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Food Safety Governance in Vietnam: Obstacles and Opportunities

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Food Safety Governance in Vietnam:
Obstacles and Opportunities

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ABSTRACT

Vietnamese people frequently express fear about commercially available food in their country. What accounts for these fears and what is the Government of Vietnam doing to respond to these fears? That is the puzzle this thesis aims to solve.

Traditional Vietnamese food consumption patterns are increasingly burdened by food safety challenges accompanying Vietnam's transition to a market-oriented economy. An already weak food safety regulatory system is forced to navigate a changing society, political climate, economy, and international market.

This public policy study is based on survey research conducted in Vietnam, personal interviews with vendors, consumers, government officials, NGO representatives and extensive research into scholarly literature and reports by international agencies and the Vietnamese government. It details the various food safety issues which plague the food sector of the Vietnamese economy and provides concrete evidence which confirms the Vietnamese people's fear of their food system. Four case studies -- supermarkets and convenience stores; fruits and vegetables; meat; and seafood -- provide an overview of the food industry and its accompanying regulations in order to demonstrate a lack of enforcement across the entire food system. This thesis argues that the Vietnamese government has failed to adequately address food safety matters.

Three overarching factors are identified which explain this regulatory failure: the government's obsession with maintaining political legitimacy, corruption, and a highly fragmented regulatory structure. These factors must be viewed in the context of the state's priorities, which are to continue on the current trajectory of economic growth and to greatly shrink the informal food economy in an effort to adopt a more modern food sector which

emulates Western standards. This thesis is unique because it explores food safety from a public policy perspective, as opposed to the conventional scientific perspective. It provides an original and comprehensive overview of food safety policy in Vietnam and evaluates the Vietnamese political system in light of these policies. The thesis concludes with significant policy recommendations.

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LIST OF ABBREVIATIONS

AMCHAM	American Chamber of Commerce
DAH	Department of Animal Health
DDT	Dichlorodiphenyltrichloroethane
DLP	Department of Livestock Production
DOFis	Departments of fisheries
EUROCHAM	European Chamber of Commerce
FAO	Food and Agriculture Organization of the United Nations
FDA	United States Food and Drug Administration
FDI	Foreign direct investment
GAP	Good Agricultural Practices
HACCP	Hazard Analysis Critical Control Points
HPC	Hanoi People's Committee
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
IPSARD	Institute of Policy and Strategy for Agriculture and Rural Development
ISO	International Organization for Standardization
MARD	Ministry of Agriculture and Rural Development
MOIT	Ministry of Industry and Trade
NAFIQAD	National Agro-Forestry-Fishery Quality Assurance Department
NGO	Non-Governmental Organization
PPD	Plant Protection Department
SPS	Sanitary and Phytosanitary Measures

TFBCs	Transnational food and beverage corporations
UNDP	United Nations Development Programme
USDA	United States Department of Agriculture
USSR	Union of Soviet Socialist Republics
VAC	*Vuon, ao, choung* (“field, pond, stockyard”)
VCCI	Vietnam Chamber of Commerce and Industry
VND	Vietnamese Dong
WHO	World Health Organization
WTO	World Trade Organization
QCVN	*Quy chuan ky thuat* (“national technical regulations”)
QR	Quick response

Introduction

"The food situation in Vietnam is very dangerous now. People do not want to eat the food, but they have to live so they do not have a choice. They think they are eating poison. The government has issued some laws, but nothing has changed."

- Hai Thai

This is how the food safety situation in Vietnam was explained to me by my close friend Hai Thai. Her perspective is not unique. Hai represents the prevailing opinion of the Vietnamese populace. Many Vietnamese are afraid of their food and are displeased with the protection that their government is providing. After decades of unprecedented economic growth, following the Communist Party's success in liberating the country, the Vietnamese government is quickly losing grip of the public approval that it enjoyed until now. Its political legitimacy is being called into question in a major way. It is common for contemporary observers of Vietnam to note the ongoing problem facing the party of bolstering its legitimacy.[1]

In *Vietnam: Rethinking the State*, Martin Gainsborough paints an emblematic picture of the current political, social, and economic state in Vietnam, as I would portray it myself. He describes "a vibrant street life, amazing food, a country in transition from plan to market, industrialization, continued Communist Party rule, a strange mixture of seemingly free-market capitalism and yet continued talk of socialism, an increasingly vibrant public sphere, leading, for some, to thoughts of political pluralism, and a ruling party which is struggling to come to terms with a changing society and economy."[2]

[1] See also Gainsborough, Hayton, and London.
[2] Gainsborough (2013), p. 1

This thesis aims to explain why the Vietnamese are afraid of their food and why the government has failed to respond to these fears. It provides a view into how a country, still governed by a communist party, its only legal party, although with a market-oriented economy is navigating a new era free of foreign occupation and oppression, from a government and a citizen perspective. The view in focus is food safety. It details the various food safety issues within the Vietnamese food system and seeks to explain why they arose, how they are approached on a regulatory basis, and how this has shaped popular opinion. My initial hypothesis, which has guided my research, is that the government has inadequately addressed food safety scandals because its limited approach has been fraught with corruption and widespread fragmentation.

This work is important because Vietnamese culture is defined by its cuisine. Vietnamese cuisine is vibrant and it is vast. It is an integral component of the country's history, its cultural traditions, and kinship systems. The food safety issues discussed in this thesis threaten this cuisine, and therefore threaten an important element of Vietnamese culture. It goes without saying, that the lack of food safety in Vietnam also poses grave threats to public health. These public health matters will be discussed in detail in the chapters that follow.

Methodology

This paper was greatly informed by my four months stay, from January to May 2017, in the country through the Connecticut College Study Away/Teach Away program. A combination of personal accounts, scholarly research review, survey work, and informal interviews with actors involved in the Vietnamese political process were used in order to write this work. The survey work was conducted in Hanoi alongside Professor Rolf Jensen. The surveys examined urban shopping patterns, among various socioeconomic classes, at supermarkets (*sieu thi*)

and traditional markets in Hanoi. Because the sample size obtained from conducting these surveys is limited, I have not relied on it heavily.[3] This survey, as it stands alone, is not representative of the population but it informed my initial conclusions with regard to public opinion on food matters and these conclusions have been expanded through extensive scholarly research.

Background and Definitions

Food safety is defined as the "credence attributes, i.e., attributes not directly observable by the user, which create the most uncertainty concerning quality, relative to search and experience attributes."[4] Prior to Vietnam's economic reforms of 1986, known as *Doi Moi*[5], which transformed the domestic economy into a socialist-oriented market economy, food security and alleviation of poverty were at the center of the debate. The reforms, and the rapid economic growth that followed, have been successful at lifting a large portion of the population out of poverty; food security is no longer a central concern. Since many Vietnamese people must no longer fear starvation, they now have the luxury to concern themselves with the safety of the food they eat. This newly developed concern poses great trouble for the Communist Party.

Furthermore, prior to *Doi Moi,* food safety matters were less of a problem because food production and distribution networks were entirely controlled by the state. The introduction of political and economic reform has made economic development the state priority. The emergence of food safety issues must be seen in the context of profound changes which have resulted from this rapid and widespread economic development.[6] In the context of food safety,

[3] Jensen, Stark-Ewing et al. (2017)
[4] Darby and Karni 1973; Nelson 1970 in Moustier and Tan Loc (2015), p. 55
[5] Throughout this thesis, Vietnamese names or terms will be written in italics without Vietnamese diacritical tone-marks.
[6] Steiner (2016), p. 1342

economic development in Vietnam can be seen both as a positive and as a negative development. From a positive viewpoint, this development has brought about substantial progress in the food industry, in various aspects, but has also given rise to many new food safety issues and has exacerbated existing ones.

The fact that the Vietnamese government has relaxed its controlling nature and authoritative tendencies has provided food producers and distributors with much greater freedom to expand their businesses. The relaxation of government control has, on the other hand, also led to an epidemic in the manufacturing of counterfeit products; as can be observed most evidently through the case of pesticide and antibiotic usage. The disintegration of the authoritative state control apparatus has also produced a largely unregulated and chaotic food distribution system.[7] This chaos is apparent within every case study (chapter) detailed in this thesis.

While I will make the case that the Vietnamese state has failed to address food safety matters in an adequate manner, it is difficult to identify one clear reason why it has failed. The failure of the Vietnamese food safety system can only be explained in the context of multiple political and societal factors. The Vietnamese political system is complex and, one could even say, nearly impossible to fully decipher. This thesis is my best attempt at uncovering institutional failure as it pertains to food safety, how it is influenced by the political needs of the ruling party and how it is informed by a burning desire to grow, expand, and westernize.

Throughout this paper, I will be referencing what is commonly referred to as the "informal food-sector" of Vietnam[8] in order to explain what exactly the Vietnamese government is trying to destroy in their grand scheme of modernization. While most scholars will most likely define this informal food-sector slightly differently, for the sake of this thesis I will be providing

[7] *Id.*
[8] Jensen and Peppard (2013), p. 2

my own definition. In the context of my work, I define the informal food-sector as any independently run, small business that lacks the resources and business policies that formal companies tend to benefit from. The informal food-sector in Vietnam is comprised of street vendors, sidewalk businesses, household-run businesses, basket ladies (roving street vendors) and businesses without a formal storefront or management system which, more often than not, benefit from state support and subsidies. Informal food-sector businesses are often run by lower class individuals who are selling their goods simply to survive. They enjoy no state benefits and are forced to fend for themselves. They are often exposed to extreme scrutiny and are, quite literally, chased off the streets by law enforcement officers.

Chapter Outline

This honors thesis is comprised of four main chapters. The first one discusses the rise of supermarkets and convenience stores in a food system that has been shaped by open-air wet markets for centuries. It seeks to illustrate an ever-present tension in Vietnam between the traditional mode of food consumption, traditional marketplaces and street food stalls, which the lower and middle classes still demand; and the government's attempt to overhaul the traditional aspects of this system in order to westernize and "civilize" the Vietnamese food economy. The second chapter explores the fruit and vegetable industry in Vietnam and focuses primarily on a failure to regulate pesticide use, which has resulted in a Vietnamese fear of domestic, as well as Chinese, produce.

The third chapter examines the Vietnamese meat industry in a regulatory context, looking at issues such as the high rate of Salmonella, recurring Avian Influenza outbreaks, the overuse and abuse of antibiotics in production, unsustainable and unhygienic manure treatment, and a general lack of food safety oversight in slaughterhouses. The fourth and final chapter discusses

the fish, seafood, and agriculture industry in Vietnam, looking at how a highly fragmented fish supply chain, consisting of a large number of actors and many unregistered participants, leads to a severe lack in traceability. Inadequate training and education services for fish farmers lead to a dearth in food safety knowledge which is coupled with widespread non-compliance with food safety regulations and hygiene standards by producers along the supply chain.

The Food Safety Regulatory System

I will be looking at the regulatory system within each of these food system subsectors. It will quickly become clear to the reader that there is no single food system ministry. Prior to 1990, Vietnamese food safety standards were largely derived from the former Soviet Union's standards. It was not until the early 1990s that Vietnam began to develop its own food safety standards by establishing technical advisory committees comprised of "governmental agencies, research institutions, universities, food enterprises and consumer groups."[9]

There is an incredible amount of overlap of responsibility between the Ministry of Health, the Ministry of Industry and Trade, and the Ministry of Agriculture and Rural Development. This overlap has enabled many violations of food hygiene and safety and has exacerbated the lack of enforcement inherent in food safety regulation. There are approximately 400 laws, regulations, and ordinances that the central government and the ministries have issued and circa 1,000 laws, regulations, and ordinances issued by local governments. Many of them lack a clear focus and are mere political window dressing.

In 2010, The Food Safety Law was promulgated by the National Assembly of Vietnam. The law aims to ensure that food safety management is conducted along the entire food supply

[9] Steier et al. (2016), p. 1276

chain, "from farm to fork."[10] When this law was implemented in 2011, it was seen as a huge step in the right direction towards more effective food safety regulation. While the Food Safety Law can be seen as a statement from the government in the sense that it illustrates an attempt to resolve the food safety crisis in Vietnam, this attempt has not sufficed. Since 2011, there has been little improvement of the food safety situation in Vietnam. The Food Safety Law did not live up to its expectations, in part because it is extremely broad in its scope, which further underscores the government's lack of commitment to food safety in light of its focus on furthering economic growth.

As will be described in Chapter I, the government's true primary food safety policy is its overhaul of the informal food-sector which it aims to replace with an even greater abundance of supermarkets and convenience stores. This policy is much more in line with its goal to modernize and westernize the food industry than many of the goals set out in the 2010 Food Safety Law. The informal food-sector poses the greatest danger to the Vietnamese system. An attempt to eradicate it and to replace it with a food retail system, which could handle food safety matters in a more official, privatized, and consolidated manner, appears far more attractive to Vietnamese policy makers.

Conclusion

The many food safety issues detailed in this thesis should make it abundantly clear that Vietnam has a problem with food safety. Hai Tai's conviction that the food safety situation in Vietnam is dangerous is substantiated throughout every chapter. The conflict between westernization and modernity, tradition and poverty which permeates the Vietnamese economy and, in turn, the Vietnamese food system informs all four chapters of this thesis. In light of the

[10] World Bank, p. 23

Communist Party's success in liberating the country from foreign domination and elevating the country to a middle-class economy, Figuié et al. pose an important question: "If in the past public actors, such as the Communist Party, guaranteed the protection of consumers, what about today in the more liberalised economy?"[11] Why did the party succeed so gloriously at ensuring food security and economic growth but has failed so miserably to ensure food safety? This is the question I will seek to answer and will return to in my conclusion.

[11] Figuié et al. (2004), p. 13

Works Cited

Figuié, Muriel, et al. "Hanoi consumers' point of view regarding food safety risks: an approach in terms of social representation." *Vietnam Social Sciences*, vol. 3, Citeseer, 2004.

Gainsborough, Martin. *Vietnam: Rethinking the state*, Zed Books Ltd., 2013.

Hayton, Bill. *Vietnam: rising dragon*, Yale University Press, 2010.

Jensen, R., D. Peppard, and VTM Thang. *Women on the move: Hanoi's migrant roving street vendors*. Hanoi, Vietnam: Women's Publishing House, 2013.

Jensen, Stark-Ewing et al. "Gender and Development Survey Data." *Connecticut College*, Hanoi, Vietnam, 2017.

London, Jonathan. *Politics in contemporary Vietnam: Party, state, and authority relations*, Springer, 2014.

Moustier, Paule, and Nguyen Thi Tan Loc. "The role of proximity and standards in guaranteeing vegetable safety in Vietnam." *World Food Policy*, vol. 2, 2015.

The World Bank and ILRI, FAO, Canada, ADB, CIRAD, Australia (Development Partners).

Steier, Gabriela, and Kiran K. Patel. *International Food Law and Policy*, Springer, 2016.

"Vietnam Food Safety Risks Management: Challenges and Opportunities.", 2016.

Chapter I

Convenience Foods and the Rise of Supermarkets

Introduction

The informal food-sector in Vietnam is thriving. Roaming the streets of Hanoi, or really any major city in Vietnam, one is instantly overwhelmed by the amount of businesses that have set up shop in small storefronts, on the sidewalks, or on any street corner feasible, sometimes blurring "the boundary between street and sidewalk."[1] The Vietnamese are an undeniably resourceful and opportunistic people. Any commodity or service can be turned into a business, any space can be utilized to grow this business. The structure, or lack thereof, of the informal food-sector is such that it creates the impression that anyone can start a business at the drop of a hat, at least in Vietnam.

"Street vendors specialize in fruit, vegetables or meat; small stores on the ground floor of homes specialize in tinned foods, rice, fish sauce, vegetables, and similar goods; open-air markets offer a wide variety of fresh produce."[2] Throughout the four months that I spent in Vietnam, I saw countless businesses come and go. My main pastime while riding on the back of a motorbike taxi in Hanoi was to take note of the new businesses that had emerged or disappeared since I had last traversed a particular corner or street of Hanoi.

While there are aspects of this type of industry which are fascinating to observe, the informal food-sector in Vietnam illustrates the lack of accountability within the Vietnamese state. This portion of the economy is antithetical to the Communist pursuit of pervasive state ownership and control. The informal food-sector, in theory, is more in line with a market

[1] Jensen and Peppard (2013), p. 2
[2] Figuié and Moustier (2008), p. 213

economy, which Vietnam has conditionally adapted, but it is characteristic of Vietnam. The government is earnestly attempting to diminish the scope of the informal food-sector in an attempt to fully adopt western-style businesses, as opposed to traditional Vietnamese open-air markets and street vendors.

During the beginning of my semester in Vietnam, I often frequented the *banh mi* (Vietnamese style sandwiches) and waffle vendors that lined the streets around my university. About halfway through the semester, law enforcement officials began chasing these vendors away. Two to three brave sellers would hide in the alleyways until the police disappeared. One particularly brave street vendor (we referred to him as "the waffle man") survived longer than any of the other vendors, but eventually, he too disappeared. All of this happened within the span of just a few weeks. A little more than halfway through the semester, the carts from which I had purchased my breakfast every morning no longer existed. I began either opting for a quick snack in a convenience store or would simply wait to eat until lunch.

The Vietnamese authorities had eliminated a convenient, warm breakfast; in exchange for more sanitary, but also far more processed western-style convenience foods from China, Korea, Germany, the U.S., and various other products with obscure origins. The government's suppression of informal food-businesses may inadvertently increase the need for imported food and could lead to an increased reliance on convenience stores and supermarkets. The privatization of domestic companies and the opening of trade and capital flow regimes has allowed foreign products to rapidly enter Vietnam's retail markets. Foreign investment has transformed those retail companies.[3] Ration coupons, used up until 1986 for the distribution of

[3] Reardon and Swinnen (2004), p. 522

basic food items, are a thing of the past. Modern food outlets with more variety and imported goods are the future.

Vietnam's entry into the World Trade Organization ("WTO") in 2007, further increased the pressure to make it easier for foreign companies to enter the country. The WTO agreement allowed "foreign companies access to the service sector without having to create cumbersome joint-venture arrangements with local partners."[4] The influx of foreign food corporations has undoubtedly impacted the ability of small-scale producers to grow their businesses. As Baker and Friel note: "…the globalization of food systems results in developing country populations becoming increasingly exposed to and sometimes dependent on the investments and imports of transnational food and beverage corporations (TFBCs). Through their considerable market power TFBCs can shape global and local food systems in ways that alter the availability, price, nutritional quality, desirability and ultimately consumption of ultra-processed foods and are therefore increasingly implicated as a key nutrition transition driver."[5] In the same way, TFBCs can impact the exposure, of the population receiving these foreign goods, to food safety issues.

While a young middle-class has emerged that is demanding fast, convenient, diverse, and western-style food at a growing rate, most Vietnamese consumers, especially vegetable shoppers, have not adapted to the new retail alternatives that the state is promoting: "…the persistent preference of vegetable shoppers for established sales structures drives the mushrooming of unhygienic street markets that lack formal food safety guarantees such as certification, as well as basic hygiene facilities such as adequate water supply, drainage and waste treatment systems."[6] However, now that Vietnam has a growing middle class and a higher number of women in the

[4] Hookway (2008)
[5] Baker and Friel (2016), p. 2
[6] WHO (2006) in Wertheim-Heck (2014), p. 327

workforce, with more disposable income and less time available for shopping, the modern food retail sector is undoubtedly going to continue to grow. Consumers are increasingly accepting processed and packaged products and are more willing than ever to try new products.[7]

Several studies, such as the 2016 study by Baker and Friel, show that "…the grocery retail sector is, in terms of increasing market concentration and thus market power, likely to be a key driver of ongoing food systems change and consumption patterns in the region. The data supports the observation that the supermarketisation of Asia is not only well underway but is also continuing apace."[8] This market and consumption shift is expected to result in the greater availability of safer and more diverse foods.

Background

A "supermarket revolution" started in the early 1990s in many developing countries in Asia and Latin America. Vietnam's first supermarket was opened in Ho Chi Minh City in 1993.[9] It was a state-run enterprise named Minimart.[10] "This revolution involves the rapid increase of modern retail shares in food retailing at the expense of traditional shops and wet-markets."[11] This revolution started with the upper class in large cities but has since diffused to small cities and poorer populations. The foods sold in these supermarkets have evolved from largely processed items to fresh produce. Domestic, local chains started the revolution, but the sector is now multi-nationalized and more concentrated than ever.[12]

[7] Vo (2017), p. 4
[8] Baker and Friel, p. 12
[9] Figuié and Moustier, p. 212
[10] Cadilhon et al. (2006), p. 33
[11] Reardon (2011), p. 14
[12] *Id.*, p. 15

It was originally considered unlikely that the rise of supermarkets would continue in Asia due to ingrained food systems and cultures, which are not conducive to supermarket shopping.[13] The modernization of the food system in Asia must compete with traditional wholesale markets, the relative lack of domestic agribusiness, a high share of small farmers (relative to the level of economic growth and development), and poor infrastructure.[14] The transition to a more modern food system has been accelerated in Vietnam and China due to a mix of state investment and foreign direct investment ("FDI"). A survey conducted in Hanoi in 2017 implied that people seem to be frequenting supermarkets in greater numbers than they did only a few years ago. In fact, 50 percent of the respondents stated that they were shopping in supermarkets more than they had three years ago. By contrast, only 11 percent indicated that they were shopping at open-air markets more than they had been before.[15] It is important to note that a high number of these respondents can be categorized as middle- or upper-class.

The importance of fresh produce to Asian consumers has also made less-processed items more readily available, at a quicker pace than in other countries.[16] Fresh produce is supplied to supermarkets via traditional wholesale markets by field brokers and wholesalers.[17] Nonetheless, market shares in the packaged, processed, and dry food categories such as grains, noodles, and dairy products have grown more rapidly than those in the fresh food categories.[18]

Small farmers are at a disadvantage in terms of selling their products to larger outlets, such as supermarkets, due to "their general poverty of assets, such as education and infrastructure, but also by specific assets, such as irrigation or specialized horticultural

[13] *Id*.
[14] *Id*.
[15] Jensen, Stark-Ewing et al. (2017)
[16] *Id*., p. 18
[17] *Id*., p. 23
[18] Baker and Friel, p. 66

knowledge, needed to supply to modernizing domestic and export markets."[19] In addition, it is often difficult for small farmers to achieve the large volumes, consistency in volume and quality over time, low transaction costs, commercial quality, and safety necessary to compete in these markets.[20] In particular, food safety is increasingly a concern among supermarket shoppers and distributors in Vietnam. In an effort to account for the possibility of small suppliers being excluded from the modern food supply chain, farmer cooperatives have helped position small farmers to enter supermarket channels and programs have been put in place that are geared towards increasing the amount of produce available from small farms at supermarkets.

