“IF WE CAN’T GROW RICE, THEN WHAT?”: FARMING LIVELIHOODS IN THE PRODUCTION OF VIETNAM’S RICE FARMING LANDSCAPES

by

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This dissertation is dedicated to the farmers
who have nourished many

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ABSTRACT

This dissertation challenges dominant food security discourses and practices that seek to address food insecurity through technoscientific approaches to agricultural production. Situated in Vietnam's An Giang province in the Mekong River Delta, this work ethnographically explores and historically grounds global, national, and household scalar implications of these same discourses and practices on rice farmers' livelihoods. The central research question that guided this project asks: if farmers are producing security for the nation, then why do they remain food insecure? Through a 16-month ethnographic study utilizing a mixed-methods approach I combined participant observation, household surveys, semi-structured interviews, and participatory mapping with rice farmers, farm laborers, and local and national government officials in order to address this question from a historically and ethnographically ground perspective. I show how Vietnam's history of hunger and famine, experienced most recently in the late 1970's, colors the nation's current and future agricultural development. Focused on a future of rural development, economic growth, and values of modernity, new models of agricultural production are implemented across the Mekong River Delta to ensure the nation's self-sufficiency in producing "enough" rice and food. Amongst these strategies, intensive triple cropping rice practices, food safety certifications and practices, and an increased reliance on agro-chemicals has resulted in differing farming practices and mixed impacts on farming livelihoods. I leverage a feminist political ecology and science and technology studies framework to foreground the rice farmers' perspectives and differed experiences, while tracking the rooted inequalities within government policies, market logics, and social relationships. In three articles, I (1) examine differential experiences of state-based agricultural models and their impact on farmers' livelihood security (2) trace how dominant discourses raise questions about individual and state responsibility; and (3) explore emergent farming livelihood opportunities and challenges within late socialist agricultural development. Drawing on ethnographic accounts and experiences, particularly from farmers, results showed that these dominant discourses that narrows food security to only be governable through techno-scientific approaches and agricultural practices are insufficient to address farmers' insecurity.

CHAPTER 1. INTRODUCTION

Sitting with Mrs. Thủy[1] and Mr. Văn under their concrete house, we absorbed the light breeze from the nearby rotating electric fan. The cross breeze from the fan and the coconut trees outside made the late March-end of dry season heat a little more bearable. Mrs. Thủy, Mr. Văn, and I were prepping their lemongrass stalks for sale at the local market in Mỹ Phú Đông commune in An Giang province for the following morning. Mrs. Thủy and I shaved the outer layers of lemongrass while Mr. Văn used his machete to cut individual stalks from the large bundle. We had all sat down for an interview earlier that morning and were now sitting together to make up for missed morning work.

Mrs. Thủy and Mr. Văn are rice farmers in Vietnam's Lower Mekong Delta; they have farmed rice for their entire lives. Their experience is much like many farmers in An Giang province, a region that has historically committed to growing rice as a part of Vietnam's national food security policy (Gorman 2019) and a driver of regional economic growth to the region. Intensive rice farming in Mỹ Phú Đông commune has a deep history intertwined with national notions of security, political economy, and more recently, its position in global economies. Over the past 20 years, models of intensified rice production have been implemented in order to increase rice yields for national and global export. After visiting Mrs. Thủy and Mr. Văn's house on multiple occasions, I began to learn how farmers produced more than these models suggested – how they cultivated much more than rice, from the orchid garden and chicken pen on the side of the house, the coconut and cassava growing everywhere in between, and the fish pond that separated their orchid gardens from their rice field that was newly surrounded by lemongrass bushels. While we worked, I asked how they maintain their diverse livelihood strategy growing rice, lemongrass, and orchids. Mrs. Thủy said, "Nowadays rice farming is not stable, and it cannot ensure our life. So now, we need to switch to other plants. But, because rice is traditional in the Mekong Delta and Vietnam, we don't want to transfer completely from rice right now, but maybe in the future."

Her husband, Mr. Văn, echoed these thoughts. In the mapping exercise that I conducted earlier that week, he drew his current household property with these diversified agricultural features of rice and produce. Visible in his map were the vegetables growing throughout their yard,

[1] All names in this chapter have been changed to a pseudonym to maintain confidentiality.

a fishpond behind their house, orchids his children sell in the nearby city for additional income, as well as their 2.47 acres (1 hectare) of rice growing amidst a stretch of other farmers' fields. Following up with him, I asked Mr. Văn what a food secure household would look like. He took a green pencil and etched within his carefully drawn 2.47 acres (1 hectare) rice field, a mix of canal banks with coconut trees and lemongrass bundles next to a 0.74 acres (0.3 hectare) shrimp pond. He said that as he gets older, he will no longer be able to farm rice because it is too labor intensive. With the future model of agriculture that Mr. Văn envisions for himself , he will still be able to contribute to the Mekong River Delta's agricultural production, just with non-rice crops. We worked until four in the afternoon when Mrs. Thủy noted that it was getting late, and we should start our long trip back to Long Xuyên city. My research assistant and I left the unfinished piles of lemongrass with this couple as we drove back to the city on our motorbikes (Huang 2018).

I left their house with many thoughts, I wondered about the uncertainty they expressed around whether non-rice agriculture was a possible livelihood option here. Were they hinting at a greater instability of growing rice or was there a larger shift happening in this rural rice landscape, or maybe both? In a region like Mỹ Phú Đông (MPD) commune, where intensive rice production remains the dominant source of income and way of life for residents, I remembered that Mr. Văn and Mrs. Thủy were already beginning this transition toward non-rice farming livelihoods. And yet, it was also true that they were uncertain about whether they even wanted to stop producing rice, or whether they could survive financially without it. I ultimately returned to the question that a farmer had rhetorically asked me a year earlier during a visit to Vietnam: "If we can't grow rice, then what?" Reflecting on this question after I met Mr. Văn and Mrs. Thủy, it seemed that maybe deciding between rice and non-rice livelihoods was not the central question these farmers were posing. Rather, they were asking about their own livelihood security as tied to agricultural production and agricultural practices. They were envisioning their future alongside Vietnam's strategies for rural development and their own histories.

Reflecting on their current and future visions of livelihood security, Mr. Văn and Mrs. Thủy were already in dialogue with Vietnam's national food security policy that was based on increasing rice yields; their own production contributed to the national rice supply. Thus, to think about food security and livelihood security requires an explicit reflexivity to question what farmer futures are prioritized or discarded in the promise of rice production in Vietnam's Mekong Delta. For Mr. Văn and Mrs. Thủy, their imagined future incorporates a production strategy that

accommodates low intensity labor with high financial returns as they age. And yet, their uncertainty about what the future looks like is exemplary of the paradox that farmers' livelihood security in Vietnam. This paradox is driven by models of agricultural production that do not reflect their own visions and realities of uncertainty, futures, and security. As Mrs. Thủy and Mr. Văn discussed, food security must be tied to a separate but interlinked strategy – livelihood security.

By exploring how food security is both a practice and a project utilized by different actors in Vietnam across agricultural landscapes, I center farmers' livelihoods, such as that of Mrs. Thủy and Mr. Văn and how they inevitably intersect with dominant discourses and strategies around agricultural development. These dominant discourses around food security, largely shaped nationally by the Food and Agriculture Organization, takes a techno-scientific approach that centers agricultural productivity and economies as an essential component of global and national security (McKeon 2014). In Vietnam, a similar approach in the nation's food security strategy has focused on rice production to feed a nation, to symbolize national self-sufficiency, and to rewrite histories of famine and hunger (Gorman 2019). Today, these same capabilities of producing enough food to feed the nation, remain central to the nation's food security. Thus, in this ethnographic project, I move discourses of food security beyond a definition tied to agricultural productivity, that dominantly has decentered farmers' subjectivities, histories, and realities from policies and programs. By focusing on rice, I throw attention to the temporal and embodied scales of farmers' agricultural livelihoods based on rice consumption and production, as they create food secure futures on their own terms. In asking the following research questions (Table 1.1), I focus on three main themes to explain the ultimate paradox: if farmers produce food security for the nation, then why do they remain food insecure?

Table 1.1 Research questions and major research themes (Source: Author)

Research Questions	Research Themes
What are the necessary conditions for a good life for smallholder farmers in the Mekong Delta? How do household and agricultural practices align with notions of food security?	Agricultural Livelihoods
What strategies are utilized by farmers and by the Vietnamese national government in addressing food security? How do food security projects impact and potentially transform farmers' ability to create futures and emergent possibilities for food secure futures?	Future Making
How do these national projects engage with discourses of international food security governance?	Discourse and Security

My findings, based on 16 months of ethnographic research, show that rice farmers in the Mekong Delta make choices about food security based on projects of *future making*. Future making points to how farmers link the temporal scales of agricultural production with the promises of security (Weszkalnys 2016; Ferry and Limbert 2008). Future making also describes how farmers think about and enact their livelihoods, which I understand to be a combination of affective dimensions of being, such as fears and desires, with material and immaterial facets of making a livelihood, such as access to existing capital and credit.

I make this link intentionally. The affective and embodied dimensions are often considered anecdotal in dominant food security discourses and practices. This results in the creation of heteronormative imaginings of livelihoods (Agard-Jones 2013) that erase considerations of both future making and the affective dimensions of livelihood practices. I build on Gibson-Graham's work on economies and livelihoods, which seeks to render visible and valuable forms of alternative livelihoods that are too often invisible within conceptions and calculations that comprise the "formal" economy (2008; 2015). Affective dimensions of livelihood creation, such as anticipation, fear, and desire, are very much a part of understanding this paradox of food security. The security of food and agricultural production frames farmers' everyday experiences in the past, present, and future as well as the environmental conditions, national government policies, and the temporal possibilities of rice production.

This project takes to heart Mrs. Thủy and Mr. Văn's paradox, which is emblematic of all smallholder farmers I spoke with in the Mekong Delta. Despite smallholders being producers of a

nation's food and guarantors of national food security, at a household and community-level, they remain insecure. To this end, I show how rice production is part of Vietnam's late socialist moment that combines pro-rural development programs as a means to "catch up" with ideas of global modernity and development (Zhang 2001). Food security projects at different scales in Vietnam are influenced by late socialist demands that drive the development and maintenance of rural landscapes and livelihoods, and the urban cities they feed. Discourses, coming from national scales, also have real implications: they support policies that force farmers' livelihoods into market demands through land policies and government agricultural programs. I suggest that farmers' insecurity remains invisible within national markers of food insecurity that only account for financial capability, food access, and food distribution (United Nations Vietnam 2008a). Rather, I point to an insecurity only visible through an understanding of affective dimensions of farmer livelihoods. I use food, rice specifically, as a lens to raise questions about Vietnam's food security through historical narratives, governmental policies, market driven strategies, farmers' livelihoods, and human-environment negotiations.

Table 1.2 Relationship between research questions, research objectives, and research themes (Source: Author)

Research Objectives	Research Questions	Research Themes
Illustrate how farmers' livelihoods engage with the project of food security and how they navigate their agricultural identities	What are the necessary conditions for a good life for smallholder farmers in the Mekong Delta? How do household and agricultural practices align with notions of food security?	Agricultural Livelihoods
	What strategies are utilized by farmers and by the Vietnamese national government in addressing food security? How do food security projects impact and potentially transform farmers' ability to create futures and emergent possibilities for food secure futures?	Future Making
	How do these national projects engage with discourses of international food security governance?	Discourse and Security
Examine the ways that rice farmers employed emergent labor and market opportunities in their agricultural livelihoods as a project of future making	What are the necessary conditions for a good life for smallholder farmers in the Mekong Delta? How do household and agricultural practices align with notions of food security?	Agricultural Livelihoods
	What strategies are utilized by farmers and by the Vietnamese national government in addressing food security? How do food security projects impact and potentially transform farmers' ability to create futures and emergent possibilities for food secure futures?	Future Making
Connect food security as a project of future making by exploring the intersections of livelihood affect and resource security as promised by Vietnam and implemented by farmers	What strategies are utilized by farmers and by the Vietnamese national government in addressing food security? How do food security projects impact and potentially transform farmers' ability to create futures and emergent possibilities for food secure futures?	Future Making
	How do these national projects engage with discourses of international food security governance?	Discourse and Security
Trace the implications of late socialist market demands on Vietnam's agricultural production and food security strategies as a project of making rural livelihoods.	What are the necessary conditions for a good life for smallholder farmers in the Mekong Delta? How do household and agricultural practices align with notions of food security?	Agricultural Livelihoods
	How do these national projects engage with discourses of international food security governance?	Discourse and Security

1.1.1 Defining Terms

Douglas (1982) notes food acts as the means through which human-environment and social relationships are sedimented. Whether through the consumption of cơm, cooked rice, versus cháo,

a porridge; foods illuminate stories of poverty and plenty consumed now and in the past. For rice farmers in An Giang province, rice is at the core of their perception of what it means to be a farmer and how they think about their livelihoods. Similarly, rice is at the core of how Vietnam engages with international market demands and conceptualizations of rural landscapes. Rice then becomes the focus in human-environment relationships as it evokes justice (K. V. Cadieux and Slocum 2015), tensions of local food production and exports (Grossman 1993; Carney 2009; Tsing 2015; West 2012), and policies on health (Carney 2014; Holmes 2013; Guthman 2008; 2014; Jung, Klein, and Caldwell 2014). Rice, thus, can be used to make sense of how farmers cultivate their livelihoods, how the Vietnamese government engages with food security projects, and how market demands and rice production influence Vietnam's food security.

I also focus on farmers' livelihoods and agricultural livelihoods within food security and future making discourses. Using "livelihood," I connect how farmers recognize and understand what the necessary material and immaterial components are to a good life. I draw on definitions of agricultural livelihoods that require more than the pursuit of material assets, but also includes the immaterial and dynamic flexibility that draws on knowledge, relationships, and identities (Mares 2012; Komarnisky 2009; Gibson-Graham 2015). More specifically, I rely on Gibson-Graham's (2015) critique that livelihoods are often seen as invisible within market-value economies and that the economy is not separate from the natural world. To highlight this in MPD commune, I rely upon farmers' notion of "enough" to illustrate how farmers' livelihood conditions, both material and affective, are made invisible. As farmers point to how state-driven agricultural models aim to address financial insecurity, they also identify how these models can become a tool that mask and perpetuate inequalities within farming communities. Gibson-Graham (2015) critique the binaries of livelihoods as economic or ecological, that are seen in resource-producing economies and agrotechnology movements like the Green Revolution, global trends in the growth of corporate power in agricultural industries (Kloppenburg 2010; Miller 1977; Brooks 2005; Stone 2010), and the industrial turn of agricultural production (Berry 2015). In their critique, Gibson-Graham (2015) highlight the negative impacts to the health of the earth (Shiva 2006) while offering a re-envisioning of the economy as historical and discursive, so that we may be able to explore the myriad ways of livelihood-making people engage in worldwide (Callon 2007; Gibson-Graham 2015). As I show in Chapter 2, this has direct impacts on farmers' ability to maintain financial and livelihood security. This concept of "enough" suggests that farmers' livelihood security are

hindered by structural barriers within state-driven agricultural models that result in differences in farmers' ability to maintain their livelihoods. In summary, I use the phrase *farmers' livelihoods* to define how rice farmers integrate material and immaterial components to a good life[2] that requires understanding how these enmesh within economies and visions of food security in effect influencing their ability to live well.

"Future making" builds on more recent anthropological work on the linkage between futures and the state of anticipation pervasive in thoughts and feelings (Adams, Murphy, and Clarke 2009). Futures and temporality play a critical role within farmer livelihoods and the development of agricultural landscapes. By drawing up a future-making lens, I show how understanding affective dimensions of livelihoods are equal in importance to material dimensions of livelihoods, like finances and food access. Taking a cue from feminist political ecology frameworks, I use the lens of feminist commitments to diverse labors, including affective and emotional, and also the less invisible scales, such as the household, bodies, and temporalities, as instructive to understand livelihoods (Elmhirst 2011; Wichterich 2015). These affective dimensions, such as anticipation, fear, and desire, are common "resource affects" relevant in human experiences with resources (Weszkalnys 2016). In her use of "resource affect," Weszkalnys (2016) makes the link between concepts of futurity, resource use, and wealth and labor within extractive economies. Agricultural production, as a type of resource extraction, similarly evokes forms of affects seen in other extractive industries, such as oil or mineral extractive industries. Anticipation of wealth, fears of destruction, and hopes and desires of certain futures all have implications on how farmers understand, create, and foster their livelihoods.

Temporality and experiences of ruination threads through farmer practices in diverse ways, especially as it intersects with agricultural development and farming livelihoods. In Chapter 4, I introduce the food security trap to describe the multiple dimensions of farmers' precarity resulting from the combined intensity of rice production, the lack of job opportunities, and the pressures on smallholder farmers to succeed. As the concept of "enough" alludes to, state-driven agricultural models and national policies ultimately create precarious material and political economic conditions that are made invisible. I use the lens of ruins and ruination as a way to make these conditions more visible. Stoler (2008) suggests that ruins are the process of dispossession and

[2] This term is adapted from *buen vivir*, which has Indigenous roots in Latin America. See Zanotti 2016 for a more in-depth history on the development and origins of a good life discourse.

displacement that are most visibly seen on the landscape as material debris or the destruction that is left behind. But we can also look at ruins through a temporal lens, as Desilvey and Edensor (2015) suggest, that ruins is the transition period between devastation and something else. Ruins allow us to understand the food security trap as a slow and invisible process of displacement and dispossession.

While dominant food security discourses tend toward productivist-driven strategies, they are often detached from the lived experiences of food security (McKeon 2014; Davidson 2016). Other food security discourses more related to lived experiences focus on individual food access over national food production (Sen 1981), shifting broader global conversations of food security toward public health and nutritional access (Mechlem 2004). And yet, dissonances between food security policies and lived experiences are still commonly rooted within the use of languages and values lacking familiarity within the complex lifeways of food insecure peoples and communities (Pottier 1999, 199; Agarwal 2014; Boyer 2010; J. Clapp 2014). Building on these dissonances, I argue that temporal and affective dimensions of farmers' livelihoods reveal the gaps and opportunities between policies and lived experiences. For this reason, I focus on future making as a project of food security that is centered on the affective dimensions within agricultural livelihoods and the ability to envision a future.

Considering Vietnam's contemporary late socialist state, I explore food security discourses through the implications of how "lateness" motivates political economic decisions oriented towards globally idealized trends of development, modernity, and growth. I also examine how farmers situate their livelihoods within and outside of these discourses. To this end, I explore the interactions between discursive power and resource distribution to examine the influence of land tenure policies, agricultural production policies, and farmers' decision-making strategies are entangled (Peet and Watts 1996). As Zhang (2001) describes for China, late socialism has prompted policies linking pride and security with ideals of economic self-sufficiency, production, and development. I characterize late socialist demands in Vietnam through an increasing opening up to foreign markets, a movement towards less governmental oversight in some realms while conversely engaging in socialist politics, a general rise in social movements and public protests, a reliance on free market demands in order to keep agricultural production on the rise, and increasing discussions about the precarity of life that seek to justify an existence that relies on farmers' insecurity.

Anthropological scholarship focused on Vietnam has already established the connections between neoliberal economics, illiberal politics, and citizens seeking new forms of state-legible power and rights (Harms 2016; Schwenkel and Leshkowich 2012; Leshkowich 2014). Vietnam's engagement with a mix of neoliberal logics and market socialism that promises a higher quality of life through privatization and self-regulation and the moralization of efficiency and standardized quality as a form of civility (Schwenkel and Leshkowich 2012; Ong 2006; Nguyen 2016; Schwenkel 2012; Leshkowich 2008, 2014), the combination with capitalist extractivism in its agricultural sector imparts questions about the implications on livelihood security. I explore sociotechnical worlds as they interplay with agricultural models, or how farmers foster and maintain agricultural production, through this lens of rice landscapes as a sociotechnical imaginary (Haraway 1991; Harding 2009). Jasanoff and Kim's (2015) redefinitions of a sociotechnical imaginary demonstrates how these imaginaries are based on collective desires and dreams of the future. In Vietnam, the imaginary is one that is wrapped within national visions of food security, agro-technical visions of the future, and farmers' own livelihood imaginings. As I show, dominant and preexisting conditions, managed by the state, continue to reinforce the state's sociotechnical imaginary, that is wrapped within late socialism, agricultural development, and a reimagining of farming livelihoods. Vietnam engages within these mixed political and economic ideologies in order to justify projects of food security that exacerbate farmers' own insecurity.

These key terms – livelihoods, future-making, discourses, and late socialism - drawn upon throughout this dissertation come from a feminist political ecology (FPE), political ecology (PE), and feminist science and technology studies (STS) framework that foregrounds intersectional diversity in farmers' livelihoods with the understanding that inequality in food security is entrenched in power and human-environment relations. This project benefits from the combined strengths of these three theoretical frameworks to make the following claims: (1) material and immaterial practices and meanings in farmer worlds are central to understanding agricultural livelihoods; (2) Multi-scalar and multi-temporal relationships can make visible, invisible dimensions of power and dispossession; (3) tracking inequalities in power and knowledge transverse sociotechnical and ideological terrains; (4) deconstructing dominant discourses reveals fault lines in food security practices; and (5) rooted inequalities should be understood as entanglements.

1.2 Legacies of Practice

Dominant national discourses on food security have focused on productivist-centered policies (McKeon 2014), however as applied within Vietnam more recently, these discourses are aimed toward rural development and farmer livelihood development schemes (Trung tâm Đào tạo và Tư vấn Kinh tế Hợp tác 2015). During the 1970's, as Vietnam was grappling with a food supply shortage, much of the world was also facing this reality. At the 1974 World Food Conference in Rome, Italy, governments convened to address the global issue of food production to ensure that global food consumption supply needs could be met (Anderson and Cook 1999). The first of its kind, this conference began in response to the global food crisis of the mid-1970s that was heightened by rapid population growth and unprecedented occurrences of drought (Mechlem 2004). As a result, the crisis shifted world food prices and put stress on the price stability of basic foodstuffs in both international and national markets (FAO 2003). The crisis marked the starting point for the future of food security governance, and it was instituted within neoliberal paradigms that privileged private-liberal markets (McKeon 2014).

Starting with the 1979 Food and Agriculture Organization's (FAO) 'Plan of Action on World Food Security', the global strategy to address the new goal of food security was fostered primarily through policies enhancing cereal stock and cereal stock policy (Mechlem 2004). Through the 1980s and post-food crisis period, conversations about food security shifted from food availability and food production concerns toward the linkages between poverty and individual food access (Mechlem 2004, FAO 2003). These linkages between food security and poverty called for economic modernization and coincided with the linkages between poverty and livelihood sustainability planning within international development aid (Scoones 2009). The 1985 World Food Security Compact adopted by FAO defined food security as the fundamental right to be devoid of hunger through the abolishment of poverty (Mechlem 2004).

As these new codified definitions of food security shifted attention toward global food production, livelihood maintenance at the household scale proved important. Theories of economic modernization have attempted to address global food security within a neoliberal and agricultural development scheme since the 1970s, a well-developed literature on sustainable livelihoods had a similar approach. Scholars utilize predictive supply and demand models to facilitate the implementation of food security projects by institutions such as the World Bank, United Nations, and other bilateral development agencies (Scoones 2009). As sustainable livelihood studies began

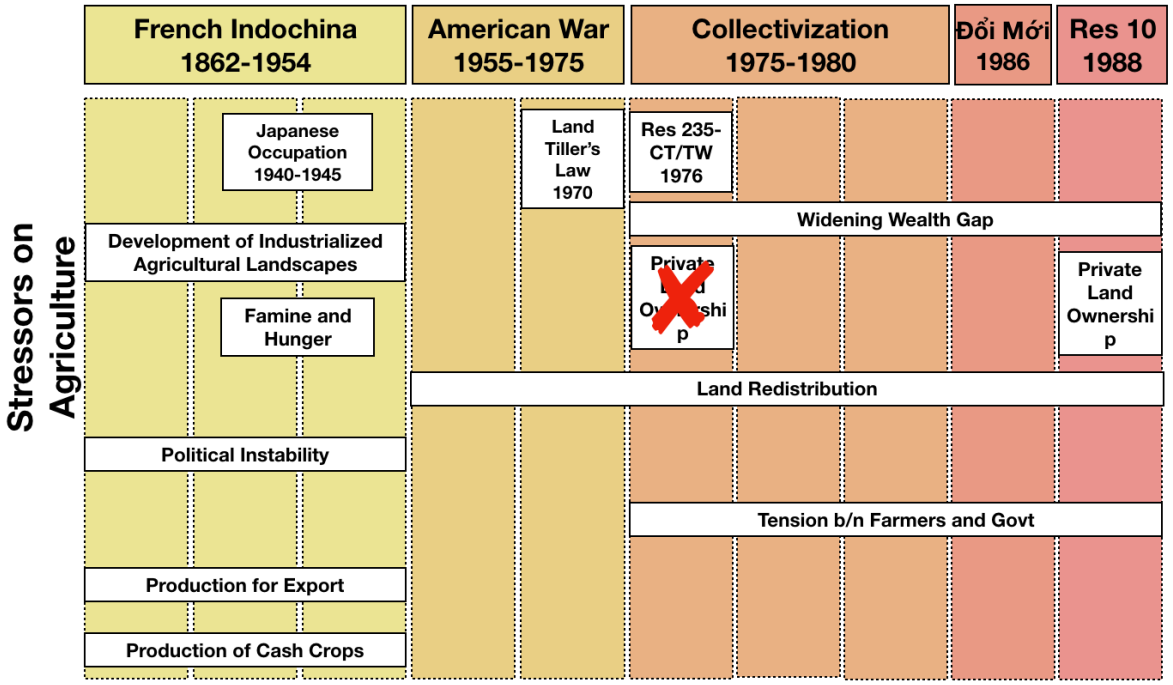
to shift focus toward the local and household level, attention to class, gender, ethnicity became more prevalent within livelihoods literature (see Richards 1985; Mortimore 1989; Davies 1996; Fairhead and Leach 1996). These discourse shifts reveal an emerging understanding among scholars and policy experts of food security that focused on the development of rural livelihoods at the household level.

1.2.1 Vietnam and Food Security

> "In 1978, crops were destroyed by a natural disaster. I was only 10 years old at the time. The floods of that year destroyed most of the crops. The government had already stored rice and people had to buy their own rice to eat because they couldn't harvest any. My family struggled. We had to mix rice with banana root as food. That was a lot of trauma. It's a horrible memory to think about." - Farmer from MPD commune

Farmers' historical memories shape local smallholder farmer ideas of food security and their histories with government intervention. As this farmer above describes, the trauma of 1978 was echoed in multiple interviews as farmers brought it up to talk about how difficult life is for farmers. Their memories are tied to environmental disaster and government intervention. Key events in Vietnam's history, as shown in Figure 1.3, highlight how governmental attempts to address food insecurity resulted in decades of environmental, agricultural, and societal distress that continue to impact farmers' futures. These include the Great Famine of 1945, Mekong infrastructural development changes, historical land tenure policies, and a nation-wide shift to an open economy.

Table 1.3 Key historical events and their impact on agricultural livelihoods in Vietnam (Source: Author)



The first major historical event that my interlocuters shared with me most often occurred in the late 1970s, when the Vietnamese government responded to a series of multi-scalar crises, including French colonization from 1861-1954, Japanese colonization from 1940-1945, and the American War in the 1970s. During these time periods, Vietnam ebbed and flowed with famine and hunger with other impacts on the way that Vietnam, as a nation, would come to understand their own food security and agricultural production. The Great Famine of 1945 plagued Northern Vietnam but has had reverberating effects on national visions of how and what it means to be a self-sufficient agricultural nation. A few factors led up to this famine including multi-nation colonization and invasion as well as a series of weather patterns that exacerbated hunger and the lack of food aid.

During the 1945 famine, Vietnam was a part of French Indochina, what is now current day Cambodia, Vietnam, and Laos, but was occupied by Japan with the French Vichy government acting as a puppet government. Japanese colonization during the early 1940's shifted agricultural foci toward cash crops to provide industry goods and food supplies to Japan. The agents of Japanese colonialism maintained control over crops like rubber, coal, and rice in the southern

Mekong Delta. Multi-nation tensions, between the France and Japan, played out in Vietnam and exacerbated much of the social tensions for Vietnamese farmers.

Prior to the rice harvest in 1944-1945, northern and central Vietnam was struck with periods of extreme weather events, a phenomena that continues to impacts these regions of Vietnam today (Gunn 2014). Floods and extreme storms ruined the November 1944 rice harvest, leaving little to no food behind for the incoming year. However, even prior to the failure of the rice harvest, people in Northern and Central Vietnam were already experiencing hunger and food scarcity. Common hunger and famine foods such as fallen rice husks, cassava roots, and banana tree roots were already widely consumed (Marr 1995). These food shortages intensified the impact of the November 1944 rice crop failure.

The impacts of this event led to a period of hunger, starvation, and death for many Vietnamese peasants. The combination of French colonial administration, Japanese occupation, and the American government attacking transport systems resulted in an inability for any nation to provide aid under pressures of war. Thus, no food aid or famine alleviation strategies occurred (Huff 2019). The trauma of the Great Famine of 1945 and anger at colonial powers encouraged peasant support for the Indochinese Communist revolution to oust French and Japanese colonizers (Huff 2019). Southern Cochinchina, today's southern Mekong Delta region of Vietnam, responded to photos and stories of extreme hunger in the north by sending relief and food stocks to the north (Marr 1995). The Great Famine of 1945 marked a time period that Vietnam's government did not want to occur again, particularly the inability to be a self-sufficient agricultural nation and the compulsory sale of rice grown in Vietnam to Japan.

The second key occurrence in Vietnam's history involves the long term development of the Mekong Delta's canal infrastructure in the late 19th century (Biggs et al. 2009). The Long Xuyên Quadrangle, a major water basin of the Mekong River Delta, is subject to annual monsoon floods and silted waterways, making it a precarious landscape that has challenged settlement in this region. In pre-French colonial periods, the Vĩnh Tế Canal was built in order to expand Vietnamese rule in the Lower Mekong basin, which pushed the former Khmer rule south-west toward Phnom Penh, Cambodia (Biggs et al. 2009). During French colonial rule between 1861-1954, the Mekong region underwent infrastructural changes including the construction of a canal system allowing the increase of rice producing areas. These infrastructural changes aimed to take control of the Mekong River environment, to create a landscape that would no longer succumb to

the annual floods and environmental hazards. Dykes continued to be built between the 1980's and 1990's to allow for increased rice production through intensified agricultural methods of triple crop production (Dill, Deichert, and Thu 2013). These long-term infrastructural changes in the Mekong River Delta region led to this region becoming one of the most productive areas for rice and aquaculture production in the world (Gerke et al. 2012).

The third historical period can be summarized in a few key land tenure policy changes before and after the American Vietnam War. During the American Vietnam War, between 1955-1975, the Southern President Ngô Đình Diệm, implemented Ordinance No. 57 to reduce rent and tenant contracts, which led to a period of land redistributions and credit programs prior to Reunification in 1975 (Bui and Preechametta 2016). These land policies aimed to move away from socialist collectives managed by landlords and government officials (Dang 2010). The South continued these changes away from the socialist managed land policies in 1970 when President Nguyễn Văn Thiệu implemented the Land Tillers' Law to regain trust and bring peasant support away from the socialist party (Gorman 2014). This law aimed to establish smallholder farms by distributing farmland to tenants for free while the government compensated former landowners (Salter 1970; Bui and Preechametta 2016). This policy was again, shifting away from tenant-landlord models of the socialist party toward private ownership models encouraged by the South (Dang 2010). American intervention prior to the American War, in the 1950s, aimed to increase rural standards of living through agricultural initiatives (Elkind 2016). As American agricultural extension workers attempted to implement sweeping changes to rural livelihoods in southern Vietnam, many Vietnamese farmers selectively accepted aid and agricultural projects as they saw fit within their own livelihood strategies (Elkind 2016). These relationships between Vietnamese farmers and American aid workers foreshadowed a continued reluctance and distrust of foreign assistance and aid leading into the American War. While much of the effects of chemical ruination occurred in northern and central Vietnam, the long-lasting legacies of health effects continue through generations (Gammeltoft 2014). Ruination in the south from the American war, remain less visible – there are traces in land policies, relations between American aid workers and Vietnamese farmers that all reshape ways of living on and managing the land.

