-Food Prospectus," 68.

previous chapter, it determined that the first chapter's findings were generalizable and that "East Asian" factors were not their cause.

Therefore, in any region, it appears that countries choosing LSLAs are those that face rapid and long-term increasing demand for food, demand for a growing variety of agricultural products, and severe limitations on food production to meet this demand. These countries likely have a dependency on imports for certain food products but also a strong aversion to global import markets and implement strategies to mitigate risks of this dependency. Further, they will institute policies that promote self-sufficiency in agriculture, including economic support for domestic agriculture and trade restrictions. In light of these overall goals and aversions, these countries will likely pursue LSLAs as one supporting component of an overarching food security strategy, to minimize import risks and secure access to domestically demanded agricultural resources.

This chapter's insights contribute to the academic literature on both food security and "land grabbing," examining the factors encouraging investor nations to pursue a LSLA food security strategy. This chapter clarifies why nations enact specific food security strategies, especially since nations that select similar food security strategies (such as LSLAs) may possess dissimilar attributes. Moreover, given that this chapter determined the generalizable nature of the first chapter's findings, these findings are now more applicable and have increased explanatory power regarding nations' selection of food security strategies. This explanatory or predictive power may be especially valuable in upcoming years, since projected rising food demand may contribute to future food insecurity and encourage more nations to pursue LSLA food security strategies.

CHAPTER 3

Introduction

The first two chapters of this thesis sought to determine whether there are specific food security conditions, interests, and objectives that motivate nations to pursue LSLAs as a food security strategy. The results of these chapters indicated that there are, in fact, significant food security drivers that directly prompt nations to encourage domestic companies to acquire farmland abroad to secure access to agricultural resources. However, a further question remains: would any country that faces these food security conditions pursue such a strategy, or are there additional, “secondary” motivations underlying LSLAs?

Policy decisions never occur in a vacuum; they occur via policymakers influenced by culture, history, experience, incentives, and ideology. Thus, a nation’s paradigm defines the range of policies that are possible to select in response to a given set of conditions. Consequently, while any given policy choice might be directly driven by specific “triggers,” there are likely “secondary” motivations of that choice, based on a country’s national outlook.

The first two chapters determined the food security “triggers” that lead nations to pursue LSLAs. However, these chapters also found that LSLAs are often compared with mercantilism or colonialism in the literature, and that they are often implemented as an attempt to circumvent agricultural import markets. Moreover, the countries pursuing them all strive for agricultural self-sufficiency, preferring independence to reliance on other states. Since these characteristics appear indicative of an aversion to liberal

economic markets, one “secondary motivation” of LSLAs could be a nation’s overarching economic outlook.

Therefore, this chapter examines the economic outlooks of nations pursuing food security LSLAs, as indicated by national economic history and current policy choices, to determine if these states share economic paradigms. Specifically, it analyzes the economic outlooks of the four nations studied in the first two chapters, since these states are proven to share similar LSLA strategies and food security “triggers.” This chapter seeks to establish whether economic outlook can be considered a secondary motivation of food security LSLAs, setting the stage for this policy choice; further, if these nations do share an economic outlook, it seeks to determine whether this outlook appears “illiberal” or “mercantilist” in nature, which would be consistent with LSLAs’ description in the literature. This chapter ultimately finds that these states do share an illiberal and nationalist economic outlook, as each has a significant history of illiberalism that carries through to modern-day economic policies; these findings indicate that an illiberal economic outlook is one secondary motivation of LSLAs.

Literature Review

The first two chapters determined specific food security factors that, in general, contribute to nations’ selection of LSLAs as a food security strategy. However, in light of LSLAs’ connection to national efforts at agricultural self-sufficiency, avoidance of international import markets, and a fundamental “mistrust in the reliability of markets,” it appears that nations pursuing LSLAs may be driven not just by similar food security concerns, but also by specific economic outlooks and tendencies.⁵²¹ Moreover, given the similarities described in the second chapter’s Literature Review regarding East Asian

⁵²¹ Woertz, "The Governance of Gulf Agro-Investments," 97.

tendencies toward state-led growth, market intervention, and mercantilist-reminiscent natural resource competition, it is possible that other LSLA-pursuing nations share these traits or an overarching “illiberal” economic paradigm. To provide a foundation for analyzing LSLA nations’ economic outlooks, this section examines academic literature describing LSLAs as a form of mercantilism and colonialism. It then analyzes mercantilism and colonialism within the larger context of economic illiberalism in order to explore the potential economic similarities shared by LSLA-pursuing nations.

Large-Scale Land Acquisitions, Colonialism, and Mercantilism

There is a large body of literature comparing LSLAs to colonialism, due to the clear similarities between the two as national efforts to acquire foreign land. For instance, in describing LSLAs, Cotula explains, “far from being a new phenomenon, large land deals have a long history in Africa” and “during colonialism, settlers and colonial companies took millions of hectares.”⁵²² Similarly, Spieldoch and Murphy assert “land acquisition by foreigners is not a new phenomenon” since “colonization of farmland by foreign settlers dates back thousands of years” and “the 19th century saw a huge wave of colonization by European powers;” they view LSLAs as simply “the most recent phenomenon,” comprised of “countries...looking to outsource food, feed, and fuel production to stabilize future supplies.”⁵²³ Scholars and researchers such as Margulis, McKeon, and Borras Jr., McMichael, Pearce, and Kugelman reiterate LSLAs’ colonial “historical precedent.”^{524,525,526,527}

⁵²² Cotula, *The Great African Land Grab? Agricultural Investments and the Global Food System*, 15.

⁵²³ Spieldoch and Murphy, "Agricultural Land Acquisitions," 40-41.

⁵²⁴ Margulis, McKeon, and Borras Jr., "Land Grabbing and Global Governance: Critical Perspectives," 3.

⁵²⁵ Philip McMichael, "Land Grabbing as Security Mercantilism in International Relations," *Globalizations* 10, no. 1 (February 2013): 48.

⁵²⁶ Pearce, *The Land Grabbers: The New Fight Over Who Owns the Earth*, x.

⁵²⁷ Kugelman, "Introduction," 3.

However, many scholars also view LSLAs as a distinct trend, even if these scholars recognize concurrently colonialism's precedent to and similarities with LSLAs. For example, Margulis, McKeon, and Borrás Jr. understand "the recent wave of land grabs [as] distinct from previous eras," since this wave "occurs in a world of sovereign states exercising territorial control at least formally."⁵²⁸ Likewise, Kugelman argues, "today's overseas land investments differ from their [colonial] predecessors in significant ways," specifically, "their scale is much larger," "they emphasize staples instead of cash crops," "they are concluded on the basis of agreements instead of through the barrel of a gun," and, lastly, "they are spearheaded by more government-led investment than in the past."⁵²⁹

Historically, colonialism has been closely linked with the economic doctrine of mercantilism (which is defined and described more thoroughly in the following section). For example, O'Brien describes "the mercantilist age of imperialism" from 1415 to 1815, during which "colonization and commerce with other continents [transformed] the Netherlands and England into successful market economies."⁵³⁰ Likewise, Roll depicts mercantilism as a doctrine that places "the building-up of nation-states... in the forefront" of economic development, which "uses monetary, protectionist, and other economic devices... as instruments to this end;" hence, as Roll explains, "the value of colonies" under mercantilism "depended on their ability to act as exclusive markets for the manufactures of the mother country, to supply in exchange raw materials and other

⁵²⁸ Margulis, McKeon, and Borrás Jr, "Land Grabbing and Global Governance: Critical Perspectives," 3.

⁵²⁹ Kugelman, "Introduction," 3.

⁵³⁰ Patrick O'Brien, "Mercantilism and Imperialism in the Rise and Decline of the Dutch and British Economies 1585-1815," *De Economist* 148, no. 4 (2000): 469.

produces which would otherwise have to be bought from foreign countries, and to form a reservoir for cheap labor.”⁵³¹

Due to the link between mercantilism and colonialism, scholars have also compared LSLAs with mercantilism or attributed LSLAs to mercantilist economic attitudes. McMichael, for example, explains that modern “land grabbing entails a direct ‘security mercantilism,’” which involves “[overriding] the multilateral trading system governed by WTO rules, substituting direct access to productive land for food...rather than relying on market access.”⁵³² Margulis, McKeon, and Borras Jr. support this viewpoint, maintaining that although “today’s land grabs are facilitated by the institutions and practices of neoliberal globalization,” they are motivated by “‘security mercantilism’ that may have illiberal ends.”⁵³³ Numerous additional scholars such as Dixon and Nally reiterate and support LSLAs’ link to mercantilism.^{534,535}

Mercantilism and Economic Illiberalism

Given that LSLAs are often compared to colonialism and, likewise, to mercantilism, it appears possible that nations pursuing food security LSLAs may adhere to a common economic outlook. Hence, this section provides an overview of mercantilism and explores literature describing the range of economic paradigms to which LSLA nations may adhere.

In essence, mercantilism is considered the “economic thought and practice in Europe from about 1500 to 1750,” which “[viewed] both power and wealth as legitimate

⁵³¹ Roll, *A History of Economic Thought*, 62, 84.

⁵³² McMichael, "Land Grabbing as Security Mercantilism in International Relations," 50, 48.

⁵³³ Margulis, McKeon, and Borras Jr, "Land Grabbing and Global Governance: Critical Perspectives," 18.

⁵³⁴ Marion Dixon, "The land grab, finance capital, and food regime restructuring: the case of Egypt," *Review of African Political Economy* 41, no. 140 (2014): 236.

⁵³⁵ David Nally, "Governing precarious lives: land grabs, geopolitics, and 'food security,'" *The Geographical Journal*, January 2014: 2.

goals of national policy;” mercantilist states “believed that a state could use the gold and silver it accumulated to increase its power,” and thus “took all necessary measures to accumulate gold by increasing their exports and decreasing their imports.”⁵³⁶ According to Bulut, mercantilism developed for European states “to achieve several aims simultaneously,” including “[consolidating] the power of the central governments, [regulating] the rapidly increasing industrial and trade sectors, and [accumulating] wealth.”⁵³⁷ Therefore, according to Roll, “state intervention” in the economy “was an essential part of mercantilist doctrine,” which led mercantilists to “[clothe] their views in the garb of a policy designed to strengthen the nation.”⁵³⁸ Lastly, as Buzan explains, mercantilism is characterized as a system “in which economic and individual interests were subordinated to the pursuit of state power.”⁵³⁹

Despite mercantilism’s development in early-modern Europe, many modern scholars, according to Cohn, “refer to some states today as being ‘*neomercantilist*’” or *mercantilist*, in essence “[using] *mercantilism* as a general term in reference to realist thought and practice in [International Political Economy studies].”⁵⁴⁰ Such modern-day “mercantilist” or “realist” states take many forms, ranging from autarkic to protectionist or even fully “open” (and, according to Buzan, can even “combine” these economic traits), however, they are all characterized by diverging from the position of economic liberalism.^{541,542} Thus, realists “give priority to politics over economics and generally

⁵³⁶ Theodore H. Cohn, *Global Political Economy: Theory and Practice*, Fifth (New York: Longman - Pearson, 2010), 18, 58.

⁵³⁷ Mehmet Bulut, "Reconsideration of Economic Views of a Classical Empire and a Nation-State During the Mercantilist Ages," *American Journal of Economics and Sociology* 68, no. 3 (July 2009): 801.

⁵³⁸ Roll, *A History of Economic Thought*, 62.

⁵³⁹ Barry Buzan, "Economic structure and international security: the limits of the liberal case," *International Organization* 38, no. 4 (Autumn 1984): 598.

⁵⁴⁰ Cohn, *Global Political Economy: Theory and Practice*, 58.

⁵⁴¹ Buzan, "Economic structure and international security: the limits of the liberal case," 615.

view ‘the economy as a creature of the state;’” contrarily, liberals “tend to view economics and politics as separate and autonomous,” asserting “that governments should not interfere in economic transactions and that their role should be limited to creating an open environment in which individuals and private firms can freely express their economic preferences.”⁵⁴³

Fundamentally, the critical link between modern and historical “mercantilist states” is based on the role of the state in the economy and the purpose of national economic development. As depicted by Gilson and Milhaupt, liberals believe that “the individual company is the unit whose value [should be] maximized” whereas modern mercantilists view “the country [as] the unit whose value is to be maximized, with a corresponding increase in the role of the national government as a direct participant in and coordinator of the effort.”⁵⁴⁴ Thus, modern mercantilism can essentially be depicted as a form of “economic nationalism,” which is described by Gilpin as an overarching doctrine that believes “economic activities are and should be subordinate to the goal of state building and the interests of the state.”⁵⁴⁵

There is a large body of scholarship analyzing economic nationalism. Nakano provides a thorough overview of the “aim” and “policy” of economic nationalism, as compared to liberalism; according to him, “economic nationalists aim at establishing, maintaining, and enhancing the (economic and political) power of the nation” and, therefore, “believe that an active role for the state may be required for economic

⁵⁴² Cohn, *Global Political Economy: Theory and Practice*, 56-58.

⁵⁴³ Cohn, *Global Political Economy: Theory and Practice*, 57,79.

⁵⁴⁴ Ronald J. Gilson and Curtis J. Milhaupt, "Sovereign Wealth Funds and Corporate Governance: A Minimalist Response to the New Mercantilism," *Revue D'Economie Financiere* Special Issue (2009): 346.

⁵⁴⁵ Robert Gilpin, *The political economy of international relations* (Princeton: Princeton University Press, 1987), 31.

development” but will also “in principle adopt any kinds of policies, including ‘liberal’ ones, so long as these contribute” to national power.⁵⁴⁶ In contrast, he views “the primary aim of liberal economic policy [as] economic efficiency and the welfare of individuals” and, thus, “liberals in principle advocate free markets and minimal state intervention.”⁵⁴⁷ Moreover, as described by Harlen, unlike liberals, “Economic Nationalists frequently regard trade negatively...and favor economic protectionism,” especially for “economically weak nations.”⁵⁴⁸ Likewise, Isaacs-Martin characterizes economic nationalism as viewing “the state [as] instrumental in utilising its resources and distributing the benefits to its citizens equally to strengthen the nation.”⁵⁴⁹ In contrast to Harlen’s argument, however, Isaacs-Martin cautions, “economic nationalism should not be confused with protectionism” since it might, at times, be “in the state’s best interest...to support free trade,” and instead argues that economic nationalism “strives to eliminate foreign control and centralise ownership.”⁵⁵⁰ To synthesize these views, while economic nationalism can support diverse, sometimes contrasting, beliefs or tenets, overall it rejects liberalism (yet may utilize liberal practices), supports state-led economic development, and provides a greater role for government economic intervention.

According to the literature, economic nationalism and even modern mercantilism can be described using a variety of terms and divided into numerous subcategories. For instance, according to studies by Gilpin, Buzan, as well as Guerrieri and Padoan,

⁵⁴⁶ Takeshi Nakano, "Alfred Marshall's economic nationalism," *Nations and Nationalism* 13, no. 1 (2007): 61-62.

⁵⁴⁷ Nakano, "Alfred Marshall's economic nationalism," *Nations and Nationalism* 13, no. 1 (2007): 61.

⁵⁴⁸ Christine Margerum Harlen, "A Reappraisal of Classical Economic Nationalism and Economic Liberalism," *International Studies Quarterly* 43, no. 4 (1999): 739.

⁵⁴⁹ Wendy Isaacs-Martin, "National Identity and Economic Nationalism: Can an Economic Perspective Reinforce Nationalism and Nation Building," *Africa Insight* 41, no. 1 (June 2011): 60.

⁵⁵⁰ Isaacs-Martin, "National Identity and Economic Nationalism," 60, 65.

mercantilist states may be considered “*benign*” or “*malevolent*.”^{551,552,553} As described by Guerrieri and Padoan, “benign mercantilism aims to protect domestic welfare and stability” whereas “malevolent mercantilism tries to increase state power.”⁵⁵⁴ However, in describing the Soviet Union as an example, Buzan asserts, “it makes no difference...whether the Soviet Union is considered to be militaristic and expansionist or defensive and benign” since it “is a constant in the analytical distinction between contemporary liberal and mercantilist international economic systems.”⁵⁵⁵ In sum, regardless of the “type” of mercantilism, all mercantilist states fundamentally differ in outlook from liberal ones.

An additional characterization of economic nationalism noted in the literature is “state capitalism.” Bremmer, a seminal scholar in the study of state capitalism, describes this form of capitalism as “a system in which the state functions as the leading economic actor and uses markets primarily for political gain.”⁵⁵⁶ He depicts state capitalism as led by “four primary actors: national oil companies, state-owned enterprises, privately owned national champions, and sovereign wealth funds,” and as mainly implemented by “emerging-market countries” with “histories of heavy state involvement in their economies.”⁵⁵⁷ Beeson and Islam reiterate Bremmer’s view of state capitalists as having a history of intervention, describing “the determination of economic structures and relationships” as having “an inherent ‘institutional logic’” or “institutional inertia [that]

⁵⁵¹ Robert Gilpin, *U.S. Power and the Multinational Corporation* (New York: Basic Books, 1975), 234-235.

⁵⁵² Buzan, “Economic structure and international security: the limits of the liberal case,” 608.

⁵⁵³ Paolo Guerrieri and Pier Carlo Padoan, “Neomercantilism and international economic stability,” *International Organization* 40, no. 1 (Winter 1986): 29.

⁵⁵⁴ Guerrieri and Padoan, “Neomercantilism and international economic stability,” 29.

⁵⁵⁵ Buzan, “Economic structure and international security: the limits of the liberal case,” 612.

⁵⁵⁶ Ian Bremmer, “State Capitalism Comes of Age,” *Foreign Affairs*, May/June 2009: 2.

⁵⁵⁷ Bremmer, “State Capitalism Comes of Age,” 2, 5.

will inhibit change.”⁵⁵⁸ Other scholars, such as Apeldoorn, Graaff, and Overbeek, have expanded upon these analyses, describing “*statist capitalism*” as a system in which “the state tends to go beyond what is normally deemed to be the essence of capitalism.”⁵⁵⁹ They assert that this system is “associated with the strategies of developing states seeking to catch up with...the power of the West,” ranging from “*rentier strategies*,” which focus on “maximizing income derived from the possession of natural resources,” to “*developmentalist strategies*,” which “[constitute] investment-driven industrialization” efforts.⁵⁶⁰

One key component of state capitalism described in the literature is the possibility for state-led intervention to take advantage of the free market liberal system. For example, Aligica and Tarko depict state capitalism as “[using] the free market system—for instance free rides the relatively liberal global trade system—to get rich and influential” and then “[using] influence and power for objectives that could end up undermining the very system of free markets.”⁵⁶¹ Likewise, McNally portrays state capitalism as “a political economy in which the state directs and controls key productive forces in an economy, yet employs capitalist practices such as market competitive pressures.”⁵⁶² This is supported by Apeldoorn, Graaff, and Overbeek, who state, “whereas earlier the ‘statist’ catch-up with the West involved a mercantilist and protectionist strategy in which the country’s own industries were shielded from global competition, the statist capitalists of today have

⁵⁵⁸ Mark Beeson and Iyanatul Islam, “Neo-liberalism and East Asia: Resisting the Washington Consensus,” *The Journal of Developmental Studies* 41, no. 2 (February 2005): 209.