The supermarket industry in Vietnam, while greatly influenced by imported products, is not exclusively dominated by foreign companies. Vietnamese supermarkets are unique to Vietnam and the products offered are adapted to Vietnamese tastes. "Although chains from the socialist period have been mainly privatized in Eastern Europe, in Asia they have either persisted or have been proactively used to position domestic retail in competition with private domestic and foreign retail."[21] Although Japanese, Thai, Korean, and Chinese food products have considerable leverage to dominate the Vietnamese food industry, due to the sheer size of their markets, Vietnamese processed food enterprises are thriving due to high domestic demand and their edge in the market which is that they understand the taste of Vietnamese consumers.[22] Foreign companies are challenging domestic enterprises as the domestic taste evolves, modernizes, and consumers increasingly crave a Western diet.

[19] *Id*., p. 25
[20] Reardon and Swinnen, p. 520
[21] *Id*., p. 20
[22] Asia News Monitor (2016), p. 1

Convenience food typically contains a high amount of salt, fats, and sugar and is considered to be unhealthy.[23] The convenience food market in Vietnam has boomed with a much higher growth rate (15-20 percent) than the average rate of the world economy (5-7 percent) over the past decade. Younger, urban dwellers are facing obesity in greater numbers, a health issue previously unfamiliar to developing countries like Vietnam.[24] There has been a gradual transition from a more traditional Vietnamese diet; consisting largely of legumes, pulses, and vegetables; to a more western-style diet with more meat consumption, at all levels of the population. This increase in meat consumption, and the resulting implications for food safety governance, will be discussed further in Chapter 3.

This increasingly western-style diet is accompanied by a longer supply chain with food going through many different hands and traveling greater distances. This supply chain has the consequence that Vietnamese consumers are now, more than ever, unaware or ignorant of the process their food goes through before it reaches their plates. This includes the ways food is grown, processed, distributed and marketed.[25] A longer supply chain also leaves more room for error and increases the risk of food safety violations and health hazards.

Ultra-processed foods are defined as "industrial formulations made entirely or mostly from substances extracted from foods (e.g. oils, fats, sugar, starch, and proteins), derived from food constituents (e.g. hydrogenated fats and modified starch), or synthesized in laboratories from food substrates or other organic sources (e.g. flavour enhancers, colours, and several food additives used to make the product hyper-palatable)."[26] Due to the prospects for higher penetration of processed and packaged, convenience and ready-to-eat foods; Vietnam remains a

[23] Olsen (2017), p. 98
[24] *Id.*
[25] De Jong (2017), p. 2
[26] Baker and Friel, p. 2

major market for food additives. "Food additives are substances used for enhancing the taste, colour and texture of food products. They also prevent microbial growth and increase the shelf life of food products."[27]

Regulatory Framework

The Vietnamese government's primary response to food safety risks appears to be the modernization and regulation of the food retail system, which contrasts with the daily consumer practices in cities like Hanoi where over 95 percent of vegetables are still purchased at open-air markets and informal und unhygienic street markets where no food safety protocols are in place.[28] "Especially in the Socialist Republic of Vietnam, with a socialist- oriented market economy, the government plays a powerful interventionist role in the modernization of food markets by promoting 'supermarketization' as a generic path and replicable model suitable for all consumers."[29] Retail modernization is regarded as an important instrument in the food safety control system because supermarket chains are known to implement private food safety management systems and maintain food hygiene standards.[30]

"Government plans, although not yet formally approved by the HPC [Hanoi People's Committee], propose to reduce long-established wet markets in urban Hanoi from a total of 97 in 2010 to around 15 markets in 2020, with the majority to be replaced by modern style super- and hypermarkets."[31] This policy intervention into the food retail market is motivated primarily by an ambition to transform the capital into a prosperous and civilized modern city. It is specified in

[27] Asia News Monitor (2015)
[28] Wertheim-Heck (2014), p. 326 and 329
[29] Wertheim-Heck (2015), p. 96
[30] *Id.*
[31] HealthBridge (2011) in Wertheim-Heck (2014), p. 327

the strategy of the Domestic Trade Department of the Ministry of Trade on the grounds of "modernization" and "civilization."[32]

China

The Vietnamese state is a peculiar combination between communism and capitalism. The state simultaneously follows these two objectives, often times, in a manner that seems inherently incompatible. It maintains a "socialist-oriented market economy."[33] The Vietnamese state has characteristics of both transition economies and free-market economies elsewhere in South-East Asia and its retail system transformation bears some similarities to the cases within Central and Eastern European (CEE) countries and China."[34] China is the world's largest processed food manufacturer by volume. The country is the Asian region's "global sourcing export gateway."[35] China has promoted similar food system modernization policies to the ones in Vietnam.

The *Nonggaichao* ("farmers markets into supermarkets") law aims to integrate wet markets, through an auctioning process, in urban centers into supermarket chains[36] and a rural supermarket program has also been put in place.[37] The Chinese company "Xincheng leases long-term (from townships) 1000 hectares of prime vegetable land, hires migrant labour, installs greenhouses and uses tractors and drip irrigation (thus changing production technology), to produce in-house large quantities of high quality vegetables for the supermarket chains and for export. It also has contracts with 4,500 small farmers to add to its own production. This kind of operation can be described as a major 'agent of change' in the Chinese agrifood economy."[38]

[32] Figuié and Moustier, p. 215
[33] Jensen and Peppard, p. 5
[34] Hong Nguyen et al. (2013), p. 8
[35] *Id.*, p. 12
[36] Reardon and Swinnen, p. 518
[37] Reardon (2011), p. 20
[38] Reardon and Swinnen, p. 521

According to an Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD) official, Chinese food quality is equal to Vietnamese food quality. Major cities, such as Hong Kong, are superior, in terms of food quality, to Vietnam – but the Chinese provinces closest to the border do not differ much. Vietnam has the ability to export to China, but China has much larger influence on the Vietnamese food market than the Vietnamese could ever dream of. The Chinese encourage informal cross-border trade between Chinese and Vietnamese companies for tax purposes. This benefits China greatly economically, hurting the Vietnamese economy in return. While undercutting Vietnamese import regulations, the Chinese import policies are very strict, therefore greatly limiting what Vietnam can sell to China.[39]

News of tainted Chinese foods has been in circulation in Vietnam for over a decade now. As a result, the Vietnamese have changed their eating habits and are increasingly avoiding Chinese products. Consumers are willing to pay a higher price for foods that are free of the harmful chemicals the Chinese tend to use, such as formaldehyde or borax.[40] These chemicals are often used to manufacture ramen noodles. Before the Vietnamese government began adapting more stringent food safety laws, "the country had become a "dumping ground" for dated canned goods, unlabeled products of uneven quality, and counterfeit alcoholic beverages,"[41] largely originating from China.

Consumer Attitudes

Vietnamese consumerism is a relatively new phenomenon: "Until only a few years ago, the Vietnamese consumer was still absent from the social and economic landscape, eclipsed by both the overwhelming need simply to provide for a malnourished population and an ideology

[39] Hoang Vu Quang, IPSARD (2017)
[40] Mason (2007)
[41] Hagen (2002), p. 7

that condemned all forms of ostentatious consumption, especially foreign goods which were seen as a symbol of economic imperialism (Vann, 2005). It was not until 1991 that private advertising was permitted and this event marked the birth of the Vietnamese consumer."[42] The Vietnamese consumer has been influenced by Buddhist, Confucian, and Taoist cultures and by periods of Chinese, French, and American occupation and communist dogma. Consumers in Vietnam are "described as being torn between the desire to act in accordance with collective norms and the wish to assert individual values, between support for national production and the attraction of imported goods."[43]

Household food providers in the Asia-Pacific region can be divided into two distinct groups: those who hold hedonist values, trust industry sources of information and self-transcendent values and those who trust health sources and distrust industry sources of information and use convenience food outlets less frequently.[44] The Vietnamese diet, especially in urban areas has changed considerably since *Doi Moi*. The modern Vietnamese diet is more diversified. Meat and fruit is consumed in greater quantities. People are also more prone to eating out and snacking between meals.[45] Rapid urbanization and rural-to-urban migration has increased the pressure on the provision of daily fresh food. Urbanization also drives a wedge between production-consumption relationships. A rise in demand for fresh produce, coupled with shrinking farmland, intensifies the cultivation methods necessary to meet this demand. These consequences of urbanization increase the food safety threats that Vietnamese consumers are faced with.[46]

[42] Figuié and Moustier, p. 210
[43] *Id*.
[44] De Jong, p. 7
[45] Figuié and Moustier, p. 210
[46] Wertheim-Heck (2014), p. 326

However, it seems as though both the Vietnamese government and its citizens believe that the products sold at supermarkets are safer and more heavily inspected than the produce that is considered "sub-standard" at wet markets and other food outlets.[47] Food safety concerns of consumers in Vietnam and Thailand, "…sensitized by recent food crises, are accelerating a turn to produce and poultry from supermarkets earlier than in other regions."[48] Consumers are also increasingly demanding traceability of the food products they purchase. Modern food retail outlets are regarded as food sources where consumers can find out the origin of the food they are buying.[49] These perceptions stem, in part, from the fact that supermarket products are more expensive and, therefore, considered to be of higher quality.

Supermarkets are not intended for poor customers. The lower classes would like safe and higher quality products but cannot afford them. People often go shopping at the supermarket when they are expecting guests in order to give the impression that they are well off. For everyday meals, lower and middle classes will buy their food from the local market.[50]

I experienced this myself on numerous occasions during my semester in Vietnam. Whenever I would be invited over to dinner by a Vietnamese family, they would serve me various kinds of Vietnamese, as well as imported candies and snacks prior to the main meal and after for dessert. On more than one occasion, even though I had already been presented with an abundance of different sodas and other processed food items, one of the hosts would make an additional trip to the supermarket to buy more soda or candy, just to make sure there was more than enough for us to choose from. During one particular meal, the father in the family went to the supermarket twice in between courses.

[47] *Id.*, p. 214
[48] Reardon et al. (2012), p. 1235
[49] Vo, p. 17
[50] Figuié and Moustier, p. 215

Cadilhon et al. confirmed in a study in 2006 that modern distribution outlets, including supermarkets tend to reject sub-standard produce and only accept high quality produce. The quality is judged based on food safety requirements and the produces' appearance.[51] Supermarkets, such as Metro and Big C, guarantee very good quality produce that is ready to be sold to "quality-conscious customers."[52] Traders in urban centers are especially concerned about higher quality products. They ask their collectors, who ask their farmers, to take special care of their produce. "This quality incentive makes the collectors grade the vegetables at the farm stage so that they can get a higher return on homogeneous lots of better grade produce. Producers can also benefit from this preliminary grading as they will likewise get higher prices for the part of their harvest that is of better quality."[53]

This business arrangement was confirmed by an IPSARD official in an interview in 2017. According to this official, the fruit in supermarkets is largely imported from Australia but the vegetables are supplied domestically. Importing vegetables is very expensive, which is why supermarkets tend to source domestically. Supermarket suppliers are often personally involved in managing the supply chain process. They have the advantage of being able to ask a producer to provide a certificate that verifies the quality of the products.[54]

Few studies have examined whether supermarket products are, in fact, consistently of better quality and safety than those on offer at ordinary market outlets. Preliminary studies have indicated that the vegetables sold at supermarkets are less frequently found to be covered in excessive and harmful pesticide residues. The issues surrounding pesticide residues on Vietnamese produce will be discussed further in Chapter 2.

[51] Cadilhon et al., p. 44
[52] *Id.*
[53] *Id.*
[54] Hoang Vu Quang, IPSARD (2017)

There are a substantial number of small shops and "safe vegetable" market stalls, largely run by small-scale farmer groups, that rival the safety assurance of supermarket produce. Nonetheless, by private standards, supermarkets have considerable leverage to improve the safety of the food items that are circulated throughout Vietnam, in light of the state's failure to impose and maintain truly effective public food safety standards.[55]

A 2017 study by Decision Lab concluded that the rise of convenience stores in Vietnam is being driven by Gen Z-ers who are classified as 15-23-year-old "digital natives" who are about to finish their studies and are entering the labor force for the first time.[56] They are attracted to the variety offered in modern convenience stores, the free Wi-Fi, air-conditioning, and fast and easy food that is accessibly at almost any hour of the day.[57] "The result has been an increase in market share to 14%, which translates to a lot of tuna sandwiches, bento boxes and warmed up chicken wings."[58] The Vietnamese convenience market is expected to continue growing at a rapid pace, by 37.4 percent between 2017 and 2021; more than any other Asian market.[59]

Despite the recent state intervention that has forced many street vendors to shut down their businesses, the Gen Z-ers appear to be consuming street food only slightly less than the rest of the population. The popularity of street food for a hearty, warm meal is anything but on the decline. Convenience food outlets do not offer substantial meals in the same way that traditional street food stalls do and are, therefore, more popular for the atmosphere and luxurious amenities they offer.[60] Although fast food chains have slowly entered the Vietnamese market, they face more competition from local Southeast Asian markets than they do in other developing nations'

[55] Figuié and Moustier, p. 216
[56] Asia News Monitor (2017), p. 2
[57] *Id.*, p. 1
[58] *Id.*, pp. 1-2
[59] *Id.*, p. 2
[60] *Id.*

markets due to the continued popularity of street food, the low prices and abundant availability of quick food that they offer.[61]

Through my interactions with the Gen Z-ers during my time in Vietnam, I observed a curiosity and demand for Western food items, such as hot dogs. However, the traditional Vietnamese diet is undoubtedly still a central component of family life, kinship, and Vietnamese identity. My friends in Vietnam consumed street food and home cooked Vietnamese meals, based off of recipes that had been passed on for generations, at a far greater rate than they did hot dogs. Vietnamese cuisine is so inherently Vietnamese that a complete, or even a partial, adaptation of a more Western diet is unthinkable.

Risk of Contamination in Processed Food Items

Food poisoning cases have increasingly been linked to the consumption of ready-to-eat food worldwide, in both developing countries like Vietnam and developed countries like the U.S. and Japan. Many food poisoning cases have been linked to dairy products. Another major source of contamination is the lack of proper hygienic measures during food preparation. The food-handlers themselves can harbor harmful bacteria.[62]

Especially in Vietnam, ready-to-eat food items are often prepared by small-scale local producers without quality control checking. The possibility of improper handling and cross-contamination during transportation is also a factor, as well as contamination through reused or improperly washed containers, equipment, or packaging.[63] In addition to food safety risks posed by food producers, consumers often store their food at room temperature, to conserve energy, for long periods of time in the tropical and humid Vietnamese climate.[64] Therefore, it has become

[61] Baker and Friel, p. 12
[62] Mai Huong et al. (2009), p. 166
[63] Mai Huong et al., p. 168
[64] *Id*.

customary for people to make small, fresh purchases every day in order avoid having to use their refrigerators all the time.[65] In addition to energy concerns, it is also customary in many Asian countries for consumers to consider food only fresh if it was purchased "…'as close as possible to the live animal or plant.' Chilled and frozen meat, fish or fresh products are associated with a period of storage that thus makes the food un-'fresh'…"[66] This issue, as well as other topics related to fish and seafood safety, will be discussed further in Chapter 4.

Conclusion

There is no better exemplification of just how rapidly Vietnam is developing than the contrast between modern/formal and traditional/informal food-retail operations. Despite widespread Communist party efforts to squash the informal food-sector, many streets in Hanoi, and even Ho Chi Minh City, are still brimming with street food vendors and food carts. These emblems of the past are characteristically Vietnamese and are not showy or luxurious in any way. They tend to only offer a handful of dishes, or even just one single dish. Consumers can conveniently drive up to these informal food-outlets on their motorbikes and make a quick purchase without even having to dismount. Shopping at a supermarket is considered to be more of an inconvenience because customers have to park their bikes or cars and have to traverse through multiple aisles to find what they are looking for.

On the outskirts of Hanoi, one can find street food's exact opposite: Big C supermarket, a Thai owned company.[67] The Big C is, quite possibly, the largest and busiest supermarket I have ever been to, hence the name. The product selection is seemingly endless. There are so many people frantically pushing their carts through the aisles that it is almost impossible to navigate

[65] Figuié and Moustier, p. 214
[66] Cadilhon et al., p. 33
[67] Vo, p. 10

the supermarket. There are some Vietnamese products to be found, but a large portion of the selection appears to be imported. On top of shelves and shelves of products, there are numerous ready-to-eat hot food stations. Consumers can shop, eat, and socialize all in one space. The Big C is the Vietnam of the future. The government wants it and a growing middle- and upper-class is increasingly demanding this kind of shopping experience.

However, as Oriane Cornille, with the French Development Agency, pointed out in an interview, the Vietnamese have a hard time abandoning old habits. They are pragmatic people with a lot of respect for the older generations.[68] The older generations grew up shopping exclusively at wet markets. Imported products were hard to come by and the variety was limited.

While food safety issues are undoubtedly important to combat, it is important to not ignore traditional habits in an effort to modernize the Vietnamese food system. As Wertheim-Heck points out, "…it is essential to connect to and accommodate the daily realities of consumers managing time and space in a modernizing city rather than to impose an ideal, typical market exclusively driven by the wish to control food safety risks."[69] The Vietnamese government should stop trying to go against existing social norms and practices and should instead adopt policies that align more closely with these existing food consumption patterns. A 2017 survey implies that 51 percent of the respondents, in Hanoi, continue to shop at wet markets on a regular basis.[70]

According to Wertheim-Heck, official state documents give the impression that not many alternatives to expanding the supermarket sector have been taken into consideration on Vietnam's path to development. "Retail modernization policy is portrayed rather one-

[68] Oriane Cornille, *Agence Française de Développement*, March 16, 2017, Hanoi, Vietnam
[69] Wertheim-Heck (2014), p. 326
[70] Jensen, Stark-Ewing et al.

dimensional and unambiguously western conflated."[71] The paradox of one-dimensionally and unambiguously putting in place such a wide-reaching policy, which outlaws wet markets and street food, is that this approach is closely related to the "residual state control of the economy."[72] This communist, authoritarian state control of the economy has been on a sharp decline since Doi Moi, but has certainly not fully disappeared.

In fact, as will become increasingly clear throughout the following chapters, many initiatives aimed at reforming the food industry, which are painted in a public safety light, are merely put in place in order for the government to maintain its political legitimacy. The government must appear as though it is concerned about food safety. In reality, supermarkets and convenience stores are not being promoted because they can more comprehensively manage food safety, and this is the communist party's ultimate goal, but merely because they are yet another step towards development, westernization, and civilization. After centuries of foreign military occupation and oppression, the Vietnamese state is desperately trying to catch up with the rest of the world -- especially China.

In light of the fact that a large portion of the population still relies on traditional markets and does not have the means to frequent supermarkets on a regular basis, exclusively promoting supermarket retail in an effort to improve food safety may be counterproductive. What started as a consumer-driven development has now been taken over by the government in an effort of economic development.[73] Modern food shopping outlets are seen as being more "civilized,"[74] during a time when the state is desperately attempting to create a "civilized" nation by Western

[71] Wertheim-Heck (2015), p. 104
[72] Reardon and Swinnen, p. 518
[73] Hagen, p. 14
[74] Wertheim-Heck (2015), p. 96

standards. “The presence of women walking around with baskets and poles…,” street vendors commonly referred to as basket ladies, undermines the image of a modern, international city.[75]

Instead of attempting to hamper informal food-businesses and small-scale agricultural productions, the state should be investing in infrastructure and public goods to enhance those production networks’ capacity to upgrade the quality and safety of their products through, for example, targeted farmer and business-owner assistance programs.[76] “Instead of simply prohibiting street vending activities and informal markets, the authorities could support the ‘formalization’ of this sector, allowing street vendors to operate in designated areas (off main streets).”[77] In order to fully capitalize on their market advantages (food freshness and low prices), while improving the hygiene of their products, these informal food-operators with less capital than modern operators need public backing.[78]

The Vietnamese state’s current form of intervention into the food retail sector underscores its disconnect from what is in the best interest of a large portion of the population that is too poor to benefit from this policy and will be negatively affected by the transition to a supermarket society. Even if the government’s confidence in the potential of supermarkets to solve the food safety crisis is substantiated, the segment of the population that is too poor to shop in supermarkets will be excluded from the benefits of improved food safety. Public health should not merely be a privilege for the wealthy portions of society. Similarly, the informal food-sector, that is gradually being excluded from the market, will suffer at the hands of a small amount of disproportionately powerful companies, many of which are foreign-owned, such as Big C and VinGroup.

[75] Jensen and Peppard, p. 115
[76] Reardon and Swinnen, p. 523
[77] Figuié and Moustier, p. 216
[78] *Id.*

This tension between the globalization and the localization of food production, distribution, and consumption is, most likely, only going to increase. With the implementation of the Doi Moi policies in 1986, the Vietnamese state managed to forfeit some of its authoritarian power in the interest of a greater good: The Vietnamese economy. The informal food-sector, comprised of small-scale farmers and businesses, has contributed greatly to the success of the Vietnamese economy. One can only hope that the state will acknowledge this past success and the role the informal food-sector has played in shaping the food industry, despite being antithetical to modern, Western standards. As Jensen and Peppard argue, "policy formulation should operate with an explicit recognition that the informal food-sector in Vietnam (as elsewhere) has played and will continue to play a pivotal role in the country's development."[79]

[79] Jensen and Peppard, p. 132

Works Cited

Baker, Phillip, and Sharon Friel. "Food systems transformations, ultra-processed food markets and the nutrition transition in Asia." *Globalization and health*, vol. 12, BioMed Central, 2016.

Baker, Phillip, Adrian Kay, and Helen Walls. "Strengthening trade and health governance capacities to address non-communicable diseases in Asia: challenges and ways forward." *Asia & the Pacific Policy Studies*, vol. 2, Wiley Online Library, 2015.

Cadilhon, Jean-Joseph, et al. "Traditional vs. modern food systems? Insights from vegetable supply chains to Ho Chi Minh City (Vietnam)." *Development Policy Review*, vol. 24, Wiley Online Library, 2006.

De Jong, Breanna, et al. "Personal values, marketing attitudes and nutrition trust are associated with patronage of convenience food outlets in the Asia-Pacific region: a cross-sectional study." *Journal of Health, Population and Nutrition*, vol. 36, BioMed Central, 2017.

Figuié, Muriel, and Paule Moustier. "Market appeal in an emerging economy: Supermarkets and poor consumers in Vietnam." *Food Policy*, vol. 34, Elsevier, 2009.

Hagen, James M. "Causes and consequences of food retailing innovation in developing countries: supermarkets in Vietnam." *New York, USA, Cornell University, Department of Applied Economics and Management*, 2002.

Hookway, James. "In Vietnam, fast food acts global, tastes local." *The Wall Street Journal Eastern Edition*, Dow Jones & Company, Inc. New York, N.Y, 2008.

Huong, Bui T. M., et al. "Toxigenicity and genetic diversity of Staphylococcus aureus isolated from Vietnamese ready-to-eat foods." *Food Control*, vol. 21, Elsevier, 2010.

Jensen, R., D. Peppard, and VTM Thang. *Women on the move: Hanoi's migrant roving street vendors*. Hanoi, Vietnam: Women's Publishing House, 2013.

Jensen, Stark-Ewing et al. "Gender and Development Survey Data." *Connecticut College*, Hanoi, Vietnam, 2017.