At the end of the American War, the South vastly differed from the North in terms of agricultural land management. The South was dominated by middle peasants who owned 80 percent of cultivated land and 60 percent of the total farm equipment, whereas the North was

dominated by tenant-landlord programs (Dang 2010; Bui and Preechametta 2016). These policies widened the wealth gap that many farmers continue to reference today as creating multiple classes of farmers: land-owning farmers, land leasers, and farm laborers. After the American Vietnam War and Vietnam's reunification, the national government again shifted agriculture toward a socialist collective model of agriculture. In 1976, Resolution 235-CT/TW forbade people from one commune from farming land in another commune. This policy forced landowners to give up their land in other communes as a way for officials to redistribute land of non-residents to land-poor residents (Dang 2010). This policy attempted to ease farmers into a period of collectivization and shared agricultural lands while also allowing government officials greater authority and management over farmers and their land. And finally, in 1978, Resolution No. 57 called for the end of exploitation of land resources by rich farmers in order to expand collective farming (Dang 2010).

Entering into Vietnam's collectivization period around 1975, the government attempted to implement cooperatives and a top-down agricultural policy whereby agricultural production and farmers would be controlled by local officials and cooperative managers. While farmers in the North were familiar with this collective agricultural model, farmers in the South were angered by the loss of their land and the loss of autonomy in agricultural decision-making that was familiar. Southern farmers resisted, organized strikes, abandoned land, and destroyed crops leading to the eventual failure of collective farming. Thus, in response to falling food prices and farmer revolts, Vietnam shifted into decollectivization in 1986. These protests in the South provided greater freedom for farmers to make decisions on their own about what they grow in their fields and how they cultivate their land.

The fourth period I discuss is known as Đổi Mới, which prompted a transformation of the economy from socialist, centrally-oriented economy to a market-driven economy (Gorman 2014; Tai 2001). The government pushed away from previous Soviet-socialist styled government towards Đổi Mới market reforms that could take advantage of agriculturally fertile lands of the Mekong Delta in order to become a global food and merchandise producing region (Dang 2009). Power over agricultural maintenance shifted from landlords and the national government to provincial and district level governments and private landowners in an effort for overall decentralizing the economy (Biggs et al. 2009). Emboldened by economic renovation, Đổi Mới,

farmers sought to reclaim land that had been taken under former land policies, throughout the 1990's.

During this time period in the 1990's, local government leaders in An Giang Province aimed to redress these former agricultural policies by uplifting the non-resident prohibition, which allowed farmers to move freely to reclaim their land. Farmers could retrieve their land based on their production capacity, however this created tensions between former landowners and current landholders (Dang 2010). As farmers in the South accumulated previously taken lands and also purchased more land, a growing wealth gap between middle-class farmers and landless peasants occurred (Gorman 2014). Farmers and landowners continued to accumulate wealth and private ownership of machinery, while landless peasants remained unable to keep up economically.

These four historical periods including the famine, infrastructure development, changing land tenure policies, and the opening up of Vietnam's economy all contributed to Vietnam's national government's discourse about food security and challenges on farmers' livelihoods. The livelihood insecurities felt throughout the nation in these four time periods initially drove the beginnings of the paradox that opened up this introduction. As Vietnam moved from having chronic food shortages to being one of the dominant rice exporters in the world through a "rice first" strategy to attain national food self-sufficiency as their national food security policy (Kompas et al. 2012), the nation instilled a seemingly invisible wave of insecurity masked by the nation's economically-producing rice fields. The nation's food security became about self-sufficiency, production increases, and agricultural exports. This imagination of what a food secure nation looks like materialized in the building of dyke infrastructure in order to intensify agricultural production and investment in agricultural research and technology that seemingly secured the Mekong Delta's ability to produce an abundance of rice. Decades later, rice farmers' livelihoods continue to tell the story about Vietnam's food security in the lived experiences of fear, the repetitious uncertainty in food production where their desire for more money, more food, and more opportunities remain unattainable. While their own livelihood security remains uncertain, these rice farmers continue to see their labor as an essential part of the state's food security discourse: to increase production for Vietnam's economy and the nation's food supply. However, as this historical retelling of food security portrays, in making a more food secure nation that has rebounded from famine and wars, these national discourses of food security and the policies associated with them have transformed

farmer livelihoods and ultimately have limited farmers' ability to make decisions about food security as a project of future making.

1.2.2 Landscapes of An Giang Province, Vietnam

An Giang, Vietnam is one of thirteen provinces in Vietnam's Mekong Delta, and is most well-known for its rice production. When I asked rice farmers who lived in An Giang province what this region was known for, they always first pointed to its rice production. The Mekong River Delta covers an area of 3.9 million hectares with 2.6 million hectares used as agricultural land (CGIAR Research Program on Climate Change 2016). Thirteen provinces make up this region that holds 19 percent of the national population or about 17.5 million people (CGIAR Research Program on Climate Change 2016). The Mekong River Delta offers a landscape rich in sociocultural and ecological relationships.

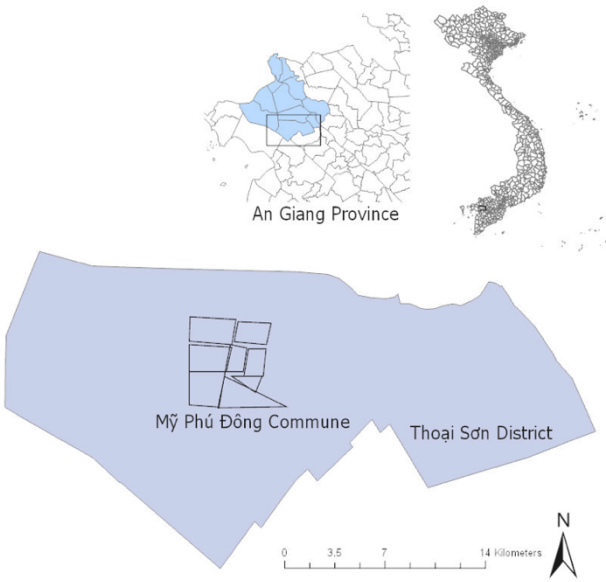


Figure 1.1 Map of research sites (Source: Author)

The southern Mekong Delta region of Vietnam has long been a site of contentious development from French and Japanese colonialist periods and the post-American War period (Biggs 2010). The Mekong Delta of Vietnam is the site of settlement for Vietnamese migrants from the North and French colonialist settlers during the 1960s (Biggs 2010; Gorman 2014). In the 1800's, the ethnic Khmer peoples were "displaced" by "Vietnamese settlers from the North"

to clear the Mekong River Delta for agricultural cultivation (Gorman 2014: 505). These farmers adapted ethnic Khmer, an ethnic minority group mostly from Cambodia, agricultural technologies and tools, and crossed short-stem rice strains from northern Vietnam and China with the long-stem rice favored by Khmer farmers (Biggs 2010). Today, mostly Kinh families populate the region, with lasting signs of the ethnic Khmer, French, and Chinese influences visible on the Mekong River Delta landscape (Biggs 2015). Despite periods of resettlement and shifting agricultural policies described earlier (Gorman 2014), the Mekong has continued to prosper as one of Vietnam's most productive industrial and agricultural regions (Biggs 2010). As land destined to and integrated into the global economy, pressures for farmers to integrate and participate within global and transnational loans and market systems has increased (P. McElwee 2007). Farmers are implicated in these dual roles of providing for their own households, as well as providing for and supporting national and global economies.

I was directed to Mỹ Phú Đông commune from the staff at the Research Center for Rural Development (RCRD) based on my research interests in food security and agricultural production and my research goals. The Research Center for Rural Development, located within An Giang University, supported and sponsored this research in Vietnam. I became connected to Dr. Kiên Vân Nguyễn, at RCRD, through his relationships with the US Borlaug Center on Global Food Security, a major funder of this research project. He and his team provided logistical support including translators, research assistants, national and local government approvals, and lodging during my tenure in Vietnam.

This commune provided the perfect setting for approaching rice farming livelihoods as not all communes in An Giang Province were mostly low-land triple-crop rice producing areas. All 740 households in Mỹ Phú Đông commune were either rice farmers or participated in rice farming. As a triple-cropping commune, the land's infrastructure is built to prevent flood waters from interrupting the ability to grow three crops. This commune prided itself on its rice productivity, but as I later learned, their production was only a part of their vision for the future. Farmers told me the story about how their family came to own land in Mỹ Phú Đông Commune, Thoại Sơn District in An Giang Province. Farmer families were the first people to come as a part of the government's incentive during the 1980's prior to Đổi Mới, or the Economic Renovation Period. Most of these farmers were moving from Chợ Mới District, a part of An Giang Province, and were moving because there was no more land to expand their farms in Chợ Mới, and there was a lot of

land here. These farmers, about two generations prior to the current generation of farmers, transformed the former landscape of mangrove forests to rice paddies. Despite changing the visual landscape and land-use purpose of this area, the soil remained acidic and constrained farmers' ability to grow all food products. Farmers recall that their grandparents had seeming ownership over the land that they cleared, as long as they paid a small fee to the government for this land. The current generation of farmers reflect on these periods of losing their land, and for many if they were lucky enough, eventually they were able to repurchase these land parcels. The colonization of landscape here is not lost on farmers.

1.2.3 Food security from an applied anthropological perspective

The development and critique of international food security discourse fuels my scholarship; I take seriously my role as an applied anthropologist and US Borlaug Graduate Research Fellow in thinking about food security on a global scale. As an applied anthropologist, my work is responsive to the needs of my research partners and the communities in which I partner and conduct research. I am guided by Briller and Nyssa's (2019) commitment to an applied anthropology that combines public engagement, global grand challenges, and a commitment to the use of anthropological knowledge within practicing scholarship. To this end, I engaged with multiple research communities in the US and in Vietnam. As a US Borlaug Graduate Research Fellow, I partnered with the Research Center for Rural Development (RCRD) in An Giang Province, Vietnam in order to conduct research on the state of food security in An Giang Province. My role as an applied anthropologist entails providing research results and recommendations on working with local farming communities on food security as well as providing scholarly mentorship to researchers at RCRD. In addition, my role as an applied anthropologist engages within multi-disciplinary and critical conversations about Borlaug's legacy, thus using feminist political ecology, political ecology, and science and technology studies frameworks in my research[3].

[3] The implications of my research results, that critically examines the material conditions in which farmers remain insecure, seeks to emphasize *why* farmers need to be centered within discussions about how food is produced, how development aid seeks to address national food security, and how agricultural landscapes are managed. This analysis remains important within this legacy of Norman Borlaug, as it reflects on the history of how agricultural science and technology continues to seek to prevent global hunger and famine, while also suggesting the ways in which this framework perpetuates these same food insecurities.

Norman Borlaug, an American scientist, is most well known as the recipient of a Nobel Peace Prize in 1970 for his work on solving problems on wheat cultivation in Mexico (The World Food Prize 2020). His development of stable disease resistant varieties of wheat led to improved crop management that transformed agricultural production not only in Mexico, but also in Asia (The World Food Prize 2020). He sparked the Green Revolution, a period aimed to utilize agricultural science and technology to prevent hunger and famine across the world, however resulted in large scale crop failures amongst smallholder farmers (Holt-Gimenz and Altieri 2013). Today, the Green Revolution and Borlaug's legacy live on at institutes such as: The International Food Policy Research Institute (IFPRI), International Rice Research Institute (IRRI), Consultative Group on International Agricultural Research (CGIAR), and Food and Agriculture Organization (FAO), to name a few, who act as international knowledge centers within the realm of global agricultural development and global food and nutrition research, policy, and practice. These centers push global food security, global hunger, and global food systems governance to the forefront of agricultural research, while also setting the dominant ways of thinking about food security, agricultural technology, and aid. These ideas converged on Vietnam during a later phase of the Green Revolution, as the implementation of agrotechnology in the name of increasing food supply was implemented. And as seen today, the continued use and presence of agricultural research centers, national policies, and seed technologies continue these legacies.

CGIAR, which is the parent organization of IRRI and IFPRI aims to advance agricultural research in order to help the world's poor people to nourish their families and improve productivity in their economic growth and management of natural resources. Conversely, farmers' livelihoods and futures are often more complex than prescribed Western ideas of nutrition, productivity, and agricultural technology described above. In this work, I hone in on farmer livelihoods and their intersections with human-technology interfaces, knowledge, and practice, but I do so in order to disrupt discourses and practices of food security. Balancing questions about technological development, hunger and crisis, and developing middle-income nations, my research speaks to the in-between countries that are neither the world's lowest GDP or the most impoverished nations, nor are they the most developed nations of the world producing more food waste at the consumption stage than any other nation. Countries like Vietnam— they are on the upward economic swing with pushes toward peri-urban spaces, agricultural development, farming loss, rapid appropriation of urban boundaries, and rapid economic growth (Harms 2016).

I learned about Vietnam's Mekong River Delta at the United Nations Framework Convention on Climate Change in 2015 while talking with a representative from a Thai NGO[4]. She described that countries like Thailand and Vietnam struggle with these multi-national environmental challenges impacting the shared Mekong River that affects those most closely tied to this river: farmers, fishers, and coastal residents. It became clear that Vietnam was unique in its required participation in transnational environmental challenges that impact farmer livelihoods. In understanding that human economies are linked to non-human economies (Gibson-Graham and Miller 2015), the questions about Vietnam's global capitalist ascent becomes a component in human livelihood practices and our understandings of global food economic crises, agricultural development, and farmer well-being. During the global food price collapse and financial crisis of 2008 Vietnam was largely unaffected and became the second fastest growing economy behind China (Hoang 2016). Spanning my tenure living in Vietnam between 2017-2018, I watched Landmark 32 rise within the Saigon skyline to ultimately tower as the tallest building in Vietnam, overpowering old colonial-era architecture of the city's past. Foreign development in the form of foreign direct investment rose 8 percent after Vietnam joined the World Trade Organization in 2008 until 2016, leading to a significant rise in these foreign direct investments (Hoang 2016). These statistics show the rapid increase in foreign development in Vietnam, which has multiple impacts on Vietnam's food security, such as the increased presence of foreign markets without insurance protection for farmers. In 2018, roads in Long Xuyên were overridden with dragon fruit priced between $0.53-$0.75/lb. (5000-8000 VND/kg) substantially lower than the usual $1.59/lb. (15000 VND/kg) price. Sellers told the same stories about Chinese buyers pulling out of sales this season and farmers had to just "give away" their fruit, throwing away an entire season's worth of income because there was no protection or assurance that there would be a market for their produce. Vietnam's desire to engage with foreign development and foreign investment may keep Vietnam's economy on the rise, but as this dissertation explores, these promises of late liberal demands on

[4] This research was supported by Purdue Climate Change Research Center, the department of Political Science at Purdue University, and Purdue University's College of Liberal Arts. CEE relies on collaboration, in coordinating field work, collecting and analyzing data, and thinking through meaning, and this dissertation reflects the efforts of the larger team working on site in Paris. The Paris-COP21 CEE team is: project leaders Kimberly R. Marion Suiseeya and Laura Zanotti, and researchers Scott Benzing, Sarah Huang, Fernando Tormos, Suraya Williams, and Elizabeth Wulbrecht.

capitalist development relies on and creates inequalities and insecurities entangled within the laboring class.

This project disrupts the chaotic drive of capitalist exploitation in agricultural production. By calling attention to the monochromatic pursuit of increasing agricultural production in the name of food security, nations like Vietnam have instilled false promises of wealth and livelihood security that parallels the false security in agricultural resource extraction. As the number of middle-income countries continue to rise, Vietnam being a prime example, these nations' food security will continue to be at risk and often the most invisible. And this falls on Mrs. Thủy and Mr. Văn's paradox again, that despite being a food secure nation, as defined by Vietnam's national calculation of self-sufficient rice production, farmers in the Mekong Delta live in a state of insecurity. This is important because as farmers continue to be invisible as part of the world's food secure population, their insecurities and hunger will likely become exacerbated by the changing environment, climate, and demands of global food production. I further elaborate on this paradox through three articles that comprise this dissertation that focus on farmers' livelihoods, future making, and late liberal demands.

1.3 Applied and Practiced Methods

Riding on the infamous Phương Trang coach bus from Saigon to Long Xuyên in An Giang Province, I felt every bump and beep of the bus horn as we quick stopped and sped our way past motorbikes driving in the road's shoulder. Overpass highways and crowded city streets quickly turned into rice paddy-lined smaller lane highways until we pulled past smaller cities finally reaching Long Xuyên. Long Xuyên is the largest city in An Giang Province and houses the provincial government offices as well as An Giang University. Through my research partnership with the Research Center for Rural Development and An Giang University, I found myself calling Long Xuyên my home in the southern Mekong Delta. This small city, with a population of about 300,000 people, was constantly undergoing construction and renovation. Some of the larger projects included the installation of larger water pipes under the streets and new pavement for some of the major streets in the city. The smaller projects included quick turnover of local clothing stores or smoothie stands that lined the sides of the road. Long Xuyên is a large enough city to have multiple local food stand markets, with the largest one Chợ Long Xuyên located along the main river through-way. These development changes skimmed through my memory as annoyances

of the road, however the occurrence of a new road and larger underground water pipes moved from the city to the rural spaces and became a part of the greater Nông Thôn Mới project[5].

Gibson-Graham (1994) make the parallel connection between resource extraction and social science research. In this analogy, they say that knowledge is the precious resource in the same way that bauxite is a precious metal. The actions of social science research, the probing and digging to find answers to our research questions, can be exploitative of the communities that we seek to engage in our research. As this project is critical of the dominant discourses of what food security means and invested in applied and feminist methodologies, this work questions how dominant research ideologies exploit certain resources, such as the land and the farmers. Despite this, ethnographic practice can also be generative, which are the aspects of research relationships that I sought, rather than the extractive potential. As identified by environmental feminist scholars (Agarwal 1992; Shiva 1988), women and marginalized people are often treated in the same vein as environmental resources, open to domination and exploitation. Hence this work's "discursive destabilization" (Gibson-Graham 1994, 219) to undermine dominant discourses and research design that is built on dominance, exploitation, and an assumed right to access.

Prior to arrival in Vietnam, I planned on implementing feminist methodologies focused on projects of self-determination rather than research *on* others. In creating a project open to alternative futures and diverse livelihoods, I built into my research design methodologies that prioritized the voices of rice farmers who are often silenced in their knowledge and livelihood strategies. Yet, in practice, these methodologies pushed me to refocus attention on the manifestations of precarity and security in multiple scales and multiple bodies. Feminist political ecology was instructive in centering the *embodied* experiences of farmers in the *everyday* practices of rice production in Vietnam's Mekong Delta. This became important to counter the dominant perspective on global food security discourses, which emphasizes the *disembodied* characteristics of agricultural development of nutrition, technology, and Western science that overshadows the lived experiences of food security, especially of farmers (Pottier 1999; Davidson 2016).

[5] Nông Thôn Mới, or the New Rural, is a rural development project that was being implemented across Vietnam. In MPD commune, this new policy took effect in Summer 2018 and resulted in new road construction, new housing infrastructure, and drinking water infrastructure. This project will not be discussed in this dissertation, however, the impacts of construction and trends of rural development certainly imbued farmers' interviews during the latter half of this research project. See (T. C. Tran 2015).

In a mixed-methods approach combining participant observation, semi-structured interviews, household surveys, and participatory mapping activities, I hoped to engage farmers through an iterative grounded theory research project feeding back into the loops of how farmers envisioned challenges to attaining food security and futures of livelihood construction. However, in practice, I was often challenged in ways to avoid dominant discourses on food security because of my own lack of language comprehension or needing to learn a formalized research process. But I learned how these challenges revealed theses unexpected intersections of research process, security, surveillance, and the management of food resources through agricultural production.

1.3.1 Methodologies in practice

This project is situated within grounded theory (H. Russell Bernard 2011; Charmaz 2014) and feminist participatory methodologies (Friedman 1998; Elmhirst 2011; Thomas-Slayter, Wangari, and Rocheleau 1996; D. Rocheleau 2004; Katz 2001) as they intersect with and drive theoretical understandings of feminist political ecology, political ecology, and feminist science and technology studies. Participant voices and worldviews are integrated within throughout the data collection and analysis process. These theoretical and methodological groundings ask whose voices are silent in their visions and goals and how can researchers disrupt the academic traditions and dominant institutions that ignore those voices (Rocheleau 2015; Harcourt and Nelson 2015). Drawing from decolonizing methodologies, my work emphasizes what Maori scholar, Linda Tuhiwai Smith (1999) believes, that the process is much more important than the outcome of the research. Leaning on indigenous methodologies, the importance of research process and the research relationships between people must result in respect, healing, and self-determination to uproot the normative power differentials. The component of self-determination is necessary to eliminate the space between researcher and marginalized subjects that must be done through a recognition of how colonial practice is implemented and practiced (J. T. Johnson and Larsen 2013; Laura Zanotti et al. 2020). Self-determination is the right of peoples to reject dominance and promote their own institutions of knowledge construction and livelihood practices (Bishop 1994). Johnson and Larsen (2013) suggest understanding the importance of place as a part of the research relationships because lands hold historical memories and become embodied in the knowledge systems and knowledge production. However, I was often challenged with the task of carrying out participatory methods while navigating the institutional structure of conducting research in

Vietnam. I discuss these challenges by describing what methods I sought to implement, how these methods were actually carried out, and then a reflexive discussion about the challenges of conducting ethnographic research in Vietnam.

Within feminist participatory methodologies (Elmhirst 2011), I aimed to retain participant voice as much as possible while conducting interviews, mapping, and participant observation in my non-native language of Vietnamese. Speaking Vietnamese and having a research assistant from this area of southern Vietnam was important in order to establish relationships with participants and to engage at a level of fluency that did not disadvantage participants. I adjusted my methods to fit within a broader institutional research structure that I needed to conform local research protocols. I sought government permissions and student visas to conduct research through the Research Center for Rural Development, who acted as my host institute for national government purposes as well as a research partner through a US Borlaug Global Food Security Research Fellowship. This hierarchy of governmental permissions started at the national level and then province, district, and commune level. I visited each of these government buildings between the months of August to December 2017 in order to submit a description of research purpose and research design, timeline of activities, and to get face to face time with leaders at each of these government offices. During each visit, permission was granted from officials belonging to a branch of the local levels of Department of Agriculture and Rural Development. I compensated each official, as per local research protocols, during each visit for coordinating other folks to meet with me who would grant government approval or assign other people to work directly with me. These meetings were important for obtaining a red stamp on my research permit document that my research assistant carried around until being submitted to the local provincial office in Long Xuyên. These research permission meetings are common in post-socialist countries, like Vietnam, as described in Sarah Turner's (2013) *Red Stamps, Gold Stars.* It is important to note how researchers undertake working in different communities in order to shed light on the necessary practice of asking for permission and receiving approval as well as the impacts of challenging circumstances for researchers who are not accustomed to these practices.

As Turner (2013) suggests, in countries with gold stars, a political symbol of socialism, there is a certain reliance on the red stamp. These political symbols are utilized at all levels of the state as a form of becoming legible. Red stamp protocols were not necessary for all social science researchers who have conducted fieldwork before me or even those that I met while in Vietnam.

During my tenure living in country between 2017-2018, I came across about a dozen American researchers who all faced differing entry processes to conducting social science research in Vietnam. For example, an anthropology graduate student studying peri-urban farming spaces in Hanoi did not have to engage at all with government officials or seek formal permission processes to conduct her dissertation research. Another social science researcher studying with Tay ethnic communities in northern Vietnam sought government approval to engage in research activities at the village-level, however, did not have the everyday presence of a government official. And lastly, a religious studies graduate student studying with Buddhist centers in Saigon did not require permissions to travel to rural communities of Buddhist charity trips into the Mekong Delta. I had hoped many times to gain comfort in these colleagues' experiences, but instead left feeling uncertain and unprepared because of the variability in research experiences.

These reflections about the process of research permissions and red stamps point to a potential shift in thinking about who matters in the eyes of the state. In Vietnam, farmers often populate the lowest socioeconomic status in society – a reflection that many farmers I interviewed embodied, often describing themselves as "lowly farmers." In these descriptions of uneducated peasants and a presentation of the dichotomy of civilized and uncivilized (Harms 2016), the red stamps process portrays a state imagining of farmers within contemporary society. Farmers who participate in agricultural projects and models deemed "exciting" by local agricultural extension officers, symbolize not only what I later describe as successful farmers, or those who have more than "enough," but also might symbolize what the state believes is worthy of attention in a larger project of state future-making. However, within this project, red stamps, work in multiple ways. The material presence of red stamps and their symbolic presence were made visible in the everyday aspects of research. Red stamps also carry questions about the multiplicity of state and farmer sociotechnical imaginaries and visions of agricultural futures. State sociotechnical imaginaries reflect how agricultural production is conducted and how food security is governed, but also reify *who* and *whose* livelihoods matter within these developments. Thus, in thinking about representation and red stamps, surveillance becomes key to thinking through sociotechnical imaginaries from farmer livelihoods to research practices (Jasanoff and Kim 2015). The idea that multiple imaginaries can exist, hints at a greater societal shift within contemporary Vietnam, one in which red stamps are material and abstract, and one in which farmers' own livelihood imaginaries percolate.

About four months into the research, the constant weight and delay of government approvals and research process from my own university began to overwhelm my own self-determination and confidence in justifying conducting this research. In a stroke of luck, I came across Turner's (2013) book, which discusses varying levels of engagement with state visibility and surveillance from a foreign researcher's perspective in Laos, China and Vietnam. This volume discusses the challenges of conducting research in countries where governments are sensitive to foreign engagement and research with ethnic minority communities. Similar to stories echoed in this book, my own fatigue of surveillance and unfamiliarity often left me questioning whether I would even be allowed to conduct research. And even longer lasting, these feelings of being watched and unknowingly followed developed into trauma that would later resurface during data analysis. I found that more and more anthropologists are writing about their own experiences with trauma and fieldwork. Katherine Verdery's (2019) *My Life as a Spy*, provides a detailed temporal reflection of being surveilled by the secret police in Romania and her own accounts of retracing her police files. *Anthrodendum*, in 2019, released a series on "Trauma and Resilience in Ethnographic Fieldwork" that brings attention to the impact of conducting fieldwork on the anthropologists' psyche.

These feelings of isolation, paranoia, stress, and disappointment are common amongst anthropologists during their research fieldwork trips (Pollard 2009). The feelings of uncertainty and fear are also common. Many scholars have written about these circumstances from the perspective of graduate students (Pollard 2009), from a gender-based perspective (Huggins and Glebbeek 2009), within conflict zones (Nordstrom and Robben 1995), and from Socialist states (Verdery 2018; Turner 2013; Steffanie Scott, Miller, and Lloyd 2006). The confrontation of fieldwork challenges, specifically that of surveillance, changed how I thought about my own positionality in the field. I naively thought that conducting research in lowland Kinh communities would not have the same types of surveillance that social scientists have faced in northern Vietnamese ethnic minority communities (Turner 2012; 2013; Bonnin 2011; Sowerwine 2004), but that proved wrong. Despite conducting research capturing farming livelihoods of Kinh peoples in the southern Mekong River Delta (MRD) region, my research still confronted state surveillance including everyday interactions with a police officer who followed me to my field sites and varying levels of permissions and check-ins with state actors, such as local government officials. I often grappled with this push and pull of my own researcher insecurities to reassess the space that I took

up by conducting this research. And I couldn't help but embody every reminder that I was being surveilled, from the random motorbike followers to the almost weekly phone calls from the US Consulate in Ho Chi Minh City checking in on me; I faced many sleepless nights and anxiety attacks thinking about worst-case scenarios of being extracted from Vietnam. But I also faced many research crises where I confronted what it meant to be a non-native researcher, a foreign researcher in a late Socialist country, and an Asian American in Asia. These experiences of surveillance and questions about security allowed me to regularly reflect how Western research, particularly academic research, often makes us think that we can have access to any space and move freely. I connect these ideas of mobility and liberty with the same critiques that feminist STS scholars have about science and technology, that are capitalistic, imperialistic, and paternalistic (Rose 1994). It is from a parallel ideology described earlier that grants humans the access to exploit natural resources that also grants access to the freedom to conduct research and move around as one pleases. These institutionalized processes of gaining permission and navigating fitting in and sticking out, reminded me that researchers are not privy to their wants, but must adhere to those of a particular place.

1.3.2 Meeting farmers and farm laborers

Safety and security, as dictated by local government officials, police officers, and my research partners, influenced where I was able to travel and conduct research. The research institute told me that I could not live anywhere outside of Long Xuyên city because it was not safe. This was echoed by government officials and my friends that my safety was threatened if I were to go into rural areas. This made it hard and uncomfortable when my coworkers and friends invited me to their rural homes to introduce me to their families. I didn't quite know whether these concerns from government officials were actual concerns, or just a way to keep me in one place. I often felt trapped and paranoid whether my actions would result in government retribution on the research center or myself if government workers were to find out about illicit overnight trips to rural areas. These thoughts became a part of the process of getting accustomed to living and working in southern Vietnam, which was a different space than I was used to in the US. But these challenges also made it hard to make friends, socialize, and spend time with farmers.

I envisioned my research to follow within feminist methodologies paying attention to the voluntary, as initiated by me and not a government official, nature of participating in research

through snowball sampling. However, when I arrived in MPD, it became clear that a government official choosing research participants was part of standard local research protocols. Through feminist participatory methodologies, I wanted to talk with farmers who were often not state-legible or often underrepresented in government projects, but this strategy did not always occur.

1.3.3 Everyday scenes

My days often started at 5:00 am to finish typing up field notes from the day before and then hopping on my motorbike at 6:45 am and arriving at my research assistant's house at 7:30 am. We would ride together until arriving at the commune office to meet Ms. Lanh, the government official, at 8:30 am. This scheduled varied everyday depending on different activities. At harvest time, I was often asked to arrive at the commune office at 6:00 am. The early mornings reflected the daily schedule of the actual buzz of motorbikes around me in the morning from the windows where I lived in Long Xuyên city. Local street stands started cooking breakfast as early as 4:00 am before the morning rush for school at 6:30 am. The smells of pork grilling on open air coals attached to metal food carts perched on a sidewalk or on the edges of the street provided a quick snack as I drove out of the city, onto major roadways sparsely populated with houses and food carts and more populated with agricultural and construction companies. Every morning was time crunched as people avoided the worsening heat that would arrive in the afternoons, or as many people mentioned, as early as 10:00 am.

I engaged in participant observation (Kawulich 2006) and semi-structured interviews (Bernard 2011) that triangulate responses to interview questions with the lived experiences in the day to day that are then encompassed within a research project where I lived and worked with farmers. Through participant observation, I visited farmers' houses, while accompanied with a government official as described above, and often sat in the shade sipping on mugs of iced tea in the hot afternoons. I napped in hammocks under trees bordering rice fields. I cut and prepared lemongrass stalks for sale at the local market. And I visited farmers' fields pulling weeds, invasive rice varieties, and checking for brown plant hopper infestations. For some farmers that I later came to befriend, I traveled with them to death anniversary parties and family member weddings. All of these moments were contentiously shaped through negotiations with government officials about whose house I could go visit. But I became comfortable enough later on to not tell them about off-site visits with farmers that took us outside of Mỹ Phú Đông commune. I respected this amount of

surveillance within the commune, which meant that I did not travel into the commune without the accompaniment of a government official.

While I remained in Long Xuyên for the bulk of time between August 2017-December 2018, I supplemented my research with an internship opportunity with the national government. During the summer months of May-August 2018, I served as a research intern at the Institute of Agricultural Cooperatives[6] in Saigon. I traveled with the other employees to sites in the Mekong Delta to implement agriculture-related and non-agriculture related cooperatives. We traveled to three provinces in the Mekong Delta. Through this internship I was able to learn more about the policy-driven side of agricultural development, specifically this one model of agricultural cooperatives.

