Peri-urban land, livelihoods and food security

The bitter sweet taste of urban expansion and its effect on food security in the peri-urban areas of Hué, Vietnam.

INTERNATIONAL DEVELOPMENT STUDIES

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Warm regards,
Laila Bouallouch

Dedication

This thesis is dedicated to the 795 million people experiencing hunger and millions of people facing food insecurity in this world of abundance. Individuals who are not just numbers but human beings with a face.

Word count thesis: 28.097

Abstract

As Vietnamese cities continue to expand and encroach on their peri-urban peripheries, there is a rising concern about loss of farmland to housing. Compulsory land acquisition is one of the most challenging questions in land management. It is undesired by the farmers, as they are being dispossessed of their land. The issue of the compensation schemes in respect to the acquisition is alarming since the affected farmers are still dissatisfied with the compensation package as it affects their livelihoods and food security.

This study focusses on urban growth in Xuân Hòa village in Thừa Thiên-Huế province which is a peri-urban area in central Vietnam. The researcher looks at the effect of urban growth on the livelihoods, compensation and food security of (former) farming households in Xuân Hòa. Currently, not much is known about food security in peri-urban areas and in particular the shifts in the mobility of consumption in those areas. In this study, the types of land loss shocks are investigated and their effects on food security, as are coping strategies. In addition to the four pillars of food security - availability; accessibility; utilization and stability – the study also includes overconsumption as food insecurity because overconsumption does not lead to a '*healthy and active*' life as the widespread definition of food security by the FAO suggests.

The research shows that land loss, unemployment and illness of a household member are the common shocks in the village. In coping with land loss shocks, most households adopt an ex-ante risk management strategy (income smoothing). The coping strategies vary with household characteristics such as size, age and gender, and with assets such as land and livestock. Land losses are seen to force increased expenditures on food while illness reduced consumption of food.

Land loss is seen to affect a shift in diets as protein-rich foods are too expensive and people (children) need to resort to cheap foods like instant noodles rather than preferred food such as sweet potatoes and beef. Access to food is largely mediated by amount of cash available. Rice is most important to the poorest groups as it provides 78% of their daily calories and accounts for half of their food budget. Although urbanisation leads to higher demand for food that in turn stimulates local production, food production of the affected peri-urban households decreases: the land loss group produces 17kg of rice per month compared to 26kg in the control group.

Food safety is increasingly an issue as households convert to buying food. Control of imported foods, especially from China, is still weak. Dairy products, confectionary, fresh fruit and vegetables, and pig and poultry internal organs are prone to high levels of dangerous substances and the use of chemicals for preservation. Meanwhile, food stability is an issue due to shocks such as land loss, unemployment and lack of a safety net. At the same time, overconsumption and unhealthy eating habits are on the rise as consequences of the nutritional transition towards buying food and interlinkages with urban areas.

Keywords: *Peri-urban areas; land loss; urbanisation; compensation; food security; sustainable livelihoods; coping strategies; food mobility; Hué; Vietnam.*

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Measurements conversions

The currency used in this study is the Vietnamese dong (₫). The currency converter from Euro to VND has been calculated on 14 June 2016 by the XE currency calculator.

€1,-	=	₫ 25.055,-
€10,-	=	₫ 250.434,-
€100,-	=	₫ 2.504.492,-
€1.000,-	=	₫ 25.042.243,-
€10.000,-	=	₫ 250.422.427,-

Furthermore, during the calculations of land size and income from agrarian resources the following measurements have been converted in this study:

1 Sào	=	360 m²
1 Triệu	=	₫ 1.000.000,-
1 Quintal	=	₫ 550.000,-
1 Ton	=	10 quintals

List of abbreviations

ADB	=	Asian Development Bank
BCSR	=	Board for Compensation, Support and Resettlement
CM	=	Conceptual Model
FAO	=	Food and Agricultural Organisation
FG	=	Focus Group
GDP	=	Gross Domestic Product
HA	=	Hectare
ICESCR	=	International Covenant on Economic, Social and Cultural Rights
KG	=	Kilogram
KMO	=	Kaiser-Meyer-Olkin
LDO	=	Land Development Organisation
MANOVA	=	Multivariate Analysis of Variance
NGO	=	Non-governmental Organisation
PPC	=	People's Party Committee
SDG	=	Sustainable development goals
UN	=	United Nations
VND	=	Vietnamese Dong
WCED	=	World Commission on Environment and Development
WFC	=	World Food Conference

Glossary

Land	In most systems of law, land is the surface of earth, materials beneath, the air above, and all things fixed to the soil. Notable exceptions are found in communist countries, such as Vietnam, where the land is controlled by the nation (Williamson et al, 2010).
Land acquisition	The process by which the state government acquires (private) land for the purpose of industrialisation, development of infrastructural facilities or urbanisation, and provides compensation to the affected land owners and their rehabilitation and resettlement (Pawar, 2015).
Land administration	The process run by the government using private- and public sector agencies related to land tenure, land value, land use and land development (Williamson et al, 2010).
Land governance	The activities associated with determining and implementing, sustainable land policies (Williamson et al, 2010).
Land grab	Large scale, cross-border land deals or transactions that are carried out by transnational corporations or initiated by foreign governments (Zoomers, 2010).
Land reform	The attempt to change the land tenure and improve the distribution among right holders to support a certain goal (Dekker, 2001).
Land tenure	Rights in land. Formally the institutional arrangement of rules, principle's, procedures and practices whereby a society defines control over, access to, management of, exploitation of, and use of means of existence and production (Dekker, 2001).
Land use	The manner in which land is used (Williamson et al, 2010).
Land value	The worth of a property, determined by a variety of ways, each of which can give rise to a specific estimation (Williamson et al, 2010).

Chapter 1 Urban expansion and food security: an introduction

In the context of rapid growth and changes in land use, the compulsory acquisition of land has become a delicate issue due to the increasing pressure on the government to deliver public services in an area of an already high demand for land (FAO, 2008). Moreover, the affected people of the land acquisition process are not content with the compensation package offered due to its negative affect on livelihoods and food security.

Furthermore, food systems have become increasingly integrated worldwide due to globalisation. Cash-crops have replaced subsistence agriculture; traditional farming methods have given place to intensive, industrial ones (relying on monocultures, chemicals use, more machinery, etc.); and in many areas the focus of agriculture has shifted from local consumption to food exports (FAO, 2008). This has substantially increased agricultural output and food trade. At the same time, this has rendered communities much more vulnerable to market fluctuations. Conventional food systems have also had significant socio-environmental impacts, which are usually not accounted and are thus treated as externalities of the system. Such impacts include the erosion of food cultures, social capital loss, ecosystems degradation, and a global shift towards unhealthier eating habits. Thus, we live in a world of food abundance and widespread food insecurity, both in the form of food deprivation and overconsumption. Local communities worldwide have had to cope with such global trends, at a time when their self-reliance is increasingly smaller due to the integration of food systems.

Food security has been recognized in Vietnam as an important dimension of '*development*' since 2002, when it was formally included in the national policy framework. Since the mid-1980s, Vietnam has shifted from an agricultural economy to a multi-sector-based one, propelled by a policy of promoting industrialization and modernization (van Westen et al, 2011). The shift towards industrialization and modernization also let to an increase in national development plans focused upon urbanisation (UN 2012). The Vietnamese urban population is increasing with an average growth of 3% per year. At present, around 33% of the Vietnamese population resides in urban areas (table 1). This percentage is estimated to augment to 45% by 2020 (DiGregorio 2011). There is also a consumption mobility shift seen in Vietnam due to globalisation and modernisation policies, where 20% of the urban children suffer from obesity while 28% of the rural children suffer from malnutrition (GRiSP 2013).

Table 1: Population in Vietnam (years) & urban population in percentages (Adjusted from GSO, 2016)

	Year	Total	% urban
Vietnam	1995	71.995.500	20.7
	2000	77.630.900	24.1
	2005	82.392.100	27.1
	2010	86.947.400	30.5
	2013	89.759.500	32.2
	2014	90.728.900	33.1

The country's economic structure has been changing ever since the Doi Moi (*open door*) reform policies were introduced by the government. Having augmenting economic growth and higher incomes combined with a rising population has led to an increase in urban services such as housing, infrastructure and work places. However, in response to the scarce supply of land, the government decided upon land conversion to convert huge amounts of rural land into peri-urban areas and again covert them to urban uses (Webster, 2004). In order to convert rural land, the government buys the land from local households which are then provided with

a compensation package. However this compensation package is often insufficient and causes people in the long-term to struggle in obtaining their level of welfare (Ty et al, 2013).

Nonetheless, studies on industrialization have both shown positive and negative impacts on livelihoods. On one side, land conversion is challenging for the state and the affected households. The increase in landless and jobless people; environmental pollution; population mobilization; income discrepancy; social conflicts and food insecurity are among the most prominent issues arising from this process (Nguyen, 2015). On the other side, industrialization can be seen as an efficient strategy for income growth, poverty reduction and infrastructure upgrading. By creating more employment for the rural labor force and by optimizing resource use, land conversion for industrialization can provide a crucial impulse to economic growth. Land acquisition from farmers can generate labor supply in non-farm activities which is seen as the key, for in particular rural households, to exit poverty (Nguyen et al, 2014).

Since food security came to the agenda, its definitions and measures have been evolving (Badolo & Kinda, 2014). Food security is a state or condition. It is a flexible concept as reflected in the many attempts at definition in research and policy usage and numerous definitions of food security thus exist. The most popular and widely accepted definition of food security has been given by the Food and Agriculture Organization (FAO) of the United Nations (UN):

"*food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life*"

Despite increasing food production from year to year, the estimated number of food insecure people has also been increasing. Population growth, increasing wealth, consumption diversification and food accessibility are among the main factors behind the unbalanced food system (Godfray et al., 2010; Lee et al., 2013).

1.1 Problem statement

In this study, the focus lays upon urban growth in peri-urban areas and its effect on food security and the current food system in place. The decision has been made to study this topic because not much is known about food security in peri-urban areas and in particular the consumption mobility shifts in those areas. Furthermore, ''*All land belongs to the state*'' in socialist Vietnam (Nguyen et al, 2014: p.1). Currently the country experiences rapid social and economic development which leads to a augmenting demand for land for urban growth for industrial purposes. In order to accommodate the demand, the government uses land conversion for '*public purposes*' to open up expanses of agricultural land in rural and peri-urban areas (Nguyen et al, 2014). Ineffective compensation measures and a lack of agrarian production land and livelihood alternatives increases the resistance of the affected communities due to the struggle in regaining their level of welfare and food security of before the land conversion. (Ty et al, 2013).

1.2 Study objective and research question

The main objective of this study is to understand the land loss shocks faced in Xuân Hòa and how it effects the livelihoods and food security of the farmers. To achieve the objective the following research question is addressed:

"To what extent does urban growth affect food security of (former) farming households in Xuân Hòa and how do they respond to land loss shocks?"

1.3 Research Contributions and Boundaries

In order to enhance the food security of peri-urban households that lost parts of their land and improve their livelihoods, there is a need to understand the types of land loss shocks the households face. Therefore, it is important to look at the strategies used by the households to deal with the different land loss shocks in the village. In this context, this study's purpose is to identify the land loss shocks that the affected households face in their food security. The study aims to contextualize food security's four pillars within Xuân Hòa, focusing especially on households that lost parts of their land for urban expansion. The knowledge generated from the study will contribute to the development of poverty reduction interventions to improve food security and the process of land conversion for urbanisation.

The study aims to give an overview of the land acquisition process in Vietnam and its effect on livelihoods and food security.

i. For the general public, the study will show the rights of land owners and the body acquiring during compulsory land acquisition process. The changes that occur in food consumption mobility due to the compensation package are also highlighted.
ii. For the government, policy makers and urban planners, the study shows the land acquisition problems in relation to urban growth. The study evaluates how to deal with food mobility shifts in a peri-urban area and analyses the current land acquisition process for urban growth and it will provide a suitable alternative for managing the land acquisition process.
iii. For academicians the study will provide information on food consumption mobility shifts, compulsory land acquisition and urban growth in Vietnam. It will also stimulate curiosity for further research in the subject matter.

1.3.1 Academic contributions

The academic contribution of this study is a broadened definition of food security, one that emphasizes elements that are often overlooked, such as food insecurity from overconsumption and food deprivation and its effect on the upward/downward food mobility shifts that results from it.

1.3.2 Practical contributions

Practical contributions can certainly arise from the application of this study's results. The broader understanding of food security, greater awareness of its challenges, and the recommendations provided here may all influence the attitudes and behaviours of different social actors (e.g. consumers, community groups, NGO's, government officials, food businesses). This may lead to action in real-world contexts, particularly in the commune examined, and contribute in a tangible manner to the promotion of food security (e.g. in the form of policy changes, community initiatives, networking among different stakeholders).

1.3.3 Research Boundaries

This research focuses on challenges to, and opportunities for, achieving food security at the local level. As such, it considers forces and factors operating at state/provincial, federal, and global levels, but only as long as they affect the local commune. Clearly, each of those larger levels poses specific challenges and can be arenas for action. However, this study deals with existing challenges at the local level, and focuses only on what could be done in, and by, local communities. The research examines one case study, and it is the only one analysed. Because of limited time, resources, and scope, other communities are not considered. This is another

boundary and a limitation to the applicability of the results. Naturally, the more similar a community is to the case study presented here, the more it can benefit from this study's results, as it is likely to face similar challenges. Nevertheless, many similar challenges emerge in very different communities as a result of broader trends (e.g. towards agricultural industrialization, towards American fast-food diets) and can be generalized to other communities. Similarly, many of the recommendations are applicable to other contexts, provided they are adapted to the specifics of each locality. Section 4.4 will discuss the specific boundaries in this study in more depth.

1.3.4 Research ethics

The purpose of the survey was explained to the farmers before they were interviewed or surveyed and their verbal consent was sought. The main ethical issue pertaining to this research was confidentiality and the protection of participant interests. Due to the initial reluctance of certain respondents to participate (see section 4.4), the researcher was able to win their confidence and trust facilitating the overall surveying process. Also, participants were made aware that the objective of participation was entirely voluntary and therefore respondents that wanted to withdraw could do so at any given point during the research.

1.4 Justification of Study

The first reason for this study has to do with quantity. There has been surprisingly little research done on peri-urban poverty, food insecurity and upward/downward food mobility shifts in terms of malnutrition and overconsumption. A reason for this could be that poverty is traditionally believed to be concentrated in rural areas and food insecurity is solely linked to food deprivation. Hence the study would attempt to fill this research vacuum and provide current information on peri-urban food security. Moreover, this study focuses on resilience of households and how they respond to land loss shocks. This is relevant because few studies actually track households on the urban fringe to understand how they construct strategies to deal with socio-economic difficulties as they move in and out of poverty.

1.5 Structure of the thesis

The thesis has seven chapters. In the second chapter, literature connected to food security and urbanisation are reviewed The third chapter explains the theory on food security and sustainable livelihoods. In addition, the conceptual framework of the study is presented in this section. The fourth chapter explains the methodologies used to achieve the main study objective. Empirical results and their interpretation are addressed in the fifth chapter. The sixth chapter gives conclusions and the last chapter is used to give policy recommendations and suggestions for further research.

1.5.1 Title explanation

'*The bitter sweet taste of urban expansion and its effect on food security in Hué's peri-urban areas*' has been chosen as a title due to the positive and negative effects urbanisation has on the farmers in peri-urban areas. People experience pleasure of urban expansion in terms of improved infrastructure but people also experience pain due to an increase in food insecurity due to land loss.

Chapter 2 Facts and comparisons: a brief review of the literature

The global demand for urban land for residential, industrial or commercial purposes, is increasing rapidly. It is estimated that two billion people are in rapid need of housing in urban centres within the next 25 years (Long, 2012) The huge demand for urban space can be met in three ways. First, by redeveloping already urban land; second, by converting rural land into urban use or third by efficient use of open urban spaces (Deininger et al., 2008). Developing countries usually have an even more pressing need for urban space due to more economic activity, population growth and the migration flow from rural to urban areas.

There is substantial evidence in the literature that access to land for the rural poor is essential for food security and economic development in developing countries. The basic assumption that access to land is an effective tool for poverty reduction is shared by international organizations, academic researchers and NGOs alike. The UN Special Rapporteur on the '*Right to Food*' recognizes access to land as a key means to realizing the 'Right to Food' as set forth in Art. 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR). Disputing about land can be viewed as a social situation where at least two parties claim property rights of the land. That right could be rights to generate income from land, to manage the land, to transfer the right, to exclude others from the land and the right to compensate for the land loss (Wehrmann, 2008). Disputes on land should be properly dealt with in a constructive way and not be ignored as it can lead to changes in policy and implementation and therefore can be regarded as the engine of change. In most cases disputes in compulsory acquisition of the land are related to dissatisfaction with the compensation (the amount and form of compensation) (Kironde, 2009; Kakulu, 2008).

2.1 Concepts of food security

Efforts to fight hunger and food insecurity may have been a fact of life at various points in history, but it was only after World War II that such efforts became concerted at the global scale. In the 1940s, the world saw the creation of the UN and the FAO, with the purpose of organizing and strengthening international efforts in food-related matters. In 1974, this organization brought on the first World Food Conference (WFC), where leaders agreed upon the goal of putting an end to world hunger. The conference occurred in the wake of a devastating famine in Bangladesh, one of many episodes of severe starvation leading to thousands of deaths despite all the development and progress brought on by technology, science and improved health-care (WFC, 1974).

Chronic hunger and undernourishment remain present in the 21st century, as well as episodes of famine, as seen in Darfur, Malawi, and Niger. The WFC occurred at a period of sharp price rises and at the climax of the Green Revolution, when researchers developed high-yield varieties of staple foods such as wheat and corn and applied them in developing countries. By expanding food availability, they expected to expand food consumption and achieve what was considered food security at that time. However, as a ground-breaking study of the Nobel laureate Amartya Sen would demonstrate in the early 1980s, food availability per se is not sufficient to guarantee food consumption and end hunger (Sen, 1989). It is necessary to make it accessible, either in the form of means to produce it or of purchasing power to buy it. In 1983 the FAO amended its definition of food security to then include economic access to food, following up on Sen's work. Three years later, in 1986, the World Bank also published "*Poverty and Hunger*", a famous study that reaffirmed the notion that increased production would not be a solution if people remained poor and unable to access food. The concept of food security has continued to evolve since then (World Bank, 1986).

According to the FAO, food security, at the individual, household, national, regional and global levels, exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. This definition reaffirms the need for economic access in addition to availability, and, for the first time, requires that the food have quality, both in terms of nutrition and cultural appropriateness. "*Safe and nutritious food… for an active and healthy life*" can be simply understood as healthy food. Similarly, "*food to meet their… food preferences*" can be translated into culturally-appropriate food.

2.1.1 Food insecurity

Food insecurity is the opposite of food security. Therefore, it may be defined as a situation where people, individuals at times, lack physical and economic access to sufficient, safe and nutritious food needed to maintain a healthy and active life. According to Frongillo and Nanama (2012), household food insecurity results when food is not available, cannot be accessed with certainty in socially acceptable ways, or is not physiologically utilized completely. Food insecurity occurs whenever enough and safe foods are not available or the ability to acquire such foods is limited. Food insecurity represents a major public health concern and is a useful index of health and well-being because it is associated with poverty, ill health, poor dietary intake, and limited social capital (Hadley et al., 2006).

2.1.1.1 Coping strategies

Coping strategies are activities, which maintain food security or combat food insecurity that has occurred at the household level. Coping strategies are directly attributed to household activities rather than external factors. According to the literature review households adopt both ex-ante and ex-post coping strategies in their endeavour to be food secure. Generally, there are four categories of strategies, namely consumption, expenditure, income, and migration.

- Consumption strategies include relying on less-preferred food substitutes, reducing the number of meals eaten per day, regularly skipping food for an entire day, eating meals comprised solely of vegetables, restricting consumption of adults so children can eat normally, and feeding working members at the expense of non-working members;
- Expenditure strategies include the use of savings and avoiding health care or education costs in order to buy food;
- Income strategies include, the use of pension, small businesses and selling household and livelihood assets such as livestock;
- Migration strategies include sending children to relatives or friends" homes or migrating to find work (Maxwell et al., 2008).

Increased use of coping strategies indicates a decrease in food security. Likewise, a decrease in food security results into increased frequency and severity of coping strategies. Thus, the analysis of coping strategies indicates a decreasing food security situation when coping strategies accelerate from temporary measures (e.g., reduction in number or quality of meals for a brief, defined time period) from which a household can recover, to measures that undermine future lives and livelihoods and damage social, financial, physical, or natural assets irreversibly (Maxwell et al., 2003). According to Young et al. (2001:4) understanding the severity of food insecurity is essential for determining the best type of response. The severity of food insecurity is gauged by its impact on people's ability to feed them in the short term, and its impact on livelihoods and self-sufficiency in the longer term. These two perspectives

allow the severity of food insecurity to be judged as follows:- 9 A population or livelihood group is considered acutely food insecure if: (i) People experience a large reduction in their major source of food and are unable to make up the difference through new strategies; (ii) The prevalence of malnutrition is abnormally high for the time of year, and this cannot be accounted for by either health or care factors; (iii) A large proportion of the population is using marginal or unsustainable coping strategies; (iv) People are using coping strategies that are damaging their livelihoods in the longer term, or incur some other unacceptable costs, such as acting illegally or immorally.

