Impacts of agricultural land acquisition for urbanization on smallholder agriculture and gender issues in affected communes: A case study in Huong Thuy town, Thua Thien Hue province, Vietnam

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Table of content

List of Chart

List of figure

List of Table

Acronym

ALAFU	Agricultural Land Acquisition for Urbanization
ALA	Agricultural Land Acquisition
ADB	Asian Development Bank
DFID	Department for International Development
DONRE	Department of Natural Resources and Environment
FAO	Food and Agriculture Organization
GEIAH	Gender Equality in Affected Household
GSO	General Statistics Office of Vietnam
PUA	Peri-Urban or Urban Agriculture
MONRE	Ministry of Natural Resources and Environment
MOC	Ministry of Construction
Mha	Million hectare
HGE	Household gender equality
HTTPC	Huong Thuy Town People Committee
ILO	International Labour Organization
UCW	Unpaid Care Work
UNDP	United Nations Development Programme
UNW	United Nations Women
WPHDM	women's participation in household decision-making
SES	Socio-Economic Status

Abstract

Agricultural Land Acquisition for Urbanization (ALAFU) is an inevitable process that has been happening around the world, especially in developing countries. It is the process by which the government acquires agricultural land from various users, converts it to non-agricultural land, and constructs and develops roads, buildings, residential areas, parks, and other infrastructure on the acquired agricultural land. ALAFU has significantly contributed to social-economic development but has caused many impacts, such as agricultural land scarcity, land grabs, transforming agricultural systems, interrupting local livelihoods, and changing gender issues. In the context of increasing population and food demand as well as requesting gender equality improvement, the questions are whether small agriculture and gender issues in affected communities could get any benefits associated with ALAFU and what should the ALAFU program do to limit the negative impacts on small agriculture and gender issues? This study answered these questions through a case study in Huong Thuy, Thua Thien Hue province, Vietnam.

Thua Thien Hue province, a central province of Vietnam, has a severe climate and poor soil resources. Under the pressure of economic development, the provincial authorities have promoted urbanization and industrialization by expanding Hue City to the south of the province. As a result, between 2010 and 2015, 7083 ha of agricultural land has been acquired to be converted to non-agricultural land. The government planned to expand Hue city to five times its current size in 2014, so 19,000 ha of agricultural land will be converted between 2016 and 2020. Agriculture has been facing challenges because the soil quality of agricultural land areas is poor, while flooding and drought are increasing. Cultivation and livestock are the main activities, contributing 65% and 25% of the total value of the agricultural sector, respectively. In addition, under the long-lasting culture of the Nguyen dynasty, the division of the roles of women and men in economic activities and the family has been typical and rooted deeply in each family. Women often stay at home, take care of family members and do all the domestic work that is requested rather fussily and strictly than in other places, while men go out, ensure the family economy, and participate in public events and family events. So, men often make all the decisions for the family and women accept this division.

To build the research framework, this study applied the sustainable livelihood framework of DIFD (1999) and the theory of natural resource access. The case study method and the mixed method were applied in this study, in which qualitative data dominated. Primary data, which included both qualitative and quantitative data, were collected using a survey of 200 households, eight group discussions, 17 key informant interviews, and participatory observation at the study site. The quantitative data was coded and analyzed into statistical data, while the qualitative data was documented as stories, quotes, and pictures. Out of the primary data, I also collected secondary data from reports, papers, statistical data, and previous studies of my colleagues on the study sites that were related to the research topic. I also used Google Earth to collect images of land-use changes in study sites over time.

The research findings have shown the opportunities and challenges that ALAFU created for small agriculture and gender issues in affected communes. Regarding smallholder agriculture, after ALAFU it has gradually transformed from traditional agriculture to peri-urban or urban agriculture (PUA). Rice cultivation and livestock production have declined sharply because of the reducing of rice land and

the merging of affected communities into urban areas (livestock is prohibited in urban areas). Moreover, non-farm jobs with higher incomes are now more available after ALAFU, which is also the main reason for this change. As a result, a part of the remaining rice land has been abandoned after ALAFU, and the rest of it is concentrated in several households that still follow rice cultivation as one of their main incomes. In contrast, potted flower plantation (PFP) has rapidly developed due to the increasing consumer demand of urban dwellers. Until now, it has become the main income of 34% of surveyed households. However, while rice land is abandoned, PFP has to deal with a lack of space or area to put flowerpots, which will lead to challenges in the near future when the free spaces around the village, where PFP is happening at present, are narrowed by increasing population and housing.