1.3.4 Understanding farmers' livelihoods in place

In order to understand the challenges and daily livelihoods of rice farmers in MPD, I solicited household surveys. While household surveys have been critiqued for their limitations in capturing qualitative experiences of food insecurity in the household (Hadley et al. 2008), I wanted to utilize surveys as a way to collect a generalized understanding of farming challenges and understandings of livelihoods. Surveys were also recommended by RCRD as a method that farmers are most familiar with in An Giang Province. Through these surveys, I gathered information on the impacts of agricultural development projects and new technologies on how farmers construct a *good life* (Kitayama and Markus 2000; Shirmer et al. 2016). By exploring questions about financial stability, generational knowledges, and farmer wellbeing, these surveys will reveal dissonances and connections in how dominant food security policies are embodied, translated, and understood in farmers' construction of a food secure life. Surveys allowed me to answer broader questions about how farmers think about their livelihoods, what specific components do they consider a part of their livelihood, and how do these components impact their day to day lives. I attended to my first research question about conditions for a good life through household surveys.

My research assistant and I had 10 days scheduled to complete seven household surveys per day. These strict timelines and numbers reflect the government approved work timeline and

[6] This is a pseudonym for this organization.

schedule. The local MPD commune office wanted to have a timeline of my research activities for every single day so that they would always know where to find us and what we were going to be doing. We set out every day and stopped at five to seven households a day and conducted a 67-question survey about farmer well-being and environmental challenges. These were followed up with 11 questions about household demographics.

By focusing on research question one about farmer well-being, farmers were asked to rate on a scale of importance questions about what is important for a good life and their overall perspective on their ability to live a good life. These survey questions focused on specific characteristics of livelihood capability such as the ability to afford enough food, ability to afford costs for daily life, or ability to provide well for their families. These questions were modeled from the 2015 Regional Well-Being Survey on Farmer Challenges conducted by the University of Canberra (Peel, Shirmer, and Mylek 2016; Shirmer et al. 2016) and USDA SNAP Food Security Interview Guide (USDA 2013). While the USDA survey focuses on coping strategies, such as food intake and food accessing sites, the University of Canberra study focuses on farmer challenges and well-being as focused on financial means and opportunities. I implemented these guides to focus on the feminist political ecological project of drawing attention to multiple scales of governance, such as looking at the household and body as a scale in order to bring attention to affective forms of well-being. Thus, as seen in Appendix A, my survey guide situates farmer well-being as relational, temporally fluid, and affects such as pride and opportunity and hope.

After these 34 household surveys were collected, data was inputted to Excel. I did searches for the most important aspects of each section of the survey: environment, wellbeing, livelihood, and food security. These responses then structured the creation of the interview guide to make sure that questions were highlighting what farmers had already identified as important or interesting.

1.3.5 Contextualizing livelihoods and future visions

I conducted a total of 100 semi-structured interviews using an interview guide built on salient topics that farmers indicated during the household surveys. These questions guided farmers to articulate their meanings and interpretations of a good life, to broadly think about their livelihoods, as well as follow experiences and reflections of how food security discourses contribute to a livelihood construction. These interviews facilitated dialogue with farmers on 1) what farming means to them; 2) what challenges and fears they confront in agriculture; and 3) how

they understand their food security. Through these interviews I explored research questions one, two, and three about what farmers thought necessary conditions for their livelihoods were and how they thought about futures. Answers about national projects of food security came from interviews with government officials, and during participant observation where farmers would interact with government officials or agricultural engineers.

I asked farmers to describe what makes a good life and what daily activities are most important to them and their family. I also wanted to know how their perceptions about their identity interacted with the cultivation of their livelihoods through questions about how they started rice farming, the meaning of farming to them, what success looks like, and what changes they have witnessed in their lifetime. These questions revealed that rice farming is about maintaining a livelihood tradition and family ownership of land.

I also asked questions about environmental changes and what worries them. Through these questions, farmers discussed the affective dimensions of their livelihood. This revealed that environmental challenges are persistent, and the process of agricultural production and technological development have resulted in increased fear, uncertainty, and new challenges with debt and land ownership. Farmers talked about these changes and fears by alluding to the future and the uncertainty that a future brings for them when they are living such precarious lives that they felt are not controlled by them. Finally, I asked questions about food security and what food security looks like to them and many farmers answered in response to them last and the future. They alluded to past times where they did not have food because of governmental conflict or floods and they also talked about governmental promises to provide financial aid and assistance during bad agricultural seasons that never materialized.

I interviewed two local government officials, one from Mỹ Phú Đông commune and one from Thoại Sơn district office. These two government officials were asked to participate in my project by the leader of Mỹ Phú Đông commune and Thoại Sơn district during the first day that I asked for government permissions to conduct research. These two participants were identified by the commune and district leader because they were available during my research period and were educated and worked on food security projects in their respective locations. I interviewed one national government official located at the Center for Agricultural Policy under the Ministry of Agriculture and Rural Development Office in Hanoi. In these interviews, I followed a separate interview guide that focused on questions about food security projects and policies that are

implemented in Vietnam. I wanted to know the goals, challenges, and process of how these projects are carried out. These interview questions reflected research question 2 and 3 by asking about how the government officials interacted with farmers through food security projects and also how these food security projects reflected specific discourses about food security and agricultural livelihoods. In order to focus in on discourses, I also asked about what success in rice production and agricultural production looks like to understand what government officials want to create and achieve through their policies and longer-term visions of the nation's agricultural industry.

I interviewed 12 farm laborers who all did not own land. In total, the 85 farmers I did interview were a mix of land and non-landowners (see Table 1.4). I also had a separate interview guide for farm laborers that was focused on their livelihoods and challenges they face in food security. Most of these farm laborers were former farmers and landowners but had lost their land because of debt or crop failure. Because of this, I wanted to explore what they think makes a good life and what challenges they have faced and worry about in the future. These interviews revealed that being a farm laborer was often referred to, both by farmers and other farm laborers, as the result of failures of agricultural production and the government. Farm laborers often had to give up their land because of a crop failure and were unable to get a non-agricultural wage labor job because the government has not provided any other opportunities for them. These interviews deepened my understanding about how debt and cycles of insecurity can play out in agricultural livelihoods in MPD.

Most of these interviews were audio-recorded aside from a few with farmers and farm laborers and the interviews with government officials. These interviews were conducted in Vietnamese and with the assistance of my research assistant were transcribed into Vietnamese and then translated into English. Semi-structured interviews required an interview guide, which helped while I was still in the process of learning Vietnamese. My Vietnamese reached a beginner level of conversation, however, was not enough to always understand what farmers were saying during the interview. Thus, the semi-structured interview guide, along with my translator, helped in making sure that each question was asked in the way that I intended and also allowed flexibility to ask follow-up questions if necessary.

1.3.6 Mapping past, present, and future

The visual depictions of livelihood construction and food secure practices, as mapped onto landscapes, can provide a rich analysis of the ways in which food security and agricultural development discourses allow and prevent opportunities to cultivate particular human-environment relationships. GIS and mapping incorporates the epistemological diversity in how farmers classify, manage, and identify their environments for resource management strategies (Conant 1994; Aswani and Lauer 2006; Nyerges 2000; Herlihy and Knapp 2003; N. Peluso 1995; Robbins 2003; Rundstrom 1995). I conducted participatory mapping with farmers who were interested in this activity. This activity allowed me to answer questions about how farmers envision their future households, and where they perceive challenges existing now and in the future.

When I first arrived in Mỹ Phú Đông, I utilized hand-held GPS devices during 'go-along' interviews (Kusenbach 2003) to map the commune and sites that the government officials felt were most important in the commune. These GPS data points mostly focused on the boundaries of the commune and specific areas where farmers were growing non-rice products or where water pumping stations are located. I employed this method to answer research question 2 about futures, by asking how farmers envisioned what their agricultural fields would look like in 5-10 years. For some farmers this was difficult to imagine, so they mapped according to what they wanted in the next year. Even though they didn't talk about what it would look like in five or more years, they did elaborate on the challenges of even beginning to imagine the future when they must live on a day to day basis. This method elucidated that security for farmers was not just in their agricultural fields because the act of producing foods would not be enough to generate income for their livelihoods. They often highlighted areas in their fields that were troublesome either because they owned land in the middle of other farmers' fields, and thus could not make decisions on their own about what to grow or they had areas that were more susceptible to pests and diseases. Seventy-six farmers participated in this activity after their interviews. These maps were hand-drawn and then were scanned to be digitally stored.

1.4 Conclusion

Reckoning with food security requires a multitude of theoretical insights and methodological approaches to disentangle disconnections between lived experiences of food

security and implementation of food security discourses. By focusing on individual decision-making through which farmers contribute to constructing meaningful agricultural livelihoods, I avoid an assumptive and prescriptive analysis common in the agricultural development literature. Rather, my approach recognizes the daily concerns of farmers in building and improving their livelihoods that gives credence to the meanings and power they hold in dictating what a food secure livelihood entails and can become in the future. Multi-method ethnography can answer how farmers make a living and what conditions are necessary for a good life, how projects of food security impact their livelihoods, and how these national projects of food security engage with broader food security discourses. I argue that food security is a project of future making in order to bring attention to the temporal finitude of agricultural production. And through rigorous reflexivity, I explore and note the complications of doing ethnography in a surveillance state.

In the following articles, I unravel what rice farmers' food security looks like through an analysis of livelihood cultivation, future making, and alternative livelihoods within late liberalism. In the first article, I argue that affective livelihoods and the process of future making are tools through which the promises of security are materialized in farmer livelihood precarity. I draw on farmer interviews and participant observation to show how farmers have embodied a life of "enough," which to them reveals government control in only barely securing farmers' livelihoods. In the next article, I discuss food safety certifications, as a tool to discuss farmer precarity in the face of increasing reliance on technoscientific data. I use ethnographic data to show how farmers point to the paradoxes of growing safe food and living within toxic environments. While food safety certifications reach urban areas, farmers are left with livelihood decisions weighing the costs of toxic foods, toxic environments, and financial stability. Finally, in the last article, I argue that late socialist demands on agricultural production as created ruinous rural landscapes. In this chapter, I draw on evidence from participant observation and interviews to show the mechanisms of late socialist development in rural areas as a means through which farmer precarity is both invisible and visible. I conclude by turn once again to the future of food security studies; I suggest scholars must invest in understanding the totality of farmers' livelihoods, including the affective dimensions of future making, in order to fully apprehend the precarity and unanticipated results of late socialist governance of agriculture.

Table 1.4 Demographic data collected from interviews (Source: Author)

Count	Gender	Age	Occupation	Land Tenure
3	Female	30-39	Farm Laborer	N/A
4	Female	30-39	Farmer	Own
3	Female	30-39	Farmer	Own & Rent
1	Female	30-39	Farmer	Rent
1	Female	30-39	Local Government Official	No Data
2	Female	40-49	Farm Laborer	N/A
3	Female	40-49	Farmer	Own
2	Female	40-49	Farmer	Own & Rent
1	Female	40-49	Farmer	Rent
1	Female	40-49	Farmer	Own & Borrow
1	Female	50-59	Farm Laborer	N/A
3	Female	50-59	Farmer	Own
2	Female	50-59	Farmer	Own & Rent
1	Female	50-59	Farm Laborer	Borrow
2	Female	60-69	Farm Laborer	N/A
3	Female	60-69	Farmer	Own
1	Female	No Data	Farm Laborer	NA
1	Male	20-29	Farmer	Own
4	Male	30-39	Farmer	Own
6	Male	30-39	Farmer	Own & Rent
1	Male	30-39	Local Government Official	No Data
1	Male	40-49	Farm Laborer	N/A
7	Male	40-49	Farmer	Own
9	Male	40-49	Farmer	Own & Rent
1	Male	40-49	Farmer	Rent
1	Male	40-49	National Government Official	N/A
12	Male	50-59	Farmer	Own
7	Male	50-59	Farmer	Own & Rent
1	Male	50-59	Farmer	Own & Borrow
4	Male	60-69	Farmer	Own
2	Male	60-69	Farmer	Own & Rent
1	Male	No Data	Farm Laborer	N/A
4	Male	No Data	Farmer	Own
2	Male	No Data	Farmer	Own & Rent
5	Male	No Data	Farmer	No Data

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CHAPTER 2. FARMING CONDITIONS OF "ENOUGH": GOVERNING LATE SOCIALIST FOOD SECURITY IN VIETNAM

2.1 Abstract

As agricultural models for increasing productivity and economic prosperity are continually promoted in Vietnam's Mekong River Delta, smallholder farmers are placed in increasingly precarious conditions as they are forced to make difficult trade-offs to meet livelihoods needs. These state-sponsored models of high technological solutions for increasing production and stabilizing farmers' incomes aim to provide farmers with greater access to livelihood opportunities and material possessions. This article leverages a political ecology approach to focus on how farmers' financial capability perpetuates state programs aimed for the good of all farmers, while masking how these programs exacerbate existing insecurities for some farmers. Without attention to the differential impacts of livelihood conditions of rice farmers today, the continuation of agricultural models aimed for the betterment of rural areas and residents may continue to drive farmers and farming laborers out of these regions.

Keywords: livelihood security, late socialism, rural development, agricultural development

2.2 Introduction

Dr. Danh[7], the Director of the Institute of Agricultural Cooperatives (IAC), stood in front of conference participants at the celebration of 45 years of peace and cooperation between Japan and Vietnam. His role in this moment was to introduce Vietnam's agricultural cooperative program. Dr. Danh told a retrospective story to conference goers about a time when Vietnam was economically poor and experienced periods of hunger and famine. Relevant to the topic at hand, he focused on his experiences with agricultural development and farmer livelihoods. As a comparative point, he told the conference participants that Japan started agricultural cooperatives

[7] All names throughout this piece have been replaced with a pseudonym so as to maintain confidentiality.

and, in contrast to Vietnam, the farmer income now is double that of non-farmers. Then he posed a question,

> "Wouldn't it be a beautiful image if Vietnamese farmers could get to this same level? Where the farmer makes $5600 (130 million VND), and the normal income is only $2200 (50 million VND) per year. Seven years ago, farmer incomes in Japan were lower than half of today's Vietnamese farmers, but now Japanese farmers use the [agricultural] *cooperative model*. And Vietnamese farmers can use this method too! It's not about the individual, it's about the collective work."

He acknowledged the murmurs and smiles in the crowd, "I know you can't believe these numbers."

Those in the audience included Vietnamese national government officials, Japanese agricultural cooperative program directors, and, importantly, local district and commune leaders throughout the Mekong Delta. Agricultural cooperatives[8], as proposed by the Institute of Agricultural Cooperatives (IAC)[9], is one example of a state program that promises security for farmers that would allow them to achieve livelihood wealth and increased incomes. IAC provides an institutional framework for local governments to implement a system of agricultural development in Vietnam's rural landscapes. Dr. Danh's enthusiasm and encouragement of this model in his speech reveals that he, like many others, believe that: wealth is an important characteristic of a secure livelihood for farmers, wealth is tied to aims to combat historical periods of national hunger and famine, and the benefits of wealth can be felt by all farmers equally. This model of agricultural production sets high expectations of wealth and economic opportunity for Vietnamese farmers, as Dr. Danh noted desired incomes of $5600, which are a substantial increase to the $2142[10] that Mỹ Phú Đông (MPD) commune farmers in Vietnam make annually. The agricultural cooperatives proposed by IAC and Dr. Danh's desire for the success of this model for the Vietnamese farmer both highlight what I argue is the main contradiction of agricultural

[8] Agricultural cooperatives are a model of agricultural production that promotes efficient use of resources and production in Vietnam (Cox 2014). As described in Cox (2014), agricultural cooperatives of today derives from a long history and development of the cooperatives model that fell under Vietnamese collectivization and decollectivization. These periods resulted in a shift in ownership and management of agricultural production. A 2012 Cooperative Law in Vietnam, defined cooperatives as an economic system with at least seven members who cooperate and manage in the production and sales of products to the benefit of all members (No.: 23/2012/QH13). This model reflects the guidelines created by the International Cooperative Alliance (ICA).

[9] The Institute of Agricultural Cooperatives is a pseudonym for a center in Vietnam that specializes on marketing and consulting in Southern Vietnam. The mission of the center is three-fold: provide training to government officials and farmers, provide consulting where they are guiding farmers to connect with businesses, and do policy advocacy to the Ministry of Agriculture and Rural Development. For farmers, this means creating cooperatives of about seven farmers in order to collectively buy and own rice seeds, machines, and agricultural inputs like fertilizers and pesticides.

[10] As reported in an annual agricultural report from the Mỹ Phú Đông commune government in 2016.

programs that promote farmers' wealth and livelihood stability in Vietnam. Despite the promise of security, these programs deepen the levels of livelihood insecurity and perpetuate a system of inequality amongst rice farming.

As I will argue in this article, agricultural programs, like agricultural cooperatives, are just one example of top-down development models that use stated-based programs or languages that do not resonate with a particular group (Escobar 1996). The impact of such programs is that state-based development models maintain normative approaches in their implementation. On the one hand, these development models assert dominant environmental discourses or technological solutions for the betterment of local livelihoods. And while these models might be accepted and praised by these local communities, on the other hand, they can also differentially and unequally impact farmers in both the perceived benefits and faults (Davidson 2016; Ferguson 1990). In engaging with this same contradiction of the promise of security within agricultural programs, as mentioned in Davidson (2016), farmers' livelihood security strategies can simultaneously promise wealth and exacerbate existing income and livelihood disparities amidst rice farmers.

In this article, I discuss livelihood security as an alternative mode to dominant discourses of food security exemplified in state-based policies. I utilize the term livelihood security to summarily include food security as defined by the national government as it interacts with other components of a farmers' life. Vietnam's national food security policy defines food security in a limited way, specifically through quantity and production of rice (Nguyen 2014). In discussing concepts of food security with rice farmers in Vietnam's Mekong River Delta, their experience of food security as promoted by state programs became all-encompassing of their ability to plan and prepare their livelihoods for the future. This ? included their income, farming practices, diversified agriculture, education, and ability to care for multiple generations of family members in their household. Moreover, state-dominant discourses of livelihood security are portrayed through solutions for addressing the precarity of agricultural production –low income, hunger, and low production rates. Despite increasing technological development in how rice is produced, through seed technologies and enhanced management of pests and diseases, rice production in Vietnam falls short. State agencies dictate and provide economic support for programs and material conditions of security for farmers, but issues of wealth disparity and poverty remain (United Nations Vietnam 2008b). When applied, the models impact farmers at different scales, deepening the growing unequal distributions of assistance and security gap amongst farmers. Whereas the

state imagines their definitions of a secure livelihood to be universal across all rice farmers, this study situates and contrasts farmers' understanding of security within these state imaginings. I identify how state narratives about, and governance of livelihood security have critical material and ideological implications and are predicated on some farmers remaining insecure.

Employing a political ecology approach to rice farmer livelihoods in Vietnam, I first contextualize state-based development motivations through late socialist ideologies. Then I show how legacies of state land distribution and management creates and reflects the state's priorities for food security. Finally, I describe how MPD rice farmers experience rice farming and the ways in which conditions of security and insecurity are defined through material and affective means. In this vein, borrowing from rice farmers use of the term "enough," I use this emic concept as an analytical lens to illustrate how state-driven agricultural models, such as those described above, become a tool for masking and perpetuating inequalities. Enough, as I will explain in this article, captures the material conditions of having the minimum to survive in a "food secure" nation, and also the affective dimensions of livelihood uncertainty – such as fear. Farmers highlighted in this piece reveal the realities of the state's imagining and programs of security and how it benefits certain farmers while driving other farmers into greater insecurity.

Research for this ethnographic article is based on 16-months of environmental anthropology research, combining multiple methods across different sites of Vietnam to explore human-environment interactions (Gezon 2010). I worked with Vietnamese Kinh rice farmers living in Mỹ Phú Đông (MPD) commune in An Giang province. An Giang is one of 13 provinces in Vietnam's Mekong River Delta, and has historically been one of Vietnam's most productive rice-growing regions (Anh and Tinh 2020). Vietnam's Mekong Delta, spanning 9.6 million acres (3.9 million hectares), relies on two-thirds of this land for agricultural production (CGIAR Research Program on Climate Change 2016). The Mekong Delta supports livelihoods built around food production: 50,000 acres (20,300 ha) of aquaculture, 114,000 acres (46,000 ha) fruit, and 3.3 million acres (1,341,700 ha) rice in An Giang, Cần Thơ, and Đồng Tháp provinces in 2012 (W. Smith 2013). Due to land tenure policies and economic incentives discussed below, many of these farmers migrated to MPD from other areas of the Mekong River Delta in Vietnam to grow rice. At the time of research, MPD devoted 7000 acres (2839 ha) of land to grow rice for 2018. Figure 1

shows that the highest percentage of land devoted to rice farming is devoted high-yielding rice varieties, such as IR50404 and OM5451[11].

Table 2.1 Rice seed varieties by percentage of total rice-growing land in Mỹ Phú Đông commune for the winter-spring 2017-2018 season (Source: UBND Xã Mỹ Phú Đông 2017)

Rice seed varieties	OM 6976	OM 4218	**OM 5451**	OM 2514	Jasmine	DS 1	Sticky Rice	**IR 50404**	Japanese	Other
Total (acres)	192.66	54.34	**3,485**	54.34	585.39	538.46	308.75	**1168.31**	103.74	521.17
Percentage (%)	2.75	0.77	**49.7**	0.77	8.35	7.68	4.4	**16.66**	1.48	7.43

I conducted semi-structured interviews and participant observation with rice farmers who live in Mỹ Phú Đông commune and with IAC in Saigon. Participant observation in Mỹ Phú Đông involved spending time with farmers on their rice fields, in their homes, and around the local commune during all three rice seasons. In Saigon, I conducted participant observation in the IAC office located on the Ministry of Agriculture and Rural Development University campus, where I attended meetings with province and commune-level government officials across the Mekong River Delta and attended conferences and workshops in Saigon with foreign and national government officials between May and August 2018. During these daily interactions, I asked participants, farmers, government officials, and IAC employees about their experiences and opinions about agricultural development, food security, and rice production.

To follow-up participant observation activities, I conducted 85 semi-structured interviews with land-owning rice farmers, 12 interviews with farm laborers, and 3 interviews with government officials. Questions focused on farmers' experiences with rice farming, what they envision for their futures, and their understanding of food security. Through open-coding qualitative analysis (Emerson, Fretz, and Shaw 2011) I focused on the question, what is food security. The themes of how farmers understood and created their material livelihoods to envision livelihood security came to the fore as did the negative aspects of living insecure livelihoods, such as financial insecurity and instability.

[11] IR50404 is a common name for an International Rice Research Institute variety of short-term non-aromatic variety of rice. OM5451 is another short-term non-aromatic variety of rice that is frequently grown in Vietnam.

2.3 Security for Whom?

The governance of food security, in Vietnam, is best understood through a late socialist scholarly framework that calls into question the political economic state as being neither completely socialist nor post socialist. In late socialism, scholars highlight how national leaders experience the feeling of being late to a modern status of global development, which has prompted national policies that promote pride and security while undergirding ideals of self-sufficiency, production, and development (Zhang 2001; Zhang and Ong 2011). In this section, I show how within late socialism, actors' promotion of security in Vietnam results in contradictory outcomes of pro-rural development policies and farmers' livelihood insecurity. Political ecology as a framework undergirds how this seeming contradiction exists: that despite the state attempting to achieve pro-poor and pro-rural development policies by promising wealth to rural farmers, farmers remain insufficiently secure in their livelihood opportunities.

2.3.1 Late Socialism

Scholarly works on late socialism examines the ideological basis for state governance of pro-rural development in Vietnam and how this feeling materializes in a variety of ways within farmer livelihoods. Late socialism ideologies draw upon a contradictory governance strategy that allows for neoliberal principles – ideas of private accumulation, self-interest, and self-promotion – within the confines of state-defined areas of control (Zhang and Ong 2011). These ideas are built on the feelings of "lateness" or falling behind national and global development (Escobar 2011). This scholarly framework explores *why* governments promote rural development programs and how citizens make sense of their changing livelihoods and subjectivities coinciding and in response to these programs. As also seen in China, the Vietnamese government allowed privatization to occur without dismantling the socialist apparatus. This took place by providing citizens a space to privatize within the government's limits, for example, new private market housing in post-Mao China led to the creation of a middle class, restructuring class differences, and creating urban spaces occupied only by a class that had the financial means to do so (Zhang 2010). In this example and elsewhere, Zhang argues that late socialism is a complex melding of public and private spaces in which state socialism manages and controls economic growth, reifies class differentiation, and

in which new subjectivities emerge (Zhang 2010; Zhang and Ong 2011; Zhang 2006). As such, new subjectivities are formed and melded within a new moral and social order.

These late socialist ideologies allow for these emergent middle-class morals to stand in for what is desired. This occurs without middle-class citizens questioning their privileged position within a society that is based on structural inequality. Vietnam's growing middle class, rendered moral, fits the state's ideals of citizenship and social order (Harms 2016). For the poor class, the reordering of a social and moral order further marginalizes and exposes the vulnerability of the poor in an unequal socioeconomic system. For example, Schwenkel (2012) describes the events proceeding the destruction of an urban public housing facility, Quang Trung, that entailed shifts in a moral ordering of public housing under socialist modernization as modern, and then rendering that same housing as unmodern under late socialist ideologies. As old socialist architecture is replaced with what is seen as newly modernized buildings, the city's residents who no longer can afford to live in these housing developments are displaced. The logics of late socialism here drives a social and moral order built upon seemingly individual and private ideals of growth and modernity but are all the while regulated within a state-defined modern economy. This ? results in the continued disproportionate distribution of wealth, that is complexly tied to national desires of growth and modernity and local visions of livelihood security and opportunity. This ? is not only limited to the urban areas of Vietnam, but equally impacts rural livelihoods. What results is the continued marginalization of poor people, making way for a wealthier class who can afford to purchase and own land, and modern housing structures. This same logic applies to farming communities in which late socialist citizens align farmers' livelihood security through material and immaterial possessions, such as financial stability and participation in state-based programs. I use this framework to show how some farmers continue to benefit from an agricultural system under late socialism and how other farmers are driven into greater vulnerability. And ultimately, how without addressing the underlying conditions of late socialism and new subjectivities of modernisms, that inequalities persist.

2.3.2 Political ecology: promises and distribution of wealth

Taking Pedersen and Holbraad's (2013, 9) working definition of security as "a set of discourses and practices concerned with a given social collective's reproduction over time," I make two claims to how a political ecology framework to understanding security is critical. First,

security and insecurity are produced through uneven multi-scalar distribution of wealth and materialities within political, social, and ecological contexts (Dianne Rocheleau and Roth 2007; Robbins 2012; Blaikie and Brookfield 1987). Second, security and insecurity are imagined through attention on how narratives are created and enacted to differentially promote ideas of personhood and livelihood capabilities (Bryant and Goodman 2004). Political ecology frameworks provide a useful way to analyze how the promise of security is based on state discourses of a late socialist security, one that promotes pro-rural development aid and income opportunity, while relying on the individual to create their own security and stability.

The discursive power within state-sponsored farming aid programs and new models for agricultural production, such as triple cropping rice, appeal to both state and farmer interests in ways that position agricultural development schemes in line with the existing late socialist status quo. Scholars have shown how state discourses of livelihood security across the world tend to dominate agricultural programming, such as agricultural schemes of modernization (Murray Li 2014; Grant 2014; West 2012a), organic seed distribution and systems (Aistara 2011; 2012; 2018; J. Guthman 2014) and development (Davidson 2016; 2012), while undermining the existing ways of being or producing rice. This paper moves beyond the dominant narrative that farmers must rely on their individual ingenuity in order to display resilience and resistance to structural forces against them (Taylor 2007; Kerkvliet 2005; Davidson 2016). Rather, I explore how livelihood responses to development and modernity are wrapped within desires for security and stability and farmer subjectivities, even if they are state-defined.

By drawing on the rich literature of political ecology that critiques dominant discourses of agricultural production as always effective in promoting economic security and dominant discourses of farmers as culturally responsive and ingenious in their coping mechanisms (Davidson 2016; Murray Li 2014), I show how these state-sponsored visions of agricultural development rely on structures of late socialist security. By capitalizing the promise of wealth on future visions of income and stability, late socialist agricultural programs can persist under the discourse of rural development, and economic prosperity. Despite the resulting feelings of anxiety and fear, late socialism masks the responsibility of success and security upon the individual farmer, and the failings to achieve this type of livelihood evades structural political economic systems. In this way, the promise of security becomes a useful tool to understanding farmers' experiences and expectations of futures. The dually contractual and socially unwritten expectations between state

and farmer are unrealized. And thus, the promise of security inevitably falls short; there is an expectation from the farmers that the promise will be fulfilled, however, many structural barriers prevent farmers from seeing these promises of security and wealth.

In Vietnam, promises are tied to agricultural programs aimed at integrating solutions legible to foreign and national agricultural companies, state actors, and other farmers. West's (2012) description of certification schemes surrounding Papua New Guinea coffee is a good example of how narratives of promise and progress are generative but ultimately inequitable. West shows how coffee certification schemes portray dominantly accepted ideals about social justice, poverty eradication, and primitivism of coffee farmers (2012). She finds that the conditions of production and labor are far from equitable as stated within these new imaginaries. While aiming to reduce social inequality and environmental degradation, third party coffee certification models are still built upon an imaginary that reinforces neoliberalism market-based approaches and farmer insecurity (West 2012). This work shows, similar to the case in Vietnam, how ideological promises behind dominant discourses of what farmers *should* be doing does not adequately capture the impacts of these policies and discourses on farmer livelihoods.

I suggest that farmers' uncertainty about their futures is a part of a structural insecurity, where the state creates and structures livelihoods in a certain way to promise a secure but never attainable future (Watts and Peet 2004; D Goodman and Watts 1997). Uncertainty, fear, and other affective modes of understanding farmers' security might not be visible or physical (Weszkalnys 2016). However, I argue that uncertainty can describe both current and ongoing fears as well as historical legacies of emotional and physical survival associated with times of war and hunger. And these state-based promises are critical to understanding the affective dimensions of security. Whitington (2018, 7) suggests, "the uncertainty entailed in a promise is an integral part of its seduction" and asks us to focus on the potential and the experience that this promise creates or its affect on the subject. As political ecologists ask of scholars who utilize this framework (Murray Li 2007; Davidson 2016), I take seriously the task of identifying the anxieties and fears of farmers in the contradictions to the state's strategy of addressing livelihood security in Vietnam's rice fields as a key to understanding farmer livelihood security.

2.4 State visions of security in Vietnam's Mekong River Delta

The Mekong River Delta (MRD) is a site where the state's imaginings of achieving security materializes in land use management and agricultural production. There were two important historical phases in which the MRD was prioritized by the Vietnamese government as a site for agricultural production and as a means toward greater national food security after the famine in 1945. In the first phase, the Vietnamese government promoted the 'rice first' campaign in the mid-1970s and in the second phase, the government opened Vietnam's economy to international markets in the late 1980s (Tuan 1996). Programs during these two-time periods gave attention to the Mekong Delta as a site for agriculturally fertile land and a potential source of national security. Visions of security promoted rested on the state's ability to control the environment, increase agricultural productivity, and manage farming livelihoods.

The reverberating effects of the famine of 1945 in Northern Vietnam set in motion a call for increased agricultural production, an increased national supply of rice, and the prioritization of land for rice production. Japanese colonization and the rerouting of goods such as rubber, coal, and rice from southern Vietnam exacerbated the impact of a flood during the November 1944 rice harvest (Marr 1995). This led to a period of hunger, starvation, and death of over two million Vietnamese peoples between 1944 and 1945 (Marr 1995; Xuan 2010) – which are still remembered today. As food shortages and agricultural development under colonial powers progressed, the Mekong Delta's floodplains and riverbanks became subject to political, social, and economic development projects. The major canal infrastructure developed in the late 19th century (Biggs et al. 2009), particularly in the Long Xuyên Quadrangle (the location of Mỹ Phú Đông commune), became the focus for increasing the region's rice production (Xuan 2010). The canal infrastructure opened up pathways for agricultural development and export through the management of waterways and floodplains and also the management of rice cropping seasons. Today, these landscapes are the legacies of productivity and development set in motion by colonial powers and now continued by the Vietnamese government in late socialist times.