⁵⁵⁹ Bastiaan van Apeldoorn, Nana De Graaff, and Henk Overbeek, “The Reconfiguration of the Global State-Capital Nexus,” *Globalizations* 9, no. 4 (August 2012): 480.

⁵⁶⁰ Apeldoorn, Graaff, and Overbeek, “The Reconfiguration of the Global State-Capital Nexus,” 480-481.

⁵⁶¹ Paul Dragos Aligica and Vlad Tarko, “State capitalism and the rent-seeking conjecture,” *Constitutional Political Economy* 23, no. 4 (September 2012): 361.

⁵⁶² Christopher McNally, “How Emerging Forms of Capitalism Are Changing the Global Economic Order,” *Asia Pacific Issues*, no. 107 (February 2013): 3.

opened up to the world economy” and are “playing along with the (neo-)liberal rules of the game.”⁵⁶³

This body of literature demonstrates fundamental similarities among non-liberal economic systems and outlooks. Although non-liberal systems have the propensity to be either protectionist or open and can utilize a wide range of strategies, all use the economy in an essentially nationalist manner to “maximize” the “value” of the state instead of the individual.⁵⁶⁴ Moreover, non-liberal outlooks share an aversion to key tenets of the liberal doctrine, despite having a tendency to exploit liberal economic tools when such tools will improve the position of the state. Since LSLAs are often based on an aversion to import markets and consist of state-led efforts to control key national resources for state development, it appears likely that countries employing LSLAs may adhere to an economic paradigm that is in some form economically nationalist and non-liberal.

Shortcomings and Contributions

As described in the first two chapters, most of the academic literature on LSLAs focuses primarily on the content of land deals, the effects of LSLAs on host nation populations, and the scope of land investments. The literature also focuses, to an extent, on the “first-degree,” motivations of investor nations, for instance, the Global Food Crisis of 2007-2008. However, the literature is significantly lacking regarding more complex or deep-rooted investor nation motivations, such as long-term food security concerns or overarching economic paradigms. While scholars do note the links between LSLAs and colonialism or mercantilism, they do not expand upon these links to reveal connections between LSLAs and economic outlook similarities among major investor nations. This

⁵⁶³ Apeldoorn, Graaff, and Overbeek, "The Reconfiguration of the Global State-Capital Nexus," 483.

⁵⁶⁴ Gilson and Milhaupt, "Sovereign Wealth Funds and Corporate Governance," 346.

chapter, therefore, seeks to provide greater insights into potential commonalities among investor nations' overarching economic outlooks, due to their mutual use of LSLAs. To research these parallels, this chapter will analyze the economic outlooks of the four nations examined as case studies in the first two chapters, China, South Korea, Saudi Arabia, and India.

Theory and Hypothesis

This chapter hypothesizes that countries utilizing LSLAs as a food security strategy will share overarching economic outlooks and tendencies. Specifically, it postulates that these nations will share an overall economically "illiberal" or economic nationalist paradigm, although the "form" of illiberalism (protectionism, state-capitalism, etc.) may vary by country. Fundamentally, this chapter tests the extent to which states pursuing food security LSLAs may be motivated (in an indirect, policy environment sense) by illiberal economic outlooks and an attempt to "maximize" the "value" of the state over the individual.⁵⁶⁵

As the Literature Review describes, LSLAs have frequently been linked to colonialism and, hence, to mercantilism. Since mercantilism is often considered the foundational economically nationalist outlook, it appears likely that states pursuing LSLAs adhere to such illiberal views in other areas of economics and development, which would thus be indicative of an overall illiberal view. Moreover, modern illiberal or economically nationalist states often strive for goals that coincide with those of LSLAs, such as avoiding or circumventing markets, protecting domestic companies or consumers, manipulating "liberal" markets for national gain, and relying on state intervention to direct national economic efforts.

⁵⁶⁵ Gilson and Milhaupt, "Sovereign Wealth Funds and Corporate Governance," 346.

Nations adhering to an illiberal economic outlook might support a wide variety of economic policies or have disparate economic tendencies; for example, one illiberal state might support protectionist tariffs to develop domestic industries whereas another might open to free trade but engage in substantial state intervention. However, all illiberal states “reject” liberal doctrine, to some extent, and utilize economic policy in a nationalist, state-centric (as opposed to individualistic or “free trade”) manner. Therefore, to test this chapter’s hypothesis, this analysis examines illiberal economic policies or tendencies in each of the nations studied in the first two chapters, to determine the extent of “economic nationalism” in these states.

Methodology

This chapter examines the economic outlooks and tendencies of countries pursuing LSLAs as a food security strategy, to determine the extent to which these outlooks and tendencies adhere to an illiberal, economic nationalist paradigm. To analyze this, it compares the illiberal policies and tendencies of the nations investigated as case studies in the previous two chapters, China, South Korea, Saudi Arabia, and India. It then determines areas of overlap, which should provide insights into whether economic illiberalism, nationalism, and mercantilism underlie food security LSLAs. If the results demonstrate that each country utilizes economic policy in a significantly nationalist or illiberal manner (for instance, heavy state intervention, an abundance of state-owned enterprises, nationalized natural resources, state-centric development policies, tariff or trade barrier protections for domestic industries, mercantilist export support, or significant investment in opaque sovereign wealth funds), then it is likely that nations pursuing LSLAs share an overarching illiberal economic outlook. If such economic

parallels cannot be found, then it is likely that economic outlook is not a general secondary motivator of LSLAs. All primary findings are as of June 2014.

The previous two chapters comprehensively analyzed the food security motivations, circumstances, and conditions of China, South Korea, Saudi Arabia, and China, as well as their LSLA styles; thus, these countries have also been selected for examination in this chapter. Since the previous two chapters confirmed that these nations share food security conditions and LSLA styles, these factors will be controlled for in an analysis of economic paradigms; to select other nations that pursue LSLAs might leave this study vulnerable to the critique that, despite any results demonstrating economic outlook similarities, these nations might not share food security conditions or LSLA styles. Moreover, the previous two Methodology sections identified vast fundamental political, regional, demographic, and economic disparities among the case study nations, which supported the generalizable nature of the previous chapters' findings regarding food security conditions and LSLAs; therefore, analyzing these states in the current chapter should also reveal generalizable trends in terms of economic paradigms, given the diverse nature of the sample.

As described in the previous two chapters, case study-based research can be subject to data availability difficulties. Similar to the previous chapters, this study individually analyzes disparate countries' histories and policies; it is therefore possible that available information may vary by nation, especially if there are limited English-language sources in each state on a particular topic. This chapter utilizes a diverse range of sources to correct for this difficulty; however, the specific sources used for each country may vary in some respects.

Finally, to define and clarify terms, liberalism is a doctrine “[emphasizing] the importance of the free market and private property and [seeking] to limit the government’s role in economic affairs.”⁵⁶⁶ Moreover, using Gilson and Milhaupt’s definition, liberalism attempts to “maximize” the “value” of the company or individual, instead of the state.⁵⁶⁷ In contrast, economic nationalism, modern mercantilism, or illiberalism will be considered doctrines that essentially attempt to “maximize” the country’s value, using a wide variety of specific economic tools.⁵⁶⁸ Further, such views will “give priority to politics over economics and generally view ‘the economy as a creature of the state.’”⁵⁶⁹ Although some illiberal views may encourage the use of “liberal” economic tools, such as reducing trade barriers, these views will be considered illiberal if such tools are utilized in a state-centric attempt to increase national power, security, or stability, or if they are implemented within the context of a wide range of illiberal tools (such as protectionism, state intervention, etc.).

Results

The first two chapters established general food security conditions that motivate nations to pursue a LSLA food security strategy. However, it is likely that there are additional, “secondary” motivations that drive countries to pursue such a strategy, such as national economic outlook. Given LSLAs’ comparison in academic literature to illiberal economic outlooks and strategies, such as mercantilism and colonialism, this chapter seeks to determine if states pursuing LSLAs adhere to an illiberal economic paradigm in other national efforts. This section, therefore, examines to what extent China, South

⁵⁶⁶ Cohn, *Global Political Economy: Theory and Practice*, 77.

⁵⁶⁷ Gilson and Milhaupt, "Sovereign Wealth Funds and Corporate Governance," 346.

⁵⁶⁸ Gilson and Milhaupt, "Sovereign Wealth Funds and Corporate Governance," 346.

⁵⁶⁹ Cohn, *Global Political Economy: Theory and Practice*, 57.

Korea, Saudi Arabia, and India exhibit illiberal or nationalist economic histories and current policies.

China

China has a long history of using economic nationalist or illiberal strategies. At its founding in 1949, China “installed a socialist economy both in industry and (after mid-1950s) agriculture, and the private sector was minimal and operated in minute scale and under the shadows.”⁵⁷⁰ However, after the death of Mao Zedong, China began to “liberalize” its economy; “after 1978, small private enterprises were permitted, the agricultural sector was partly de-collectivised, and special economic zones were established in order to boost exports and attract foreign capital.”⁵⁷¹ This liberalization continued as China “coined the notion of a ‘socialist market economy’” in 1992 and joined the World Trade Organization in 2001; consequently, “scores of [small and medium enterprises] were privatized, the import licensing and quota system relaxed, tariffs considerably reduced, new industrial segments opened up for foreign investment, and export-supporting measures [were] created.”⁵⁷²

Thus, on the surface, China appears economically liberal by many measures; the country utilizes many of “the essential elements of capitalism,” for example, by “[promoting] calculating capitalists, a free market, [and] wage labor.”⁵⁷³ However, in reality, the nation “shows a total involvement of the state in the economy and complete

⁵⁷⁰ Pranab Bardhan, "The Paradigm of Capitalism Under a Developmental State: Does it Fit China and India," *The Singapore Economic Review* 55, no. 2 (2010): 243.

⁵⁷¹ Stefan Schmalz and Matthias Ebenau, "After Neoliberalism? Brazil, India, and China in the Global Economic Crisis," *Globalizations* 9, no. 4 (August 2012): 493.

⁵⁷² Schmalz and Ebenau, "After Neoliberalism? Brazil, India, and China in the Global Economic Crisis," 493.

⁵⁷³ Nan Lin, "Capitalism in China: A Centrally Managed Capitalism (CMC) and Its Future," *Management and Organization Review* 7, no. 1 (2010): 70.

synchronization of a party-government-military-economic regime.”⁵⁷⁴ Further, China’s liberalization process was fundamentally designed by the state to achieve national interest objectives and has been primarily state-led. To mitigate “economic stagnation,” the state created “cycles of induced reforms... where each small step at liberalization created pressures for further liberalization;” China “[retained] control” over liberalization by, for example, employing “top-down Leninist incentives focused on economic performance” to “[encourage] local governments to compete vigorously for investment capital.”⁵⁷⁵ Moreover, given that the ruling Chinese Communist Party (CCP) has “more than 80 million members,” the CCP “pervades the private sector as well as every level of government,” allowing the state to exert economic control; as Freeman Jr. describes, “in China, the invisible hand is a [CCP] cadre.”⁵⁷⁶

China’s state-led development has contributed to what has been designated as the “China model.” According to Zhao, this model involves “[copying] successful elements of liberal economic policy by opening up much of the economy to foreign and domestic investment, allowing labor flexibility, keeping the tax and regulatory burden low, and creating a first-class infrastructure through a combination of private sector and state spending.”⁵⁷⁷ However, this development strategy “is led by a strong and pro-development state, capable of shaping national consensus and ensuring overall political and macroeconomic stability in which to pursue wide-ranging reforms;” the model “[emphasizes] economic growth as an overarching national goal and political stability as

⁵⁷⁴ Lin, “Capitalism in China: A Centrally Managed Capitalism (CMC) and Its Future,” 70.

⁵⁷⁵ Christopher McNally, “Sino-Capitalism: China’s Reemergence and the International Political Economy,” *World Politics* 64, no. 4 (October 2012): 752.

⁵⁷⁶ Chas W. Freeman Jr., “China’s Rise and Transformation: Towards Pax Sinica,” *Washington Journal of Modern China* 10, no. 2 (2012): 7.

⁵⁷⁷ Suisheng Zhao, “The China Model: can it replace the Western model of modernization?” *Journal of Contemporary China* 19, no. 65 (June 2010): 419.

a pre-condition for modernization.”⁵⁷⁸ As summarized by Breslin, the China model is based on a “commitment to doing whatever it takes to promote growth while maintaining political stability.”⁵⁷⁹

Despite nominal liberalization, the state maintains control over the economy through a variety of means, including state-owned enterprises (SOEs), trade barriers, government support, intervention and planning, and sovereign wealth funds (SWFs). Regarding SOEs, “while state firms retreated from the most competitive and least profitable sectors” during liberalization, they continue to control “critical industries” such as “oil, gas, and mining,” “metals, steel, and petrochemicals,” “essential network industries in telecommunications, transportation, and utilities,” as well as “all major banking and financial institutions.”⁵⁸⁰

SOEs in China continue to “compete with other enterprises in the marketplace” but SOE leaders “answer to the dictates of the state.”⁵⁸¹ Further, China’s “‘free’ market is asymmetric in favour of” SOEs “in accessing loans and resources...and operating in both domestic and foreign markets,” SOE employees have “only limited bargaining rights while enjoying security similar to...employees in the bureaucracy,” and “some [SOEs] become ‘national champions’ as the state restricts their competitors and encourages their mergers and acquisitions.”⁵⁸² Moreover, China uses these SOEs to achieve national objectives, such as “to secure ever-increasing supplies of foreign oil;” for instance, China “has encouraged the three major Chinese national oil companies (NOCs)...to establish an ambitious internationalization strategy,” and, “as a result of 18 years of expansion in

⁵⁷⁸ Zhao, "The China Model: can it replace the Western model of modernization?" 423.

⁵⁷⁹ Breslin, "The 'China Model' and the global crisis," 1328.

⁵⁸⁰ McNally, "Sino-Capitalism: China's Reemergence and the International Political Economy," 753.

⁵⁸¹ Lin, "Capitalism in China: A Centrally Managed Capitalism (CMC) and Its Future," 71.

⁵⁸² Lin, "Capitalism in China: A Centrally Managed Capitalism (CMC) and Its Future," 71.

overseas activities, by 2010 Chinese oil companies had stakes in more than 200 projects in about 50 countries.”⁵⁸³

China also utilizes numerous trade barriers to promote domestic enterprise. This is especially the case in innovative or technological fields, for which China “[manipulates] currency, markets, standards, [intellectual property] rights, and so forth to gain an unfair advantage favoring their technology exports in international trade.”⁵⁸⁴ China also exercises a range of import bans, for example on “used goods” and “remanufacturing process inputs,” tariffs, such as “on narrow body aircraft,” and “export restraints,” including “export quotas, export licensing, minimum export prices, [and] export duties” primarily on “raw material inputs where [China] holds the leverage of being among the world’s leading producers.”⁵⁸⁵ Further, China has “attempted to manage the export of many primary, intermediate and downstream products by raising or lowering the value-added tax rebate available upon export,” at times “[reinforced]...by imposing or retracting export duties.”⁵⁸⁶

Additionally, China uses protectionist measures to defend “domestic industries;” it often applies “restrictive investment regimes...in numerous manufacturing sectors” and in “service sectors, such as financial services, telecommunications services and express delivery.”⁵⁸⁷ Moreover, “discriminatory regulatory processes” are used to “frustrate efforts of U.S. suppliers” in industries such as “services;” these processes include

⁵⁸³ Roland Dannreuther, “China and global oil: vulnerability and opportunity,” *International Affairs* 87, no. 6 (2011): 1345-1346.

⁵⁸⁴ Stephen Ezell, “Fighting Innovation Mercantilism,” *Issues in Science and Technology* 27, no. 2 (Winter 2011): 84.

⁵⁸⁵ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: China*, USTR Report, Washington, D.C.: Office of the USTR, 2014, 4.

⁵⁸⁶ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: China*, 5.

⁵⁸⁷ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: China*, 6.

“informal bans on entry and expansion, various restrictions on the cross-border supply of services, [and] overly burdensome licensing and operating requirements.”⁵⁸⁸ Lastly, the country is considered “among the least transparent and predictable of the world’s major markets for agricultural products,” due to regulators’ “selective [market] intervention.”⁵⁸⁹

Beyond pure trade barriers, the Chinese state plays a prominent role in supporting, intervening in, and planning the Chinese economy. For example, China “[provides] a range of injurious subsidies,” specifically for export-promotion, to support “its domestic industries.”⁵⁹⁰ Further, CCP “Cadres stimulate the growth of production, employment, and civic pride” by offering “Chinese entrepreneurs,” at home or abroad, “exemptions from government regulations and licensing regimes, cheap loans, free land, political protection, and security from labor unrest.”⁵⁹¹ These cadres often “play the economic role that fund managers and other investors do elsewhere,” however, they also command “the power of the layers of the government and party apparatuses they represent,” adding a “political twist” to economic management.⁵⁹² The state also targets “economically and strategically important” industries for development through the “Strategic Emerging Industries” initiative, including “energy-saving and environmental protection,” “new generation information technology,” “biotechnology,” “high-end equipment manufacturing,” “new energy,” “new materials,” and “new-energy vehicles.”⁵⁹³

⁵⁸⁸ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: China*, 8.

⁵⁸⁹ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: China*, 10.

⁵⁹⁰ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: China*, 4.

⁵⁹¹ Freeman Jr., "China's Rise and Transformation: Towards Pax Sinica," 6.

⁵⁹² Freeman Jr., "China's Rise and Transformation: Towards Pax Sinica," 6.

⁵⁹³ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: China*, 3.

Lastly, China employs illiberal financial controls and SWFs, which contribute to the state's "direct control of vital economic capital."⁵⁹⁴ In China, "all major banks are under the control of a vice premier at the State Council" and, as of 2010, "about four-fifths of the assets in the banking system are controlled by 17 institutions, whose leaders are all appointed."⁵⁹⁵ Moreover, "China is expanding its SWFs;" Chinese SWF expansion began "in 2007 with the establishment of the China Investment Corporation with assets of \$200 billion" and, in recent years, China has developed "at least three" more.⁵⁹⁶ These SWFs are considered worrisome because China "[provides] very little public information about their investment strategies and holdings;" thus, they could "help domestic companies secure technology or other expertise from a portfolio company even if that transfer reduces the portfolio company's value," since "the loss to the portfolio company [would be] shared by all owners, while the benefit from the transfer [would accrue] entirely to the SWF and its government."⁵⁹⁷

South Korea

South Korea also has had a long history of state-led economic development focusing on national interest objectives. South Korea began a significantly state-directed economic development plan "in 1962 when the newly launched Park Chung-Hee military regime, which seized power through a military coup in 1961, initiated the 'Five Year Economic Development Plan.'"⁵⁹⁸ The Park government implemented an economic development strategy to increase exports, through which "domestic firms imported raw

⁵⁹⁴ Lin, "Capitalism in China: A Centrally Managed Capitalism (CMC) and Its Future," 77.