Regarding gender issues, we found both negative and positive impacts associated with ALAFU. By comparing the changes in socio-economic status (SES) of affected women in three zones where the purposes of agricultural land acquisition (ALA) are different, the SES of affected women by ALAFU has improved the most through the benefits of urbanization. ALAFU has greatly contributed to the changes in the jobs of affected women. New jobs gave them higher incomes and required them to be more active. Improving employment status has created domino effects on women's income and social knowledge. ALAFU has created the most opportunities, but the support programs for all ALA projects are the same and very limited. This causes inequality for the affected people, especially the affected women in ALA projects for hydropower development. The change in household gender quality (HEG) in affected communes is also studied by comparing the roles of husband and wife after and before ALAFU, and by comparing the groups of affected and non-effected households. HGE in both groups has improved through the benefits of ALAFU, especially the HGE of the affected households group. The income contribution of women to the household’s income has greatly improved and reached almost that of husbands. Women are busier with their income activities than men, but their responsibilities for unpaid work burden, household decision-making, and social activities have not changed significantly. As a result, ALAFU has a positive impact on HGE, but women still have to face the potential risks of temporary jobs without security and continue to bear the UPW burden.

Based on the findings, this thesis suggests some recommendations that support policy-making processes related to supporting programs of ALA and urbanization programs. The government should pay more attention to PUA development in affected communes by the ALAFU project to not only create livelihoods for local people but also contribute to the sustainable development of urban areas. They should also improve the support program of ALA projects to limit the negative impacts on gender issues. The support needs to be based on the needs and characteristics of each affected group. It should not be transferred to cash as the present, instead of that, it should be an action plan in the long term.

Chapter I: Introduction

Agricultural Land Acquisition for Urbanization (ALAFU) is the process by which the government acquires agricultural land from various users, converts it to non-agricultural land, and constructs and develops roads, buildings, residential areas, parks, and other infrastructure on the acquired agricultural land. This is an unavoidable process in developing countries due to population pressure [1]. This process has also gradually transformed rural communes into peri-urban and urban areas, changing livelihoods, culture, environment. Although ALAFU occurred in developed countries many years ago and experiences have been shared, the effects of ALAFU on each country are very different, including both negative and positive effects that must be studied. This is due to differences in political regimes, agriculture, land resource management, and social-economic factors. Access to agricultural land, agriculture, and gender issues have all interacted, so ALAFU has undoubtedly had a significant impact on agriculture and gender issues. Vietnam, one of the world's top five rice exporters, has been implementing ALAFU since the 1990s, leading to the conversion of 2.6 million hectares of rice land in particular [2] and around 10 million ha of agricultural and forest land in general [3]. Notably, ALAFU occurred in Vietnam in the context of smallholder agriculture which has played a critical role in national agriculture being fragmented and less profitable. Additionally, rural gender issues such as women's socioeconomic status (SES) and household gender equality (HGE) have been limited. So, in the context of ALAFU, the questions are whether the two issues mentioned (repeat the issues again: impact on smallholder agriculture and gender issues) above have benefited or damaged from the ALAFU projects, and what are the challenges and opportunities associated with ALAFU for these issues? My Ph.D. research project discovered the answers to these questions. In this chapter, I explain the thesis' context, outline, and structure.