The canals and the development of dikes created a material infrastructure that would control how rice is produced. This new heavy dependence on rice production came from lasting fears of hunger and famine in the 1940s. The state implemented "rice first" or "rice everywhere" strategies in order to provide a national supply of rice as a contrast to being insecure (Thang 2014; Government Office 2010). Prior to the 1960s, rice cropping models in Vietnam's Mekong Delta

followed the flood season calendar, which allowed for one rice crop per year known as the winter crop or floating rice (Nguyen, Dumaresq, and Pittock 2018). An Giang Province is located in a lower-lying area that is subject to annual flooding, so the winter crop was situated between May to December and yielded less than two tons of rice per hectare (Xuan 1995). After the construction of high dike infrastructure in the 1960s, rice cropping intensification became a reality as dikes managed water flow into and out of farmers' fields. The dikes implemented a means of controlling flood waters so that farmers could grow a crop of rice during the flood season. In addition to controlling flood waters, this infrastructure also opened up new rice production capabilities during dry seasons, as water could be pumped from the canals into their fields.

In the early 1980's, Vietnam's government implemented a "new economic area" policy that encouraged farmers to move into An Giang Province by giving out land parcels for a small fee (Nguyen 2009). Through this model, farmers could own land and grow rice for a small price, thus drawing farmers into the MPD region. Beginning in 1988, MPD farmers switched from one to two crops to assist the nation's goal of rice self-sufficiency and national security. After the integration of high-yielding rice varieties and a high dike in MPD in 1996, a third crop was added to the annual production calendar. The transition from one to three crops of rice was rapid and transformative. The shift between high-yielding varieties that occurred between 1976 to 1998 changed 1.2 million acres (0.5 million hectares) of land from floating rice to 62,000 acres (25,000 hectares) (Xuan and Matsui 1998). In 2015, the land dedicated to floating rice decreased to 499 acres (200 hectares) in An Giang Province, Vietnam (Nguyen, Dumaresq, and Pittock 2018). The state's management of both water and land opened up new possibilities for how rice could be produced outside of the normal occurrences of biophysical factors.

Table 2.2 The triple cropping rice production calendar in comparison to the floating rice crop calendar. This is based on the 2018 triple rice cropping year from An Giang Province (Source: Author)

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
				Floating Rice Crop							
1st Crop				2nd Crop				3rd Crop			

The state's implementation of these security strategies – securing the increased production of rice and controlling the environment – shaped the economic opportunities within the landscape and in turn structured rice production practices. The 'rice first' policy established the state's vision of the material conditions of food security: economic incentive zones for rice production (MPD is

one example of this), reliance on agricultural technologies (including high yielding rice seed varieties, pesticides, fertilizers, harvesting machines), integration of foreign agricultural companies, and infrastructural developments (including dikes, roads, and the utilization of French colonial canals). These conditions of state-supported security are physical markers on the landscape that depict how rice is produced and who produces that rice. Farmers are active agents in managing the production and health of this land.

The second important historical phase came about in 1986, after the government restructured its economy. This period is marked by an opening to global markets, leading market socialism or late socialism. Many of Vietnam's economic restructuring supports growth through rural and urban development [12]. Policies such as the government's 2014 "Agricultural Restructuring Plan" are just one example of how Vietnam plans to redesign rural development. This plan aimed to increase rural incomes by 2.5 percent by 2020, improve rural livelihoods, ensure food security, and increase living standards of rural areas (Decision 899/QD-TTg). These plans focused on improving rural living standards, as will be further described below, has only benefitted some farmers while continuing to perpetuate the discourse that these rural development models are effective pathways to farming livelihood security.

Vietnam's dedication of land resources for rice production, which started most notably in 1970 resulted in Vietnam becoming one of the leading global exporters of rice (Kompas et al. 2012). Areas for rice production in Vietnam differed only slightly since the early 2000s, and has increased 1.7 percent per year between 2000-2010 (Jaffee, Son, and Anh 2016). Through policies aimed at increasing rice production, Vietnam and many other nations in Southeast Asia were heavily influenced by the International Rice Research Institute (IRRI), headquartered in the Philippines, spreading high-yielding rice varieties. As farmers in MPD today use IR 50404, a product of IRRI's agricultural technological spread (Anh and Tinh 2020), the combined strategies of material development and land use policies are embedded in the state's underlying visions of food security.

Histories of hunger and famine, opening of national markets, and the technological rise in agricultural production are all aimed to address Vietnam's goal toward self-sufficiency and national security and create dominant discourses of production and security. As I argue, the intensification of rice production and the slow creep of environmental pollution and degradation

[12] For more on this topic see Schwenkel 2012; Harms 2016; Harms 2009

from such production, adversely limited the adaptation strategies available for farmers' livelihoods. On the one hand, increasing access to global markets means greater access to farming equipment, such as tractors and rice harvesting machines. Improving machinery and the resulting high-yielding rice varieties are examples of the material conditions that serve as the basis of state-imagined security. On the other hand, these material introductions over the past 30 years affect and change how farmers manage their fields: crops susceptible to new diseases and pests, unpredictable weather patterns, a changing laboring class, limited access to agricultural technology, poor soil quality, and polluted river canals and water. Rice farmers in Vietnam are exposed and beholden to the vagaries of weather and subsistence production. State policies increase material conditions of farming and widen the wealth gap and unequal access to farming assistance and land resources. These broad policies aim to address rural development on the whole, but actually exacerbate poor living conditions for farmers who were not secure from the beginning – let me explain how.

2.5 The modes and models of creating security and being secure

Agricultural cooperatives are just one current model through which the state promises agricultural wealth and livelihood security to farmers. Triple cropping rice and large-farm models, which aim to address the nation's food security through efficiency, development, and growth, are two other state-led approaches. In this section, I present qualitative data from interviews with four farmers to elaborate on the material and affective conditions of insecurity that are imagined and lived at different scales: state and household. I explore the impact of state discourses of security on farmers and describe how farmers adapt to these agricultural practices. I elaborate on different forms of security and insecurity experienced to show how some farmers benefit, while others are pushed into more precarious conditions.

2.5.1 State imaginations of security: hi-tech agriculture and the pursuit of production

There are different ways that state-led technological solutions for wealth play out. In a 2018 interview for a Vietnamese online newspaper, the Director of the Center for Agriculture and

Rural Development within the Ministry of Agriculture and Rural Development, Mr. Nguyễn[13], describes hi-tech agriculture as a model for environmentally safe production of rice. He says,

> "The idea to find technological solutions to support agricultural production comes in the context that the world's agriculture sector needs to increase food production by 70 per cent by 2050 but requiring less use of fertilizers and chemical pesticides to improve product quality and preventing climate change from negatively affecting agriculture. Therefore, hi-tech agriculture can be seen as a way to lessen the negative impacts on the environment" (Vietnam News 2017).

In this statement, he appeals to a global problem and solution, that hi-tech agriculture can address both environmental conditions that challenge production and the global need for food. By engaging with global discourses on agricultural production, Vietnam is seen to be not just mere recipients of globalization, but Vietnam actively engages with and participates within these same agricultural practices. The implementation and adoption of hi-tech agricultural practices and models are attached to a global practice of agricultural production aligned with late socialist desires for national security. Despite these global appeals, implementing high-yielding rice programs and managed pesticide and fertilizer treatments has laid the groundwork for cyclical insecurities within the harvest calendar.

As these agricultural technologies are implemented in rice farming communities, such as An Giang Province, farmers emphasize the inherent insecurity and instability in producing high-yielding rice. Chú Bấc[14], a 56-year-old rice farmer, describes how this insecurity is built into the government model of triple crop rice.

> Chú Bấc: [Natural disasters] affect my life because farmers have to worry all the time. [Farmers] are only happy when you can harvest and get a high production, but before that everyone worries if something could happen. In the past, we could ensure our production and income, but now not anymore.
>
> Sarah Huang: Was this during one crop or two crops?
>
> CB: In two crops you could ensure because at first, there were less people living here and in Vietnam. So, farmers only had to grow 1 crop of rice and that was enough to supply food for all. But the population kept growing and we switched to two crops, and this period you could still get a high income and ensure productivity.
>
> SH: And now, why can't you ensure your production?

[13] I have retained the true name and position title as this information came from a public media source.
[14] Farmers' names have been replaced with a pseudonym in order to maintain anonymity.

CB: Because of natural disasters that can happen at any time, like broken flood bank walls. Two to three years ago there was a storm that destroyed all the crops and machines and we couldn't access our fields, so the government gave 50,000 VND/1 công lớn to farmers.

SH: Was this only for people who own land or rent land?

CB: The money was given to all farmers who cultivated land. It was a shameful situation when one farmer who rented the land from other people lost it. Then he left to go find a job elsewhere, but a year later the government gave his money to the farmer but because he wasn't there, so the landowner got that money instead.

In this exchange, Chú Bấc describes how technological solutions expose the failure and aging infrastructure the government once constructed to control environmental conditions in addition to the modern day governmental financial assistance provided to farmers. While he recognizes the financial benefits of this particular technological solution of multiple cropping systems, he points to a gap in which these technological solutions are only as good as the farming system in which they are placed. This line of thinking falls within critiques of agricultural development described earlier where development programs often misaligned with on the ground ways of being. In this example, Chú Bấc describes how a confluence of environmental changes, farmers' financial capabilities and insecurities contribute to whether farmers benefit from these different cropping models.

Chú Bấc highlights two important technological shifts in rice production. The first, is the switch from one to two crops that was implemented as a part of the state's strategy for national security. The second, occurred when the state switched from two to three crops. With each concurrent crop, as Chú Bấc identifies, farmers became even more stressed with their own food supply. Technological agricultural solutions with higher yields required the introduction of machinery and use of pesticides and fertilizers to increase efficiency and shorter production time periods. Subsequent shifts included reliance on selling rice to middlemen whereas in the past, farmers could sell directly to local markets. Participants described how selling to middlemen also eliminated the process of needing to dry rice before bringing it to market. With the ease of selling wet rice, directly from the fields to the middlemen, most farmers sell their entire crop rather than drying rice for their family's food supply. One farmer describes: "People usually experience food insecurity when they switch from two to three crops because when people did two crops, they

could store food for the next year but now they think that they have the third crop, so they don't store the rice." These farmers identify how the changes resulting from adopting multiple cropping rice are beneficial, while also exposing the unintended consequences of creating a system where farmers sell their entire food supply. The inadequacies of a political economic system set up to protect and support some farmers.

2.5.2 The promises of security and the production of "enough"

Promises of security expose the varying levels of reliance on governmental programs and financial need within rice farming livelihoods. Farmers often evoked the concept of "enough" to describe having certain set of financial savings to pay off farming debt, afford multi-generational household expenses, and purchase food. This concept of enough does more than describe what farmers need to survive, but also describes the sliding scale between security and insecurity. Multiple rice farmers I talked with would say, "I don't think the Vietnam government cares too much about farmers who live here." When I asked one farmer why he felt this way, he said, "In this region, I heard a rumor that the government gives money to help people here, but I didn't get any." The state's benefits of financial assistance in a bad harvesting season seek to provide farmers with enough money to recover the financial loss of not receiving expected income from selling their harvest in addition to the costs of agricultural inputs and labor throughout the season. While farmers may believe they can have access to these funds, they experience the unequal distribution of financial insurance. Speculating why this might be, this farmer identified that there are just some farmers that are more favored by government officials than other. The truth of this statement aside, the unequal and uncertain distribution of state assistance persist.

In contrast to the above farmer's unawareness of the assistance program, another farmer explains how he benefits from state financial assistance.

> "The government takes care of farmers in bad weather because they will subsidize money for farmers. The last third crop was really rainy- [the rains] lasted more than two months- when farmers only had three months to harvest. The rain destroyed 50-100 percent of crops. For the 8.9 acres (30 công) [that I own], I could only get four to six bags so many people had to sell their land to pay their debts and leave this region to go to Bình Dương or Phú Quốc to find another job. They haven't returned. The people who can pay for fertilizer or pesticides, they keep staying here."

This farmer, who benefits from these financial insurances, understands the inequality in how they are distributed. He shows that if farmers lack the financial means to make a profit or break even during a harvest without government assistance, then they cannot benefit from that government assistance. The farmers who do not receive these benefits, are the ones that either physically leave the commune or feel that they are unwanted by the government.

These farmers were never visible nor physically present while I was conducting fieldwork. I would hear stories from farmers about a family that used to live near them and left because they couldn't pay their debts. Talking with families with mixed household income sources, from local wage farm labor to migratory labor in urban factories, they described selling their own farmland to pay for debts accrued from renting land, agricultural inputs, and a loss of income. These farmers' stories are exemplary of a changing rural agricultural landscape in which farmers are being dislocated and forced to find labor elsewhere. The concept of enough expressed by the farmers elaborates on the varying states of secure and insecure livelihoods that are not represented within household income. Rather, it presents contrasting experiences of late socialist farmers: ones who have individually succeeded and those who have not. "Enough" explains security as contingent on the actualization of the promise of security and the resulting differences in farming livelihood outcomes. These individual experiences speak to the larger conditions under which farmers experience livelihood conditions set by structural and institutional contexts of rural farming in Vietnam.

In a similar example, Li (2014) has shown how governmental policies on land tenure in Indonesia becomes the mode through which wealthy farmers "win out" over non-wealthy and thus, less successful farmers. Here, we see a similar mechanism at play. Governmental programs to obtain food security benefit those farmers who are already financially secure – they have enough production or income to survive a harvest loss. As Chú Bấc described earlier, one farmer who rented land, a more precarious situation than owning land, had to leave and never received his financial assistance. With land ownership, farmers do not need to worry about fluctuating and unpredictable changes in rent or payments during each crop season. For farmers that rent farmland, the rent becomes an additional cost in addition to the pesticides, seeds, fertilizer, and labor that is required of a triple cropping harvest season. He lays out a similar scenario as Li does, in which farmers that already own land and are financially stable "win out" over farmers that are already insecure.

For farmer Anh Tuấn, rice farming was a draw for him to make a livelihood but discusses how it only exacerbates class-based inequalities. Anh Tuấn, a man in his 40s became a farmer after his father gave him 1200 m^2 of rice fields. In contrast to his former jobs as a businessman and a mechanic, he described rice farming as a kind job because there is less competition between people and an easy job. During an interview, I asked him what he needs to be food secure and he said,

> "I'm worried about a successful farm and yet, I don't want to sell all the rice that I grow. I store some of the rice for family consumption. If I get an unsuccessful crop, then I have to buy rice and food and it's expensive. People say, 'if disaster happens, rich people will be hungry for six months and poor people will be hungry for three months.' This means that rich people who aren't farmers, they think that they are rich so they can afford to buy food. But poor people are farming, so they can store food and they don't depend on spending money to get food."

Anh Tuấn uses this local proverb to describe what he believes is at stake with the changing technologies in agricultural practice and precarity of being a farmer. "If we get a low rice price, then we have to try to save money and it makes us really uncomfortable. The family isn't happy, and everyone is uncomfortable." His family does not have the financial means to save and recover from a failed crop or delayed government assistance. He goes on to explain,

> "Now there are some rich rice farmers who will sell all the rice after harvest because they think that storing rice is too much labor, so it is easier to sell all their rice and they can afford to buy rice from the market. But poor farmers will store the rice and then they can rely on it later on. But we don't know what will happen in the future. Everything here depends on rice."

While in the past, being able to save your rice for household consumption would provide enough food, but as farming practices are changing, one's financial stability has become necessary to provide farmers with security.

The dependence on financial conditions for a family's food security reveals the importance of considering the unequal class-based distributions of assistance, wealth, and security. For the state, their ability to provide "enough" assistance to wealthy farmers who lose a harvest only further amplifies their financial capability. But for farmers who never receive their financial assistance, their insecurity is further exacerbated by these promises that never materialize. The precarity of enough is described in what Saminian-Darash (2013) calls the potential uncertainty – the space between what has occurred and what is about to occur. This uncertainty manifests in the fears of not being able to receive government assistance, not being able to purchase food at the

market, and not being able to own land. The farmers still retain financial conditions of enough for now but highlight how the state further exacerbates their insecurity and fears of the future.

2.5.3 Material conditions of farmers' livelihood security

Stitched onto a farmer's shirt was an agricultural company's slogan: "PHYSAN: Hết mọi lo lằng" which translates to, "PHYSAN: all your worries are gone." Many farmers wear shirts from agricultural companies, like this one from PHYSAN, advertising fertilizer or pesticide products for the company they work for. This company's logo, "all your worries are gone," provides a useful example to explore how perceptions of security interface within farmer-company interactions. In MPD, these company contracts, that mostly focus on Japanese rice production as shown in Table 2.1, aim to help farmers reduce production costs, attain high profits, and avoid trading situations based on low prices. Companies provide a stable price for the harvested rice at the start of the crop season and are obligated to pay that amount at the end of the harvest. This differs from the conventional model where farmers negotiate the selling price of rice with middlemen at the end of the harvest season. If farmers can't find a good price, they still must sell their rice or risk losing even more money.

Much like the government assistance programs, any farmer can attain a contract with a company and do so either through word of mouth from other farmers or by attending workshops in the commune that are sponsored by agricultural companies. Driving through MPD, agricultural shops line the main road, shaded with blue tarps tied to trees. Stacked piles of 20kg bags of fertilizer, plastic bottles of pesticides scatter through the shop, and printed banners from agricultural companies line the back of the shop, advertising new products to treat snails, a common pest during early stages of the growing season. In a 2016 Thoại Sơn District annual report on agricultural activities, there were eight companies with contracts in the district where MPD commune is located. The district recognizes that there are only a small number of businesses and land area that is devoted to company production, only 7.6 percent of total land devoted to growing rice (UBND Huyện Thoại Sơn Phòng Nông Nghiệp 2016).

Farmer Cô Phạm grows high-quality rice seed for the Japanese company, Angimex-Kitoku. "I'm a good farmer and I can do well for myself because I've been growing the Japanese variety of rice for Angimex-Kitoku for more than 10 years. In that time period the price has been stable. I can sell my rice for $0.84/lb. (8900 VND/kg)." Cô Phạm makes almost $0.29 (3000 VND/kg)

more per pound than most farmers who do not grow Japanese varieties of rice. She points out the main reason for her financial success is the stability in the price, set by the company rather than by the market or middlemen. Seeing a stable rice price for 10 years is not common. Despite the financial stability and draw of contract farming, the market continues to demand the production of low-quality rice varieties, a common feature of Mekong River Delta rice farms.

In the 2017-2018 Winter-Spring growing season, only 1.48 percent of total rice-growing land in MPD was dedicated to Japanese companies, showing that company contracts are still in the minority of production models in this area. There are multiple differences with growing for a Japanese company and selling to middlemen including, the variety and quality of rice. More common varieties grown in MPD, including OM5451 and IR50404 shown in Table 2.1, are both national seed varieties that can be purchased from Vietnamese agricultural seed companies. These varieties of rice are considered low quality and characteristically are short-term, short-grain, and non-aromatic varieties that are sold for export. Even if farmers are to produce the higher-quality varieties of rice without a farming contract, there is still a higher demand for low-quality varieties (Cramb 2020). While company contracts can provide stable prices, low quality varieties are easy to grow, produce high-yields, usually have less pests and diseases, and is in high demand. Farmers see these market demands and also the ease of continuing to grow low-quality rice varieties more appealing than the more intensive process of growing high-quality rice varieties that require more care and attention to prevent frequent diseases and pests.

As Cô Phạm explained how she benefits financially by having a contract, she also embodies models of well-being that differed from other farmers. I met Cô Phạm as she was returning from a conference for all farmers growing with Angimex Kitoku. My research assistant and I arrived at her house before she did and sat on the house porch as she pulled up on a motorbike with a young man dressed in slacks and a button-down collared shirt. She apologized for being late as she hurried past us to unlock the doors. She put down a gift-wrapped box on the porch and on top rested a framed certificate from the agricultural company that recognized her late husband as a farmer for Angimex-Kitoku. She came back outside with glasses of salted lemonade and we asked her what was in the box, “Oh, it’s probably an electric rice cooker. The company always gives us gifts. I have like four electric rice cookers and they’ve even given us electric kettles in the past.” She brought the box inside with the framed certificate and put it on the ground off to the side. Her expecting attitude about the gifts portrayed an assuredness and a confidence I had yet seen in

farmers. It starkly contrasted Anh Tuấn's concern and uncertainty in production. Cô Phạm's material possessions, the collection of electric rice cookers and framed certificates on her walls also differed from the usual decorations I would see hanging in people's homes – family photos, children's graduation certificates, and wedding portraits. More importantly the certificates and cookers, material manifestations of lived realities and award structures that benefit some farmers over others, reflects uneven distribution of material possessions and variations in farmer well-being, specifically tied to confidence and livelihood security.

Despite a small portion of farmers choosing to work with Japanese seed company contracts, farmers still have varying experiences with the benefits of these contracts. Chị Hoa, another farmer, has a contract with a seed company similar to Cô Phạm, but unlike Cô Phạm, her household diversifies their income to afford expenses for food, farming, and daily life. Households in this commune rely on agricultural production as their main source of income. Most are farmers, where their income relies on their productivity, whereas other MPD residents rely on wage labor. Throughout the crop season, women wage laborers are seen weeding rice fields by hand and transplanting them while men operate machinery for harvesting, spreading pesticide and fertilizer. Most of these laborers are older than 16 years and their income is dependent on the labor required during each stage of the rice production cycle: throwing seed, transplanting, weeding, spreading pesticide and fertilizer about three times, and harvesting. Some wage laborers find multiple avenues of work, such as Chị Hoa and her husband who are both farm laborers and an event disc jockey. For them, this money supplements their income to pay off debts from previous harvesting seasons and for other livelihood needs, such as motorbikes for transportation. As we sat outside in the shade of Chị Hoa's porch, she fumbled with the zipper on her sweatshirt sometimes covering her face as she talked with us. Her visible unease starkly differed from the confidence exuded by Cô Phạm.

> "I have a contract with a seed company, and I sell directly to them. When I have a contract, then I can get a stable price. But my life is still impacted by pests like brown plant hopper and rice stem gall midge. It's very serious when your plants get infected because then you get no production. It happens to everyone. For some farmers who already spray to prevent it, they still get damage, but maybe it's smaller than compared to not spraying to prevent it. Those changes, they impact my life. If I get a low production, then I get low income, so I have to do something else to get money to pay for the loss. Then I carefully prepare for the next crops so I can ensure that I can get income from that."

For Chị Hoa and her family, the promise of security never materialized in the explicit ways that Cô Phạm enjoys. Here she blames her low production on pests and diseases, a situation that many farmers experience. However, the difference is in her ability to financially afford to recover from the production loss and costs of pesticides and fertilizers that are required when pests or diseases affect the rice crop. For farmers without debts, they can easily pay for bags of fertilizer or pesticide treatment for unanticipated blights, but this strains farmers without this already existing financial stability that farmers like Cô Phạm have. Instead of emphasizing the material possessions, which indicated for Cô Phạm, the life of a secure farmer, Chị Hoa describes insecurity. For her, "[farming] means you are hungry and miserable. People need food to live, they need rice. So, farmers feel frustrated when we get low production because then we get no income. And in really bad situations, you can't get enough rice to store for food to feed your family."

That Chị Hoa describes farming in this way and the additional burden of supplementing her income with wage labor is telling. I introduce Chị Hoa to describe what Povinelli (2011) describes as a state of endurance. Povinelli says that endurance is the continuance that has no reference to a beginning or an end (2011), thus neither being fully secure nor being fully insecure. While the farmers who were absent during my research, the ones the Chú Bấc and Anh Tuấn describe as having left the commune because of debts, farmers like Chị Hoa remain. She exposes the state of enough – both materially and affectively – as neither secure nor insecure. The income that she supplements from wage labor allows her to continue being a rice farmer with the hope for financial stability. Moreover, the extra labor and carefulness to ensure her family's security does not make reference to an end, but rather a continuation of the same cycle of wage labor and farming. The differences in livelihood experiences, the unequal distribution of wealth underlie the meanings of security for these farmers. As one farmer described, "If the government had to choose, they would rather have poor people who have food than people who don't have food. Because even if the people are poor, they might still have food. But if people are hungry, then they don't have any food at all." Anh Tuấn and Chị Hoa have similar experiences. They describe the disparity in agricultural promises of security – that despite participating in hi-tech solutions for increased incomes and production or in more stable income models through company contracts – they remain insecure. They supplement and protect their food resources and income through food saving techniques or wage labor but are left unsure about the future. These livelihood strategies reveal the precarity of only having enough.

2.5.4 Conclusion: Winning and losing in farming livelihood security

I have described two types of conditions of enough and security, in which some farmers benefit from these agricultural models of livelihood security, while others are stressed in both their well-being and material conditions. For Cô Phạm and Chú Bấc, they both subscribe to government narratives and practices of success and security and are able to benefit from financial assistance and material means. For Anh Tuấn and Chị Hoa, while they also subscribe to these same narratives and practices of success and security, they both express a type of anxiety and fear in living within what I have argued is a state of enough. For them, enough embodies a space in which they are practicing the "right" livelihood models, but their experiences show how these models might provide enough to survive, but often fall short of even that. For other farmers, agricultural models of security can provide more than enough and these act to justify the state's continued recognition and imaginary that their form of agricultural development results in farmers' security. These ethnographic examples show how livelihood precarity persists and is produced in agricultural models that propose to create secure livelihood opportunities for farmers.

Farmers who do not achieve the desired imaginary are doubly burdened. First, the burden of failing to attain wealth and livelihood security is placed on the individual farmer rather than larger political economic systems. Second, these failures, combined with livelihood insecurities creates ongoing feelings of fear, anxiety, and insecurity. Chú Bấc and Cô Phạm's household economies were exemplars of this phenomenon. Placing the burden on individual farmers fails to identify institutional barriers that determine levels of success through material conditions, but only for farmers who are already secure (M. A. Carney 2015). For the farmers in the in-between stages of security and insecurity, these promises of agricultural wealth and models of agricultural technological solutions put their livelihoods more at risk by amplifying insecurity. Chú Bấc's story about the farmer who left before his financial assistance could be distributed is just one example of the individualized burden and trade-offs made to endure the financial distresses of failed crops.

I have also shown that farmer insecurity is not tied solely to productivity statistics and environmental management. Instead, my interlocutors showed that farmer insecurity is the prolonged exposure to only having "enough." In the state's pursuit of maintaining late socialist markets, state policies and programs align with ideas of modernization, growth, and development and make farmers into late socialist citizens. These programs result in a state where farmers pursue livelihoods that are always inevitably precarious, in order to maintain government standard levels

for agricultural development and growth. In doing so, the state's role in maintaining farmer resources becomes exacerbated in the already existing class-based inequalities amongst farmers and the assistance provided by the state is distributed unequally.

Food security governance is imagined and managed by state actors, developed through late socialist ideologies, and maintained through agricultural projects promoting technological solutions. Late socialism that seemingly guides the development and modernity of urban and rural infrastructures (Zhang 2001) and renders buildings, landscapes, and people as moral. The logics of late socialism continues to disproportionately distribute wealth while justifying state-sponsored dispossession and destruction in the name of growth and modernity. In rural farming communities, farmers' ability to comply and live within late socialism falls upon the farmer to maintain financial stability and material possessions. The maintenance of security relies on farmers' individual responsibility and ability to uphold livelihood characteristics of security and stability, through material possessions, adoption of the "right" models of agricultural production, and financial means. In the state's rendering of security, it becomes a promise of wealth that is entangled within farmers' desires and hopes. The state's own late socialist ambitions and the masking through material conditions of security have only perpetuated farmers' state of "enough" that can bring security only for a few farmers. In the state's continued assertion of food security for the nation through demands on agricultural production, farmers will continue to exist in a state of "enough," or at risk of becoming not only food insecure, but of losing out on their livelihoods.

Thus, these state-sponsored programs to increase rice cropping seasons, financial aid, and agricultural company contracts, make obtaining livelihood security impossible. Rather, these programs have set the conditions through which farmers' security exists if only farmers already have financial stability and security. While these state-sponsored programs aimed to create more opportunity for farmers, this article describes the inevitable differential impacts on farming livelihoods. As such, the governance of farmers' livelihood security creates conditions whereby inequality and disproportionate wealth persist.

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CHAPTER 3. FAKE FOODS AND CERTIFICATIONS: FARMER PERCEPTIONS ON FOOD SAFETY AND RURAL LIVELIHOOD CHANGES

3.1 Abstract

Today's rural landscapes are rapidly changing as agro-industrial food production transforms smallholder farming practices. In Mỹ Phú Đông commune, located in southern Vietnam, rice farmers are experiencing dramatic changes to their rural livelihoods, which has resulted in polluted environments, food fears, and challenges in rice production. At the same time agricultural production is shifting, Vietnamese consumers are demanding more accountability from the food industry, asking for reliable and safe food, as media scares about harmful fake food products describe the corruption and unsafe practices behind private entrepreneurs. Dominant discourses about both fake foods and safe foods result in an increasing pressure on local farmers to produce food with less chemical reliance without the agricultural infrastructure to do so in place. Drawing on 16 months of ethnographic fieldwork in Vietnam, I present three case studies of rice farmers who are exemplary of these shifts and whose experiences reveal the fears and institutional livelihood challenges of being a rice farmer in today's rice landscape. As these farmers show, dominant discourses force responsibility onto farmers to change how food is grown within an environment and market landscape that is not institutionally capable.

Keywords: food safety, fake food, food certifications, agricultural development

3.2 Introduction

As I sat in the Institute of Agricultural Cooperatives (IAC)[15] in Saigon with Dr. Danh, the Director, he pulled out an electronic device that he said could read the toxicity levels in fruits and vegetables. The device had a metal needle at the end that when inserted into a piece of fruit, in this case the guava on the office table, reads the nitrate level in that produce. Based on a specific formula developed by the device's manufacturer, a "red light" or "green light" appears indicating

[15] This is a pseudonym for an agricultural cooperative center in Vietnam. The name has been changed to retain confidentiality. Similarly, all names have been changed to a pseudonym.

the amount of nitrates allowable based on an average human body weight. During this particular conversation in May 2018, Dr. Danh was testing guavas bought at a local market in Saigon's District 1, near the Ministry of Agriculture and Rural Development's (MARD) campus. Throughout that summer, I accompanied Dr. Danh and watched him conduct the same tests on different fruits and vegetables in rural communes across the Mekong Delta. The guava instructional testing gave us a "red" reading, identifying high levels of toxins, most likely from nitrates found in agricultural fertilizers. Dr. Danh joked that we should have eaten it first because now none of us would want to eat it given the reading results. The implications of Dr. Danh's joke captures dominant and emerging discourses about health and safety in Vietnam's food system and how they are tied to reliance on technoscientific information.

Dr. Danh continued the meeting – and discussion about safe foods – by talking about the Vietnam Good Agricultural Practices (VietG.A.P.) program and certification process. In this program, the Vietnamese government sets standards for agricultural practices, such as the amount of agro-chemical inputs (pesticides and fertilizers) that are safe to use in producing foods. These standards are based on the Global Good Agricultural Practices (G.A.P.) programs, which certify adherence to standardizations of "good agricultural practice"; however, in Vietnam, they operate at a lower standard (Nicetic et al. 2010). GlobalG.A.P. is a result of the rise of private standards in the governance of global agricultural chains (Henson and Jaffee 2004). GlobalG.A.P., started in the United Kingdom in 1997 under the name EurepG.A.P., sought to expand existing national safety standards to other countries as import of fruits and vegetables were increasing (Henson, Masakure, and Cranfield 2011). A similar fear of food safety concerns related to pesticide residue in the 1990's in Vietnam, resulted in government attempts to ban certain agrochemicals as well as create a government "safe food" label. This ? eventually rolled into VietG.A.P. in 2001 (Moustier et al. 2010). As these certification programs aim to persuade consumers that agricultural products are safe and have regulated levels of toxicity, they remain market driven by consumer demand, rather than by farmers and producers (Scott, Vandergeest, and Young 2009). Friedberg, in the context of French safety certifications in Burkina Faso also draws a disconnect between consumer demand and the producers behind them, "what consumers largely did not see was the work that went into providing them with food as certifiably pure as it was pretty" (2004, 5). A growing demand for state sponsored and privatized safe food certifications has provided an opportunity for

the rise of an organic production market in Vietnam (Faltmann 2019), and as a consequence, talk of safety amongst rice farmers in Vietnam's Mekong River Delta takes on a different meaning.