Marr, David G. *Vietnam*, vol. 6, Univ. of Calif. Press, Berkeley [u.a.], 2013.

Mason, Margie. "Tainted Foods Are Daily Problem in Asia." *The Washington Post*, 2007., http://www.washingtonpost.com/wpdyn/content/article/2007/06/16/AR2007061600535.html.

Mergenthaler, Marcus, Katinka Weinberger, and Matin Qaim. "The food system transformation in developing countries: A disaggregate demand analysis for fruits and vegetables in Vietnam." *Food Policy*, vol. 34, Elsevier, 2009.

Minten, Bart, and Thomas Reardon. "Food prices, quality, and quality's pricing in supermarkets versus traditional markets in developing countries." *Review of Agricultural Economics*, vol. 30, Oxford University Press, 2008.

Nguyen, Hai T., et al. "Re-Regulation in the Post-WTO Period? A Case Study of Vietnam's Food Retailing Sector." *Growth and Change*, vol. 45, Wiley Online Library, 2014.

Olsen, Svein O., and Ho H. Tuu. "Time perspectives and convenience food consumption among teenagers in Vietnam: The dual role of hedonic and healthy eating values." *Food Research International*, vol. 99, Elsevier, 2017.

Reardon, Thomas. "The global rise and impact of supermarkets: an international perspective." 2011.

Reardon, Thomas, and Johan F. Swinnen. "Agrifood Sector Liberalisation and the Rise of Supermarkets in Former State-controlled Economies: A Comparative Overview." *Development policy review*, vol. 22, Wiley Online Library, 2004.

Reardon, Thomas, C. P. Timmer, and Bart Minten. "Supermarket revolution in Asia and emerging development strategies to include small farmers." *Proceedings of the National Academy of Sciences*, vol. 109, National Acad Sciences, 2012.

Thi Hong Nguyen, Hai, Steve Wood, and Neil Wrigley. "The emerging food retail structure of Vietnam: Phases of expansion in a post-socialist environment." *International Journal of Retail & Distribution Management*, vol. 41, Emerald Group Publishing Limited, 2013.

"Vietnam: Convenience costs Vietnam's out-of- home food service industry" *Asia News Monitor*, Bangkok, 2017.

"Vietnam: Healthy demand in food industry drives additive market." *Asia News Monitor*, Thai News Service Group, Bangkok, 2015.

"Vietnam: Supermarkets stock more imports as retail war heats up." *Asia News Monitor*, Thai News Service Group, Bangkok, 2017.

"Vietnam: Supermarkets tap into domestic retail sector." *Asia News Monitor*, Thai News Service Group, Bangkok, 2015.

"Vietnam: Vietnamese enterprises dominating processed food market." *Asia News Monitor*, Thai News Service Group, Bangkok, 2016.

Vo, Kiet. "Vietnam Retail Foods – Sector Report 2016." *Global Agriculture Information Network*, USDA Foreign Agriculture Service, 2017.

Wertheim-Heck, Sigrid C., and Gert Spaargaren. "Shifting configurations of shopping practices and food safety dynamics in Hanoi, Vietnam: a historical analysis." *Agriculture and Human Values*, vol. 33, Springer, 2016.

Wertheim-Heck, Sigrid C., Sietze Vellema, and Gert Spaargaren. "Food safety and urban food markets in Vietnam: The need for flexible and customized retail modernization policies." *Food Policy*, vol. 54, Elsevier, 2015.

Wertheim-Heck, Sigrid C., Sietze Vellema, and Gert Spaargaren. "Constrained consumer practices and food safety concerns in Hanoi." *International journal of consumer studies*, vol. 38, Wiley Online Library, 2014.

Chapter II

Fruits, Vegetables and Pesticides

Introduction

Beneath the surface of the issue surrounding food safety is the ever-present tension between achieving economic growth, on the one hand, and meeting food safety standards on the other. Rapid economic growth in Vietnam has been met with rising inequality between the rich and poor, urban dwellers and rural dwellers, and the educated and uneducated. Vietnam has been successful at reaching increasingly high output levels. Vietnam's 'more is better' approach has required higher inputs, hence excessive use of pesticides.

Pesticides are chemical compounds which farmers use to protect their crops from "insects and mites, weeds, aquatic plants that clog irrigation systems, plant diseases (caused by fungi, bacteria and viruses), nematodes, snails, slugs, rodents, and birds that consume enormous quantities of seed and grain."[1] State officials are well aware of the dangers of a 'more is better' approach, which prioritizes production volume rather than quality: "When farmers produce a lot, it affects our food safety."[2] Vietnam imported 72,650 tons of pesticides in 2010[3] and, according to the Vietnam Pesticide Association, pesticide imports reached approximately 109,500 tons in 2016.[4]

The Vietnamese government is continuously updating an exhaustive list of illegal pesticides. However, many farmers still use illegal pesticides in large quantities. Rural farmers are faced with the threat of pesticide poisoning. These chemicals have even been cited as a

[1] Thuy et al. (2012), p. 1
[2] Hoang Vu Quang, IPSARD (2017)
[3] Van Toan et al. (2013), p. 28
[4] Than (2016), p. 27

means through which farmers commit suicide. “In 2002, more than 7,000 cases (involving 7,647 people) of food poisoning by pesticide residues were reported, causing 277 deaths in 37 out of the 61 provinces.”[5]

Since *Doi Moi* and the introduction of land use rights that freed farmers from collective labor and allocation of their output, and allowed them to produce directly for the market, chemical fertilizers and pesticides have been sprayed more frequently and in larger quantities. This is largely due to private entrepreneurs who exploited this opportunity and began importing, formulating, and distributing pesticides in large quantities. The land use rights put in place by *Doi Moi* have given farmers incentives to improve their land and diversify their crops. This freedom poses certain dangers to the environment, public health, and the economy, which I will outline in this chapter.

Increased publicity surrounding cases of pesticide poisoning, and excess pesticide residues on domestically distributed fruits and vegetables, has led the public to demand “safer” vegetables. The growing Vietnamese middle class is increasingly on the lookout for higher quality produce, free of pesticide residues. Some farmers are responding to this market opportunity and are exploring new ways of producing “safer” vegetables through tactics such as integrated pest management (IPM), crop rotations, compost additions, and the use of shade houses to create more favorable growing environments. IPM programs serve to “improve farmers’ decision-making capacities by enhancing their knowledge and skills to secure more effective production conducive to human health and environment[al] protection.”[6] By applying fewer chemicals, these farmers are also significantly lowering their input costs and generating

[5] Van Hoi et al. (2013), p. 19
[6] Plant Protection Sub Department (PPSD), Ha Tay Province (2007)

higher profits. The slow-growing movement away from chemically intensive agriculture is also being driven by increased competition within the pesticide industry.

With hundreds of thousands of agricultural households and operations in the country, it is almost impossible for the government to effectively monitor the use of pesticides. The policies in place are ineffective in ameliorating the consequences of excessive pesticide use. The overuse of pesticides has already "led to severe deforestation, soil erosion, sedimentation of rivers, flooding in the deltas, declining fish yields, and pollution of the coastal marine environment."[7] Vietnam's public health can be affected by pesticides through "the ingestion of mineral, chemical, and biological components of soil, and can also be influenced in more indirect ways when soils interact with the atmosphere, biosphere, and hydrosphere."[8] The overuse of pesticides can also result in an enhanced contamination of ground and surface water. This ground and surface water contamination ultimately reaches drinking supplies and, thus, directly affects human health.[9]

Aside from environmental and human health impacts, excessive pesticide spraying negatively impacts Vietnam's ability to export its produce. Excessive pesticide residues have been detected on produce originating from Vietnam, which has led to Vietnamese produce being rejected by foreign customs officials in various countries across the world. Therefore, it would be in the country's best interest to decrease the amount of pesticides used, for the environmental, human, and economic well-being of the country.

Background

As Pham Hung Viet et al. outline, pesticides were used in Vietnam long before *Doi Moi*. The country began spraying pesticides in the 1940s, primarily as a means of disease control.

[7] Loganathan et al. (2011), p. 280
[8] Loganathan et al., p. 280
[9] Lamers et al. (2013), p. 23

Vietnam was importing its pesticides from former Soviet bloc countries in Eastern Europe, such as Russia, prior to establishing full diplomatic relations with the U.S. in 1995 which lifted the U.S. trade embargo against Vietnam and led to an increase in foreign investment.[10]

Before 1995, pesticide imports ranged from 6,500 to 9,000 tons per year. By 1995, pesticide use had risen to 33,000 tons. *Dichlorodiphenyltrichloroethane* (DDT) was widely used (thousands of tons per year) during the American War, as well as in 1982. DDT usage decreased from 315 tons per year in 1961 to 22 tons by 1974, as a result of supply reductions to Vietnam from the USSR. DDT imports reached an all-time high in 1992 and 1993 after an increase in malaria occurrences. The Vietnamese government officially banned DDT usage in 1995. DDT imports were banned as early as 1992.[11]

Paddy production also grew rapidly between 1986 and 1991, at a rate of 5.1 percent.[12] In the 1950s, pesticide use amounted to 100 tons per year. By 1991, pesticide use had multiplied 150 times[13]. A study conducted by the Food and Agriculture Organization (FAO) between 1990 and 1991 found that rice in southern Vietnam is sprayed with an average of 5.3 pesticide applications per crop. This number is higher than the pesticide application rate in any other country in Asia. China, for example, was found to only use 3.5 applications per crop.[14]

The problem surrounding pesticides is of particular relevance to the issue of governance in Vietnam because it's associated with the chronic corruption and lack of accountability that permeates the Vietnamese system. "Viet Nam ranks 112 out of 178 countries in Transparency International's 2011 Corruption perception index, with a 2.9 index on a scale ranging from 0 to

[10] Pham Hung Viet et al. in Ito et al. (2015) and Loganathan et al., p. 281
[11] *Id*.
[12] Huu Dung and Thanh Dung (1999), p. 1
[13] Van Hoi et al. (2009), p. 174
[14] Loganathan et al., p. 281

10. There is a broad consensus that corruption is endemic and systemic in Viet Nam."[15] Illegal pesticides continue to be smuggled into Vietnam in masses where they become a burden for the uneducated rural farmer who is susceptible to the deceit of pesticide marketers. Pesticide advertisements also play a large role in convincing farmers that they have a severe pest problem that, in reality, may not be quite so severe.[16]

Unfortunately, illegal pesticides are not the full extent of the problem. Counterfeit pesticides, as well as pesticide cocktails, are circulated widely. These cocktails are often a mixture of cheaper and more expensive pesticides. Singular chemicals are sold under numerous different trade names. The Ministry of Agriculture and Rural Development's (MARD) pesticide register contained around 5,800 different trade names at the end of 2015.[17] This causes the exposed plants to become resistant to these chemicals at an accelerated pace because farmers are unaware that they are, in fact, spraying their produce with the same product. Instead of using several different pesticides, they spray the same pesticides in larger quantities unknowingly aggravating the exposure. In a study conducted from 2008 until 2009 in the Mekong Region, farmers cited four main reasons for applying pesticide cocktails: to enhance the effectiveness, save time and labor, prevent pests that could develop later on in the plant cycle, or simply to imitate other farmers' application methods.[18]

Consumer Fears

When it comes to public fears concerning food safety, pesticide residues are at the forefront of the debate. Vietnamese consumers are aware of the country's widespread pesticide problem and are generally concerned about the quality and the safety of the fruits and vegetables

[15] Oxfam (2012), p. 39
[16] Van Mele et al. (2002)
[17] Fresh Studio (2016), p. 3
[18] Van Toan et al., p.33

they purchase. A common misconception is that produce which is treated with pesticides or other chemicals is a cause of cancer.[19] Consumers are not only afraid of domestic produce. They are acutely aware that many of the pesticides used in the country originate from China and are just as, if not more, afraid of Chinese fruits and vegetables than they are of their Vietnamese counterparts.

As was mentioned in the previous chapter, consumers tend to trust the quality and safety of vegetables more when they purchase them from supermarkets. Consumers are aware of the lack of safety regulations in place at wet markets: "There is a woman who ate cabbage bought in the market, then she had stomach ache and diarrh[o]ea. Now people do not dare to eat vegetables from the [local] market."[20]

This Vietnamese fear of produce became apparent to me very quickly upon my arrival in the country: On a characteristically humid morning in early January in Hanoi, Vietnam, I was sitting in my Vietnamese language course. I was new to the country. My teacher, Co Linh, began to tell us how a family friend had purchased an apple which had been exported from China. According to my teacher, her family friend was poisoned and killed by this Chinese apple. "The Chinese are trying to poison us," she said. Co Linh did not disclose any further details about the circumstances surrounding this story.

The point of her story was not to tell us about her friend Co Linh wanted to warn my class, which consisted entirely of newcomers to the country, of the dangers of Chinese fruits and vegetables which are treated with pesticides, herbicides, and all sorts of toxic chemicals. I relate this story to illustrate how even educated, middle-class Vietnamese are fearful of Chinese produce. In most cases, consumers have no way of knowing where a product came from, much

[19] Nguyen-Viet et al. (2017), p. 2
[20] Thang et al. (2015), p. 86

less whether it came from China. If they are aware of its origin, they have little way of knowing what substances have been added to the product and whether it is in fact poisonous. Nonetheless, the Vietnamese fear of Chinese food products is widespread, and it is real.

Safe Vegetable Program

In 1995, the Ministry of Agriculture decided to respond to overwhelming public concern over vegetable safety. The "safe vegetable" program aims to provide state-certified vegetables that are supposed to be free of pesticide and herbicide residues.[21] The program was, and continues to be, a failure. It is not authenticated by a standardized certification process and there are no formalized sanction mechanisms in place in case of noncompliance.[22] There was an attempt by the government to impose sanctions on farmers who do not meet the "safe vegetable" standards, such as withdrawing their safe vegetable certificate, but it has been reported that state officials continued to issue certificates to farmers without doing their due diligence as to whether the farmers actually used little to no pesticides.[23]

The "safe vegetable" program has not been able to take a significant share of the vegetable market and gain consumer trust. Consumers rightly suspect that the inspections of these "safe" vegetables are conducted in a lax manner.[24] Scholars also argue that there is weak evidence that these vegetable products certified as "safe" are truly safer than traditionally marketed vegetables.[25] There is little evidence that pesticide residues on these vegetables are evaluated in a laboratory setting.[26]

[21] International Institute for Environment and Development (2015)
[22] Mergenthaler et al. (2009), p. 268
[23] Moustier and Tan Loc (2015), p. 63
[24] *Id*.
[25] Nguyen-Viet et al., p. 4
[26] Mergenthaler et al., p. 268

The government has developed another certification scheme based on the Good Agricultural Practices (GAP) mechanism, which also aims to limit pesticide use. However, GAP costs more and also demands more labor from farmers, which makes it less suitable for small scale farmers, who dominate the agricultural industry.[27] Like the safe vegetable program, the VietGAP program has also been largely ineffective.[28] Certification mechanisms, overall, have gained little traction in the fruit and vegetable industry. The lack of state support that is given to these certification programs is a contributing factor to their failure.[29] In addition, certification programs add costs and constraints to local farmers and these costs are often not rewarded with higher profits.[30]

Pesticide Regulation in Vietnam

The National Assembly promulgated the decree on plant protection and quarantine (Decree no. 92-CP) in 1993. This decree was the first state-issued legal document on pesticide management. It provided the ramifications for plant protection, production, formulation, distribution, and use. It sets forth the responsibility and rights of the relevant state agencies in their efforts to monitor pesticide activity. The decree designated the Plant Protection Department (PPD) as the key administrative authority in pesticide policy. The department has achieved national reach by operating from the central to the district level. It is especially active in the Mekong Delta region.

The Plant Protection Department (PPD) was established in 1961 and currently manages 67 points of entry located at roads, airports, and seaports; as well as 60 domestic stations. [31] The

[27] *Id.*
[28] World Bank (2016), p. 47
[29] Moustier and Tan Loc, p. 60
[30] Moustier and Tan Loc, p. 69
[31] Plant Protection Department, IPPC

department is responsible for conducting the pesticide registration process and managing pesticide residue control proceedings. In the early years of the PPD, pre-*Doi Moi*, specialized teams of four to five farmers handled pesticide applications, working in conjunction with the PPD.[32]

MARD's "tasks and authorities" when it comes to pesticide control are listed under Article 11 ("Plant Protection") and include: regulating the experimentation and registration of new pesticides, issuing certificates for experiments; announcing the list of possibly used pesticides, restricted or prohibited pesticides and guiding import and export activities of pesticides and pesticide ingredients.[33] As of 2015, Vietnam has prohibited the use of 29 pesticides in agriculture.[34]

In order to fully register a pesticide, bio-efficacy test results, toxicological data assessment results, and residue data assessment results are required. Pesticide registrations must be renewed every five years. The registration process can be lengthy, up to four years. This creates an incentive for companies to bribe government officials in order to speed up the process. The inefficiency of the pesticide registration process is further aggravated by the overwhelming number of registration submissions that the PPD receives each year, making it almost impossible for the Department to review all submissions.[35]

Through the pesticide registration process, companies are required to specify the crops to which the pesticide can be applied. Companies are discouraged from registering all possible crops due to the cost associated with the application procedure. The initial registration fee includes one crop and amounts to 200 million VND, 8804 USD. Each additional crop costs

[32] Dasgupta et al. (2007), p. 122
[33] "Mandate," Ministry of Agriculture and Rural Development
[34] Schreinemachers et al. (2015), p. 360
[35] Schreinemachers et al., p. 360

another 60 million VND, 2641.2 USD. This leads to a situation where a plethora of pesticides exists for certain popular crops, such as rice, but very few exist for less popular crops, such as Chinese cabbage.[36]

The PPD is also responsible for pesticide inspections at the company, import, and trader level. Import inspections serve to assess whether pesticide products meet the legal standards on ingredient content and quality. PPDs at the province-level are responsible for trader inspections. The PPD pre-announces regular inspections, which can take anywhere from 30 minutes to an entire day. In the case of "extreme inconformities"[37] the Department can assign a specialized task force.

Regulatory Flaws and Data Restrictions

Scholars and policy makers are advocating for the removal of inexpensive pesticides, which are often associated with high toxicity, from the market. Studies have shown that farmers in Vietnam tend primarily to use pesticides in categories I and II, based on the World Health Organization (WHO) classification of pesticides, which are classified as moderately and extremely hazardous, respectively.[38] The state has made limited efforts to limit these highly toxic chemicals. Safer alternatives have merely been added instead. These highly toxic pesticides are primarily imported from China; very few are produced domestically. Pesticide imports into Vietnam are approximately $500 million per year. Legal pesticide imports from China increased from $22.5 million in 2000 to $200.3 million in 2008. Chinese pesticides accounted for 42

[36] Fresh Studio, p. 4
[37] Fresh Studio, p. 3
[38] Huu Dung and Thanh Dung, p. 13

percent of the total pesticide import value in 2008.[39] To date, pesticide imports from China have risen above 50 percent.[40]

One must bear in mind that these numbers do not include pesticide products that were smuggled to Vietnam from China. If smuggled products are taken into account, the real number is much higher. The Vietnamese state encourages the distribution of pesticides by not levying an import tax on pesticides. The state attempted to issue a five percent sales tax in the mid-1990s but was met with strong opposition.[41] Pesticide exports are not the only way that China influences pesticide levels in Vietnam. The Red River, which runs from China's Yunan Province in a relatively straight line to Hanoi, thence to unfold into one of Asia's major rice-producing deltas, also acts as trans-boundary pollutant channel between the two countries. Pesticide contaminants are transported from pollution sources in China into the Red River Delta of Northern Vietnam.[42]

A recent estimate by the Ministry of Industry and Trade estimates that 30-35% of the pesticides currently in use in Vietnam were imported illegally.[43] The Ministry also surveyed over 5000 pesticide companies in 2007 and over 8000 farmers and found that 12% of companies and 18% of farmers were violating pesticide regulations, hence they were circulating or using illegal pesticides or were responsible for improper usage.[44] Vietnamese government officials have even been known to accept bribes in order to allow pesticide marketers and distributers to continue circulating illegal pesticides.[45] It is important to note that surveys of this nature are limited to pesticide companies that have obtained an official certification from the state. Due to the scope

[39] Van Hoi et al. (2013), p. 21
[40] Than, p. 24
[41] United Nations Development Programme (UNDP)
[42] Quang Hung and Thiemann (2002), p. 360
[43] Van Hoi et al. (2013), p. 21
[44] *Id*.
[45] *Id*.

and nature of the informal sector in Vietnam, which I defined in the introductory chapter, the assumption can be made that there are far more pesticide retailers in existence than the state is aware of or that were surveyed.

The widely held notion still exists that pesticides are the be all and end all of achieving higher outputs. The repercussions of spraying are taken out of the equation. Farmers frequently believe that applying these chemicals at the early stages of plant growth is the most effective way to maximize their yield; however, this tends to lead to more excessive spraying. The study conducted by Van Toan et al. in the Mekong Region found that farmers tend to favor the application of higher doses per hectare in order to err on the safer side in terms of protecting their crops.[46]

The pesticide policies in place merely regulate the types of pesticides that can be used, through publication of the list of permitted, restricted, and banned pesticides. These policies do not place any restrictions on the amount of a pesticide that can be sprayed on a particular crop. The state merely provides amount recommendations, which are not legally binding. Even state officials are aware of the plethora of guidelines on how to apply pesticides in existence, their lack of effectiveness, and the need for binding laws on pesticide application.[47]

Additionally, MARD has yet to provide farmers with training or certification resources which might help reduce the number of pesticide poisoning cases, could better regulate the amount of pesticides sprayed, and could reinforce the guidelines for application procedures. There is not only a need to more effectively regulate pesticide application procedures, but also to enforce regulations to avoid the consequences of improper storage and disposal of pesticides. These can lead to leakages that further exacerbate human and environmental exposure to the

[46] Van Toan et al., p.33
[47] Hoang Vu Quang, IPSARD (2017)

toxic chemicals contained in many pesticides that are being used in Vietnam. Regulations on storage and disposal focus on industrial manufacturers and distribution companies, as opposed to individual retailers and household applicators.[48]

In essence, the primary means through which the state regulates pesticide distribution and use is through the pesticide registration process. This process is by no means comprehensive or effective. Illegal pesticides are widely circulated regardless, which the state is aware of but chooses to ignore. The registration process does not wholly account for imported pesticides, certainly not for pesticides being smuggled from China. Pesticide marketers are undercutting any registration efforts by selling identical chemicals under several different trade names. These marketers, and their consumers by extension, are mixing dangerous pesticide cocktails, further curtailing any efforts at ensuring the distribution of the types of pesticides that are scientifically proven to be safe; as opposed to the restricted or banned, highly toxic brands.