⁵⁹⁵ Lin, "Capitalism in China: A Centrally Managed Capitalism (CMC) and Its Future," 77.

⁵⁹⁶ Lin, "Capitalism in China: A Centrally Managed Capitalism (CMC) and Its Future," 77.

⁵⁹⁷ Gilson and Milhaupt, "Sovereign Wealth Funds and Corporate Governance," 352-354.

⁵⁹⁸ Jongseok Lee, Iain Clacher, and Kevin Keasey, "Industrial policy as an engine of economic growth: A framework of analysis and evidence from South Korea (1960-96)," *Business History* 54, no. 5 (August 2012): 727.

materials or half-finished goods and exported finished goods cheaply;” to do so, the government “established several [SOEs]” and provided “incentives,” such as cheap loans, “to exporting firms.”⁵⁹⁹ In essence, the goal of this development strategy was “economic development through rapid industrialization,” which was to be guided by “three powerful agencies (the Economic Planning Board, the Ministry of Trade and Industry, and the Ministry of Finance).”⁶⁰⁰

Beginning “in 1973,” the Park government decided to “strategically promote six heavy and chemical industries;” these industries included “steel, non-ferrous metals, machinery (including car manufacturing), electronics, ship building and petrochemicals,” and “strong [state] support” was offered “to these sectors” in terms of loans, tax incentives, competition limits, “restrictions on foreign ownership,” and establishment of SOEs.⁶⁰¹ To further support “targeted” industries, “only the government” was permitted to “access foreign borrowing and allocate the credit;” the state “also strictly regulated the labor sector, compressing wage levels and banning labor unions.”⁶⁰² Moreover, starting in 1980, “policies” were enacted “to manage competition more actively,” which essentially “provided a tailored support package including subsidized loans, tax exemptions and fixed term exemptions from anti-trust laws” for industries deemed “re-enforceable;” industries designated as such included “car manufacturing, construction vehicles, diesel engines and heavy electric equipment” and, thus, Korea “banned new entrants to these markets until 1989.”⁶⁰³

⁵⁹⁹ Lee, Clacher, and Keasey, "Industrial policy as an engine of economic growth," 728.

⁶⁰⁰ Edward Kwon, "Flashback: Financial Liberalization in Mexico and South Korea," *Asian Affairs: An American Review* 39, no. 1 (2012): 25.

⁶⁰¹ Lee, Clacher, and Keasey, "Industrial policy as an engine of economic growth," 729-730.

⁶⁰² Kwon, "Flashback: Financial Liberalization in Mexico and South Korea," 25.

⁶⁰³ Lee, Clacher, and Keasey, "Industrial policy as an engine of economic growth," 732.

This development method, historically used by South Korea as well as Japan, Taiwan, and Singapore, has been called the “developmental state” model, the “success” of which is attributed to “the crucial role played by the state.”⁶⁰⁴ The core tenets of this model, as described by Kim, involve “export-oriented industrialization,” state commitment to “protecting, subsidizing, and disciplining” “[selected] promising industries and sectors,” a state with “strong capacity to implement and sustain ‘big push’ programmes” as well as “an ability to insulate itself from particular interests in society,” and “linkages between economic planners in the state and business sectors in society.”⁶⁰⁵ Further illustrating this model’s state-centric and political nature, Stubbs explains that the DS is primarily based on “a weak society which is unable to offer any concerted resistance to the rise of a relatively strong state,” “ideas circulating within the society...that [promote] the concept of the DS,” and supportive “regional security” and economic circumstances.⁶⁰⁶ This model is frequently characterized as being linked to “nationalism (neo-) mercantilism, economic transformation, rapid industrialization, performance legitimacy or some amalgam of a number of these ideas.”⁶⁰⁷

South Korea eventually began a process of liberalization, starting in the 1980s, “as neoliberal-minded technocrats and U.S. pressures for financial and trade market opening converged;” hence, throughout the 1980s, “the Chun Doo Hwan regime opened the financial market to attract foreign capital to finance a current account deficit.”⁶⁰⁸ Further, due to student protests for “political democracy,” worker efforts to promote “economic democracy,” and “pressure to liberalise the economy...from abroad,”

⁶⁰⁴ Kim, "Rethinking Colonialism and the Origins of the Developmental State in East Asia," 383.

⁶⁰⁵ Kim, "Rethinking Colonialism and the Origins of the Developmental State in East Asia," 384.

⁶⁰⁶ Stubbs, "What ever happened to the East Asian Developmental State? The unfolding debate," 6-7.

⁶⁰⁷ Stubbs, "What ever happened to the East Asian Developmental State? The unfolding debate," 6.

⁶⁰⁸ Kwon, "Flashback: Financial Liberalization in Mexico and South Korea," 28, 35.

“economic liberalisation” was pursued, “[reducing] state intervention” as well as “[moving] toward welfare-oriented policies.”⁶⁰⁹ This push toward liberalization shifted the “priorities of the state,” leading to “restructuring within the economic ministries,” “greater openness to direct foreign investments and imports,” and “economic growth [changing] from being the sole, primary goal, to one of many goals of the state.”⁶¹⁰ Moreover, democracy protests in 1986-87 led to democratic elections in December 1987, ending “nearly two decades of authoritarian rule.”⁶¹¹ Subsequently, from 1993 to 1998, the “Kim Young Sam government” bolstered liberalization by “[adopting] a comprehensive financial liberalization process” and by pushing for Korean membership in the Organization for Economic Co-operation and Development (OECD).⁶¹²

Despite economic and political liberalization since the 1980s, Korea has, in many ways, retained its illiberal economic outlook. Although Korea no longer follows the DS model explicitly, according to Wong as of 2004, “the developmentally oriented state continues to play important roles in East Asia’s economic, social, and political development” and “the developmental states in Japan, Korea, Taiwan, and China continue to experiment with industrial policies, R&D policies, social welfare reforms, and economic policy.”⁶¹³ Further, “the neo-mercantilist ideas that underpinned the DS and its policies became deeply embedded in the formal institutions and informal practices of government,” and these beliefs “continue to have their adherents in key locations in the bureaucracy.”⁶¹⁴ Thus, many illiberal facets of the DS still remain in Korea and are

⁶⁰⁹ Nora Hamilton and Eun Mee Kim, "Economic and political liberalisation in South Korea and Mexico," *Third World Quarterly* 14, no. 1 (March 1993): 117.

⁶¹⁰ Hamilton and Kim, "Economic and political liberalisation in South Korea and Mexico," 117.

⁶¹¹ Hamilton and Kim, "Economic and political liberalisation in South Korea and Mexico," 119.

⁶¹² Kwon, "Flashback: Financial Liberalization in Mexico and South Korea," 30.

⁶¹³ Wong, "The Adaptive Developmental State in East Asia," 357.

⁶¹⁴ Stubbs, "What ever happened to the East Asian Developmental State? The unfolding debate," 12.

evident in the country's SOEs, trade barriers, state support for the telecommunications industry, resource security policies, and SWFs.

SOEs remain a large component of the Korean economy. According to an OECD report, as of 2009 (the most recent OECD data) Korea had 56 "enterprises majority-owned by the central level of government," accounting for 120,655 employees.⁶¹⁵ The Korean SOE sector is valued at \$177.6 billion, "the highest valuation of a national SOE sector among reporting countries."⁶¹⁶ However, even these data may underestimate the true count of Korean SOEs, as a report sponsored by the Ministry of Strategy and Finance noted, as of 2010, 22 formal SOEs, 79 "quasi government agencies," and 185 "other public institutions," totaling 286; the only difference in these categories is that, "if the revenue an institution generates on its own exceeds 50% of the total revenue, it is classified as an SOE."⁶¹⁷ As of 2014, the Strategy and Finance ministry cited the existence of 302 "public institutions."⁶¹⁸

The SOE sector includes a wide variety of firms, often used for national strategic objectives; for instance, the Korea National Oil Company "was established to support the stability of [the] national economy by securing energy supply against oil crisis through the strategic petroleum stockpiling and petroleum development," and the Korean Development Bank (KDB) was designed to "develop Korean industries and the national economy" in "its role as a government-run bank."^{619,620} Further, despite prior attempts to

⁶¹⁵ Hans Christiansen, "The Size and Composition of the SOE Sector in OECD Countries," *OECD Corporate Governance Working Papers*, no. 5 (2011): 7.

⁶¹⁶ Christiansen, "The Size and Composition of the SOE Sector in OECD Countries," 7, 9.

⁶¹⁷ IlChong Nam, *Governance of SOEs and Public Institutions in Korea*, Knowledge Sharing Program Report, Seoul: KDI School of Public Policy and Management, 2013, 86-87.

⁶¹⁸ Ministry of Strategy and Finance, "Remaining 264 Public Institutions Submit Reform Plans," *Economic Policy - Public Institutions Policy*, May 29, 2014, <http://english.mosf.go.kr/>.

⁶¹⁹ Korea National Oil Corporation, *About Us*, May 29, 2014, http://www.knoc.co.kr/ENG/sub01/sub01_1_1.jsp.

“privatize...state-owned industries, including the KDB,” “draft legislation introduced by the majority party late in 2013 could reverse some privatization plans, including the privatization of KDB.”⁶²¹

Korea also exercises illiberal trade barriers and investment restrictions to protect domestic industries, even despite recent FTAs such as with the U.S.⁶²² For example, the nation has required excessive “verification” on specific goods to determine country of “origin,” quality, or security, and has restricted foreign investment in a range of industries, including GPS navigation, cloud computing, credit and debit cards, restaurants, express shipping, and medical devices.⁶²³ The country retains severe “quotas” on foreign media, which, for instance, require “that any movie screen show domestic films at least 73 days per year,” that “foreign programs may not exceed 20 percent of terrestrial television or radio broadcast time,” and that foreign music is limited “to 40 percent of all music content.”⁶²⁴ Further, “Korea prohibits foreign investment in rice and barley farming,” “imposes a 50 percent foreign equity limitation on meat wholesaling,” “limits foreign investment in electric power generation, distribution, and sales to 50 percent,” “restricts foreign investment in the areas of news agency services and publishing and printing,” and does not allow foreign investment “in terrestrial broadcast television operations.”⁶²⁵ Lastly, for non-FTA countries, “Korea’s tariffs on imported agricultural goods average

⁶²⁰ KDB Bank, *About KDB Bank*, May 29, 2014, <https://www.kdb.co.kr/ih/wcms.do>.

⁶²¹ United States Trade Representative, *National Trade Estimate report on Foreign Trade Barriers: Korea*, USTR Report, Washington, D.C.: Office of the USTR, 2014, 4.

⁶²² United States Trade Representative, *National Trade Estimate report on Foreign Trade Barriers: Korea*, 1.

⁶²³ United States Trade Representative, *National Trade Estimate report on Foreign Trade Barriers: Korea*, 1-10.

⁶²⁴ United States Trade Representative, *National Trade Estimate report on Foreign Trade Barriers: Korea*, 4-5.

⁶²⁵ United States Trade Representative, *National Trade Estimate report on Foreign Trade Barriers: Korea*, 8.

54 percent” and “its average tariff on non-agricultural goods is more than twice that of the United States,” at 6.6%.⁶²⁶

The Korean state also provides considerable support to specific domestic industries, especially telecommunications (telecoms). Within this industry, the nation often “[engineers] market outcomes through the use of ceilings on dominant firms’ market share, by promoting mergers among smaller operators and by supporting marginal firms through cheap access to bandwidth/[licenses]” as well as “through the use of guaranteed minimal market shares.”⁶²⁷ Further, the state “is primarily focused upon promoting the interests of domestic manufacturers” and “effectively ‘manages’ the development of markets;” thus, the government “maintains close relations with certain service providers,” encouraging them to provide “services using newly emerging technologies in return for privileged access to spectrum resources.”⁶²⁸ The state also often enacts “regulatory standards” that “delay the entry of foreign technologies to the domestic market, giving domestic firms a grace period in which to adapt.”⁶²⁹ Hence, Korean telecoms reflect “active ‘management’ of markets to support the development of indigenous industrial capacity in a major strategic industry,” which “conforms almost perfectly with the developmental state ideal.”⁶³⁰

Korea also pursues mercantilist resource security policies. In 2004, Korea launched “both a National Energy Plan and an Overseas Resource Development Plan,” which “sought to promote investment by national firms in new resource projects in

⁶²⁶ United States Trade Representative, *U.S. - South Korea Trade Agreement*, May 29, 2014, http://www.ustr.gov/uskoreaFTA/key_facts.

⁶²⁷ Iain Pirie, “The new Korean political economy: beyond the models of capitalism debate,” *The Pacific Review* 25, no. 3 (July 2012): 380.

⁶²⁸ Pirie, “The new Korean political economy: beyond the models of capitalism debate,” 380.

⁶²⁹ Pirie, “The new Korean political economy: beyond the models of capitalism debate,” 380.

⁶³⁰ Pirie, “The new Korean political economy: beyond the models of capitalism debate,” 380.

overseas countries;” these policies “provide governmental assistance to national firms to acquire ownership, and ultimately control, of overseas resource projects.”⁶³¹ Thus, Korean “state-owned financial institutions” are encouraged to “extend discounted loans to national firms...investing in foreign resource projects.”⁶³² In light of this support, “in the oil and gas sector alone, Korea’s oil companies have launched twelve new overseas projects...since state financial support was made available,” and four Korean investments in iron ore have “[been] made with the support of concessionary state finance.”⁶³³ Moreover, “diplomacy” also “[supports] overseas investment” and Korea has “[drafted] regulations to ensure that proceeds from state-supported overseas investment are repatriated and reinvested.”⁶³⁴ Such policies reveal “a strong mercantilist preference to import resources from nationally-controlled suppliers.”⁶³⁵

Finally, South Korea utilizes SWFs, specifically the Korea Investment Corporation (KIC).⁶³⁶ According to the fund’s annual report, the KIC “was established in 2005 to preserve and enhance the long-term purchasing power of Korea’s sovereign wealth through efficient management of public funds in the international financial markets” and “as of the end of 2012, total assets under management stood at USD 57.0 billion.”⁶³⁷ The KIC started with \$20 billion, which was initially invested “in traditional asset classes such as stocks and bonds;” over time, “the scope of investment has been broadened to include inflation-linked bonds and commodities as well as private equity,

⁶³¹ Wilson, "Northeast Asian Resource Security Strategies and International Resource Politics in Asia," 21-22.

⁶³² Wilson, "Northeast Asian Resource Security Strategies and International Resource Politics in Asia," 23.

⁶³³ Wilson, "Northeast Asian Resource Security Strategies and International Resource Politics in Asia," 24.

⁶³⁴ Barclay and Smith, "Introduction: The International Politics of Resources," 129.

⁶³⁵ Wilson, "Northeast Asian Resource Security Strategies and International Resource Politics in Asia," 24.

⁶³⁶ Korea Investment Corporation, *2012 Annual Report: KIC in Search of Sustainable "Alpha"*, Annual Report, Seoul: Korea Investment Corporation, 2012, 1.

⁶³⁷ Korea Investment Corporation, *2012 Annual Report*, 1.

real estate and hedge funds” as well as “emerging markets.”⁶³⁸ Moreover, 3.2 percent of holdings have been invested in “special investments,” which include “resource development, energy, new technologies, etc.”⁶³⁹

Despite these public disclosures, according to Kim, the KIC “shows how an SWF can be operated in a way that favors bureaucrats and politicians,” as “its CEOs and Auditors are often appointed from the ranks of bureaucrats, the level of disclosure is kept to a minimum, and some senior positions were terminated during the first year of the new presidency.”⁶⁴⁰ Further, the KIC annual report explains that the “KIC adheres to the basic principles of acting in good faith and enhancing shareholder value in the long term when exercising voting rights” and “has drawn up related procedures to ensure voting rights are exercised appropriately;”⁶⁴¹ however, “KIC does not disclose its proxy voting guidelines, nor its related procedures.”⁶⁴² Moreover, the fund has “made several cross-border acquisitions in the energy sector,” which “may help prevent Korea from suffering from future oil shocks.”⁶⁴³ Thus, the KIC appears to be part investment fund, part supporter of national economic strategy.

Saudi Arabia

Saudi Arabia is one of the clearest examples of economic nationalism and illiberalism, largely due to the Saudi “non-representative,” “absolute monarchy” system of government, which causes economic actors to “closely associate themselves with the

⁶³⁸ Korea Investment Corporation, *2012 Annual Report*, 10.

⁶³⁹ Korea Investment Corporation, *2012 Annual Report*, 1-2.

⁶⁴⁰ Woochan Kim, “Korea investment corporation,” *Journal of the Asia Pacific Economy* 17, no. 2 (May 2012): 209.

⁶⁴¹ Korea Investment Corporation, *2012 Annual Report*, 27.

⁶⁴² Kim, “Korea investment corporation,” 227.

⁶⁴³ Kim, “Korea investment corporation,” 227.

powerful elites” and removes any “effective dissent.”⁶⁴⁴ Saudi Arabia has maintained this system since its founding in 1932, and “one of [the] male descendants” of the founder “rules the country today, as required by the country’s 1992 Basic Law.”⁶⁴⁵ The country also is considered one of the founders of state capitalism; according to Bremmer, “state capitalism began to take shape during the 1973 oil crisis, when the members of the Organization of the Petroleum Exporting Countries (OPEC) agreed to cut oil production in response to the United States’ support of Israel in the Yom Kippur War.”⁶⁴⁶ Thus, “the world’s most important commodity became a geopolitical weapon,”⁶⁴⁷ as described by Friedberg, the 1970s oil embargo demonstrates a significant use of “economic statecraft” and an attempt “to use...control over scarce resources to influence the policies of the comparatively strong and wealthy.”⁶⁴⁸

The Saudi system is also considered illiberal due to its vast oil resources and “rentier state” economic and political model. This model is typified by a “state [that] is largely dislocated from the national economy...because of large income from exports of oil, gas, or other ‘rents’” and, hence, does not need “to tax the local economy to finance its activities.”⁶⁴⁹ States that adhere to this model are “not under pressure to develop an efficient economic basis for the country, but can rather rest on distributing (or allocating) the revenues [they accrue] from rents.”⁶⁵⁰ Further, such nations’ vast “financial resources”

⁶⁴⁴ Elie Elhadj, *Saudi Arabia's Agricultural Project: From Dust to Dust*, MERIA Journal Report, Herzliya: Gloria Center, 2008, 8.