Working with rice farmers in An Giang Province, one of Vietnam's most productive rice growing regions (Anh and Tinh 2020), farmer conversations about safety were neither focused on nitrate levels nor labeling practices. Instead, farmer concerns were interlinked with the livelihood trade-offs that they were accustomed to making in order to continue growing rice and sustaining household incomes for their families. For these farmers, safety was not tied to the late socialist agricultural markets and discourses described above, which are in alignment with global and privatized discourses of "good agricultural practices" – but was tied to both late socialist agricultural landscapes of the past and state-imagined futures. Safety became tied to agro-industrial development and pro-poor policies largely shaped by late socialism. As Vietnam, arguably, has existed in a late socialist moment (Schwenkel 2012; Harms 2016), the anticipation of economies moving towards a global development and modernization (Zhang 2001), has created overlooked and unanticipated consequences for local farmers.

Global food movements have had several unanticipated consequences, such as stressing local labor forces (Guthman 2014; Holmes 2013; Besky 2013), prompting unforeseen shifts in social relationships and local meanings (Davidson 2012; 2016; Aistara 2011; Oxfeld 2017), and creating changes in everyday livelihood choices (Li 2010; 2014; 2015). As I suggest in this paper, as part of the global food system these practices and impacts are also interwoven within Vietnam's late socialist agricultural industry. More specifically, the international rise of agribusiness and organic industries (McMichael 2009) and national policies that neoliberalize agricultural production (Friedmann 2009) impact farmers and farmer livelihoods across Vietnam. The impact on Vietnamese farmer livelihoods is most pronounced in the disparate meanings of safety that seem to account for consumers' livelihoods over farmers' livelihoods. in the dilution of the meaning of safety. Similar to the skepticism of Vietnamese consumers about national and privatized safety certifications, farmers identify the existence of multiple modes of safety – food, environmental, and household – that disrupt any one meaning of food safety. As farmers highlight multiple conceptualizations of safety, these questions about agrarian changes and visions of the future become critical to understand. These temporal scales tease out farmers' lived realities of safety as they exist within histories of what the state imagined for an agriculturally productive nation as well as future imaginations of a modernized and standardized agricultural practice.

In this piece, I focus on rice farmers' realities of safety, as they navigate identified gaps in state governance of food safety in Vietnam. Following farmer livelihoods and their interplay with safety concerns, I chart livelihood decision-making in agricultural practices, and perceptions about safe food and toxicity to show how farmers make sense of safety in the context of political economic pushes toward standardized legibility of agricultural practices. I argue that global discourses about agro-food governance, and the influence of these discourses in a Vietnamese context, continues to promote an economic movement towards rural development and betterment of rural livelihood standards while falling short of such programs.

First, I introduce anthropological and food studies scholarship about global food systems discourses and governance to highlight the powerful impact of different agro-food system schemes, including food safety certifications, have on patterning farmer livelihoods. Then, I provide a history of Vietnam's integration into diverse agricultural models and show the ways in which global food discourses on national policy impact Vietnamese farmer livelihoods. I utilize case studies from southern Vietnam to highlight how late socialist agricultural production disproportionately places the burden of safe food production onto farmers. As such, farmers' livelihoods remain precarious as they navigate changing rural and urban landscapes, increasingly toxic environments, and constraints in Vietnam's agro-industrial fields. I conclude by showing how these logics in governing for national food safety result in farmers making trade-offs in their own ability to create more safe livelihoods within Vietnam's late-socialist agricultural landscape.

3.3 Methods

Drawing on 16 months of ethnographic fieldwork conducted in Southern Vietnam, I combine research with government officials, local and national, along with policy implementation impacts on rice farmers in Mỹ Phú Đông commune, to understand agricultural livelihoods and agricultural production. Three months were spent in Saigon during an internship with Institute of Agricultural Cooperatives (IAC), an organization focused on education and operational assistance

of agricultural cooperatives[16] across Vietnam. IAC[17] is situated within the Ministry of Agriculture and Rural Development but travels extensively to different districts across the Mekong Delta. During this internship, I traveled with employees from IAC as they presented about cooperatives to local district government officials and toured agricultural fields, wet marketplaces, and religious sites, including local Buddhist temples. Thirteen months were spent in Mỹ Phú Đông commune[18], where I worked with a local government official and a research assistant conducting 100 interviews with rice farmers, local government officials, farm laborers, and national government officials. These semi-structured interviews focused on understanding rice production practices, environmental challenges, and livelihood adaptations. I also conducted 35 household surveys with rice farmers, some of whom were also interviewed, to collect baseline data about household income, land ownership, and history of land development in Mỹ Phú Đông commune. Using grounded theory (Charmaz 2014), major themes from these interviews were identified and used to conduct open coding across all datasets (Emerson, Fretz, and Shaw 2011).

3.4 Mỹ Phú Đông commune

Mỹ Phú Đông (MPD) commune is located in An Giang Province, which has historically been one of the region's most productive rice growing regions (Anh and Tinh 2020). During research, MPD was growing rice across 7000 acres (2839 ha). In interviews with rice farmers in MPD, their average household land ownership ranged between 2.5-5 acres (1-2 ha) of land. Outside of this, most farmers lease land from absent landowners who are usually located in urban areas of southern Vietnam, in order to increase their production quantity. According to Table 3.1, while 54 percent of farmers own the land that they farm on, 39 percent of farmers manage a combination of land

[16] Agricultural cooperatives here describes a model of agricultural production that promotes efficient use of resources and production in Vietnam (Cox 2014). As described in Cox (2014), agricultural cooperatives of today derives from a long history and development of the cooperatives model that fell under Vietnamese collectivization and decollectivization. These periods resulted in a shift in ownership and management of agricultural production. A 2012 Cooperative Law in Vietnam, defined cooperatives as an economic system with at least seven members who cooperate and manage in the production and sales of products to the benefit of all members (No.: 23/2012/QH13). This model reflects the guidelines created by the International Cooperative Alliance (ICA).

[17] The Institute of Agricultural Cooperatives, is an organization based in Saigon
. This center focuses on marketing and assisting in the set-up of cooperative models throughout Southern Vietnam. The mission of the center, as communicated by Dr. Danh, is three-fold: provide training to government officials and farmers, provide consulting where they are guiding farmers to connect with businesses, and do policy advocacy to the Ministry of Agriculture and Rural Development. For farmers, this means creating cooperatives of about seven farmers in order to collectively buy and own rice seeds, machines, and agricultural inputs like fertilizers and pesticides.

[18] This research was sponsored by the Research Center for Rural Development located at An Giang University.

ownership and leasing. This combination of land tenure allows farmers to increase the amount of land that they can receive an income from, and theoretically increase their household incomes. In total, 85 farmers (including land owning and land leasing combinations) and 12 farm laborers (wage labor) were interviewed. Of these 85 farmers, 17 of them also earn income through farm wage labor. Overall in this commune, most households are tied to agricultural production – either rice, vegetable, or livestock.

Most of the farmers I spoke with were between the ages of 20 to 69 years old. While I mostly spoke with men, oftentimes their wives would listen to the conversation because they were curious about who I was. Of the 35 household surveys collected in 2017, the average household income was reported at $7,170 (165.5 million VND) annually. These households are often multi-generational, however, as will be explained later in this piece, many people in their 20's and 30's leave the local commune to work in factory jobs. They will often leave their adolescent age children at home to be taken care of by the grandparents. Neighboring communes and districts do not offer much job opportunity aside from farm wage labor and construction labor, but some people find jobs in the garment industry outside of Saigon.

Table 3.1 Land tenure type, as reported by rice farmers in Mỹ Phú Đông commune in 2018 (Source: Author)

Land Tenure Type	**# of Farmers (n = 84)**
Own land only	45
Own and rent land	33
Rent land only	3
Own and borrow land	2
Borrow land only	1

3.5 Governing agro-food systems

3.5.1 Global discourses of agro-food systems

Anthropological scholarship about transnationalism and globalization argue that global discourses are shaped and proliferate in different local contexts (Appadurai 1996; Aihwa Ong 1999; Gupta 1992; Tsing 2005). Discourses surrounding food, for example, are shaped by interrelated global processes of governance structures (Goodman and DuPuis 2002; McMichael 2016; Mintz 1985), trade agreements (Aistara 2011; 2008), political ideologies (Alkon and Mares 2012;

Caldwell, Dunn, and Nestle 2009), and diverse cultures of practice and forms of citizenship (Davidson 2012; 2016; Reese 2019; Zanotti 2016;). These in turn create repurposed marketplaces and shifting livelihoods for people engaged in these food systems (Aistara 2018). Farmers are differentially impacted by global media and policy discourses (Faltmann 2019; Grant 2014), that proliferate within their livelihoods and their own perceptions of safe foods and place. International discourses shaped by economic markets and political ideologies systemically reinforce particular notions of citizenship, modernity, and development (Ong 1999). The ability of international food discourses to jump from global to local scales can impact local farmer livelihoods in ways that are unproductive. By offering livelihood options aligned with moral values, these food discourses and their programmatic counterparts become framed as what is *good*, thus setting up any alternative livelihood pathway as *not good.*

Specific discourses within global agricultural systems continue to dominate food systems governance. In the late 1980s, Friedmann (1993) describes a shift toward "private global regulation" in which large companies began to regulate the agro-food conditions that would change the standards and processes of food production. This shift would account for the responsibility of private companies to plan for investment, agricultural materials sourcing and marketing on global scales, rather than national or local governments. This dominance of new food systems regulations occurred across transnational agricultural companies leading to a period of standardization of diets, new forms of divisions of labor, regional specialization, and a homogenization of production conditions globally (Raynolds 2004). These widespread changes in worldwide agricultural production systems had the following consequences: migratory agro-food labor force (Holmes 2013), increase in certification schemes (Clapp and Fuchs 2009), farmworker rights movements (Holt-Giménez and Altieri 2013), and the creation of international food governance boards, such as the Food and Agriculture Organization (FAO).

Scholars have also shown how these widespread changes impact agricultural systems and programs whose aims are in conflict with large agri-business. For example, Guthman (2014) found in her research of the North American organic agriculture industry that despite challenging industrial agriculture's exploitive health concerns and labor injustices, the organic industry similarly relies on industrialization and marginalized forms of labor. Thus, Guthman exposes the disparities that persist even in discourses and food movements that appear as "alternative to," but rather are a remaking of the same. In this instance, Guthman shows how socio-spatial values

related to family farms and a rural use of resources can be mistakenly portrayed as anti-corporate and antithetical to industrial agriculture in the United States, but in fact through their entry into organic production are not. Thus, while ideas of organic agriculture's benefits have been purported globally, the local or national implementation of these programs can continue to exploit the very same problems they could theoretically address. The discursive power of organics, as a market-based value, obscures the inequalities that this agro-food program aimed to address in the first place.

Similarly, Besky (2013) identifies a parallel paradox within international Fair Trade certification in India. Certifications in India are used as market-based strategies to increase sales of Darjeeling tea. Besky found that third-party programs that advertise existing outside normative market logics through their social justice and labor rights discourses, still perpetuate labor inequality practices that minimize Darjeeling tea plantation workers' ideas of just practices. The marketing of the tea creates a "third world agrarian imaginary" in which workers are caring environmental stewards instead of workers, plantation owners, and planter, thus making the landscape and labor ones that are palatable to environmentally-oriented Euro-American consumers. Besky is critical of how this imaginary romanticizes human-environment relationships as a means for marketability. In the end, this imaginary obscures the labor inequalities that persist despite companies obtaining Fair Trade certification. What becomes important here is the way that market-based strategies that seek to address labor inequality and food safety standardizations globally are implicated in the perpetuation of these same inequalities. Similarly, in Vietnam, as I explored the disruptions in how dominant agro-food discourses play out in local contexts, I describe farmers' perceptions of safe food discourses, and its larger context within Vietnam's changing agro-food system.

3.5.2 Navigating imaginaries from global discourses to national practices

As discussed, anthropological interventions in globalization and transnationalism around agriculture have highlighted the means by which international discourses are created and sustained, as well as how alternative agriculture systems are coopted in ways that associate new or different values within the implementation of these systems. For example, Tsing (2005) shows in her ethnography *Friction* how people's ideas and desires can engage with others and create unpredictable outcomes like conflicts, collaborations, or destruction. Her work as well as the work

of many other scholars show how global encounters of discourses are not predictable and are not easily adapted within and across different scales of encounters – global to local, regional to national (Davidson 2016; Johnson 2018; Zanotti 2016). West (2012b) describes how global social imaginaries connected to images of people and place move through physical and discursive spaces. Importantly, West reveals that dominant images and imaginaries produce place in ways that often is reductive rather than representative, such as is shown by her in depth exploration of coffee imaginaries surrounding farmers in Papua New Guinea. Imaginaries about a place and its people allow us to ask what the impacts of these discourses are and what imaginaries are created, and how these can impact the very subjects of these imaginaries.

I integrate an anthropological focus on globalization and transnationalism of food systems with a political ecology and food studies perspective to explore how farmers reconcile rural livelihood changes with imaginaries built upon food safety certifications and sustainable agriculture. Ideas about food and spatiality have long been connected to discuss infrastructural constraints in urban areas (White 2010; 2011; Winter 2004), race and space in food access (Slocum and Cadieux 2015; Passidomo 2014), and migratory food labor (Mares 2012; Holmes 2013). This section describes the production of these values within alternative agricultural regimes. I show how food preferences and socio-spatial values are related through senses and values of delight and disgust, a contrasting relationship long interrogated within food studies (Douglas 1966). Guthman (2014), Besky (2013), West (2012b) show how organic and fair trade certifications become stand-ins for ideas of pristine rural agriculture and discursively imagines farmers as environmental stewards. Similarly, I critically examine how safe food certifications mask farmers' realities of toxicity and fear of fake foods in Vietnam.

Dominant discourses around food production also infiltrate agricultural practices in addition to agricultural places. These discourses pattern livelihood values and hierarchies of difference in specific ways that reveal farmers' agency and resistance[19]. Food systems cater market values to specific socio-spatial values, associating 'safety' and 'toxic free' with ideas of wealth and urbanity within consumer contexts (Allen 2010; Hinrichs and Allen 2008; Slocum and Cadieux 2015). However, these connections often mask the lived realities and active resistance of

[19] I invoke McElwee's (2016, 21) definition of resistance to describe "the ways in which technologies of rule fail to persuade the governed to conduct their conduct differently," which builds off of the work of Guha (1989) and Peluso (1992). Thus, my emphasis here on agency and resistance is to show how farmers counter these dominant discourses of livelihood options and how alternative livelihood patterns emerge (Bebbington 2000).

the people and landscapes that exist outside of these associations and those at the sites of production. In the United States, Reese (2019) uses the term "geographies of self-reliance" to center Black agency as it is spatialized within state structural constraints of food inequities, which in this case are the disinvestments of food corporations in Black communities. In doing so, she emphasizes the active role of Black community members in choosing livelihoods with characteristics that extend beyond the dominant narratives that Black neighborhoods in the United States as dispossessed, suffering, and lacking agency in their food systems.

Directly countering the dominant assumptions of class and geographies, Reese pushes the argument that local resource users can both be shaped by political economic realities as well as motivated to and perceive their livelihoods in a diversity of expressions and forms. Thus, they are not strictly confined by national or international policies. Johnson's (2017) research with fish producers in Uganda's Lake Victoria is a case in point of how food producers maintain a diversity of livelihoods. These fishers engage in nourishing livelihood practices of eating and existing and providing for other eaters of fish, while simultaneously violating international fishery norms. Thus, central to her thesis, is the emphasis on how global discourses set norms of practices that perpetuate violences against fish producers. Emphasizing a common theme explored throughout this paper, the seemingly untenable power of dominant discourses around how food is produced in line with global food safety standards, dilutes livelihood expressions of these same discourses. Zanotti (2016) similarly shows how Mebêngôkre-Kayapó peoples navigate global discourses of organic food production practices while maintaining a diversity of local food practices that not only sustain their livelihoods, but also personhood, community, well-being and a good life. In these ways, Reese (2019), Johnson (2017), and Zanotti (2016) show the complexity in how local communities reconcile national and global discourses of sustainability and just food in line with their own livelihoods. In addition, these scholars emphasize how local peoples push forward their own agendas and livelihood strategies in conversation with and external to these dominant discourses that seek to manage or erase their livelihood practices.

Vietnamese rice farmers navigate their realms of 'good agricultural practices' and food safety regulation envisaged through late socialist agricultural governance and balanced with farmers' long-term visions of a food secure future, both of which are not always aligned. Thus, the discursive power, as enacted through food safety certification programs and managed agricultural practices, can obscure the persistent inequality of industrial agro-food systems, in addition to what

these works illustrate, obscure the diversity of livelihood opportunities outside of these national and international discourses about safe food. In the next section, I draw upon my own research to show how this unfolds in Vietnamese farmer livelihoods. Similar to Reese, I focus on the heterogenous identities of local resource users who carry out their livelihoods through a diversity of practices. These practices, while limited by national programs and international policies, do not necessarily conform to dominant discourses. Instead, I argue that farmers are making decisions based on a variety of factors associated with the growth of safe food discourses, national programs, and opportunities available in their region.

3.5.3 Vietnam as a case study: exploring market shifts and food scares

Market shifts in the late 1980s led to a rapid rise in the uptake of global food systems discourses about market-based strategies, industrial agro-food systems, and food safety. The opening of Vietnam's economy in the 1986 Economic Renovation period, Đổi Mới, opened Vietnam's socialist market ideologies to global markets. After this, the World Monetary Fund integration in 2003 positioned Vietnam to accept and utilize foreign investments and funds for national projects of urban and rural infrastructural development (McElwee 2007). Vietnam's food system remained a symbol of these changes, moving from national hunger in the late 1970's toward global economic ascension (Hoang 2015). Thus, contextualizing Vietnam's entry into global markets and late socialist governance provides the setting through which farmer's perceptions about shifts in their agricultural livelihoods and food safety governance are entrenched and still enacted.

Socialist and post-socialist states, like Vietnam, use food as a lens through which to articulate particular socialist values while also signaling towards ideas of success, progress, equality, and modernity (Caldwell, Dunn, and Nestle 2009). Zhang (2006) describes late socialism through the concept of "lateness," or feelings of anxiety for being late or behind in terms of global development. Using Zhang's (2006) concept of lateness for late socialist agricultural systems, the attention and uptake of global or international certifications and standardizations act to legitimize food production and practices aligned with dominant discourses. These ideologies are then mobilized into a national label that symbolically links national agricultural practices, products, farmers, and consumers in line with these global imaginaries of safe and just food systems. Grant's (2014) examination of the role of certification schemes in Vietnam's coffee industry aptly shows

how certifications act as visible signs of quality and traceability. At the same time, certification schemes hint at a larger desire to certify Vietnam as a global producer of coffee, a designation that globally, has been rendered invisible. Thus, Grant proposes that certifications have dual roles for Vietnam. On the one hand, they are used as opportunities for Vietnamese farmers to gain legitimacy within global certification schemes and agricultural markets, providing them access to foreign investors. On the other hand, these certifications reflect particular market-based values, images of the farmers themselves, or the places where these crops were grown. While certification schemes provide a more visible and tangible form of legitimacy for the nation's food products, the effects vary in ways that tell impartial stories about farmer's livelihoods and the agricultural landscapes.

Post-socialist food is also tied to ideas of what it means to be a good person or citizen in a nation as it becomes enmeshed in how food and health are imagined, provisioned, and managed by governments (Leung and Caldwell 2019). In Vietnam ideas about food and health changed in relation to capitalism and neoliberal liberties from the Economic Renovation period. These new liberties provide consumers and entrepreneurs access to new ideas about choice, self-interest, and privatization in regards to what foods should be eaten, where foods should come from, and who is responsible for individual health (Nguyen-Vo 2008; Vann 2005). However, choice, self-interest, and abundance are unequally accessible (Figuié and Bricas 2010; Figuié and Moustier 2009) as these are now structurally limited by one's economic ability and mobility. These changes reflect not just national trends in late socialist agriculture, but the globalized trends toward mass consumption of standardized products (Friedmann and McMichael 1989). For example, Peckham (2015) shows how colonial authorities in Hong Kong utilized civic hygiene and food safety of local residents to describe colonial attitudes toward Chinese subjects. Thus, Peckham offers a larger context to think through food discourses within transnational geopolitics. Late socialist governance changes what is means to be a responsible neoliberal citizen, promoted by the state, and how individuals cultivate that sense of citizenship (Faltmann 2019). Moreover, increasing notions of privatization within late socialist or market socialist economies, creates instability through which the market is seemingly open yet an invisible strong state continues to govern this self-interest from afar (Zhang and Ong 2011). The implications of invisible state governance are made visible in the appearance of respective discourses about safe food and good food, and how

these discourses emphasize market-based values and socio-spatial values prioritizing safety protocols over farming livelihoods[20].

The influence of discourses like food safety and toxic free maintain dominance in what Faltmann (2019) calls the incomplete neoliberal project. This ? occurs because consumers are then required and allowed to create their own meaning of the responsible neoliberal citizen, however, that is still governed by state late socialist motivations and goals (Faltmann 2019; Gainsborough 2010; Schwenkel and Leshkowich 2012). Thus, private and public, become markers of the incomplete neoliberal project, whereby farmers are largely left out. Agricultural programs and practices are governed by dominant state desires and state discourses and consumer demand for safe food, yet farmers retain the individual responsibility of financial risk and environmental sustainability to provide these desirable foods. In this section, I present three case studies that analyze farmers' perceptions and decision-making around new norms of food safety governance. In particular, I focus on the impact of these dominant discourses in obscuring farmers' own everyday realities of safe food and toxicity. By situating these farmers' perceptions within a larger context of global trends in agri-food systems, I hope to emphasize the importance of a critical read on certifications schemes and discourses of safe food and the ways in which they limit or hide livelihood opportunities or decisions of farmers.

3.6 Finding food safety

3.6.1 Fake foods and changes in relationality across rural and urban places

Sitting with a group of farmers, Mr. Trịnh, Mr. Phạmm, and Mr. Lê, at a coffee shop one hot afternoon in late April, my research assistant and I enjoyed our iced coffees. I was saying goodbye to these farmers that I knew before leaving to spend the next three months in Saigon with Dr. Danh at IAC. Mr. Trịnh, a farmer in his 40's, made an impressionable comment about the younger generations in that moment: "The next generation in my family, they can choose what they want to do. Young laborers in this commune prefer to work at the factories in Saigon or Bình Dương[21]. I don't want that generation to farm because it's hard work, working in the sun and hot

[20] These ideas are shaped by Foucault's (1979) notions of power and discipline in governance.
[21] These are two large cities in southern Vietnam. Saigon, or Hồ Chí Minh City, is the main urban hub of the south. Bình Dương is located outside of the Saigon and is more well known for its factory industry. Thus, many farmers in MPD mentioned knowing either a family member or a neighbor who currently or in the past has worked at a factory in Bình Dương.

weather. Most young people go to the big city." The other two farmers nodded in agreement. Mr. Phạm noted,

> "I think about 80 percent of the youth go to the city and now when you go to the houses here, it's mostly just elderly people. Farmers who own two or more hectares will stay here, but farmers with less than two, like around 1.2 to 1.7 acres (0.5-0.7 hectares) might give their land to other farmers to rent and then those people will move to the big city to work. It's hard to get laborers now for farming, because there aren't a lot of young people. But we also have machines now too."

His voice slowly tapered out. And then Mr. Trịnh looked at me, "So you're going to Saigon soon?" I gave a quick nod, and he responded, "Big cities like Saigon have a lot of fake rice and real rice. My son buys a bag of rice from Saigon and put it in a tree for a year and the rice still wasn't damaged!" They all laughed. "Saigon has products from all over Vietnam, so you just don't know the quality. Make sure you look at the rice when you're cooking it. When you take plastic rice and real rice, the plastic will float." The other men began to exchange other stories that they have heard on TV about fake food products, such as a company that they heard was putting battery parts into their coffee products. Mr. Lê, whose daughter lives in Saigon, says that he will send his daughter rice so that he knows that she is always eating safe food products.

As Mr. Trịnh and this broader conversation reflects, ideas about safety are entrenched within changing rural social relations, rural outmigration, and perceived fears of what these changes mean to farmers and future generations. As older generations of farmers are encouraging their children to seek education and jobs elsewhere outside the rural commune, they are also confronting the realities of livelihood differences across rural and urban places. They are not alone in their experiences. Migration from rural to urban areas between 2010 to 2015 was 36.2 percent, replicating global trends of rapid urbanization (GSO 2016). In Vietnam, the urban population has grown 3.4 percent per year and the rural populations has seen a 0.4 percent increase in 2008 (GSO 2009)[22]. These national trends toward urban development create varying levels of worry within farming communities like MPD commune. Safety here becomes a way to think about the fears of these changes and the resulting demographic and financial changes in the rural landscapes.

By stating his fear that urban foods are "fake," Mr. Trịnh describes his fear of the unknown – both distrust and unfamiliarity about urban health and safety and also his fears about fake food

[22]As reported by UNESCO Bangkok (2018)

products and food safety. In fact, these farmers' discussion about urban foods captures a general sentiment from farmers living in rural MPD, but also that of the other employees at IAC in Saigon. Their fears that I would eat fake food, or at least Dr. Danh's insistence on the right-to-know, are similar in urban and rural livelihoods. By showing this ? , these farmers also illuminate that safe food is not only specific to an urban consumer, but also exists in the fears of farmers, particularly as rural and urban livelihoods become more fluid. Pointing to a need to consider food safety and food certifications as it spans the urban and rural consumer.

Visiting farmers' rice fields, they might often point to a small area amidst their field. This area is where they grow a different variety of rice that is solely for family consumption. It requires careful management as farmers will use less fertilizer and pesticide on this section to prevent consuming agrochemical toxins. As one farmer describes, "I prefer to eat vegetables that I grow by myself because I'm afraid of buying from the market because they apply toxic chemicals that cause disease." The assurance of growing one's own food and the inherent safety points to how farmers are aware of what makes their food safe to eat – their independence and knowledge of managing the production of their food and the lack of agro-chemical reliance. However, their ability to manage the safety of younger generations moving out of the household captures the disconnect in whether state imaginaries of safety could be enough to assuage farmers' fears.

3.6.2 Ironic toxicity

In a later part of the conversation on that same hot afternoon, Mr. Trịnh, Mr. Phạm, and Mr. Lê described their fears about toxicity in their everyday realities. Mr. Phạm said,

> "it's kind of ironic now that farmers have killed their environments and can't even afford to eat the food that they used to have to eat because they were poor. But now we don't have free access to it, and it's expensive so we can't buy it. But now, we can afford to eat things like chicken or pork, which is cheaper than the natural fish."

Laughing, Mr. Trịnh said, "it's like we're eating like a rich person!" These food transitions are readily apparent to the farmers, who experienced floods in 1978 in MPD. This would have been the last hunger time in the region, where some farmers relied on "famine foods" or natural fish that are commonly found in the river. Imported foods and meats, such as those found at the local wet market, show an ability to adapt to new foodways while also illustrating the precarity of the cash

economy. Food access is paradoxically tied to food safety and the continued degradation of the environment and a reliance on imported or purchased foods.

Farmers are aware they are both living with direct exposure to pollutants – pesticides and fertilizers, and that these pollutants continue to have lasting effects on their environments and livelihoods. Studies showed the lack of monitoring and regulation of pesticide use on farms in the Mekong River Delta have impacted environmental conditions and nation-wide food poisonings (Nguyen, Dumaresq, and Pittock 2018). Although scholars urge a greater emphasis needs to be placed on food safety, or less chemical use, these changes are hard to implement given little government oversight and inclusion of diverse market actors in the management of safety protocols (Hoi, Mol, and Oosterveer 2013). MPD farmers' perceptions often align with these studies on pesticide use, as described by Mr. Phạm above. However, despite farmers' desire for managed agro-chemical use, market demands for high yield rice varieties remain central to farmers' livelihoods.

One afternoon in November, we were fishing in Mr. Nguyễn's backyard, in a canal that he built in between his orange trees to irrigate his crops. Mr. Nguyễn is another farmer in MPD commune, who has recently switched his former rice fields to an orange orchard. We stood on the canal bank as he took a large net with small metal weights on the bottom and threw it into the canal. The net sunk and he started pulling on a string at the center of the net, pulling it toward the canal bank where we stood, buckets in hand. Fish began flying out of the net, some landing on the bank only to be caught by the dogs. We scooped fish after fish into our buckets until the net was completely empty and all the smaller fish had been tossed back into the canal. Mr. Nguyễn inspected our buckets and picked one up. "This is a natural fish from the river that has somehow gotten into the canal. I don't know how." His wife came over and told us,

> "Tai tượng, we can get a really good profit from, but right now we're just raising the fish. There is no market here for fish. Once we brought it to the market here in MPD to sell, and the vendors would only take it for $0.95/lb. (10,000 VND per kg). But then we brought it to my hometown, Chợ Mới, and asked there. They said they could sell it for $9.43/lb. (100,000 VND per kg)! So, we don't want to sell it here."

Tai tượng is a fish normally found in the river that the three farmers earlier referred to, ones that the Nguyễn's have mysteriously been finding in their own canal. Farmers can sell these fish for a high price in other marketplaces, such as Chợ Mới, which is a larger and more populous district than Thoại Sơn, where they currently live. However, the fluctuating appearance of these fish and

the marketability of a fish that was once a famine food reflects a shift in rural foodways brought and managed indirectly by dominant discourses and management practices. A situation Mr. Nguyễn calls "ironic."

Vietnam's increased agricultural production has impacted the erosion of living standards, exodus from agricultural in precarious wage labor, and a concentration of agricultural land ownership into the hands of a few large-scale farmers (Gorman 2019). The passage of Resolution 63 in 2009 was a recent reflection of the nation's goal to increase food security by increasing the nation's rice production 2.5 percent by 2020 (Tran and Nguyen 2016). Despite government interest in developing a market for high-quality rice varieties, there is still a higher demand for low-quality varieties (Cramb 2020). These low-quality varieties are also easy to grow, produce high-yields, usually have less pests and diseases, and is in high demand. However, farmers still must use chemical inputs, such as pesticides and fertilizers, in order to maintain their average production rates. As such, rice farm fields have become increasingly polluted and have adversely impacted agricultural livelihoods. Farmers face decisions between consuming fish that are readily available and free or selling them at marketplaces to supplement precarious farming incomes. Farmers no longer can eat foods, such as the fish that were once readily available and free. Farmers seemingly have access to these non-toxic fish; it is "ironic" because the choice to consume them relies heavily on financial well-being; a powerful reminder of the varied impacts of toxicity and changing norms of agricultural production and food safety standards that reach beyond solely thinking about consumption patterns.

Safe food production in Vietnam is about limiting the amount of toxins within the food consumers eat but does not adequately take into account farmer livelihoods. As farmers in MPD described to me, some can afford to grow rice for consumption in areas where they spray less pesticides and chemical fertilizers, and others can't. One farmer explained to me: "In this area I'm growing VD 20[23] rice variety. This is a higher quality rice that can sell for around $0.75/lb. (8000 VND/kg)[24]. I grow 0.32 acres (0.13 hectares) for my family's consumption only. I also will spray less pesticides on that field because it is a higher quality rice and it is safer." However, for other farmers, the ability to sell all the rice that they grow is less time intensive, more cost-effective, and

[23] VD20 refers to a medium grain fragrant variety of rice that is sold by Kiaying Industrial Co., Ltd, a Vietnamese agricultural company.
[24] Most farmers in MPD commune grow IR50404 rice variety which sold for about $0.37/lb. (4000VND/kg) in 2018.

easier given the access to local markets to buy rice. Farmers are left with tough decisions about exposure to chemicals and decision-making around growing separate types of rice and parts of their field for consumption or sale. Thus, farmers remain precarious within these debates about food safety as their livelihood decisions weigh the trade-offs of choosing safe food, safe environments, and financial safety.