An additional component, which hampers the effective enforcement of pesticide regulations in Vietnam, is the fact that Vietnamese statistics are notoriously unreliable. Not only is data on domestic production and use of pesticides unreliable, information on imported Chinese pesticides, which constitute a large portion of the Vietnamese pesticide market, is largely unavailable. When such information is available it is often misused in the interest of powerful Vietnamese elites and at the expense of poor Vietnamese farmers. Cooperation between state authorities and pesticide producers further exacerbates this problem. Richer farmers in urban centers, such as Hanoi, are more prone to have access to the resources that enable "safe" vegetable production. IPM initiatives are only able to target a select few provinces. The state has

[48] Tri Phung et al. (2012), p, 470

created a socioeconomic divide that disproportionately favors richer farmers and limits poorer farmers to the cheap, highly toxic, and unreliable pesticides.

The Limitations of Top-Down Governance

While the global pesticide market is a powerful force, it can only go so far without the state's cooperation. The Vietnamese state has not cooperated sufficiently. A stark disconnect is at play between the central authority, the Communist Party, in Hanoi and the rural farmers that can be found in every province of Vietnam, North and South. Local, provincial authorities have little to no say when it comes to statewide pesticide policies. This raises the question of whether their lack of influence over national policy measures has any implication for what actually happens in the field, which pesticides are sprayed and how they're sprayed.

Most farmers are so far removed from the political and judicial process in Hanoi that they have never even seen the list of permitted, restricted, and banned pesticides. These lists merely constitute additional, largely meaningless, pieces of paper on the pile of documents that the socialist state publishes, largely for public relations purposes, and then fails to enforce. This weak enforcement leads to a complete lack of accountability for pesticide consumers and distributors.

The disconnect between the Communist Party and provincial authorities was explained to me in an interview with Oriane Cornille who was working for the *Agence Française de Développement* (AFD) in Vietnam at the time and had gained significant insights into the inner workings of the Vietnamese state through countless meetings with state officials. Some of her observations fall in line with my hypotheses about the Vietnamese state, through scholarly research, while others are quite surprising.

Ms. Cornille highlighted the fact that environmental policy implementation is far more effective on a local or regional level. There is a tendency by provincial authorities to ignore, or be unaware of, the policies that high-level government officials in Hanoi are putting forth. However, this provincial freelancing leads to direct, visible environmental progress, whereas, laws enacted in Hanoi often do not. A sharp divide also exists between communist party actions and grassroots-level projects carried out by Non-Governmental Organizations (NGOs) in more rural areas.

This divide is further exacerbated by the fact that the party does not allow international donors to reach too deep into the administration. Since donations must, officially, be received by the Ministry of Finance, which then redistributes the money to the respective province, foreign donations do not always reach the area for which they were intended. This also creates a competition for donations between provinces and local authorities. Provinces do have the option to directly approach a donor, who must always, however, funnel any financial resources through the Ministry of Finance first.

Ms. Cornille described the Vietnamese government as an institution plagued with "horizontal non-communication."[49] She went so far as to say that implementation issues are more pronounced in Vietnam than in other countries with a similar socio-economic make-up. According to Ms. Cornille, these implementation issues are largely due to the existence of too many voices and layers within the Vietnamese government which are desperately attempting to cooperate, or so it seems. There is not just one, cohesive institution in place. The Vietnamese state is a "quasi-double (or even triple) government."[50] The power distribution and task

[49] Oriane Cornille (2017)
[50] Oriane Cornille

delegation within the Communist Party may appear one way on paper; in reality, it plays out much differently.

Development Trajectory

According to officials within IPSARD, the Vietnamese government is changing gear from focusing on productivity to focusing on quality.[51] Jensen and Peppard concur with this notion by saying "that concerns about quality [will begin to] take precedence over concerns about price"[52] as incomes continue to rise. This intended shift in production ties back to Vietnam's developmental tension mentioned at the beginning of this chapter. Prior to achieving economic growth equivalent to that of a middle-income country, Vietnam's primary focus was on high production levels to achieve such growth. From a food sector perspective, this growth was accompanied by increased participation in global food commodity exchange. As was described in the previous chapter, during the mid-1990s, supermarkets started popping up, primarily in urban centers. Supermarkets are now commonplace across most of Vietnam. Small convenience stores, which tend to carry similar products, can be found in even greater frequency.

This shift from traditional marketplaces to western-style supermarkets provided Vietnamese consumers with access to convenience foods, which are primarily imported, in addition to goods derived directly from the agriculture and livestock sector. The introduction of supermarkets was a necessary step for the Vietnamese people to feel as though they, as a country, had finally arrived on the world stage. Only after highly processed convenience foods were introduced to the market, and had been in existence for some time, did Vietnamese consumers begin demanding "safer" options.

[51] Hoang Vu Quang (2017)
[52] Jensen and Peppard (2013), p. 131

"Safer" food products, primarily vegetables, demonstrate a positive backward shift. As IPSARD officials illustrated in my interview with them, certain levels of productivity, and the corresponding levels of economic growth and development, needed to be achieved before Vietnam could even begin to think about food quality. "Backward," in this sense, does not carry a negative connotation. A shift in the opposite direction can be a shift in the right direction. This backward shift should constitute a move away from highly toxic, and largely ineffective, pesticides to vegetables grown under more natural, less chemically-intensive conditions. However, much like the introduction of supermarkets, this shift requires consumers' willingness to adapt and to create a new market demand. The demand for "safe" food is present, but it is slow. The average farmer cannot meet this demand.

Farmers will be better-equipped to meet the demand for "safe" food if the state cooperates. A recent Oxfam report showed that, for a country characterized by and largely dependent on agriculture, the Vietnamese state has been insufficiently investing in its agricultural sector: 13.8 percent of its GDP in 2000 and only 6.3 percent in 2010.[53] Those funds are largely spent on irrigation and drainage, rather than on increasing farmer capacity and resilience.

Conclusion

The Vietnamese Government has so far failed to adequately enforce pesticide regulations and is inadequately promoting a sustainable trajectory in Vietnam's agricultural sector. Not only are richer farmers, concentrated around urban areas, exposed to IPM and "safe" vegetable programs in greater numbers, the state also favors larger, low land-based and input-intensive production models, putting small-scale farmers at a disadvantage. Agribusinesses (buyers,

[53] Oxfam, p. 15

traders, and exporters) are the ones that benefit from Vietnam's agricultural sector, not the farmers at the forefront of production. Trade mechanisms are regulated by these agribusinesses, with little regard for farmer objectives.

By allowing the needs of farmers to go unanswered, the state is hampering any efforts at sustainable agriculture. Since nearly 90 percent of agricultural land is managed by agricultural households or farms, and only 6 percent by enterprises[54], the agricultural sector is dominated by small farms, who lack the capacity to invest in infrastructure and food safety training[55], in numbers. However, in terms of the balance of power in the sector, a small percentage of enterprises has a disproportionately large amount of control.

There is a need for change in the way the state interacts with its farmers. It should be recognized that small-scale farming operations can actually adapt sustainable practices more easily. The size of their operations is well-suited to sustainable practices. The state is now faced with the challenge of looking beyond its narrow notion of economic growth. "The modernization of the Vietnamese agro-food system will occur more smoothly if the government's approach involves leading less and facilitating more."[56]

A move away from pesticides in the Vietnamese agricultural sector, overall, is not very likely in the near future. Farmers are attracted to pesticides for two main reasons: they are easy to use, and they provide a rapid means through which to control pests. While these benefits have long been apparent to farmers in Vietnam, limited knowledge exists with regards to the risks of using pesticides. Therefore, in order to relieve the environmental, health, and economic effects associated with high pesticide usage, the state must promote farmer education programs, such as

[54] Oxfam, p. 15
[55] World Bank (2016), p. 44
[56] Oxfam, p. 15

IPM programs, at a much higher rate and these programs must cater to a wider and more extensive audience. Programs aimed at educating farmers are also essential in order to introduce them to alternatives to synthetic pesticides. Without attractive alternatives, that are proven to be effective at maintaining or growing yields, farmers will continue to rely on pesticides as a "quick fix."

Moreover, reducing the high number of pesticide imports from China should be a top priority for the state. Not only are pesticides imported illegally from China, those that are imported legally are difficult to monitor and their contents are often insufficiently disclosed. The state should proactively work towards expanding the domestic pesticide market, which is currently nearly non-existent. These improvements would not only improve the efficiency of, and oversight over, the Vietnamese pesticide market, it would also help to diminish the widespread public distrust of domestic, as well as Chinese, produce. Ensuring a more ethical and sustainable pesticide market constitutes one step in the right direction towards a more effective mode of governance in order to improve the state of food safety in Vietnam.

The pesticide market in Vietnam, as well as the certification mechanisms aimed at hampering this market, are all fraught with government corruption. The pesticide regulations in place appear to be not much more than political window-dressing, in order for the government to maintain its legitimacy. These inadequately enforced regulations become even more useless in the face of endemic corruption. The state's disinterest in truly reforming the safety of the Vietnamese fruit and vegetable industry, and the safety of the other food industries discussed in this thesis, is further underscored by the lack of state subsidies in place for pesticide reduction efforts. State subsidies, and tax reductions or exemptions, only seem to be in place to encourage the increased use of pesticides. Once again, the Vietnamese government seems to be determined

to intensify and modernize a portion of the food industry which could really benefit from increased state efforts to further an already existent informal food economy.

Works Cited

Anyusheva, Maria, et al. "Fate of pesticides in combined paddy rice–fish pond farming systems in Northern Vietnam." *Journal of environmental quality*, vol. 41, The American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, Inc., 2012.

Cornille, Oriane. *Agence Française de Développement*. March 16, 2017, Hanoi, Vietnam.

Dasgupta, Susmita, et al. "Pesticide poisoning of farm workers–implications of blood test results from Vietnam." *International journal of hygiene and environmental health*, vol. 210, Elsevier, 2007.

Dung, Nguyen H., and Tran T. T. Dung. "Economic and health consequences of pesticide use in paddy production in the Mekong Delta, Vietnam.", EEPSEA, Singapore, SG, 1999.

Fresh Studio. "Overview of pesticide management, trade and use in Lam Dong Province, Vietnam." *IDH, The Sustainable Trade Initiative*, 2016.

Hayton, Bill. *Vietnam: rising dragon*, Yale University Press, 2010.

Hoai, Pham M., et al. "Pesticide pollution in agricultural areas of Northern Vietnam: Case study in Hoang Liet and Minh Dai communes." *Environmental pollution*, vol. 159, Elsevier, 2011.

Hoi, Pham V., et al. "Pesticide use in Vietnamese vegetable production: a 10-year study." *International Journal of Agricultural Sustainability*, vol. 14, Taylor & Francis, 2016.

Hung, Dang Q., and Wolfram Thiemann. "Contamination by selected chlorinated pesticides in surface waters in Hanoi, Vietnam."*Chemosphere*, vol. 47, Elsevier, 2002.

International Institute for Environment and Development et al. "Food Consumption, Urbanisation and Rural Transformations.", 2015.

Ito, Osamu, et al. *Monitoring and Governance of Persistent Organic Pollutants in Asia*, United Nations University, 2015.

Jensen, R., D. Peppard, and VTM Thang. *Women on the move: Hanoi's migrant roving street vendors*. Hanoi, Vietnam: Women's Publishing House, 2013.

Klemick, Heather, and Erik Lichtenberg. "Pesticide Use and Fish Harvests in Vietnamese Rice Agroecosystems." *American Journal of Agricultural Economics*, vol. 90, Agricultural & Applied Economics Association, Oxford University Press], 2008.

Lamers, Marc, et al. "Agricultural pesticide use in mountainous areas of Thailand and Vietnam: towards reducing exposure and rationalizing use." *Sustainable Land Use and Rural Development in Southeast Asia: Innovations and Policies for Mountainous Areas*, Springer, 2013.

Loganathan, Bommanna G., and Paul K. Lam. *Global contamination trends of persistent organic chemicals*, CRC Press, 2011.

Mergenthaler, Marcus, Katinka Weinberger, and Matin Qaim. "Consumer valuation of food quality and food safety attributes in Vietnam." *Review of Agricultural Economics*, vol. 31, Oxford University Press, 2009.

Ministry of Agriculture and Rural Development. "Mandate.", https://www.mard.gov.vn/en/Pages/mandate.aspx.

Moustier, Paule, and Nguyen Thi Tan Loc. "The role of proximity and standards in guaranteeing vegetable safety in Vietnam." *World Food Policy*, vol. 2, 2015.

Murphy, Helen H., et al. "Farmers' self-surveillance of pesticide poisoning: a 12-month pilot in northern Vietnam." *International Journal of Occupational and Environmental Health*, vol. 8, Taylor & Francis, 2002a.

Nguyen Than. *Agriculture in Vietnam and Status of Pesticides Market*, 2017.

Nguyen-Viet, Hung, et al. "Food safety in Vietnam: where we are at and what we can learn from international experiences." *Infectious diseases of poverty*, vol. 6, BioMed Central, 2017.

Nhơn, Đặng H., et al. "Accumulation of Persistent Organic Pollutants in Sediment on Tidal Flats in the North of Vietnam." *VNU Journal of Science: Earth and Environmental Sciences*, vol. 30, 2014.

Oxfam. "Growing a better future: Expanding rights, voices and choices for small-scale farmers in Viet Nam.", 2012.

Phung, Dung T., et al. "Pesticide regulations and farm worker safety: the need to improve pesticide regulations in Viet Nam." *Bulletin of the World Health Organization*, vol. 90, SciELO Public Health, 2012.

Plant Protection Department, "Country report -- update on Plant Protection Department of Vietnam." *International Plant Protection Convention*. https://www.ippc.int/static/media/files/publications/en/1310182292_26_vietnam.pdf

Plant Protection Sub Department (PPSD), Ha Tay Province. "Demonstration and dissemination of community-based SRI utilization model in Ha Tay Province, Vietnam, 2007." *Vietnam National IPM Program*, 2007.

Quyen, Pham B., Dang D. Nhan, and Nguyen Van San. "Environmental pollution in Vietnam: analytical estimation and environmental priorities." *TrAC Trends in Analytical Chemistry*, vol. 14, Elsevier, 1995.

Schreinemachers, Pepijn, et al. "Safe and sustainable crop protection in Southeast Asia: status, challenges and policy options." *Environmental Science & Policy*, vol. 54, Elsevier, 2015.

Simmons, Luke, and Steffanie Scott. "Health concerns drive safe vegetable production in Vietnam." *LEISA-LEUSDEN-*, vol. 23, 2007.

Than, Nguyen. "Agriculture in Vietnam and Status of Pesticides Market." *Vietnam Pesticide Association*, 2016. http://www.cacasiasummit.com/Uploads/Download/7-Vietnam%20Agricuture%20and%20Status%20of%20Pesticides%20Market.pdf

Thang, Tran C., Bao Linh, and Dinh Thi. "How to Support Poor Vietnamese Consumers to Deal with Food Price Volatility and Food Safety Issues." *IDS Bulletin*, vol. 46, Wiley Online Library, 2015.

The World Bank and ILRI, FAO, Canada, ADB, CIRAD, Australia (Development Partners). "Vietnam Food Safety Risks Management: Challenges and Opportunities.", 2016.

Thuy, Pham T., et al. "Current pesticide practices and environmental issues in Vietnam: management challenges for sustainable use of pesticides for tropical crops in (South-East) Asia to avoid environmental pollution." *Journal of Material Cycles and Waste Management*, vol. 14, Springer, 2012a.

Tuyen, Nguyen N. "Women farmers and IPM farmer field schools in Vietnam." *ILEIA Newsletter*, vol. 13, 1997.

United Nations Development Programme, (UNDP). "Taxes on Pesticides and Chemical Fertilizers.", http://www.undp.org/content/sdfinance/en/home/solutions/taxes-pesticides-chemicalfertilizers.html.

Van Hoi, Pham, Arthur P. Mol, and Peter J. Oosterveer. "Market governance for safe food in developing countries: the case of low-pesticide vegetables in Vietnam." *Journal of environmental management*, vol. 91, Elsevier, 2009.

Van Hoi, Pham, et al. "Pesticide distribution and use in vegetable production in the Red River Delta of Vietnam." *Renewable Agriculture and Food Systems*, vol. 24, Cambridge University Press, 2009.

Van Hoi, Pham, Arthur Mol, and Peter Oosterveer. "State governance of pesticide use and trade in Vietnam." *NJAS-Wageningen Journal of Life Sciences*, vol. 67, Elsevier, 2013.

Van Mele, Paul, et al. "Influence of pesticide information sources on citrus farmers' knowledge, perception and practices in pest management, Mekong Delta, Vietnam." *International Journal of Pest Management*, vol. 48, Taylor & Francis, 2002.

Van Toan, Pham, et al. "Pesticide management and their residues in sediments and surface and drinking water in the Mekong Delta, Vietnam." *Science of the Total Environment*, vol. 452, Elsevier, 2013.

Vu Quang, Hong. *Institute of Policy and Strategy for Agriculture and Rural Development*, March 2018, Hanoi, Vietnam.

The World Bank and ILRI, FAO, Canada, ADB, CIRAD, Australia (Development Partners). "Vietnam Food Safety Risks Management: Challenges and Opportunities.", 2016.

Chapter III
The Meat Industry

Introduction

In 2008 cases of *Salmonella* were found in salami in the United States. The Rhode Island Department of Health traced the outbreak to peppercorns contained in the salami, which had been exported from Vietnam. It was later found that around eight percent of the peppercorns being exported from Asia tested positive for Salmonella.[1] Rhode Island food safety authorities were reported as having found Salmonella in black pepper from Vietnam. According to the report, the company in question recalled 1.24 million pounds of salami on January 23 and a further 17,235 pounds on January 31 (2010) after a Salmonella outbreak occurred in more than 200 people across 42 states and the District of Columbia."[2]

The U.S. imports around 75% of its spices. The U.S. Food and Drug Administration (FDA) has regulatory oversight over spices in the United States; its control is limited, however, to testing and sampling once the goods have crossed the U.S. border. The food safety and hygiene practices of the countries from which the U.S. imports is largely out of the FDA's control.[3] As globalization increases people's access to food products from all over the world, the risk of foodborne illnesses increases. When Vietnam transitioned to a capitalist market economy in 1986 as a result of the *Doi Moi* economic reforms, it slowly became a player in the global economy, and began to attract foreign businesses and to import and export goods at a greater rate. Vietnam thus put itself at a greater risk of exposure to foodborne illnesses and also put the

[1] Interview with Dr. Julian, July 27, 2017, Providence, RI
[2] Robert (2012), p. 42
[3] Gurtler et al. (2014), p. 9

countries to which it exported at a greater risk of being exposed to internal diseases spread through food.

With the increasing rate of urbanization and the rapid intensification of food production networks in Vietnam, the variety of food safety risks will undoubtedly change. These factors will further exacerbate the Vietnamese people's risk of exposure to foodborne illnesses and excess chemical residues and will require more cohesive food safety control and prevention measures on the part of the Vietnamese government.[4] In contrast, advances in animal slaughter and processing practices, largely as a result of foreign investment, can have positive impacts on the safety of Vietnamese meat.

A discussion about the governance of food safety, as it relates to foodborne illnesses, would be incomplete without an evaluation of the meat industry in Vietnam. In this chapter, I will analyze how the Vietnamese state regulates the meat industry and the effects that this regulatory regime has on Vietnam's ability to export livestock products. Similar to the issue surrounding pesticide residues on fruit and vegetable products, Vietnam has been receiving heavy criticism from the international community, and its own citizens, for the high prevalence of antibiotic residue that is often found on its meat products. Vietnam has been responsible for a disproportionately large amount of food export violations relative to its share of imports. Because dairy is primarily imported from other countries, the Vietnamese dairy industry is not yet relevant in the context of domestic food safety governance.

As of late, there has been heavy media coverage regarding the country's desire to make its meat more marketable to countries with high food safety standards, such as the U.S., Europe, and Japan. Vietnam is home to a large pork market: 80 percent of the meat consumed in Vietnam

[4] Carrique-Mas and Bryant (2013), p. 484

is pork. However, Vietnam cannot export much of its pork because a large amount of it has not been cleared for being free of hand, foot, and mouth disease; it is generally considered to be of low quality and high fat content; and is associated with high production costs.[5]

My discussion of the regulation pertaining to food safety oversight in the meat industry will primarily focus on pork and poultry products because they make up the largest portion of the Vietnamese meat market. Scandals involving the use of carcinogens in meat production and the distribution of expired imported meat have led to public distrust toward domestic meat production. The issues surrounding meat production reveal another set of food safety issues in Vietnam that the government has yet to adequately address.

The major food safety issues in the meat industry in Vietnam are: high residues of antibiotics in Vietnamese meat; foodborne illness outbreaks in meat, such as the avian flu and salmonella in chicken and hand, foot, and mouth disease in pork; poor oversight in slaughterhouses, particularly informal ones, which dominate the industry but lack adequate processing infrastructure, which leads to unhygienic and unsafe conditions; and the distribution of meat products primarily in traditional wet, open air markets with little to no food safety management.

All of these factors exacerbate a widespread public fear by the Vietnamese of their food. As the middle class continues to grow, Vietnamese people are consuming meat in greater quantities and are demanding higher quality meat. At present, Vietnam cannot meet the demand for higher quality meat. There is little incentive for meat producers to generate higher quality meat products because the higher cost associated with a higher quality product would not pay off on the market.[6]

[5] Vu et al. (2007), p. 291
[6] Knips (2004), p. 29

Background

Livestock accounts for approximately 19 percent of Vietnam's agricultural production value.[7] As is the case with many sectors of the Vietnamese economy, the Vietnamese meat market experienced a boom in the aftermath of *Doi Moi*. "The production quantity of indigenous meats (pork, beef, and chicken) increased by 90% from 2002 to 2012. With a rapidly growing middle class, livestock consumption continues to rise. Consumption went from 3.5 million tons in 2013 to 3.6 million tons in 2014 and is forecasted to reach 4.5 million tons by 2019."[8] Although the meat industry has experienced relatively stable growth over the past few years, meat output, particularly chicken and beef supply, has not been able to satisfy consumption demand, with the exception of the pork meat output.

Pork has long been the traditionally consumed meat in Vietnam. The origins of Vietnamese pork consumption can be attributed to Chinese influence. The Chinese have traditionally equated meat consumption, especially pork consumption, with triumph over hardship. While pork meat will undoubtedly continue to be consumed at high rates, a recent preference for foreign, imported goods has emerged among the growing middle class. This shift in preferences has created a positive outlook for the consumption of other meat varieties that are more common in the West, such as beef and chicken. The domestic beef and poultry industry is expected to grow three to five percent, per year.[9] The predominantly middle- and upper-class demand for foreign goods has also been accompanied by a drastic surge in meat imports, especially bovine meat.[10]

Vietnamese consumers principally prefer fresh meat. This preference is not unique to Vietnam. Many other countries worldwide, such as the U.S. and Europe, prefer freshly butchered

[7] Nguyen, Meat Market Report, p. 2
[8] *Id.*, p. 3
[9] *Id.*, p. 4
[10] *Id.*, p. 4

meat. In Vietnam, the desire for fresh meat largely explains why Vietnamese consumers tend to purchase their meat on wet markets. Lower class citizens tend to rely on the fresh meat suppliers at traditional wet markets, who they know and trust.[11] People who are overly concerned with food safety, the middle- and upper-classes, are much more likely to purchase their meat from modern retail outlets rather than traditional wet markets.[12] A recent study implies that meat is purchased from supermarkets nearly as frequently as it is from wet markets (65 relative to 79 percent).[13] This study surveyed food shoppers from multiple socioeconomic backgrounds.