2.1.2 Gap in the food security definition

Although the FAO definition has become increasingly inclusive, it still has important gaps commonly pointed out by academics and community organizations. This study highlights one gap: food insecurity from overconsumption and poor eating habits. Overweight, obesity, and diet-related chronic diseases such as type II diabetes are increasingly widespread in both developed and developing countries. In some countries, it is already a larger problem than food deprivation. As a result, this concern has been gradually incorporated into the notion of food security, and it can be even interpreted in FAO definition, which stresses the need for "*an active and healthy life*". Yet, publications from that organization (such as their annual report State of Food Insecurity in the World) still fail to incorporate overconsumption as a form of food insecurity. The idea of healthy food system takes into account multiple factors (e.g. economic, social, and biophysical) and actors involved with food (e.g. farmers, food processors, policy-makers, retailers, and others) and the complexity of their interactions.

2.2 Agrarian transitions

The literature on agrarian transition offers a number of relevant theoretical insights that are useful for understanding changing processes in a rural context. In a general sense, agrarian transformations must be placed within an understanding of the dynamic processes of globalisation and global interactions, however, the specific historical conditions in a country are likewise important, as argued by Cramb (2007): "*The particular context of agrarian change matters. Responses between and within countries differ. Livelihood outcomes are not predetermined by global economic forces*" (p. 5). Hart et al. (1989) have highlighted the importance of explicitly placing "*state imperatives and the exercise of power at different levels of society*" (p. 3) at the centre of analysis of agrarian transformation. As states have different historical contexts and geographical conditions that shape their approach to programmes and policies for agrarian change and economic development in marginal rural areas, explicit attention to how they exercise power and carry out interventions becomes important (Rigg 2012; Hart et al. 1989). State interventions and policies constitute both intentional and unintentional sources of change in rural areas.

In the context of upland agrarian transformation, emphasis has been placed on how the developing state have constructed upland areas as spheres for specific development intervention, thus shaping specific development outcomes for rural livelihoods (Hart et al. 1989) . The uplands have only been created as marginal spaces by a continued and prolonged engagement with the lowlands, and these engagements have been characterised by questions of power and state to the extent that people living in the uplands have been designated as poor, backward and underdeveloped in opposition to the modern sphere of the developed lowlands (Li 1999). As a result, the developing state and its bi- and multilateral donors have pushed for very specific sets of state interventions, e.g. large-scale land expropriation for agricultural development, land zoning and mapping or enforced resettlement schemes, aimed

at bringing upland populations closer to state agendas and increase state control over upland natural resources (Hall et al. 2011; Li 1999). Such interventions are central to processes of territorialisation by which governments actively seek to establish control over its territory, population and resources as a way of building a coherent nation state (Rigg 2005; Vandergeest & Peluso 1995). Vandergeest & Peluso define territorialisation as the process by which states "*divide their territories into complex and overlapping political and economic zones, rearrange people and resources within these units, and create regulations delineating how and by whom these areas can be used*". Territorialisation consequently implies drawing boundaries around people and resources, and can be applied through a range of land control mechanisms such as zoning, planning and allocations (Rigg 2005).

Although the above highlights the importance of government policies in shaping upland change processes, it is also important to note that agrarian transformations cannot be viewed as merely an external process imposed on rural communities and households. "*Governments […] do not have the ability to control and shape the economy and society in anywhere close to a deterministic manner*" (Rigg 2012: 4). Rather than seeing rural people as passive victims of irresistible external forces (Cramb 2007: 6), people should be acknowledged as agents with powers to shape their own transformations in active engagement with both states and markets.

2.2.1 Reform of land institutions

Currently, the *'Unit for Land Compensation and Ground Clearance'* takes care of the land acquisition in Vietnam and is divided into two sub-divisions. (World Bank, 2011). The first is the Land development organization (LDO). This is a permanent organization established by the Provincial People's Committee (PPC) that is responsible for recovering land according to '*published land use*' plans and not for specific investment projects. The PPC is responsible for land recovery, managing recovered lands, conducting land auctions for investment projects, and transferring land to investors. The second is the Board for compensation, support and resettlement (BCSR), which is a temporary committee established under the District People's committee to work on land compensation and resettlement for a specific project. This committee follows administrative regulations and not market mechanisms (World Bank, 2011). The land price can be determined in three ways: 1) by the relevant People's committee; 2) via auction or; 3) by land users upon transfer of land user rights (Vietnamlaws, 2016).

Before 1980, farmland, production output, and means of production were fully managed by the village cooperatives. In 1980, the first reform of tenurial contracts was implemented which allowed farmers to keep their surplus produced for home consumption. The series of changes that followed in particular post-doi moi, as can been seen in table 2, were designed to increase the flexibility of the land management in order to increase production, raise investment incentives, and overcome food insecurity (Que,2005). However, land is still owned by the Vietnamese people but managed by the state and farmers received land use rights for a period of 15 years. Pursuing the decollectivization effort further, the 1992 land law granted five rights to land users: 1) the right to exchange, 2) transfer, 3) mortgage, 4) inherit, and 5) lease out land (table 2). Land use certificates (*Red Books*) were issued to users for a period of 20 years for annual crops and for 50 years for perennial crops. The state and local authorities maintain control over rental contracts, transactions, and general land use plans. This policy was assessed by observers and researchers as egalitarian in nature (Ravallion et al, 2008) and is the largest land titling program implemented in the global south (Doand Iyer, 2008).

Table 2: Overview of land law changes in Vietnam in years (Adjusted from VietnamLaws, 2016).

Policy document	Year	Key points relating to land
First constitution	*1946*	Article: 12 'the right of private ownership by the Vietnamese people is secured'.
Agrarian reform law	*1953*	Land ownership is removed from landlords and passed directly to the tenants.
Second constitution	*1959*	Article 11: recognized State ownership (people's ownership), collective ownership, individual ownership, and national capitalist ownership on the main materials for production including land. Agraian ownership by peasant is recognized but cooperatives are encouraged.
Third constitution	*1980*	Article 19: only ownership by all citizens. Article 20: land systematically managed by the state. The state allocates and recovers lan according to plan. Land was used by agricultural cooperatives, however, the productivity was low.
Doi Moi	*1986*	Land used by agricultural cooperatives allocated by the state to households and individuals for permanent and stable use. Land offices and land administration systems were established.
First land law	*1987*	Rights of households and individuals to use land was recognized. All land transactions are decided by the state and no land values or land market is recognized.
Fouth constitution	*1992*	A state-mananged market economy is accepted. Land owned by all citizens (Article 17), land managed and allocated by the state to organizations, households, and individuals (Article 18).
Second land law	*1993*	Only 'all citizen ownership' is recognized, however, land has a price defined by the state. Households have the right to exchange, transfer, inherit, lease, and mortgage land. State's power of compulsory land recovery is the only means to acquire land for development projects. Economic organizations can access land only by leasing land from the state.
Land law amendments and supplementations	*1998* *2001*	Domestic economic organizations can access land by gaing allocated land from the state for housing development projects and land-infrastructure exchange-based projects; Domestic economic organizations can receive land by land transfer, lease and contribution as capital from household and individuals; Improved mechanism of land recovery by the state from current land-users for investment projects, compensation and resettlement for users whose land is recovered.
Third land law	*2003*	Only 'all citizens ownership' is recognized, however, rights and responsibilities of land authorities and rights and obligations of land users are identified clearly. Market price of land is also recognized. Domestic economic organizations can access land based on the options of gaining allocated land or leasing land from the state. Limits of compulsory land conversion is applied, voluntary land conversion is introduced. Regulations on compensation and resettlement are made.
Decree 84	*2007*	Identifies the conditions for recognition of land use rights of current users who have no legal documents. Permits foreign investord to undertake housing development projects for commercial purposes. Stipulates transparency and dissemination of compulsory land conversion procedures, guarantees benefits to affected land users.
Fourth land law	*2014*	Land belongs to the people with the State acting as the owner's representative and uniformly managing land. The State shall hand over land use rights to land users. Clearer terminology is used. The term 'foreign organizations' and individuals' is no longer used unless the land user is a diplomatic organization or a diplomat. Stricter conditions apply to grant land user rights to developers.

In Vietnam, there is still room for improvement in the legal framework relating to land and compensation in post-Doi Moi stage. This is because the Vietnamese state, similarly to that of China, has maintained its key role on societal and economic organizations' by elites control over the economy. At the local level, globalization and neo-liberalism could not weaken the state. Local elites are able to maintain their power by using new developments to resist

international agreements (Gainsborough, 2010). New market mechanisms have not yet substituted institutions, which were used to regulate the establishments of urban spaces. Rather, institutional organizations', governance practices and economic relations, characterize the reform process in Vietnam (Labbé & Musil, 2013).

2.2.2 Compensation

The most common instruments that the state has and can apply to access land are negotiations and persuasions or legalized force and through compulsory acquisition (Kombe, 2010).The latter normally comes into effect through the power of eminent domain, which gives the state powers to expropriate private property for public use without necessarily seeking the owner's consent. Nonetheless, the land owner is subjected to payment of fair and prompt compensation (Kombe, 2010). In other words, compulsory land acquisition means that the state or government, has the power to acquire the land for public use, and should offer compensation packages for the affected people accordingly. Due to the different legislation in different countries, there are different explanations about this concept. For example, it has been called compulsory land purchase in several literature; in Tanzania compulsory land acquisition laws stipulate that persons whose land is expropriated for public interest have to be fairly and promptly compensated (Kombe, 2010). In Vietnam, compulsory land acquisition mainly refers to the process of transforming the rural collective's land to urban land, and is known as a form of "*government behaviour*" which is described as "*using coercive measures to acquire private land under compensatory arrangement by the government in the public interest*" (Zou et al, 2007). It should distinguish the compulsory land acquisition from land expropriation. Land in both conditions is occupied by the state or government for public interest, but the former means a change of ownership while the latter means a change of land use right. Besides, land expropriation also implies that there is no compensation for the affected people.

Generally, compulsory land acquisition involves eight key steps:

1) Submit an application for using rural land by the local government;
2) Receive permission from the state council or provincial level government;
3) Plan to acquire the land in details;
4) Promulgate the decision of the land acquisition to the affected people;
5) Register the compensation by the specified authority and the affected people;
6) Compensation planning protocol by the local governments;
7) Confirm the compensation by the superior governments;
8) Implement the compensation scheme by the superior governments.

Compensation can be defined as the reparation of a loss which must be paid in the case of land acquisition. Cernea (2000) defines compensation as the *"damage substitution"*. Asian Development Bank (ADB) (1998) conceptualises compensation as a comparison between the situation "*with*" the project and the situation "*without*" the project. This implies that, affected communities should at least maintain the standard of living as high as before they were resettled. ADB's policy emphasises that the economic and social base should be restored in compensating the affected people. Mugabe (2009), adds that the various livelihood losses should be compensated, including: - income and property, and transport should be offered to transfer and relocate the affected people and their properties and to assist people to rehabilitate and restore their lives. Furthermore, Mutamba (2009) considers that the costs and value of compensation should be equal to the market cost and value plus transaction. In a statutory manner it is provided that what one receives is not less than what the government pays (Speedy, 1977). Compensation therefore, implies a full and complete equivalent package for the losses sustained by the affected people.

2.3 Peri-urban areas

The global demand for urban land is increasing and it has been long debated by scholars and policy-makers to determine the causes and consequences of agrarian land conversion. Important themes that are recurring in the literature are the influence of urbanization processes and industrialization on the rural-urban transition of rural and urban areas. Several theories on rural changes tend to focus on the political-economic aspect. The political-economic aspect is described as industrial and urban development in combination of how the rural sector is being degraded to benefit the capitalist development process of the agrarian sector (Cypher & Dietz, 2008). Moreover, wide ranges of theories exist on the interactions between the rural and urban sector. These theories underline that these sectors need to create distinct linkages between themselves to improve the lives of people living in both the areas. Urbanization has been an important demographic trend of the twenty-first century, and growth is particularly rapid in developing countries. While some of this growth is manifested in the city centre, much of the growth is taking place at the peri-urban fringe.

Peri-urban areas are described as the transition zone between urban and rural areas with, on the one hand, lower population densities and a lack of infrastructure compared to cities, and therefore not "*urban*", and on the other hand a limited amount of agricultural and natural land, and therefore not "*rural*" (Piorr et al. 2011). In an attempt to amend the conventional Eurocentric view of urbanization as a process that prefers the distinction between rural and urban, McGee used the term '*desakota*' (desa for village and kota for town in Indonesian) to define urbanization and the process of urban spread (McGee, 1991: p.7). McGee (1991), refers it ''*as the emergence of peri-urban regions of highly-mixed rural and non-rural activity surrounding the large urban cores of many Asian countries*" that have a significant focus on industrialization and rapid economic growth. In this definition, McGee (2005) located peri-urban as outside the areas adjacent to the city core and admits that globalisation is an important factor hereby.

Peri-urban areas have become a focal point in developmental processes where the forces of globalization and localization meet (Nguyen et al, 2014). The literature review shows that it is not only the influence of each of these separate factors, but especially the way in which they affect and are interlocked with each other. Stronger rural-urban links, including the development of small towns that ensure access to urban markets, often through small-scale traders, and remittances from migrants to the cities, contribute to food security by supporting both production and access. However, high food prices have affected the growing number of net food buyers in both rural and urban areas, and the financial crisis has reduced migrants' ability to send money home.

2.3.1 Agricultural land in Vietnam

The population of Vietnam has reached 91 million in 2015, of which 70 percent live in rural areas and are mostly concentrated in rice growing deltas. Although the economic importance of agriculture is sinking from 25 percent of Gross Domestic Product (GDP) in 2000 to almost 21 percent of GDP in 2010, still more than half of the country's total labor force is engaged in agriculture. Nowadays, Vietnam is the 5th largest rice producing country, due to an increase of paddy production from 25 million tons in 1995 to almost 40 million tons in 2010 (USDA 2014). The main factors enabling such fast development were an extension of the irrigated proportion of rice fields, more intensive use of fertilizers, the growth of higher yielding varieties and an expansion of the rice cultivation area (GRiSP 2013). Those developments were similar to the so-called "*Green Revolution*" which took place earlier in other Asian rice producing countries. Currently, Vietnam is one of the biggest exporters of rice that saw a

growth of rice exports from 4.7 million tons in 2008 to 7.7 million tons in 2012, but exports fell down to 6.7 million tons in 2013, which are partly the results of land acquisition (VGFA, 2014).

GRiSP (2013, p. 128), mentions some constraints to the rice production in Vietnam:

- "Shrinkage in rice area for rice cultivation due to land conversion to commercial lands, which will result in a decrease in total rice production;
- Inadequate credit facilities, which limit farmers' input use due to insufficient capital;
- Inadequate water during summer-autumn seasons;
- Soil degradation by long-term high cropping intensity, which depletes soil fertility;
- High inflation rate (11%), which increases input costs;
- Small landholdings, which restrict farmers' ability to produce rice for export".

Rice farmers in the country are facing increasing difficulties to make a living from rice cultivation. The costs of fuel, fertilizers and pesticides are rising, whereas the rice prices are extremely low due to excessive supplies and low export demand. One year's costs for inputs could even eat up all harvest profits. Therefore, many rice farmers in Vietnam are not motivated to grow rice anymore (Oryza 2014). Resulting from this, many farmers abandon their fields and look for livelihoods in better-paid jobs in the cities, some convert their paddies to more profitable vegetable farms, or others transform them (often illegally) to shrimp farms. In 2013, around 6'882 hectares of fields have been left uncultivated (Diplomat 2013).

To achieve a decent standard of living for everyone today without compromising the needs of future generations (sustainability by UN, 2013), the realization of these targets need appropriate identification of ways to help the poor to ascend out of poverty and to get decent jobs without harming the environment. It should be ensured that everyone has access to water, food and nutrition. Shaping cities so that everyone enjoys a decent quality of life including, building better transport systems that allows everyone to get where they want to go while avoiding overcrowding and pollution. Ensuring that oceans are healthy; marine life is not threatened by pollution and climate change due to mankind's activities; and making sure that communities are resilient in the face of natural calamities are important recurring themes. The challenges, however, are the lack of adequate supporting policies and strategies to achieve sustainability (GEO5 2012). However, one would ask, how easy it will be to achieve sustainable development in the middle of poverty in many developing countries, and the global food insecurity where currently 795 million people around the world are suffering from chronic hunger and billions more suffering from food insecurity (FAO, 2015).

Chapter 3 Characterising food security: theory and conceptual model

Food security covers a wide range of areas, from the physical supply and availability of food, to the nutritional value as well as the capacities of people to use food, to the macro and micro social systems that determine entitlement to food (FAO 2003). The definition of FAO reflects the multidimensional nature of food security, and comprises four dimensions: *availability, accessibility, utilization* and *stability* of food (FAO et al., 2014; WFS, 1996). Food availability is the sufficient quantities of food being available on consistent basis to the consumer; food accessibility is having enough resources to obtain appropriate foods for a nutritious diet; food utilization refers to appropriate usage of food, based on knowledge of basic nutrition and care; and food stability is the access to adequate food at all times without risking losing access to food as a consequence of sudden shocks. The FAO defines food security:

''*When all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life''*(FAO et al., 2014).

The term food insecurity is not defined by the organization. However, when analysing their published documents, the FAO sees food insecurity in the form of food deprivation. In this study, the author is also including overconsumption as food insecurity since overconsumption is not leading to an '*active and healthy*' life as mentioned in the definition of the FAO for being food secure.

3.1 Sustainable livelihood framework

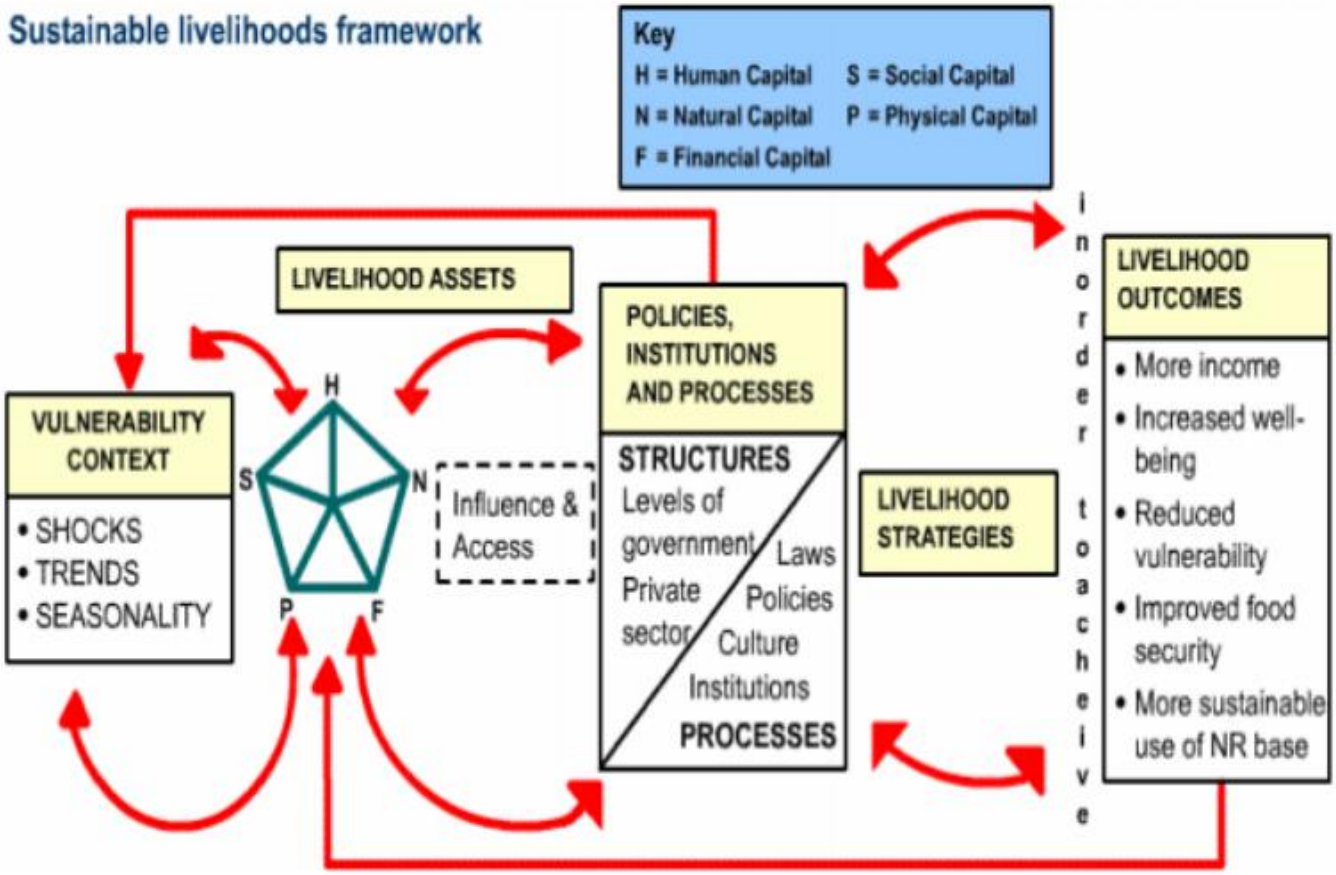
Chambers and Conway (1991) define livelihoods as people and their capabilities and means of living including food, income and household assets. Livelihood activities, therefore, have a direct influence on the household food security situation. Understanding the livelihood concept is therefore important as it is linked to households' food security (Buechler and Devi 2003). The concept of livelihoods also provides a detailed picture of how households cope with a variety of shocks that affect them in meeting their basic needs (Adekoya 2009).

The sustainable livelihood approach (Fig 1) has increasingly been used in development. The framework has been used to understand the capabilities of households to cope with shocks that occur (Allison and Ellis 2001). It provides a framework for analysing the risks that people are vulnerable to as well as the strategies these people adopt in order to achieve their livelihood outcomes (Ahmed et al, 2008). The approach gives a better understanding of how households' resources, access, diversity of livelihood strategies and the relevant factors at micro, meso and macro levels influence the choices made by the households. The nature of shocks and coping mechanisms of sustainable livelihoods are important to understand.

''*A livelihood is sustainable when it can cope with and recover from stresses and shocks, and maintain or enhance its capabilities and assets both now and in the future without undermining the natural resource base''* (Scoones 1998).