1.1 Context of the research

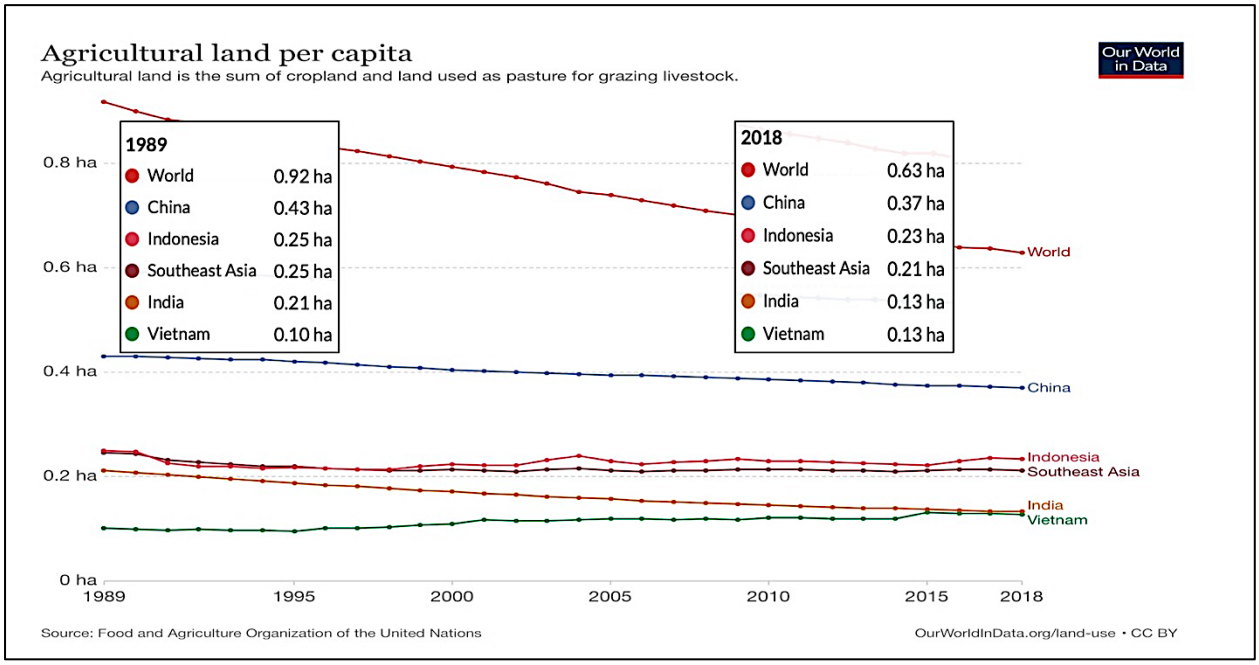
Globally, there are about 134 million people born every year. The predicted population of the world in 2050 will reah to 9.7 billion [4]. The share of urban population has also increased from 14% in 1990 to 45% in 1998, then in 2008 it actually surpassed the rural population [5,6]. In the period 2015-2030, a total urban population is projected to grow quickly from 4 billion to 5.1 billion people, and that of Asia will increase from 2.1 to 2.8 billion people [7]. The boom in the population has caused high pressure not only on food security but also on the urbanization process that often causes farmland loss [1]. As a result, agricultural land resources have faced high pressure in both quantitative and qualitative aspects, such as a reduction in area and soil degradation [8].

1.1.1 High pressure on agricultural land resources

Agricultural land contributes to countries around the world achieving their human security and well-being goals. Because of the aforementioned rising population, during the period 1989-2018, agricultural land per capita has decreased from 0.93ha to 0.63ha and that of arable land has reduced from 0.24 ha to less than 0.19 ha [8]. In the meantime, almost all the potential agricultural land has been exploited. In other words, any future expansion would be prohibitively expensive, and installing irrigation systems and other facilities would be extremely difficult [9].

In Asia, agricultural land has fluctuated significantly in recent decades due to several interconnected causes, like population growth, urbanization, rising wealth and food change. As of 2015, agricultural land decreased considerably in some countries such as Brunei Darussalam 66.7%, Japan 48%, and Korea 35.3%. However, agricultural land growth in some countries was very high during the same period, for example, 49,5%, in Malaysia, 47,8% in Vietnam, and 40,7% in Bhutan [10]. The absolute extent of land has also changed between 1961 and 2015. Some countries have gained agricultural land, such as 153 Mha in China, 18.6 Mha in Indonesia, and 87.2 Mha in Saudi Arabia, while some countries lost land, for example 27.8 Mha in Mongolia and 13.7 Mha in Iran. There is now also a limited amount of potential land that can be transformed into agricultural land. The majority of the new agricultural land is coming from converted natural forests, and most of this converted land is linked to urbanization and population growth [9].

In Vietnam, agricultural land per person is lower that of other Asian countries. Since the 1990s, by promoting domestic migration, the government has converted uncultivated land and natural forest in remote areas into agricultural land. In that period, the overall area of agricultural land increased by nearly 70%. In the 2000s, it was subsequently slightly increased [11]. The total cropland area by 2012 reached nearly 11 million ha, accounting for 35% of the country's agricultural land, of which the share of annual crops is 60%, that of perennial crops and grassland is 34% and 6% respectively [11]. The agricultural area per person increased from 0.1ha in 1989 to 0.13ha in 2018. The average area of agricultural land for the agriculturally active population is 0.28ha, about half of that in Cambodia, Myanmar, or the Philippines [12]. Like many developing countries, land for agriculture was obtained mostly by the conversion of natural forests and was lost by urbanization.