My work shows that farmers are still grappling with toxic environments, their own financial and physical susceptibilities, and the ways in which they are participants in making farmer landscapes polluted. As the farmers above joke, they knowingly contribute to this pollution. This ? has changed their access to free and readily available sources of food, such as fish from the river, because the environmental impact of chemical inputs has made these fish rare and marketable. One farmer said, "To be food secure, the government has to ban toxic chemicals so farmers can get safer food. Rice is very important, and we eat enough to work, but if rice is toxic then it affects your health." And in a later conversation with Ms. Lanh, the local government official, asserted, "But if farmers don't apply chemicals then you won't get production." However, this farmer felt differently about this strategy, saying, "But that doesn't matter because we only want access to safe food." These complicated notions about food safety and farmers' own responsibility in contributing to the toxicity of foods is complex. As this farmer indicates, he is complicit in the pollution of his environment, however, feels that this is the only option for him as a farmer. Notably, this increasing pesticide use has led to increasing public awareness and food scandals about food safety issues in the past 20 years (Figuié et al. 2019). Farmers are on the frontlines of these decisions.

While pesticide and chemical fertilizers led to gains in yields, it led to a structural dependency of food production on these chemicals and unwanted side effects for human health (Carvalho 2006; Scott, Vandergeest, and Young 2009). Farmers in MPD noted skin rashes, respiratory health issues, and fatigue from pollution in the river system. They are no longer able to bathe in the river, because of the amount of chemicals released from rice fields into the water.

Pesticide regulation programs have been broadly implemented in An Giang Province; however, these programs while aimed at promoting sustainability and safety, add extra pressures and financial risk to farmers. The Vice Head of Plant Protection in An Giang Province noted that the "1 Must and 5 Decreases" program (1P5G) encourages farmers to choose a high-quality rice variety with decreasing seeds, pesticides, fertilizers, postharvest costs, and postharvest loss. A

World Bank funded program called Vietnam Sustainable Agriculture Transformation (VN SAT) provided money starting in 2016 to eight provinces to more effectively implement the 1P5G program and other programs such as "3 up 3 down" (3G3T), integrated pest management (IPM), and "4 rights" (4R): right medicine, right time, right quantity, right disease. Farmers in MPD noted learning about and implementing these methods between 2003 and 2005, however struggled to maintain their rice production. One farmer said, "When I did these two methods, they didn't work well because 3G3T you have to decrease the amount of fertilizer, but then I couldn't get the yield that I expected. Those methods are good, but they aren't really effective for production."

Programs sponsored by the World Bank and International Rice Research Institute (IRRI) are implemented by the Vietnamese Ministry of Agriculture and Rural Development (MARD) and local government officials in communes and districts in order to manage more sustainable production of rice. While farmers' perceptions about these programs are generally positive because they want safer environments, there are immediate financial risks in not being able to spray chemicals on their rice plants. Farmers I spoke with point to the structural challenges of growing intensive rice with the added pressures of programs aimed at sustainability and safety. The pressure to perform within these dominant discourses of safe food production inequitably falls on the farmers, who note that these shared desires are constrained by limitations in their current livelihoods. Moreover, in conversation with government officials and IRRI officials, the blame falls on farmers. Common reasons for failure include perceptions that farmers are not being educated and do not understand how to implement these programs. Conversely, my work shows that farmers understand how these programs work but are instead constrained by their ability to effectively implement them when their livelihoods are at stake.

Dominant ideas by agricultural development managers undermine local farmers' knowledge and decision making within particular contexts (Davidson 2012, 2016). As agricultural production has become more reliant on mechanized labor and technological advances (Biggs 2015), farmers have been doubly constrained in their ability to adapt to these livelihoods. As the farmers in MPD commune expressed, agricultural management practices and livelihood decisions are complicated in many ways, however all are in relation to their ability to create what they perceive as safe environments for themselves and their families. Safety in this instance is driven by their own notions of food safety, non-toxic environments, and financial stability. However, their ability to create more safe environments are impacted by their distrust of imported foods, their ability to

control and manage their own food production, and the government's responsibility in providing more opportunities for less pollution. A more critical perspective on how agricultural development programs purportedly upholding food safety make farmer livelihoods less safe. The late socialist model that carries with it ideas about responsible citizenship and governance of globalized agro-industrial food systems complicates who has access to safe food. Dominant discourses about food safety lead to greater precarity in farmers' livelihoods.

3.6.3 Navigating toxic environments- responsibility and the promotion of pollution and not

Dr. Danh brought his nitrate detector along with us as we visited communes throughout the Mekong Delta. We visited with local commune offices to discuss the benefits of implementing agricultural cooperatives. Dr. Danh would provide an hour-long lecture about what cooperatives are, how they could be implemented, and the specific benefits they would bring to each commune. After the lecture, I would accompany Dr. Danh to tour the local commune's farms and marketplaces.

In Mỹ Hội commune, a group of local commune officials, IAC employees, and agricultural businessmen arrived at the local marketplace in the center of the commune during our visit. The market was empty, which made the concrete floor seem even more exposed with remnants of stands, tarps covering wooden tabletops, and women rinsing out their plastic tubs that once were filled with fish. A woman was standing behind her wooden stand, a blue tarp laid in front of her displaying different fruits and vegetables.

Figure 2.1 A large group of government officials watch as Dr. Danh tests a vegetable at a local marketplace (Source: Author)

Dr. Danh approached her and took out his nitrate reader. He started chatting with her asking where she gets her fruit from and whether they use pesticides or not. She responded, pointing down the main road that we had traveled. He took the pointy needle of the device and waited for a reading of the toxicity of the gourd. He looked down and read a number and said, “Oh, it’s not that bad. You’re selling good food.” Everyone around him, local government officials crowded around him and nodded in acknowledgement. The vendor, an older woman, also nodded, taking a few moments to scan the crowd of people that had just assembled in front of her. Without any other exchange, the crowd moved on. Dr. Danh turned to Cô Trang, the commune leader, and said, “See, if you had a cooperative here, we could verify to markets and your customers that we were selling good quality fruits and vegetables by using tools like this. It would make selling in bigger markets easier for local farmers.” Dr. Danh was alluding to the new marketplace opening in Saigon’s District 1 that would sell only agricultural cooperative products from southern Vietnam. Underlying his comment, was the ability to feed urban consumers safe food. Providing this vendor

the affirmation that she was selling "good food," was the type of technical legitimacy and standardization that Dr. Danh was hoping to provide these local vendors. While VietG.A.P. certification means very little now to Vietnamese consumers, if vendors could prove that they were selling safe food, Dr. Danh hoped this would provide the additional legitimacy needed within the production chain.

Technological legitimacy, such as reliance on machines like the nitrate reader or technologies like the pesticide management programs, make farmers and farming practices legible to state actors and consumers. In making farmers into environmental stewards, these tools, more so than the certifications, become a mechanism to control agricultural management practices and farmer livelihoods. As this market vendor remained silent during Dr. Danh's demonstration, the government officials around her found this technological form of safety to provide an assurance and knowledge of a type of safe food that had or had not existed to them previously. This results in the silence of the farmer or farmer knowledge in exchange for the authoritative capabilities of technological readings.

Agricultural cooperatives (AC), as directed by Dr. Danh, provide an avenue of legitimacy for farmers through food certification. Cooperatives differ from other agribusiness models in that a group of farmers own and manage a business equally, rather than any one individual. As Dr. Danh describes,

> "Agricultural cooperatives are the new rural development model where seven or so farmers can come together and create a business. The mission of our center is three-fold: provide training to government officials and farmers, provide consulting to guide farmers to connect with businesses and do policy advocacy to MARD. We want farmers to work together for economic reasons, because now the average size of a farm is 0.3 ha. But if farmers are able to join together, then they would have more land to produce more and they can lower their production costs together."

As he describes, the cooperative aims to benefit smallholder farmers, an opportunity that would allow smallholder farmers to remain competitive and economically stable in the face of a growing trend of wealthy farmers producing more rice on large areas of land. However, farmer precarity remains. Farmers earlier in this piece described their livelihood trade-offs as the decisions about environmental toxicity and financial stability and how to maintain safety within their own households. The difference being the power of safety assurances that seemingly supersede other forms of safety.

These livelihood trade-offs reveal the lack of awareness and institutional structures underpinning a safe agricultural practice, as defined by late socialist agricultural desires. The silence of this market vendor and farmer resound in the overall invisibility of farmers' ability to cope with these precarious landscapes. Burnham and Ma (2018) emphasize that the uptake and sustainability of new agricultural climate change adaptation strategies depends on farmers' flexibility to weigh and implement their own livelihood social, political, and economic institutions against these new adaptation strategies. However, as Burnham and Ma (2018) show the importance of local livelihood practices in smallholders' ability to cope with current and future risks to their agricultural livelihoods, the farmers that I introduce describe how discursively and ideologically, safe food and technoscientific agricultural production in Vietnam fail to even consider farmers' existing livelihood challenges.

During trips to local communes, Dr. Danh's presentations showed pictures of new technologies that agricultural cooperatives would use and different rural livelihood benefits. One of these included a rice-husking machine, so that farmers would not have to send their rice to a separate mill. Other benefits, like a local water bottle company and a community swimming pool aimed to appeal to rural standard of living. Food safety acts as a gateway to urban ideals of safe food, and thus, state imaginaries of farming livelihoods. These ideas of legitimacy and technoscientific progress not only standardize farming practices but exclude farmers from the end products. These new imaginaries of a rural, sustainable farmer then mask the ironic toxicity and absence of farmers within the production of safe foods.

3.7 Conclusion

In late-socialist Vietnam, the switch after Đổi Mới toward an open-market also shifted the logic in how agricultural marketplaces work. As shown in this paper, the impact of dominant global discourses seeking to legitimize safety within agro-industrial food systems disproportionately falls upon farmers to provide safe food, safe environments, and safe livelihoods. First, I show how farmers' fears of fake food products rife within Vietnam, have created growing sentiment of distrust in imported food markets in rural and urban spaces. Farmers rely on their own production, management practices, and livelihoods to provide food for their families, thus maintaining their own safe livelihoods. However, farmers' own ability to assure their own livelihood safety confronts a deeply entrenched reliance on agrochemicals. This reliance on agro-chemical

production, one that is strongly encouraged through market demand, relegates farmers to choose between toxic-free environments and financial stability. And lastly, the continued perpetuation of dominant discourses of food safety, legitimized and standardized through agricultural cooperatives and technoscientific models, makes food legible in urban market landscapes where farmers remain invisible, thus making an ideal image of a farmer outside of their precarious livelihoods described above. The late socialist agricultural landscape is one rife with complicated networks of safety that span polluted fields to consumable foods. However, central to this landscape are the late socialist-driven mechanisms that seek to standardize discourse around food safety without critical understanding of the persistent environmental toxicity and livelihood trade-offs. In making farmers to be environmental stewards, contributing to safe environments and safe foods, farmer face continued livelihood precarity.

Within late socialist systems, markets are based on ideas of private, individual choice, and self-interest (Schwenkel and Leshkowich 2012), thus contrasting to traditional socialist values of self-sufficiency and providing for the nation. The AC is a good example of late socialist agricultural development. Adhering to global values of modernity and rural development, while also aiming to make agricultural production in Vietnam more effective, AC's are both a project of making good farming citizens and making good, safe food. However, for commune leaders like Cô Trang, the intrigue was in the ability to help farmers. Over dinner that night, in celebration of officially signing an agreement to establish an AC, Cô Trang turned to me and said, "I don't sleep at night and I can barely eat. I am so worried, what happens if this fails? What will happen to these farmers?" Her fear that something would go wrong with the AC's or that she had made the wrong decision weigh heavy in thinking about the possibilities for farmers undergoing change in agricultural development.

Collectively, these examples present the multiple ways in which these food safety certifications obfuscate responsibility away from industrial agro-food production and demand more from farmers undergoing rural and urban change. Farmers' fears embodied four major changes in their livelihoods: rural outmigration, environmental toxicity, food access, and responsibility for food safety. First, the farmer's fears over fake food in urban areas provides a glimpse into the broader landscape of rural changes that farmers experience. Contextualized within a media of food scares across Vietnam, fake food renders urban areas as unknown for some farmers, all the while describing safety as neither visible in urban nor rural, but central to farmers' own

livelihood capability. The changing food consumption landscape is only further illustrated in Mr. Phạm's story about the marketability of a former famine food. As he illustrates, MPD has polluted their environments enough to result in the loss of fish that were naturally found in the river. Now these fish have become a commodity for the wealthy consumer and a profit for the farmer who can find them in the waterways. Mr. Phạm's story also highlights the false assumptions of toxicity in rural areas: that farmers are irresponsibly managing and creating toxic landscapes. Rather, these farmers show the ironic and precarious livelihood situation of creating toxic environments, necessary for livelihood stability. All the while risking their own exposure to toxicity in their food and on their land.

As I have shown, toxicity in farmer environments is unwanted and unmanageable if responsibility is placed solely on farmers. Their seeming mismanagement of pesticides is not an individual's responsibility, but points to the larger systemic issue of an entire food security policy reliant on the intensive production and intensive usage of chemical pesticides and fertilizers. And finally, these government sponsored programs – VNSAT, IPM, AC's – all act as opportunities through which a late socialist governance of agro-food industries purports to support farmer livelihoods, through safe foods and safe environments, but still relegates the responsibility of each upon the farmer.

An uncritical approach to these changes might find that farmers must rely on their own resilience to adapt to these seemingly inevitable changes, but these farmers consider the landscape of agricultural production to be more complex. A critical approach reveals that despite dominant discourses about safe food and toxic food within media scares and national policies, farmers have similar concerns and face similar structural limitations. Government sponsored programs aimed at increasing sustainability of the local environment and agricultural production are not aimed at the best interest of the farmer. Farmers describe wanting to attain these same values of less-polluted environments, conducive to the policies that are enacted. However, intensive agricultural production and safe food certifications requires that farmers bear the burden of blame and also responsibility. But as these farmers describe, rural and urban food spaces are rapidly changing. Thus, farmer livelihoods in late socialist Vietnam are doubly impacted by agro-industrial discourses and practices as well as new trends in safe and productive agriculture, making their livelihoods more, not less precarious. New market dynamics drive farmers' own ability to live in clean environments and their exposures to diverse toxicities and uncertainties.

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CHAPTER 4. A FOOD SECURITY TRAP: CONCEPTUALIZING AGRICULTURAL LANDSCAPES AS RUINS

4.1 Abstract

Rural agricultural landscapes are undergoing multiple changes, such as environmental degradation, land grabs, and a change in labor force. In Vietnam's Mekong River Delta, these changes have come about in the past 40 years, since economic reformation shifted Vietnam's agricultural industry toward more global markets. In an area that was once deemed the rice basket of Southeast Asia, rice farmers in Mekong River Delta are living in ruinous landscapes. These fields, once devoted to rice production, are also undergoing major shifts as material, political economic, and discursive conditions continue to shape the local and national discourses around agricultural development. Drawing on 16 months of ethnographic research in Vietnam's Mỹ Phù Đông commune, I examine the role of ruination and the conceptualization of a food security trap to explore how late socialist governance of agricultural development creates visible and invisible constraints in farmer livelihoods.

Keywords: Ruins, agricultural development, food security, late socialism, farmer livelihoods, ruin

4.2 Introduction

At ten in the morning Đạt, my research assistant, and I collapse into hammocks strung between trees along the canal. Sounds of motorbikes along the main road 10 feet away fill the moments of quiet I yearn for. Starting at six in the morning, the day had been filled by the drumming of the rice harvesting machine motor as we stood by our friend, Anh Tuấn[25], who was carefully watching farm laborers drive the harvester through his rice fields. In between running to collect leftover fallen rice that the machine missed – rice that Anh Tuấn's family would save for their own household consumption until the next harvest season in three months – we talked about the challenges he faced this crop season. From the surprise presence of brown plant hopper, a pest that eats at rice stalks, to the exceptionally high price of fertilizer he bought for this crop, he was pleased, exhausted, and relieved to see a *normal* production – about 714 lbs./acre of rice. He joked

[25] All names have been changed to a pseudonym to maintain participant confidentiality.

with his wife, who was standing behind us watching carefully over the weighing of the rice bags, that they will eat well tonight with this income. We left Anh Tuấn's house on this celebratory note, with the relief and weight of uncertainty temporarily lifted off the shoulders of both him and his wife. However, Đạt and I sensed an anticipation from them of what the next harvest season would bring – more pests or unexpected price hikes. In three months' time, Anh Tuấn will find out.

Đạt and I ate lunch in our hammocks not long after we left Anh Tuấn and his wife. The hum of conversations between farm laborers also taking a break and the dubbed Bollywood film playing on a dusty TV along the main road lingered in the background. After finishing our meal, Đạt looked at me and said, "Sarah I wanted to ask you, what do you think is the escape for farmers?" I asked what he meant, and he said, "These rice farmers, Anh Tuấn, they need an escape because they might not realize it, but they are in a trap that they can't get out." I paused and thought for a moment. Maybe Đạt was right. While Anh Tuấn and his wife were able to overcome the uncertainty of rice production this year, there was no guarantee for the following year or even for the next crop. The intensity of rice production, the lack of rural job opportunities, and the pressures on smallholders to sell their land make farmers seasonally precarious, which in turn makes the uncertainty within their livelihoods seem surmountable in the short term but a trap in the long term.

I saw this trap play out in other farmer livelihoods. For example, another rice farmer in Mỹ Phù Đông (MPD) commune we talked with highlighted the tensions between agricultural income, governmental programs, and income diversification:

> "I followed the government's wishes to grow rice here in Mỹ Phù Đông commune, so I came from Long Xuyên. But I think now, farming can't supply enough income for my family. So, my wife and I have to do other activities. We just wait for the harvest, then grow another crop and work year by year. I don't know what to expect."

As I will explain in this article, what Đạt observed, and what these farmers are experiencing is a particular food security trap specific to this region – one in which national policies associated with rice production and farmer livelihoods based on rice creates precarious material conditions and structural political economic conditions. These conditions ultimately constrain farmers' livelihoods and future possibilities rather than provide for them.

This article explores what I call the food security trap. The food security trap in Vietnam references the late socialist governance of farmer livelihoods, the role of precarious production in rice farming, and the dominant narratives of rural and agricultural development – all of which shape farmer livelihoods in particular ways. The food security trap suggests that the state-led

narratives and policies that promote food security through rice production are the very same policies that undermine farmer livelihood security. Different from food security, livelihoods refer to farmers' overall wellbeing and ways of being (Zanotti 2016). Thus, this food security trap, as referenced by Đạt earlier, describes the structural political economic constraints that creates particular material and discursive livelihood conditions at the expense of others, such as income diversification or scaled-adaptation strategies that might help to mitigate farmer vulnerability. Despite the framings of a trap that creates structural barriers and ultimately limitations on farmers' agency, farmers still maintain their ability to define their own livelihoods and futures.

In order to make the food security trap visible, I suggest these otherwise overlooked invisible conditions can be rendered legible if we consider them through the lens of "ruins" or "ruination." A fairly recent concept, although represents longstanding practices of dispossession, Stoler (2008) suggests ruins are the process of dispossession and displacement that are most visibly seen on the landscape as material debris. Through this framework of ruination, I situate this trap – that becomes in focus in moments of livelihood precarity, instability, and anticipation. In doing this, the trap and its resulting ruins, allows us to expand typical understanding of agency and power in farmer livelihoods, food security, and questions of precarity and anticipation. I show how plans for rural development and agricultural development are tied to an ecological and discursive restructuring of rural landscapes. These development plans, focused on efficient land use, diversified agriculture, and non-agricultural industries, creates differing impacts on farmers (Akram-Lodhi 2005; Akram-Lodhi and Kay 2010; Fly 2016; Nguyen 2009 Taylor 2007). As such, ruins, as materially situated, can illuminate how the food security trap differentially impacts farmers' own agency in seeking secure livelihood opportunities and responding to late socialist demands of rural development. It is this moment in which agricultural ruins emerge as farmers, dispossessed of livelihood agency and limited by material and political economic constraints, are increasingly vulnerable to the vagaries of a rice and non-rice transition.

By drawing on ethnographic work with two farmer families, Cô Phương and the Nguyễn family, in late socialist Vietnam, I explore the material conditions, structural political economic conditions, and the discursive conditions that shape experiences of local to national narratives of agriculture in Vietnam. The first example, Cô Phường's family, shows how late socialist ideas of farmers' success and security can result in limited agency in farmer food security and the structural conditions that shape their livelihoods. The second example of the Nguyễn family shows that

despite a perceived uptick of agency in livelihood diversification strategies, the same structural conditions shape how and to what end their agency can render their livelihoods less vulnerable. I suggest the concept of the food security trap paired with a ruination approach that analytically reveals how late socialist governance of agricultural development creates visible and invisible constraints in farmer livelihoods. Specifically, this article shows these constraints to be abandoned farmland and farmers' fears, equally important in understanding farmers' precarity of existing in these transitional periods.

4.3 Theorizing a rural ruins

As an analysis that proposes to use the concept of "the food security trap" that reveals agricultural ruins, several conceptual clarifications and entanglements need to be unpacked. I come to the food security trap as an analytical concept in Vietnam through an intersecting lens of feminist political ecology (FPE), science and technology studies (STS), and anthropological approaches to ruins.

First FPE brings attention to how the process of livelihood displacement is constructed through power and difference and the intersectional approaches to understand difference (Elmhirst 2011; Harcourt and Nelson 2015; Rocheleau 1995). This framework allows us to ask questions about who defines what land use patterns, agricultural practices, and ways of being matter and how these shape farmers' livelihoods differently. Broadly, FPE explores how uneven distributions and access to decision-making power about resources are enacted across multiple scales of livelihood difference (Elmhirst 2011; Harcourt and Nelson 2015; Rocheleau 1995). As Vaz-Jones (2018, 716) implements a FPE of displacement, she focuses on how "power and difference are constructed through environmental relations and processes, delineating spaces where particular subjects do or do not belong in relation to nature and resources." Thus, FPE also allows us to ask questions about structural power that is multi-scalar in its implementation and its impact. Displacement and dispossession, from a FPE perspective, focuses on the non-spectacular and gradual process of displacement (Vaz-Jones 2018) that is grounded within the everyday experience, thus signaling that power is diffuse (Sultana 2011). Thus, as Mollett (2014) shows, displacement is not necessarily about movement from place, but can take the form of constraints on livelihoods and on futures. I apply these ideas about multi-scalar displacement to look at how farmers are impacted by ideological changes within Vietnam's political economy that create ruinous landscapes.

Through their attention to sociotechnical imaginaries and infrastructures that shape landscapes, STS scholars bring attention to the plurality of imaginaries that emerge through scientific technologies, and the potential that these imaginaries contradict one another (Felt et al. 2016; Harding 2011). This concept raises questions about how discourse and space are conceptualized and how these are materially represented. And ruins bring attention to the material manifestations of power, difference, and imaginings by considering what remains *after* particular forms of agricultural development occurs.

Drawing on STS, I explore how inequalities and complexities of material relationships are contextualized within histories of gender and colonialist hierarchies that remain dominant in today's agricultural landscape (Subramaniam et al. 2016). STS focus on the complexity of these material realities offers the potential to understand the multiple types of social ordering that occurs on late socialist agricultural landscapes. Social ordering refers to how some imaginings of agricultural landscapes remain dominant, or how certain knowledge and expertise becomes dominant over others (Jasanoff and Kim 2015). The inequalities that emerge are not only ideological, but also material. I thus conceptualize the food security trap through this STS framing, in which I show how dominant imagining conceptualizes certain ideals, in this case modernity, progress, technology, as the means for successful food security. Agricultural ruins then exist as a type of sociotechnical imaginary, or the "collectively imagined forms of social life and social order reflected in the design and fulfilment of nation-specific scientific and/or technological projects" (Jasanoff and Kim 2009, 120). This framing is useful not to ask what new sociotechnical imaginaries are created, but rather the potential of the emergence of multiple imaginaries and their impacts on farmer livelihoods and the imaginings that farmers themselves create (Jasanoff and Kim 2015). Then, the plurality of imaginaries can exist both in conflict and in concert with one another. And it is this exact friction within conceptualizations of food security and land use that ruins allow us to explore these ideas.

Ruins are embedded in an ongoing processes of displacement and dispossession (Stoler 2008), and thus they are simultaneously a site of transition or devastation as they are occurring or have already occurred. Ruins can be in the form of material destruction, seen in the cost of developing a now abandoned hydropower dam (Rao 2013). Or they can also be temporal, in between devastation and transition to something else (DeSilvey and Edensor 2013). Gordillo's situating of ruins describes the transition as a process of making old and modern: "as part of a

process in marking these objects as old highlights the modernity of the present" (2014, 9). In Vietnam, these agricultural ruins, are both. In situating the trap as a creator of ruins, I show how multiple actors integrated through a late socialist governance is responsible for this play of power. While also keeping in mind that power, both visible and invisible is differentially distributed and enacted.

Peluso and Vandergeest (2011) demonstrate this relationship of ruin with forests as they describe how political forests are leftover debris of imperialism, renewed and reformed through territorial control, which produce radicalized subjects while simultaneously disregarding land rights. The forests, identified as material debris to which I find akin to ruins, remain because of nested cycles of imperial power and colonized projects, thus showing the veracity of state actors in reinventing ruinous landscapes into the present time. To understand ruins, these authors suggest that we must contextualize the moving parts that deem a landscape a ruin: transition periods, who has power and how are they implementing it, and what materialisms are changing within the landscape.

One reason why ruins is a useful descriptor of agricultural landscapes is because ruins themselves don't immediately create pause. In fact, their existence and underlying forms of power and dispossession are masked because they are enduring[26] (Rao 2013). In this same vein Stoler asks,

> "if 'violent environments' are made so not by a scarcity of resources but by grossly uneven reallocation of access to them, the dispossession and dislocations that accompany these violence do not always take place in obvious and abrupt acts of assault and seizure, but in more drawn out, less eventful, identifiable ways" (2013, 5).

The dispossession is slow and invisible and thus, the ability to navigate this process becomes difficult because they take place over long periods of time and often without attention. Personhood, actors, and bodies become important here as they are multiply constituted in agency and power (Agard-Jones 2013). Thus, rice farmers' bodies, their experiences, and their livelihood choices are porous - they can have both anxieties about the future and limits on their agency when it comes to

[26] Temporal lags are an interesting component of ruins, however, is not fully explored in this piece. One example of temporal lags are the time spans between building a development project and the resulting effect. Rao (2013) describes this occurring with a mega dam project in southern India, where the remaining construction materials continue to haunt residents and divert waterflow without the actual dam coming into function. This type of temporal lag is meant to show how ruins can have unintended consequences that are easy to ignore or not see because their destruction and existence doesn't come right away.

making decisions about livelihood opportunities, while being fully aware of the multiple traps they exist within. By looking at farmers' livelihoods in this way, I also focus on the disparate forms of displacement as they impact bodies differentially and as forms of dispossession and displacement look and act differently. The focus is on the enduring quality of remains and what they render.

The merging of FPE and STS allows us to explore these questions about temporal changes that influence the materialisms of power and how that creates agricultural ruins, and how different actors such as farmers, are also creating and reinventing these ruins. Feminist political ecologists pay attention to the intersectional creation of spatial differences and livelihood inequalities that emerges through histories of power and materialisms as they impact multiples scales: institutional, individual, and temporal. Drawing upon an STS focus on sociotechnical imaginings, I am able to highlight the invisible and purposefully hidden strategies of farmers as an important site for livelihood cultivation and futures to emerge.

4.4 Methods

This work emerges from ethnographic fieldwork conducted in Mỹ Phù Đông (MPD) commune located in Vietnam's Mekong River Delta. Located in An Giang province, one of Vietnam's most-productive rice region (Anh and Tinh 2020), MPD commune covers a total land area of 21,046 acres (8,517 hectares) with about one-third of this land is devoted to agricultural production. Farmers, as explained later on in this piece, are transplants from different communes within An Giang Province, and moved to MPD as a part of government economic incentive programs. Thus, many of the farmers that I visited reside in temporary physical houses, where they stay toward the end of the harvest season and travel back to their more permanent house in another commune – most commonly Chợ Mới or Long Xuyênên. Farming households are multi-generational households, and most of the farmers I spoke with were male and over the age of 20. I conducted fieldwork in MPD between 2017 and 2018. Spatially, this commune is divided into seven subsections, all separated by canals built for agricultural irrigation. As a part of the Mekong River Delta, this canal water is fed by these river systems that spans across China, Myanmar, Laos, Thailand, and Vietnam before emptying into the Pacific Ocean.

Ethnographic research included the use of qualitative methods such as, participant observation, participatory mapping, semi-structured interviews, and household surveys. Overall, these ethnographically-grounded mixed methods traced the impact of agricultural production on

farmers' livelihoods, including their food security and livelihood security. At the time of research, there were 1,072 households located in this commune, about 4,206 people. I conducted participant observation with rice farmers and farm laborers who lived in the commune to identify different livelihood activities including agricultural and non-agricultural practices and daily conversations regarding the rice harvest or events in the community (H. R. Bernard 2011). Semi-structured interviews prompted questions about farmers' experiences with changing environments, weather patterns, agricultural practices, and ability to adapt[27]. Through participatory mapping, where I guided farmers through a drawing exercise of their farmland and household, I prompted questions about current agricultural practices and challenges, and their hopes and desires for their farmland in the future (Marte 2007; Strang 2010). Combined, these methods provided a grounding for understanding how farmers perceived their current livelihood circumstances and the changes that have occurred and what they desire will occur in the future. I conducted 100 semi-structured interviews – 85 with farmers, 12 with farm laborers, and 3 with government officials. I also conducted participatory mapping with 76 of those farmers to supplement the interview that preceded.

4.5 Governing the Trap

4.5.1 Late Socialism

The food security trap in Vietnam emerges at intersecting scales in a moment of late socialist governance[28]: institutional, individual, and temporal. Described by Zhang (2001), late socialism in China refers to the economic transformation under market forces, privatization, and global capital. Late socialist ideologies occurred during economic renovation, Doi Moi, in the late 1980s transitioning from state-oriented entrepreneurship and development toward market-oriented policies (Leshkowich 2008). "Lateness" also describes a political anxiety of being *late* to the global development game and a yearning for modern and progressive development (Zhang 2006). For example, lateness can help explain the rationale behind development investments in technological modernization, rural industrialization programs and universalizing school education and

[27] See also Patil et al. (2010) for how I structured interviews and surveys to understand experiences around food security.
[28] Scholars in Vietnam utilize different terms to describe Vietnam's governance: post-socialist, late socialist, market socialist (Schwenkel 2013; Avieli 2014; Schwenkel 2012; Ann Marie Leshkowich 2008; 2011).

transportation (Taylor 2007), as methods of addressing more modern and progressive-liberal policies utilizing market-based ideologies[29].

4.5.2 Lateness in food security and rural development

Lateness is critical to understand in the context of farmers; it underpins the political economic marketization of farmers' livelihoods and food security. The 2008 Global Food Crisis, which led to a rapid rise in cereal prices worldwide, prompted increased attention to Vietnam's loss of agricultural land, about five percent between 2000 and 2008, and a projected 3.6 million hectares by 2020 (Le Trong 2012). Thus, the impact on Vietnam's agriculture prompted a shift toward socialist policies, reprioritizing land for agriculture in order to prevent rising rice prices and loss of rice in markets in 2008 (Alavi 2011; Gorman 2019). Farmers experienced periods of instability within the domestic rice market, and marketplaces across Vietnam even sold out of rice (Ngan 2012). In order to protect its national supply and food security[30], in March of 2008, the Vietnamese government implemented an export ban to keep an affordable domestic rice price while also safeguarding national supplies (United Nations Vietnam 2008b). This ban aimed to stabilize domestic rice prices and strengthen the nation's supply of rice, which is kept in case of emergencies. This marked a shift again in Vietnam's national commitment to addressing food security through agricultural productivity (Government of Vietnam 2009).

Variable farmer experiences resulted from these shocks, particularly at the household level. Farmers struggled to repay loans and afford food, and continued to experience other challenges to their food security, such as increasing land competition for non-agricultural industries like tourism and industrial development (United Nations Vietnam 2008b). Existing agricultural lands, mostly located in rural areas, were slotted for other textile industries. Complicating these already existing challenging livelihood situations, rice farming productivity is challenged by environmental challenges and global trends toward landless farmers and a growing textile industry in southern

[29] I apply Zanotti's (2016) combined history of late liberal capitalism and pink tide politics occurring in Latin America to this idea. Zanotti builds on the work of Povinelli (2011) who defines late liberalism, a term relevant to this argument, as the political economic governance ideology that shapes state action through the liberal recognition of cultural difference (2011). Povinelli's description of late liberalism is a similar logic to the late socialist ideology explored in this piece.