With this perspective, the framework helps to generate an understanding of the strategies that households use to cope with the shocks faced in the village. Livelihood assets will determine the coping strategies used. Access of livelihood assets can be modified by factors such as institutions, organizations, social relations, and trends and shocks. Moreover, the household strategies will lead to outcomes which in turn will explain the overall status of the household in relation to food security as it is in the case of this study.

Figure 1: The DFID sustainable livelihoods framework (source: DFID, 1999).



The main strength of the framework is that, it presents a holistic view of livelihood systems and reflects the multi-dimensional nature of poverty. The approach is people-centred, designed to be participatory and places great emphasis on sustainability. Another crucial aspect of the approach is that it focuses on myriad of factors, at different levels, that directly or indirectly ensure or hinder poor people's access to all kinds of resources and their livelihoods. In addition, the framework provides a more dynamic perspective on livelihoods and makes it possible to understand that even the poorest of the poor are active decision-makers, not passive victims in shaping their own livelihoods (Krantz, 2001). Furthermore, the approach firstly acknowledges what people have rather than focusing on what people do not have and what to do. Secondly, it serves as a useful guideline and analytical tool for policy-makers and development practitioners.

Despite the mentioned strengths of the framework, the approach is not flawless as there are concerns raised over what factors to include in the conceptual framework. A major concern has been the complex nature of the approach. This is because it has been considered by some as over ambitious and providing insufficient practical guidance on how poor household construct their livelihoods (Carney, 1999). Another problem with the approach is that it is designed to work across various sectors. But similar to what Carney (1999) noted, most government agencies and both local and international organisations are administered and funded separately on a sector basis and thus cross-sector development is difficult to achieve in reality.

3.2 Risks, shocks and coping strategies

Risks and shocks can affect households' food security. On the one hand, as defined by Renn (1992), risks are:

''The possibility that an undesirable state of reality may occur due to natural events or human activities thereby causing physical harm to humans or ecosystems''.

Shocks on the other hand, as defined by Chambers and Conway (1991), can be described as:

''Impacts that are sudden, unpredictable and traumatic and may include such things as wars, droughts, floods, fires, famine, epidemics and market failures".

Omobowale (2008), classifies risks into three categories: micro, meso and macro shocks. The micro shocks refer to shocks at the household level, meso shocks are at the community level and macro shocks occur at the national or international level (Omobowale 2008). For this study, the micro shocks will be examined.

Coping strategies may especially occur in the case of poor households. Subsequently, literature states that short term coping behaviour may be harming long term human development (Dercon & Krishnan 2003; Skoufias 2003). In Adekoya's paper (2009), he states:

''Households in times of food crisis may have two options of either to protect or modify consumption''.

Where protecting consumption means that households have to employ strategies to ensure food availability. Whereas modifying consumption is done by reducing and diversifying consumption or reducing the size of the household. Adekoya also concludes that a food insecure household will often simultaneously reduce and modify their consumption. Coping strategies may be considered positive or negative given the consequences. Positive coping strategies are related to off-farm employment, savings and family networks for sharing. The negative strategies are related to selling productive assets, severe reduction of food consumption, abnormal migration, and reducing expenditures on basic services like health and education.

Households will develop strategies to cope with shocks that consists of **ex-ante** risk management or **ex-post** recovery strategies (Corbett 1998). According to Rungruxsirivorn (2007), the ex-ante risk strategies deal with household income smoothing whereas ex-post strategies deal with consumption smoothing of the households. Income smoothing can be described as choosing safer but less profitable production choices, e.g.: crop and income diversification. Consumption smoothing, however, is achieved by borrowing and selling assets or by adjusting their eating habits and labor supply.

3.3 Operationalization

The definitions and dimensions of food security as discussed so far are general in terms of duration, level of analysis and evaluation. Therefore, it is worthwhile to operationalize food security in the context of this study.

Food security*:* Refers to the availability, accessibility, utilization and stability of food items. Given its multifaceted nature, it has been difficult to devise a single indicator to measure it despite the improvement in the theoretical understanding (CFS, 2011). It is even impossible

to measure food security exactly, rather we usually "estimate" it. In this study, food security is measured via dietary energy intake (food diary), food expenditure survey questions and, subjective statements.

Livelihood assets: consist of natural, physical, financial, social and human assets and are the building blocks for a sustainable livelihood. Households develop their capacity by building assets up to cope with challenges that they face in order to meet their needs in a sustainable way (DFID 1999; Ellis 1998). The framework visualises how different types of assets contribute to sustainable livelihoods. Assets are important in understanding how households respond to shocks. In this study, the assets will be measured by a survey questionnaire.

Livelihood strategies: refer to a combination of activities that households choose in order to achieve their desired livelihood outcomes (Ellis 2000). In this study the strategies are determined by the respondents in the form of a survey and FG's.

Livelihood outcomes: refers to what households seek to achieve through their livelihood strategies. The livelihood outcomes come from household capital endowments and the mediating processes which may help households become less or more able to cope with shocks (Ellis 2000). In this study the outcomes will be determined by looking at the livelihood assets and strategies.

3.4 Conceptual Model

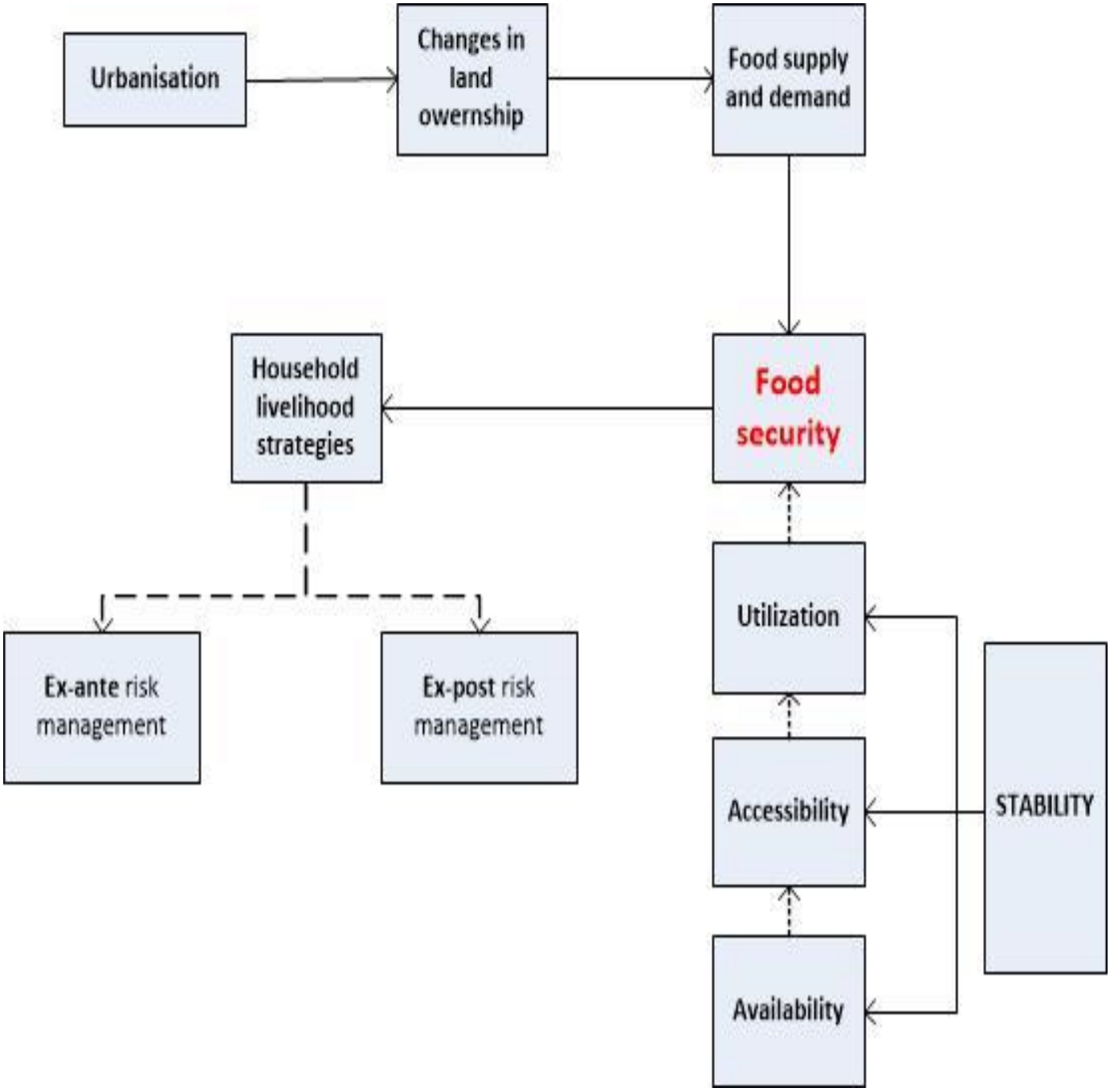
The definitions and dimensions of food security as discussed are general in terms of duration, level of analysis and evaluation. Therefore, it is worthwhile to operationalize food security in the context of this study. Given the objectives of this thesis, the author measures food security by incorporating selected indicators of availability, accessibility, utilization and stability dimensions to get a comprehensive representation. The indicators for each dimension are selected considering the objective of the study and data availability.

The definition conceptualizes food security in four dimensions: availability, access, utilization and stability. Food security requires that all four dimensions must be simultaneously fulfilled due to their hierarchical and complementary nature (FAO et al., 2014). Given the objective of this thesis, Food security is measured by incorporating selected indicators of availability, accessibility, utilization and stability dimensions to get a comprehensive representation.

Risks in food security are gradually gaining importance and recognition by academics and policy makers. It is argued that risks such as job losses, conflicts, diseases and unstable climatic conditions can affect all dimensions of food security. Figure 2 represents the food security framework developed by the author. This framework shows the four main domains of food security, and establishes the relationships that exist between them. It also shows how they are critically linked and influenced by urbanisation.

The outcome of the literature review is that urbanization will affect long term food demand and supply which will lead to price change of food items. The food price changes, in turn, affect the food security of countries by making available food less accessible which hinders the proper utilization of food and therefore affect the food stability pillar. Households that face food insecurity will develop strategies that comprise of ex-ante risk management and ex-post recovery strategies. The ex-ante risk management strategies deal with income smoothing and ex-post risk management strategies deal with consumption smoothing. Figure 2, presents a visual summary of these relationships.

Figure 2: Conceptual model food security and urbanization (source: author, 2016).



Chapter 4 What to do in the field: scope and methodology

In the following chapter the methodological considerations regarding the empirical data collection and the subsequent data analysis are described. The main research question to be answered is as following:

"To what extent does urban growth affect food security of (former) farming households in Xuân Hòa and how do they respond to land loss shocks?"

To answer the research question the following sub questions are addressed:

a) To what extend are households affected by urban expansion and what kind of compensation did the affected households receive?
b) What are the consequences for food availability, food access, food utilization and food stability and how do these consequences affect food mobility?
c) How can food security be improved?

4.1 Research location

The fieldwork for this thesis has been conducted in the uplands of central Vietnam. The research has taken place in one of the four village of the commune Thuy Van in the peri-urban village Xuân Hòa which is located in the border of Hué city. Xuân Hòa is showing noticeable in very tangible ways how Hué is growing e.g.: new infrastructure and housing (Vos, 2015). Table 3 shows the increase of the urban population in the province. At present, around 33% of the population in Vietnam resides in urban areas (table 1) and in Thừa Thiên-Huế Province, already 49% of its population resides in urban areas.

Table 3: Total population Hué (years) & urban population (percentages) (Adjusted from GSO, 2016).

	Year	Total	% urban
Hué	1995	999.300	25.9
	2000	1.052.100	29.9
	2005	1.072.900	33.2
	2010	1.090.900	43.2
	2013	1.122.700	48.4
	2014	1.131.800	48.6

The Vietnamese government is also actively building better infrastructure to accommodate the inflow of new urban households in the future. The area experiences the effects of urbanization as more land is being converted from agricultural use to urban space. The commune contains of four villages of which Xuân Hòa is closest to the city and the first village where the PPC started to acquire land (map 1). For these reasons Xuân Hòa makes for an interesting and a good representative case study. According to Vos (2015), the local government has bought nearly 100 hectares of land in Thuy Van to re-issue and re-develop for urban purposes. The acquired hectares in the commune makes it therefor the second largest area where land has been acquired compared to other land sales in Hué's peri-urban areas (Nguyen, 2015c).

Thuy Van commune used to be an administrative division of Huong Thuy district, however, the status of the commune has changed to being Hué's urban ward (Vos, 2015). Thuy Van covers an area of 4.88 km² and is situated just northeast of Hué. Latest statistics show that the commune counts 1.812 household of which 530 households are located in Xuân Hòa.

Map 1: Geographical overview Thuy Van commune and the villages (adjusted from Hayward, 2014).

The waterways and the main road surrounding Thuy Van act as a natural border (map 1). The central area is the location which is maintained as land for rice cultivation. The central area is now being acquired by the local government to convert the land for industrialisation such as new infrastructure and residential houses. Thus, agricultural land in Thuy Van is being used to supply for the demand of Hué. Table 4 shows the increase of residential land and a decline of farmland.

Table 4. Decrease of agricultural land in hectares in Thuy Van (Vos, 2015).

Year	**Agrarian Land**	**Residential land**	**Total**
2005	314	174	488 ha
2008	297	191	488 ha
2011	290	198	488 ha

To cross the waterway and facilitate future traffic a new bridge has been built from Hué to Thuy Van. Due to the close proximity of Xuân Hòa to Hué, the village seems suitable to conduct further research and provide for data needed. In Xuân Hòa a rise in population levels (36%) can be seen which is the result of the new residential houses build (table 3). Although no data about the village land use is available, the statistic regarding the main source of income of local household lays in the agricultural sector, however the agrarian involvement is declining. The number of households which worked in agriculture as its main source of income has declined by 25% between 2008-2014. The household involved in non-agricultural activities as a main source of income show in the same period a rise of 63%.

4.2 Sampling and Data

In order to collect holistic data, the study combines quantitative and qualitative data. This section will address the methods used in the research.

Quantitative research: The research started with a three day observation on the bridge that connects the village with the city. The second step was to gather the socioeconomic indicators necessary to understand food security in the village, by designing a survey in order to collect the household data on the matter. A random two-stage selection procedure was used to pick

respondents for the study. The first stage was to start at the headman's house and then ask the households that live left opposite his house and then right opposite that house etc. The second stage of randomization involved two waves of data collection. The first wave was carried out in February and March 2016 in which the control group in the village were randomly selected. The second wave of data collection was hold in April and May 2016 and here the land loss households were selected for further analysis. In total 94 household surveys have been conducted. Furthermore, all survey respondents (94 households) were asked to keep a food diary for a week. After the trial surveys were conducted in the first week, the researcher found that the survey was only being answered by the household head, and that was often the husband. In order to gain a perspective on food security by the women, the food diary could only be answered by the wife since they usually were in charge of the household budget and the daily meals. During the surveys, the researcher observed the houses of the respondents in order to get a better idea of their welfare level.

Qualitative research: Data that was not able to be attained through surveys was collected via 3 focus groups in order to get an interactive, qualitative account of local perceptions on food security and the impact of development interventions in their respective communities. From the two waves of data collection a lottery system of selection was used to select these households for focus groups; 5 household representatives in the control group, 8 land loss households and 11 children of both wave groups were selected for the FG. The FG were conducted on a terrace which has been newly build next to the river. The location has been decided taking into account that it should be reachable to all respondents and that the respondents need to be comfortable speaking freely. The researcher has rented out the entire terrace so distractions would be minimal. Furthermore, 7 private, semi-structured interviews were held with NGO's and government nationals to get a better understanding of the urbanisation processes and its effects on food security.

4.3 Methods and Empirical framework

Three statistical methods will be used in this study. The first method is the multivariate analysis of variance (MANOVA), which will be used to test the hypothesis regarding the effect and differences of urban expansion on food security in the two research groups (the affected group and the control group). The second method used is the multinomial logit regression model of the determinants of household coping strategies and regression techniques will determine the effect of the shocks on household wellbeing and the differences in livelihood assets. The final method used, is the factor analysis which will reduce the number of land loss shocks variables that affect food security.

MANOVA

MANOVA is a linear model that is used to detect group differences on multiple outcomes. MANOVA looks at interactions between independent variables and see which group differs from each other. The model is designed to look at several dependant variables (outcomes) simultaneously. After the MANOVA a discriminant function analysis has been run to predict an independent variable from a set of dependent variables (to which group a person belongs to) (Field, 2013).

Multinomial logit regression

Multinomial logit regression is a model to identify the determinants of household coping strategies. In this study, the focus is on the differences in the household food security pillars when faced with shocks. Based on maximum likelihood, the researcher estimates that a coping strategy is dependent on a range of household characteristics such as gender, household size,

and educational level of household head among other factors. Specifically, the researcher categorize the explanatory variables as household assets..

Regression techniques are used to determine the effects of different shocks on food expenditure and consumption. The regression model will explain the shocks' effect on household expenditures by holding other factor constant which in turn will provide insight on the extent of household food consumption (the food security pillars). Given that food consumption in this study is a count variable, it is estimated as a linear poisson regression model. The researcher hypothesizes that land loss shocks will have a negative impact on household food consumption. Food consumption is measured via the food diary and survey.

Factor analysis

Factor analysis is a multivariate statistical technique used to reduce the number of variables in a data set to a smaller number of variables with minimum variance. The factor analysis has been used to reduce the number of land loss shocks that the respondents have mentioned. The factor analysis will identify the most common shocks among the households. The highest loadings on variables will be used in the factor analysis which will define the type of shocks represented by the created factors (Field, 2013). In determining the number of meaningful factors to retain, the eigenvalue-one (Kaiser) criterion will be used. The criterion is that each observed variable contributes to one unit of variance in the data and the component showing an eigenvalue less than one which accounts for less variance than would have been accounted for by one variable and a eigenvalue greater than one is accounting for a greater amount of variance than had been contributed by one variable (Kaiser 1960). The factor analysis will be followed with a cluster analysis in which similar sets or groups will be created from the factors retrained (Ketchen and Shook 1996). A two-step cluster analysis will be conducted to identify the common shocks and coping strategies of the households. This involves hierarchical clustering of the retained factors from factor analysis which will be followed by k-means clustering. The clusters representing shocks will be named based on the shock. Given that households will employ multiple ways to deal with shocks, the coping strategies therefore will be named based on the coping mechanisms mentioned by the respondents.

4.4 Food security measurements

This section will discuss the methods used to measure food security in the research location. Two methods have been used: a consumption and expenditure survey and, subjective measurements via statements and FG.

Consumption and expenditure survey based approaches:

Household surveys are also used to get information on food expenditure and food consumption to calculate food security (Demeke et al., 2010). Calorie intakes calculated from consumed commodities tell whether a household is food secure or not. A household is food secure if the calorie consumption is greater than the recommended daily calorie consumption (Korale-Gedara et al., 2012). Different scales have been developed to measure food security through household surveys. If a household survey is representative enough, it has the advantage to get detailed evidence on consumption patterns, which is often better than the macro estimation of undernourishment (De Haen et al., 2011). In addition, in household surveys it is convenient to divide households based on socioeconomic and demographic conditions which helps to get deeper insight into the food security problem. But, it is also difficult to recall all food items consumed and accurately converting them into a caloric equivalence. (De Haen et al., 2001). The households were asked to keep a food diary for a week, in order to calculate caloric intake.

Subjective measures:
Subjective measures are also used to capture the perception of people themselves towards their food security status (Greer & Thorbecke, 1986). Based on psychometric scales, this measure provides information on the actual experiences of people associated with food insecurity that cannot be captured by other measurements. Another advantage of this measure is that it can provide indicators at different levels of food insecurity (mild, moderate, severe). But, it may lead to biased results due to its subjective nature (Headey, 2013). In conclusion, there is no perfect single indicator that can embrace all aspects of food security and devising a better food security measure is still undergoing (FAO et al., 2014). Due to the absence of a "gold standard'' measure of food security, it is generally conventional to include a suite of indicators to assess food security in a more comprehensive manner (Wineman, 2014). The subjective measures will be measured with short statements on food security.

4.5 Limitations

This section will discuss the research constraints in more depth. In order to limit bias and subjectivity, the constraints of this study will be discussed as they are important to mention, since they may have influenced the collected data and therefore the conclusions of this study.

Survey Limitations:
One of the survey limitations that needs to be addressed, is the presence of the headman during the fieldwork. The headman had to be present at every survey collected which may lead to bias answers of the respondents since the respondents were not uncomfortable in speaking openly. The respondents might also have had the feeling that they had to participate in the study due to the presence of the headman which may have led to resistance towards the study. Furthermore, the presence of a translator and the language barrier are also a limitation of the survey. Information from respondents could have been missed or lost during translation. Research questions might have been interpreted or translated slightly different than the respondents' message. Furthermore, due to unavailability and inexperience of the first translator, a second translator is used for the main data collection. The first translator had a distinct manner of phrasing questions and interpreting answers, thus the potential influence on the data differed compared to other interviews that the second translator conducted. Also, after working three months with the second translator, the translator started to take control of the research as if it was his own research. He started arguing with the researcher that certain questions should not be asked because he already knew what the respondent would answer. The researcher explained to him that even if he thinks to know the answer that he still needs to ask the question because the villagers might have a different idea than the main stream one.

FG Limitations:
The limitations are similar to those of the surveys, only translating was more complex due to multiple respondents discussing in between each other which led to interrupting the discussion in order for the translator to briefly translate what has been said. The researcher made use of a notulist whose job was to type everything what has been said (the respondents did not wanted to be recorded on tape) in order to catch as much of the discussion as possible.