A recent IPSARD report concluded that lean meat is Vietnamese consumers' top priority.[14] Consumers also reported basing their meat choices primarily on the color of the meat (34.74 percent), followed by the smell of the meat (26.84 percent). The surveyed meat purchasers were also interested in the seal of veterinary quarantine, the cleanliness of the meat store, and their familiarity with the salesman. A preference for fresh meat in pork purchases (93.3 percent) was contrasted with a preference for live, whole animals in poultry purchases (56.67 percent).[15] The report showed that Vietnamese consumers have recently become more willing to pay a higher price for certified and traceable meat products.[16]

Meat Regulatory Authority

The Department of Livestock Production (DLP) and the Department of Animal Health (DAH) under Ministry of Agriculture and Rural Development (MARD) are in charge of regulating the meat market in Vietnam. Below the central level, agricultural and rural development services are provided by MARD and DAH's offices at the provincial, as well as at

[11] Tisdell et al. (2009), p. 7
[12] Tisdell et al., p. 17; Jensen, Stark-Ewing et al. (2017)
[13] Jensen and Stark-Ewing (2017)
[14] Duteurtre (2010), p. 16
[15] *Id.*, p. 17
[16] *Id.*, p. 16

the district level. Local livestock farming committees in the communes aim to provide similar services at the grassroots level.[17]

"In the past, regulation of food safety in Vietnam has been hampered by highly decentralized authority for monitoring value chains. A Food Safety Law (No. 55/ QH12/2010) seeks to impact quality control of slaughter and processing facilities within food distribution networks, in part through clarifying new standards and regulatory policies. Examples include the development of certification systems for good food production and slaughtering practices, increase[d] traceability and strengthening of penalties for marketing uncertified animals."[18] However, there is no comprehensive livestock policy in place. The livestock industry in Vietnam suffers from a lack of budgetary support and few regulatory interventions into the market. This becomes most apparent in the location and condition of animal slaughter and processing facilities and the resulting meat available for consumption.[19]

According to the MARD mandate, tasks and authorities, the agency is responsible for "govern[ing] [the] monitoring, inspect[ion] [of] antibiotic, harmful and poisonous chemicals and pathogenous factors for animals and plants before harvest in raw – processing, preserving, processing, transporting; control[ing] animal slaughter and conduct[ing] hygienic veterinary activities."[20] Subject to approval from MARD, antimicrobials can be included in feed formulations subject to approval from the Ministry for each specific commercial product.[21] MARD regularly publishes a list of authorized commercial feed products and trading companies, as well as an official list of banned antimicrobials for livestock and aquaculture. As is the case

[17] Duc and Long (2008), p. 11
[18] Carrique-Mas and Bryant, p. 484
[19] Knips, p. 29
[20] MARD, "Mandate"
[21] MARD 2012 in Van Cuong et al. (2016), p. 496

with the regulation of permitted, restricted, and banned pesticides, banned chemicals are nonetheless used widely in livestock production.[22]

Veterinary services, as well as sanitary and phytosanitary protection is provided by the Department of Veterinary Services, under MARD, at the central level and veterinary sub-departments in 61 cities and provinces across the country. Veterinary stations and dispensaries are supposed to be widely available at the local level. The exact number of those is unknown. Detailed data on the livestock sector's sanitary standards are generally unavailable, making it difficult to coordinate any national intervention aimed at preventing and eliminating animal diseases. The little data in existence suggests that veterinary services are weak.[23] Livestock producers are burdened by infrequent consultations and a lack of access to skilled veterinary practitioners.[24]

To respond to the new challenges associated with the growth and liberalization of the agricultural industry, the Communist Party issued Resolution 26 in August 2008, known as Resolution "Tam Nông," which defines the Party's strategic orientation for the development of agriculture, farmers, and rural areas. The resolution focuses on the construction of rural areas, adaptation to climate change, and the training of rural human resources. With regards to the livestock industry specifically, the Resolution outlines a strategy to increase livestock production from 30 percent of total agricultural output to 42 percent by 2020.[25] Building off of the resolution, the government launched a national target program on "new rural areas," as defined by Decision 800, in June 2010, which aims to develop the commercial orientation and

[22] Tuyet-Hanh et al. (2017), p. S81
[23] FAO Brief, p. 17
[24] Dang-Xuan et al. (2017), p. 81S
[25] USDA Report, p. 1

industrialization of agriculture, as well as rural infrastructures and services.[26] The Vietnamese government has also introduced zoning regulations on the proximity of production units close to urban centers and waterways, which is where slaughter facilities tend to be located, but these have yet to be passed into law.

The pork and beef sector overwhelmingly receive the most attention and funding from the government.[27] The Communist Party is focused on fostering the advancement of medium-scale, specialized livestock production systems in order to better meet the country's food safety and food quality standards.[28] Party orientation has largely reflected a disinterest in small and medium livestock production systems. Large scale, highly industrialized, western-style livestock production is favored instead.

Pork

Government policies and institutions seem to exert only a minor influence over the pig industry when it comes to food safety regulations, as can be observed across the entire Vietnamese livestock industry. [29] In Northern Vietnam, this has resulted in extremely high pig densities. [30] Pork can be contaminated by harmful microorganisms at any stage "from production to plate."[31]

A 2016 study found that most pork slaughterhouse workers in Vietnam acquire their knowledge about food safety practices through "learning by doing" rather than from training or from a veterinary or public health official. There seemed to be no official rules inherent in the

[26] Duteurtre, p. 7
[27] FAO and AGAL Brief (2005), p. 9
[28] Duteurtre, p. 16
[29] Huynh et al. (2007), p. 84
[30] Vu et al., p. 291
[31] Dang-Xuan et al. (May 2016), p. 1490

slaughter systems, only informal ones passed down from worker to worker.[32] Slaughterhouse workers and sellers had some accurate perceptions about pig diseases but were misguided in their perceptions of the risks of these diseases.[33] Slaughtering tended to be conducted on the floor of the slaughterhouse with limited process separation. People were also able to access the slaughterhouse without restriction. [34] Slaughterhouse workers frequently wore boots but no further protective gear.

Similarly, the surveyed pork retailers overwhelmingly did not wear gloves and also neglected to cool or cover their meat. They would clean the meat, and the vending table, before selling their pork but with their bare hands.[35] The study mentioned that sellers neglected to wear protective equipment because they feared that consumers would view the protective gear as an indicator that the seller has health issues they are trying to conceal and, as a result, would avoid buying from them.[36] Pork sellers also reported that consumers perceive the appearance of meat to be fresher when it is sold on wooden tables. Retailers, therefore, often sell their meat on wooden tables which are more prone to bacterial contamination.

The study, by Dang-Xuan et al. (2016), further underscored the gap between regulations and food safety practices, as was explicitly stated by veterinary and public health officials.[37] Even though small slaughterhouses dominate the industry, inspection legislation mainly applies to large or medium slaughterhouses.[38] "At the slaughterhouse, one veterinary staff member reflected, 'it cannot be 100% guaranteed that all pigs were inspected at the slaughterhouse, 80 to

[32] *Id*., p. 1493
[33] *Id*., p. 1490
[34] *Id*., p. 1492
[35] *Id*., p. 1493
[36]*Id*., p. 1490
[37] *Id*., p. 1490
[38] *Id*., p. 1493-1494

90% is a good number. The government still has difficulties in taking care of this duty.'"[39] In light of the prevalence of salmonella contamination and the overuse of antibiotics, as will be discussed later in this chapter, it seems likely that 80-90 percent is an optimistic assessment of how much pork is inspected by veterinary authorities. Slaughterhouses are also supposed to be located at least 100 meters away from residential areas. Since slaughterhouses tend to be located just outside urban areas, and urban areas are generally very densely populated, it is safe to assume that this slaughterhouse zoning requirement is often not followed.

Food safety risks aside, the fact that Vietnamese consumers, like many other cultures, prefer fresh meat is an advantage to internal pork producers.[40] Despite the demand for fresh, local pork, the government has expressed its intention to increase the pork export quantities dramatically. Vietnam only began exporting pork a few years ago, after internal pork producers had fulfilled domestic demand for the product, but pork exports are still limited relative to domestic production.[41]

Some production systems are characterized by a "closed production cycle" during which farmers not only raise the pigs but also produce the finished product. This system is said to be more effective at managing the transfer of diseases. It also has the potential to be more profitable but certainly comes with higher investments.[42] Aside from exploring alternative production cycles, it is prudent that the perceptions and practices of pork value-chain actors begin to be incorporated into food safety mechanisms in order to lessen the gap between livestock safety regulation and implementation.

[39] *Id*, p. 1494
[40] Huynh et al., p. 89
[41] Huynh et al., p. 89
[42] Vu et al., p. 291

Poultry

Commercial poultry production is more advanced, relative to other regions, in South Vietnam, the Mekong Delta Region, and the Red River Delta Region.[43] In non-intensive poultry systems, farmers lack the productive strategies to be able to develop their poultry flocks. Farmer's knowledge on poultry production is normally passed on from generation to generation. The household head, typically a man, decides which poultry breeds and types are purchased. Feeding and tending to the poultry flocks are the duties of women, the elderly, and children.[44] In informal poultry systems, farmers tend to lose track of how many chickens they have on their farm and will, therefore, only notice disease outbreaks when a large number of their flock falls ill. This leads to the rapid spread of diseases between households.[45] In addition, since farms tend to house several species and several breeds of poultry, it is very difficult for farmers to vaccinate all of them. While vaccines tend to be used efficiently in intensive systems, farmers in the non-intensive systems often cannot afford vaccinations.

Farmers in these non-intensive systems become accustomed to the risks of diseases and, therefore, pay little attention to animal disease treatment and prevention.[46] For semi-intensive poultry systems, training opportunities are traditionally provided for the male household head. Since the women, the elderly, and the children tend to be responsible for the bulk of the field work, the useful information and knowledge gathered from this training is passed on to the wrong people.[47] Nonetheless, farmers in this system tend to pay more attention to poultry health and have more direct access to veterinary services.[48] Intensive poultry systems benefit from

[43] Desvaux, p. 8
[44] Duc and Long, p. 3
[45] *Id.*, p. 4
[46] *Id.*, p. 11
[47] *Id.*, p. 4
[48] *Id.*, p. 11

greater economic and technical support. They manage diseases through strict procedures for each kind of poultry.

Antibiotics

The Vietnamese meat market remains dominated by smallholder and household meat producers, despite government efforts to consolidate meat production.[49] Smallholder or backyard pig production accounts for 85 percent of pig production in Vietnam.[50] Antibiotics are typically used in greater quantities in pork as opposed to poultry production.[51] This is most likely largely due to the large size of the pork market in Vietnam in relation to the poultry market. Meat produced in household production systems is often treated with higher levels of antibiotics[52], although the use of antibiotics can be observed across the board.[53] Antibiotics are overwhelmingly used preventatively in meat production[54] and are often added to feedstuffs as antimicrobial growth promoters to increase livestock productivity.[55] Animals are becoming resistant to antibiotics and are being infected with diseases, such as salmonella, at a higher rate due to the overuse of antibiotics.

Veterinary drugs in Vietnam are regulated by MARD through the "regulations on registration procedures of production, import and circulation of veterinary drugs, raw materials for veterinary drugs, biological products, microorganisms, chemicals used in veterinary medicine… and by the Ordinance on Veterinary medicine…"[56] These regulations address animal disease prevention and

[49] Carrique-Mas and Bryant (2013), p. 465
[50] *Id.*
[51] Van Cuong et al., p. 495
[52] Carrique-Mas et al. (2013), p. 76
[53] Ngoc Do et al., (2016)
[54] Carrique-Mas et al., p. 70
[55] Van Cuong et al., p. 490
[56] Chuanchuen, R., et al (2014), p. 114

treatment, the control of epidemics and slaughter practices, the inspection of veterinary hygiene, and the management of veterinary drugs.

Like pesticides, antibiotics are readily available in Vietnam. There is a 20 percent import tariff on beef, for example, but a zero percent tariff on the import of veterinary drugs.[57] They can be purchased over the counter at veterinary drug stores without a prescription.[58] About 50 percent of the total antibiotics sales are for veterinary use.[59] The publicity for careful use of antibiotics is also insufficient. As of yet, the government has not published guidelines on the rational use of antimicrobials in food animals.[60] Antibiotics are imported to Vietnam in great quantities. Those imported products sometimes lack instructions in local languages making it even harder for farmers to utilize them safely.

By 2011, the Asia-Pacific region accounted for 48 percent of the global veterinary antimicrobial market.[61] The overuse of antibiotics, which has become an issue over the past few years, like the overuse of pesticides, is partially a result of farmers being able to produce directly for the market, having greater freedom in their agricultural practices, but also being more susceptible to chemical companies' marketing strategies. The problem of counterfeit and low-quality, oftentimes illegal pesticides has also been observed in antibiotics use, further underscoring the ineffectiveness of agricultural drug regulation in Vietnam.[62]

Agriculture in Vietnam is characterized by a complex farming style called "VAC" (*vuon*, *ao*, *chuong* = field, pond, stockyard) which, as the name suggests, consists of agriculture, aqua farming, and stockbreeding. Each byproduct of one farming method, such as feed or fertilizer, is

[57] Knips, p. 29
[58] Yamaguchi et al. (2015), p. 5144
[59] Chuanchuen, R., et al., p. 114
[60] *Id.*
[61] Van Cuong et al., p. 491
[62] Chuanchuen, R., et al., p. 156 and see also Chapter One.

used for all other farming methods. This farming style has promoted small stockbreeding farm businesses where antibiotic use is difficult to regulate.[63] Because small family farms dominate the Vietnamese meat sector, it has become almost impossible for the government to regulate antibiotic use in livestock farming.[64]

There are many health factors inherent in ingesting antibiotics through meat consumption. When humans consume low levels of antibiotics in meat, they develop resistant bacteria.[65] Scholars argue that widespread resistant bacteria may have arisen in Vietnam as a result of the abuse of antibiotics during animal husbandry.[66]

There is an urgent need for more stringent regulation regarding disease control and antibiotics use. In the absence of conclusive research on antibiotic resistance in humans and animals in Vietnam, it would be wiser for the Vietnamese government to be more stringent rather than lax in their regulation of antibiotics. The Vietnamese government has begun paying attention to the need for stricter drug regulation, reduced use of antibiotics, increased use of alternatives for growth-promotion (i.e. probiotics, premix, vitamins, minerals and herbs), and the use of more environmentally friendly chemicals in livestock production, but so far with little success.[67]

As recently as May 2016, 80 pigs from Dong Nai Province were found to be contaminated with a banned substance. The farm owner was fined, and the contaminated pigs were disposed of. In response, the government updated its criminal code, which took effect in July 2016, to impose harsher punishments on the use of banned substances in animal husbandry.[68] Whether

[63] Yamaguchi et al., p. 5141
[64] *Id.*, p. 5143
[65] *Id.*, p. 5143
[66] *Id.*, p. 5144
[67] Chuanchuen, R., et al, p. 156
[68] Nguyen-Viet et al. (2017), p. 2

this update to the criminal code will have an impact on the use of banned substances remains to be seen.

Manure

The recycling of manure in agriculture poses significant health risks. Diseases can be transmitted through animal manure and human excreta.[69] "Highly contagious and pathogenic viral diseases such as foot and mouth disease, classical swine fever and Aujeszky's Disease, may spread through animal effluents into waterways and, when one farm is infected with one of these diseases, may cause downstream farms to be exposed to a considerable risk of infection."[70] Farmers responsible for handling livestock waste are also at great risk of diarrhea and exposure to biogas.[71] A serious case of foot and mouth disease swept the country in 2006. As a result, pig producers even began carrying out manure cleaning and collection themselves, instead of relying on external manure management, in order to prevent disease transmission.[72]

Manure used to be an important source of plant nutrients in crop production. However, with the intensification of pesticide use, the use of manure for this purpose has decreased, even though using manure as a plant nutrient is a far more sustainable practice.[73] Most farmers are well aware of the negative impacts of untreated pig manure on public health and the environment, yet, there is little incentive to adopt less harmful practices due to the lack of regulation and the ineffective enforcement of the limited regulation in existence.[74]

Few legislative measures cover small and medium-scale livestock farms, even though farms of that size are by far the most prevalent in Vietnam. As a result, farmers can freely discharge

[69] Vu et al. (2007), p. 289
[70] Johanson et al., (2005) in Vu et al., p. 289
[71] Dang-Xuan et al. (2017), p. 73S
[72] Vu et al., p. 293
[73] *Id*., p. 294
[74] *Id*., p. 296

manure into public waterways. This manure discharge not only constitutes a high risk for the spread of disease and hygiene maintenance, it is also the source of eutrophication and odor pollution.[75] Biogas farming is one solution which could also help reduce pathogens. In 2003, the government began supporting the construction of biogas digesters, in collaboration with international organizations such as the Netherlands Development Organization. However, the government has neglected to subsidize biogas, forcing farmers to carry most of the cost burden, greatly limiting the number of farmers that can afford to install a biogas digester.[76]

Salmonella

Several studies have been conducted on the prevalence of salmonella in Vietnamese meat. Percentages of contaminated samples range anywhere from 39.6 percent[77] to 69.7 percent.[78] A study by Ta et al. showed that salmonella prevalence in chicken is higher in Vietnam than in Colombia, Russia, Thailand, the U.S., and the U.K.[79] Raw meat is the main source of salmonella infection in Vietnam and is a frequent cause of diarrhea, especially in children.[80] However, the probability of acquiring salmonellosis from the consumption of boiled pork is also quite high, 17.7 percent in a given year, according to a 2016 study.[81] Most Salmonella outbreaks in humans are associated with the consumption of contaminated products from animal origin, but non-food-borne Salmonella infection in humans may be transmitted during contact with animals, contaminated water, or the farm environment.[82]

[75] Thien Thu et al. (2012), p. 70
[76] *Id*., p. 65
[77] Ha Thai et al. (2012), p. 147
[78] Nguyen, Dao T. A., et al., (2016), p. 115
[79] Ta et al. (2014), p. 60, 63
[80] Nguyen, Dao T. A., et al., p. 115 and 116
[81] Dang-Xuan et al. (November 2016), p. S99
[82] T. Vo et al. (2006), p. 153

Cross-contamination at the producer, as well as at the consumer level, due to the use of the same equipment at different points in the meat processing and consumption process, has shown to aggravate the number of salmonella cases that lead to human infection.[83] The salmonella isolates examined are often resistant to multiple antimicrobials.[84] The frequent consumption of pork in Vietnam also exacerbates the risk of being infected with salmonella.[85]

Vietnam does not have a nationwide salmonella surveillance program to monitor foodborne diseases or pathogen levels on processed and retail meat.[86] The establishment of integrated VAC systems, which have been encouraged by the government, has opened up the possibility for salmonella to spread from livestock farms to aquaculture and vegetable cultivation areas.[87] On a larger scale, the widespread distribution of food, as a result of globalization, has made salmonella outbreaks worldwide harder to control. Salmonella outbreaks are now more widely scattered and are occurring more frequently. Contaminated food produced in one country has the potential to cause an outbreak in another country, as is evidenced by the salami case in Rhode Island. This global challenge further underscores the need for national disease control programs[88], on top of an already urgent need for Vietnam to get its own situation under control.

Avian Influenza

An avian influenza (*cum ga*) epidemic swept the country between 2003 and 2004. Relatively frequent outbreaks continued to occur until 2008, with a few sporadic ones being reported as recently as 2010. According to one report, in 2004 the country's poultry flock decreased by 26

[83] Nguyen, Dao T. A., et al., p. 118
[84] Ha Thai et al., p. 990
[85] Dang-Xuan et al. (November 2016), p. S99
[86] Ta et al., p. 57
[87] Nguyen, Dao T. A., et al., p. 119
[88] T. Vo et al., p. 153-154

percent in the South and by 19 percent in North Vietnam as a result of the flu.[89] According to Statistical Yearbook of Vietnam, as early as December 2003, 38.3 million birds had died, accounting for 15.1 percent of the poultry population. These statistics show that the bird flu was largely under control by March 2004, several other studies report otherwise. As reported by a 2010 USDA report, avian influenza was still considered an epidemic that year.[90]

According to the Department of Health, the disease is subject to "compulsory notification of suspect cases to authorities."[91] An official response to a notification is supposed to include: an "investigation of suspect cases followed by laboratory confirmation and culling of confirmed infected flocks, control of bird movements and financial compensations for the owners of the culled flocks."[92] However, the system is fraught with inherent underreporting. Government veterinarians are hesitant to report outbreaks because they know that this will place a financial burden on their local government. They associate disease reporting with an obligation of expenditure in disease control.[93]

Moreover, in Vietnam it's common for households to raise small chickens. For example, during Connecticut College's SATA 2005 program, the college group stopped at a small restaurant in Northern Vietnam where they discovered that chickens were being hidden in the bathroom. According to Professor Frasure, who was leading the group that year, this was but one instance of family's hiding chickens that he observed. A lot of small scale producers seemed to be hiding their chickens at the height of the outbreak.

[89] Desvaux (2008), p. 8
[90] USDA (2010), p. 1
[91] Delabouglise et al. (2016), p. 113
[92] NCAIS, 2012 in Delabouglise et al., p. 113
[93] Delabouglise et al., p. 120

After the first outbreak in 2003, the government adopted a policy of quiet mitigation and did not announce the epidemic for months, partially out of fear that the publicity of the epidemic would deal a blow to tourism.[94] The government was able to conceal the flu outbreak for several months due to its control over Vietnamese media sources.[95] After chaos erupted, only a few months later, the Vietnamese government responded with urgency in order to preserve its political legitimacy by, for example, banning "livestock keeping in cities, towns, 'places near schools and residential areas,' livestock transport on passenger vehicles, and livestock slaughtering out of designated areas."[96] The state's epidemic control response was, however, largely centered around comprehensive, nationwide bird vaccinations.[97] Its response was rooted not only in the sense of urgency to appear politically stable, but also had to do with the sense of urgency to maintain economic growth since the Avian Flu outbreak posed as a considerable threat to the Vietnamese economy.[98]

The communist regime in Vietnam paints itself as ruthlessly effective, even in the face of an epidemic. In reality, no government is ruthlessly effective, much less a severely fragmented and authoritarian one. The Party suffers from a low level of centralization. The disconnect between central and provincial authorities is stark. "Most policies are made by Party officials doubled as state executives in closed committees outside of public view. Elected organs (e.g. the National Assembly) and mass organizations (e.g. the Trade Union) have little power although their collaboration is often sought to legitimize executive decisions and to implement policies. The

[94] Tuong Vu (2009), p. 2 and 14
[95] *Id.*, p. 16
[96] *Id.*, p. 17
[97] *Id*. p. 46
[98] Curley and Herrington (2011)

Vietnamese political system is thus highly authoritarian and, normally, officials are accountable only to their superiors but not to any social groups."[99]

The political control of national and international elites, whose special interests wanted to keep the flu concealed until it threatened their political standing, was reinforced by the political response to the Avian Flu. Poultry producers, especially private ones, lacked political protection. Individual provinces demanded government subsidies, a service they had been able to enjoy pre-*Doi Moi*, in order to pay for culling and quarantine expenses, but were left to fend for themselves. Even though farmers now enjoy more individual freedom, *Doi Moi* has also resulted in less political support. Flu mitigation efforts were focused on blaming smallholder poultry systems and completely restructuring the poultry industry in order to eliminate those players[100], albeit unsuccessfully.