⁶⁴⁵ U.S. Central Intelligence Agency, *The World Factbook - Saudi Arabia*, May 30, 2014, <https://www.cia.gov/library/publications/the-world-factbook/geos/sa.html>.

⁶⁴⁶ Bremmer, "State Capitalism Comes of Age," 4.

⁶⁴⁷ Bremmer, "State Capitalism Comes of Age," 4.

⁶⁴⁸ Aaron L. Friedberg, "The Changing Relationship between Economics and National Security," *Political Science Quarterly* 106, no. 2 (1991): 272.

⁶⁴⁹ Martin Hvidt, "Economic and Institutional Reforms in the Arab Gulf Countries," *Middle East Journal* 65, no. 1 (Winter 2011): 89.

⁶⁵⁰ Hvidt, "Economic and Institutional Reforms in the Arab Gulf Countries," 89.

both “[support] the coercive apparatus of the state” and “[sustain] massive social welfare programs,” essentially reflecting “the logic of ‘no taxation, no representation.’”⁶⁵¹ Saudi Arabia exemplifies this model, since, as of 2012, it “was the world’s largest producer and exporter of total petroleum liquids,” “the world’s largest holder of crude oil reserves, and the world’s second largest crude oil producer.”⁶⁵² Moreover, “petroleum exports accounted for almost 90 percent of total Saudi export revenues in 2011,” and oil contributed 75% of state income.^{653,654}

The rentier state system in Saudi Arabia was stronger, in line with peaking oil prices, during the 1970s, when “oil sector government together accounted for 65% of Saudi economic activity and government drove 63% of total investment in physical assets — a rate otherwise only reached in socialist economies.”⁶⁵⁵ During this time, “the state’s reach extended to virtually all Saudis,” as “heavily subsidized public utilities, state employment, and free education and healthcare guaranteed the comforts of middle class life for increasing numbers of nationals.”⁶⁵⁶ However, despite some attempts at economic reform, this system continues today,⁶⁵⁷ according to Hertog, “state employment of nationals remains high — by some [estimates] twice as high as private employment — public services remain subsidized, and networks of princely patronage are still an essential feature of daily life,” while “organized politics remains largely absent.”⁶⁵⁸

⁶⁵¹ Ji-Hyang Jang, "Weak State, Weak Civil Society: The Politics of State-Society Relations in the Arab World," *Journal of International and Area Studies* 16, no. 1 (2009): 87.

⁶⁵² U.S. Energy Information Administration, *Saudi Arabia*, Country Analysis, Washington, D.C.: U.S. EIA, 2013, 1.

⁶⁵³ U.S. Energy Information Administration, *Saudi Arabia*, 1.

⁶⁵⁴ Hvidt, "Economic and Institutional Reforms in the Arab Gulf Countries," 91.

⁶⁵⁵ Steffen Hertog, *A Rentier Social Contract: The Saudi Political Economy since 1979*, MEI Report, Washington, D.C.: Middle East Institute, 2012.

⁶⁵⁶ Hertog, *A Rentier Social Contract: The Saudi Political Economy since 1979*.

⁶⁵⁷ Hvidt, "Economic and Institutional Reforms in the Arab Gulf Countries," 102.

⁶⁵⁸ Hertog, *A Rentier Social Contract: The Saudi Political Economy since 1979*.

In light of its illiberal rentier state model, the Saudi state intervenes, controls, or supports a large proportion of the economy, exemplified by the country's state-owned oil resources, development goals, trade barriers, corporate governance structures, and SWFs. Regarding the country's oil, these vast resources have been under total government control since the 1970s and 1980s, when the "industry shifted... from one primarily controlled by foreign oil companies... to being under the control of the Saudi royal family;" further, "by 1992, the House of Saud owned all mineral resources within the territorial boundaries of the state," such that "all decisions about oil policy are made by the royal family."⁶⁵⁹

This government control is under the auspices of "the Saudi Arabian Oil Company or Saudi ARAMCO," "the state-owned oil company of the Kingdom of Saudi Arabia," which has its "broadest policy and objectives" determined by the government's "Supreme Council for Petroleum and Minerals Affairs."^{660,661} Moreover, Saudi Arabia "systematically restricts its [oil] production" such that "its spare capacity is much larger than the aggregate spare capacity of the rest of the world's producers;" this fact is critical because Saudi ARAMCO "accounts for more than a tenth of global oil production and a fifth of total proven reserves."⁶⁶² Although it is possible that these production levels are, as argued by Nakov and Nuno, "consistent with its own profit-maximising objective," these authors do not "reject additional explanations based on geopolitical reasons;"⁶⁶³ in fact, the nation has employed its "excess capacity to threaten or force other OPEC

⁶⁵⁹ Jonathan J. Pierce, "Oil and the House of Saud: Analysis of Saudi Arabian Oil Policy," *Digest of Middle East Studies* 21, no. 1 (2012): 89.

⁶⁶⁰ Pierce, "Oil and the House of Saud: Analysis of Saudi Arabian Oil Policy," 89.

⁶⁶¹ Saudi Aramco, *Our Company*, June 2, 2014, <http://www.saudiaramco.com/en/home.html#our-company%257C%252Fen%252Fhome%252Ffour-company.baseajax.html>.

⁶⁶² Anton Nakov and Galo Nuno, "Saudi Arabia and the Oil Market," *The Economic Journal* 123, no. 573 (December 2013): 1333, 1337.

⁶⁶³ Nakov and Nuno, "Saudi Arabia and the Oil Market," 1334, 1352.

members to comply with [its] demands” and “political reasons lead the Saudis to maintain secrecy about increases in excess capacity.”⁶⁶⁴ Thus, political factors play a major role in Saudi oil production, for example, “internal political stability” based on the Saudi rentier state model, “regional security,” “and foreign relations with oil producer and consumer countries.”⁶⁶⁵

The Saudi government also controls the direction of the economy through development goals directed by the Saudi Arabian General Investment Authority (SAGIA), which employs development funds “to provide long-term loans to the vital sectors of the economy such as industry, agriculture and real estate, in addition to supporting professions and small businesses.”⁶⁶⁶ SAGIA’s role is to “oversee investment affairs in the kingdom, including foreign investment” and is considered “the driving force behind Saudi’s investment program.”⁶⁶⁷ Further, SAGIA is responsible for guiding the “‘10-by-10’ initiative,” founded “by King ‘Abdullah in 2006,” “to enact reforms and promote targeted investments aimed at developing the Kingdom’s private sector” as well as “to position Saudi Arabia among the world’s Top 10 most competitive economies.”^{668,669} Although these reforms may appear “liberal,” they have been pursued through “centralized decision-making” to achieve the national objectives of improving “job creation,” “income generation, and to qualify for membership in the World Trade

⁶⁶⁴ Pierce, "Oil and the House of Saud: Analysis of Saudi Arabian Oil Policy," 92-93.

⁶⁶⁵ Pierce, "Oil and the House of Saud: Analysis of Saudi Arabian Oil Policy," 95.

⁶⁶⁶ Saudi Arabian General Investment Authority, *Funding Your Business*, June 2, 2014, <https://www.sagia.gov.sa/Investment-climate/Supporting-Your-Business-/Funding-Your-Business/>.

⁶⁶⁷ Saudi Arabian General Investment Authority, *What We Do*, June 2, 2014, <https://www.sagia.gov.sa/en/SAGIA/What-We-Do/>.

⁶⁶⁸ Hvidt, "Economic and Institutional Reforms in the Arab Gulf Countries," 94.

⁶⁶⁹ The National Competitiveness Center, *The Competitiveness Review: An Update on Saudi Arabia's 10X10 Program*, NCC Report, Riyadh: Saudi Arabian General Investment Authority, 2010, 13.

Organization.”⁶⁷⁰ Moreover, since SAGIA is state-run, its “employees, eager to please the king (and not least to receive the personal bonuses promised to them by King ‘Abdullah if they succeeded) are believed to have targeted their reform efforts to specific items which would most heavily affect their [competitiveness] ranking.”⁶⁷¹

Saudi Arabia also uses trade barriers to direct and intervene in its economy. For example, “as a member of the Gulf Cooperation Council (GCC), Saudi Arabia applies the GCC common external tariff of 5 percent,” and “imposes a 5 percent import duty on most imported agricultural and food products.”⁶⁷² The state also intervenes with a wide range of “import prohibitions,” such as on “alcohol, pork products, firearms, used clothing, automobiles and automotive parts over five years old;” moreover, “special approval is required for the importation of” numerous products, ranging from “live animals” to “natural asphalt,” “wireless equipment,” and “religious materials that do not adhere to the state-sanctioned version of Islam.”⁶⁷³ In its procurement practices, the government favors Saudi firms and nationals; for instance, it requires “contractors [to] subcontract 30 percent of the value of any government procurement...to firms that are majority-owned by Saudi nationals” and “foreign suppliers are also required to establish a training program for Saudi nationals.”⁶⁷⁴ The state also “limits foreign ownership in commercial banks to 40 percent” and 60% for “investment banks and brokerages.”⁶⁷⁵ Lastly, the government curtails foreign investment; for example, “foreign investment is currently

⁶⁷⁰ Hvidt, "Economic and Institutional Reforms in the Arab Gulf Countries," 94.

⁶⁷¹ Hvidt, "Economic and Institutional Reforms in the Arab Gulf Countries," 95.

⁶⁷² United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: Saudi Arabia*, USTR Report, Washington, D.C.: Office of the USTR, 2014, 1.

⁶⁷³ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: Saudi Arabia*, 1.

⁶⁷⁴ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: Saudi Arabia*, 1.

⁶⁷⁵ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: Saudi Arabia*, 3.

prohibited in 16 manufacturing and service sectors,” “all foreign investment...requires a license from” SAGIA, and “direct foreign participation in the Saudi stock market is generally prohibited.”⁶⁷⁶

Saudi Arabia also demonstrates an illiberal outlook through its significant investment in and influence over domestic firms. For instance, “the largest shareholders” in Saudi companies tend to be “families and the state;” family shareholders are also indicative of state involvement, since “well-connected families are better positioned than other types of block-holders to benefit the company...by using their political connections to influence both policy-making and government-controlled financing.”⁶⁷⁷ Further, SAGIA uses “state-owned development funds” to “offer subsidized loans to industrial projects,” which allows “families...to use their influence to divert funding to their companies.”^{678,679} Moreover, according to interviews with Saudi companies, “the pursuit of political and social objectives, rather than shareholder value maximization, was noted as the objective of the state when it has a controlling stake in companies.”⁶⁸⁰ Lastly, Saudi regulation neither encourages corporate transparency nor limits insider trading and fraud, since there are few “cases in which violations of disclosure rules, fraudulent accounting and ineffective auditing were detected and punished” and penalties are not “severe enough to deter future violation.”⁶⁸¹

Finally, Saudi Arabia utilizes a number of SWFs and SWF-like investment operations to direct national revenues. The country first launched an “official oil-

⁶⁷⁶ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: Saudi Arabia*, 3.

⁶⁷⁷ Jenifer Piesse, Roger Strange, and Fahad Toonsi, "Is there a distinctive MENA model of corporate governance?" *Journal of Management & Governance* 16, no. 4 (2012): 656-657.

⁶⁷⁸ Saudi Arabian General Investment Authority, *Funding Your Business*.

⁶⁷⁹ Piesse, Strange, and Toonsi, "Is there a distinctive MENA model of corporate governance?" 657.

⁶⁸⁰ Piesse, Strange, and Toonsi, "Is there a distinctive MENA model of corporate governance?" 659.

⁶⁸¹ Piesse, Strange, and Toonsi, "Is there a distinctive MENA model of corporate governance?" 667.

dedicated” SWF in March 2009, called the “Sanabil Al Saudia fund,” however, “other investment vehicles performing much the same function of a SWF have been around for decades in the form of the Ministry of Finance’s Public Investment Fund (PIF) and the SAMA’s (Saudi Arabian Monetary Agency) Foreign Holdings (FH) fund.”⁶⁸² The FH fund, although managed by the Saudi central bank, is the second largest SWF “according to the value of assets under management” (at \$670 billion), if the fund is considered an SWF.⁶⁸³ The fund primarily invests “in low-risk assets, such as sovereign debt instruments,” however, “some foreign holdings are being allocated to securities like fixed income and equities,” and the fund has a “transparency rating” of four out of ten.⁶⁸⁴ Sanabil, which is “wholly owned by the [PIF],” invests “in assets consisting primarily of stocks, bonds, real estate, foreign currencies and commodities” and “employs a long-term investment strategy comparable to most traditional SWFs.”^{685,686} Saudi Arabia also announced a new SWF in 2009, called the Hassana Investment Company, which would have “greater independence from SAMA in asset management, in particular across international stock markets” and will “[target] investments in real estate and commercial projects and both foreign and domestic stock markets.”⁶⁸⁷

India

India has historically exhibited an aversion to markets and support for state-directed development policies, albeit with a less centralized and authoritarian government

⁶⁸² Oxford Business Group, *Sovereign wealth: The country’s wealth funds now include more diverse investments*, OBG Report, Dubai: Oxford Business Group, 2013.

⁶⁸³ Vasile Dedu and Dan Costin Nitescu, “Sovereign wealth funds, catalyzers for global financial markets,” *Theoretical and Applied Economics* 2, no. 591 (2014): 10-11.

⁶⁸⁴ SWF Institute, *SAMA Foreign Holdings*, Sovereign Wealth Fund Profiles, Las Vegas: SWF Institute, 2013.

⁶⁸⁵ Sanabil Investments, *Overview*, June 2, 2014, <http://www.sanabil.sa/en/whoweare/Pages/overview.aspx>.

⁶⁸⁶ Oxford Business Group, *Sovereign wealth*.

⁶⁸⁷ Oxford Business Group, *Sovereign wealth*.

structure than many developing nations. After gaining its independence from Britain in 1947, “Indian leaders modeled their democratic parliamentary government after that of Britain;” however, the country also “adopted an inward-focused, socialist-style, economic framework.”⁶⁸⁸ This framework was “[modeled] on the pattern of the USSR and China,” including “five-year plans...with emphasis on fiscal measures to raise resources for investment and state-led investment planning.”⁶⁸⁹ Additionally, the government implemented industrial policies, in 1951 and 1956, “[that] explicitly stated that the role of government was to create industrial wealth” and affirmed “the principle that the state was to be the dominant industrializer” through the SOE “sector.”⁶⁹⁰ Combined with “the Second Five Year Plan...that decisively channeled resources to the industrial sector,” Indian policies “put in place a mind-set whereby the evolution of the economy was to be guided by conscious human action and choices that were to be made in New Delhi.”⁶⁹¹ Moreover, the Second Five Year Plan “specifically mentioned that industrial undertakings ought to behave in constraints with the social and economic policy objectives of the state, howsoever defined.”⁶⁹²

Following India’s initial move towards state-led development, “several new administrative ministries were set up” to expand the state’s ability to direct the economy and, “since 1956, every conceivable sub-sector of Indian industry has seen the presence of state-owned firms.”⁶⁹³ Additionally, while “the period from 1947 to 1968 were years

⁶⁸⁸ Beth Anne Wilson and Geoffrey N. Keim, "India and the Global Economy: Vast Potential but also Difficult Challenges," *Business Economics* 41, no. 1 (January 2006): 29.

⁶⁸⁹ Sushil Khanna, "State-Owned Enterprises in India: Restructuring and Growth," *The Copenhagen Journal of Asian Studies* 30, no. 2 (2012): 6.

⁶⁹⁰ Sumit K. Majumdar, "Crowding Out! The role of state companies and the dynamics of industrial competitiveness in India," *Industrial and Corporate Change* 18, no. 1 (January 2009): 171.

⁶⁹¹ Majumdar, "Crowding Out!" 172.

⁶⁹² Majumdar, "Crowding Out!" 172.

⁶⁹³ Majumdar, "Crowding Out!" 172-173.

of moderate regulation...the years between 1969 and 1974 were characterized by stringent regulation of private and foreign companies.”⁶⁹⁴ During the latter period, the Indian state “nationalized private sector assets in areas such as insurance, banks, coal, wheat, and significant parts of the steel industry.”⁶⁹⁵ Moreover, throughout the 1950-1975 period, “a self-interested bureaucracy, famously dubbed the ‘license-raj,’” enacted “a plethora of controls and restrictions on private sector expansion and exporting,” “a strict and cumbersome system of licensing and quotas” on imports, and “policies to foster indigenous technology.”⁶⁹⁶ Thus, the Indian economic regime from “the late-1950s...into the 1980s” is considered “one of the most highly protected and inward-oriented regimes in the developing world.”⁶⁹⁷

India began partial liberalization reforms from the late 1970s to 1991, such as a “licensing list that permitted limited imports of machinery and raw materials” and “a few measures to promote exports.”⁶⁹⁸ However, much more substantial economic liberalization began in 1991 when “a balance of payments crisis was seized by neoliberal reformers,” leading to “the election of Narashima Rao as president in 1991;” the new president “de facto abolished the extensive system of industrial licensing, opened up various segments of the public sector to private capital,” “reduced subsidies and price controls protecting agricultural producers,” and gained membership in the WTO.⁶⁹⁹ Although such reforms have continued to the present day, much of the “developmental state infrastructure [was] retained and some new, if limited, large-scale social policy

⁶⁹⁴ Rahul Mukherji, "The State, Economic Growth, and Development in India," *India Review* 8, no. 1 (January-March 2009): 83.

⁶⁹⁵ Mukherji, "The State, Economic Growth, and Development in India," 87.

⁶⁹⁶ Ganeshan Wignaraja, "India's Approach to Economic Reforms," *Policy Studies*, no. 60 (2011): 41.

⁶⁹⁷ Wignaraja, "India's Approach to Economic Reforms," 40.

⁶⁹⁸ Wignaraja, "India's Approach to Economic Reforms," 41.

⁶⁹⁹ Schmalz and Ebenau, "After Neoliberalism? Brazil, India, and China in the Global Economic Crisis," 492.

instruments, like the *National Rural Employment Guarantee* scheme” were implemented.⁷⁰⁰ Despite liberalization, India remains protectionist, heavily regulated, and dependent on state economic involvement. Specifically, the state relies on SOEs, trade barriers, and investment barriers, to intervene in and protect its economy.