Interview Limitations:
The researcher interviewed six stake holders that work with resettled communities in Hué. However, the stake holder interviewed, only worked with communities that got resettled due to hydropower development and not due to urbanisation since no NGO's exist in this area for urbanisation. The process of resettlement and the compensation between the two groups can

differ since hydropower development is mainly done by the government and urban expansion is done in partnership with the government and the private sector.

Food diary limitations:
The study used a 7 day recall method in assessing the sources of food and drinks intake of the households. Hence the information obtained could be affected by the method used.

Analysis Limitations:
During the fieldwork, a preliminary analysis was performed of the data collected. However, the actual SPSS analysis occurred after the fieldwork was completed in the Netherlands. More thorough analysis during the fieldwork would have enhanced the quality of the data collection and might have resulted in a more specific focus of collecting data.

Time and resource limitations:
Due to time constrains there were no follow-up surveys. Follow-up surveys with the respondents could have been valuable to clarify issues. This could have enabled an in-depth analysis of the research topic. The researcher also had to pay €16,- a day to conduct the research (fees for the headman and the translator), which also limited the data collection since it was not financially possible to go to the field every day for four constructive months. The research also paid for lunch during the FG and gave every respondent a small gift because they participated in the survey which also limited the resource capacity of the researcher.

Positionality limitations:
The inexperience of the researcher is important to mention, as this might have led to research errors (bias). Overall, respondents seemed open and comfortable during the surveys. However, during one of the FG a member of the communist party was present and the researcher sensed that the participants were not comfortable in answering the questions. The researcher, clarified every time that she is not associated with the local government and that the research purpose was mainly to be informative and that the information would be handled with full confidentiality.

Chapter 5 Opening the black box: what the data say

As previously mentioned, this study is different from any other study on food security. The researcher uses (a) locally representative data; (b) a comparative local perspective; and (c) a broader definition of food insecurity. The data in this study does not allow dealing with another dimension of comparability, which is the definition of what constitutes a peri-urban area. This study focuses on peri-urban households' involvement in agriculture and their food security level. Therefore, the results of this study may not be fully comparable with other studies with the same topic even more so since the study includes overconsumption as food insecurity which is rarely done in food security studies. Furthermore, a narrow definition of agriculture is used. Agriculture in this study is the agrarian income that accounts for the sales of rice, crops and livestock. Agrarian participation in this study is defined as the production of any agrarian product, whether for sales purposes or for own-consumption. Thus, activities related to the processing of agricultural goods are not included in this definition.

The research compares two (former) farming groups in Xuân Hòa. The first group is the control group and consists of farmers that still own all their land. The second group of farmers have lost (parts of) their land for urban expansion and will be compared in regards to income generation, coping strategy and food security.

This chapter will first explain the general urbanisation processes in Xuân Hòa, followed by the livelihood assets to give a clear understanding of the current situation in the village (sub question 1). Thereafter, a food security analysis with attention to the compensation package will be discussed (Sub question 1 and 2). The chapter will end with the land loss shocks and coping strategies used (sub question 2) and will end with a discussion of the results.

5.1 Urbanisation in Xuân Hòa

Xuân Hòa is undergoing land acquisition processes to develop the project '*Building Hué into a centrally run city*'. Covering nearly 1000 ha of mostly agricultural land, this project is the largest urban development project in Hué Province to date, and has resulted in large-scale acquisition of agricultural land from farmers in different peri-urban areas. The transportation system Thuy Van is better developed than in other urban fringe areas because it is near the national highway, the provincial road and a newly build bridge connects the village with the city. The main incomes still rely much on agricultural production, mainly wet-rice cultivation and some small agriculture-related businesses. Land acquisition and compensation have been mostly exercised in this area, which has so far become a hot site of property business as well as consequent increases in disputes and complaints related to land compensation.

The farmers in Xuân Hòa have received compensation packages in different years. The compensation packages under the respondents are mainly based on decision no. 3721/2005/QD-UBND and no. 11/2010/QD-UBND for land acquisition to implement the project, for which it is expected to become a complex of residential areas for farmers that have been resettled due to hydro power development and to accommodate the population growth in the city. Table 5 provides an overview of the compensation packages in the peri-urban area. The primary investors in this project is Minh Dien Vital Real Estate Joint Stock Company, a local private business based in Hué and VNECO. VNECO was formerly known as Electricity Construction Company, a state company. From 2002 to 2005, it was reorganized into a parent-subsidiary company. In 2005, it became the VNECO, under the management of the Vietnamese Ministry of Industry and Trade.

Table 5 :Comparison of the compensation pricing

	Ward according to decisions 3721 and 11
Compensation location	Xuân Hòa
Agrarian land pricing	- 780.000 VND p/m² land compared to 3.800.000 VND p/m² land in Hué - Gardening land will receive 60% compensation.
Support for job conversion	No
Allowances for livelihood	- 277.179.487 VND in total on average per household - 30-69% land acquired will get 6 months of food expenses extra covered - Over 70% land acquired will get 1 year of food expenses extra covered.
Land acquired	1411 m² land acquired on average per household

The researcher also saw a lot of abandoned buildings in the area, where construction work just stopped which raises the question whether the rapid urbanisation process in this area is actually needed. When the PPC was asked about the urbanisation process in Hué, the response was:

''We are developing the province into a centre of unique culture and tourism of the country. We almost completed the all urban plans as specified in the project "Building Hue into a centrally run city". Hue is upgrading urban transport systems, sidewalks, drainage systems, lighting systems and green space. Da Vien Bridge has been completed, bridges spanning the An Cuu and Dong Ba Rivers are being upgraded and new urban zones are taking shape. Waste treatment systems are also built in Hue, so that all is good for people''.

Mr. Khang , the director of the NGO Hearts for Hué, who works a lot with communities that have been resettled due to hydropower dam placements adds:

''We would like to expand. It is a good plan. Because Hue is very crowded so we need more place but the infrastructure needs to improve. Bigger is better. We need to make sure the conditions are good. Short term I think it is not good but on the long term it is good''.

Photo 1: New bridge in the village

Photo 2: Old bridge in the village

5.1.1 Compensation

The affected group consists of farmers who received compensation and a group who did not receive any compensation. The latter did not receive their compensation since the government is not sure when and if they will use the land and therefore the process keeps being delayed. The hardship here for these landless farmers is that they are prohibited to access their land until the government concretely decides what to do with the obtained land. According to Mr. Khang, director of NGO Hearts for Hué:

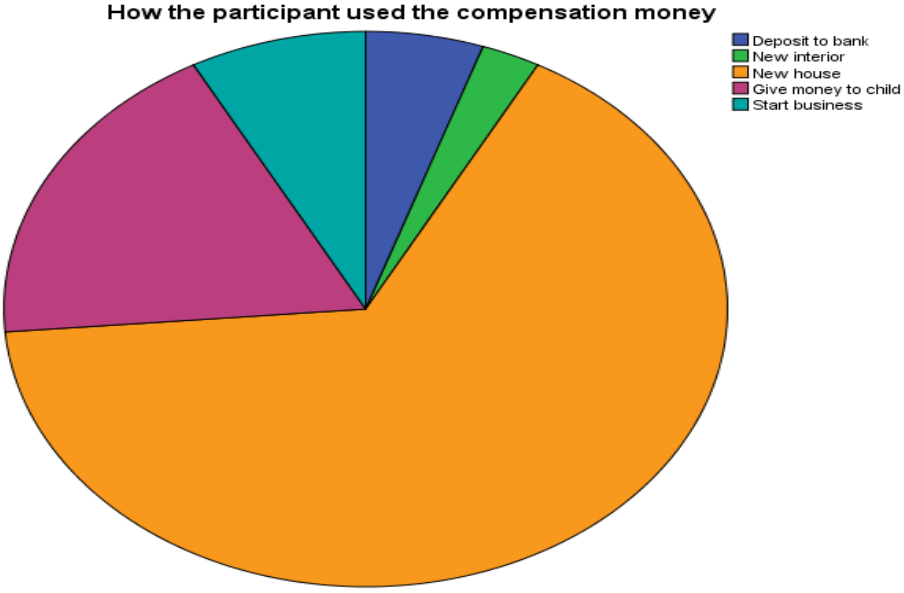
''The government provide the best for them but they don't have enough money or sometimes they can't foresee things. But they want to improve and try their best. They give professional training. Sometimes people hesitate because different place also mean different life''.

The land loss respondents thought that the land acquisition brought better infrastructure and development in the society in the village and are therefore not against urbanisation. However, the respondents raised concerns about the received compensation money which they claimed is under the land market value concentrated mainly on the argument that compensation was not sufficient to buy a similar parcel of land in another place. The compensation money ranged from 15.000.000 VND to 1.365.000.000 VND. No job conversions and not having the opportunity to go against the governments' decisions and raise their concerns were also major issues for the villagers. Another point of frustration was that the government delays the land acquisition process with years which the participants claim also delays their business since they cannot operate until the government decides to take the land or not. The respondents who know government officials said that that helped them in the process because they got more information about the acquisition but they also got encourage by these officials to just comply with what is being offered. According to Mr. Khang:

''Land acquisition and compensation will negatively affect the rural communities that will be resettled because the quality of land is bad and it's not suitable for growing/planting. The area of land is not enough for people to plant to ensure the daily meal. Compensation normally is money or land. However, the value of that compensation is not enough for living. If compensation is money it is not sustainable because people do not know how to earn it after spending. So not enough food to eat, do not have enough money to live so poorer than old villages where they have to move''.

The compensation in Xuân Hòa is on average 780.000 VND per m² compared to 3.8 million VND per m² in Hué and gardening land will only get 60% of the compensation compared to housing land. A reason for the discrepancy could be that land in the city is scarce and already developed, however, that does not justify that the villagers only get 20% of the market value. Respondents who lost under 30% of their land only got compensation in money. Respondents who lost between 30-69% also got 6 months of food expenses on top of the compensation and respondents who lost more than 70% got 1 year food expenses covered on top. Food security is an issue on the long-term because the respondents do not save the compensation money. The compensation money is mainly used to repair and upgrade their house (58.1%); followed by giving all the money to their (oldest) son(s) (16.3%) to build a house so that the parents when facing hardship can live with their son(s) and only 7% of the respondents used the money to start a new business (diagram 1).

Diagram 1: respondents usage of compensation



Thus far, in particular retired people and people with no family ties faced the most difficulties in sustaining their livelihoods after land loss. Women, who besides working on their own farm but also worked in a non-agricultural sector, usually earned twice as much as their husbands who only worked on the farm. Women were also the ones who are in charge of the household budget. To the question whether they know people that will migrate or already has migrated from the village due to the land acquisition process, people ignored the question and said that they did not want to answer questions about migration. In order to tackle this issue a bit, the researcher decided to hold a FG with children in order to get to know their perspective and their vision for their future. The respondents also claimed that the compensation money is below the market value. The current market value according to the respondents is 11 million dong per m² and they only receive 3 million dong per m². Per 500 meter land acquisition the people received 39 million dong in average, however, according the participants they rather want to receive a new house than money since they only get paid for 100 m² and not 500 m². 100 m² equals around 12 million VND and then they have to add money on top of it to buy a new house/property, although they sold 500 m² to the government for urban purposes. The BCSR follows administrative regulations and not market mechanisms. The compensation in the village is not in line with the guidelines set by the ADB which implies a full and complete equivalent package for the losses sustained by the affected people. Additionally, Mutamba (2009) argues that the value and costs of compensation should be equal to market value and costs plus transaction and that the various livelihood losses should be compensated, including: - income and property, and transport should be offered to transfer and relocate the affected people and their properties and to assist people to rehabilitate and restore their lives and that is not the case in the village.

5.2 The households

This section will discuss the first sub-question on the pattern of livelihoods of the farmers and their characteristics (table 6). The impact of agrarian land conversion on the household assets can create opportunities or risks for the affected households. By analysing these changes in household asset, more insight is acquired into the ways farmers adapt differently before and after agrarian land conversion. It will also address which household assets are inevitable to

have. The research results are displayed under the five livelihood assets identified in the sustainable livelihood framework e.g.: natural, physical, human, financial and social capital.

5.2.1 The livelihood assets

The study population comprises of 94 households which are mainly male headed households (25.5% female) with an average of 5 people per household containing 3 family generations. Across the sample, the average age of the household head is 60 years. The households on average own 1069m² of land. The level of education among the questioned households is very low. The majority had some primary schooling (51.1%) while about 26.6% had followed some secondary schooling. The study divides two groups of farmers and consist of 43 farming households that has lost land (45.7%) and 51 farming households that did not lost any land (52.3%). The summary of the asset distribution is presented in table 6.

Table 6: Descriptive summary of asset distribution, control group and the land loss group.

	MEAN		STANDARD DEVIATION	
ASSETS	*Control*	*Land loss*	*Control*	*Land loss*
Natural capital:				
Land size (m²)	1272.33	826.98	1252.24	960.98
Physical capital:				
Livestock (VND)	572.549	648.837	1.447.940	1.438.149
Rice for HH (KG)	26	17.26	22.20	21.42
Human capital:				
Household size	4.63	6.27	2.25	2.19
Children	1.27	3.16	1.37	2.43
Adults	3.35	3.11	1.48	1.41
Age	58.20	62.51	13.07	13.73
Sex (male)	1.31	1.16	0.47	0.37
Literacy (primary)	3.29	3.42	1.10	1.05
Financial capital:				
Rice Income (VND)	1.994.441	1.022.174	800.744	1.320.315
Other agri income (VND)	1.572.549	1.447.940	648.837	1.438.149
Non-agri income (VND)	3.460.784	2.228.998	1.448.837	2.888.101
Other HH member income (VND)	4.552.941	3.409.302	5.811.105	4.078.913
Total Income (VND)	11.580.715	8.108.414	6.939.611	5.217.478
Compensation (VND)	0.00	277.179.487	0.00	391.160.645
Savings (VND)	392.157	0.00	2.800.561	0.00
Social capital:				
Friends with government (no)	1.78	1.67	0.41	0.47
Community meetings	3.00	2.91	0.00	0.43

5.2.1.1 Natural assets

Land is not only a natural resource, but also a social, economic and cultural resource. It is a means of production as well as a status symbol, determining a great extent a person's standard of living in rural communities (Gartuala et al., 2012). The current land holdings in Xuân Hòa for the land loss group is too small to generate enough income to sustain a sustainable live for all the household members. The average size of land among the households with agricultural land is 1272 m² compared to 827 m² for the farmers who have lost land. The land loss group lost on average 1411 m² of their land to urbanisation. Land loss farmers working on the remaining land, usually have other income sources as well such as making inscent; keeping

livestock or, opening a small shop selling speciality foods or coffee. The farmers in the control group, are on average 58 years old compared to 63 years in the land loss group.

In general, the land loss farmers in Xuân Hòa are struggling to move away from reliance upon land and land-related activities. Households that greatly rely upon land to construct their livelihoods are heavily affected by the land conversion process. During the FG with the children, it was clear that the children from the land loss group wanted to stay in the agricultural sector while the children from the control group wanted to leave the agricultural sector. During the interviews with the land loss group, it became evident that these farmers struggle because over 44% is retired and continue farming because their age prohibits them in working in another sector. In the FGs it was also made clear that farmers can get support from the government if they are willing to sell their rice production for a fixed price to the government. However, most farmers were reluctant to do so because the price set was lower than they could sell it for.

Landlessness is present across all different household economic levels and is on the rise due to the encouragement of further industrialization and ongoing urban developments to expand the city of Hué. However, becoming landless after agrarian land conversion does not automatically result in lower living standards due to the importance of non-agrarian activities in the household incomes as farming now forms one out of many activities and is losing it importance. By shifting away from full dependency upon agriculture towards diversifying income activities across different sectors, households have more abilities to build up their household assets.

5.2.1.2 Physical assets

Access to other household assets becomes difficult without physical capital. Poor infrastructure and the unavailability of other physical goods prevents easy access to schools and hospitals limiting human capital. Due to the closer links between the urban and the peri-urban areas in Hué, the role of physical capital will increase. Another contributing factor is the land conversion process which increases the need to work outside Xuân Hòa and Thuy Van. All villages in the commune are easily accessible by motorbike or bicycle. However, car accessibility remains limited between the four villages, the roads are too small and are of bad quality. However, in the near future this might change due to the upgrade of the current infrastructural system between Thuy Van and Hué.

The main transportation vehicle in the commune are motorbikes. The poorer households usually do not own a motorbike and make more use of bicycles than the other households. Bicycles are even seen in the village as a means of transportation of the poor and not for the middle class or rich households.. The possession of a motorbike can be used privately but it can also be used to generate income by transporting products to the city to sell. Thus, drivers of particular motorbikes can take the opportunity to not only use it for personal use but also for business usage.

Both farming group also hold livestock in order to raise their incomes. Livestock holdings are only found among households where the majority of household members work in the agricultural sector. However, in order to raise livestock, the farmer already needed to have the financial capital to buy the cattle and are therefore not the most vulnerable in the village. The control group has an average of 572.549,- VND worth of livestock, while for the land loss group the average livestock worth is 648.837,- VND. Furthermore, farmers living in Xuân Hòa also use their homes to set up small informal shops where they sell speciality food or coffee, this is mainly found at the affected households since the food production of the affected peri-

urban households decreases: the land loss group produces 17kg of rice per month compared to 26kg in the control group.

The type of dwelling people own, and live in also serves as a tool to look at the differences in access in physical capital between the villagers. This method has been chosen because during an interview with an PPC employee, it was made clear that in Xuân Hòa the level of poverty is decided upon how the houses of the villagers look like.

'If villagers say they are poor at the community meetings, we will visit them at their houses and look how they live. We look at the quality of the house and what they own. After the visit we decide if they are poor or not'.

One-story houses made from bricks are the main type of dwellings found in the village. Most households have used their compensation package to upgrade their houses. During the surveys, the researcher observed the houses of the farmers to get an idea of the welfare level of the respondents (table 7).

Table 7: Observations of the houses while conducting the surveys in Xuân Hòa.

Observation of houses	**Livelihood level**
4 walls unpainted. The house is small and consists of 1 area where everything is done (eat, sleep, work). The house does not have a toilet. These farmers have no transportation means.	Very low livelihood level, also the most food insecure farmers with no land access any more. Between 500-800 calories are being consumed in this group.
The house has some divining walls for different activities in the house and they have a toilet. These farmers usually only own a bicycle.	Low livelihood level. Food insecure farmers with a small plot of land left for their own consumption. Between 801-1100 calories are being consumed in this group.
The house has some divining walls for different activities within the house. The walls have been painted. These farmers own 1 motorbike and some bicycles.	Average livelihood level. These farmers mainly rely on their agricultural production. A part of them lost some plots of land to the government but that has not affected their food security severe. Between 1101-1400 calories are being consumed in this group.
The house has divining walls for different activities within the house. The walls have been painted and the floor has tiles. These farmers have multiple motorbikes to use.	High livelihood level. Food secure farmers who make a living out of their land and most of these people have not lost their land yet to the government. Between 1401-2000 calories are being consumed in this group.
The house is painted and has tiles. The house also has a big gate around the house. These farmers have multiple motorbikes and a car.	Very high livelihood level, also the most food secure farmers with land access and hired labour on their land. These farmers lost a small part of their land to the government but they negotiated about the compensation price. Between 2001-3500 calories are being consumed.

Photo 3: rich house

Photo 4: average house

Photo 5: poor house

5.2.1.3 Human assets

Human assets are important in order to make optimal use of the other assets. The control group consist of 68.6% male households compared to 83.7% in the land loss group. Education is seen as the way out of poverty, especially when households can no longer depend on farming activities and have to move into a non-agrain sector to sustain their livelihoods. Both groups of the respondents are not highly educated. with the majority of the control group had some primary schooling (52.9%) and 48.8% of the land loss group having attended primary school. The farmers affected by land conversion make use of their own human capital as the data collected in Xuân Hòa showed that the farmers did not received any form of job conversion training. Most of the poor households complained about not having the opportunity to follow training programs which was verified by the richer households. Not having training results for these households to stick to the work they know which is working on land but now employed by other farmers, even though this will lead in the future to a more insecure existence. Women regularly find work at the local markets, often outside the commune. All the sources of human capital are directly influenced by the health status of the household members. People with health problems cannot work to their full potential or cannot work at all. These households have to spend a large amount of their income on medical bills without receiving significant help from the government. However, being ill can also be an effect of bad nutrition. This creates issues for the whole household, which than in turn can drastically reduce the well-being of all household members since more burden will be laid upon them.

Although education is supposed to be free in Vietnam, financial constraints do limit educational opportunities. According to one interviewee:

'It is said that education is free but we always have to pay. Pay the teacher so my child has a desk, pay the teacher so my child can have a chair. It's not free in reality.'

Currently, educational levels are low among the respondents, whereas educational levels are more important for the younger generations. Across the control group, the average per household consisted of 3 adults and 1 child compared to 3 adults and 3 children in the land loss group. In Xuân Hòa it is common to live in a nuclear family and their household income then becomes a shared income. Multiple members of this family will contribute by joining their earnings to the household income. The contribution to the household income is regarded to be an effective way to secure a sustainable livelihood for the household. Moreover, bigger households also have to feed more people and therefor these households are spreading their risks by working in different sectors. In the households where agrarian dependency is high, the labor force stands under more pressure to find employment to sustain the livelihoods of their household. In the households where people work as farmers or as farm labourers, vulnerability is also high. If the harvest is destroyed due to extreme weather events (floods of 1999), or the overuse of chemicals (pesticides), income from other sources is vital to remain the household welfare. The quantity of human capital can have a positive impact in adapting to new living circumstances if the household consist of mainly adults because they can diversify their income in different sectors. Households with many children (+3) are struggling due to the expenses that are just being met with their income. The amount of human capital in a household depends on several factors, including amount of generations, household size, skill levels, labor force and health status. In Xuân Hòa, households with 3 generations have a positive effect on livelihoods because there are more people in the workforce (husband and wife) and the children are being taken care of (grandparents). However, this does lead to double burden by the grandparents since they also help out on the farm.