One of the reasons flu outbreaks continued to return for several years following the initial outbreak in 2003 is that the state's response to the flu neglected to incorporate input from the farmers and businesses affected by the disease. Due to the low level of democracy in Vietnam, the state was able to ignore the legitimate needs of the epidemic victims.[101] The state also chose the most expensive method of disease control, which it was able to finance with the help of foreign aid, and, despite a tough and comprehensive strategy, did not perform better than other countries in terms of epidemic containment. Neighboring countries that did not take a vaccination approach experienced fewer waves of flu outbreaks than Vietnam did. This indicated that "vaccination could cause the virus to be endemic, and a bad vaccine was worse than no vaccine."[102]

[99] Tuong Vu, p. 14
[100] *Id*., p. 16
[101] *Id*., p. 17
[102] *Id*., p. 46

It is unclear whether poultry consumption, overall, has declined since the Avian Flu outbreak. Poultry meat is still the second most consumed meat in Vietnam. Nonetheless, as a result of the bird flu epidemic, urban consumers in Vietnam began favoring frozen chicken more than they had before.[103]

Conclusion

As became apparent in the Rhode Island salami case, Vietnam has a serious problem with the safety of its meat products. This problem is not only an internal regulatory failure, which has been accompanied by widespread public distrust of the regulatory system, it is also a transnational problem. The fear of Vietnamese meat, and the government's inability to adequately combat these fears, is now shared by a global community of meat consumers who import Vietnamese meat.

The meat industry in Vietnam is fraught with high rates of Salmonella, reoccurring Avian Influenza outbreaks, the overuse and abuse of antibiotics in production, unsustainable and unhygienic manure treatment, and a general lack of food safety oversight in slaughterhouses. These issues are further aggravated by the state's failure to provide sufficient food safety education services to its farmers. Aside from a lack of regulation, and the poor implementation of the limited policies in existence, food safety oversight in meat production in Vietnam is hard to manage due to the fact that the industry is comprised of largely informal systems. Meat is primarily sold on wet markets where little to no inspection takes place and slaughtering occurs mainly in household networks which are exempt from regulatory oversight. Therefore, with regards to domestic meat production in Vietnam, consumers' fear of their food is justified.

[103] Tuong Vu, p. 16

In light of a growing middle class, steadily increasing meat consumption, and a general demand for safer, traceable, higher quality products; there is an urgent need for the Vietnamese government to provide industry-wide food safety services and governance.[104] Instead of focusing exclusively on cutting down the number of small-scale farms in order to promote large-scale industrial ones, the state should shift its focus towards fostering safer practices within existing informal networks, because those are, most likely, not going to be obsolete anytime soon. The government also must improve access to food hazard information and data within the industry.

Its failure to provide pertinent food hazard information to the public underscores the corruption inherent in this pseudo-democratic state. This corruption, the emphasis on industrialization, and the focus on consolidating the meat sector; once again points to the fact that all the Communist Party truly cares about is pushing out the informal sector and the smallholders in order to promote economic growth and strengthen their political and international image. As is evidenced by the current issues and transitions within the meat industry, public opinion is not being taken into consideration. The lower classes have no political leverage, only the political elite does.

As Oriane Cornille pointed out in an interview in March 2017, implementation issues within the Communist Party of Vietnam are more pronounced than within governments in other countries. The fragmented, socialist Vietnamese system is burdened by a large number of actors and competing interests trying to cooperate. Power distribution within the Party is, often times, not what it appears to be on the surface. Projects that focus on one province and work with local governments are the most successful but not enough of them are in place due to a major disconnect between the Central Party in Hanoi and the provincial governments.[105]

[104] Changing production system confirmed by IPSARD official in an interview in March 2017
[105] Oriane Cornille (2017)

However, the meat industry in Vietnam is beginning to make small strides. An IPSARD official noted in an interview in March 2017 in Hanoi that the state's agricultural policies are currently focused on increasing productivity and introducing new animal breeds. A new rural development program has been put in place which aims to address the waste created by livestock activity, particularly manure.[106] Due to the urgent need for Vietnam to improve the traceability within its meat industry, a poultry origin program has been put in place which will place labels on Vietnamese poultry brands to provide its consumers with information on the poultry strain, chicken breeding period, name of the poultry farm, feed breakdown, vaccination schedule, and time of slaughter. It is important to note that no policies are coming down the pipeline which deal with food safety issues at wet markets, perhaps the biggest problem within the Vietnamese meat industry.[107]

Vietnamese poultry is slowly beginning to become marketable to countries with high food safety standards, such as Japan, the U.S., and the EU. One can only hope that these small improvements will eventually lead to more comprehensive food safety regulatory improvements within the industry and will make it more feasible for Vietnam to export its livestock products in greater quantities. Nonetheless; the corruption, fragmentation, and obsession with maintaining political legitimacy, which defines the Vietnamese government's approach to food safety regulation, will continue to plague the meat industry and the government will increasingly have trouble tempering public outcries over the safety of its meat. The Vietnamese, and the countries that import Vietnamese meat, know that their meat is unsafe. This fear will only continue to grow as long as the state fails to reassess its priorities. Vietnamese salami all over the world, not just in Rhode Island, will continue to be at risk of a salmonella outbreak.

[106] Hoang Vu Quang (2017)
[107] *Id.*

Works Cited

Blair, Robert. “Organic production and food quality: A down to earth analysis,” *John Wiley & Sons*, 2012.

Bnti, Dina. "Consumer response to food scandals and scares." *Trends in Food Science & Technology*, vol. 22, Elsevier, 2011.

Carrique-Mas, Juan J., and J. E. Bryant. "A review of foodborne bacterial and parasitic zoonoses in Vietnam." *Ecohealth*, vol. 10, Springer, 2013.

Carrique-Mas, Juan J., et al. "Antimicrobial usage in chicken production in the Mekong Delta of Vietnam." *Zoonoses and public health*, vol. 62, Wiley Online Library, 2015.

Chuanchuen, R., et al. "Review of the literature on antimicrobial resistance in zoonotic bacteria from livestock in East, South and Southeast Asia." *FAO Regional Office for Asia and the Pacific Animal Production and Health Commission for Asia and the Pacific*, 2014. http://aphca.org/presentations/REP_AMR_141022b_corrected.pdf

Curley, Melissa G., and Jonathan Herington. "The securitisation of avian influenza: international discourses and domestic politics in Asia." *Review of International Studies*, vol. 37, Cambridge University Press, 2011.

Cornille, Oriane. *Agence Française de Développement*. March 16, 2017, Hanoi, Vietnam.

Dang-Xuan, Sinh, et al. "Household Exposure to Livestock and Health in the CHILILAB HDSS Cohort, Vietnam." *Asia Pacific Journal of Public Health*, vol. 29, SAGE Publications Sage CA: Los Angeles, CA, 2017a.

Dang-Xuan, Sinh, et al. "Food Safety Perceptions and Practices among Smallholder Pork Value Chain Actors in Hung Yen Province, Vietnam." *Journal of food protection*, vol. 79, International Association for Food Protection, 2016.

Dang-Xuan, Sinh, et al. "Quantitative risk assessment of human salmonellosis in the smallholder pig value chains in urban of Vietnam." *International journal of public health*, vol. 62, Springer, 2017b.

Delabouglise, Alexis, et al. "The perceived value of passive animal health surveillance: the case of highly pathogenic avian influenza in Vietnam." *Zoonoses and public health*, vol. 63, Wiley Online Library, 2016.

Desvaux, Stphanie, et al. "A general review and description of the poultry production in Vietnam, *Agricultural publishing house*, 2008.

Do, Mai H. N., et al. "Screening of antibiotic residues in pork meat in Ho Chi Minh City, Vietnam, using a microbiological test kit and liquid chromatography/tandem mass spectrometry." *Food Control*, vol. 69, Elsevier, 2016.

Duc, Nguyen V., and T. Long. "Poultry production systems in Vietnam." *Animal genetics and breeding department, National Institute of animal husbandry, Vietnam*, 2008.

Duc, Phuc P., Fred Unger, and Hung Nguyen-Viet. "One Health in Vietnam: From training and research to policy.", *Vietnam One Health University Network*, 2015.

Duteurtre, Guillaume, and Vu T. Binh. "Future Prospects for Livestock in Vietnam: How to balance livestock industrialization, rural development strategy and environmental changes?", *CIRAD*, 2010.

FAO and AGAL, "Livestock Sector Brief." *Food and Agriculture Organization of the United Nations*, 2005.
http://www.fao.org/ag/againfo/resources/en/publications/sector_briefs/lsb_VNM.pdf

Gerber, Pierre, et al. "Geographical determinants and environmental implications of livestock production intensification in Asia." *Bioresource technology*, vol. 96, Elsevier, 2005.

Gurtler, Joshua B., Michael P. Doyle, and Jeffrey L. Kornacki. “The Microbiological Safety of Low Water Activity Foods and Spices.” *Springer*, 2014.

Huynh, TTT, et al. "Pig production in Cambodia, Laos, Philippines, and Vietnam: a review." *Asian Journal of Agriculture and Development*, vol. 4, Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), 2007.

Jensen, Stark-Ewing et al. “Gender and Development Survey Data.” *Connecticut College*, Hanoi, Vietnam, 2017.

Julian, Ernest. Providence, Rhode Island, July 27, 2017.

Kim, Dang P., et al. "Preliminary evaluation of antimicrobial residue levels in marketed pork and chicken meat in the Red River Delta Region of Vietnam." *Food and Public Health*, vol. 3, Scientific & Academic Publishing, 2013.

Knips, Vivien. "Review of the livestock sector in the Mekong countries." *Livestock sector report Cambodia, Lao PDR, Thailand and*, 2004.

Lapar, Ma L. A., et al. “Market outlet choices in the context of changing demand for fresh meat: Implications for smallholder inclusion in pork supply chain in Vietnam.” 2009.

Nguyen, Dao T. A., et al. "Prevalence, antibiotic resistance, and extended-spectrum and AmpC β-lactamase productivity of Salmonella isolates from raw meat and seafood samples in Ho Chi Minh City, Vietnam." *International journal of food microbiology*, vol. 236, Elsevier, 2016.

Nguyen, Dung, and Khanh Ngo. “Vietnam Meat Market.” Ipsos Business Consulting.

Nguyen-Viet, Hung, et al. "Food safety in Vietnam’s livestock sector.", ILRI, 2016.

Nguyen-Viet, Hung, et al. "Food safety in Vietnam: where we are at and what we can learn from international experiences." *Infectious diseases of poverty*, vol. 6, BioMed Central, 2017.

Nhat, Pham H. "Environmental performance improvement for small and medium-sized slaughterhouses in Vietnam." *Environment, Development and Sustainability,* vol. 8, Springer, 2006.

Str, Werner, Truong T. Khanh, and Alan Duncan. "Transformation of smallholder beef cattle production in Vietnam." *International journal of agricultural sustainability*, vol. 11, Taylor & Francis, 2013.

Ta, Yen T., et al. "Quantification, serovars, and antibiotic resistance of Salmonella isolated from retail raw chicken meat in Vietnam." *Journal of food protection*, vol. 77, International Association for Food Protection, 2014.

Thai, Truong H., et al. "Antimicrobial resistance of Salmonella serovars isolated from beef at retail markets in the north Vietnam." *Journal of Veterinary Medical Science*, vol. 74, Japanese Society of Veterinary Science, 2012a.

Thai, Truong H., et al. "Antibiotic resistance profiles of Salmonella serovars isolated from retail pork and chicken meat in North Vietnam." *International journal of food microbiology*, vol. 156, Elsevier, 2012b.

The World Bank and ILRI, FAO, Canada, ADB, CIRAD, Australia (Development Partners). "Vietnam Food Safety Risks Management: Challenges and Opportunities.", 2016.

Thu, Cu T. T., et al. "Manure management practices on biogas and non-biogas pig farms in developing countries–using livestock farms in Vietnam as an example." *Journal of Cleaner Production*, vol. 27, Elsevier, 2012.

Tisdell, Clement A., et al. “Natural protection from international competition in the livestock industry: Analysis, examples and Vietnam's pork market as a case.” *University of Queensland, School of Economics*, 2009.

Tra, Vu T. T., et al. "Biosecurity practices in small-scale pig farms in Hung Yen and Nghe An, Vietnam.", *Vietnam National University of Agriculture*, 2015.

Tran Huu, Cuong, Nga Bui Thi, and Philippe Lebailly. "Governance the chicken chain in Vietnam: a case study in Kim Dong District, Hung Yen Province.", 2016.

Trewin, Ray. "Crucial Agricultural Policy: Analysis of Key Threats to Food Security." *World Scientific*, 2016.

Tuyet-Hanh, Tran T., et al. "Exposure assessment of chemical hazards in pork meat, liver, and kidney, and health impact implication in Hung Yen and Nghe An provinces, Vietnam." *International journal of public health*, vol. 62, Springer, 2017.

U.S. Department of Agriculture. "INTERNATIONAL EGG AND POULTRY REVIEW", 2010.

Unger, Fred, et al. "Food safety challenges in smallholder pig value chains in Vietnam: From an assessment to feasible interventions using an integrated approach.", *ILRI*, 2015a.

Unger, F., et al. "Animal health and food safety in smallholder pig value chains in Vietnam.", *ILRI*, 2015b.

Van Cuong, Nguyen, et al. "Antimicrobial consumption in medicated feeds in Vietnamese pig and poultry production." *EcoHealth*, vol. 13, Springer, 2016.

Van, Thi T. H., et al. "Safety of raw meat and shellfish in Vietnam: an analysis of Escherichia coli isolations for antibiotic resistance and virulence genes." *International journal of food microbiology*, vol. 124, Elsevier, 2008.

Vo, An T., et al. "Distribution of Salmonella enterica serovars from humans, livestock and meat in Vietnam and the dominance of Salmonella Typhimurium phage type 90." *Veterinary microbiology*, vol. 113, Elsevier, 2006.

Vu, TKV, M. T. Tran, and TTS Dang. "A survey of manure management on pig farms in Northern Vietnam." *Livestock Science*, vol. 112, Elsevier, 2007.

Vu, Tuong. "Epidemics as Politics with Case Studies from Malaysia, Thailand, and Vietnam." *Global Health Governance*, vol. 4, 2011.

Vu, Tuong. "The political economy of avian influenza response and control in Vietnam.", *STEPS Centre*, 2009.

Vu Quang, Hong. *Institute of Policy and Strategy for Agriculture and Rural Development*, March 2018, Hanoi, Vietnam.

---. . "Rethinking the Traditional Concept of Livestock Services: A Study of Response Capacity in Thailand, Malaysia and Vietnam.", 2007.

World Health Organization, Regional Office for South-East Asia. "Burden of foodborne diseases in the South-East Asia Region.", 2016.

Xuan, Sinh D. "Quantifying Salmonella spp. in pig slaughterhouses and pork markets associated with human health in Hung Yen, Vietnam.", *Chiang Mai University*, 2013.

Yamaguchi, Takahiro, et al. "Antibiotic residue monitoring results for pork, chicken, and beef samples in Vietnam in 2012–2013." *Journal of Agricultural and Food Chemistry*, vol. 63, ACS Publications, 2015.

Chapter IV

Fish, Seafood and Aquaculture

Introduction

In 2016, Vietnam was confronted with its most serious environmental issue in several years. Hundreds of people were believed to have fallen ill from eating poisoned fish. A massive fish kill devastated the waters along 120 miles of coastline in central Vietnam.[1] It was later reported that the fish kill was a result of a nearby Taiwanese steel factory having washed unspecified cleaning chemicals through its wastewater pipeline. Public uproar over the issue quickly exploded into a national issue which posed the biggest challenge to the authoritarian government since anti-Chinese riots in 2014. "The government's failure to respond and its previous support for the Taiwan-owned steel plant at the heart of the crisis have fueled widespread suspicion of corruption and the hidden influence of foreign interests at the expense of Vietnamese livelihoods, a potent mix that challenges the legitimacy of Communist Party rule."[2] The government's decision to cover up the culprit of the killings, is said to have had the potential to make the fish kill Vietnam's Chernobyl.[3]

Vietnam is home to one of the largest seafood industries in the world.[4] It is the third largest aquaculture producer globally, next to China and India, even though Vietnam has weaker institutions and managerial capacity than some of the other Southeast Asian countries.[5] Seafood

[1] Paddock (2016)
[2] *Id.*
[3] *Id.*
[4] Tran et al. (2013), p. 1.
[5] Marschke and Betcherman (2016), p. 3.

production reached 4.58 million metric tons in 2008, earning export revenues of $4.5 billion.[6] Fisheries contribute to over 10 percent of Vietnam's GDP.[7]

Seafood is also one of Vietnam's major exports to the United States, Europe, and Japan. Only a few years ago, Vietnam's seafood industry lagged some other Southeast Asian countries, such as Thailand, due to decades of war. After the end of the American War (1955-1975), Vietnam's seafood market quickly began to grow. Following *Doi Moi* (1986), the seafood industry experienced a significant boom. The resulting encouragement of private businesses motivated the development of fisheries. The seafood industry in Vietnam continues to grow rapidly.

Many Americans are unaware that a significant portion of the seafood they consume comes from countries like Vietnam, with lower food safety standards and oversight than in the United States. As was described in the preceding two chapters of this thesis, the safe consumption of seafood worldwide is increasingly threatened by the advancement of globalization. Seafood suffers from the same problems as the other foods, vegetables and meat, I have described previously. Seafood originating from Vietnam is often contaminated with high residues of antibiotics, pesticides, and other chemicals.

Seafood was the second highest cause of recorded food poisoning events during 2007 to 2014.[8] Vietnam lacks the technology, knowledge, and capital to meet ever-changing American, European, and Japanese import standards. However, because seafood is a huge part of the Vietnamese market, the Vietnamese government is trying to comply with international food

[6] *Id.*, p. 6.
[7] Marschke and Betcherman, p. 3.
[8] Hong Luu et al. (2015), p. 777; Hong Luu et al. (2016), p. 332.

safety standards but is being faced with significant export barriers, as well as barriers to its domestic production; which will be outlined in this chapter.

Background

The Vietnamese seafood industry is characterized by a variety of production networks. Fish farming is the most common mode of production and can be found all over the country. "Asia's transition toward farmed fish over the past few decades has been fueled by a global interest in cheap fish, particularly shrimp, with farmers converting rice fields into fish farms throughout the Mekong Delta and beyond."[9] The industry is characterized by a variety of fishing and fish farming practices, from small producers to agri-business corporations. Fishers operate boats with low motor capacity in mangrove estuaries, rivers or along coastlines, or rely on sophisticated sonar equipment to track schools of fish in offshore waters. A continuum of production intensities exists within fish farming, in what some scholars characterize as quasi-peasant, quasi-capitalist, and capitalist modes of production. Ownership and labor across the fisheries sector is largely at the household level. Fish are produced for domestic, regional, and export markets.[10]

Peri-urban aquaculture production exists in and around Hanoi, as well as some other urban centers. These fish farms vary in size from relatively large-scale semi-intensive culturing of fish in wastewater-fed wetlands and lagoons to engineered and intensive specific fish production in tanks.[11] From a food safety perspective these peri-urban production networks are faced with the risk of contamination as a result of the use of urban wastewater in fish production.[12] "In Hanoi, the city sewage, a combination of domestic wastewater and industrial

[9] Marschke and Betcherman, p. 2.
[10] *Id.*
[11] Holm et al. (2010), p. 128.
[12] *Id.*, p. 129.

wastewater, is discharged without formal treatment into a drainage system which includes small rivers. Since the 1960s, these rivers have been the source of wastewater which is pumped and channeled to aquatic ponds and fields."[13] The risk of contamination in this case has, however, been shown to be relatively low. A 2009 study found low levels of toxic elements, less than nine percent of the tolerable intake.[14]

Since 2007, farmed fish production has surpassed commercial fishing and Vietnam is now at the forefront of a "blue revolution."[15] The largest fish farming concentration can be found within the Mekong River Basin. It accounted for 87.2 percent of the fish farm acreage in 2008.[16] The Red River is also one of the largest sources of fish in Vietnam, supplying mainly freshwater prawn.[17] The central provinces specialize in culturing sea products, such as lobster, tuna, and seaweed.