India retains a significant role for SOEs in developing and directing the economy. In spite of liberalization and “the policy shift in favour of the private sector, there are several sectors of the economy where SOEs continue to play a major role.”⁷⁰¹ Many of these roles are vestiges of the previous economic regime; for example, “historically, Indian banks had been wholly owned by the government” and today “account for roughly 76 percent of total assets and 84 percent of all bank branches” in India.^{702,703} Public firms also play a major role in “defense equipment,” “have the dominant share of the financial sector,” and “exclusively” control “generation of atomic and non-atomic power, manufacture of aircraft, heavy machinery, and equipment for rail and sea transport.”⁷⁰⁴ Further, Indian SOEs “manufacture items such as nonferrous metals, chemical intermediates, iron and steel, drugs and fertilizers, and are involved in diverse activities, such as construction, engineering consultancy, farming, handicrafts retailing, shipping, coal mining, oil refining, and commodity trading.”⁷⁰⁵ Moreover, despite earlier efforts at SOE privatization, these were “discontinued” during the period from 2004-2009.⁷⁰⁶ Thus, as of 2009-2010, there were 217 “Central State-Owned Enterprises,” owned by the

⁷⁰⁰ Schmalz and Ebenau, "After Neoliberalism? Brazil, India, and China in the Global Economic Crisis," 492.

⁷⁰¹ Khanna, "State-Owned Enterprises in India: Restructuring and Growth," 6,

⁷⁰² Viral V. Acharya and Nirupama Kulkarni, "What Saved the Indian Banking System: State Ownership or State Guarantees?" *The World Economy* 35, no. 1 (2012): 21.

⁷⁰³ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, USTR Report, Washington, D.C.: Office of the USTR, 2014, 6.

⁷⁰⁴ Majumdar, "Crowding Out!" 173.

⁷⁰⁵ Majumdar, "Crowding Out!" 173.

⁷⁰⁶ Khanna, "State-Owned Enterprises in India: Restructuring and Growth," 14-15.

central government, and, as of 2007, there were “about 838 [State SOEs] with investment above” 2.7 trillion rupees;⁷⁰⁷ these firms frequently receive special treatment, such as in government procurement practices and telecom spectrum sales.⁷⁰⁸

India also applies significant trade barriers to protect domestic industries and consumers, shielding them from market forces. For example, “many of India’s bound tariff rates on agricultural products are among the highest in the world, ranging from 100 percent to 300 percent,” and “India also maintains very high tariff peaks on a number of goods.”⁷⁰⁹ Further, “India’s customs tariff and fees system is complex and characterized by a lack of transparency;” for instance, India imposes multiple “cumulative” duties on goods, extracting duties based on prices inclusive of previously paid tariffs, and the disparities between bound and applied tariffs provide “considerable flexibility to change tariff rates at any time.”⁷¹⁰

In addition to tariffs, “India maintains a ‘negative list’ of imported products subject to...nontariff regulation,” which bans the import of certain items, requires import licenses for others, and allows some products to be “importable only by government trading monopolies.”⁷¹¹ Moreover, India provides “several export subsidy programs, including exemptions from taxes” and “financing to exporters at a preferential rate.”⁷¹² India also employs substantial food subsidies and agricultural support policies such as

⁷⁰⁷ Khanna, "State-Owned Enterprises in India: Restructuring and Growth," 17-18.

⁷⁰⁸ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, 4, 8.

⁷⁰⁹ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, 2.

⁷¹⁰ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, 1-3.

⁷¹¹ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, 3.

⁷¹² United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, 4.

“minimum support [prices]” and “input subsidies for fertilizer, power, and irrigation water.”^{713,714} Lastly, India “has steadily increased export duties on iron ore and its derivatives” and provides “preferential power rates” for “solar project developers” that source from India.⁷¹⁵

India also supports indigenous industry via investment barriers and regulations; this support is largely due to India’s “historical colonial experience,” which often makes the nation “antagonistic toward foreign multinational enterprises.”⁷¹⁶ In government procurement practices, “foreign firms are disadvantaged when competing for Indian government contracts due to preferences afforded to Indian [SOEs],” and “companies [must] invest 30 percent or more of the value of contracts above 3 billion rupees...in Indian produced parts, equipment, or services.”⁷¹⁷ Other Indian procurement practices have been labeled “innovation mercantilist;” for instance, “in February 2012” India “announced a Preferential Market Access mandate for electronic goods...which imposes local content requirements on procurement by government and private sector entities.”⁷¹⁸

Beyond procurement practices, India limits foreign investment through strict regulations, which often benefit domestic firms. For example, foreign ownership of Indian banks “cannot exceed [74%]” and “foreign banks are not authorized to own more

⁷¹³ Ashok Kotwal, Milind Murugkar, and Bharat Ramaswami, “The Political Economy of Food Subsidy in India,” *The Copenhagen Journal of Asian Studies* 30, no. 2 (2012): 107.

⁷¹⁴ United States Department of Agriculture, *India: Policy*, ERS Report, Washington, D.C.: Economic Research Service, 2014, 1.

⁷¹⁵ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, 10-11.

⁷¹⁶ Jiho Jang, Jung-Yul Kim, and Young-Hee Cho, “Change of Industrial Strategies and Government-Business Relationship in India,” *Journal of International and Area Studies* 20, no. 2 (2013): 107.

⁷¹⁷ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, 6-7.

⁷¹⁸ Stephen Ezell, “Written Statement to the U.S. House of Representatives Committee on Ways and Means Trade Subcommittee,” *Hearing on U.S.-India Trade Relations: Opportunities and Challenges*, 2013, 2.

than [5%] of an Indian private bank.”⁷¹⁹ India also restricts foreign ownership of “news and current affairs” media channels “to [26%],” forbids foreigners from practicing law, and “[regulates] FDI (foreign direct investment) by sector.”⁷²⁰ Further, firms must obtain “state and central government permission on a range of issues” such as “land, labor, environment electricity, water, [and] taxation” before pursuing investments, and such “regulations often become a source of rent-seeking and patronage;” thus, “unless one finds a willing state government,” “India is not an easy place to begin business.”⁷²¹

Lastly, although India has not been a major player in terms of SWFs, the government has announced the creation of the “India Overseas Investment Corporation (INOIC) — under the finance ministry on the lines of a sovereign wealth fund to lend financial muscle for securing access to overseas natural resources.”⁷²² This SWF will be funded by “rupee bonds of 15-20 years with sovereign guarantee,” allowing for a “marginally higher” return “than government securities,” which benefits investors; funds will be raised via “state-run entities, banks and financial institutions,” which will be directed to purchase the bonds.⁷²³ Thus, while India has not actively invested in SWFs, its proposed fund is designed for the political objective of securing natural resources rather than the economic objective of investment.

Discussion

China, South Korea, Saudi Arabia, and India differ politically, economically, geographically, regionally, and by nearly every measure; however, all seem to exhibit an

⁷¹⁹ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, 4.

⁷²⁰ United States Trade Representative, *National Trade Estimate Report on Foreign Trade Barriers: India*, 7, 9-10.

⁷²¹ Mukherji, "The State, Economic Growth, and Development in India," 97-98.

⁷²² Sanjay Dutta, "Govt plans sovereign wealth fund," *The Times of India*, September 17, 2013.

⁷²³ Dutta, "Govt plans sovereign wealth fund."

illiberal outlook in numerous areas of their economies. Hence, based on this chapter's hypothesis and given that all four nations pursue food security LSLAs, it appears that nations using LSLAs likely share overarching economic outlooks and tendencies. Moreover, these shared tendencies appear markedly illiberal and nationalist, demonstrating an aversion to "free market," liberal capitalism and a desire to "maximize" the value of the state.⁷²⁴ This section analyzes the specific economic outlook similarities shared by the case study nations.

History and Current Policies

Each of the four nations examined in the Results section have a significant history of economic illiberalism. The specific type of illiberalism historically followed by each country differs; China and India adhered to socialist-communist central planning methods, Korea utilized an authoritarian state-led capitalism system, and Saudi Arabia employed a rentier model due to natural resource abundance. Nevertheless, each of these economic models avoids free market, individual-maximizing objectives and emphasizes the primacy of the state in economic direction, development, and planning. Moreover, in the past, each of these nations has either avoided markets altogether, in the case of China and India, or used markets to the state's advantage, in the case of Korea and Saudi Arabia.

These shared histories are important because, as asserted in the Literature Review, institutionalized economic outlooks often create an "institutional inertia" [that] will inhibit change," or at the very least influence current policymakers.⁷²⁵ This assertion appears to prove true, as each of the examined nations' histories informs their economic policies today. For example, given their state-led background, China and South Korea

⁷²⁴ Gilson and Milhaupt, "Sovereign Wealth Funds and Corporate Governance," 346.

⁷²⁵ Beeson and Islam, "Neo-liberalism and East Asia: Resisting the Washington Consensus," 209.

still “plan” or direct much of their economies; likewise, Saudi Arabia follows the rentier model in light of its nationally owned resources, and India has retained much of the bureaucratic, regulatory, and state-investment structure that limited liberalization after it gained independence, even despite liberalization efforts. Thus, nominal liberalization notwithstanding, each of the four nations provides a near ubiquitous role for the state in the economy, which appears to be directly “carried through” from these countries’ economic histories.

The analyzed nations also share numerous current economic policies or tools to achieve national objectives. SOEs, which allow states to shift the direction of economic efforts, play a major role in each nation’s economy, often surviving short-lived attempts at privatization. These enterprises are also frequently employed for pursuing national economic objectives; for instance, Saudi Arabia uses ARAMCO to control oil resources, South Korea and China use SOEs to obtain resources, and Indian SOEs preclude foreign firms’ entry into Indian government contracting. Moreover, in each nation, the state is often a major investor in domestic firms and is frequently considered one of the core drivers of economic growth.

All four nations also utilize trade and investment barriers to support indigenous economic development and limit foreign ownership. Thus, each has implemented expensive and/or opaque tariff rules, oppressive regulatory or other nontariff barriers to trade and investment, restrictions on foreign investment in the economy, subsidies on exports and domestic production, and preferential treatment for domestic firms. These policies reflect a mercantilist or nationalist outlook, as they are often intended to support domestic producers at the expense of potential foreign investors; it is likely that such

nationalistic policies are linked to the fact that each of these nations experienced colonial control by foreign powers.

Further, each nation has developed or considered employing SWFs to gain investment returns on state funds as well as to assist the government's "direct control of vital economic capital."⁷²⁶ Such funds are often considered illiberal because they are frequently opaque, fail to provide transparent disclosure, and could be used for political objectives such as controlling or influencing strategic companies, assets, or overseas resources. Moreover, these funds demonstrate a view that believes the state should play the role of active, return-seeking, risk-taking investor in the economy; consequently, there has been a recent "shift" in government "investment strategies...from conservative holdings of government bonds to higher-risk/higher-return investments in equities or corporate acquisitions."⁷²⁷

Lastly, each nation uses mercantilist or nationalist strategies for natural resource acquisition or retention. Saudi Arabia is the clearest example, controlling its oil supply often to pursue national objectives. However, China, Korea, and India utilize state-owned companies for securing natural resources, often overseas or in foreign nations.⁷²⁸ Thus, these states exhibit a strong desire to circumvent or avoid markets (or, in the case of Saudi Arabia, to control the market for the state's political and economic advantage).

Analysis

As described previously, this chapter hypothesized that the states examined in the first two chapters of this thesis, which all utilize food security LSLAs, would share overarching economic outlooks and paradigms. Moreover, it asserted that this outlook

⁷²⁶ Lin, "Capitalism in China: A Centrally Managed Capitalism (CMC) and Its Future," 77.

⁷²⁷ Gilson and Milhaupt, "Sovereign Wealth Funds and Corporate Governance," 349.

⁷²⁸ Oil India Limited, *Company Profile*, June 3, 2014, <http://www.oil-india.com/Profile.aspx>.

would likely follow an illiberal, nationalist, or mercantilist paradigm, consistent with LSLAs' linkages to mercantilism, colonialism, and economic self-sufficiency. To test this hypothesis, this chapter analyzed the economic histories, policies, and outlooks of four nations examined throughout this thesis, China, South Korea, Saudi Arabia, and India, all of which use food security LSLAs and share similar food security motivations for these LSLAs. This chapter postulated that if these nations shared similar illiberal economic outlooks, then such outlooks would likely be "secondary" contributors to the selection of LSLA food security policies.

Based on this chapter's results, it appears that all four nations share similar economic outlooks. These outlooks, derived from similar economic histories and demonstrated by current policies, all adhere to an illiberal, nationalist, and mercantilist paradigm, emphasizing the state's role in directing, influencing, or managing the economy. They support significant state intervention to promote national industrial, political, and social objectives, and view markets simply as a tool that can be directed to achieve these goals; when markets cannot provide desired outcomes, these states adhere to a paradigm that supports circumventing or manipulating them. Hence, such an outlook is consistent with food security LSLAs, which are pursued by nations to avoid the perceived risks or uncertainties of world import markets.

Although a nation's economic outlook may not directly *cause* a particular policy, a national paradigm certainly sets the stage for the range of policies a country can follow. Thus, while economic illiberalism does not *cause* food security LSLAs, it appears to be a secondary motivation that, at the very least, encourages states to pursue such a food security strategy. Moreover, although additional case studies are beyond the scope of this

chapter, economic illiberalism appears to be a general trend among countries pursuing food security LSLAs. As described in the second chapter, Qatar, Kuwait, Japan, and Singapore all pursue food security LSLAs; Japan and Singapore both have been considered “developmental states” and both Kuwait and Qatar follow the “rentier” model of Saudi Arabia.^{729,730}

Therefore, this chapter’s findings support the hypothesis that countries pursuing a LSLA food security strategy share similar economic paradigms and that these outlooks are illiberal, nationalist, and mercantilist in nature. While these outlooks are not a direct cause of LSLAs, they provide a fertile environment for such a policy to be considered. Moreover, given the significant disparities among the four case study nations described in the second chapter, it appears that the correlation between illiberalism and food security LSLAs is a general trend; this is especially likely in light of the findings regarding Japan, Singapore, Qatar, and Kuwait, although these cases have not been rigorously evaluated.

Finally, this topic offers many areas for future research. Although economic illiberalism appears correlated with food security LSLAs, further case studies, such as Japan, Qatar, Singapore, Kuwait, and Oman could be analyzed to confirm this trend. Scholars could also seek out cases in which nations with illiberal outlooks facing similar food security concerns as this thesis’ case study nations choose not to pursue food security LSLAs; such research could better clarify why these factors motivate LSLAs.

Conclusion

This chapter sought to determine if national economic outlook could be considered a “secondary motivation” of states choosing LSLAs as a food security

⁷²⁹ Kim, "Rethinking Colonialism and the Origins of the Developmental State in East Asia," 383.

⁷³⁰ Hiba Khodr, "A Preliminary Comparative Study of Policy Making in Two GCC Countries—Qatar and Kuwait: Processes, Politics, and Participants," *Politics and Policy* 42, no. 2 (2014): 273.

strategy. By comparing China, South Korea, Saudi Arabia, and India's economic histories and current policies, it established that these states, which pursue food security LSLAs and face similar food security "triggers," all share an "illiberal," "nationalist," and "mercantilist" economic outlook. Thus, it appears that economic illiberalism can be considered an underlying motivation of food security LSLAs. Such findings are consistent with LSLAs' description by scholars as driven by mercantilism and similar to colonialism; they are also consistent with the fact that nations employing LSLAs often do so to avoid markets and promote agricultural self-reliance.

Moreover, given the range of nations analyzed by this study, it appears that economic illiberalism, like the findings regarding food security "triggers" in the previous chapters, is a general trend among nations using LSLAs. Hence, based on this chapter's findings, it could confidently be predicted that a nation pursuing food security LSLAs will likely have a history of economic illiberalism (e.g. communism, socialism, authoritarian development, central planning, or state intervention), and many elements of this history will influence the nation's current economic policies. For example, such a nation will likely promote domestic industries, prevent foreign investment, employ trade barriers, invest in opaque, nationalistic SWFs, control national resources, support a range of state-owned enterprises, and intervene heavily in the economy (despite the potential for nominal "liberalization" or use of liberal economic tools); fundamentally, such a state will attempt to "maximize" the value of the state in economic endeavors, instead of the individual or company.⁷³¹

This chapter's findings further contribute to the academic literature on LSLAs and food security by establishing underlying national characteristics that encourage states to

⁷³¹ Gilson and Milhaupt, "Sovereign Wealth Funds and Corporate Governance," 346.

pursue food security LSLAs. This chapter expands on the previous chapters' analysis of LSLA drivers by determining one significant "secondary motivation" that sets the stage for such a policy choice. These findings are important, as they describe the characteristics of a nation that might pursue such a policy in the future; given projected increases in population and food demand, it is critical to know which states might pursue specific food security policies, especially if these policies circumvent the established world agricultural marketplace. Therefore, the more similar characteristics that can be discovered about LSLA-pursuing countries, the better such a policy can be predicted in response to changing global food security circumstances.

CONCLUSION

The purpose of this thesis has been to analyze the recent trend of nations utilizing large-scale land acquisitions as a food security strategy and to uncover general conditions and motivations contributing to the selection of such a strategy. This paper found specific food security conditions as well as preferred national responses to these conditions that appear to generally apply to the diverse range of states pursuing food LSLAs; it also determined that food security LSLAs themselves are similar among these states. Moreover, this paper discovered that LSLA investor countries share common illiberal economic histories, policies, and outlooks, demonstrating that economic illiberalism plays a role in “setting the stage” for states opting to employ LSLAs. In essence, this thesis develops a framework for understanding the driving forces behind LSLAs, which could be applied to future nations and circumstances to predict in which countries this strategy might find favor.

In summary, the first chapter analyzed the food security concerns, objectives, and responses (including LSLA implementation styles) of two nations that both use food security LSLAs but otherwise share few similarities, China and South Korea. It found that both face rising and changing food demand, limits to domestic supply, dependence on food imports combined with a preference for self-sufficiency, and numerous similar food security response strategies. It determined that both encourage private or state-owned firms to invest in agriculture abroad, in hopes that the food produced will be available to the home country.

Given that the nations analyzed in the first chapter are regionally located in East Asia, the second chapter examined additional case studies to ensure that region-based

factors did not account for China and South Korea's food security conditions and strategy selection. Thus, to determine the first chapter's generalizability, it investigated Saudi Arabia and India following the first chapter's template; both nations are vastly different from each other as well as China and South Korea, and neither state is located in East Asia. With only minimal variation, this chapter ultimately found that these states share parallel concerns, conditions, responses, preferences, and LSLA styles with China and South Korea. Consequently, this chapter illustrates the general nature of the first chapter's findings (outside East Asia).

Lastly, the third chapter examined secondary or underlying motivations of food security LSLAs. Due to the linkages noted in academic literature among LSLAs, colonialism, and mercantilism, as well as the general preference for self-sufficiency held by LSLA investor states, LSLAs appear to have a substantial "economic" element; hence, to indicate whether economic outlook could be considered a "secondary motivation" of LSLAs, this chapter examined if national economic outlooks are shared among countries employing food security LSLAs. This chapter analyzed the four case study nations from the previous chapters and found that each has significantly illiberal, nationalist, and mercantilist economic histories and current policies, demonstrating a shared illiberal paradigm among these nations. Thus, it appears that any nation employing food security LSLAs likely subscribes to such a paradigm.