Photo 6: Drawings of the children during the FG.

5.2.1.4 Financial assets

Financial capital represents money and the monetary assets people have to sustain, or to improve their livelihoods and include: income, financial compensation, and possessions used as financial assets. Due to its transferability to other assets, it is often seen as the most useful asset. During the field work, the financial capital(s) were displayed by looking at the monthly household income and looking at how the income has been generated and from what sectors it has been generated. Remittances was a financial asset were the respondents were not comfortable in mentioning which may result in a distorted view of the income generated per month.

The main change is noted in the income sources. In terms of savings, the land loss group did not had any savings compared to 392.157,- VND savings per month at the control group. However, the land loss group got on average 227.179.487,- VND compensation for their land, which was used instantly to upgrade their house. The land loss groups' total income is for 42% deprived from other household members compared to 31% in the control group. Furthermore, the control group generates 30% of their total income from the non-agrarian sector compared to 27% in the land loss group. These groups that diversified their income are the groups with most security in their livelihoods. However, not every household is capable to gain from the opportunities presented in the non-agrarian sector. This is mainly the case for the older farmers (+70) who have said to be struggling. The land loss group has a higher rate in retirement (44.2%) compared to the control group (27.5%). The poorer households in the land loss group, are households where the members; I) are above 60 years of age; II) have young children; or III) where the majority of the adults in the household work in the agricultural sector as farm labourers. The average households in the control group, are households where the members; I) are under 60 years old; II) have children that work and contribute to the total income; or III) most of the adults, usually the children, work in a non-agrarian sector. For those cases where agrarian income is the main source of income, agricultural land conversion will force these farmers to look for new job opportunities.

5.2.1.5 Social assets

Networks and connections that people have with each other, helps to increase their social capital. To measure the access to household's social capital, the respondents were asked to indicate their participation in community meetings, village meetings and to whom people

would turn to when they need help because they face food insecurity and how they perceive their social relations with other households in Xuân Hòa. All the respondents questioned during this study were not members of any sort of farming organizations.

Monthly meetings are held with the commune chairman, the local headman and the villagers themselves. Villagers are then given the opportunity to directly ask questions to the chairman of the commune. The respondents said they attended the meetings from the commune because the issues the farmers face might be resolved during these meetings. The farmers also wanted to raise their voice in the community by attending these meetings. Women often did not attend the meeting because they had their domestic task such as cleaning and taking care of the children on top of their work on the local market or farm. The poor and elderly (often retired) farmers also did not attend all the meetings because of transportation limitations. However, the local headman also acts as a local social organization since villagers can go to him when they need assistance or want to raise their concerns. The headman holds weekly meetings with the commune chairman to discuss ongoing events and problems in the village. Mostly, the poor respondents indicated that they would turn to the headman when they need help with food or if they want to address an issue because he is more accessible. However, the farmers when facing food insecurity would first ask their relatives or neighbours for help. Most of the respondents agreed that the food insecure farmers should first ask for their neighbours' help before going to the government.

Another point to access information is via electronics . Most of the households questioned owned a mobile phone (not a smartphone) and had a television which is one way of obtaining information although censorship remains widespread in Vietnam. Most of the households did not had a computer or laptop. The households who did owned a laptop had young children and were rich. Information regarding land conversion, compensation rates and future land conversions have to go through the headman which will pass it forward to the PPC which in turn will give a reply that the headman will communicate to the villagers. This process can take up several weeks which makes getting information about agricultural land conversion unnecessarily complicated and slow.

In Xuân Hòa, land conversion has not notably changed the social relationships within the commune and village. The respondents were given the opportunity to talk about their point of view of the land conversion process and about food security in Xuân Hòa which resulted in reoccurring beliefs and values. Women generally followed their husbands' believes when they got married. Meaning, they will move out of their parents' house to start living with their husband and his parents. Although more people from outside the commune are buying and building houses in the commune, most the respondents have been living in Xuân Hòa for several generations. People are happy with their lives in Xuân Hòa. While the role of farming activities in economic terms has diminished over the past decade, it still remains important for the farmers. During the FG, the attendants explained that life as farmers can be difficult but in order to be a successful farmer '*you should work hard and if possible let other people work on your land so that you can focus on other activities such as livestock*'. If a farmer is struggling, the respondents from the FG said:

'They are lazy and don't want to work. They want to enjoy live. The famers need to be though on their children so that they will help out and not only stay at home'.

These beliefs and values are passed on to children and young adults. Nevertheless, it can be argued that the cultural values are changing and are different among the different age groups.

5.2.2 To sum up the sustainable livelihood assets

In this section, the five assets were introduced and information was given on the changes in asset before and after agricultural land conversion. Shocks will influence the access to the different household capitals in either positive or negative ways as has been described. An increase in household's capital assets may increase chances the chance to deal with shocks. The lack of farmland is a major issue for in particular the households whose income is largely derived from agriculture. These households are usually retired and are having difficulties changing jobs due to their age and lack of job conversion trainings.

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First of all, the role of natural capital is decreasing due to changes in economic growth rates. Access to farmland will help decreasing household's expenditures, but often land of the surveyed land loss farmers are too small to sustain their entire household since they need to buy more food in order to remain their desired eating habits.

Secondly, the role of human capital is becoming more important. All children of the respondents surveyed are attending school whereas the majority of the respondents themselves only finished primary or secondary education. Since the government has not provided any form of training to the farmers losing land, older farmers have difficulties in finding stable jobs to secure their livelihoods and therefor keep farming on their remaining land and work as a hired labours on other farmers land. The affected peri-urban households have a household of six (3 children) compared to a household of four (1 child) in the control group which also differentiates their livelihoods.

Thirdly, to deal with changing living circumstances, the respondents often make use of their social capital. The farmers raise their concerns about problems they encounter at community meetings, make them heard via the village headman, or they go to their neighbours/relatives. The willingness to help each other in the village indicates that social relations between the village head and the neighbours and relatives are strong in Xuân Hòa. Unfortunately, the new living circumstances of the farmers have not resulted in more political power.

Fourthly, with the increased access to physical capital such as bridges and better roads, it has become easier for the farmers to travel to Hué. The widespread possession of motorbikes makes it possible for farmers who own a motorbike to increase their assets by having the possibility to work outside the commune. Although urbanisation leads to higher demand for food that in turn stimulates local production, food production of the affected peri-urban households decreases: the land loss group produces 17kg of rice per month compared to 26kg in the control group which is the result of land conversion.

Finally, financial assets include the contributions made by all the household members who are able to work, the savings made and the compensation received. Income sources are in both groups diversified. The affected group gathers 31% of their income from non-agricultural sectors and 42% is gathered through the remaining household members. The control group deprives 30% of their income from the non-agricultural sector and 27% from the remaining household members. Thus, the affected households are more reliable towards the income of the other household members than the control group is. In the cases where farming income is a large part of the total household income, agricultural land conversion will force those farmers to look for job opportunities elsewhere.

5.3 Food security

This section will answer the second sub-question as well about the consequences of land loss on food security, however now the current food system in place will be looked at. During the FG with the land loss group it was made clear by the participants that many households in the community and in Xuân Hòa have problems with food security. The main cause for food insecurity due to malnutrition according to the villagers was the low income farmers receive and unemployment in particular with the older farmers since they are not able to change their jobs due to their age. According to the participants, food insecure people can cope with the problem by saving money; receiving funds from the government/NGO; reducing the costs of other expenses and relying on their children for help. The participants did not think that accessibility, availability and affordability were issues in the commune that led to food insecurity. Rising incomes and the influence of globalization have contributed to changes in the Vietnamese diet. Dietary transitions refer to changes in the types of foods that households and communities are able to access and consume (Finnis, 2006). Food security due to overconsumption is being caused, according the participants, due to the easier access to Hué and an increase in popularity of American fast-food chains.

Using Pillai's trace, there was a significant effect of land acquisition on the level of food security, $V = 0.31$, $F(15, 74) = 2.17$, $p = .015$. The MANOVA was followed up with a discriminant analysis, which revealed one discriminant function. The discriminant function explained 100% of the variance, canonical $R^2 = .25$. In combination this discriminant function significantly differentiated the farming groups, $\Lambda = 0.76$, $X^2(14) = 23.14$, $p = .05$. The correlations between outcomes and the discriminant function revealed that spending habits ($r = .69$); producing own food crops ($r = .55$); caloric intake ($r = .41$); knowing someone in the government ($r = .40$), and amount of rice meals ($r = .36$), loaded high on the function. Thus, there is a difference between the two farming groups in food security. The following sections will look at the differences and where the differences lay.

5.3.1 Food availability

Food availability is closely linked to rural-urban linkages in the form of intensive connections between producers and markets, especially those run by local traders and located in small towns. Rural-urban linkages strongly affect local economic growth: access to urban markets is vital for agriculture producers, while many enterprises in the cities depend on customers in the rural areas. Such linkages are also important for poverty reduction in many rural areas, through the combination of various agricultural and non-agricultural activities. However, the current trend of conversion of agricultural land and landlessness may create substantial pressure on food security in Xuân Hòa.

The respondents said they would like to see more markets and a supermarket in Xuân Hòa or in the commune that sell fresh foods. They also want the government to provide funds to the farmers to raise cows and to train them in raising other livestock and fishery in order to maintain their welfare. Land loss is seen to affect a shift in diets as protein-rich foods are too expensive and people (children) need to resort to cheap foods like instant noodles and pork rather than preferred food such as sweet potatoes and beef. The respondents who lost their land claimed to have difficulties in buying meat, fish and dairy products because this was too expensive for them. The control group said they found it difficult to find lamb and a variety of fish near their village.

The FG respondents acknowledge that food availability varies in the commune due to the different markets in each villages. The main problem according to them was that the quality of the foods available in the markets lack and are therefore afraid to consume certain types of foods. In particular unknown food sources are a problem. The villagers tend to buy their food items in the morning at the market because it is fresher in the morning (lack of refrigerators) and the villagers only buy their food at markets were they know the farmer who produced the food (more reliable). The majority of the villagers did not want to buy their food from people that they did not know due to the fear of the chemicals that China exports to Vietnam and farmers here use to make their food look fresh. One of the chemicals (metabisulfite) is known in the village for turning pork into beef (colour wise) and then it would get sold as beef which is a higher end meat to purchase. Furthermore Metabisulfite is also known to turning rotten meat (pork) into fresh meat (it camouflages its odour). The fear for chemicals also leads to not eating divers and the market in the village already offers limited food items. Table 8 gives an overview in the differences in the main food items' availability in the village.

Table 8: Food availability comparison

	Control group	**Affected group**
Agrarian land	1272 m²	827 m²
Rice production	26 kg	17 kg
Livestock	572.549 VND	648.837 VND

5.3.2 Food accessibility

Access to food is largely determined by access to cash to buy food. Rice is most important to the poorest groups in the village as it provides on average 78% of their daily calories and accounts for half of their food budget (table 9). The number of food buyers and their dependents is likely to increase due to factors such as livelihoods changing to non-agricultural activities and conversion of agricultural land making less land available for production.

Table 9: Food accessibility comparison

	Control group	**Affected group**
Income from rice (month)	1.994.441 VND	1.022.174 VND
Rice bought	20% of food budget spend on rice	35% of food budget spend on rice (for the poorest households 50% of their food budget)
Average Food budget (month)	1.815.686 VND	1.713.953 VND

Households were requested to indicate the main source of the food items they had consumed in the past week. The responses point out that markets play an important role as the source of food for most households. Food items such as meat and dairy products were all bought at the market. Food items such as vegetables and fruits were bought at the market due to limited production of these food items by the farmers. The land loss farmers also bought an additional amount of rice at the markets due to the lack of land to be self-sufficient in rice production.

The affected group is more likely to spend more on food items than the control group. Table 10 shows the regression model conducted for food expenditure and it shows that the land loss group is spending more money on food items than the control group (a = 0.001). As mentioned in the previous section, the land loss group is producing on average 17kg of rice per month for their household compared to 26kg in the control group. This difference may explain why the land loss group is spending more on food items. Although, urbanisation is linked to higher

demand for food that in turn stimulates local production, because the villagers are losing their agricultural land, their production is decreasing. Table 9, clarifies the six levels of expenditure.

Table 10: Food expenditure defined in groups

Food expenditure	level
O VND	Extreme low
1- 750.000 VND	Low
750.001-1.750.000 VND	Below average
1.750.001-2.750.000 VND	Average
2.750.001-3.750.000. VND	Above average
3.750.001-4.750.000 VND	High
Above 4.750.001 VND	Extreme high

Table 11: Summary multinomial logit regression on food expenditure (N=94)

	B	Sig	Standard error
Low	18.36	0.001	0.85
Below average	19.47	0.001	0.58
Average	18.28	0.001	0.71
Above average	17.77	0.001	0.93
High	19.78	0.001	0.95
Extreme high	18.31	0.001	0.00

Reference category: extreme low & control group

Furthermore, the participants did not had any transportation problems to get their food items. They mostly when on foot since it was 5 minutes walking distance from their houses. The participants went to the market every day in the morning because they wanted to have fresh food due to the lack of means to keep the food in the market fresh throughout the day. On one hand, the farmers are satisfied with the markets available in Xuân Hòa because they could get their food items at a low cost compared to the supermarket or other markets outside the village. On the other hand, the farmers are not satisfied with the quality of foods and the assortment of foods. The respondents who did not shop in the village but in the city (4.2%), did so because they believe the food in the city is more safe and they offer a wider variety of goods. Most of the respondents would like to see the government providing fresh foods in the village and tackle food poisoning this way due to the excessive use of chemicals.

Photo 7: local market in Xuân Hòa

Photo 8: Supermarket in Hué

5.3.3 Food utilization

Lack of food safety is the biggest problem in the utilisation dimension of food security in Xuân Hòa. The problem of unsafe foods is becoming serious and difficult to control. It has caught the attention of the whole society, including the government and the national assembly in recent times with Formosa Steel being accused of dumping its waste in the sea causing

millions of fish to die. Unsafe foods can be found among almost all types of foods, and in all stages of the production chain. There are increasing numbers of cases of food poisoning in the village and even the researcher, who has access to better facilities than the villagers, had food poisoning twice in the four months she was there. In particular control of imported foods, especially from china, is still weak.

Apart from the survey, the researcher also gathered food diaries from the respondents. 94 respondents kept the food diary for a week and noted every meal and drink they had in the week. The average caloric intake in the village is 1149 calories per person which is below the suggested average of 2100 calories by the WHO (2016). Table 12, shows how the researcher divided the caloric intake in different food security levels with the village average as the norm. Although, the norm to be food secure is set on 2100 calories, the researcher decided to localize food security in the village by taking the mean as a standard of food security due to the different cultural eating habits in Vietnam and because the farmers are of age and therefore have a different eating habit than the younger generations.

Table 12: Caloric intake defined in food security levels.

Calories	Food security level
Under 800	High food insecure
801 – 1100	Food insecure
1101 – 1400	Average food security in the village
1401 – 2000	Food secure
Above 2001	High food secure

On average, the households consumed 17 rice meals per week per person and 4 other meals mainly containing of rice or instant noodles (table 13). These findings suggest that the villagers do not eat divers and confirm that rice is indeed a staple food in the country.

Table 13: Overview food consumption and expentiture (N=94)

	Mean	Stan. Dev	Min	Max
Food expenditure	1.769.149 VND	1.465.960	0 VND	9.000.000 VND
Rice meals	17	2.7	14	21
Other meals	4	2.8	0	7
Caloric Intake	1149 gram	461	523 gram	3134 gram

Table 14 shows that 50% of the respondents are food insecure which means that these respondents consume less than 1100 calories per day per person. The poor villagers usually ate rice with some vegtables which they would grow in their own gardens and they would often skip meals during the week.

Table 14 Average food security level in the village

		Did the participant lost land?		**Total**
		Yes	**No**	
Food security level	*High FI*	9	7	16
	FI	19	12	31
	Average FS	11	24	35
	FS	4	2	6
	High FS	0	6	6
Total		**43**	**51**	**94**

For the land loss group (diagram 2), the level of food insecurity is the highest (65.1%) compared to 37.3% in the control group (diagram 3). The respondents were also asked to fill in statements on their food security level. The results were that 46.5% of the land loss group claimed to struggle in their livelihoods compared to 43.2% in the control group. A reason for the discrepancy in the food diary reesults and the statements could be that the famers do not feel food insecure because most villagers are in the same boat. Another reason could be that the farmers felt uncomfortable to answer the questions about their food security.

Diagram 2: Average food security level of the land loss group (red and orange is food insecure)

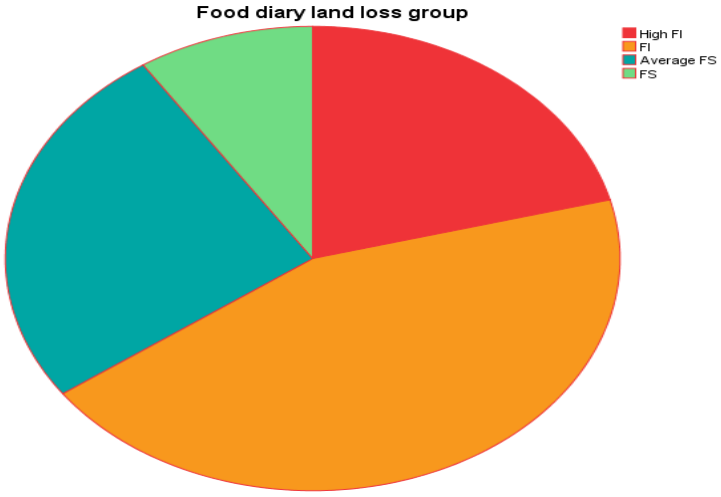
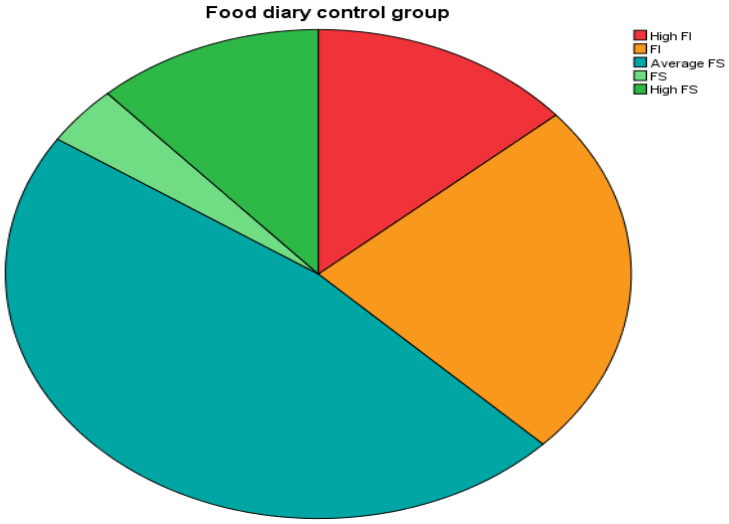


Diagram 3: Average food security level of the control group (red and orange is food insecure)



The differences in food security between the two groups also has to do with the assets the groups own. The land loss group has a lower level of welfare due to limited acces to land and unfair compensation pakages to revive their livelihoods. This in turn forces them to buy and eat cheaper and less preferred foods and even skip meals.

People are experiencing food insecurity in the form of deprivation and overconsumption. In Xuân Hòa, most farmers face food insecurity due to the problems in the pillars of food security. However, 6.4% of the respondents questions at more than 2200 calories a day which is far above the village average and above the WHO average set on 2100 calories. These farmers were also visible overweight. Furthermore, the majority of the children in the village

have bad teeth (all black) due to the overconsumption of high fat and sugary items. The growing popularity, in the village and in Vietnam, of fast-food outlets, and the high-fat, high-sugar, high-salt processed foods they sell, appears to be driving up the number of people affected by obesity-related disorders, such as type 2 diabetes. Table 15, shows the differences in food utilisation of rice in the village.

Table 15: Food utilisation comparison

	Control group	**Affected group**
Rice consumption per week	16x	17x
Caloric % from rice	43% of total caloric consumption comes from rice	59% of total caloric consumption comes from rice (for the poorest households it is 78%)

5.3.4 Food stability

Adequate food consumption requires not only the availability, accessibility or the utilization of food but the three pillars need to be stable at all times. The consumption of healthy, nutritious, and sufficient food required for the proper physical and physiological development of a person is an essential aspect of food security. Research collection in the district aimed to observe and evaluate the characteristics of eating trends within Xuân Hòa. The aforementioned weaknesses to all previous 3 pillars of food security make the village vulnerable to shocks in their food supply. Mainly shocks due to land loss, unemployment or the illness of a household member are heavily felt by the respondents. The commune also lack a safety net to assure that food is available, accessible, and suitable to utilize. This makes food security in the village unstable.

5.3.5 To sum up food security

This section explained food security and its four pillars (availability, accessibility, utilization and stability). During the FG with the respondents it was made clear that many households in the community and in Xuân Hòa have problems with food security and that a shift in consumption mobility occurs. The main cause for food insecurity in the commune according to the villagers was the low income farmers receive and unemployment in particular with the older farmers since they are not able to change their jobs due to their age. After conducting a MANOVA, it was clear that a difference exists the two farming groups in food security.

The first pillar, food availability is unstable in Xuân Hòa. The respondents who lost their land claimed to have difficulties in buying beef, fish and dairy products because this was too expensive for them. The control group said they found it difficult to find lamb and a variety of fish near the village. Land loss is seen to affect a shift in diets as protein-rich foods are too expensive and people (children) need to resort to cheap foods like instant noodles and pork rather than preferred food such as sweet potatoes and beef.