(Source: Orginial Data of FAO was publised on the website of Our World in Data, 2021)

Chart 1.1: Agricultural land per capita in some countries and the world in period 1989-2018

1.1.2 Increasing agricultural land acquisition for urbanization

Over the last two decades, farmland conversion has been considered as a hot issue around the world [12]. The loss of farmland due to urban expansion has become a global concern that must be

addressed in order to achieve sustainable development in developed and developing countries as well [13,14]. Globally, if population growth and urban expansion continue at current rates, the urban land will reach 1.2 million km2, resulting in the loss of 1.8 percent of global croplands, with Asia and Africa accounting for 80 percent of the loss [9,15,16]. Notably, the productivity of most of the converted land is double that of the average. The greatest absolute loss of cropland will occur in Asia, while the greatest percentage loss of cropland will happen in African countries [9,15].

In developed countries where population growth is steady, the cultivated land with the highest production levels is reduced due to urbanization [17]. In Canada, during the period 1988-2010, 60% of new urban land were formed on agricultural land [18]. In Latin America, 30.28% of new urban areas came from converted agricultural land between 1985-2015 [19]. Annually, the United States converts about 500,000 ha of land and Australia also consumes a vast amount of agricultural land for urban expansion [20]. In Australia urban sprawl consumes vast agricultural land areas for homes, infrastructure, and commercial buildings. Nevertheless, land demand remains important [21].

In Asia, the conversion agricultural land to urbanization has been concerned as “a silent disaster” [6,22,23]. Among the countries in Asia, the urban population in China rose to more than 500 million people in the period from 1978-2021. Over the past decade, the annual urban population growth rate in China has achieved nearly 4%, leading to an increase of 100 million urban dwellers in the cities [24]. At present, the urbanization rate of this country has reached 60.6% [25]. As a result, 6.7 million hectares of agricultural land has been converted to develop urban area [26,27]. In India, the urban population has been increasing consistently from 27.81% in 2001 to 34.9% in 2020. Over the years, urban expansion has occupied huge areas of land, causing the share of agricultural land reduced by 16.31% [28]. A majority of the converted agricultural land has good soil [29]. In Indonesia, agricultural land decreased by 0.17% per year during 2000-2005. In the period 1999-2002, the total of agricultural land that was converted to non-agricultural are around 450,000 hectares [30]. Losing agricultural land due to urban expansion has been a hot issue in this country [31,32].

In Vietnam, a total of 833 urban areas were established by 2018, representing an urbanization proportion of about 38.5%. It is expected that this figure will increase by 50% by 2025 [33,34]. The population in urban areas increased to 35,03 million in 2017 from 19,51 million in 1990 [35,36]. In order to promote urbanization and industrialization, a huge area of agriculture has now been converted into non-agricultural land [37]. The GSO reports that between 1995 and 2009, the area of non-agricultural land was increased by 1,8 million ha, but that of rice land was reduced by about 2,6 million ha [2]. Over the last three decades, approximately 10 million hectares of land has been transformed into other land uses [3]. Furthermore, most of the converted terrain is on flat land in lowlands, where agricultural production may be more convenient than highlands and other areas [38].

1.1.3 Challenges associated with land resources for agriculture

Agriculture always holds an important role in food security and economic development. In 2018, its share is 4% of the global GDP and 25% of GDP in some developing countries. It also contributed to almost the whole lives of about 65 percent of poor laborers [39]. Compared to other sectors, the growth in agricultural is two to four times more effective at improving the life of the poorest people. Therefore,

it is one of the most powerful sectors when it comes to alleviating poverty, improving social-economic wealth and feeding around 9 billion people by 2050 [40].