[30] At the time, in 2008, Vietnam's food security was defined by Resolution 63 which stated that food security is about the production of rice. Gorman (2019) further describes how this policy has resulted in erosion of living standards, exodus from agriculture into precarious wage labor, and a concentration of agricultural land into a small number of large-scale farmers' ownership.

Vietnam (Akram-Lodhi 2005; Rigg 2006). These political economic motives, for both farmers and the government, appear in tension with one another and has vast implications for farmers' own decision making.

4.5.3 Late Socialist responses to hunger and rural landscapes

Late socialism comes as a response to various eras of socialism within Vietnam. However, more particular to farmer livelihoods, Japanese colonization in the 1940s and French occupation in the late 1860s are more recent moments in the past that have shaped insecurities, especially around famine and hunger. Responding to a need, in the 1940s and again in 2008, to become self-sufficient, the Vietnamese government shifted their agricultural responsibilities toward rice production to build a national supply (Gorman 2019). This policy responds to historical periods of famine and colonization between the 1860s – late 1970s, and thus reflects goals of nation-building through socialist strategies of self-sufficiency (Faltmann 2019). Many of the rice farmers in Mỹ Phù Đông commune, were a part of this national push in the 1980s, after the American War, toward developing rice landscapes in rural areas of the Mekong River Delta. More recently, in 2016, the government has decided to move away from compulsory rice production in designated areas, and are allowing farmers to produce non-rice crops (Jaffee et al. 2016). Marking a shift in agricultural landscapes, Vietnam's attention toward agricultural production has shifted its attention to wealthy landowners while driving the former rural farmers into other non-agricultural industries such as local construction labor or textile factories. These shifts toward changing labor and landownership are reflected within recent agricultural policies.

The government's reprioritizing of rural landscapes for rice production after 2008, reified government visions of a changing rural landscape. One of which is the desire to become a self-sufficient rice growing nation, which involves the prioritization of increasing rice production through mechanization and higher-yielding rice varieties (Government of Vietnam 2009). However, concurrent to this desire for increasing productivity is a global trend of "agrarian transition" in which mechanization and commercial farms are displacing the dominant models of smallholder farmers (De Koninck 2004). In Vietnam this is seen through rising prices of agricultural inputs, such as fertilizer, pesticides, and rice seeds that places an added pressure on the stagnant output rice prices and farmers' incomes (Gorman 2019). Thus, smallholder farmers,

of which most farmers in MPD are as they produce on 2.47-4.94 acres (1-2 hectares) of land, are increasingly relying on multiple livelihoods and income sources in order to survive.

Another aspect of reprioritization of land is the shifting of land ownership and management to wealthy landowners and away from smallholder farmers (Akram-Lodhi 2005; Gorman 2014). As smallholder farmers are squeezed into other livelihood options searching for, what Akram-Lodhi and Kay (2010, 179) call "fragmentary and insecure sources" of jobs that are temporary and casual wage labor forms. At the same time, wealthy landowners who have accumulated land from previous land redistribution policies in the 1980s[31] are part of these land management shifts toward renting. Thus, wealthy landowners are able to benefit from these increasing insecurities of smallholder farmers and the increasing demand from Vietnam's government for rice productivity. Despite these shifts in land management and precarity in smallholder farmer livelihoods, the government continues to respond with a dual pro-productivity and pro-poor development plan. In a 2014 national "Agricultural Restructuring Plan" (Decision 899/QD-TTg), the policy lays out specific criteria for achieving economic, social, and environmental sustainable development. Within this, the nation's goal to increase rural incomes by 2.5 percent by 2020, improve rural household livelihoods and ensure food security and increase living standards all seemingly aim to achieve late socialist goals of change, progress, and development. Shifting of rural land use and emphasis on the successes of rural development, the government creates a sociotechnical imaginary that directs a form of social order. In this case, that social order aims at late socialist development strategies for economic and agricultural progress and development synchronous with an improvement of rural living standards.

I argue that the food security trap is created and shaped by the successive waves of national policies and international priorities that have consequences on agricultural development and its accompanied social reordering. This ? has taken place through agricultural landscape restructuring and rural social changes. These schemas of rural development are markers of the "lateness" that surfaces in Vietnam's national imaginary related to progress modeled through efficient land use, modern agricultural production, which results in smallholder farmers' livelihood precarity and reliance on non-agricultural jobs and short-term labor strategies.

[31] A similar redistribution of land has also occurred in other areas of Vietnam and is further explored in Gorman (2014, 502).

Moreover, it is important to note the international effects of these national policies. In 2008, the UN named Vietnam as no longer vulnerable to food insecurity (United Nations Vietnam 2008b). This exposes farmers to existing vulnerabilities to food security without specific plans to account for livelihood insecurities. Therein, the food security trap also occurs at an individual scale, impacting farmers' livelihoods through livelihood decisions and economic opportunities that are made available, such as agricultural and non-agricultural wage labor. And lastly the food security trap occurs at a temporal scale, in more immediate time scales with slow transitions of rural programming and longer time scales with impacts of political transitions across empires. Thus, what remains, farmers' livelihoods and ecological restructuring of agricultural landscapes, are ruinous – tenacious, fleeting, dispossessive, and displacing.

4.6 Ruins in Vietnam

In rural landscapes, the concept of ruins guides questions about livelihood dispossession and material debris. In urban landscapes, it complicates the construction of new infrastructural development projects and destruction of colonial-era architecture across Vietnam's urban landscapes (Schwenkel 2013; Harms 2016). In calling ruins "residual and tenacious" Stoler hints at a process through which histories can be reappropriated, opening livelihoods up to different futures (Stoler 2008, 211). In this article, how farmers interact and cope with agricultural livelihood demands after rice production is an example of Stoler's "vital reconfiguration," that does not give complete power to governments, state officials, and markets to tell this story about their livelihoods. Farmers themselves assert that their possibilities of futures remain viable.

4.6.1 Cô Phương and her lizards

We pulled up to a house where loud music was playing on speakers and aluminum round tables were set up. Men were laughing and talking loudly, some drunkenly stumbling into the road. Motorbikes, maybe 20, were lined up. We parked our bikes and walked up towards a concrete house where a man was sitting against the front pillar on the porch. He did not acknowledge us. A brick encasement with a small area of an aluminum roof and wire fencing over grass stretched across the front yard. Đạt and I peered into the encasement, expecting to see animals or snakes. There was nothing; it was completely empty. We walked into a kitchen area with a shallow wood

planked platform that had a water spigot attachment. Another small wire fence enclosure lay under the same banana leaf roof that shielded us from the sun. We did not have to look too hard to see baby chicks walking around this encasement, pecking around at the grains of rice on the dirt ground.

An older woman peered from the concrete house attached to the wooden section of the house that we had walked into. She walked out nervously and greeted Ms. Lanh[32]. The woman, Cô Phường, nervously looked at us while Ms. Lanh introduced us and the research project. She made mugs of instant coffee for the four of us and nodded in agreement as confirmation that she remembered Ms. Lanh asking her to speak with us. She turned to Đạt and I and gestured toward the floor indicating for us to sit and drink. A lizard, about three inches long slinked next to me, and I jumped a little. Cô Phương looked at it as it stood still, and I reached to grab my phone to snap a picture. "I used to raise them [pointing at the lizard]. This one is two months old and would sell for about $0.65 (15,000 VND). I felt so bad for them because they stopped eating, so I just let them all go. I want to find a more stable job, but I'm not sure what." The silence filled with the lizard's movement around us, eventually hopping onto the dirt ground and disappearing from sight.

Cô Phương pointed to the enclosures behind us, the one filled with baby chicks and the empty one in the front yard.

> "These cost about $4313.86 (100 million VND) each to build. But these lizards like to live in the wild, free. They didn't do well in the enclosures, they didn't eat, they didn't give birth. And they just kept getting smaller and smaller. I had to just let them go. I lost all that money from building the enclosures."

The lizard, rắn mối *(Dasia olivacea),* that ran by and the empty enclosure in the front yard are reminders for Cô Phường. "They still come by; I think because they know we have food. But I just had to let them go, I felt bad," she said as Đạt and I took a picture of the enclosure behind us. These olive tree skinks are promoted as a good economic opportunity for farmers in southern Vietnam as these skinks provide an easy opportunity for high economic returns, as indicated in this local news video clip[33], claiming that olive tree skinks can yield $9.00- $13.00 (200,000- 300,000 VND) per lizard depending on its size[34]. The non-farmed olive tree skinks arrive in this area during the

[32] Per local government requirements on my research project, Ms. Lanh was assigned to introduce myself and my research assistant to local farmers in Mỹ Phù Đông commune. Ms. Lanh is a local government agricultural extension worker and works regularly with farmers in this commune. Thus, she became an essential partner because she was responsible for approving research activities, including introducing me to community members who were farmers.
[33] From Tuoi Tre News Online: https://tuoitrenews.vn/news/video/20190103/olive-tree-skink-hunting-a-good-side-job-in-southern-vietnam/48370.html
[34] For reference, one rice harvesting season can usually yield around $729/acre or equivalent to 200 lizards.

rice harvesting season before they too, disappear. In line with the financial flows of the rice harvesting season, these lizards are a symbol of livelihood dispossession based on unstable livelihood opportunities adjacent to the precarity of rice production.

Cô Phương came to MPD about 20 years ago from another commune in Long Xuyên, the capital city of An Giang Province. She inherited 0.3 acres (0.12 hectares) of land in Long Xuyên from her parents where she grew rice. However, she heard that land in MPD was better for rice farming. So, she sold her land in Long Xuyên and used that money to rent land in MPD to grow rice. But after a few unproductive years she was not able to make a profit and decided that she would build a house instead and then just work as a farm laborer, a wage labor job. The land that she signaled to in the back of her house, was the 1.5 acres (0.6 hectares) that her family lost, consequently also losing their income and their subsistence. While the desire in the past was to secure a stable rice farming livelihood, she was not able to make this a financially secure livelihood because of the precarity of growing rice described above. And now, she hopes for a job to make enough money to live. Her family is scattered across the Mekong Delta and they pool their resources to share income within the household. Her one daughter works in a factory in Bình Dương, her son and husband work at construction sites that they can reach from MPD. And for her, she stays in MPD and works as a farm laborer. They once invested in raising these lizards, but as she described earlier, this failed, and her family then migrated to find work elsewhere because "there are no jobs here."

For many rice farmers in the Mekong River Delta, the harvest season cycles through financial losses and gains. In addition to these financial fluctuations – costs inputs throughout the season and income at the end of the season – farmers are also experiencing other types of financial losses as the hands of landowners' financial gains. Cô Phường's lost leased land behind her house continues to produce rice, but for another farmer. The empty lizard enclosures and the still producing rice fields surround Cô Phương, as a constant reminder of what displacement and dispossession look like and feel like. Her particular ruins, the empty lizard enclosures and her household surrounded by fields that are not her own, shows how farmers are either squeezed out of rural landscapes and forced to leave or they live in the ruins and are faced with visible reminders of lost land and limited economic diversification opportunities. Cô Phương and her family are increasingly pushed out of the agricultural system. They are no longer landowners, and Cô Phương is the only one in her family that continues to participate in the agricultural system, now as a farm

laborer for other farmers. As Cô Phương and her family remain, they are constrained in both decisions: to stay in the ruins or to leave.

Cô Phường's family's experience points to the problem in insufficiency of the logics of rural development, which suggest that states are aiding farmers in their transition out of poverty and into more stable and sustainable livelihoods. Yet, development indicators, used to determine levels of poverty or food insecurity, tend to miss localized livelihood practices (Davidson 2016; Dove 2011; Grossman 1998; Jarosz 2015; Li 2014). These indicators, for example, miss the transition periods and everyday pressures of slow processes of development that Cô Phương is experiencing. She is reminded daily of her livelihood dispossession, where she hides from strangers for fear that they are government officials or bank representatives demanding repayment for her debts. She is surrounded by agricultural ruins that not only represents land abandoned, but a reminder of her inability to keep up with these rural changes. Even while Cô Phường's livelihood is not solely focused on rice farming, her proximity to rice fields, stories of being in the fields, and seeking other non-rice-based livelihoods act as material and non-material reminders of what she does not have and what she believes remains outside of her grasp. "Now, I don't know what is most important to me. I only have one option, to be a farm laborer. I start at six in the morning. In the past, I could work until two in the afternoon, but now it's too hot so I have to come back at 12. But at that time, many people have already died in the fields." For Cô Phương, dispossession abounds.

However, as Cô Phương explains, the dispossession is in the precarious everyday-ness of farm laborers. Her dispossession comes not from an immediate or visible action, such as a dominant or visible actor taking from her or displacing her. Rather what she describes is the presence of things that once were hers, but no longer. The rise and fall of potential livelihood options are bookended by precarity as her choices lead to short term gains or losses. Because as she once raised lizards as a livelihood strategy and now has the only option to become a farm laborer, she is not able to supplement her family's income. A slow dispossession or slow violence that does not cause stir, but rather is a signal that suggests a reconfiguration of the dominant narrative of farming livelihoods are needed.

National policies toward rural development both explicitly and implicitly require the reconfiguration of land ownership and land use. Land will be moved away from smallholder farmers, either toward non-agricultural industries or will be bought and sold by wealthy

landowners as farmers fall to the vagaries and stagnations of the rice markets. Cô Phường's experience also shows us the food security trap, while experienced individually, is embedded in structural conditions that shape localized experiences. As Cô Phường's story reveals, agricultural ruins create structural inequalities for farmers who continue to "lose" in their production. Cô Phường's livelihood diversification and individual agency, made some pathways for farmers available, still are ultimately limiting.

4.6.2 The Nguyễn's orange production and non-rice ruins

As we pulled up onto the driveway, the towering metal gate stood closed and locked above us on our motorbikes. Ms. Lanh, a government official from Mỹ Phù Đông commune, yelled into the seemingly empty house "Cô ơi, đến rồi." It didn't look like anyone was home. But in minutes, the sound of jingling keys and the rattling metal door as it slid open, revealed a woman dressed in brightly colored house clothes, Mrs. Nguyễn. She smiled at us and hurried us inside saying, "I thought you were the government officials coming here again. They keep asking to visit our orange fields." We walked through her house as she resealed the front gate and then shut the front door.

As we came to the back door of her house that stood on the second level, we overlooked the expansive 6.52 acres (2.64 hectare) garden. Rows of orange trees interchanged with two water canals in between, filled with fish and on the outer edges of their yard, coconut trees blocked out any outsiders. After spending months visiting average sized rice fields of smallholder farmers in MPD, around 0.3-3.0 acres (0.12-1.20 hectares), I was not used to the size of their space. Unprompted, my research assistant turned to me and whispered, "don't take any photos here." This wasn't the first time that I had heard this request. I left my phone behind in my backpack and instead grabbed a small notebook and pen, as if these could capture her space.

Her yard was lush in greens, almost leaving no space to show the dirt beneath us: morning glory, citrus trees, local herbs. We walked around the fields in the mid-morning heat. Her husband, Mr. Nguyễn, eventually joining us after awaking from his morning nap that he takes after working in the fields. We walked past a large cemented structure encompassing a dark hole to which Mrs. Nguyễn proudly and shyly explained, "This is our watering system. Many people here, government officials and agricultural company technicians, they come here to ask to see our system. But this is why we were hiding earlier, because we don't want more and more people coming here."

When we came back to the house, we sat out on the front porch, visible to the commune government office sitting on the other side of a large canal that runs through the middle of MPD commune. Mrs. Nguyễn looked at me across the table as we cooled off from walking through her fields in the hot Mekong sun, her eyes lowered to look into mine and she said,

> "I don't know if I believe in that superstition that if you took pictures of my fruit that something bad would happen to them, like a bad crop or bad weather. But I have to do this. I have to do this because I put my whole life into this orchard. All my money and my life. I have to do everything I can to protect them."

She poured more freshly-squeezed orange juice into my glass, and we sat quietly until we asked who was trying to come see her today. She began to tell us that some government officials keep coming to the house to ask when they can come visit and bring some agricultural company technicians to look at their model of agriculture that they are doing here in their orchard. She said that they keep asking and asking, but she would not budge. She again put on that exasperated look and looked straight into my eyes, "If I keep letting them in, who knows what will happen to my fields and my future." I nodded in agreement, however the connections that she had just drawn out for me, agricultural production and management of crops through fears and futures, was only just developing for me.

The Nguyễn family bought their land about 17 years ago in MPD commune to grow rice. "Weather is like a baby, it changes its temper fast," Mr. Nguyễn once described. The light-hearted comparison to a baby maybe masks the actual damage that weather has had on his fields.

> "The bad weather, or when it changes unpredictably can cause more disease and pests. In the past, I cultivated 10.3 acres (4.8 hectares) of rice fields and with the bad weather, all my crops fell down. I lost $21,600 (500 million VND) that time. I cultivate fruit now here in MPD and rice in Chợ Mới [another local commune in An Giang Province]. I think working with fruit is the most important because rice has a lot of disease and the price is low. It's too expensive to pay for pesticides and fertilizers. Fruit isn't easy, but the price is good."

The precarity of changing crops is one that similarly resounds in Cô Phường's story. The extent of that precarity and the results from it are what should become the focus.

Mrs. Nguyễn's warning me not to take pictures of her fields, derives from her superstition that something would happen to her fields, the fear of the effects of outsiders and what they leave behind also comes from their experiences. In the past year, the Nguyễn's have piloted a "You Pick" model in their orchard, where guests could pay an entry fee to pick as many oranges as they wanted.

However, the Nguyễn's stopped the program after they saw how many oranges were left picked and wasted on the ground. They were risking too much. Mr. Nguyễn described,

> "Fruit is not like rice. With rice, it's easier because you can follow other people because everyone does it. But now, I have to learn all the new things even though I am old. An agricultural engineer came and gave fertilizer to sometimes. Then those trees turned yellow! If he did it to all the trees, then I would have lost everything."

His fear and his wife's fear that they could lose everything – is a loss that specifically describes the type of dispossession of farmers who live in these agricultural ruins.

The food security trap described by the Nguyễn's aligns with models of economic development that suggest, through large-scale agricultural development and pro-poor development models, poverty alleviation and economic needs will be addressed. The Nguyễn's land use has shifted away from rice production toward a non-rice industry, one of a few in the region. Their garden draws interest from government officials and agricultural companies because of its potential to model a new crop market for MPD. These farmers are an example of a livelihood opportunity that starkly contrasts Cô Phương, who is a farm laborer and has failed at non-rice production. However, the Nguyễn's livelihood still remains precarious, and that becomes visible in their lack of experience with certain practices or the possible intrusion of government officials and expansion of their agricultural model. They fear that their land could become agricultural ruins if their production failed and all their fruit trees were destroyed.

This food security trap, of increasing rice production for the common good at the expense of real change for farmer livelihood security, has driven farmers like the Nguyễn's toward a non-rice crop. Despite the government's interest in their productivity with oranges, the Nguyễn's are still fearful of the precarity of the food security trap. Mr. Nguyễn identifies this as a livelihood paradox, that not growing rice is not always an option. He said, "if you lose the source of rice, then you will be dead." Because even though he might have the opportunity for another livelihood that he believes would allow him to be prosperous, the fear of completely losing out on rice production or maintaining an alternative non-rice livelihood without a security net, is a ruin. For them, the loss of rice production and the uncertainty and fear in growing oranges highlights how their livelihood security becomes dispossessed. While they continue to have livelihood options with more secure sources of income compared to wage labor, they are kept in a temporal limbo between the past and the future – past rice livelihoods and future uncertainty.

In an example of how development sustains temporal uncertainty, Rao (2013) describes an archaeological project in Jetprole, India. He writes about how the expectation for villagers here is to sacrifice their livelihood in the name of a public good, in the name of modernization and progress. However, in that process, the villagers still remain outside of the benefits of these public goods and they remain in a temporal uncertainty of neither fully belonging in the past livelihood opportunities and nor the future ones. Similarly, in the Nguyễn's expectations of potential livelihood security through orange production, they remain in between a past and a future – the past being the uncertainty of rice production and the future being the uncertainty of non-rice production. Their behaviors of hiding from the government officials symbolizes a sense of abandonment within these agricultural ruins.

In applying the concept of ruins and ruination, the Nguyễn's describe how they have abandoned rice production because it didn't provide enough income for them, however the ruins they live within now describe what happens after rice. For them, their temporal food security trap is in the past promises of what a rice livelihood would always provide – a livelihood and food. After not having enough income from rice production, they were financially capable of other livelihood opportunities outside of wage labor. But in doing so, they live within this trap of the uncertainty of former rice landscapes and the prospect of hope displaced from rice and now onto oranges. The food security trap leaves the Nguyễn's never able to fully move beyond the past and into their future. As Rao (2013) describes, the creation of ruins is always seen as only a cost of development by the state without any regard for the everyday realities of these types of dispossessions.

4.7 Living within the ruins

These two examples show the different pathways farmers can and do take to address their livelihood security. The first describes farmers who lose their livelihood capability in rice farming and fall into insecure and fragmented wage labor opportunities. The second describes farmers who seemingly have more livelihood opportunities in rice and non-rice farming, but experience precarity in the uncertainty of either livelihood option. Thus, the ruins here are compounding, on the one hand mark the potential for livelihood opportunity and national rural development, while on the other hand symbolizes the various forms of livelihood dispossession. Ruination describes the process through which these landscapes have been deemed landscapes of change for

modernization and development, while also developing a landscape through which livelihoods are increasingly precarious and vulnerable to these changes and acts of abandonment carried out by government officials. These discursive and policy-based tools are examples of the material and discursive process of displacement (See also Dempsey 2016). This ? leads to uneven flows of benefits, exploitation of land, all the while allowing development agencies, or in this case, the national government, from evading responsibility in this type of livelihood displacement. The Nguyễn family is wrapped up in this material and discursive process of ruination – changing their livelihood trade from rice to oranges results in the unequal benefits of either such lifestyle as they are haunted by a fear of the future and the past.

These ruins also tell the story of slow dispossession in late socialist age. The state's push for agricultural development and progress for growth in its economy leaves behind these ruins that farmers are left to cope. The agricultural industry in Vietnam, in a late socialist state, treats agricultural landscapes as one that is late, thus producing different types of ruins, both visible and invisible. This suggest that national policies expect farmers, like Cô Phương, to recover from losses or leave rural livelihoods. I suggest that this is a form of dispossession created by the food security trap; a dispossession that is not always visible. These types of dispossession fall in line with more dominant changes occurring on rural landscapes in Vietnam: rural to urban migration, aging farming populations, and loss of land to wealthy landowners (Fly 2016; Li 2009; Nguyen, Grote, and Sharma 2017).

The Mekong Delta was once a frontier landscape for rice production, and the hope for a nation's economic prosperity and food security (Gorman 2019). But more recently, these rice farming landscapes have suffered the reprioritization toward intensive production, and the state has created conditions in which vulnerable livelihoods persist and limited opportunities exist for smallholder farmers. The focus on core rice production and rural development are attempts at allowing opportunity for a late socialist growth. Shifts in Vietnam also reflects a shift to prioritize modernize rural landscapes (Taylor 2007). What remains then, are agricultural landscapes of ruins, actual material remains of what once was, and affective remains take shape in farmers' fear of what will be.

These ruins, as described by Cô Phương, show what is left of an agricultural economy undergoing change. To restate, the production of ruins is a desired change detailed in the Vietnamese Government's "Agricultural Restructuring Plan" that has hopes of bringing rural

living standards out of poverty. This vision, as I describe above, is aligned with the "lateness" ideology. The ruins that I detail further anticipate what is yet to come, what Stoler (2008) calls the vital reconfiguration that can be done in rewriting the narrative of these landscapes. As I show, the farmers I worked with attempt to rewrite the narrative of rural landscapes to reveal the resulting types of dispossession in the government's strategy for pro-poor and pro-productivity landscapes. Landscapes of agricultural ruins are in contrast to livelihoods that are deemed dominant and favored by the state, and those deemed necessary and required by farmers. However, as the case of Cô Phường's family shows, this diversification of agency and structural inequalities provide important insights into how farmers choose to live in these transitional time periods. By paying attention to how the food security trap creates these dominant discourses and livelihood strategies for farmers, it reveals how farmer livelihoods can be institutionally unequal even as farmers choose to pursue livelihood opportunities that further reveal these structural inequalities that are not visibly seen or recognized by national policies toward rural development.

4.8 Conclusion: If not rice, then what emerges?

In this article, I chart how visible and invisible agricultural ruins are created by state-based agricultural models and policies. The food security trap, or the state-led narratives and policies that promote food security through rice production and undermine farmer livelihood security, makes these ruins visible. This article details the impacts on local farmers' livelihoods in Mỹ Phù Đông commune. Cô Phường's empty lizard enclosures show how the food security trap is structural – political, economic and environmental factors impact the livelihood opportunities. What makes her story about agricultural ruins interesting is how these national discourses about livelihood plurality are posed as pathways for success and opportunity, however, her experience shows that precarity and vulnerability can result. Thus, while livelihood opportunities, that are alternative to rice, are posed by the state as accessible to all farmers; access to these opportunities and their impacts are still very much unequally distributed. The Nguyễn family orange orchard describes how the food security trap is built within these national policies aimed toward agricultural development, growth, and change. However, what remains common in both of these stories are the agricultural ruins that emerge – the seemingly possible and yet impossible barrier of rice and non-rice landscapes.

As late socialist ideologies, and Vietnam's outward eye toward modernity in all industries continues to emerge (Grant 2014; Harms 2016; Hoang 2015), the impacts on agricultural landscapes are more than just material – they are tenacious in their impact on livelihood opportunities. Global agricultural development, seen in Vietnam's interest in organic production, fair trade, and international food safety certifications (Ehlert and Faltmann 2019) describes a shift in how landscapes are utilized and what livelihoods belong. Besky's (2013) examination of tea plantations in India maybe acts as a cautionary tale for Vietnam's rice farmers. While tea thrives in Darjeeling, it acts as a ruin – connecting political economy and ecological restructuring of landscapes to create a reminder of colonial pasts and colonial presence (Besky 2013). In the same way, rice landscapes are a ruins of both – a haunting of past colonial efforts shaping the current landscape, and also of the present and lasting impacts of a rice-dominant agricultural landscape.

Thus, the abandonment of rice livelihoods and the untenable nature of that livelihood, as seen through the government's eyes, goes beyond just the political economic restructuring or the ecological uses of the landscape. What livelihood possibilities emerge, is yet to be decided. However, what we can learn from this are the ways that farmers continue to live within these ruins. Tsing's *awkward zones of engagement* (2005) comes to mind here, that there is no one universalizing quality but rather the need to pay attention to what happens when they meet. Dismembering this falsity that there is either one or the other, in the Dayak's case, either development of conservation (Tsing 2005), in the case of Cô Phương and the Nguyễn's, either rice or bust, we begin to see more. This situating and recognizing of the plurality in livelihoods allow us to also view agricultural ruins as landscapes not just of stagnant loss awaiting development and growth, but rather opportunity.

By highlighting these different forms of the food security trap, as institutional, national, and temporal, I hope to highlight the inequality and limits of farmer livelihoods. A feminist political ecology framework situates the different experiences of agricultural production within these broader changes occurring on Vietnam's rural landscapes. We also see that farmers' ability to adjust to new livelihood opportunities is not an individual problem, but rather is created through limitations in their power to make decisions about their agricultural production. These state-driven agricultural intensification programs make up the sociotechnical imaginary through which multiple imaginaries emerge, Cô Phương and the Nguyễn's being examples of how multiple imaginaries can exist. However, while multiple imaginaries of futures emerge, state-based powers

that created the food security trap remain, thus creating the ruins. Ruins, as an analytical concept, becomes important in that it situates the temporal and material livelihood experiences that embody state and farmer desires. Its temporal component makes visible the slow violence of late socialist growth and modernity upon farmers' livelihoods. This case study also allows us to continue to ask critical questions of whether alternative to rice livelihoods can actually lead to something else entirely, or are they reproducing the constraints that are not in line with what farmers or the national government wants.

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CHAPTER 5. CONCLUSION

In the early months of 2020, I received a message from Dr. Kiên , my research supervisor at the Research Center for Rural Development in An Giang, Vietnam. It had been about two months since we last connected, two months that was filled with the spread of a global pandemic, COVID-19. He was asking if I could pass along a GoFundMe page that his non-profit organization was using to raise money for farmers in An Giang province who were suffering from one of the worst droughts in the past decade. While I was conducting research in MPD commune, some farmers mentioned the impact of droughts on their fields. Most notably, a drought in 2015 resulted in farmers losing most, if not all, their rice production in a season. The devastation of such loss, as described in the articles of this dissertation, resounds within all facets of farmers' livelihoods. Central to Dr. Kiên 's request to share his crowdsourcing campaign with my friends and the impacts of this season's drought is the precarity of farming livelihoods in Vietnam. I was confronted again with some of the questions that started this dissertation project – If farmers produce security for the nation, then why do they remain insecure?

Crowdsourcing aid is a reminder of the failure of state-programs to support farmers, thus requiring the need to solicit private individual donations through efforts like Dr. Kiên 's fundraiser. It also serves as a reminder of what is at stake when existing state-programs meant to provide financial aid during bad harvests, or agricultural models meant to provide higher incomes to create financial security have instead created greater livelihood insecurity. However, the conditions under which farmers continue to remain insecure despite the implementation of these state-based projects for rural development, remains unaddressed. As described in three articles, I show how the state maintains a national food security agenda based on agricultural yields, and how farmers rationalize their lived realities of security and insecurity within these programs.

In Vietnam, national notions of food security are inherently tied to technological and scientific advances in productive yields. As Carney describes, "the ontological basis for the concept of 'food insecurity' stems from an ongoing politics of knowledge that increasing attempts to apply scientific understanding to what are indeed political-economic or social problems and all the while dehumanizing those who suffer" (2014, 2). Food security as a sociotechnical project (Jasanoff and Kim 2015) is shaped by global discourses around agricultural technological approaches to addressing what Carney calls, a "political-economic or social problem." Thus, as

food security projects are carried out through state governance, sociotechnical ordering suggests what farmers and agriculture can be like – patterning livelihoods as good and bad based on their alignment with state-based visions. In applying these theories, I show how farmers' livelihoods are made invisible in the states' sociotechnical imaginary that is based on late socialist governance of agricultural livelihoods. Through three separate articles, I traced the multiple experiences of farmers' livelihood security, national engagement with discourses around food security, and the implications for thinking through the impact of these discourses on local livelihoods. However, as this dissertation presses, the consequences of such logic are simultaneously urgent to address and marginalized in dominant discourses around food security.

In exploring the strategies that farmers implemented to maintain security, the necessary conditions for a secure livelihood, and the national discourses utilized to govern strategies for national food security – I found that farmers and farm laborers who did not successfully maintain the state's socio-technical imaginary, were made invisible. While Vietnam's national policies and strategic plans over the next five years aim toward strengthening agricultural production, creating more effective management plans, and furthering rural development, the source of farmers' vulnerability and their livelihood security remain abstract. Dr. Kiên 's crowdsourcing makes claims that address the lacking state-based institutions in place to address farmers' insecurity.

By situating food security within farmers' livelihoods and as a part of the state's socio-technical imaginary, I bring attention to the complexity of food security as experiences on the ground. Article 1 addresses two major objectives of this dissertation. I show how farmers engaged with the national projects food security by navigating their own agricultural identities, which are inevitably entrenched within state visions for food security and their own strategies for livelihood security. In this article, I describe food security as a state-based project that promises wealth and financial opportunity for farmers. For the state, these new agricultural programs can move the country forward in its late socialist quest toward growth and modernity, while also continuing to provide for the nation. I situate farmers' experiences as they navigate these promises of wealth with their own livelihood desires in order to show how state governance of livelihood security has material and ideological implications on farmers. I argue that conditions of "enough," act as material and affective reminders of the widening security gap within this farming community. While some farmers continue to thrive in MPD commune through government assistance and material wealth, other farmers experience compounding insecurities on already stressed household

finances. While these assistance programs seek to provide farmers with enough stability to weather the vagaries of rice production, the distribution of aid and wealth affect farmers' ability to recover from bad harvest seasons. Thus, farmers grapple with their continued ability to grow rice when they are seemingly practicing the "right" livelihood models of growing rice, while still not having enough to survive. The contrasting experience are farmers who succeed and who do not act to model what the state desires in the sociotechnical imaginary and unintentionally perpetuating the existing inequalities and insecurities of other farmers. The agricultural landscape can then appear secure, as farmers' success and state-based programs proceed. However, underlying this success are the farmers who do not fit this desired imaginary and become doubly burdened.