The second pillar, access to food in the village is vulnerable, erratic, and unpredictable. Rice is the most important energy intake in the household and is even providing 78% of the daily calories of the poorer households which accounts for half of their food budget. The land loss group is more likely to spend more on food items than the control group according the multinomial logit regression model. Although, urbanisation is linked to higher demand for food that in turn stimulates local production, because the villagers are losing their agricultural land, their production is decreasing. The land loss group produces 17kg of rice per month for their households compared to 26kg in the control group due to loss of land. For the most

vulnerable, access to food is limited due to not having the means to access it. Transportation to get to food is not an issue for all the respondents questioned due to the market being located at 10 minutes walking distance.

The third pillar, the lack of food safety is the biggest problem in the utilisation dimension of food security in Xuân Hòa. The respondents complained about food poising in the village. The problem of unsafe foods is becoming serious and difficult to control. It has caught the attention of the whole society in recent times with Formosa Steel being accused of dumping its waste in the sea causing millions of fish to die and chemicals such as Metabisulfite being on the rise. In particular control of imported foods, especially from china, is still weak. Controlling imports of dairy products, confectionary, fresh fruit and vegetables, and pig and poultry internal organs are particularly important due to the likelihood of high levels of dangerous substances and the use of dangerous chemicals for preservation. The average caloric intake in the village is 1149 calories per person and 50% of the respondents consume less than the average. Most households consumed 17 rice meals per week per person and 4 other meals usually containing noodles.

The final pillar is food stability. The weaknesses in the pillars of food security make the village vulnerable to shocks in their food supply, thus making food stability unstable. Mainly shocks due to land loss and unemployment are heavily felt by the respondents. Furthermore, unsafe foods are also on the rise and are worrying the villagers to an extend that they are reluctant to consume certain foods or buy foods from unknown sources. The commune also lack a safety net to assure that food is available, accessible, and suitable to utilize.

A rising concern is caused by overconsumption and unhealthy eating habits in the village and in Vietnam. Overweight, obesity, and diet-related diseases such as type II diabetes are increasing in the village and it might become a larger problem in the future than food deprivation is. Xuân Hòa is experiencing food insecurity in the form of deprivation and overconsumption since 50% of the households questioned are food insecure due to the lack of food (downward mobility) and 6.5% is overweight due to overconsumption of food (upward mobility). This trend is also seen in Vietnam where 28% of the rural children suffer from malnutrition while, 20% living in urban areas suffer from obesity (GRiSP 2013).

The downward mobility in the village occurs when the farmers are of age, unemployed and have little to no land access. The upward mobility that is seen in the village is due to an easier access to the city, increase in income and an increase in American fast-food outlets. In particular, children are vulnerable to upward mobility and food insecurity due to overconsumption of high fat-; oily- and sugary food items. There is a cruel irony about the consequences of the nutritional transition in Vietnam. Previous generations fled the country in rickety boats to escape starvation and extreme austerity under communism during the cold war and they are being replaced by a new generation whose health and wellbeing are under threat in the form of overconsumption.

Photo 9: Local market where women are selling fish.

5.4 Identifying land loss shocks

This section will answer the second sub-question on what types of land loss shocks the farmers face. The households reported a number of shocks that occurred in the village. The reported shocks included floods, loss of land, unemployment, illness, death of household member and conflicts. The most common shock was loss of land (37.2%), followed by unemployment (36.2%) and illness (10.6%). However, the land loss shocks and unemployment shock are interrelated to each other. The other shocks had low occurrence rates of less than 10 percent. A principal axis factor analysis was conducted on the 8 shocks with oblique rotation (direct oblimin). The Kaiser-Meyer-Olkin (KMO) test verified the sampling adequacy for the analysis, KMO = 0,534 , and all KMO values for individual items were greater than .50, which is above the acceptable limit of .50 (Field, 2013). An eigenvalue analysis was run to obtain the eigenvalues for each factor in the data. Three factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 68.4% of the variance. The three common factors represent loss of land, unemployment, and illness shocks.

Depending on the type of land loss shock, the shocks that have been identified in this study can have diverse effects on household food security. On the one hand, illness will increase expenditures on health care thereby affecting expenditures on food or food production which is especially apparent in the case of low income households. Illness thereby affects human capital productivity, rendering households unable to produce or provide food for their family. On the other hand, loss of land and unemployment can as well have negative effects on the household food security situation especially when the household member lost land and is unemployed will play a vital role in making food and income available. The negative effects are worse in the case of unexpected unemployment or land acquisition and for households that buy rather than produce their food. In particular, households that are being put on hold for land acquisition face food insecurity on a short-term compared to households that lost their land but received immediate compensation. An explanation for this occurrence is that the households cannot access the land and they will not receive any compensation until the government has acquired it completely.

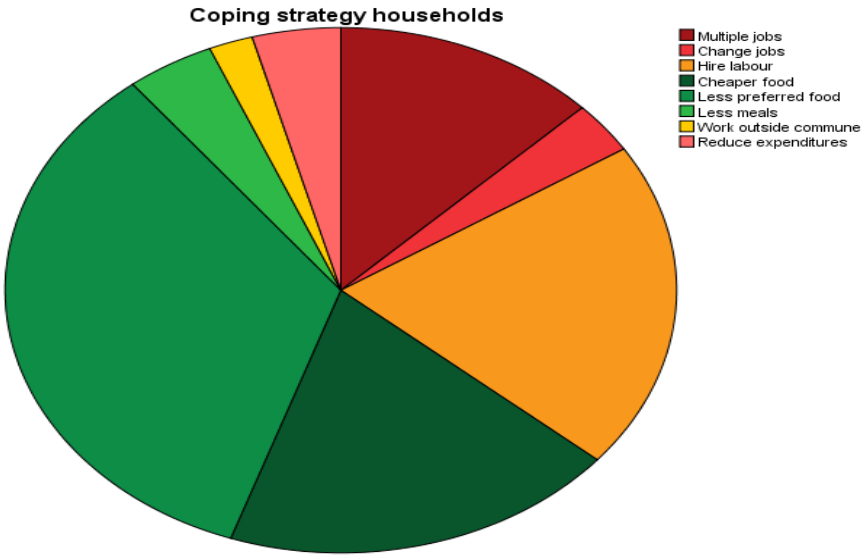
5.4.1 Coping strategies

Following the identification of land loss shocks, a similar procedure was done to identify the coping strategies of households that face land loss shocks. Overall, the respondent used consumption smoothing (ex-ante) as a coping mechanism. Interesting to note is that the female headed households mainly used an income smoothing strategy, however attention needs to be paid to these results as the female households were not representative. Nonetheless, results indicate that the overall coping mechanisms for both groups include: eating less preferred food (34%), hire labour (20.2%) and eat cheaper food items (19.1%), having multiple jobs (12.8%), eating less meals (4.3%) and reducing expenditure (4.3%). More or less 5% of the households would change jobs and seek for employment outside their communities (Diagram 4).

The steps taken here are in line with the previous results in a study by Norhasmah (2010); who indicated that during a food crisis, the affected households adopt a variety of coping mechanisms to survive. According to Kuwornu et al. (2012) eating less preferred and expensive food is the immediate strategy adopted by the households faced with food shortage. However, as food insecurity gets worse other more severe strategies such as skipping meals during the day are used. A study by Chhetri et al. (2006) on food insecurity indicates that households that are vulnerable to food security adopt different strategies to cope with shocks that might affect them. Apart from the above mentioned coping strategies,

households do also adopt other long term strategies. Table 16 shows the coping strategies that were mentioned by the individual households. The findings also imply that apart from farming activities, people also have some non-farm jobs which help them to increase food availability at the household level. Working as a labourer is a widely adopted livelihood strategy in this study, particularly among resource poor households.

Diagram 4: coping strategies HH (Greenish= consumption smoothing; Reddish= income smoothing).



Generally, the respondents used consumption smoothing (ex-ante) as a coping mechanism. However, results indicate coping strategies for the affected group include: eating less preferred food (39.5%) compared to 29.4% in the control group. Hired labour is nearly the same in both groups (21.6% in the control group and 18.6% in the land loss group). 23.5% in the control group compared to 14% in the land loss group would eat cheaper food items. However, 17.6% of the control group has multiple jobs compared to 7% in the land loss group.

Table 16: comparison in coping strategies

		Did the participant lost land?	
		Yes	**No**
Coping strategies	*Multiple jobs*	7%	17.6%
	Changing jobs	4.7%	2%
	Hire labour	18.6%	21.6%
	Cheap food	14%	23.5%
	Less preferred food	39.5%	29.4%
	Less meals	7%	2%
	Work outside commune	2.3%	2%
	Reduce expenditures	7%	2%
Total		**100%**	**100%**

Within the strategies, the role of land appears to be important with about 20% of the households would hire labour for their land so that the owner of the land can focus on other activities. However, no one would willingly sell their land, as this is a last resort for both groups. This relates to other studies, such as Corbett (1998), that found that most households would avoid to sell their productive assets like land when faced with food insecurity unless the households do not see any other options.

5.5 Discussion of the findings

This study has explored peri-urban households' livelihoods and food security within Xuân Hòa using a mixed-method approach which have resulted in a number of insightful findings on the upward and downward mobility of food consumption in a peri-urban area that will contribute to the existing literature on food security and peri-urban households in relation to land conversion shocks.

The study results emphasizes the important role that land and markets play in the provision of food for the peri-urban households in Xuân Hòa. With over half of the population of Vietnam living in rural areas, there is a general lack of infrastructure for transporting food and reaching consumers. The majority of farms in these areas are small and farmers must deal with little or no cold storage facilities, lack of farm credit, little market information, and poor infrastructure which all can affect food security.

The food security pillar patterns among the respondents, poor and rich, clearly suggest that the households in Xuân Hòa are more likely relying on market purchases for the supply of their food needs. The affected households, however, have a higher food expenditure rate than the control group due to less access to farmland. Although, most households produce their own rice and certain types of vegetables for consumption, the farmers do not produce all the foods that they want and need to eat.

The above discussion suggests that in pursuing food security, households have to strike a balance between two types of strategy. The first is to ensure a safe livelihood approach and secondly this strategy must be resilient and sustainable to ensure persistence and household survival.

Table 17: summary results logistic regression descriptive variables

Variable	ß
Household size	-0.359
Gender	0.004
Age	-0.058
Total household income	0.126
Land size	0.461
Nagelkerke R^2	0.319

Table 17 presents an overview of the main factors that influence household food security. The regression model shows that household size is significant which indicates that households with more people are more likely to be more food insecure, a one member increase in household size in Xuân Hòa will decrease by 0.359 times of households becoming food secure. The effect of household size and food security were also found by a food security study in Pakistan from Bashir et al. (2012). Furthermore, the results on gender showed that households headed by females are more likely to be food secure than those headed by males. However, female headed households were not significant nor representative in the study so the results found are unreliable. Another explanation could be that female headed households are much younger than male headed household which may have resulted in a distorted picture of the results.

The current study finds that farm land size increases the odds of food security by 0.461 times. This definitely shows strong positive correlation between these two. This is consistent with the study by Haile (2005), Feleke (2003) and many other studies that found out farm land size

increases the likelihood of households being food secured. The scarcity of land is mainly attributed to population pressure. Thus what we draw from this is that, small scale farmers, with only small size of farm sizes need to work efficiently in order to benefit the maximum yield out of it to ensure their food security. However, the quality of land has not been investigated during this research.

Seemingly, food security worsened with increasing the age of household head. The age of the household head had a positive sign which indicates that increasing the age of the household tends to worsen household food security. The results are in line to other studies such as the study of Bashir et al. (2012) that found an inverse relationship between the household head's age and household food security.

Household heads with high education are more likely to be food secure according to the FAO. However, due to the low education of the majority of the respondents, this could not been taken into consideration. Furthermore, income has a positive effect on food security. Different studies claim that formal salaries serve as a reliable and desirable source of income and will increase food security more than informal income will. However, the big majority of the respondents were farmers selling their produce on the markets receiving informal salaries so no comparisons could have been made between types of salaries.

However, a few issues require careful attention as far as these outcomes are concerned. The study involved respondents from Xuân Hòa in Thuy Van commune that is located in Hué, central Vietnam. Comparison of the households surveyed in Xuân Hòa and their livelihoods and those outside this peri-urban area will not be logical due to the differences and comparative advantages of the village. Xuân Hòa, being a peri-urban area, has the physical environment advantage. The village has rivers, is closely located to Hué city and their infrastructure is being improved. The livelihoods and opportunities available to households in peri-urban areas and along the coastline cannot be compared to those in the interior and far outward areas. These findings may not therefore apply to households outside the study area or region. The findings from the coping strategies, although clearly defined, may to some extent be limiting. An absence of significant dominance in the variables, makes it difficult to measure the significance of some of the strategies. However, the significant role assets play in all the coping strategies is important to mention. Literature from related studies suggest that decreasing ones physical and/or natural capital can have severe consequences and devastating effects for future households livelihoods, thus, making those households more prone to food insecurity and unsustainable livelihoods.

The outcomes on household livelihoods also requires careful consideration due to the monthly household food expenditures since this study did not include the costs of home grown food consumption in relation to the food expenditure. Although the assumption for the model was that the shocks are from outside and man-made, land conversion by the government and private sector, some caution has to be paid to the context of illness. Illness may occur due to food poising, overwork or due to the members of the household not eating well. Due to the variety of effects on illness, in particular by not eating well, makes the endogeneity questionable.

The findings have further substantiated assertions by Maxwell et al (2000) that poverty-related issues such as food insecurity are no longer an absolute rural phenomenon but a peri-urban problem as well. 50% of the questioned households are food insecure (consuming under 1100 calories) and this proved the seriousness of the predicament. The majority of the food insecure

households in terms of food deprivation were farmers who lost land, are of age, have a low educational background and low incomes. Furthermore, an increase in overconsumption can also be seen. These farmers have farm labourers and receive half of their income from the non-agrarian sector. This signifies that as an emerging issue from this study, national and local governments should recognize that the fast pace of urban population growth has resulted in poverty but also in more unhealthy eating habits within peri-urban areas and this problem is likely to intensify over time–both in peri-urban Xuân Hòa and across Hué city. Contextually, another rising issue is that, the households' reflections on the dimensions of food security revealed that, generally, food availability was not a problem within the study area. The difficulty had to do with food accessibility and this is reliant on limited financial resources.

Finally, this study has highlighted a topic of emerging concern in terms of consumption mobility shifts. The relationship between urbanisation and 1) food insecurity, poverty and malnutrition & 2) food insecurity, wealth and obesity could be explored at great lengths in future studies. But although demographic trends will increasingly shift the focus of poverty-related problems into peri-urban areas over the next two decades, policy makers and civil society could launch capacity-building programs to potentially alleviate the menace of food insecurity to ensure an active and healthy life for all households.

5.5.1 Validity and reliability of the results

Validity is the degree to which a study actually measures what it intends to measure while reliability refers to the consistency and conformability of research findings. In this study one of the difficult tasks is achieving valid and reliable results. There were some factors in this study that can affect the validity and reliability of the data. One of the main problems was wrong perception of the respondents. Some of the respondents were suspicious of the study, associating it with the government. The study investigates issues related to compensation and the food adequacy status of households and some households, in particular the poor, were frightened that their answers would reach the government which will lead to consequences. The other problem was securing data that are kept at communal level. Due to limited time and complicated permission letters, official data from government agencies have been limited. However, in spite of the above mentioned problems the following precaution measures were taken in order to maintain and ensure the reliability and validity of the outcome of this research:

- FG were used to obtain opinions on issues related to compensation policy effectiveness. Also questions were included in the questionnaire to pin down individual respondent's perception and opinions on the policies;
- Sample households were drawn using scientifically valid sampling approaches and this would make the research free from bias;
- The insights obtained from both the combined use of qualitative and quantitative methods simultaneously increase the strength of the conclusion;
- The fact that the methods and procedures applied in collection and analysis are clearly outlined enables the replication of the study.

Chapter 6 And it ends: the conclusion

As discussed in the introduction, attaining food security is clearly more complicated than just producing more food. The fundamental issue concerns access to nutritious food rather than food production, and this notion is now well accepted as the key factor determining food security. Conventionally, the term "food insecurity" is used to describe situations of food deprivation. This study, however, adopts a broader perspective on the issue. It has associated the ideas of food security with those related to healthy food systems, suggesting that it is not only important to strive for universal access to adequate food but also to think of the means and processes by which it can be achieved; that is, a food system that promotes equity and environmental sustainability. In addition, food security also emphasizes the need for a healthy and active life unimpaired by overconsumption or inadequate eating habits.

Following the well-known definition of FAO, this study considers four components of food security (availability, accessibility, utilization and stability). The research focusses on the effect on food security and sustainable livelihoods by agrarian land conversion for urban expansion in the peri-urban area Xuân Hòa bordering Hué city, central Vietnam. Land conversion in Xuân Hòa emerged mainly due to the limited land available for infrastructural improvement and the urban expansion of Hué. The leading question of this study is:

"To what extent does urban growth affect food security of (former) farming households in Xuân Hòa and how do they respond to land loss shocks?"

This study explores the coping strategies of land loss households using the collected data of 94 households in Xuân Hòa. The study identifies common land shocks, coping strategies, determinants of land loss shocks and their effects on food consumption in the households using factor and MANOVA analysis as well as regression techniques. The results show illness, land loss and unemployment as the most common shocks among the households besides other land loss shocks. In order to cope with the shocks, most of the households adopt an ex-ant risk management strategy in which they use several coping mechanisms. The coping strategies that the households engage in are determined by variables such as household age, sex, and size of the household. Land, livestock and other household assets are clearly implemented within the coping strategies as well. By selling their land, the households render themselves vulnerable in the future. Specifically, having less land increased expenditures on food. Food consumption is effected by unemployment among the reported shocks.

6.1 Unfair compensation practices

The compensation packages offered for the acquired land in Xuân Hòa did not help in building sustainable livelihoods. This is due that compensation packages temporally upgrade living standards because the money is used for materialistic items. Among 55.4% of the households, the money received was used to rebuild or repair the house and almost 15% of the households gave the money to their eldest son, so he can build a house. Only, a small percentage of the households (6.4%) used the compensation to start a new business such as a coffee shop or a small restaurant. However, the land conversion process needs to be re-evaluated in the commune. The research showed that the most vulnerable households are the group of farmers that are stuck in the middle of the urban process. These farmers have lost plots of their land without receiving any compensation. The reason why they did not receive any compensation is because the government has not decided yet what to do with the plot of land they acquired. Without concrete plans for the land conversion for urban purposes, the

livelihoods and food security is threatened for these households in short-term time. Whereas, the households that received compensations might face these threats in a longer-term time.

Furthermore, the research shows that apart from the affected group with no compensation, the retired are also affected by the land conversion and urbanization processes in the commune. These older farmers (70+), are low educated, only know how to farm and no retirement benefits are existent. Thus relying upon work as farm labourers due to the decreasing land to farm on and the decreasing importance of the agricultural sector in general. They are too old to find a stable income earning jobs in the industrial sector in Hué as they often do not meet enterprises' requirements. These older farmers often then take on work as farm labourers in order to sustain their livelihoods, whereas before they were still able to work on their own land to make ends meet. However, due to the limited availability of farmland, their incomes has decreased such as their opportunities for a sustainable livelihood. Women, however, are found to be more risk daring than men. The research found that all women enhance income diversification as a strategy (ex-post). Women mainly find work at the local markets in the city or in the small-trade sectors. However, one must note that the women in the study are much younger (40+) than the male headed households in the study (60+) and only 23 out of the 94 households questioned were female (not representative).

6.2 Irregular food security

The food insecurity present in the village has elements of transitory food insecurity in terms of irregularity. This irregularity exists when the affected farmers run out of their compensation money. They do, however, undertake preventive measures in order to mitigate the consequences of this period. Hence, these measures reflect the nature of the food insecurity, which they experience. While national, or at least larger-scale, food shortage tends to increase food prices dramatically, household food shortage is not merely a consequence of external factors. The vulnerability of the households and their livelihood strategies are of great significance to the severity of the food shortage they endure.

The average caloric intake in the village is 1149 calories per person. A downward mobility consumption pattern exists in the village since 50% of the questioned households are locally food insecure due to food shortages. Their poverty status was established based on their farm incomes, which constitute their main source of income and basis of their subsistence. The inadequate farm incomes are a result of land constraints in terms of small plots left to cultivate. While the constraints can immediately be influenced by the farmers themselves, their only way of livelihood maintenance appears to be through engagement in activities in addition to farming. Livelihood diversification is hence motivated by poverty and food insecurity. The nature of the food insecurity is reflected by the additional activities in which the farmers engage. These are both off-farm and non-farm activities. Besides on-farm diversification, other means of risk minimisation are conducted. These include eating less and asserting to cheaper food items. The risk minimisation taking place within the households thus has the dual intension of preventing income loss and preventing destitution when crisis occurs. This hereby reflects the transitory aspects of the food insecurity.

Rice is most important to the poorest groups in the village as it provides 78% of their daily calories and accounts for half of their food budget. The land loss group is more likely to spend more on food items than the control group according the multinomial logit regression model because the affected group only can produce 17kg of rice per month for their households compared to 26kg in the control group. With barely any other activities for the older households to supplement their income to buy additional food, the access and consumption

pillars of food security stand in a vulnerable, erratic, and unpredictable position. If the pillar of access is to be secured in Xuân Hòa, more attention needs to be addressed to the means in which its most vulnerable community members can acquire food. Whether its income diversification programs or securing fair market prices for their products. The lack of food safety is the biggest problem in the utilisation dimension of food security in Xuân Hòa. The problem of unsafe foods is becoming serious and difficult to control. It has caught the attention of the whole society in recent times with Formosa Steel being accused of dumping its waste in the sea causing millions of fish to die and chemicals such as Metabisulfite being on the rise. In particular control of imported foods, especially from china, is still weak. Controlling imports of dairy products, confectionary, fresh fruit and vegetables, and pig and poultry internal organs are particularly important due to the likelihood of high levels of dangerous substances and the use of dangerous chemicals for preservation.