Vietnam began exporting seafood in the 1980s[18], following *Doi Moi*. Exports increased dramatically from 1999-2008, growing 18 percent annually. After Vietnam and the U.S. signed a bilateral trade agreement in 2000, Vietnamese seafood exports to U.S. markets increased sharply. Exports to the U.S. dropped in 2003 due to disputes over dumping of shrimp and catfish.[19] Alabama, Louisiana, and Mississippi have completely banned the import and consumption of Vietnamese fish.[20]

Vietnam primarily exports frozen shrimp, fish, frozen squid, and dried fish products. Catfish and shrimp are by far the most important fish to be exported.[21] Frozen filets and shrimp

[13] *Id.*
[14] *Id.*, p. 139.
[15] Marschke and Betcherman, p. 3.
[16] Ha Thanh and Hong Chuong (2010), p. 3.
[17] *Id.*
[18] *Id.*, p. 6.
[19] *Id.*, p. 4.
[20] *Id.*, p. 6.
[21] *Id.*, p. 4.

are mostly processed by larger operations. Dried fish is largely processed at the household level.[22] The majority of seafood processors are small- or medium-sized enterprises and operate in Southern Vietnam.[23] Vietnam National Sea Products Corporation is the biggest processing and exporting enterprise.[24]

Because the demand for seafood is high in Japan, trading companies from that country helped establish seafood processing plants in Vietnam by installing equipment, training technical staff, and ensuring that seafood products were processed and packed in accordance with their standards. In the 1980s, more than 80 percent of Vietnamese seafood exports went to Japan. After *Doi Moi* (1986) and the end of the American trade embargo (1994), Vietnamese seafood enterprises were able to find more markets for their products and became less reliant on trade with Japan.[25]

After citing imported Vietnamese fish several times for food safety concerns, Japan has warned that it would stop importing Vietnamese seafood which would be a loss of $1 billion in export revenue for Vietnam.[26] The U.S. has also become increasingly skeptical of Vietnamese seafood. In 2011, FDA officials found that Vietnam permits 38 drugs in aquaculture, most of which are not approved in the U.S.[27] After approaching the Vietnamese government about these export violations, the FDA received the following response: "The Vietnamese government responded that it performed 100 percent testing only for products intended for countries with which it had a bilateral agreement, of which the United States was not one. The government stated, however, that it was taking other actions that would preclude the need for this level of

[22] *Id.*
[23] *Id.*
[24] *Id.*
[25] Tran et al. (2013), p. 7.
[26] *Id.*, p. 7.
[27] *Id.*, p. 15.

testing, such as disseminating information on unapproved drugs, providing training to local authorities, and disciplining violators. According to FDA officials, the agency has not taken steps to develop such an agreement."[28] FDA officials now inspect 100 percent of the seafood coming from Vietnam.[29]

Domestically, Vietnamese people consume fresh water fish. Frozen seafood is not as popular. Vietnamese consumers' fish and seafood choices are influenced by their attitudes about perceived quality, price, time needed to prepare fish as a meal, and the availability of fresh fish.[30] Social norms and family expectations, such as the tradition of having shared meals, also influence fish consumption.[31]

Fisheries Regulatory Authorities

The Ministry of Fisheries is the agency responsible for fisheries management.[32] Most coastal provinces also have departments of fisheries (DOFis) to assist provincial authorities in managing their fisheries and aquaculture sectors.[33] The Ordinance on Food Hygiene and Safety, Vietnam's first overarching legal document to unify the nationwide management of food hygiene and safety during production and marketing, was issued in 2003 by Vietnam's National Assembly. It prohibits practices in aquaculture and food processing that pose a threat to human health.[34]

The Veterinary Ordinance, which was promulgated in 2004, subjects imported and exported animal products to quarantine and ensures that they are controlled by competent

[28] *Id.*
[29] *Id.*
[30] Thong and Olsen (2012), pp. 79, 92.
[31] Huy Tuu et al. (2008), p. 549.
[32] Son and Thuoc (2003), p. 967.
[33] World Bank Report (2005), p. 23.
[34] *Id.*, p. 7.

veterinary agencies.[35] The Fishery Law of 2003 calls for the sustainable management and development of fisheries resources and sets concrete regulations for environmental protection in fish capture, aquaculture, and seafood processing. It also puts in place implementation mechanisms, such as environmental planning and the establishment of sea convention areas and outlines the division of ministerial responsibility for sustainable fisheries resource management.[36] The Fisheries Administration Directorate and the Department of Animal Health, at the national and provincial levels, share the responsibility of supervising fish sector input suppliers, producers, and middle trading actors.[37]

Seafood processors have to be certified with the seafood sector standards set by MARD.[38] However, only wholesale agents/collecting units are registered as companies under control of the regulatory networks established by MARD. The middle traders and collectors further down the supply chain, towards the producers, are beyond effective control by the administrative systems of MARD and seafood processors.[39] Provincial governments, generally, regulate middle traders, who register as business firms, but these governments have no records or effective control over small traders. These small traders are often the ones who are blamed for poor quality seafood.[40]

Shrimp

Vietnam ranks fourth in the world in farm-raised shrimp production behind China, Thailand, and Indonesia.[41] Vietnam produced 657,282 tons of shrimp in 2016, with an export value of $3.2 billion.[42] Shrimp fishing is mostly concentrated along the coast of the Tonkin Gulf

[35] *Id.*
[36] *Id.*
[37] Tran et al. (2013), p. 7.
[38] Ha Thanh and Hong Chuong, p. 6.
[39] Tran et al. (2013), p. 6.
[40] *Id.*
[41] *Id.*, p. 1.
[42] Chi Tran et al. (2008), p. 167.

and the Mekong Delta.[43] The intensification of shrimp culture has been hampered by serious disease problems, primarily caused by viral and bacterial pathogens, which has led to major economic losses in the shrimp industry.[44] Diseased shrimp is rarely examined or diagnosed.[45]

A study by Uddin et al. found up to 20 percent salmonella prevalence in Vietnamese shrimp.[46] There appears to be a higher occurrence of salmonella in seafood products in Asian and African products than in European and American ones. A 2015 Consumer Report study found that 60 percent of global frozen shrimp was contaminated with salmonella, vibrio, listeria, or E. coli.[47]

Growth in overall shrimp production in Vietnam can be attributed to expansion rather than intensification until the mid-1990s. Extensive systems developed in the Mekong Delta soon after the American War. It was not until the late 1980s that a shrimp hatchery industry developed in Nha Trang and Khanh Hoa with more intensified production systems. In 2000, with the passage of government resolution No. 09/2000/NQ-CP, which allowed farmers to convert low-productivity coastal saline paddy fields into shrimp ponds, shrimp farming expanded further.[48]

Over the past few years, there has been a bias in aquaculture research, development, and extension services towards shrimp -- due to its high value and the high levels of input it requires. Aquaculture of fish suitable for domestic consumption or to improve the diets of the poorest people has not been a main focus. The government's short-term goal has been to expand and industrialize shrimp aquaculture as rapidly as possible in order to earn the desired foreign exchange.[49] The ten-year shrimp aquaculture development plan, which the government

[43] Son and Thuoc, p. 962.
[44] Chi Tran et al., p. 167.
[45] *Id.*
[46] Uddin et al. (2015), p. 1.
[47] *Id.*
[48] Omoto et al. (2016), p. 124.
[49] *Id.*, p. 318.

announced in 2001, involved the conversion of 60,000 hectares of coastal and paddy land in 23 provinces into shrimp farms. This shrimp aquaculture development plan was criticized by the international community due to the role of corruption by public officials regarding the acquisition of land rights for shrimp farming.[50]

The Ministry of Fisheries has the overall responsibility for shrimp production, but provincial and district governments are responsible for the actual planning and monitoring of aquaculture development.[51] In the absence of good coordination and analysis of the cross-sectoral effects and needs in the shrimp industry, contradictory policies with inconsistent implementation emerge.[52] The shrimp industry is yet another example of how food production in Vietnam is conducted in a highly centralized manner, largely driven by the interests of the political elites and the largest, most powerful fish companies.

Furthermore, the large number of small-scale producers and traders involved in the shrimp supply chain, make it incredibly difficult to document production practices and to establish traceability within the industry[53], negatively affecting food safety oversight: "Hundreds of thousands of small-scale shrimp producers served by many thousands of unregistered small-scale traders make tracing the precise origins of shrimp arriving at the processor/exporter's gate all but impossible."[54]

Organic certification of shrimp is beginning to gain traction in Vietnam. The first internationally certified organic shrimp production pilot project was in the Mekong Delta in 2007.[55] This alternative form of agro-food production has proven itself to be a good alternative to

[50] *Id.*, p. 319.
[51] *Id.*
[52] *Id.*, p. 322.
[53] Tran et al. (2013), p. 4.
[54] *Id.*, p. 8.
[55] Omoto et al.

uniform high-input food production that is controlled by domestic corporate interests and large global buyers.[56] Instead of forcing the peasantry in a Southern Vietnamese community, which has not been deeply integrated into the global agro-food system, to conform to a uniform and intensive scale of farming, these farmers are able to resist conformity and to establish a method of farming largely on their own terms.[57]

Vietnam's shrimp industry still relies primarily on small-scale farming (250,000 family farmers), however, there are 8000 semi-intensive and intensive shrimp producing operations, which account for 10 to 15 percent of the shrimp pond area. It is clear that the shrimp industry is gradually shifting to intensive shrimp farming, because the shrimp pond area percentage of semi-intensive and intensive production systems was just three percent in 2003.[58]

Catfish

The serious conflict over catfish between the U.S. and Vietnam dates back to the late 1990s, following the normalization of diplomatic relations between the two countries in 1995. After this agreement, Vietnamese producers began exporting cheap catfish to the U.S. The U.S produces catfish as well, but a different kind of catfish. Due to the low price of Vietnamese catfish, the U.S. lost a substantial share of the American catfish market. In response, U.S. congressmen from catfish-producing states pushed for legislation to limit the definition of "catfish" to the family of catfish that is produced in the U.S. These congressmen were successful, and the definition was limited in the 2002 Farm Bill.[59]

This anti-dumping case, initially, had a drastic impact on Vietnamese catfish exports to the U.S. Many small Vietnamese farmers went bankrupt. However, Vietnamese catfish

[56] Omoto et al., p. 121.
[57] *Id.*, p. 122.
[58] *Id.*, p. 124.
[59] McCannon (2016), p. 580.

producers quickly realized the need for them to diversify their export markets to other parts of the world and, as a result, the Vietnamese catfish industry bounced back.[60] Despite the Farm Bill and later imposed anti-dumping duties, Vietnamese catfish producers continued to dominate the American market.[61]

However, the new USDA catfish inspection program could severely affect Vietnam's ability to continue exporting catfish at the rate it has been. The catfish industry makes up approximately two percent of the Vietnamese economy and the U.S. accounts for 20% of all catfish exports from Vietnam.[62] McCannon argues that this new inspection program, outlined in the 2008 and 2014 Farm Bills, violates the U.S.'s commitment to the World Trade Organization (WTO).[63]

While the USDA has made far too many unjustified accusations against Vietnamese catfish, such as that it contains traces of heavy metals[64] and poses a risk of carcinogens,[65] in an effort to squash its catfish market in the U.S., there is some evidence that Vietnamese catfish is not always safe. A study by Uddin et al., for example, found up to 50 percent salmonella prevalence in Vietnamese catfish.[66] In 2013, 100 percent of Vietnamese catfish farms used antibiotics not approved in the U.S.[67] The U.S. began inspecting Vietnamese catfish imports in May 2016, after the catfish inspection rule went into effect in March 2016.[68] It now seems as though the U.S. could be successful, after all, at slowly pushing out Vietnamese producers from the catfish market, but the Vietnamese will not give up without a fight.

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[60] Bridonneau (2014)
[61] *Id.*, p. 581.
[62] *Id.*, p. 589.
[63] McCannon, p. 617.
[64] *Id.*, p. 599.
[65] *Id.*, p. 598.
[66] *Id.*, p. 1.
[67] Center for Food Safety, p. 1
[68] *Id.*

Foodborne Diseases

Integrated fish-livestock systems, VAC (*vuon, ao, chuong*) systems, pose the highest risk of foodborne disease transmission.[69] VAC systems are a form of small-scale bio intensive farming where gardening, fish rearing, and animal husbandry are closely integrated. This enables optimal use of land, water, and solar energy in order to achieve high yields with low capital investment.[70] Ponds become contaminated through the use of animal, and occasionally human, fecal waste as pond fertilizer and through runoff water from pond banks and adjoining fields.[71] The manure is discharged directly into the fish pond. Its nutrients support the growth of plankton and other microorganisms that the fish consume and reduces the need for additional feeding.[72] Using human and animal manure as pond fertilizer is an economically wise choice for farmers[73], which is why they employ this method despite the risks associated with it.

When humans are infected with foodborne disease in Vietnam, this is often due to cultural habits of eating raw or inadequately prepared fish dishes.[74] Unlike the low prevalence in Nghe An province, in the Nam Dinh and Ninh Binh provinces a high disease presence of 30 to 40 percent was associated with raw fish consumption, which is a tradition for people living in the Red River region.[75] Nursery ponds in those provinces are usually located close to households and premises housing livestock and poultry. The fish are grown there for up to four weeks and are then sold for further cultivation to reach market size in grow-out ponds. This increases the risk of disease transmission throughout the whole production process.[76]

[69] Clausen et al. (2012), p. 1438.
[70] Dang et al. (2012), p. 1317. *See* also Stark-Ewing, Chapter Two, "Meat," p. 15-16.
[71] Clausen et al., p. 1438.
[72] Dang et al., p. 1317.
[73] K. Chi et al. (2018), p. 423.
[74] *Id.*
[75] Thi Phan et al. (2010), p. 1905.
[76] *Id.*, p. 1906.

Most food safety control programs in fresh water fish have focused on the later stages of production: processing and handling. Studies shows that interventionist efforts are necessary along the entire production chain, from the juvenile stage to fish consumption. Clausen et al.'s study found risk reduction measures in fish nurseries to be effective at preventing foodborne disease transmission.[77]

Antibiotics

Like the Vietnamese meat industry, the Vietnamese seafood industry is burdened by the overuse and misuse of antibiotics. The poor quality and inadequate labeling of antimicrobial products leads to ineffective disease treatment and contributes to the development of antibiotic resistance.[78] A 2004 study by Chi Tran et al., showed that Vietnamese shrimp farmers used as many as 32 different kinds of antimicrobial products in shrimp ponds and 39 different kinds in shrimp hatcheries.[79] In some cases, shrimp contaminated with antibiotics by one producer are mixed in with other shrimp with no way of knowing where the original contamination occurred.[80] Farmers engaged in more intensive production systems tend to use antibiotics more often than small-scale farmers, but both kinds of farmers may sell their shrimp to the same set of traders thereby negating any efforts by smaller-scale farmers to use antibiotics less frequently.[81]

Farmers tend to have little knowledge of the diseases and are forced to base their product choices on their own and other farmers' experiences, as well as on advice from feed and chemical sellers. Farmers in this study also reported that they routinely used higher antimicrobial dosages than recommended because the recommended dosages had proven ineffective. Many

[77] Clausen et al., p. 1443.
[78] Chi Tran et al., p. 167.
[79] *Id.*
[80] Tran et al. (2013), p. 6.
[81] *Id.*

farmers in this study also stated that antimicrobials appeared to be no longer effective at controlling diseases.[82] As a result of poor product labeling, farmers are unlikely to know how to apply the antibiotics they use correctly. Farmers reported spreading antibiotics directly into the shrimp pond water, which greatly exasperates the level of antibiotic residues in shrimp.[83] In this 2004 study, farmers also stated that they handle the antibiotics with their bare hands.[84] This direct skin contact poses a great health hazard.

As already became evident in the preceding chapter, antimicrobials in livestock and aquaculture are not regulated as well as human medicines.[85] There is a lack of a comprehensive model for managing antibiotics and other chemicals, which has exacerbated the number of trade sanctions against the Vietnamese seafood export sector.[86] The high number and diversity of products makes it challenging to regulate them efficiently.[87] The Department of Animal Health (DAH), under MARD, has the mandate to control veterinary drugs, chemicals, and biological products marketed for use in aquaculture and livestock.[88] While 669 antimicrobials and other veterinary compounds are permitted for use by DAH and MARD, only 24 are banned in aquaculture. [89] Many of the permitted antibiotics are banned in other countries like the U.S. and Japan.

Pesticides

Wild aquatic animals in flooded rice agroecosystems are at risk of overzealous pesticide application.[90] It is a traditional practice for Vietnamese farmers to produce rice jointly with

[82] *Id.*, p. 173.
[83] *Id.*
[84] *Id.*
[85] *Id.*, p. 167.
[86] Ha Thanh and Hong Chuong, p. 1.
[87] Chi Tran et al., p. 167.
[88] *Id.*, p. 173.
[89] *Id.*, pp. 173-174.
[90] Klemick and Lichtenberg (2008), p. 1.

aquatic animal foods.[91] Fish, crustaceans, and other aquatic animals inhabit flooded rice paddies. Fish and other animals enter the rice fields when farmers irrigate them by channeling or pumping water from nearby streams. The flooded condition of the rice fields is necessary for aquatic animal survival and advantageous for rice growth. Most farmers rely on natural food sources present in the rice to sustain the fish population. [92] Rice farming households harvest these fish, primarily at the end of the season when the paddies are drained, as an additional source of food, to supplement the staple food of rice, and income.

The fish also act as a form of natural pest control by feeding on insects and weeds in the rice paddy fields.[93] This method is used deliberately in some Integrated Pest Management (IPM)[94] rice systems.[95] The chemical fertilizers and pesticides that farmers use in rice production can have adverse effects on these fish harvests. High toxicity pesticides can be especially harmful to fish.[96] Only minimal use of pesticides is warranted in the production of both rice-fish and rice monoculture.[97]

The study by Klemick and Lichtenberg confirmed that higher pesticide use results in lower harvests of wild fish.[98] A study by Rothuis et al. (1998) found that farmers decreased their use of pesticides in rice-fish monoculture rice systems, as compared to rice production only.[99] However, the Klemick and Lichtenberg study found that farmers do not consider the fish

[91] *Id.*, p. 2
[92] *Id.*
[93] *Id.*, p. 1.
[94] *See* also Stark-Ewing, Chapter One, "Pesticides," p. 3.
[95] Klemick and Lichtenberg., p. 2.
[96] *Id.*, p. 12.
[97] *Id.*, p. 3.
[98] *Id*., p. 12.
[99] *Id.*

population in their paddies when deciding on the level of pesticide use. They do not perceive fish losses from pesticides to be of significance.[100]

The presence of pesticides in fish populations in rice production, which farmers and their families consume, seem to be yet another manifestation of the excessive spraying of highly toxic pesticides in Vietnamese agriculture, as outlined in chapter two. In non-IPM systems there is a desperate need for the government to better regulate pesticide use. While the fish harvested from rice production are not sold to consumers domestically, they are consumed by farmers who are already being exposed to high quantities of pesticides.

Barriers to Effective Regulation in the Fisheries Industry

A 2015 study by Hong Luu et al. reported that the physical environment of fishing ports, trading establishments and markets could be classified as non-compliant or seriously non-compliant with the regulations in place. Approximately 39 percent of samples from fishing ports and fish markets were classified as unacceptable according to Vietnam's microbiological standards.[101] "The lack of adequate facilities and improper practices in these food industries are common reasons for noncompliance with government regulations and contamination of food."[102]

Fish distributors reported reckless fish handling practices that heightened the risk for contamination of raw fish. Fish handlers, intermediate traders, and retailers often have direct contact with the fish while also unloading, sorting, washing, storing, and transporting the products.[103] They neglected to ensure that their hands, their work surfaces, and their tools were clean and sterilized while handling the fish.[104] These handlers even admitted to failing to

[100] *Id.*
[101] *Id.*, p. 777.
[102] *Id.*, p. 789.
[103] Hong Luu et al. (2016), p. 332.
[104] Hong Luu et al. (2015), p. 790.

implement adequate handling practices that they knew were appropriate.[105] Most fish distributors had not been trained in basic food hygiene and safety.[106] Hong Luu et al.'s study also showed a lack of commitment to food safety from managers and authorities.[107]

National technical regulations (QCVN) -- which focus on the physical environment, personal hygiene, and training relevant for food safety -- were issued by MARD in 2009[108], but clearly have not been very effective. The government has recognized that the ultimate responsibility for seafood safety lies with the distributors.[109] However, it is also important to educate consumers about food safety so that they can demand better practices.

Most processors are Hazard Analysis Critical Control Points (HACCP) certified, many are Good Agricultural Practice (GAP) certified, some are EU certified, and a small number of processors is International Organization for Standardization (ISO) certified.[110] The most common, and relevant to the Vietnamese industry, of these certifications is HAACP which "is the main platform for international legislation and good manufacturing practices for all sectors of the food industry. HACCP also forms a key component of many certified compliance standards and is recognized as a main element of international trade in food products."[111]

The vast majority of processors have limited understanding of the international food safety standards they are required to meet. Information on these international requirements comes from official government documents, but the government is not always up to date on the standards. This results in import warnings, and to shipments being rejected or destroyed. Since countries like the U.S. and countries in Europe are constantly changing their import standards,

[105] Hong Luu et al. (2016), p. 333.
[106] *Id.*, p. 339.
[107] *Id.*
[108] *Id.*, p. 332.
[109] *Id.*
[110] *Id.*, p. 7-8.
[111] Vietnam Certification Centre

and these standards vary by country, it becomes hard for the government to keep up.[112] It takes a few years for producers to adapt to international Sanitary and Phytosanitary Measures (SPS) standards. The SPS, a 1994 agreement under the WTO, is intended to ensure that measures are put in place to limit international trade in order to protect public health and safety, as long as the measures are grounded in scientific evidence and only limit trade to the extent necessary without unjustifiably discriminating against the products of another country.[113]

Small and medium-scale processors, which dominate the industry, do not have the capital to invest in compliance.[114] The private sector responds to the barriers in export markets by using an "exit and compliance"[115] strategy. They stop exporting to the countries with stringent import requirements and move to markets with looser technical barriers and SPS measures. Japan, for example, has less stringent hygiene standards than the EU and the U.S. and is more focused on the quality and the freshness of the fish.[116] South Korea is also an example of a country with safety standards that Vietnam is able to meet successfully.[117]

State management also lacks the technology and equipment needed to detect antibiotic residue in export products. Officials cannot detect quantities of residue as precisely as jurisdictions like the EU.[118] The National Agro-Forestry-Fishery Quality Assurance Department (NAFIQAD) is responsible for the sampling and inspection process. The sites that the agency inspects are generally small, scattered across the country, and use a wide variety of technologies. The samples taken at these sites are representative of environmental pollution indicators (heavy metals, pesticides), but are insufficient to inspect indicators of other elements (chemicals,

[112] *Id.*, p. 9.
[113] McCannon, p. 592.
[114] *Id.*
[115] *Id.*, p. 11.
[116] *Id.*
[117] *Id.*
[118] *Id.*, p. 10.

antibiotics). These factors contribute to the challenges of comprehensive industry oversight.[119] The small size of fish farms and the technological differences between them make it difficult for the farms themselves to implement effective hygiene-controlling measures. One farm can be affected by pollution from adjacent ones.[120]

The government has announced that it plans to create an agency, under MARD, that will specialize in collecting and distributing relevant fisheries food safety information. This new agency is set to work closely with The Ministry of Industry and Trade (MOIT), the American Chamber of Commerce (AMCHAM), the European Chamber of Commerce (EUROCHAM), the Vietnam Chamber of Commerce and Industry (VCCI), and international standard-setting bodies to collect, study, analyze, and forecast new standards on hygiene and the environment by importing countries.[121] It remains to be seen whether the Vietnamese government will ever create this agency.

Conclusion

As the recent toxic fish scandal showed; the authoritarian, corrupt, and inflexible nature of the Vietnamese government has profound effects on food safety regulation in the Vietnamese fish and seafood sector. Although the regulation and implementation failures vary by fish sector (shrimp, catfish etc.), some general trends in food safety enforcement have emerged: a highly fragmented supply chain, consisting of a large number of actors and many unregistered participants, leads to a severe lack in traceability; inadequate training and education services for fish farmers leads to a dearth in food safety knowledge which is coupled with widespread non-compliance by producers along the supply chain.

[119] *Id.*
[120] *Id.*
[121] *Id.*

The Vietnamese government has made a concerted effort to comply with international hygiene standards in order to grow and maintain its fish export market, but these efforts have been hampered by the absence of overarching food safety standards and the fact that individual countries' standards are in constant flux. The current course of development within the Vietnamese fish industry indicates that the country is on its way to a much more industrialized and, possibly, more easily managed and controlled production and distribution structure, in order for the country to better serve the needs of global markets. This development will likely lead to the marginalization of small-scale producers, as it becomes harder for them to keep up with the pressure to industrialize.