Another major objective of this dissertation was to trace the implications of late socialist market demands on agricultural production and farming livelihoods. Article 2 examines how Vietnam uses global discourses around food safety, implements them within a late socialist context, and explores the impacts on farmers' livelihoods. Food safety certifications, reliance on technoscientific knowledge, and controlling agricultural management practices are all examples of late socialist agricultural production that seek to modernize Vietnam's agricultural industry. As such, implementing these models make Vietnam's rice farmers legible to an urban middle-class consumer, and the state's visions of late socialist growth. In this article I show how farmers in MPD commune conceptualize safety in three spheres – food, environmental, and household. Farmers talk about how in adopting models to produce safe food, they are confronted with livelihood trade-offs that weigh safety within these different spheres. And as new strategies to produce food are introduced in these rural landscapes, farmers continue to point to the existing landscape of insecurity – polluted environments, precarious production, and insufficient incomes – and the resulting creation of new insecurities – livelihood trade-offs between safe food and safe environments, rural outmigration, food access, and responsibility for food safety.

And lastly in Article 3, I address the last major objective of this dissertation, which seeks to examine emergent possibilities for rice farmers. I introduce the food security trap in Vietnam to suggest that state-led policies that promote food security are the same policies that undermine farmer livelihood security. In exploring how these policies undermine farmer livelihood security, I utilize ruins and ruination to describe processes of dispossession. The logics of rural development insufficiently suggests that states are aiding farmers in their transition out of poverty and into more stable livelihood. However, these development indicators miss local livelihood practices as well

as the nuances of slow transitions and livelihood dispossession, or the ability to make decisions about one's future. Including a temporal component to the processes of rural development and food security practices, I show how development indicators and state policies miss the impacts of new policies that reconfigure land tenure or new policies that shift management practices of agricultural fields. The misalignments between new policies and agricultural practices result in uneven flows of financial benefits, exploitation of land, and the state evading responsibility in these examples of livelihood displacement. While this is a story of dispossession, I also emphasize that farmers are seeking new livelihood opportunities that are emergent from the food security trap. The results of these new livelihood opportunities and what other ones might emerge has yet to be decided.

However, what this dissertation does reveal, is that without changes in the agricultural institution – or the sociotechnical imaginary that governs rice production and the coproduction of farming livelihoods – farmers will remain vulnerable to changes in the environment, in rural and urban migrations, and in government policies. Without careful consideration of food security as inherently about livelihood security, we miss the affective dimensions and material conditions through which farmers express their ability to maintain the necessary conditions to achieve food access, financial stability, and future-making.

5.1 Theoretical Contributions

Theoretically, this dissertation examines how food security remains a complex issue and provides a combination of frameworks to ground an alternative approach to understanding food security. In combining a feminist political ecology, political ecology, and feminist science and technology studies framework, this dissertation explores the processes and distributions of intersectional social-environmental relationships as they emerge within multiple sociotechnical imaginaries. By integrating these theoretical frameworks, I bring attention to questions about temporal and embodied aspects of farming livelihoods, and the facets of farmers' lived experiences that are critical to understanding food security. Bringing attention to feminist political ecology and feminist STS frameworks that emphasize affects and emotions, in addition to the household scale, I show how food security is experienced intersectionally.

Through three articles, I argue the following about the creation of specific agricultural models and sociotechnical imaginaries. Food security, as it is governed in Vietnam, cross-cuts

multiple scales simultaneously. In dominant discourses, food security is governed through sociotechnical imaginaries focused on futures that encourage the growth of science and technology. This is shown in state-based agricultural models described in Article 1 and 2, intensive rice cropping, reliance on agro-chemicals, and the infrastructure that supports these models – canals and irrigation systems. The basis of agricultural production exists at global, national, and local scales. The sociotechnical imaginary of food security production is maintained through late socialist ideologies that push policies and practices of growth, modernity, and development to justify Vietnam's positioning in global economies. And as Vietnam scholars, such as Grant (2014) show, agricultural certifications and programs are reflections of global economies and farmers themselves – both of which are not complete. Thus, in making food security a sociotechnical imaginary, agricultural programs describe what is and what ought to be, but only as aligned with state visions.

Focusing on livelihood differences, this dissertation also presents multiple sociotechnical imaginaries. As farmers in these three articles describe institutional traps and lacking in support, they also describe their own futures in line with state-based programs and values. Thus, food security maintains its complexity as farmers show how multiple livelihood realities can exist – ones aligned with agricultural technological futures and within farmers' own ways of being, neither being mutually exclusive. However, as these farmers show, when state visions are not in line with farmers' own ability to adjust their livelihood, the state fails these farmers. This is true because despite farmers' own livelihood strategies, the state's sociotechnical imaginary remains dominant. We see this in how the state operates and maintains discursive and institutional power that is able to make some farmers' livelihoods invisible on agricultural landscapes.

My theoretical contribution reintegrates farmers' lived experiences and temporal and embodied aspects as central to the study of food security. Contextualized in late socialist literature, state actors have conceptualized agricultural futures based on ideas of growth and modernity, as part of belonging to global economies. As such, agricultural models toward productivity and discourses around food security are mobilized – seeking the continual intensive production methods without consideration of implications to farming livelihoods. FPE and STS are necessary in understanding the multiple scales at which food security can be studied, but also asks questions about what is food security and what it ought to be, and more importantly focuses on these multi-

scalar integrations of how state actors and dominant food security discourses order and organize farming livelihoods to achieve late socialist visions of agricultural development.

5.2 Methodological Contributions

Methodologically, this work was guided by feminist research methods. Gibson-Graham's (1994) parallel between research practice and resource extraction acted as a reminder of research practices that "mine." They identify that research is not about discovering a truth, but rather about the *interactions* that reveal alternative discourses that can subvert existing power structures (Gibson-Graham 1994, 220). As a scholar interested in food security, I sought to maintain this methodological reminder in not only how I understand food security and farming livelihoods, but also in how I conducted myself and designed my research.

Guided by feminist participatory methodologies, mostly within practice of feminist political ecologists (Dianne Rocheleau 1994; Thomas-Slayter, Wangari, and Rocheleau 1996), I sought to incorporate participant voices and worldviews within the data collection and analysis process. By grounding my research design within voices who are often silent, the parallels between farmers made invisible and my awareness of research practices that can perpetuate the same, it became ever more important to farmers here.

As a project examining discursive power as it proliferates from national policy to livelihood practice, I navigated local research protocols, professional relationships with government officials, and an awareness of my own presence and visibility. I mention this here as I saw my feminist methodologies necessary in understanding food security. Dominant discourses and ideologies about who farmers are and what agricultural practices are "right," proliferated as I formed more relationships with government officials and NGO's. I mention this here as these relationships often reflected poorly upon farmers – stating that farmers were unknowledgeable and lacked management skill. Taken uncritically, discursive powers of *who* has authority and *how* agriculture is practiced, remain untouchable. Thus, feminist scholarship focused on food security and resource management guide critical analysis to disparate power within socioenvironmental relations (Davidson 2016; L. Zanotti 2016; M. Carney 2014; Burnham, Ma, and Zhang 2016a; J. Johnson 2017). Understanding household food security requires reflexive understanding, critical analysis of voice, power, and worldviews. Without such, the incomplete picture of food security as a lived experience, remains.

I also implemented a multi-method approach to examining food security for a multitude of reasons. The first being, it was a recommended practice by local research institutes in Vietnam who were familiar with working in the region. Conducting household surveys at the start of fieldwork helped guide an understanding about the region and the demographics and characteristics of MPD commune. Relationally, these surveys helped break down some barriers of access, as I became more visible in the commune and also was able to build relationships with some farmers. The second reason was to encourage multiple ways of expressing one's own food security that is not always captured solely through an interview or a survey or a mapping exercise. This multi-pronged approach attempted to create a fuller picture of farming livelihoods that expanded the existing temporal and spatial scales and allowed for conversation to expand into future livelihood arrangements.

As an applied anthropologist, I see this work contributing to methodological approaches to food security research, as conducted by development NGO's and agricultural research institutes. In implementing feminist participatory methodologies, I press the need to remain reflexive in the ways that Gibson-Graham (1994) describe. Such that research is not about seeking an ultimate truth, but rather an examination of the interactions of discursive power and lived experiences. Practically, I believe this to mean two main things: the first being reflexive in research design and the research responsibilities and the second being flexible in your research design. Thus, maintaining an understanding of how discursive power appears in research design – in the questions that we ask and in the methodological toolkits we draw from – can ground researchers in remembering what agendas are being prioritized and why. Research design must also account for seeking permissions and potential adjustments to how research is conducted. Part of this practice stems from remembering that the research toolkits that we implement, may further ostracize ways of communicating and representations of livelihoods. These are necessary processes in order to decenter the dominant discourses of what food security is and how we see and approach studying it. Thus, the way that researchers approach studies about food security matters because it shapes how you can begin to understand the multiple types of livelihood strategies and the different ways that food security and insecurity are expressed.

5.3 Applied Contributions

More specifically, each of these articles point to the larger implications of not only how practitioners approach food security problems globally, but also about why this interdisciplinary training, feminist methodologies, and way of thinking matters. In the first article, I introduce the promise of wealth within state agricultural programs and how this creates unequal distributions and experiences of wealth and farming success. In particular, I pointed to the affective and material conditions through which these inequalities are apparent as a way to identify a way of thinking about inequality. National policies that continue to support very specific models of agricultural development and attention to farmers that succeed often exclude or marginalize the farmers that require financial assistance or livelihood support. Rather than paying attention to the extremes – farmers who are wealthy or farmers who have left agriculture – national policies and research institutes working within Vietnam, must pay attention to farmers that remain in between this spectrum. As I highlighted in this article, farmers repeatedly pointed to their fear about what *could* happen. It is these specific fears and potential realities that draw attention to the failures of national policy and food security discourse. By understanding and focusing on the material and affective conditions of farmers that remain in the middle of the wealth spectrum, policies and research institutes can better understand the economic and livelihood conditions through which farmers need to remain food secure.

In the second article, I discuss the changing rural-urban dynamics in Vietnam as they are revealed in discourses around food safety. This article points to the existing changes that are occurring, and the rise in global distrust around agricultural production. What this article does is point to what happens when the discourses get ahead of the market and economic realities of agricultural landscapes. This paper has implications for how food studies scholars think about the issue of food safety and agricultural development. Similarly, this paper has broader implications for scholars who work within plant production and agricultural research centers, as it highlights an additional layer to understanding *how* these technologies impact local livelihoods. Thus, I propose that agricultural development workers and agricultural research centers pay careful attention to the implications of technological implementation. Second, while this article specifically is focused on Vietnam, my findings can be applied broadly to many middle to low income country that rely on or has historically relied upon agricultural industries and agricultural development. Without

attention to the mismatched agendas of food safety discourse and economic and market infrastructures, farmers remain at risk of livelihood loss.

Article three suggests food security scholars should consider the concept of a food security trap. I provide a way to think about the complexity of global food insecurity by defining and elaborating this concept. I propose food security scholars should consider the complex network of actors and temporal conditions of agricultural systems. While much social justice work aims to reimagine futures, I similarly approach food security challenges as a future that needs reimagining. I provide one way to reimagine this future that contextualizes the urgency to which agricultural livelihoods are shifting. To this end, ruins and ruination also conceptually provides a different way of thinking about how agricultural landscapes are changing – by situating loss, desire, dispossession, and hope within apprehending farmers' livelihoods and experiences. Thus, as food security scholars continue to envision futures of technological development, ways of accounting for micro and macronutrients in household diets, I press them to consider other uncertainties. Specifically, I recommend attention to the transition zones, where households are neither food secure nor food insecure or where households have just "enough." By paying attention to these middle areas, we can see how farmers negotiate transitions in agricultural development as central to how, collectively, agricultural futures can exist.

5.4 Moving Forward

To return to the paradox that started this project, if farmers produce food security for the nation, why do they remain food insecure? As I have shown throughout this dissertation, food security and farming livelihoods have multiple characteristics, and the discursive powers that govern agricultural practices and food security are disparate and strong in their persistence across multiple aspects of the agricultural production chain – food certifications, agricultural management strategies, and national policies. And as Dr. Kiên's crowdsourcing campaign remains active, even months after his first request to me was sent, I can't help but wonder the ways in which the precarity of agricultural production will not only change with environmental changes, but also the ways in which farmers' precarity will be made visible and invisible. Are crowdsourcing campaigns the only mode for the future stability of farmers' livelihoods – I sure hope not. But will these campaigns mask the underlying inequalities and existing insecurities of farmers – maybe.

As this work has shown, and as the pervasiveness of livelihood insecurity in farming communities worldwide are felt (Burnham, Ma, and Zhang 2016b; Grant 2014; Zanotti 2016), I see this work continuing to push the boundaries on how food security is researched. In seeking to disrupt the dominant discourses of food security, as governed through sociotechnical imaginaries and agricultural yields, this dissertation emphasizes the importance of centering farmers. Focusing on farmers' stories and livelihoods, reframes the dominant discourses of food security that inexplicitly marginalize farmers, farmers' knowledges, and their livelihoods. In order to build stronger food security policies, there is a need to understand first, farmers' experiences and livelihoods as they are central to the continued production of food and yet are often left out of these discussions. Coming off of this ethnography and having sit with the lived experiences of farming futures and the intersection of hope and dispossession, I learned just how many different ways farmers' experiences are discounted when it comes to the development of policy, implementation of technology, and adaptation of land use models. And in fact, these are not new realizations amongst anthropologists. Pottier's (1999) piece is a reminder of the history of anthropologists pushing for more within the study and development of the food security field. Asking why these practices remain when we know that they aren't working. And that question remains for me as well – why do we continue with the same practices, how do we call attention to the invisible inequalities, and how can farmers or those marginalized get a seat at governing tables? While this dissertation sought out these questions, I believe that applied anthropologists have a particular skillset to continue to press for more from food policymakers, from agricultural development agents, and from researchers. We are trained to see how invisible power operates, to pay attention to the often forgotten and overlooked aspects of livelihoods, and we understand the role and importance of lived experiences. As I move into a career as a practicing anthropologist, I take with me this deep understanding that how applied anthropologists show up and show what we think and how we think – these processes actually matter in fighting for greater food justice.

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APPENDIX A. FARMER SURVEY INSTRUMENT: FARMER WELLBEING AND FOOD SECURITY

Section 1: Farmer Well-being
Please select the answer that best reflects your experiences as a farmer.

1) How important is **farming** in making a good life?
   Most important □1 Somewhat important □2 Not Important □3

2) How important is **family** in making a good life?
   Most important □1 Somewhat important □2 Not Important □3

3) How important is **education** in making a good life?
   Most important □1 Somewhat important □2 Not important □3

4) How important is **getting a job** in making a good life?
   Most important □1 Somewhat important □2 Not important □3

5) How important is **good health** in making a good life?
   Most important □1 Somewhat important □2 Not important □3

6) How important is **having enough food** to eat in making a good life?
   Most important □1 Somewhat important □2 Not important □3

Finance
How true are the following statements?

1) I am satisfied with my household income.
   Very true □1 Somewhat true □2 Not true □3

2) I am satisfied with my ability to save money.
   Very true □1 Somewhat true □2 Not true □3

3) I can afford my daily living costs.
   Very true □1 Somewhat true □2 Not true □3

4) I believe that growing rice provides enough of an income to feed my family.
   Very true □1 Somewhat true □2 Not true □3

5) I can easily access resources when there are issues with my farm.
   Very true □1 Somewhat true □2 Not true □3

6) I believe that the cost of rice production has increased in the last 20 years.
   Very true □1 Somewhat true □2 Not true □3

7) I have other avenues to gain finances that I can rely on. (e.g. Family, children, multiple jobs)
   Very true □1 Somewhat true □2 Not true □3

Rate these questions on a scale of 1-3.

8) How would you rate your overall financial wellbeing?
   Excellent □1 Good □2 Bad □3

9) How satisfied are you with your living standards?
   Excellent □1 Good □2 Bad □3

10) How satisfied are you with your farm's production?
    Excellent □1 Good □2 Bad □3

11) How satisfied are you with your ability to purchase food?
    Excellent □1 Good □2 Bad □3

12) How satisfied are you with your ability to grow food to eat?
    Excellent □1 Good □2 Bad □3

Please rank the following from spending the most (1) to the least (5):

_____ rice seeds
_____ pesticides/herbicides
_____ fertilizers
_____ farm labor

Wellbeing

How true are the following statements?

1) I feel energized to do my work.
   Very true □1 Somewhat true □2 Not true □3

2) I think that I have lots of options to solve my problems.
   Very true □1 Somewhat true □2 Not true □3

3) My past experiences have prepared me well for the future.
   Very true □1 Somewhat true □2 Not true □3

4) I think I am successful in life.
   Very true □1 Somewhat true □2 Not true □3

5) I usually find myself worrying about something.
   Very true □1 Somewhat true □2 Not true □3

6) I can meet the goals I set for myself.
   Very true □1 Somewhat true □2 Not true □3

7) I feel that I can provide well for my family.
   Very true □1 Somewhat true □2 Not true □3

8) My skills and knowledge are adequate for my needs.
   Very true □1 Somewhat true □2 Not true □3

9) My skills are valued by my family.
   Very true □1 Somewhat true □2 Not true □3

10) My skills are valued by other farmers.
   Very true □1 Somewhat true □2 Not true □3

11) I believe that growing rice is a respectable job.
   Very true □1 Somewhat true □2 Not true □3

12) It is important to help other farmers with their work.
   Very true □1 Somewhat true □2 Not true □3

13) It is important that my children become farmers.
   Very true □1 Somewhat true □2 Not true □3

Rate these questions using a scale of 1-3.

14) How would you rate your health?
   Very Good □1 Good □2 Bad □3

15) How would you rate your family's health?
   Very Good □1 Good □2 Bad □3

Environment

To what extent are any of these a problem for your farms? Rate them based on the following scale:

1) Poor water quality
   Big problem □1 Somewhat a problem □2 Not a problem □3

2) Soil health
   Big problem □1 Somewhat a problem □2 Not a problem □3

3) Invasive plants
   Big problem □1 Somewhat a problem □2 Not a problem □3

4) Air pollution
   Big problem □1 Somewhat a problem □2 Not a problem □3

5) Poor health of natural vegetation
   Big problem □1 Somewhat a problem □2 Not a problem □3

6) Pests/disease
Big problem □1 Somewhat a problem □2 Not a problem □3

7) Cost of agricultural inputs
Big problem □1 Somewhat a problem □2 Not a problem □3

8) Low income
Big problem □1 Somewhat a problem □2 Not a problem □3

9) Lack of available rice markets
Big problem □1 Somewhat a problem □2 Not a problem □3

10) Drought
Big problem □1 Somewhat a problem □2 Not a problem □3

11) Salt intrusion
Big problem □1 Somewhat a problem □2 Not a problem □3

Food Security
How true are the following statements?

1) I am satisfied with how much food I eat.
Very true □1 Somewhat true □2 Not true □3

2) I get enough of the kinds of foods that I want to eat.
Very true □1 Somewhat true □2 Not true □3

3) I worry about whether my food will run out.
Very true □1 Somewhat true □2 Not true □3

4) I worry about how much food I can grow to feed my family.
Very true □1 Somewhat true □2 Not true □3

5) I worry about how to pay for food.
Very true □1 Somewhat true □2 Not true □3

Please answer these questions based on the last 12 months.

6) Did you ever skip a meal because you couldn't afford food?
Yes □1 No □2

7) Did you ever skip a meal or cut portion size so that another family member could eat more?
Yes □1 No □2

8) Were you ever hungry because there wasn't enough food?
Yes □1 No □2

9) Did this change during the wet season versus the dry season?
Yes □1 No □2

Section 2: Agricultural Practice and Knowledge

How true are the following statements?

1) I have enough resources to adjust to the impact of drought on my rice crops.
Very true □1 Somewhat true □2 Not true □3

2) I have enough resources to adjust to the impact of salt intrusion on my rice crops.
Very true □1 Somewhat true □2 Not true □3

3) I am able to make good decisions during bad harvest years.
Very true □1 Somewhat true □2 Not true □3

4) I have good options for selling my rice.
Very true □1 Somewhat true □2 Not true □3

5) I feel financially secure as a rice farmer.
Very true □1 Somewhat true □2 Not true □3

6) I want to have more options other than rice farming to make an income.
Very true □1 Somewhat true □2 Not true □3

7) I rely on multiple sources of income to support my family.
Very true □1 Somewhat true □2 Not true □3

Choose the answer(s) that best describe your experiences.

8) I rely on _____ for other sources of income.
□ Livestock
□ Forest-based products
□ Government salary
□ Local non-farm wage labor
□ Local farm wage labor
□ Garden crops
□ Services
□ Trading
□ Other _____

9) When my family runs out of food, we rely on _____.
□ Government services
□ Neighbors
□ Friends
□ Family members
□ Other

10) I get information about new farming practices from _____.
- □ Government officials
- □ Family members
- □ Other farmers
- □ My own experiences
- □ NGOs
- □ University researchers
- □ Other

11) I learned how to farm from _____.
- □ Government officials
- □ Family members
- □ Other farmers
- □ NGOs
- □ University researchers
- □ Other

12) I choose what to plant based on _____.
- □ what I've done in the past
- □ what other farmers are doing
- □ information from government
- □ market prices
- □ environmental conditions

13) Is there anything else you think is important to tell us?

Section 3: Farmer Information
This section asks general questions about yourself and your household.

1) What is your age?

_____ years

2) What is your gender?

Male □1 Female □2 Other □3

3) What is your ethnicity?

Cham □1 Khmer □2 Khan □3 Other □4

4) How many years of formal education have you completed?

_____ years

5) How many people live in your household?

_____ people

6) What is the age of each person living in your household?

_____ _____ _____ _____ _____ _____

_____ _____ _____ _____ _____

7) How many of the people living in your household provide labor on your farm?
_____ people

8) How much land does your family own?

_____ hectares

9) How much land does your family farm on?

_____ hectares

10) How many years have you been growing rice?

_____ years

11) What is your household income?

_____ dong

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VITA

EDUCATION

Purdue University	Anthropology	Ph.D.	2020
(Concentrations: Applied Anthropology, Ecological Sciences and Engineering)			
Purdue University	Anthropology	M.S.	2016
Ursinus College	Environmental Studies and Sociology	B.A.	2014

PROFESSIONAL EXPERIENCE

Purdue University, Engineering Projects in Community Service (EPICS), West Lafayette, IN

Teaching Assistant and Graduate Administrative Assistant, 2019 – 2020

- Advised undergraduate students on human-centered design process for multi-disciplinary environmental sustainability and international development project
- Managed strategic planning and communications for student recruitment including scheduling recruitment meetings with faculty and undergraduate ambassadors
- Developed and taught qualitative research skills including concept mapping, introduction to ethnography for engineers, story mapping, and interviewing skills
- Will lead student focus groups in order to assess and develop curriculum congruent with program learning objectives

Hyphen Magazine: Asian America Unabridged

Senior Editor of Food and Agriculture, 2018 – 2020

- Wrote 2 feature stories about immigrant access to food in the US and cultural experiences
- Edited and advised writers from drafting to publication on feature stories
- Copy-edited writing pieces about food and agriculture in Asian American communities on Drupal

Purdue University, Department of Anthropology, West Lafayette, IN; Honolulu, HI; Paris, France

Graduate Research Assistant, 2015 – 2016

From Presence to Influence: Examining the Politics of Indigenous Representation in Global Environmental Governance (PI: Dr. Kimberly Marion Suiseeya; co-PI: Dr. Laura Zanotti)

- Conducted collaborative event ethnography on a multi-disciplinary team utilizing rapid ethnographic methods at two international environmental governance events in Honolulu, Hawai'i and Paris, France
- Mentored Purdue University graduate students on data management and organization by creating a data management plan that detailed how to manage files and log team-member data
- Managed the Presence to Influence Project Blog to detail daily research activities and research results to academic and non-academic audiences

Purdue University, Department of Anthropology, Utqiaġvik, AK
Graduate Research Assistant, 2014 – 2016
Collaborative Research: Gender, Environment, and Change: Exploring Shifting Roles in an Iñupiat Community (PI: Dr. Laura Zanotti; co-PI: Dr. Courtney Carothers)

- Conducted collaborative ethnographic research on a multi-disciplinary team utilizing participatory and decolonizing methods to collect and document stories of leadership and strength in Utqiaġvik, AK
- Research focused on environmental change, community adaptation, food security, and Iñupiat livelihood strategies
- Managed five-member team research files, conducted literature review on decolonizing methodologies and Alaska Native subsistence rights and history

FIELD RESEARCH EXPERIENCE

2017 – 2018. An Giang Province, Vietnam and Ho Chi Minh City, Vietnam
Conducted dissertation research: 34 rice farmer household surveys, 100 semi-structured interviews with government officials and rice farmers, 76 participatory mapping interviews with rice farmers, and 16 months of participant observation.

2016. World Conservation Congress. Honolulu, Hawai'i
2015. UNFCCC COP21. Paris, France

Conducted collaborative event ethnography with a coordinated research team to understand the pathways and conditions under which Indigenous Peoples are able to exert influence at global environmental governance events. PI: Dr. Kimberly Marion Suiseeya; Co-PI: Dr. Laura Zanotti

2014 – 2016. Utqiaġvik, Alaska
Conducted 19 semi-structured interviews, over 6 months of participant observation, presented research findings to Alaska Native Village of Utqiaġvik and Iñupiat History, Language, and Culture Commission.

2015. Anchorage, Alaska
Conducted Master's thesis research: 22 semi-structured interviews with refugee and immigrant community members, 2 months of participant observation. Volunteered with Alaska Literacy Program and University of Alaska Fairbanks Cooperative Extension.

TEACHING EXPERIENCE

Purdue University

Guest Lecturer

- Food Security and Environmental Changes — Spring 2019, 2018
- Urban Agriculture — Fall 2017, 2015
- Health, Sustainability and the Built Environment — Spring 2015
- Anthropology Graduate Professional Seminar — Fall2019, Spring 2020

Engineering Projects in Community Service

- Anthropology in Design Work — Fall2019, Spring 2020
- Stakeholder Mapping in Design — Fall2019, Spring 2020
- Qualitative Methods in Anthropology — Fall2019, Spring 2020
- Interviewing Skills — Fall2019, Spring 2020
- Creating a Story Map — Spring 2020
- Mapping using ArcGIS — Spring 2020
- Practice in the field: ArcCollector App — Spring 2020

PUBLICATIONS and PRESENTATIONS

Peer Reviewed Chapters and Journal Articles

Huang, Sarah. 2020. "Food from Home and Food from Here: Disassembling Locality in Local Food Systems with Refugees and Immigrants in Anchorage, Alaska." in ed. Julian Agyeman and Sydney Giacalone. *Immigration, Immigrants, Agriculture and Food in North America*. Cambridge, MA: MIT Press.

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Huang, Sarah. 2013. "Tribal Climate Change Issues: Information to Support Regional Planning Efforts" Internal Report to EPA Region 10. Seattle, WA.

Press Releases

"Leadership and Strength Project" on KBRW, Barrow, Alaska. Radio Interview. June 10, 2014.

Featured in "Two Weeks in Vietnam" *Purdue Climate Change Research Center Annual Report*. 2016.

Featured in Wallheimer, Dorothy. "Battling Climate Change" *THiNK.* April 2016.

Conference Presentations

Huang, Sarah. 2019. “Marginal securities: examining farmers’ fears and desires in making food security in rural Vietnam.” *American Anthropological Association Annual Meeting.* Vancouver, BC, Canada.

Huang, Sarah. 2018. “Amidst Rice Production: Conversations in Farmers' Food Security in An Giang Province, Vietnam.” *The International Workshop on Water Governance, Climate Change and Food Security in Minority Communities, Vietnam.* An Giang, Vietnam.

Huang, Sarah. 2017. “Urban Transnational Foodscapes: Exploring methodological challenges and opportunities to engage immigrants and refugees in urban food programs.” Society for Applied Anthropology’s *Trails, Traditions, and New Directions*. Santa Fe, NM

Huang, Sarah. 2017. “Whose food security? The role of Vietnamese farmer livelihood practices within shifting socio-political environments.” Purdue Center for the Environment *New Perspectives on Sustainability and Resilience.* West Lafayette, IN

Huang, Sarah. 2016. “Localizing the local food movement: Understanding transnational food identities in the creation of local foodscapes in Anchorage, Alaska.” Society for Applied Anthropology’s *Intersections*. Vancouver, BC, Canada

Huang, Sarah with Drs. Laura Zanotti and Courtney Carothers, Charlene Apok, Charlotte Ambrozek. 2016. “Grounded in place: Collaborative research experiences in Barrow, Alaska.” International Conference of the European Network of Political Ecology’s *Undisciplined Environments*. Stockholm, Sweden

Huang, Sarah. 2015. “Food from Here: Understanding local food with immigrants in Anchorage, Alaska.” Graduate Association for Food Studies Meeting. Cambridge, MA

Huang, Sarah. 2015. “Food, Identity and Place: Conceptualizing food security with immigrants in Anchorage, Alaska.” 3rd Annual Yale Food Systems Symposium. New Haven, CT

Invited Talks

Huang, Sarah. 2019. “Visibility in the Field.” Purdue University Dept of Anthropology “Fresh from the Fields” Lecture Series.

Huang, Sarah. 2016. “From Presence to Influence: How identity politics emerged at the Paris Climate Summit” West Lafayette Unitarian Universalist Church Social Justice Forum.

Huang, Sarah. 2016. “Presence2influence: Examining the politics of indigenous representation in global environmental governance” Purdue College of Liberal Arts Lecture Series.

FELLOWSHIPS AND GRANTS

Fellowships

2016 – 2018	U.S. Borlaug Fellowship in Global Food Security for Dissertation Research ($22,624)
2016– 2020	Purdue University Ross Fellowship ($60,000 + tuition)
2018– 2019	Purdue College of Liberal Arts Purdue Research Fellowship ($20,000 + tuition)
2012 – 2014	United States Environmental Protection Agency Greater Research Opportunities Fellowship ($48,900)

Grants

2019	American Anthropological Association: Anthropology and Environment Society Dissertation Workshop Participant
2018, 2019	Purdue College of Liberal Arts PROMISE Grant ($1,500)
2017	Southeast Asian Studies Summer Institute (SEASSI) Scholarship ($5,500)
2017	Purdue College of Liberal Arts Global Synergy Research Grant ($9,200)
2017	Purdue Dept of Anthropology Graduate Travel Award ($600)
2016	U.S. Borlaug Summer Institute on Global Food Security Participant
2016, 2017	Purdue College of Liberal Arts PROMISE Grant ($750)
2016	Purdue Climate Change Research Center Graduate Incentive Award ($4,000)
2016	Purdue Climate Change Research Center Travel Award ($750)
2015	Purdue Graduate Student Government Travel Award ($750)
2015	Purdue Dept of Anthropology Graduate Travel Award ($400)
2014	Frederick N. Andrews Environmental Travel Grant ($750)

SERVICE

Purdue University Service

2019 – 2020	Vice President of Purdue University Anthropology Graduate Student Organization
2017 – 2019	Founder of Purdue University Graduate Student Organization on Food Security
2016 – 2017	President of Purdue University Anthropology Graduate Student Organization
2014 – 2020	Member of Purdue University Anthropology Graduate Student Organization

National Service

2015 – 2020 Reviewer for Journal of Agriculture, Food Systems, and Community Development

2015 – 2020 Reviewer for the Graduate Journal of Food Studies

Community Service

2019 Immigration Clinic Volunteer, Lafayette Urban Ministry, Lafayette, IN

2015 Citizenship Class Instructor, Alaska Literacy Program, Anchorage, AK

2015 Volunteer, University of Alaska Fairbanks Cooperative Extension, Anchorage, AK

SKILLS AND LANGUAGES

Qualitative Data Analysis: Atlas.ti, NVivo, Dedoose

Mapping: ESRI ArcGIS, Google Earth

Language: English (native), Vietnamese (conversational)