Food availability is threatened by agrarian land conversion because the land loss group are producing less and therefore need to buy food they otherwise would cultivate. The food products available in the village fail to meet the necessary nutritional requirements for a normal, healthy development, since the village sells limited food items. The respondents who lost their land claimed to have difficulties in buying beef, fish and dairy products because this was too expensive for them. The control group said they found it difficult to find lamb and a variety of fish near the village. Land loss is seen to affect a shift in diets as protein-rich foods are too expensive and people (children) need to resort to cheap foods like instant noodles and pork rather than preferred food such as sweet potatoes and beef. The weaknesses in the food security pillars makes the village vulnerable to shocks in their food supply. Mainly shocks due to land loss and unemployment are heavily felt by the respondents.

Furthermore, an upward mobility in consumption can also been seen in the village. The growing popularity of high-fat, high-sugar, high-salt processed foods, appears to be driving up the number of people affected by obesity-related disorders, such as diabetes. In Xuân Hòa, most farmers face food insecurity due to the problems in the pillars of food security and food deprivation. However, 6.4% of the respondents questioned ate more than 2200 calories a day and were visibly overweight and their children had bad and black teeth which indicates a rise in food insecurity by overconsumption of unhealthy foods.

6.3 Livelihood diversification

Food insecurity is hence reflected differently in the livelihood strategies. Some farmers are more devoted to preventive measures, while others take risks, either out of necessity or choice. Their livelihood strategies, as well as engagement in and motivation for livelihood diversification, strongly appear to be resulting from the assets, incomes and capacities of the individual household. This determines their food insecurity status as well as access to livelihood diversification.

Livelihood assets were measured by questioning affected households and non-affected households of land conversion in Xuân Hòa. This has been done to identify the impact of the land conversion. More importantly, the decreasing role of natural capital is due to the growing importance of the non-agricultural sector. Due to this development, the role of human capital is becoming more and more important as well. The quality and quantity of human capital assets determine the opportunities that the farmers can take upon successfully. Villagers further make extensive use of their own social networks to ask for advice or help. Most farmers know each other and therefore it is more accessible to ask for help from neighbours and relatives. Family ties remains essential in Xuân Hòa, since several generations live

together as they operate as a single household unit. The households cooperate to secure everyone's livelihood and therefore it is common to see that the oldest son takes care of his parents once they are unable to take care of themselves, hence that parts of the compensation is given to the son. Agricultural land conversion clearly changes the assets people possess. The transition from a rural to a peri-urban area has influenced the lives and the household income of the villagers in Xuân Hòa who have always relied on farmland production. The role of the agrarian sector is changing, in particular in its contribution to household incomes in Xuân Hòa. In lieu of the livelihood activities, the findings show a high degree of income diversification. It indicates that non-agricultural activities are increasing as livelihood activities since both group deprive around 30% of their income from this sector. Having farmland does help in decreasing households' expenditures in particular food expenditure since the households with land do not need to buy more rice for their consumption.

Although, the means of risk minimisation might not be optimal, they are very important to the farmers, as no other means are available. Yet the farmers would have more extensive coping capabilities if they had higher incomes as can been seen in the control group. In this way, incomes resulting from activities undertaken as a means for compensating for land constraints can be ascribed as attributing to risk minimisation. Compensation for land constraints thus reduces poverty as well as facilitates coping with food insecurity. However, not all the households are much engaged in activities that compensate for their land constraints. Inaccessibility appears to be the reason. Besides the sale of assets, wage labour is the main coping activity. Wage labour is accessible to all, however, it is perceived as a last resort due to the low income generated from it. Hence, the farmers only engage in this activity during a period of food shortage, when it is absolutely necessary.

6.4 In a nutshell

To conclude, land conversion does not necessarily have to affect food security. Food security gets affected by unfair compensation packages (under land market prices) combined with the farmers spending it all on materialistic items. This will lead to food insecurity on the long term, if the affected household will not look for opportunities outside the agrarian sector and commune. In order to really help the poor and the most vulnerable, training programs are strongly needed so the farmers can obtain new skills. However, for the elderly, job conversion is difficult because they will face age discrimination on the job market. There is a growing and young labour force, with whom the elderly have to compete and they should not be forgotten. Furthermore, the voice-lessness of the farmers is a problem. There is a lack of transparent information systems regarding land conversion and there is a the lack of chances to discuss the compensation packages. The farmers feel that they are not being heard which increases the resentment of the land conversion process. By giving the villagers means to participate in the process, the farmers will become active citizens instead of passive victims.

Another issue that rose is the land conversion process. The process takes several years and farmers only get their compensation if the government has concrete plans for the acquired land. This group will face food insecurity on a short term because they do not have land anymore to use nor received any compensation. The land conversion process can take up several years. The inefficiency of this process is resulting in short term food insecurity of the farmers who have lost their land without receiving compensation due to the lack of concrete plans. In Xuân Hòa, food security is affected by land conversion due to the above reasons. However, it is not solely caused by land conversion. Food poisoning is another factor contributing to food insecurity in the village. Metabisulfite and the Formosa Steel issue are contributing factors in making food items unsafe and inaccessible.

Chapter 7: Policy recommendations

The fact that different livelihood strategies were identified indicates a tendency that calls for different targeted interventions. Policy priorities should focus on increasing engagement in off-farm and non-farm activities. These activities are, however, not equally accessible to all small-scale farmers - not the attractive ones anyway. However, as the off-farm and non-farm activities are to be conducted as either additional activities or alternative activities, it is possible that even the poorest farmers can benefit. This would be in a long-term manner though. With parts of the population engaged in alternative activities instead of agriculture, the farm population might obtain larger plots, which could facilitate higher incomes. While this appears to remedy the land constraints of the entire farm population, and resolve the increasing land pressure caused by population growth, the additional activities would still be accessible only to the less poor farm households, entailing increased inequality. Prioritising a focus on alternative activities hence appears to be the most reasonable poverty strategy, if such a strategy is to target the poorest as well.

Specific policy recommendations include:

1. The land conversion process can take up several years. The inefficiency of this process is resulting in short term food insecurity. The government should only acquire land, if they have concrete plans for the land and pay a fair compensation price for it. The government should also ask the affected people on the type of compensation they would like to receive since now they are only receiving cash, whereas production land and housing might be more appropriate for a sustainable livelihood. Also the way BCSR determines compensation needs to be changed into following market values;
2. The voice-lessness of the farmers in Xuân Hòa need to be addressed. Instead of seeing farmers as passive victims, let the farmers be active agents instead. This will decrease the resentment towards land conversion and improve their livelihoods;
3. Training programs are strongly needed so the farmers can obtain new skills to be eligible to work in the non-agrarian sector. If the government decides to take land from farmers, it is their responsibility to provide the means to be eligible in the formal workforce. Working and receiving formal pay checks will reduce food insecurity and poverty as well;
4. Controlling imports of dairy products, confectionary, fresh fruit and vegetables, and pig and poultry internal organs are important due to the likelihood of high levels of dangerous substances and the use of dangerous chemicals for preservation. The government needs to control and label products that use these chemicals. The farmers want to know what they eat and providing descriptive labels on food products or quality certificates will increase food security.
5. To tackle poverty and food insecurity due to land conversion, the government should provide the affected farmers with livestock in the form of a '*chain for solidarity*' where the government provides e.g. a goat, buffalo, cow etc. to the most vulnerable households and the offspring will be given away to other vulnerable households. This way the solidarity in the village will increase and poverty will be tackled;
6. The UN Sustainable Development Goal (SDG) 2, recommends that governments aim to improve food security and nutrition over the next 15 years in response to the global challenge of fostering sustainability. SDG 2 provides an avenue for governments to create and develop food security-related policies and regulations. Policies specific to the role of the informal food economy, integrate non-food issues related to food security (such as urbanization and infrastructure), collaborate with supermarkets to create policies catering to the poor and track food consumption patterns to develop strategies for improved food options are needed.

7.1 Critical reflection

Apart from the limitations in the research mentioned in sections 1.2 and 4.4 and the critical discussion of the findings in section 5.5. this section will focus on a critical reflection on the food security measurements, definition used and the research process.

7.1.1 Food security measurements

Despite its four decades of age in the development agenda, food security as a term is still surrounded by widespread confusions. The confusions are related to both its very definition and measurement which are still fuzzy due to its multifaceted nature. One cannot measure a term if it is not defined properly. I observed that there is still a lack of comprehensive and objective definition and measure of food security which makes the evaluation and mitigation of food security problems more challenging.

FAO puts a broad and general definition of food security which has been picked up by many studies, including this thesis, in the food security literature. But the definition does not put a clear reference on the scale (individual, household, national) and state (chronic, temporary or persistent) of food security. Obviously, this gives the way for all sorts of manipulations in studying the food security problem. In addition, the scarcity of data hinders from making the necessary analysis and comparisons across different peri-urban areas. Some of the definitions or operationalization of indicators of food security are questionable. In addition, the methods used to calculate them and their sources are not very clear to check their reliability. Sometimes, it was not convincing to use them as they are, but I used them due to the absence of a better alternative. Instrumental variable approach may also improve the investigation by mitigating possible endogeneity problem, which I could not implement due to lack of strong and valid instruments.

However, for other food security research it is better to use the FAO definition with sustainable food security which exists when:

1. All people have stable physical and economic access to healthy and culturally-appropriate food.
2. The food system respects and promotes equity and social justice, strengthening social integrity.
3. The food system contributes to biophysical sustainability. It promotes biodiversity and ecosystems integrity.
4. Consumers have a food environment with favourable conditions to choosing foods that meet the three criteria above.
5. People make choices and have attitudes that are beneficial to the promotion of sustainable food security.

Having a broader definition, will make sure that you will have a holistic approach into measuring sustainable food security.

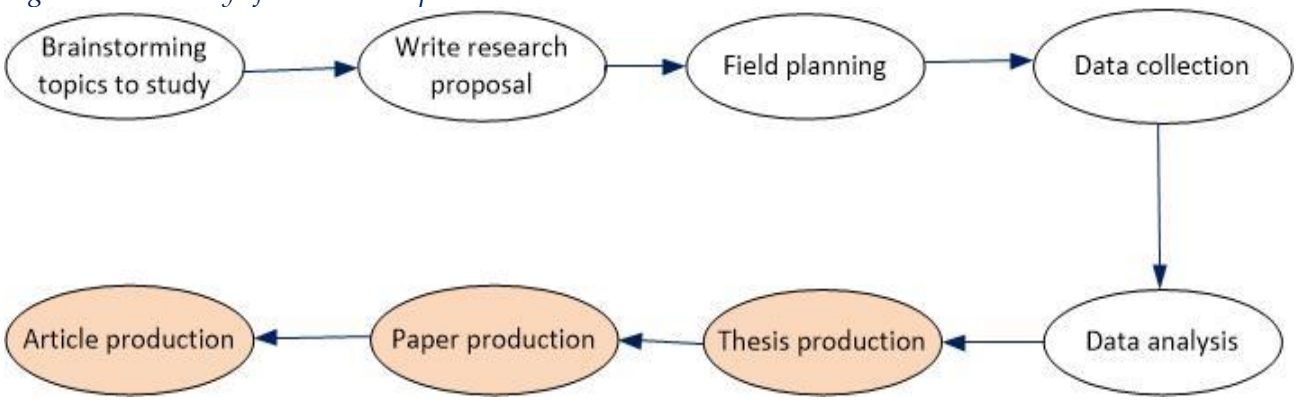
The food security issue invokes an important reflection upon our attitudes and the way we organize society. Food is a very specific subject because, not only is it an essential resource, but it is also something that has deep connections with cultures and traditions. It affects all three dimensions of health and well-being (biological, mental, and social). Similarly, it connects all levels of decision-making, from the individual to the global level. There are different realities which demand different attitudes, more grounded in solidarity, care, and a sustainability ethic. These are the necessary grounds for action, so that effective contributions can come forward.

7.1.2 The research process

Travelling always gives me an immense pleasure, field work is a great way to expand my knowledge beyond the book and class room where many theoretical aspect are taught and are expected to be used in real life. This field work has given me an opportunity to understand the Vietnamese culture and life style of the farmers in a peri-urban area.

Figure 3 gives a graphic summary of the research process. The research started by preparing a scientific research proposal with extensive literature review. A series of discussions with my supervisors encouraged the critical thinking on concepts used in this study. The draft of questionnaires was prepared in Vietnam and the sets of questions have been tested in the field. A few questions have been modified after the field verification and adopted in the field for the study. Data was collected using mixed methods tools. Compilation of necessary information, tabulation, processing and presentation were part of the data analysis. Reporting the results and subsequent discussion led to the conclusions and recommendations.

Figure 3: Summary of the research process



Throughout the research continual analysis of the research process and the use of critical reflexivity to enhance self-awareness was just as, if not more important than the continual and ongoing process of data analysis in the field. Being critical of the self and the research process allowed for new and important questions to arise regarding epistemologies and ethics as they relate to research and working in a cross cultural context. As a student of development studies, the knowledge, values, theory, concepts in social sciences could possibly influence this thesis, especially when interviewing the respondents. However, I tried my utmost best to not ask leading questions that could influence the outcome of my study, as this could create biases and thereby decrease the validity of my study.

Several limitations meant that an adaptive approach was necessary. An adaptive approach allowed me to adjust my techniques based on study site limitations, changing circumstances, personal reflection and community feedback. Being critical was difficult but necessary to adapt my approach to better suit the needs and circumstances of the community. Once I was comfortable with the ongoing process of constantly scrutinizing the research process and myself I found strength in my ability to move forward. Rather than a 'limitation', understanding the process of critical reflexivity allowed me the opportunity to explore the difference in worldviews and epistemology creating an awareness of the inherent vulnerabilities in the research process. Critical reflexivity allowed me to approach the research from a new direction, one no less rigorous or systematic but more thoughtful and inclusive. Dealing with the challenges of the research and the research process were a necessary and important part of this work. Ultimately, acknowledging the shortcomings of the process aided in strengthening the field work.

7.2 Further research

During the study, three potential topics can be researched further in depth. The first topic concerns consumption mobility shifts and sustainable food security, the second topic relates to the evaluation of the resettlement programmes and the final topic will address potential research areas in migrations trajectories. All recommended topics emerged from this study.

The first recommendation to study more in-depth, is the food security of urban people and rural people. Attention needs to be paid to the level of food deprivation compared to overconsumption and recording the amount of people that face or have diseases related to food deprivation (malnutrition) or overconsumption (obesity). In particular in Vietnam, the rise of diseases related to overconsumption such as diabetes is augmenting. This study has highlighted a topic of emerging concern in terms of consumption mobility shifts and dietary changes. The relationship between urbanisation and 1) food insecurity, poverty and malnutrition & 2) food insecurity, wealth and obesity could be explored at great lengths in future studies. How individuals value and perceive food security can be better understood by examining local perspectives. The consideration of values and perceptions related to food security can be used in combination with other forms of assessment to better understand local conditions in Vietnam. For example, a quantitative assessment of nutritional adequacy can help with understanding the impact of dietary changes within individuals. As well, a closer examination of the situation in regards to people who own little to no land would help in better understanding food insecurities that may exist.

The second recommendation which is worth studying further is related to the resettlement housing and new urban houses in Thuy Van. It would be interesting to focus more on the backward migration process fom urban to peri-urban areas and in particular if the newly build residential houses in Xuân Hòa are being used. Interesting would be to know if migration changed the relations within the commune and if the farmers, after the land conversion process is completed, are still living in the village or if they have been resettled to another area. We often talk about the '*right to the city*', however, we are ignoring the '*right to the village*'. People in urban areas such as Hué are more often looking for housing in peri-urban areas such as Xuân Hòa. These people not only move to peri-urban areas due to limited housing availability in urban areas but also to escape the hectic city live.

The third and final recommendation concerns migration trajectories within ASEAN. During the study, direct questions about migration were avoided by the participants and due to its relative unimportance, the researcher decided to skip the questions to avoid harming the study. It would be interesting to further investigate the (economic) migration trajectories, in particular now the ASEAN union has been developed and is gaining in importance. In particular the migration patterns between Vietnam to Cambodia and vice versa. It would be interesting to learn more about the migration trajectories of the respondent e.g.: from village to city to crossing borders. The questions of interest would be 'Why' someone decides to migrate; 'How' the migration path looks like and 'How' does migration effect one's food security, livelihood and economy; whether on a local, national or global scale.

Topics related in the context of ASEAN migration to be considered:

- Local economic factors and internal & international migration: from rural to peri-urban to urban areas to crossing country borders.
- Self-Employment and business ownership of the migrants and among the return migrants: brain drain or brain gain.

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Appendices

Photo's FG

Interview schedule

Organization	Interviewee	Position	Date	Time
Friends of Hué	Ms Hanh Vo	Director	17/02/2016	14:00 - 15:00
Thuy Van municipal	Mr Tong	Community leader	18/02/2016	08:30 - 09:30
Xuan Hoa center	Mr Hung	Village headman	18/02/2016	09:30 - 10:30
Hearts for Hué	Mr Khanh Truong	Founder; Chairman	18/02/2016	14:15 - 16:30
Provincial people's committee	Anonymous	Anonymous	20/02/2016	14:30 - 15:15
Center for social research and development	Ms Tran Chi Thoi	Project manager	22/02/2016	14:00 - 15:15
Grains De Riz Pour Un Sourire	Ms Nadine Fatin	Project leader	14/03/2016	20:00-21:00
Focus group	3 different groups	Interviewee, Farmer	10/05/2016 – 20/05/2016	11:30 – 14:00

Interview questions

Name:

Responsibility:

Organization department:

Objective: To obtain and verify knowledge, experience, activity and information on different aspects of land acquisition processes (in particular the implementation of it).

A. Land acquisition, compensation, public participation and resettlement.

1. What is your role and responsibility during the land acquisition?
2. Are there any team/ committee formed for the land acquistion? (explain)
3. What are the processess and procedures of land land acquisition?
4. What kind of comepensation is being used for the affected people? (cash, land or housing)
5. How is the compensation determinded? (how many dongs for square meter)
6. What are the main challenges during the land acquisition and compensation?
7. How do you handle these challenges?
8. Do you think that the government tries to minimize the consumed land and to avoid relocation?
9. How are the affected people involved in the land acquistion process?
10. Do you know of any conlflict during the land acquisition of the affected people?
11. How do you manage any complaints and conflicts?
12. Are social and environmental assesment conducyed after the land acquisition of the affected people (why no or yes)
13. Do you think that land acquisition has an affected on food security of the affected people?
14. Does land acquisition affect people differently? (old people, women etc)
15. How long before the land acquisition and demolition of houses and land is the information about compensation provided?
16. Where there any residents that did not had any legal ownership/ certificate of the land?
17. How do you compenssate those people without any legal ownership?
18. Do you have any additional ideas/ suggestions about the land acquisition process?

Thank you!

Subjects: local experts and businesses in Thua Thien Hue.
Expected length: ~ 60 minutes.

Participants agree to sign the consent form and accept being recorded. If being refused, paper-based recording will be used.

Opening questions
Brief introduction of interviewing purposes and issues covered
Interviewee's name:
Gender:
Age:
Job:
Organization:
Educational background:

Main interviewing questions

1. What are your general comments on urbanization in Thua Thien Hue in recent years?
2. What are the processes of agricultural land acquisition and compensation practiced in Thua Thien Hue in 2007 and in the peak time of urban expansion in 2011 and 2012?
3. How has the compensation been defined, how do you decide upon compensation?
4. During land pricing for compensation, I am wondering whether the local authorities considered the decrees 17 and 69 to make the compensation price close to the market price?
5. There has always been a discrepancy between compensation price and market price. This is a common situation in Vietnam. The farmers seem to be the losers in the development game. Agricultural land to farmers is inevitable and now they lost their land and their sustainable livelihoods. Do you agree with me?
6. During the planning stage of urban development projects involving land acquisition for economic development, do the local authorities consult with local communities before starting the project for urban expansion? How do you keep them informed in the land acquisition process?
7. How and to what extend do you think the practice of acquisition and compensation will negatively affect the rural community in peri-urban areas?
8. Land-related disputes have been increasing quickly in recent years, especially complaints relating to unfair compensation after acquisition. Do you think this will hinder social stability of Vietnam now and in the future?
9. Many people in Hue are dissatisfied about the land acquisition and compensation. Some of them brought their cases to trial. However, the majority prefers to accept it although they are disappointed. This is for example very different from cases of Van Giang in Hung Yen or in peri-urban areas of Hanoi. What do you think caused this difference?
10. In your opinion, what should be done to improve the practice of acquisition and compensation in order to mitigate land-related disputes and complaints?

Thanks for sharing your valuable time with me!

Survey

Name: **Survey number:** **Date:**

This survey is undertaken in light of a study considering food-security and compensation packages of (former) rice farmers in Thuy Van Commune, Xuan Hoa village. You have been asked to participate because you are a rice famer in this area or because your land has been acquired by the local government to expand Hué city. The survey will take max 1 hour of your time and all information will be handled with confidentiality and anonymity. The findings will be used for my Master thesis.

Part I. General information

1. Age: …… 2. Gender:…… 3. Religion:…… 4. Ethnicity:……
5. Main job:…… 6. Household head:……
7. Since when are you living in Xuan Hoa:……..

8. Educational level:
   - o I cannot read and write
   - o I can read and write but I never finished any degree
   - o Highest degree obtained:……

9. Marital status:
   - o Married o Separated/divorced
   - o Widowed o Single

10. If you have children, please indicate the gender and if they attend school or not.
Child 1: age_____ sex_____ school_____ Child 3: age_____ sex_____ school_____
Child 2: age_____ sex_____ school_____ Child 4: age_____ sex_____ school_____

11. What is the total number of people living in your household? (Eating from the same kitchen.)

Adults	Children

12. How many family generations are there in this household?
……

Part II. Practice of agricultural land acquisition and compensation

13. What is your household's total agricultural land (according to Land Use Right Certificate)
……

14. What is your rice yield income per month:……
Other vegetable crops (if any), income per month:……
Non-agricultural income (please specify, if any)……..