The fish industry in Vietnam is ultimately buyer-driven. In order to appease international buyers; the government will continue to favor large-scale, intensive, and less lucrative production networks, while attempting to push out small-scale fish farmers. This shift will lead to the loss of employment for many fish farmers who need this employment most. However, it will enable the government to exert more cohesive control over the industry, which could have positive effects on its ability to manage food safety. An alternate scenario is that small-scale fish farmers would be left to serve a small domestic market and perhaps the more accessible markets of China and South Korea, leaving the technically sophisticated markets of the U.S., Japan, and the EU to large-scale farmers.[122]

Either way, the Vietnamese government cannot afford another toxic fish scandal on the magnitude of the one in 2016, neither domestically nor internationally. Its political legitimacy, the support of its constituents, and its place in the global fish market is at stake. The government

[122] Tran et al. (2013), p. 10.

should focus on investing in sanitation infrastructure; educating and training food handlers and producers and providing food safety information to consumers.

The case of fish and seafood safety in Vietnam is yet another example of where the government's priorities lie. Its priorities, overwhelmingly, lie with modernizing, westernizing, and industrializing this industry. The Communist Party is willing to go to great lengths to achieve its objective of economic growth, at any cost, even if that means resorting to corrupt habits. While a more cohesive and large-scale fish industry might benefit food safety initiatives, by only focusing on the largest companies the government disadvantages the smaller ones and could ultimately hurt the industry overall.

The issue surrounding pesticide use in flooded rice agroecosystems exemplifies the fact that the overuse of chemicals in food production, and the lack of accountability inherent in chemical usage, permeates the entire Vietnamese food system. The government's failure to adequately enforce the food safety measures it puts forth, due to the fact that its priorities lie with large-scale production, becomes apparent along the entire supply chain; from street food stalls, vegetables and fruits, all the way to meat and seafood. Food safety management becomes even harder when farmers and producers refuse to comply with the regulations in place, largely due to the fact that the government has given them little incentive to do so, and also lack educational resources from the state in order to know how adequately to comply with them.

Works Cited

Anh, Nguyen T. L., et al. "Animal reservoir hosts and fish-borne zoonotic trematode infections on fish farms, Vietnam." *Emerging infectious diseases*, vol. 15, Centers for Disease Control and Prevention, 2009.

Bridonneau, Marion. "Vietnam in post WTO – Current situation and future challenges for the agro-industry sector." *United Nations Industrial Development Organization (UNIDO) Country Office in Vietnam*, 2014.

Center for Food Safety. "Food safety standards and regulations: Implications for Asian fish exporters." *Policy Brief*, 1801.

Chi, Tran T., et al. "Prevalence of zoonotic trematodes in fish from a Vietnamese fish-farming community." *Journal of Parasitology*, vol. 94, BioOne, 2008.

Clausen, Jesper H., et al. "Prevention and control of fish-borne zoonotic trematodes in fish nurseries, Vietnam." *Emerging infectious diseases*, vol. 18, Centers for Disease Control and Prevention, 2012.

Dang, Son T. T., and Anders Dalsgaard. "Escherichia coli contamination of fish raised in integrated pig-fish aquaculture systems in Vietnam." *Journal of food protection*, vol. 75, International Association for Food Protection, 2012.

World Health Organization, "Foodborne trematode infections.", http://www.who.int/foodborne_trematode_infections/infections_more/en/.

Vietnam Certification Centre, "HACCP.", http://www.quacert.gov.vn/en/haccp.iso299.html.

Han, MMM P. H. "Fisheries development in Vietnam: A case study in the exclusive economic zone." *Ocean & Coastal Management*, vol. 50, Elsevier, 2007.

Holm, Peter E., Helle Marcussen, and Anders Dalsgaard. "Fate and risks of potentially toxic elements in wastewater-fed food production systems—the examples of Cambodia and Vietnam." *Irrigation and Drainage Systems*, vol. 24, Springer, 2010.

Klemick, Heather, and Erik Lichtenberg. "Pesticide use and fish harvests in Vietnamese rice agroecosystems." *American Journal of Agricultural Economics*, vol. 90, Oxford University Press, 2008.

Lebel, Louis, et al. "Industrial transformation and shrimp aquaculture in Thailand and Vietnam: pathways to ecological, social, and economic sustainability?" *AMBIO: A Journal of the Human Environment*, vol. 31, BioOne, 2002.

Luu, Phuc H. "Compliance with seafood safety standards within the Vietnamese finfish capture distribution chain," *Queensland University of Technology*, 2015.

Luu, Phuc H., Belinda Davies, and Michael P. Dunne. "The association between factors which affect the food safety practices of seafood distributors within the southern domestic distribution chains in Vietnam." *Food Control*, vol. 73, Elsevier, 2017.

Luu, Phuc H., et al. "Seafood safety compliance with hygiene regulations within Vietnamese domestic distribution chains." *British Food Journal*, vol. 118, Emerald Group Publishing Limited, 2016.

Marschke, Melissa, and Gordon Betcherman. "Vietnam's seafood boom: Economic growth with impoverishment?" *Environment, Development and Sustainability*, vol. 18, Springer, 2016.

McCannon, Kristen E. "The USDA Catfish Inspection Program: Southeast Asian Challenges at the WTO." *Hous.J.Int'l L.*, vol. 38, HeinOnline, 2016.

Omoto, Reiko, and Steffanie Scott. "Multifunctionality and agrarian transition in alternative agro-food production in the global South: The case of organic shrimp certification in the Mekong Delta, Vietnam." *Asia Pacific Viewpoint*, vol. 57, Wiley Online Library, 2016a.

Richard C. Paddock. "Toxic Fish in Vietnam Idle a Local Industry and Challenge the State.", Jun 8, 2016, https://www.nytimes.com/2016/06/09/world/asia/vietnam-fish-kill.html?_r=0.

"Seafood Safety: FDA Needs to Improve Oversight of Imported Seafood and Better Leverage Limited Resources," U.S. Government Accountability Office, 2011. *Social Science Premium Collection*.

Son, Dao M., and Pham Thuoc. *Management of coastal fisheries in Vietnam*, vol. 67, 2003.

Thi, Anh N. T., et al. "Evaluation of the microbiological safety and quality of Vietnamese Pangasius hypophthalmus during processing by a microbial assessment scheme in combination with a self-assessment questionnaire." *Fisheries science*, vol. 80, Springer, 2014.

Thien, Cu P., et al. "Prevalence of zoonotic trematode parasites in fish fry and juveniles in fish farms of the Mekong Delta, Vietnam." *Aquaculture*, vol. 295, Elsevier, 2009.

Thong, Nguyen T., and Svein O. Olsen. "Attitude toward and consumption of fish in Vietnam." *Journal of Food Products Marketing*, vol. 18, Taylor & Francis, 2012.

Tran, Kim C., et al. "Quality of antimicrobial products used in white leg shrimp (Litopenaeus vannamei) aquaculture in Northern Vietnam." *Aquaculture*, vol. 482, Elsevier, 2018.

Tran, Nhuong, et al. "Governance of global value chains in response to food safety and certification standards: the case of shrimp from Vietnam." *World Development*, vol. 45, Elsevier, 2013.

Tuu, Ho H., et al. "The role of norms in explaining attitudes, intention and consumption of a common food (fish) in Vietnam." *Appetite*, vol. 51, Elsevier, 2008.

Uddin, Gazi M. N., et al. "Clonal occurrence of Salmonella Weltevreden in cultured shrimp in the Mekong Delta, Vietnam." *Plos one*, vol. 10, Public Library of Science, 2015.

"UKRAINE: FOOD AND AGRICULTURAL IMPORT REGULATIONS AND STANDARDS -- Current Politics and Economics of Russia, Eastern and Central Europe," vol. 29, *Nova Science Publishers*, Inc, Hauppauge, 2014.

Van Thi Phan et al. "Freshwater aquaculture nurseries and infection of fish with zoonotic trematodes, Vietnam." *Emerging Infectious Diseases*, vol. 16, Centers for Disease Control and Prevention, 2010.

Le Ha Thanh and Pham Hong Chuong. "Vietnam's Aquaculture Trade: Food Safety and Sanitation Issues." *Cornell University*, Ithaca, New York, *10-12*, 2010.

Zweig, Ronald D., et al. "Vietnam: Fisheries and Aquaculture sector study." *Report for Ministry of Fishery of Vietnam, Hanoi*, vol. 141, 2005.

Conclusion

Vietnam has a problem with food safety. The Vietnamese fear of domestically supplied food is justified. There is no single, all-encompassing solution to the issue of food safety in Vietnam. Several factors contribute to the government's failure to adequately manage food safety matters. Some of the main contributing factors, as outlined in this thesis, are: The Communist Party's obsession with maintaining political legitimacy and furthering economic growth, widespread corruption, and a highly fragmented regulatory structure.

The food safety regulations in place are often disconnected from the producers who are tasked with following them. These food producers (farmers etc.) are, furthermore, far removed from the Party's headquarters in Hanoi and do not necessarily have the education level to be able to comprehend the rules put before them. As the Communist Party continues to attempt to abolish the informal food-sector, in an effort to promote large-scale, western-style production systems, small businesses will be marginalized and the lower classes will disproportionately suffer the consequences of unsafe foods.

Vietnamese people are aware of the food safety dangers they are exposed to (the excessive use of pesticides and antibiotics and unhygienic wet markets, to name a few) and are increasingly demanding safer, chemical-free foods. The government's failure to sufficiently respond to these fears, especially considering its desire to maintain political legitimacy, leads me to the conclusion that any concerns about public health are overshadowed by the priority put on economic growth. The government only cares about food safety to the extent that it can keep public disapproval tempered and to the extent that it does not impose on its ability to continue on the current trajectory of steady and rapid economic growth which is the key to modernization,

westernization, and civilization. The state has set out to reform its economy along market lines without losing political control[1], which, one could argue, are two incompatible tasks.

The government's ultimate goal is to catch up, sooner rather than later, with the world's biggest economic powerhouses (the U.S., Europe, Japan, and, most notably, China). As I have pointed out, the food safety laws that the government puts forth are not solely, or even primarily, to ensure the safety of its citizens. I am not arguing that they are putting forth fake laws, but most regulations in existence are haphazardly enforced and are laced with ulterior motives. Their regulatory efforts are compromised by the fact that the government's priorities lie elsewhere. They lie with the economy and an idealized notion of becoming a Westernized nation.

The Vietnamese public, and the international community, is slowly but surely catching on to this political window dressing and the state is losing grip of its political legitimacy. This legitimacy rested on decades of sacrifice, war, and blood. Any Vietnamese citizen under the age of 43 was born after the country's political and military victories were won. No one under the age of 60 has a serious memory of participating in the American War.

As the age of victory and newfound independence further creeps into the past and the age of the internet and increased globalization takes over, the government must begin to accept that is has an ongoing problem with legitimacy. The government knows that a large portion of the world is democratic and has serious elections and that Vietnam does not. The Communist Party claims to be the sole legitimate political organ. It claims to express the sentiments of the people. But its claim to legitimacy, which is that the Party brought the country all of its prosperity, has worn out. The Party is having trouble convincing people of its effectiveness.

[1] Gainsborough (2013), p. 20

Communist parties always point to the radiant future. There is always another goal, another five-year-plan. In the meantime, the problems surrounding food safety keep getting worse and the schemes to cover them up keep getting more elaborate, as was the case with the 2016 cover up of the factory pollution, the toxic waste water, that led to mass fish deaths.[2] How many more toxic fish can wash up on the beach before concrete action is taken?

The party wants a big, prosperous, acquiescent middle class. If the growing middle class and the upper class continues to enjoy the fruits of the country's economic growth, they will not question the government's effectiveness. The party's focus on expanding and appeasing the middle and upper classes of society, by ensuring that the trajectory of modernization is sustained, aims to ensure that these classes will not rock the boat.

The informal food-sector (comprised of lower class workers) is not going to disappear anytime soon, no matter how hard the government tries to eradicate it. It might shrink, but it is too strong a force to cease to exist within the next few decades. In light of this fact, it would be wise for the government to try to strike a balance between appeasing and fostering the middle and upper classes, while simultaneously supporting the lower classes. However, when it comes to food safety, this is not what is being done. The Communist Party has a problem with balance.

As I have already pointed out, the government is not simply lying when it puts forth food safety regulations. The IPSARD official that I spoke to in Hanoi seemed sincere when he told me that they are trying to ensure a safer, more sustainable food system.[3] If these regulations were actually effective, it would help the government's image greatly, but other national priorities have gotten in the way. In addition to misaligned national priorities, the state is tasked with enforcing these laws in a highly fragmented regulatory system, consisting of multiple agencies

[2] See Chapter 4
[3] Hong Vu Quang

with overlapping responsibilities. In light of this crippling fragmentation, one must wonder: why not just have one food safety agency? A single agency tasked with ensuring that food safety regulation is effectively put forth and implemented, could greatly help to alleviate the lack of accountability within the Vietnamese food system, which begins with the legislators in Hanoi and trickles all the way down to the rural farmers.

It is no secret that the Vietnamese state has a problem with corruption. The issues surrounding corrupt politics hamper the effectiveness of its food safety system. As I have discussed in the context of the agricultural sector, the country is dealing with the smuggling of inexpensive, highly toxic, and illegal pesticides. Pesticides started being used in excessive quantities after *Doi Moi*, which freed farmers from collective labor and allocation of their input and allowed them to produce directly for the market. There are regulations in place, which address pesticide use, but these are enforced loosely and often do not reach the rural farmers. In addition, officials have been known to accept bribes to allow pesticide marketers and distributers to continue selling illegal pesticides.

While the failure to adequately manage food safety matters can be traced to the Communist Party's obsession with maintaining political legitimacy, widespread corruption, a highly fragmented regulatory structure and, most importantly, the state's priority to continue on its trajectory of economic growth, modernization and westernization; the overarching issue here lies in the functioning of food supply channels to ensure food safety in a transitional economy.[4]

The government has responded to the public outcry over food safety, however, not adequately. It has demonstrated a lack of commitment, coupled with misaligned priorities, to solving the food safety crisis. This lack of commitment and the government's misaligned

[4] Figuié et al. (2004), p. 13

priorities are further fraught by a weak, fragmented, and ineffective food safety regulatory structure which lacks institutional coordination and overwhelmingly focuses on large-scale production systems, excluding the dominant informal food-sector from the equation. These institutional failures can be observed within the central government level, as well as between the central and local authorities.[5]

Can the Vietnamese government continue on this trajectory? Only time will tell. Although, one thing is certain: the poor state of food safety in Vietnam is due to institutional failure. The Communist Party must rethink its priorities if it seeks to maintain political legitimacy and domestic, as well as international, backing. Can growth, development and food safety go hand-in-hand? Perhaps, if the Communist Party manages a complete overhaul of the food safety system with a single food safety ministry, less corruption, and a more moderate obsession with economic growth.

Policy Recommendations

In light of the argument that I have presented, and the extensive research conducted on this topic, I would like to make two overarching recommendations to the Vietnamese government. Since administrative reform tends to be slow in Vietnam,[6] and the government has proven to be quite stubborn and inflexible in its loyalty to socialist ideals, I acknowledge that my recommendations may appear to be idealistic.

My first recommendation, which I have already alluded to, is that the government form a single food safety ministry in order to combat the intense fragmentation and decentralization inherent in the food safety regulatory system. The government does not necessarily need to

[5] OECD (2015), p. 24
[6] FAO (2018)

create a new agency to oversee food safety matters. Instead of having three different ministries manage food safety, with overlapping duties, food safety regulation should be the primary responsibility of one ministry.

My second recommendation is broader, and it requires a complete change in attitude on the part of the government. It is therefore my most idealistic recommendation. The Vietnamese authorities have been employing an aggressive strategy to eliminate the informal food-sector in Vietnam. As I have discussed in this thesis; during my stay in Vietnam, I witnessed police enforcement in Hanoi chase street food vendors off the streets on numerous occasions. The elimination of the informal food-sector is a completely unrealistic objective. The informal food-sector in Vietnam comprises a large portion of the economy and consumers rely on it greatly. I can say with almost absolute certainty, that the government will be unsuccessful at eradicating it; at least in the near future.

The government must acknowledge the resiliency of the informal food-sector. Instead of attempting to completely abolish it and replace it with supermarkets and convenience stores; food safety regulators should work towards providing the informal food-sector with greater resources in order to combat the food safety issues it faces. I will make no argument against opening up more supermarkets and convenience stores. However, this should not be the government's primary objective.

The state's focus on supermarketization could be viewed as an attempt to divert the responsibility of managing food safety on foreign companies which have a competitive advantage in the supermarket sector. A shift towards outside food safety control would further underscore the government's lack of commitment to food safety and would indicate that it might have given up on improving the domestic food safety issues through internal review. A much

more effective approach to solving the food safety crisis in Vietnam, would be to strike a balance between supporting and promoting the informal food-sector and adapting a more modern food retail sector. Vietnam could benefit greatly from more stringent food safety regulatory enforcement at wet markets since these wet markets are the most heavily frequented food retail outlets.

Looking Ahead

I would like to conclude this thesis by reporting on the most recent developments of the food safety situation in Vietnam. These most recent developments provide a mixed image comprised of improvements and diminishments in the food safety realm. I will commence with the bad news: in March 2018, the Vietnamese government announced that it would give food businesses the power to declare their products safe and hygienic without requiring them to apply for any official safety certification. This recent decree is thought to reduce the financial and time-intensive burden on food businesses in applying for food safety certificates. Food producers are now tasked with taking responsibility to meet food safety standards.[7]

The problem with this decree should appear obvious. Privatizing food safety inspections and certifications greatly reduces enforcement and accountability instead of working towards making regulations more stringent and making the food safety system, overall, more effective; which is what Vietnam is in desperate need of. This recent development makes me feel pessimistic about the future of food safety governance in Vietnam and it certainly falls in line with the government's misaligned priority on the economic growth over the safety of the food sector.

[7] Vietnam Plus, March 10, 2018

To turn to the good news regarding the food safety situation in Vietnam, several steps have been taken to improve food safety enforcement: the city of Hanoi announced in March 2018 that it will be deploying food-checking cars throughout the city which will check the quality and safety of food in markets, supermarkets, and food stores in an effort to decrease the consumption of low-quality food. The cars will test food products and will show the results on the spot. Food products shown to be contaminated with excessive chemicals will be seized immediately in order to demonstrate to the public that the government is serious about food safety.[8] In an effort to promote increased transparency, Hanoi also plans to begin employing the use of quick response (QR) codes in order to provide consumers with information on the origins of the produce for sale.[9] This initiative aims to promote greater accountability for food producers while simultaneously tempering consumer food safety concerns and promoting greater trust in domestic produce.

Ho Chi Minh City is also making strides towards improved food safety. It has created a Food Safety Management Board in order to account for the fragmentation and disconnect in the food safety regulatory system on the national level. The Board aims to oversee food safety matters in a more comprehensive and consolidated manner than the ministries have been able to achieve.[10]

Finally, on a national level, Prime Minister Nguyen Xuan Phuc has called upon the ministries responsible for overseeing food safety to institute tougher sanctions on food safety violations and to conduct a general review of food safety enforcement. While this commitment sends the right message, it fails to address the institutional barriers that have arisen from a

[8] Viet Nam News, March 21, 2018
[9] Viet Nam News, January 16, 2018
[10] Viet Nam News, March 17, 2018

fragmented and decentralized system with overlapping responsibilities. While the prime minister calls upon the Ministry of Health to take the leading role, he also assigns various overlapping tasks to five other agencies.[11]

Overall, the recent advancements in the food safety realm in Vietnam seem to place an emphasis on testing food products which are already on the market, instead of attacking the root causes of food safety dangers: the institutional failure on the state and local level which leads to food safety violations at the beginning of the supply chain, long before the food reaches consumers' plates. Furthermore, the three positive developments are overshadowed by the overwhelmingly negative development: the privatization of food safety certification. Nevertheless, these proposed changes to food safety enforcement have all stemmed from an increasing rise in consumer dissent over how the government has responded to poor food safety. This public pressure, which has called into question the Vietnamese political institution as a whole, is unquestionably food safety's greatest hope.

The fact that Vietnamese citizens now feel that they can openly criticize the party's actions, expresses a move away from political repression and a move towards a more vibrant political scene[12], which will work in favor of the governance of food safety in Vietnam. As London rightly notes: "what comprises 'the state' rarely moves in the same direction, rarely works together, and rarely sings from the same hymn sheet."[13] In order to combat corruption, regain and maintain political legitimacy, ensure a functioning institutional organization, and continue on the trajectory of economic growth; the Communist Party must move towards a state structure that "sings from the same hymn sheet."[14] Without effective coordination, reduced

[11] Vietnam Plus, March 02, 2018
[12] London (2014), p. 190
[13] *Id*., p. 180
[14] *Id*.

corruption, and a true commitment to solving the food safety situation in Vietnam for the greater good, not just the elite; the governance of food safety in Vietnam is doomed. The public is now tasked with exerting even greater pressure on the Communist Party to ensure that this unfortunate fate does not become reality.

Works Cited

"Businesses allowed to declare products' safety," *Vietnam Plus*, March 10, 2018. https://en.vietnamplus.vn/businesses-allowed-to-declare-products-safety/127665.vnp

"City takes steps to ensure food safety," *Viet Nam News*, March 17, 2018. http://vietnamnews.vn/society/424488/city-takes-steps-to-ensure-food-safety.html#QgVhJXH1RXEgSShU.97

Figuié, Muriel, et al. "Hanoi consumers' point of view regarding food safety risks: an approach in terms of social representation." *Vietnam Social Sciences*, vol. 3, Citeseer, 2004.

Food and Agriculture Organization of the United Nations, "Viet Nam at a glance.", FAO in Vietnam, 2018. http://www.fao.org/vietnam/fao-in-viet-nam/viet-nam-at-a-glance/en/

"Food-checking cars to be deployed in Hanoi," *Viet Nam News*, March 21, 2018. http://vietnamnews.vn/society/424845/food-checking-cars-to-be-deployed-in-ha-noi.html#TU4CIEZ6KFdfCybW.97

Gainsborough, Martin. *Vietnam: Rethinking the state*, Zed Books Ltd., 2013.

"Hà Nội to use QR code to trace fruit origins," *Viet Nam News*, January 16, 2018. http://vietnamnews.vn/society/421206/ha-noi-to-use-qr-code-to-trace-fruit-origins.html#je46f3cs6quzVVFP.97

London, Jonathan. *Politics in contemporary Vietnam: Party, state, and authority relations*, Springer, 2014.

OECD, "Agricultural Policies in Vietnam, *OECD Publishing*, 2015, Paris, France.

"PM asks for clear prohibitions, tougher sanctions on food safety violations," *Vietnam Plus*, March 02, 2018. https://en.vietnamplus.vn/pm-asks-for-clear-prohibitions-tougher-sanctions-on-food-safety-violations/127237.vnp

Steier, Gabriela, and Kiran K. Patel. *International Food Law and Policy*, Springer, 2016.

Vu Quang, Hong. *Institute of Policy and Strategy for Agriculture and Rural Development*, March 2018, Hanoi, Vietnam.