Fundamentally, this thesis finds that LSLA food security strategies lie at the center of a complex matrix of food security, economic, historical, and cultural factors, and that nations pursuing such a policy, even if different by most other measures, will likely share these factors. Further, this thesis corrects deficiencies in the literature, mainly

by describing the highly intricate and complex long-term conditions faced by LSLA-pursuing countries and by examining how LSLAs fit within a broader set of food security objectives, responses, and strategies in these states. Moreover, this thesis demonstrates that LSLAs are certainly not solely short-term reactions to the Global Food Crisis, but rather a long-term effort by nations to secure food resources in response to projected enduring domestic food security challenges while minimizing the perceived “dangers” of market-based solutions to these concerns. Such policies are entirely consistent with these nations’ economic outlooks and mirror their strategies in additional areas, such as oil and other natural resources.

This thesis and the LSLA issue in general raise a number of nuanced theoretical and applied questions, which, although beyond the scope of this study, are also exceptional areas for future research if there were to be additional chapters of this thesis. One of the most essential questions that should be analyzed in the future is: does this strategy make sense, from a global food security, an investor nation’s food security, and a host nation perspective?

From a world food security perspective, it is possible that these land acquisitions could vastly increase food production. If national and industrial investment in agriculture can increase the amount of land in cultivation and raise the productivity of land, it is possible that such investments could expand overall food production and lower world food prices, increasing food security; even if the crops are entirely exported to investor nations and never see the world market, the consumption of these crops will inherently satisfy a portion of investor nations’ food demand, thus reducing their dependence on (and world demand of) import markets, decreasing world food prices. Given substantial

projected increases in food demand, such policies may have value if they can bring more land into cultivation and match world supply with demand. A valuable future study or potential future chapter could analyze how much land, at current production levels, might be necessary to match food supply with projected demand to stabilize world prices.

One caveat to this potential benefit, however, involves the “type” of agriculture utilized to increase crop production, as unsustainable farming can lead to environmental degradation and a failure to produce crops. One key example is the American “Dust Bowl” phenomenon “during the 1930s;” as “agricultural production began to expand substantially on the American Plains, and native grasslands were increasingly plowed up for crops,” “severe drought...which led to widespread crop failures,” combined with “loss of ground cover,” “made farmland susceptible to self-perpetuating dust storms (wind erosion) and substantial runoff during occasional heavy rains (water erosion).”⁷³² More sustainable land uses, “where productivity was less affected by erosion and production was less likely to cause additional erosion,” such as for “hay and pasture” over “wheat and other row crops” was hindered by “land tenancy” practices, as “tenants’ short-term incentives were thought to encourage the overuse of land.”⁷³³ Thus, as cited by the “[U.S. government-established] Great Plains Committee,” unsustainable farming driven by a short-term focus played a major role in the crisis, including factors such as “high rates of farm tenancy and absentee landlords [causing] over-production of crops relative to livestock,” “[a] lack of farm improvement/long-term planning,” “expansion of

⁷³² Richard Hornbeck, “The Enduring Impact of the American Dust Bowl: Short- and Long-Run Adjustments to Environmental Catastrophe,” *American Economic Review* 102, no. 4 (2012): 1479.

⁷³³ Hornbeck, “The Enduring Impact of the American Dust Bowl,” 1480.

farming into marginal areas,” “over-cultivation of small landholdings,” and “undue dependence on wheat as a cash crop.”⁷³⁴

Given that LSLAs typically result in the expansion of agriculture and an increase in cultivated land, unsustainable farming techniques, as exemplified by the “Dust Bowl,” could exacerbate the conditions that LSLAs are employed to solve. Since industrial agriculture, which is used heavily in LSLAs, has been criticized by some scholars as “eroding biodiversity,” “polluting soil, water, and air” with “synthetic chemical pesticides and fertilizers,” “eroding [soil] much faster than it can be replenished – taking with it the land’s fertility and nutrients” and “[consuming water] at unsustainable rates,” failure to implement farming techniques that avoid these negative outcomes could cause crop failures and environmental damage.⁷³⁵ Under such conditions, LSLAs would lose their value while also harming host nation environments. However, since LSLAs tend to be long-term investments, designed to produce food to meet future demand, it is certainly possible that investors will take a long-run view and will not succumb to the “short-term incentives” of 1930s American tenant farmers.⁷³⁶ If investors do consider long-term effects, LSLAs could raise the world’s food supply, benefitting global food security; thus, future research should examine LSLAs’ farming practices to determine their current sustainability and suggest improvements.

From an investor country’s food security perspective, the benefits of LSLAs are debatable. Investor countries *could* import a significant portion of crops from host nations

⁷³⁴ Robert A. McLeman et al., “What we learned from the Dust Bowl: lessons in science, policy, and adaptation,” *Population and Environment* 35, no. 4 (2014): 426-427.

⁷³⁵ Leo Horrigan, Robert S. Lawrence, and Polly Walker. “How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture.” *Environmental Health Perspectives* 110, no. 5 (May 2002): 445.

⁷³⁶ Hornbeck, “The Enduring Impact of the American Dust Bowl,” 1480.

through LSLAs, however, given the large populations of many investor countries (such as China and India), the benefit is likely marginal; for smaller nations, such as Saudi Arabia, South Korea, Singapore, or Qatar, the outcome of LSLAs is likely more optimistic, as these nations have to support the food consumption of much smaller populations. Nevertheless, as illustrated by this thesis, LSLAs are not the only food security policy employed by investor nations, indicating that even if their production benefit is marginal, this marginal advantage may be beneficial the future; LSLAs may “prime the pump” of further food production by bringing large-scale agriculture to unindustrialized nations with fertile farmland.⁷³⁷ Hence, future studies could be conducted to determine what proportion of investor nations’ food demand can be supplied by LSLAs as well as to investigate whether industrial agricultural investment in host nations can grow fast enough to support these nations’ demand.

A further risk of LSLAs from an investor nations’ viewpoint is host-investor disputes, specifically legal recourse in response to such disputes. The law that backs LSLA deals is primarily “international investment law” and “many...land leases are governed by the terms of Bilateral Investment Treaties” between host and investor nations; these treaties “frequently include provisions promoting national treatment for foreign investors, and providing injured foreign investors with access to State-investor international arbitration.”⁷³⁸ In the event of a breach, such as if host nations enact policies contrary to the treaties’ terms, investors may seek arbitration at the International Centre

⁷³⁷ Pearce, *The Land Grabbers: The New Fight Over Who Owns the Earth*, viii.

⁷³⁸ Telesetsky, "Resource Conflicts over Arable Land in Food Insecure States," 302.

for Settlement of Investment Disputes (at the World Bank), which could require compensation to be paid by the breaching party.⁷³⁹

While arbitration may economically compensate for host policies encroaching on investors' property, it would not benefit an investor country if, for example, host nations decide to ban food exports in response to a food crisis; further, there is always a risk of political unrest or land nationalization, which may be more likely during a crisis, potentially reducing investor nations' ability to rely on LSLAs. Moreover, given that, as scholars such as Welzer have speculated, "the consequences of climate change are...shortages of water, declining food production, increased health risks and land degradation and floods that reduce living space," there may be increased environmental-based conflict and crises in the future.⁷⁴⁰ In any such crisis, the effectiveness of international arbitration may be dubious and would certainly not result in increased food production for the investor nation. Hence, future research could categorize past disputes or predict whether future disputes might lead to external international legal settlement, bilateral negotiations by host and investor nations, or even outright conflict, especially in the case of shifting environmental conditions.

Furthermore, even if they perform exactly as intended, LSLAs may create additional challenges for investor nations. Each country analyzed in this thesis has promoted farm employment or farmers' income as a key goal of its agricultural policies, in addition to absolute food production and security. If LSLAs become "too" successful, such that they produce a substantial proportion of an investor nation's food, the entry of LSLA crops into the domestic food market could reduce prices and harm incomes in the

⁷³⁹ Telesetsky, "Resource Conflicts over Arable Land in Food Insecure States," 303, 305.

⁷⁴⁰ Harald Welzer, *Climate Wars: What People Will Be Killed For in the 21st Century* (Cambridge, Malden: Polity Press, 2012), 73.

domestic agriculture industry, contradicting these nations' farm income goals; the greater the percentage of crops "re-exported" to the host nation (which varies by nation and circumstances), the more dangerous this effect. Additionally, if the domestic market is flooded with LSLA crops, it may incent farmers to seek alternative employment, which would further exacerbate these nations' food security challenges of falling agricultural labor supply and urbanization. Thus, future scholarship could determine what level of LSLA crop "imports" would be sustainable for domestic agriculture and what policies could be implemented to mitigate this challenge.

Lastly, the question of whether LSLAs benefit or make sense for host nations could be addressed by future research (and has been already analyzed substantially in the literature). In theory, LSLAs could bring investment and industry to developing nations, potentially raising economic growth, employment, food production, etc., while also providing rent from investors. Further, as noted previously, such investments could raise world food supplies, lowering prices (even if the crops are exported). However, LSLAs also have the potential to displace populations, since even "'idle' or 'marginal' land" can be owned or used by "groups such as nomadic herders who depend on land at certain times of the year;" moreover, marginal land can "be productive in other terms – for hunting, gathering, or pastoralism," and LSLAs preclude these activities.⁷⁴¹ Therefore, in the future, scholars could determine if and under what conditions LSLAs benefit host nations, what protections do and should exist for local landowners, and whether LSLAs are a net benefit for host nations and local populations.

⁷⁴¹ Thomas Molony and James Smith, "Briefing: Biofuels, Food Security, and Africa," *African Affairs* 109, no. 436 (2010): 493.

Beyond these broader questions, there exist myriad areas of additional future research that could be based on the specific findings of this thesis. For example, additional case study nations could be investigated to further determine the extent to which the results of this thesis can be considered general. For scholars conducting such an investigation, it would be valuable to select case study nations that reflect an even more diverse range of national circumstances; thus, Singapore would be beneficial to study, given its unique position as a city-state. Likewise, examining nations outside the “top 18” (see Appendix 5 and page 71) could establish whether these nations’ LSLAs differ from those within this group.

In addition to strengthening these findings’ “generalizability,” further aspects of LSLAs could be explored. For example, scholars could study cases in which a nation faces the food security and underlying economic conditions described in this thesis but does not decide to pursue LSLAs; if such cases exist, their examination could explain why these conditions lead to LSLAs in some circumstances and do not in others. Moreover, the link between biofuels production and LSLAs could be developed more thoroughly, given the competition between food and “fuel” crops; this thesis’ results could be applied to biofuel LSLA investor nations to determine similarities. Finally, additional cultural, historical, social, environmental (water, climate, etc.), or political factors could be analyzed in case studies to determine if there are further direct or underlying motivations of food security LSLAs.

Lastly, future research could use the results of this thesis to analyze varying “camps” of academic literature in greater depth. As touched on in the first and second Literature Reviews, there is a long history of diverse scholarly opinion on the links

between population growth and food scarcity. For example, Malthus asserts that food scarcity provides “a strong and constantly operating check on population” while Ricardo maintains that when food is scarce, its price increases and populations will farm more or reproduce less.^{742,743}

These debates have continued into the present day. Hence, while neo-Malthusians such as Ehrlich have predicted massive famines due to overpopulation, other scholars have questioned this outcome;⁷⁴⁴ Boserup, for example, argues, “in many cases the output from a given area of land responds far more generously to an additional input of labor” and “population growth is...the independent variable which...is a major factor in determining agricultural developments.”⁷⁴⁵ Likewise, scholars such as Rosenberg, Hallam, and Eccleston cite technology as protecting against Malthusian famines; for instance, Rosenberg contends, “there is no obvious reason why the further growth of technological skills should not...continue the shift from dependence upon scarce sources of materials to dependence upon more abundant sources” and, Eccleston claims, “fear of hunger will undoubtedly drive scientific innovation.”^{746,747,748} Thus, future research could examine the selection LSLAs or their ultimate effects to determine if they support specific camps within scarcity scholarship.

LSLAs for food security are a novel, yet historically and culturally based response to modern changes in food demand, supply, and distribution of agricultural resources.

They raise numerous questions regarding world food production, the “commodification

⁷⁴² Malthus, *An Essay on the Principle of Population*, 13.

⁷⁴³ Ricardo, *The Principles of Political Economy & Taxation*, 278.

⁷⁴⁴ Ehrlich, *The Population Bomb*, 3.

⁷⁴⁵ Ester Boserup, *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure* (New Brunswick: Transaction Publishers, 2005, 1965), 14, 11.

⁷⁴⁶ Rosenberg, "Innovative Responses to Materials Shortages," 117.

⁷⁴⁷ Hallam, "International Investments in Agricultural Production," 31.

⁷⁴⁸ Eccleston, "Peak Food?" 16.

of sovereign national territory,” the benefits of industrial agriculture, resource nationalism, and the welfare of developing nations’ populations.⁷⁴⁹ As described throughout this thesis, they can also lead to political strife or policy shifts, and can create a negative or colonial perception of investor nations, making them risky and potentially volatile policy tools.

However, given massive projected increases in world food demand and population growth, nations that fear international market mechanisms for supplying agricultural products may have an incentive to pursue such a policy, at the very least as a marginal support of additional food security strategies; LSLAs will become especially valuable for these countries if food producing nations follow past trends during future crises and implement agricultural export restrictions or other barriers to trade. Moreover, if market mechanisms ever fail (possibly due to such restrictions) during this period of rising demand, traditionally import-dependent nations may become concerned over their reliance on import markets; in such a circumstance, it is likely that LSLAs will become increasingly prevalent. Therefore, by examining and uncovering the core and secondary motivations driving these investments, this thesis should provide insights to policymakers and scholars that may prove helpful in predicting which nations might select this strategy, especially during a rapidly approaching period of increased food demand coupled with potential limits to supply expansion.

⁷⁴⁹ Margulis, McKeon, and Borrás Jr., "Land Grabbing and Global Governance: Critical Perspectives," 18.

APPENDIX 1: Land Matrix Data – China Agricultural LSLA Deals⁷⁵⁰

| # | Target Country | Location | Investor | Intention | Deal Status | Execution Status | Size: Intent (ha) | Size: Deal (ha) | Deal Type | Crop |
|---|----------------------------------|------------------------------------|---|-------------------------------|--|--------------------------------------|-------------------|-----------------|--------------------|------------------------------|
| 1 | Benin | Savè | China National Complete Plant Import & Export Corporation | Agriculture, Renewable Energy | [2001] Concluded (Contract signed) | [2001] In operation (production) | 4800 | 4800 | Lease/ Concession | Sugar Cane |
| 2 | Sierra Leone | Tonkolili, Sierra Leone | China National Complete Plant Import & Export Corporation | Agriculture, Renewable Energy | [2009] Concluded (Contract signed) | [2005] In operation (production) | 3000 | 1222 | | Cassava (Maniok), Sugar Cane |
| 3 | Nigeria | Nigeria | Chongqing Seed Corp | Agriculture | Concluded (Contract signed) | [2006] In operation (production) | 300 | 300 | | Rice (hybrid) |
| 4 | Lao People's Democratic Republic | Pha Oudom, Laos | Jiafeng | Agriculture | Concluded (Contract signed) | [2006] Startup phase (no production) | | 3000 | | Rubber |
| 5 | Lao People's Democratic Republic | Bokeo, Laos | Kunming Ruipu Biotechnology Co. Ltd. | Agriculture | Concluded (Contract signed) | [2006] Startup phase (no production) | | 3000 | | Rubber |
| 6 | Lao People's Democratic Republic | Muang Long, Laos, Muang Sing, Laos | Kunming Ruipu Biotechnology Co. Ltd. | Agriculture, Forestry | [2006] Concluded (Contract signed), [2009] Concluded (Contract | [2006] Startup phase (no production) | 300000 | 10000 | Lease / Concession | Rubber |

⁷⁵⁰ Land Matrix, *Get the Detail: China*.

| | | | | | | | | | | |
|----|----------------------------------|--|---|-----------------------|--|--|--------|-------|--------------------|--------------|
| | | | | | signed) | | | | | |
| 7 | Lao People's Democratic Republic | Bokeo, Laos | Leilin | Agriculture | Concluded (Contract signed) | [2006] Startup phase (no production) | | 1500 | | Rubber |
| 8 | Lao People's Democratic Republic | Bokeo, Laos | Luhang | Agriculture | Concluded (Contract signed) | [2006] Startup phase (no production) | | 4000 | | Rubber |
| 9 | Lao People's Democratic Republic | Muang Long, Laos, Oudomxay, Laos, Bokeo, Laos, Luang Prabang, Laos | Yunnan Rubber Company Ltd. | Agriculture | [2002] Intended (Under negotiation), [2004] Concluded (Oral Agreement) | [2006] Startup phase (no production), [2007] Startup phase (no production) | 167000 | 3000 | Lease / Concession | Rubber |
| 10 | Lao People's Democratic Republic | Luang Namtha, Laos, Oudomxay, Laos, Luang Prabang, Laos | Sino-Lao Jinrun Development Company, Yunnan Local Product Import Export Company, Beijing Jinrun Rubber Co. Ltd. | Agriculture, Industry | Concluded (Contract signed) | [2006] Startup phase (no production), [2009] In operation (production) | | 22000 | Lease / Concession | Rubber |
| 11 | Cambodia | Stung Treng, Stung Treng | GG World Group (Cambodia) Development Co. Ltd. | Agriculture, Forestry | [2005] Concluded (Contract signed) | [2007] In operation (production) | | 5000 | Lease / Concession | Cashew, Teak |

| | | | | | | | | | | |
|----|----------------------------------|--|--|-----------------------|------------------------------------|--------------------------------------|-------|-------|--------------------|--------------------------------|
| 12 | Cambodia | Se San District, Stung Treng Province | HuaYue Group Co. Ltd. | Agriculture, Forestry | [2006] Concluded (Contract signed) | [2007] Startup phase (no production) | 10000 | 10000 | Lease / Concession | Accacia, Rubber, Teak, Trees |
| 13 | Lao People's Democratic Republic | Bokeo, Laos | Deshang | Agriculture | Concluded (Contract signed) | [2007] Startup phase (no production) | | 1500 | | Rubber |
| 14 | Lao People's Democratic Republic | Ban Houayxay, Laos | Jinsen | Agriculture | Concluded (Contract signed) | [2007] Startup phase (no production) | | 3000 | | Rubber |
| 15 | Lao People's Democratic Republic | Vientiane, Laos, Bolikhamsai, Laos | Indo-China Group | Agriculture | Concluded (Contract signed) | [2008] In operation (production) | | 7689 | Lease / Concession | Cassava (Maniok) |
| 16 | Philippines | Delfin Albano, Philippines | Jilin Fuhua Agricultural Science and Technology Development Co. Ltd. | Agriculture | [2006] Concluded (Contract signed) | [2008] In operation (production) | | 350 | Lease / Concession | Corn (Maize) |
| 17 | Lao People's Democratic Republic | Vientiane, Laos, Mai, Laos | Lilieng Biological Development Co. | Agriculture, Industry | Concluded (Contract signed) | [2009] In operation (production) | | 504 | Lease / Concession | Rubber |
| 18 | Lao People's Democratic Republic | Muang Sing, Laos, Nam Noi, Laos, Mai, Laos, Pha Deng, Laos | Xeunhua Commerce Company, Ltd. | Agriculture | Concluded (Contract signed) | [2009] In operation (production) | | 1025 | Lease / Concession | Rubber |
| 19 | Sudan | Northern, Sudan | ZTE Corporation | Agriculture | [2009] Concluded (Contract signed) | [2009] In operation (production) | 10000 | 10000 | Lease / Concession | Oil Seeds, Corn (Maize), Wheat |