15. After all expenses paid, do you have sufficient income for your household's livelihoods?
   - o No. I live a hard life.
   - o Sufficient but not enough to send my children to school.
   - o Yes, I have enough to life and to save for my children's schooling
   - o Yes, I also set aside rice (and other crops) for business (Specify how you use the profits)
     Profit:…… Usage:……

16. How did you come to know about the acquisition in Thuy Van Commune?
   - o ⍰ Received an official notice.
   - o ⍰ Your neighbours/cousins/friends told you.
   - o ⍰ Community meetings and public announcement from local authorities.

- ○ ▯ You did not know anything until the acquisition was implemented.

17. What do you think about the practice of acquisition and compensation?
    - ○▯ Oppose against (even perform some resistance).
    - ○▯ Accept but dissatisfy.
    - ○▯ Satisfy but still concern of discrepancy of compensation and market prices.
    - ○▯ Support and satisfied.

Part III. Local response on income generation & food access

18. What type of sources do you receive your money from? Please indicate which household member generates which monthly income (e.g.: rice, money from relatives, shop etc.).

Job	Who (relation to you)	Income	Age	Gender

19. Is there anyone who is a member of your household who lives and works elsewhere, but contributes to the household income?
    - ○ Yes (Please mark the member of the household who migrated in question 18)
    - ○ No.

20. How do you spend your monthly income?

Food	Dong
Rent/Mortgage	Dong
Electricity/Water/Gas	Dong
Motorbikes/Cars/Transport	Dong
Education	Dong
Savings	Dong
Other	Dong

21. How many food crops do you produce for your own use (kg or units per month)?
    .....

22. Who in your household decides about the food budget?

Who	Age	Gender	Why does he/she decide the food budget?

23. What types of food do you find difficult to find? Why?
    .....

24. Do you sometimes not buy certain foods because they are too expensive?
    - ○ Yes:.....(types of food) o No

25. What changes in the community would make it easier to get food?
    .....
    .....
    .....

.....

26. Where do you normally get your food?
    - Supermarkets in the city (Big C etc.)
    - Local markets in the city
    - Local markets in Thuy Van
    - Local markets in Xuan Hua
    - I produce my own food

27. Why do you mainly decide to get your food there?

.....
.....
.....

Part IV is only for the resettled farmers in Thuy Van, the respondents who still own all their wet-rice land, please continue with part V (question 36).

Part IV. Local response upon land acquisition

28. Place and date before resettlement?

.....

29. Were you able to choose your resettlement site?
    - No: who decided? .....
    - Yes: why did you choose this place?.....

30. How many times and when was your land being acquired for the project? Please also specify the legal document on which acquisition and compensation grounded on?

    1st time: Date:..... Total acquired agricultural land:...../Decision no. ....QD/UBND
    2nd time: Date:..... Total acquired agricultural land:...../Decision no. ....QD/UBND
    3rd time: Date:..... Total acquired agricultural land:...../Decision no. ....QD/UBND

31. Compensation: How did you and local authorities agree on the compensation?
    - Not. The local authorities announced and you just followed.
    - Via negotiation.
    - Other:.....

32. Please specify your total compensation package, including land price for one square meter.

    Total compensation money:.....
    Other:.....

33. In addition to compensation for land, were there any kind of supporting services such as vocational training, job conversion, etc. ?
    - Yes. They are:.....
    - Local authorities/investors promised to provide support but they didn't keep their promise.
    - No additional supporting services were provided.

34. What have you done for livelihoods after acquisition?
    - Continue agricultural production on the remaining land.
    - Changing jobs. Please specify.....
    - Continue agricultural production and also work in another sector.
    - Retire. In this case, how did you manage your life?.....
    - Other:.....

35. How did you use your compensation money?

Deposit to my bank account	Dong
Children's education	Dong
Buying new interior for the house (TV etc.)	Dong
Buying new motorbikes	Dong
Other:	Dong

Part V. Closing questions

36. Mention positive and negative aspects of the land acquisition in the commune.

Positive points:	**Negative points:**
1.	1.
2.	2.
3.	3.

37. People you know who no longer work and live in the commune after the land acquisition.
    Age: _____Sex: _____ Migrated to: _____ Reason_____
    Age: _____Sex: _____ Migrated to: _____ Reason_____

38. People you know who are interested to leave the commune in the future.
    Age: _____Sex: _____ Migrate to: _____ Reason_____
    Age: _____Sex: _____ Migrate to: _____ Reason_____

39. Do you have friends/relatives who work for local governments or companies?
    - Yes o No

    If yes, how did they help you during the land acquisition?
    .....
    .....

40. Do you have anything to add/comment?

.....
.....

41. If you would be willing to take part in interviews, fill in your telephone number/e-mail:
    _____

42. Are you willing to keep a food diary for a week?
    - Yes o No

43. Do you give me permission to quote your answers in my report (anonymous)?
    - Yes o No

You have reached the end of this survey, thank you very much for your time!

Food diary

7 Days Food Diary

Survey number:

Name:
Gender:
Age:

Did you lose agricultural land for urban expansion? O Yes O No
Job:

Date when diary started:
Date when diary completed:

Sunday:

Breakfast	Lunch	Diner	Snacks	Drinks

Monday:

Breakfast	Lunch	Diner	Snacks	Drinks

Tuesday:

Breakfast	Lunch	Diner	Snacks	Drinks

Wednesday:

Breakfast	Lunch	Diner	Snacks	Drinks

Thursday:

Breakfast	Lunch	Diner	Snacks	Drinks

Friday:

Breakfast	Lunch	Diner	Snacks	Drinks

Saturday:

Breakfast	Lunch	Diner	Snacks	Drinks

Calories of food items and drinks

Food	**Caloric intake**
Bowl of rice	242
Pho rice noodle soup	251
Banh Mi (sandwich)	596
Rau Cai (clay pot with veggies)	245
Shrimp spring rolls (1 piece)	240
Rice paper roll with meat/fish non fried	81
Instant noodles	360
Rice noodles	130
1 Big potato	278
Mushroom	44
1 Mango	145
1 Banana	105
Porridge	240
Tofu	149
Pork	229
Chicken	214
Beef	231
Octopus	130
Shrimps (1)	60
Fish	149
Salad	33
Baguette	180
Omelette (1 egg)	96
Morning glory	59
Bahn Beo	552
Drinks	**Caloric intake**
Beer	153
Coca cola	140
Milk	150
Black coffee	1
Condensed milk	130

Food security statements

Survey number:
Age:
Gender:
Main job:

Coping strategies Index

If there have been times in the past 30 days when you did not have enough food or enough money to buy food, has your household had to:	How often have you had to do this in the past 30 days? 0. Never 1. Hardly at all (‹1 time/week) 2. Once in a while (1-2 times/week) 3. Pretty often (3-6 times/week) 4. Always (every day)
Rely on less preferred or less expensive food?	
Borrow food, or rely on help from a relative?	
Purchase food on credit?	
Consume seed stock that will be needed for next harvest?	
Limit portion size at mealtimes?	
Reduce number of meals eaten in a day?	
Skip entire days without eating?	

Dietary diversity score

In the past 30 days, how often have you eaten:	How often have you had to do this in the past 30 days? 0. Never 1. Hardly at all (‹1 time/week) 2. Once in a while (1-2 times/week) 3. Pretty often (3-6 times/week) 4. Always (every day)
Any food made from grains: rice, maize, wheat, bread, biscuits etc.?	
Any pulses (beans, lentils, peas)?	
Any vegtables?	
Any fruits?	
Any meat: beef, pork, fish, chicken etc.?	
Any dairy products: milk, cheese, yoghurt, butter etc?	
Any sugar or honey?	

Household food insecurity and access scale

In the past 30 days, how often did this happen?	0. Never 1. Rarely (once or twice in the past 30 days) 2. Sometimes (three to ten times in the past 30 days) 3. Often (more than ten times in the past 30 days)
Did you worry that your household would not have enough food due to a lack of resources?	

Did you or any household member were not able to eat the kinds of foods you preferred because a lack of resources?	
Did you or any household member have to eat a limited variety of foods due to a lack of resources?	
Did you or any household member had to eat some foods that you did not want to eat because of a lack of resources to obtain other types of food?	
Did you or any household member eat a SMALLER meal than you felt you needed because there was not enough food?	
Did you or any household member eat FEWER meals in a day because there was not enough food?	
Did you or any household member go to sleep at night hungry because there was not enough food?	

Self-assessed food security

Please characterize the state of food security of the households as compared to a "normal" (not bad, not good) year for the following categories.	1. Food secure 2. Slightly food insecure 3. Moderately food insecure 4. Very food insecure 5. Extremely food insecure
Past 30 days	
A month before Tet	
A month after Tet	

Coping strategy & household food security and access statements.

Points	Level of food security
0	Very food secure
1-5	Food secure
6-11	Moderate food secure
12-19	Slightly food insecure
20-28	Very food insecure

Table 3: Dietary diversity grading scale.

Points	Level of food security
0-4	Very food insecure
5-10	Slightly food insecure
11-15	Moderate food secure
16-19	Food secure
20-28	Very food secure

Focus group children

Rice

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Mussel rice

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Rice and vegetables

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Rice and pork

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Rice and fish

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Rice and beef

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Instant noodles

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Rice noodles

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Sweet potato

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Potato

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes O No

Fresh spring rolls

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes ☒No

Fried spring rolls

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes ☒No

Banh mi

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes ☒No

Pho noodle soup

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes ☒No

Sweet soup

O I eat this every day

O I eat this a few times a week

O I eat this sometimes

O I never eat this

Do you want to eat this dish? O yes ☒No

Focus group questions

Focus groups

Introduction: Thank you for your willingness to take part in this group discussion. The purpose of the discussion is to explore each of your perceptions regarding the presence of food security in this community. I'd like to begin by defining food security. For example, a household may be food insecure—household members may not be able to afford to purchase food from normal retail food outlets and they may have had to take several different actions to stretch their food or may have gone without food on numerous occasions. However, in the community, food may be affordable, available, and accessible through normal markets. That is, community food security may not be a problem, but some households in the community may be food insecure. Let's try to discuss these two issues separately. First, let's talk about household food security:

1. Do you think that many households in the community have a problem with food security? What is the extent of the problem?
2. Why do you think that household food security is a problem? (That is, how do you see the problem manifest itself?)
3. How do people cope with the problem of food insecurity?
4. Do you think that food is accessible, available, and affordable in the community? (Probe to explain how it is or is not.)
5. Are there differences in different parts of the community?
6. What do you think are the biggest problems related to food security at the community level? Why do you think these exist?
7. How does the community address food insecurity? What resources are in place to avoid the problem if it doesn't exist?
8. What else could be done to improve the community's problems with food insecurity?
9. Who are the key players?
10. Are alternative food sources easily accessible and used in the community? What are they? Who organizes them?
11. Are there any local ordinances or other policies that affect food production, distribution, and consumption? (e.g., zoning rules that affect supermarket development, food purchasing regulations for local schools or institutions, policies on the use of city-owned land for community gardens)

Food Stores Let's start with some questions about food shopping:

1. How do you get to the store? Is transportation for shopping a problem? How long does it take you to get there?
2. How often do you do a big shopping for food (not counting trips for just a few items)? How many "fill-in" trips do you make (that is, trips for one or two small items)?
3. Now think about all the different types of stores that you shop at. Are you satisfied with the stores you use most frequently? (Probe for quality of food and service, location, cleanliness, food cost, and variety.)
4. Are there other stores that you would rather use but that you don't? Why not? (Probe for transportation difficulty, cost and variety of food.)
5. We are trying to understand why people shop the way they do. What influences the number of times you shop? (Probe for transportation, storage, availability of stores or food in the

stores). There are several other places to get food for your household. I am curious to know how many of you use these resources and why or why not.

6. Let's start with home grown or produced food. How many of you grow your own food in a home garden or fish or hunt for your food? Why/why not?
7. How heavily do you rely on these foods in your regular food supply? At which times of the year?
8. Do you regularly get food at no cost from neighbours or others you know who grow or hunt their own food?
9. Now one last question. Imagine that you have the opportunity to do something in the community to help people have an easier time getting the types of foods that they want or need. What would you do? (probe for the following: • Bring stores closer to our homes. • Try to get the foods we want available in the stores. • Establish and enforce standards of cleanliness for stores. • Provide public transportation to the large supermarkets. • Start a food co-op. • Start farmers' markets in the community. • Create outreach programs for alternative resources. • Establish a community garden).

Thank you for your time!

Variable names

Variable name	Variable label	Measurement
Age of the household head	Number of years	As reported by respondent
Sex	Dummy variable: 1=male 2=female	Sex of the household head
Religion	1=Buddhist 2=Christian 3=Muslim 4=Jeweish 5=Hindoe 6=Atheisit 7=Spiritual 8=Other	As reported by respondent
Etnicity	1=Kinh 2=Tay 3=Thai 4=Muong 5=Hoa 6=Khmer 7=Nung 8=Hmong 9=Dao 10=Other	As reported by respondent
Main job	1=rice farmer 2=local government 3=household work 4=other	As reported by respondent
Household head	1=Husband 2=Wife 3=Grandparents 4=Other	As reported by respondent
Date moved to Xuan Hoa	1=›2015 2=›2010 3=›2005 4=›2000 5=›1995 6=›1990 7=≤1990	As reported by respondent
Education	1=Illeterate 2=litterate but no education 3=primary 4=secondary 5=highschool 6=bachelor 7=master 8=vocational training 9=other	As reported by respondent
Marital status	1=Married 2=Widowed 3=Seperated/divorced 4=Single	As reported by respondent
If the HH has child(ren)	Dummy variable: 1=Yes 2=No	As reported by respondent
If the child go to school	Dummy variable: 1=Yes 2=No	As reported by respondent
Sufficient income	1=No, a hard life 2=Sufficient but no education 3=Yes also education 4=Yes also for business	As reported by respondent
Knowledge aqcuisition	1=Official notice 2=Neigbours etc told you 3=Community meetings 4=Did not know	As reported by respondent
Feeling aqcuisition	1=Oppose against 2=Accept but dissatisfied 3=Satisfied but concerned for landmarket 4=Support and satisfied	As reported by respondent
Land	Size of land owned	Size of land in acres
Rice Income	Income of rice yield	Income per month in Dong
Other agricultural income	Income of other agricultural activities	Income per month in Dong
Non-agricultural income	Income of non-agricultural activities	Income per month in Dong
Type money resources	1=rice 2=vegtables/fruit 3=flowers 4=livestock 5=government job 6=Inscent making 7=Shop owner 8=other	As reported by respondent
Who money resources	1=Husband 2=Wife 3=Granddad 4=Grandma 5=Uncle 6=Aunt 7=Cousins 8=Son 9=Daughter 10=other	As reported by respondent
Remittances	Dummy variable: 1=Yes 2=No	As reported by respondent
Gender remittances	Dummy variable: 1=Male 2=Female	As reported by respondent
Household expenditures	Total household expenditures	Per month in Dong
Decission food	1=Husband 2=Wife 3=Granddad 4=Grandma 5=Son 6=Daughter 7=Other	As reported by respondent
Gender decissionmaker food	Dummy variable: 1=Male 2=Female	As reported by respondent
Foodbudget	Total household foodbudget	Per month in Dong
Find some food expensive	Dummy variable: 1=Yes 2=No	As reported by respondent
Where buy food	1=supermarket 2=market in Hue 3=market thuy van 4=market xuan hoa 5=produce own food	As reported by respondent
Caloric intake	Number of caloric intake per week	Caloric intake via the food diary
Number of rice meals	Number of rice meals consumed in a week	Number of rice meals consumed via the food diary
Number of other meals	Number of other meals consumed in a week	Number of other meals consumed via the food diary
Coping strategy	Perspective on coping strategy	Coping strategy via statement food security survey
Dietary diversity	Perspective on dietary diversity	Dietary diversity via statement food security survey
Access scale	Perspective on access scale	Access scale via statement food security survey

Self-assessed food security	Perspective on self-assessed food security level	Self-assessed via statement food security survey
Choose resettlement area	Dummy variable: 1=Yes 2=No	As reported by respondent
Compensation agreement	1-No just follow 2=yes via negotiation 3=other	As reported by respondent
Support service	1=yes 2=promised but did not happen 3=No	As reported by respondent
Lifelihood after	1=continue farming on remaining land 2=change jobs 3=continue farming and work elsewhere 4=retire 5=other	As reported by respondent
Usage compensation	1=Bank 2=education 3=interior 4=moterbikes 5=other	As reported by respondent
Friend government	Dummy variable: 1=Yes 2=No	As reported by respondent
Contact for interviews	Dummy variable: 1=Yes 2=No	As reported by respondent
Manage a food dary	Dummy variable: 1=Yes 2=No	As reported by respondent
Quote in report	Dummy variable: 1=Yes 2=No	As reported by respondent

For every missing value “999” will be used

Planning

Date	Activity
01/02/2016	Arrived in Hué
03/02/2016 - 06/02/2016	Meeting with translators
07/02/2016 - 15/02/2016	Working on Survey, Interviews, food security statements and food diary
17/02/2016 - 22/02/2016	Interviews with NGO's
18/02/2016	Meeting with Community leader of Thuy Van commune and meeting with the village headman of Xuân Hòa village
21/02/2016 - 23/02/2016	Observation of the old bridge vs new bridge
23/02/2016 - 24/02/2016	Translation of the survey, food security statements and food diary in Vietnamese
25/02/2016 - 25/03/2016	Surveys
26/03/2016 - 31/03/2016	Hand in Interim report
29/03/2016 - 03/04/2016	Surveys
04/04/2016 – 10/04/2016	Preparing focus groups with translator (sending invitation letters etc.)
11/04/2016 - 24/04/2016	Focus Groups
25/04/2016 - 01/05/2016	Room left for any delays that might occur during the fieldwork. If no delays occure than more surveys will be gathered.
02/05/2016 - 15/05/2016	Analyzing all the data gathered
16/05/2016 - 22/05/2016	Presentation of data at Hué university, college of economics
23/05/2016	Flying back to the Netherlands
26/05/2016 - 27/05/2016	Presentation of data at Utrecht University
06/06/2016	Hand in Draft 1 of thesis
08/07/2016	Hand in Draft 2 of thesis
05/08/2016	Hand in Final version of thesis at Utrecht University and Hué University.
29/08/2016	Hand in paper about thesis to Hué University.
30/09/2016	Hand in article about research to Hué University.

Student assessment form

Student assessment form

This assessment has to be filled by the supervisor as appointed by the host organisation. After filling and signing, this form has to be handed over the IDS internship supervisor.

Name student: Laila Bouallouch **Address:** Professor Zonnebloemlaan 39, 3571KS Utrecht, the Netherlands
Name host organisation: Hué university, college of economics **Address**: 99 Ho Dac Di, Hué, Vietnam
Name host organisation's internship supervisor: Dr. Phục Nguyễn Quang **Function/position within host organisation**: Lecturer **Telephone number and email**: nqphuc@hce.edu.vn / +84 (0) 901 142 699
Duration of internship: 01/02/2016 till 21/05/2016 **Short description of the internship**: Doing research about urbanisation, land acquisition and food security in the peri-urban areas of the city of Hué.

1. Was the level of knowledge of the student enough to properly carry out the internship? ● More than enough 0 Enough 0 Not enough 0 Not enough at all
2. How do you consider the level of motivation of the student? ● More than enough 0 Enough 0 Not enough 0 Not enough at all
3. Did the student take sufficient initiative to make the internship successful? 0 More than sufficient ● Sufficient 0 Not sufficient 0 Not sufficient at all
4. How do you consider the level of independency of the student? ● More than sufficient 0 Sufficient 0 Not sufficient 0 Not sufficient at all
5. Was the student able to verbally express himself/herself sufficiently? ● More than sufficient 0 Sufficient 0 Not sufficient 0 Not sufficient at all
6. Was the student able to express himself/herself sufficiently in writing? ● More than sufficient 0 Sufficient 0 Not sufficient 0 Not sufficient at all
7. Did the student leave a satisfying internship report behind?

● Very satisfying report
0 Satisfying report
0 Not so satisfying report
0 No report at all

8. Was the student able to adapt himself/herself to local circumstances?
● More than sufficient
0 Sufficient
0 Not sufficient
0 Not sufficient at all

9. Was the student able to adapt himself/herself to the local culture or codes of conduct?
● More than sufficient
0 Sufficient
0 Not sufficient
0 Not sufficient at all

10. How did the student behave within the host organisation?
0 Very pleasant
● Pleasant
0 Not so pleasant
0 Not pleasant at all

11. How did the student behave in relation to the host organisation's target groups?
● Very respectful
0 Respectful
0 Not so respectful
0 Not respectful at all

12. How did the student behave in relation to local authorities?
● Very respectful
0 Respectful
0 Not so respectful
0 Not respectful at all

13. What is your general opinion about the student?
● Very good
0 Good
0 Not so good
0 Not good at all

14. Has the internship been useful for your organisation?
● Yes very useful
0 Useful
0 Not so useful
0 Not useful at all

15. Will you be able to use the results of the research in a practical way?
● Yes definitely
0 Yes
0 Somehow/probably
0 No

16. Would you like to receive any more IDS students in future?
● Yes
0 Yes, but under certain conditions
0 Probably
0 No

17. Do you have any particular comments?
18. Do you have any suggestions for any future student?

Signed by the host organisation's internship supervisor:

Nyaya Cheng phul

Host organisation's
internship supervisor