To ensure agriculture plays its roles well, intensive cultivation through multiple cropping, monocultures, and the use of agrochemicals and agricultural machinery has been widely promoted along with efforts to expand agricultural land [41]. The world's agricultural production has increased around three times over the period. Over 40% of the food production growth was in irrigated areas [8]. However, overusing chemicals and pesticides for a long time has caused land degradation, soil and water pollution, and undermining the land's long-term productive potential [41]. In addition, as mentioned above, a portion of agricultural land which is most suitable for agricultural production has been converted to non-agricultural land due to urbanization. This situation could accelerate agricultural land fragmentation and disrupt smallholder agriculture because almost all the world's farms are smallholder family farms that have a small scale. According to statistics, number of farms with a size of less than 2 ha occupies 84% of the world's farms and they uses just about 12% of the agricultural land. Conversely, the rest of the world's farms with a size over 2 ha represents 88 % of the world's agricultural land [42]. As of 2019, despite numerous efforts, agriculture still does not produce enough food for the population of the world. The global percentage of undernourished people is 8.9 %, with 22 percent in South Saharan Africa and 2.5 % in Northern America and Europe. An estimated 381 million people in Asia are malnourished, representing over 50% of the world [43].

In China, agriculture uses 9% of the world's agricultural land. Its domestic output is the top ranked in global agriculture and provides food for 22% of population of the world [44,45]. It contributes over 12% of the national GDP and holds an important position in the national economy. Since the 1970s, it has changed dramatically and the average growth rate per year in the period 1980-2010 was 5 percent, which came mainly from the cropping sectors [46]. The products of agriculture have also changed and wheat, rice, potatoes, peanuts, millet, cotton, of which rice, wheat and corn are now the main crops. Other products like fish, flax, jute and meat are also popular [47]. Agricultural production is growing rapidly, but the income of farmers from agriculture is still low. At present, agricultural land fragmentation, agricultural chemical overuse, and an aging labor force are big challenges for Chinese agriculture [48]. Although some of the biggest farms in the world are in China, most Chinese farms are very small. 120 million hectares of farmland has been allocated to 260 million rural households, meaning the average farmland size per rural household is under 0.5 ha, which is allocated to over six different plots [49]. In 2013, the total fertilizers that were applied for agriculture in China occupied 35.5% of the application of the world. As a result, surface water, groundwater, and soil have been seriously polluted [26,48]. The share of the workforce in agriculture also steadily decreased, from 38.1% in 2009 to 25.1% in 2019 [50]. Both statistical data from the national census and research findings have shown that the agricultural workforce is aging. The percentage of older labor in the total labor in agriculture reaches 32.5%. Most young labour have been trying to get non-farm jobs that have appeared due to urbanization [50].

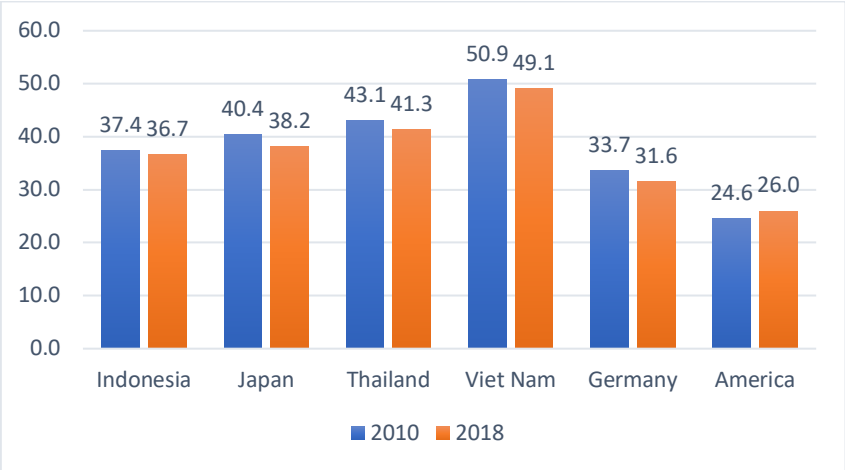
Like the situation with Chinese agriculture, farm size in Southeast Asia remains relatively small. Among Southeast Asian countries, farm size in the Philippines, Thailand, and Myanmar is bigger than in other countries [42]. Meanwhile, in Indonesia and Vietnam, farms smaller than 1 ha account for more than 75% of the total farms [51]. Rice is one of the main crops in Southeast Asia, however, its contribution to total gross agricultural production value has declined from 40% to 30% between 1990 and 2013

because the contribution of palm oil, a higher-value product, is increasing. Changes within commodity categories have also occurred. For example, poultry production has remarkably increased within the meat sector. Food security has also significantly improved in this region [51]. Overall, however, the significance and role of agriculture in the livelihoods of rural people are eroding [52].