| | | | | | | | | | | |
|----|----------------------------------|---|--|-----------------------|------------------------------------|--|--------|-------|--------------------|---|
| 20 | Democratic Republic of the Congo | Equator, Democratic Republic of the Congo, Bandundu, Democratic Republic of the Congo, Kasai Oriental, Democratic Republic of the Congo, Kasai Occidental, Democratic Republic of the Congo | ZTE Corporation | Agriculture, Forestry | [2009] Concluded (Contract signed) | [2010] In operation (production) | 100000 | 865 | Lease / Concession | Corn (Maize), Oil Palm, Soya Beans |
| 21 | Cameroon | Nanga-Eboko, Cameroon, Ndjoré, Cameroon, Santchou, Cameroon | Shaanxi Land Reclamation General Corporation | Agriculture | [2006] Concluded (Contract signed) | [2010] Startup phase (no production) | 10120 | 10120 | Lease / Concession | Cassava (Maniok), Vegetables, Fruit, Corn (Maize), Rice |
| 22 | Uganda | Luweero, Uganda | Hebei Hanhe Investment Co. | Agriculture, Forestry | [2009] Concluded (Contract signed) | [2011] In operation (production), [2009] Startup phase (no production) | 41000 | 1000 | | Corn (Maize), Fruit, Rice, Trees, Vegetables, Wheat |
| 23 | Angola | Cuito Cuanavale, Angola | China CAMC Engineering Co. Ltd. | Agriculture | [2010] Concluded (Contract signed) | [2011] Startup phase (no production) | | 1500 | | Rice |

| | | | | | | | | | | |
|----|----------------------------------|---|---|-----------------------|---|--------------------------------------|--------|-------|--------------------|--------------------------------------|
| 24 | United Republic of Tanzania | Tanga, Tanzania | Boleyn International | Agriculture, Forestry | [2007] Concluded (Contract signed) | [2011] Startup phase (no production) | 729 | 81 | Lease / Concession | Olives, Castor Oil Plant, Eucalyptus |
| 25 | Zambia | Northern, Zambia | Wuhan Kaidi | Agriculture | [2011] Concluded (Contract signed), [2009] Intended (Under negotiation) | [2011] Startup phase (no production) | 700000 | 79300 | Lease / Concession | |
| 26 | Cambodia | Kampong Thom Province, Prasat Sambo and Santuk Districts, | Gold Foison (Cambodia) A/C Import Export & Construction | Agriculture, Forestry | [2007] Concluded (Contract signed) | [2012] In operation (production) | | 7000 | Lease / Concession | Accacia, Rubber |
| 27 | Lao People's Democratic Republic | Laos | Jieng Xieng | Agriculture | [2006] Concluded (Contract signed) | [2012] In operation (production) | 32000 | 32000 | Lease / Concession | Rubber |
| 28 | Mozambique | Xai-Xai District, Mozambique | Wanbao Grain and Oil Investment Ltd. | Agriculture | [2012] Concluded (Contract signed) | [2012] In operation (production) | 20000 | 20000 | Lease / Concession | Rice (hybrid), Soya Beans |
| 29 | Mozambique | Xai-Xai District, Mozambique | Hubei State Farm Agribusiness Corp | Agriculture | [2007] Concluded (Contract signed) | [2012] Project abandoned | 1000 | 300 | Lease / Concession | |
| 30 | Lao People's Democratic Republic | Luang Namtha, Laos | Paolong Rubber Plantation Company, Ltd. | Agriculture | Concluded (Contract signed) | [2012] Startup phase (no production) | 600 | 100 | Lease / Concession | Rubber |

| | | | | | | | | | | |
|----|-------------------------------------|---|---|-------------------------------|------------------------------------|---------------------------|-------|-------|--------------------|-----------------------------------|
| 31 | Bolivia (Plurinational State of) | San Pedro, north of Santa Cruz | Shanghai Pengxin Group Co., Ltd, Pengxin International group of Shanghai | Agriculture | [2005] Concluded (Contract signed) | In operation (production) | | 12500 | | Corn (Maize), Soya Beans, Sorghum |
| 32 | Indonesia | Kalimantan, Indonesien | Tianjin Julong Group Co Ltd | Agriculture | [2006] Concluded (Contract signed) | In operation (production) | | 24000 | | Oil Palm |
| 33 | Lao People's Democratic Republic | Vientiane, Laos, Luang Namtha, Laos, Oudomxay, Laos, Bokeo, Laos, Xayaboury, Laos | Yunnan Power Biological Products Co. Ltd. | Agriculture | [2006] Concluded (Contract signed) | In operation (production) | | 37633 | Lease / Concession | Cassava (Maniok), Rubber |
| 34 | Madagascar | Diana, Madagascar, Menabe, Madagascar | China National Complete Plant Import & Export Corporation | Agriculture | [2008] Concluded (Contract signed) | In operation (production) | 10000 | 10000 | Lease / Concession | Sugar Cane |
| 35 | Mali | Niger, Mali | China Light Industrial Corporation for Foreign Economic and Technical Cooperation | Agriculture, Renewable Energy | [2009] Concluded (Contract signed) | In operation (production) | | 20000 | Lease / Concession | Sugar Cane |
| 36 | Zambia | Lusaka, Zambia | Lin Changming | Agriculture | [2003] Concluded (Contract signed) | In operation (production) | | 400 | | Corn (Maize), Vegetables, Wheat |

| | | | | | | | | | | |
|----|-----------|--|--|--------------------------|---|--|-------|--------|-----------------------|--|
| 37 | Argentina | Province | Beidahuang | Agriculture | [2010] Concluded (Contract signed) | | | 320000 | | Wheat, Soya Beans, Rapeseed |
| 38 | Cambodia | Ta Siem commune, Svay Leu district, Siem Reap province | Avic International | Agriculture | [2012] Concluded (Contract signed) | | | 7710 | Lease / Concession | Cassava (Maniok), Rubber |
| 39 | Cambodia | Phnom Sruoch, Kambodscha | Cambo Victor Investing and Developing Co Ltd. | Agriculture | [2013] Concluded (Contract signed), [2001] Concluded (Contract signed), [2010] Failed (Contract canceled) | | 26500 | 2655 | Lease / Concession | Peanut, Corn (Maize), Rice, Soya Beans, Cassava (Maniok), Bean |
| 40 | Cambodia | Kampong Speu, Phnom Srouch | Golden Land Development Co. Ltd. | Agriculture, Industry | [2005] Concluded (Contract signed) | | 4900 | | | Mango, Eucalyptus |
| 41 | Cambodia | Roleak Kang Cheung, Chhen commune, Aoral district, Kampong Speu province | Great Field International | Agriculture | [2010] Concluded (Contract signed) | | | 9059 | Lease / Concession | |
| 42 | Cambodia | Mlu Prey Muoy, Mlu Prey Pir, Sangkae Pir commune, Chhaeb | Hengfu Sugar Group | Agriculture | [2011] Concluded (Contract signed) | | | 8841 | Lease / Concession | Rubber |

| | | | | | | | | | | | |
|----|----------|--|--|-----------------------|------------------------------------|--|--|------|--------------------|--------------------|-----------------|
| | | district, Preach Vihear province | | | | | | | | | |
| 43 | Cambodia | Romonea, Dak Dam, Spean Mean Chey commune, O district, Mondulkiri province | Huor Ling | Agriculture, Forestry | [2010] Concluded (Contract signed) | | | 8400 | Lease / Concession | Pine, Rubber | |
| 44 | Cambodia | Mondulkiri Province, Chong Plas Commune, Pechreada District, Keoseyma District and Pu Chry Commune, Pechreada District | Land and Developing (Cambodia) | Agriculture | [2008] Concluded (Contract signed) | | | 7000 | | Accacia, Rubber | |
| 45 | Cambodia | Mondulkiri Province, Chong Plas Commune, Keoseyma District, Pu Chry Commune, Pechreada District | Saeng Long Green Land Investment (Hong Kong) Limited | Agriculture | [2009] Concluded (Contract signed) | | | 7000 | 7000 | Lease / Concession | Accacia, Rubber |
| 46 | Cambodia | Stung Treng Province, Sesan District | Un-Inter Trading and Development Group (Cambodia) | Agriculture | [2009] Concluded (Oral Agreement) | | | 7000 | | | Accacia, Rubber |

| | | | | | | | | | | |
|----|----------|---|---------------------------------|-------------|------------------------------------|--|------|------|--------------------|------------|
| 47 | Cambodia | Botomsakor District, Koh Kong Province | Ve Wong Corporation | Agriculture | [2006] Concluded (Contract signed) | | 9400 | 9400 | Lease / Concession | Sugar Cane |
| 48 | Cambodia | Koh Kong, Sre Ambil | Ve Wong Corporation | Agriculture | [2006] Concluded (Contract signed) | | 9700 | 9700 | Lease / Concession | Sugar Cane |
| 49 | Cambodia | Roleak Kang Cheung commune, Aoral district, Kampong Speu province | Yellow Field International Ltd. | Agriculture | [2010] Concluded (Contract signed) | | | 8449 | Lease / Concession | Sugar Cane |
| 50 | Cambodia | Tra Paing Krahom; Tra Paing Chres commune, Khon Mom district, Ratanakiri province | | Agriculture | [2011] Concluded (Contract signed) | | | 7497 | Lease / Concession | Rubber |
| 51 | Cambodia | Tasu, Sangkae Pir, Sangkae Muoy commune, Chhaeb, Chey Saen district, Preach Vihear province | | Agriculture | [2011] Concluded (Contract signed) | | | 9119 | Lease / Concession | Rubber |
| 52 | Cambodia | Chbaeb Pir, Sangkae Muoy, Mlu Prey, Chhaeb Mouy commune, Chhaeb | | Agriculture | [2011] Concluded (Contract signed) | | | 8959 | Lease / Concession | Rubber |

| | | | | | | | | | | |
|----|----------------------------------|---|---|-------------|------------------------------------|--|--------|-------|--------------------|------------|
| | | district, Preach Vihear province | | | | | | | | |
| 53 | Cambodia | Prame commune, Tbaeng Mean Chey district, Preach Vihear province | | Agriculture | [2011] Concluded (Contract signed) | | | 9015 | Lease / Concession | Rubber |
| 54 | Indonesia | Kalimantan, Indonesien | Mazhongdu International, Hainan Baisha | Agriculture | [2011] Concluded (Oral Agreement) | | 200000 | 41000 | | Rubber |
| 55 | Indonesia | Kalimantan Tengah, Republik Indonesien, Sumatera Selatan, Republik Indonesien | ZTE | Agriculture | Concluded (Contract signed) | | 35000 | 30231 | | Oil Palm |
| 56 | Jamaica | Saint Catherine Parish, Jamaica, Clarendon Parish, Jamaica | China National Complete Plant Import & Export Corporation | Agriculture | [2011] Concluded (Contract signed) | | | 18000 | Lease / Concession | Sugar Cane |
| 57 | Kazakhstan | Alaköl-See, Kasachstan | Unnamed investor 29 | Agriculture | [2003] Concluded (Contract signed) | | 7000 | | | |
| 58 | Lao People's Democratic Republic | Vientiane, Laos | Lilieng Power Co. Ltd. | Agriculture | Concluded (Contract signed) | | | 300 | Lease / Concession | Rubber |

| | | | | | | | | | | |
|----|----------------------------------|--|---|-------------|--|--|--------|-------|--------------------|------------------------------|
| 59 | Lao People's Democratic Republic | Laos | Municipality of Chongqing | Agriculture | [2004] Concluded (Contract signed) | | 5000 | | | Cereals |
| 60 | Lao People's Democratic Republic | Mueang Sing, Laos, Ban Sai, Laos, Ban Kang, Laos | Seunly Rubber Plantation Company | Agriculture | Concluded (Contract signed) | | 1333 | | | Rubber |
| 61 | Lao People's Democratic Republic | Laos | Yunnan State Farms Group, ZTE Corporation | Agriculture | [2008] Concluded (Oral Agreement) | | 100000 | 50000 | | Cassava (Maniok), Rice |
| 62 | Mozambique | Meconta, Mozambique | Rizhao Sunway International | Agriculture | [2010] Concluded (Contract signed) | | 500 | | Lease / Concession | Peanut, Sesame |
| 63 | Philippines | Philippinen | Agricultural Department of the Guangxi Zuang Autonomous Region (ADGZAR) | Agriculture | [2007] Concluded (Contract signed) | | | 40000 | | Cassava (Maniok), Sugar Cane |
| 64 | Philippines | Palawan, Philippinen | China CAMC Engineering Co. Ltd. | Agriculture | [2007] Concluded (Contract signed) | | | 10000 | | Sugar Cane |
| 65 | Philippines | San Mariano, Philippinen, Delfin Albano, Philippinen | GCO | Agriculture | [2010] Intended (Expression of interest), Concluded (Oral Agreement) | | 11000 | 6000 | | Sugar Cane |

| | | | | | | | | | | |
|----|-----------------------------------|--------------|------------------------|-------------|---|--|------|------|--|---|
| 66 | Sierra Leone | Sierra Leone | Unknown | Agriculture | Concluded (Contract signed) | | 1500 | 1500 | | Sweet Potatoes, Cassava (Maniok) |
| 67 | Uganda | Uganda | Liu JianJun | Agriculture | Concluded (Contract signed) | | 4000 | 4000 | | Food crops |
| 68 | United Republic of Tanzania | Tanzania | Chongqing Seed Corp | Agriculture | [2008] Intended (Expression of interest), Concluded (Contract signed) | | | 300 | | Rice (hybrid) |

APPENDIX 2: Land Matrix Data – South Korea Agricultural LSLA Deals⁷⁵¹

| # | Target Country | Location | Investor | Intention | Deal Status | Execution Status | Size: Intent (ha) | Size: Deal (ha) | Deal Type | Crop |
|---|----------------|---|---|-------------|------------------------------------|--------------------------------------|-------------------|-----------------|--------------------|-----------------------------------|
| 1 | Cambodia | Santuk District, Kampong Thom Province | BNA (Cam) Corp | Agriculture | [2009] Concluded (Contract signed) | | 7500 | | | Cassava (Maniok), Rubber |
| 2 | Cambodia | Phnom Srouch, Kampong Speu Province | C.J Cambodia Co., Ltd., CJ Corporation, Muhack Alcohol Co. Ltd. | Agriculture | [2001] Concluded (Contract signed) | Startup phase (no production) | | 5000 | Lease / Concession | Cassava (Maniok) |
| 3 | Cambodia | Ratanakkiri, Kambodscha | Oryung Construction | Agriculture | [2006] Concluded (Contract signed) | | 6866 | 6866 | Lease / Concession | Rubber |
| 4 | Cambodia | Snoul District, Kratie Province | PDA (Cambodia) Co. Ltd. | Agriculture | [2009] Concluded (Contract signed) | | 5256 | 5256 | Lease / Concession | Accacia, Cassava (Maniok), Rubber |
| 5 | Indonesia | Paleleh, Republik Indonesien, Bunobogu, Republik Indonesien | Unknown Investor | Agriculture | [2008] Concluded (Oral Agreement) | | 25000 | 10000 | | Corn (Maize) |
| 6 | Indonesia | Kalimantan, Republik Indonesien | Nonghyup Feed Inc., Daewoo Logistics | Agriculture | [2009] Concluded (Oral Agreement) | [2009] Startup phase (no production) | 20000 | | | Corn (Maize) |
| 7 | Mongolia | Bulgan | Gaeunpam | Agriculture | [2009] Concluded (Contract signed) | | 20000 | 20000 | Lease / Concession | |

⁷⁵¹ Land Matrix, *Get the Detail: Republic of Korea.*

| | | | | | | | | | | |
|----|------------------|---|--------------------------|-------------|--------------------------------------|----------------------------------|--------|--------|--------------------|------------------------|
| 8 | Philippines | Sarangani, Philippinen | Eco Solutions Co Ltd. | Agriculture | Concluded (Oral Agreement) [2011] | In operation | 100000 | 11000 | | Jatropha |
| 9 | Philippines | Bohol, Philippinen | Biosystems Co. Ltd. | Agriculture | Concluded (Oral Agreement) [2009] | | 100000 | | | Algae |
| 10 | Sudan | Sudan | Government | Agriculture | Concluded (Contract signed) | | | 690000 | Lease / Concession | Wheat |
| 11 | Papua New Guinea | Launakalana Agricultural Station, Papua-Neuguinea | Changhae International | Agriculture | Concluded (Contract signed) | In operation | | 36000 | Lease / Concession | Cassava (Maniok) |
| 12 | Indonesia | Merauke, Republik Indonesien | Korindo Group | Agriculture | Concluded (Contract signed) | Startup phase (no production) | | 40000 | | Oil Palm |
| 13 | Indonesia | Merauke, Republik Indonesien | Korindo Group | Agriculture | Concluded (Contract signed) | | | 14000 | Lease / Concession | Oil Palm |
| 14 | Indonesia | Merauke, Republik Indonesien | POSCO | Agriculture | [2012] Concluded (Contract signed) | | | 40000 | | Corn (Maize), Oil Palm |
| 15 | Papua New Guinea | Kaut, Papua-Neuguinea | Changhae International | Agriculture | [2006] Concluded (Contract signed) | [2011] Project not started | | 20000 | Lease / Concession | Cassava (Maniok) |
| 16 | Timor-Leste | Lospalos, Timor-Leste, Maliana, Timor-Leste, Baucau, Timor-Leste, Betano, Timor-Leste, Same, Timor-Leste, Viqueque, Timor-Leste | Komor Enterprise Limited | Agriculture | [2008] Concluded (Contract signed) | | | 100000 | | Corn (Maize), Jatropha |
| 17 | Philippines | San Roque, Philippines | Kibio 2007 | Agriculture | Concluded (Oral Agreement) | [2008] In operation (production) | 5300 | 300 | | Jatropha |

APPENDIX 3: Land Matrix Data – Saudi Arabia Agricultural LSLA Deals⁷⁵²

| # | Target Country | Location | Investor | Intention | Deal Status | Execution Status | Size: Intent (ha) | Size: Deal (ha) | Deal Type | Crop |
|---|----------------|----------------------------|---|-------------|------------------------------------|----------------------------------|-------------------|-----------------|--------------------|---|
| 1 | Turkey | Türkei | Planet World Food | Agriculture | [2009] Concluded (Contract signed) | [2009] In operation (production) | | 20000 | | Fruit, Vegetables |
| 2 | Argentina | Chaco | Alkhorayef Group | Agriculture | [2011] Concluded (Contract signed) | | | 200000 | Lease / Concession | Cereals (no specification), Rice (hybrid), Sorghum, Soya Beans, Wheat |
| 3 | Ukraine | Lviv, Lviv Oblast, Ukraine | Almarai Co., Public Investment Fund (PIF) of Saudi Arabia, Saudi Al Rajhi Group | Agriculture | [2006] Concluded (Contract signed) | In operation (production) | | 33000 | Lease / Concession | Corn (Maize), Potatoes, Rapeseed, Sugar beet, Wheat |
| 4 | Egypt | Toshka, Aswan, Egypt | Al Rajhi Group | Agriculture | [2008] Concluded (Contract signed) | [2010] In operation (production) | | 42000 | | Alfalfa, Barley, Corn (Maize), Wheat |
| 5 | Ethiopia | Bebeka, Ethiopia | MIDROC Group | Agriculture | [2011] Concluded (Contract signed) | In operation (production) | 10030 | 10030 | | Banana, Pepper, Coffee Plant |
| 6 | Ethiopia | Gojeb River, Ethiopia | MIDROC Group | Agriculture | [2012] Concluded (Contract signed) | In operation (production) | 1800 | 1800 | | Pineapple |

⁷⁵² Land Matrix, *Get the Detail: Saudi Arabia*.

| | | | | | | | | | | |
|----|------------|---|--|-------------|------------------------------------|--|--------|--------|--------------------|---|
| 7 | Ethiopia | Gambella, Ethiopia, Metekel, Ethiopia, Bench Maji, Ethiopia | MIDROC Group | Agriculture | [2007] Concluded (Contract signed) | [2008] Startup phase (no production) | 250000 | 250000 | | Jatropha, Oil Palm, Rubber |
| 8 | Ethiopia | Guba, Ethiopia | MIDROC Group | Agriculture | [2012] Concluded (Contract signed) | | 35000 | 20000 | Lease / Concession | Peanut, Oil Seeds |
| 9 | Ethiopia | Abobo, Ethiopia | MIDROC Group | Agriculture | [2008] Concluded (Contract signed) | [2014] Project abandoned, [2009] Startup phase (no production) | | 10000 | Lease / Concession | Oil Seeds, Teff, Corn (Maize), Rice, Sugar Cane |
| 10 | Ethiopia | Gambela, Ethiopia | MIDROC Group | Agriculture | [2012] Concluded (Contract signed) | Project not started | 3000 | 3000 | Outright Purchase | |
| 11 | Morocco | Guelmim, Morocco | TEA (Tiris Euro Arab) | Agriculture | [2008] Concluded (Contract signed) | | 700000 | 700000 | Lease / Concession | Citrus Fruits, Olives |
| 12 | Mali | Niger, Mali | Foras International Investment Company | Agriculture | [2009] Concluded (Contract signed) | In operation (production) | 100000 | 5000 | Lease / Concession | Rice |
| 13 | Mauritania | Rosso, Mauritania | Foras International Investment Company | Agriculture | [2008] Concluded (Contract signed) | In operation (production) | | 2000 | | Rice |
| 14 | Sudan | Atbara, Sudan | Al Rajhi Group | Agriculture | Concluded (Contract signed) | [2008] In operation (production) | 20492 | 20492 | Lease / Concession | Barley, Alfalfa, Wheat |

| | | | | | | | | | | |
|----|-------------|---|---|-------------------------------|------------------------------------|----------------------------------|--------|--------|--------------------|---------------------------------|
| 15 | Sudan | Sudan | Hail Agricultural Development Company (HADCO) | Agriculture | [2009] Concluded (Oral Agreement) | | | 8888 | Lease / Concession | Corn (Maize), Vegetables, Wheat |
| 16 | Sudan | Nile, Sudan | Nadec | Agriculture | [2010] Concluded (Oral Agreement) | | 42000 | 42000 | | |
| 17 | Senegal | Linguere, Senegal | Asiyla Gum Company | Agriculture | Concluded (Contract signed) | [2005] In operation (production) | 20000 | 20000 | | Accacia, Rubber |
| 18 | Sudan | sudan | Government | Agriculture, Renewable Energy | Concluded (Contract signed) | [2011] Project not started | 60702 | 60702 | | Sugar Cane |
| 19 | South Sudan | Gwit, South Sudan | Prince Budr Bin Sultan | Agriculture | [2010] Concluded (Contract signed) | | 105000 | 105000 | Lease / Concession | |
| 20 | Ethiopia | Oromia, Ethiopia | | Agriculture | [2005] Concluded (Contract signed) | [2007] In operation (production) | | 2000 | Lease / Concession | Pulses, Oil Seeds, Grains |
| 21 | Argentina | Villaguay, Entre Rios Province, Argentina, General Villegas, Buenos Aires Province, Argentina | Almarai Co. | Agriculture | [2011] Concluded (Contract signed) | In operation (production) | | 12306 | Outright Purchase | Corn (Maize), Soya Beans |

APPENDIX 4: Land Matrix Data – India Agricultural LSLA Deals⁷⁵³

| # | Target Country | Location | Investor | Intention | Deal Status | Execution Status | Size: Intent (ha) | Size: Deal (ha) | Deal Type | Crop |
|---|----------------|---|--------------------------------------|-----------------------|------------------------------------|--|-------------------|-----------------|--------------------|--|
| 1 | Cambodia | Sambo District, Kratie Province | Carmadeno Venture (Cambodia) Limited | Agriculture | [2009] Concluded (Contract signed) | | 7635 | | | Sugar Cane |
| 2 | Indonesia | Kalimantan, Indonesia, Sumatra, Republik Indonesien | KS Oils Ltd | Agriculture | [2008] Concluded (Contract signed) | | | 55847 | | Oil Palm |
| 3 | Malaysia | Malaysia | KS Oils Ltd | Agriculture, Industry | [2007] Concluded (Oral Agreement) | [2008] Startup phase (no production), [2010] In operation (production) | | 405 | Outright Purchase | Oil Palm |
| 4 | Brazil | Estado de Paraná, Brasil | Shree Renuka Sugars | Agriculture | [2010] Concluded (Contract signed) | In operation (production) | | 78000 | | Sugar (no specification) |
| 5 | Ethiopia | Wanke, Ethiopia | Bharat Herbals & Oils (BHO) | Agriculture | [2010] Concluded (Contract signed) | [2012] Project not started | 100000 | 27000 | Lease / Concession | Cereals (no specification), Cotton, Oil Seeds, Rice, Jatropa |
| 6 | Ethiopia | Gambella, Ethiopia | Karaturi Global Ltd | Agriculture | [2010] Concluded (Contract signed) | In operation (production) | 300000 | 100000 | Lease / Concession | Corn (Maize), Oil Palm, Rice, Sugar Cane |

⁷⁵³ Land Matrix, *Get the Detail: India*.

| | | | | | | | | | | |
|----|----------|------------------------------------|---|-------------|---|--------------------------------------|--------|-------|--------------------|--|
| 7 | Ethiopia | Bako, Ethiopia | Karuturi Global Ltd, Karuturi Global Inc | Agriculture | Concluded (Contract signed) | In operation (production) | | 11700 | Lease / Concession | Sugar (no specification), Corn (Maize), Oil Palm, Rice, Vegetables |
| 8 | Ethiopia | Anno, Ethiopia | Neha International | Agriculture | [2009] Concluded (Contract signed) | [2012] Startup phase (no production) | | 4000 | Lease / Concession | Rice |
| 9 | Ethiopia | Bandira, Ethiopia | Sannati Agro Farm Enterprise, Sannati Group | Agriculture | [2010] Concluded (Contract signed) | Startup phase (no production) | 100000 | 10000 | Lease / Concession | Pulses, Cereals (no specification), Rice |
| 10 | Ethiopia | Gambela, Ethiopia | Ruchi Soya Industries | Agriculture | [2010] Concluded (Contract signed) | [2013] In operation (production) | 50000 | 25000 | Lease / Concession | Pulses, Corn (Maize), Soya Beans |
| 11 | Ethiopia | Benishangul-Gumuz Region, Ethiopia | Praj Industries Ltd | Agriculture | [2010] Concluded (Contract signed), [2009] Intended (Under negotiation) | [2010] In operation (production) | 10000 | 200 | Lease / Concession | Jatropha |
| 12 | Ethiopia | Oromia, Ethiopia | | Agriculture | [2007] Concluded (Contract signed) | | 10000 | 10000 | Lease / Concession | Tomatoes |
| 13 | Ethiopia | Omo, Ethiopia | Sara Cotton Fibers Ltd | Agriculture | [2010] Concluded (Contract signed) | | | 10000 | Lease / Concession | Cotton |

| | | | | | | | | | | |
|----|------------|----------------------------------|--------------------------------|-------------|---|--|--------|-------|--------------------|-------------------------------|
| 14 | Ethiopia | Godere, Ethiopia | Verdanta Harvests Private Ltd. | Agriculture | [2010] Concluded (Contract signed) | | | 3012 | Lease / Concession | Tea, Coffee Plant, Eucalyptus |
| 15 | Ethiopia | Dangur, Ethiopia, Guba, Ethiopia | Shapoorji Pallonji & Co. Ltd | Agriculture | [2010] Concluded (Contract signed) | In operation (production) | | 50000 | Lease / Concession | Oil Seeds, Pongamia Pinnata |
| 16 | Kenya | Naivasha, Kenya | Karuturi Global Ltd | Agriculture | [2007] Concluded (Contract signed) | In operation (production) | 200 | 200 | Outright Purchase | Flowers |
| 17 | Madagascar | Ihorombe, Madagascar | Landmark | Agriculture | [2006] Concluded (Oral Agreement) | In operation (production) | 5000 | 5000 | Lease / Concession | Corn (Maize) |
| 18 | Uganda | Mabira, Lubanyi, Uganda | Mehta Group | Agriculture | Concluded (Contract signed), [2007] Intended (Under negotiation), [2013] Intended (Under negotiation) | | | | | Sugar Cane |
| 19 | Zambia | Zambia | Unnamed investor 109 | Agriculture | [2004] Concluded (Contract signed) | [2004] Startup phase (no production), [2006] In operation (production), [2008] Project abandoned | 600000 | 12000 | | Jatropha |

| | | | | | | | | | | |
|----|--------------|-------------------------|-----------------------|-------------------------------|------------------------------------|----------------------------------|-------|--------|--------------------|--|
| 20 | Sudan | Sudan | Lucky Group | Agriculture | Concluded (Contract signed) | In operation (production) | 1500 | | | Corn (Maize), Cotton |
| 21 | Sierra Leone | Port Loko, Sierra Leone | SIVA Group | Agriculture | [2011] Concluded (Contract signed) | In operation (production) | 46000 | 41582 | Lease / Concession | Oil Palm |
| 22 | Mozambique | Marracuene, Mozambique | Nirmal Seeds | Agriculture | [2011] Concluded (Contract signed) | | 10000 | 10000 | | Rice |
| 23 | Mozambique | Gurue, Mozambique | HK Jalan Group | Agriculture | [2006] Concluded (Contract signed) | [2006] In operation (production) | 6000 | 6000 | | Tea |
| 24 | Mozambique | Gurue, Mozambique | HK Jalan Group | Agriculture, Forestry | [2006] Concluded (Contract signed) | [2006] In operation (production) | 1200 | 1200 | | Tea, Eucalyptus |
| 25 | Madagascar | Diana, Madagascar | Unnamed investor 153 | Agriculture | Concluded (Contract signed) | [2012] In operation (production) | 6000 | 6000 | Lease / Concession | Food crops (no specification) |
| 26 | Ghana | Ashanti, Ghana | Viram Plantation Ltd. | Agriculture, Renewable Energy | [2009] Concluded (Contract signed) | | | 400000 | Lease / Concession | Coffee Plant, Oil Palm, Rubber, Sugar Cane, Food crops (no specification), Tea |
| 27 | Mozambique | Nampula, Mozambique | Primus Agri Products | Agriculture | [2011] Concluded (Contract signed) | [2012] In operation (production) | 300 | 170 | Lease / Concession | Corn (Maize), Sesame |

| | | | | | | | | | | |
|----|-----------------------------|--|---|-------------------------------|------------------------------------|--------------------------------------|-------|-------|--------------------|--|
| 28 | Cambodia | Kor Ky and Ampel commune, Romeas district, Svay Rieng province | UNKNOWN | Agriculture | [2010] Concluded (Contract signed) | | | 1200 | Lease / Concession | Sugar Cane |
| 29 | Uganda | Western Region, Uganda | McLeod Russel India Limited | Agriculture, Forestry | [2004] Concluded (Contract signed) | [2004] In operation (production) | | 4404 | | Eucalyptus, Tea |
| 30 | Ethiopia | Abobo, Ethiopia | Green Valley Agro Plc | Agriculture | [2012] Concluded (Contract signed) | | | 5000 | Lease / Concession | Cotton |
| 31 | Ethiopia | Dima, Ethiopia | JVL Agro Industries Ltd | Agriculture | [2012] Concluded (Contract signed) | | 5000 | 5000 | Lease / Concession | Cotton |
| 32 | Ethiopia | Dima, Ethiopia | Saber Group | Agriculture | [2011] Concluded (Contract signed) | [2013] Startup phase (no production) | 25000 | 25000 | Lease / Concession | Cotton, Soya Beans |
| 33 | United Republic of Tanzania | Rufiji River, Tanzania | Eurovistaa Trading Co. Ltd | Agriculture | Concluded (Contract signed) | [2006] In operation (production) | 10000 | 6000 | Lease / Concession | Corn (Maize), Cotton |
| 34 | United Republic of Tanzania | Rufiji River, Tanzania | Mahakaushal Sugar and Power Industries Ltd | Agriculture, Renewable Energy | [2012] Concluded (Contract signed) | Project not started | | 12132 | Lease / Concession | Sugar Cane |
| 35 | Mozambique | Mozambique | Rajarambapu Patil Sahakari Sakhar Karkhana Ltd. | Agriculture | [2013] Concluded (Oral Agreement) | | 17000 | | Lease / Concession | Cassava (Maniok), Rice, Sugar Cane |
| 36 | Uganda | Kayunga, Uganda | Tirupati Sarjan Limited | Agriculture | Concluded (Contract signed) | In operation (production) | | 1214 | Outright Purchase | Corn (Maize), Onion, Pineapple, Sugar Cane |

APPENDIX 5: Land Matrix Data – Top LSLA-Pursuing Nations by Number of Deals⁷⁵⁴

| # | Investor Country | Number of Agricultural Deals | Size of Agricultural Land Acquisitions (ha) | Food Security LSLA Strategy? |
|----|--------------------------|------------------------------|---|------------------------------|
| 1 | Malaysia | 68 | 2311301 | No |
| 2 | China | 62 | 674541 | Yes |
| 3 | United Kingdom | 46 | 1619400 | No |
| 4 | Viet Nam | 41 | 275679 | No |
| 5 | United States of America | 36 | 1498290 | No |
| 6 | Singapore | 33 | 910730 | Yes |
| 7 | India | 32 | 909066 | Yes |
| 8 | Republic of Korea | 21 | 1021945 | Yes |
| 9 | Thailand | 17 | 271913 | No |
| 10 | Italy | 17 | 199000 | No |
| 11 | France | 16 | 411878 | No |
| 12 | South Africa | 16 | 187974 | No |
| 13 | Canada | 15 | 395332 | No |
| 14 | Saudi Arabia | 14 | 1203686 | Yes |
| 15 | United Arab Emirates | 13 | 183974 | Yes |
| 16 | Belgium | 11 | 182544 | No |
| 17 | Netherlands | 10 | 211914 | No |
| 18 | Japan | 10 | 155100 | Yes |

Note: The values in this table are approximate and may include closed or cancelled deals; since this chart is only meant to depict which nations (as a total) are most active in LSLAs (of any type), some data have been omitted, such as Hong Kong-specific LSLAs. For a more robust analysis of the values and specific land deals for the case study nations covered in this thesis, please see nation-specific appendices and case study “Results” sections.

⁷⁵⁴ Land Matrix, *Get the Detail: By Intention of Investment*.

APPENDIX 6: FAOSTAT Data – Example Crop Import Dependency Ratios⁷⁵⁵

| Country | Cereal Import Dependency Ratio – 2008 (%) | Soybean Import Dependency Ratio – 2010 (%) | Pulses Import Dependency Ratio – 2010 (%) | Vegetable Oils Import Dependency Ratio – 2010 (%) |
|----------------|--|---|--|--|
| China | 2.2 | 78.14 | 17.8 | 34.55 |
| South Korea | 73.2 | 90.41 | 79.72 | 83.59 |
| Saudi Arabia | 82.9 | No FAO Data | 92.84 | 107.56 |
| India | 0.5 | ~0 | 14.37 | 46.85 |

Note: All values except the “Cereal Import Dependency Ratio” are self-calculated using FAOSTAT “Food Balance Sheets” data. Thus, all other values are approximate and, while calculated using the same formula as described by the FAO for the “Cereal Import Dependency Ratio” (Quantity Imported/(Quantity Produced + Quantity Imported – Quantity Exported)), may not account for all factors included in FAO official calculations.⁷⁵⁶ Each ratio is based on a three-year average, with the year displayed being the “middle” year. Lastly, the crops analyzed have been chosen for their importance to the case study nations; as noted in the Results sections of the first two chapters, staple cereal grains are critical to all four states, soybeans are used heavily in China, pulses are vital for India, and vegetable oils play a major role in agricultural demand in many nations, but especially in India. A key factor to note when viewing these data is that a smaller ratio for a larger population nation may be, in absolute terms, a larger dependency than a larger ratio for a smaller population nation; national income levels may also influence the perceived challenges of dependency.

⁷⁵⁵ United Nations Food and Agriculture Organization, *FAOSTAT - Compare Data*.

⁷⁵⁶ United Nations Food and Agriculture Organization, *FAO Statistical Yearbook 2013 World food and agriculture*, 111.

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CURRICULUM VITA

Charles Eric Hintz was born in Morristown, New Jersey in 1990. He received a Bachelor of Arts in Economics in 2012 from Emory University, where he was a member of Omicron Delta Epsilon, the national economics honors society. Following graduation, Mr. Hintz supported the National Nuclear Security Administration as a consultant for Booz Allen Hamilton in Washington, D.C. and Mclean, Virginia. In January 2013, Mr. Hintz began his tenure as a Master of Arts degree candidate in Global Security Studies at The Johns Hopkins University.