Agriculture in Vietnam is one of the most important income sources of farming households and one of crucial contributors to the national economy as well. By implementing the Doi Moi policy in 1986, the country had positively shifted, escaping food insecurity and becoming an agricultural exporter [12]. Almost 90% of the agricultural land in Vietnam falls under either agricultural households or farms with small size. Farms with a size smaller than 0.2 ha account for 30% of all farms, while farms with a size between 0.2 and 0.5, farms with a size between 0.5 and 1 hectare, and farms with a size between 1 and 2 ha account for 26%, 18%, and 15%, respectively. The farms with a size of over 2 ha only account for 12% of the total. Moreover, similar to China, rural people were allocated agricultural land in an egalitarian way, meaning each household could have 4-7 plots in different places based on the quality, terrain, distance [53]. This caused to farmland fragmentation, limiting agricultural productivity [54,55]. Besides that, since almost all the potential farmland was used in the early 2000s, agricultural production has been intensive through the application of techniques and overuse of pesticides and fertilizers to achieve high productivity. Consequently, Vietnam moved forward to a transition country in 2010 from an ag-based country [12]. In return, farmland and water resources have been seriously polluted and degraded, causing big challenges for sustainable agricultural development [54,56,57]. Until now, the value-added of agricultural products in Vietnam is still limited [53]. Between 2002 and 2012, the contribution of agriculture to the household economy in general and to rural households in particular was reduced from 28.6% to 19.9% and from 43.4% to 31.8%, respectively [12].

1.1.4 Gender issues in agriculture

Data in 2012 from FAO indicated that the livelihoods of 45% of the world's population depend on agriculture, forestry, fishing, and hunting. The percentage of female labor in the agricultural labor force is lowest in the Americas with around 20% and highest in in East and Southeast with around 50%. The rest of the world is 43% on average [58]. The feminization of agriculture is becoming more and more popular in developing countries because of migration and traditional labor divisions. However, there are inequal allocation of the responsibilities, power and benifits between men and women in agriculture in particular and in life in general [59]. Women's roles in agriculture vary, ranging from cultivators on their own agricultural land to paid and unpaid workers, employers, employees, wage-labor in both farm and nonfarm jobs, in addition to parental and child-rearing responsibilities. Rural women bear a greater labor burden than men, including a greater share of unpaid household responsibilities such as food preparation and fuel and water collection [60]. While rural women continue to play such important roles, their authority to make household decisions regarding labor and expenditures is frequently denied. They are typically marginalized at all levels, from production and consumption at the household level to the market, policy, and institutional levels, which have ramifications for their households and communities. They face discrimination in accessing natural resources and important services such as land resources, training courses, credit, and e-commerce [61]. Such gender gaps in agriculture and access to land resources have also caused gender issues such as the low social-economic status of rural women and household gender inequality.



(Source: FAOSAT, 2021, % of employment in agriculture)

Chart 1.2: The share of female employment in agriculture of selected countries

In Asia, the main problems that women have to face are not the physical availability of resources, but rather power dynamics, poverty, and inequality. They are the main agricultural labor force but are limited in access to land as well as access to agricultural extension services and irrigation management. Social inequalities in the division of labor and women's voices in public push women into low socio-economic positions [60]. In India, women's status in society and the family has significantly improved. However, there are still many problems that rural women have to bear, such as gender inequality, limitations on access to credit, land resources, health care, and education [62]. Rural women contribute significantly to agriculture but have to face a lot of problems such as the burden of unpaid work, discrimination, and being excluded from decision making processes. Consequently, their social-economic status is limitted [63]. Similar stories happen in China and other Asian countries as well.

In rural Vietnam, gender equality has been a focus of the national strategy of socio-economic development in the past decades. However, women still have low position in society. 65% of rural female labor is employed in agriculture, and 45% of them are self-employed. Most rural female laborers do not have health insurance or access to social security benefits. Rural women still play a main role in domestic work [64]. Their participation in household decision-making and social activities has slightly enhanced. Most rural women (around 70.9%) can not access the training courses or services to improve the working capacity and skills [65,66]. Many gaps in gender issues including employment, income, participation, access to service and resources, and burden of domestic work of women need to be filled in. Overall, gender preconceptions such as "men in public life, women at home", "men build the house, women make the home" are remained deeply in rural society [66,67].

1.2 Outline

1.2.1 Research gaps

ALAFU happens in many countries around the world, especially those that are rapidly developing. Many studies have applied different research methods to investigate and reveal the impacts of ALAFU (including both negative and positive consequences). These approaches have included both qualitative and quantitative methodologies. The existing benefit sharing status of ALAFU projects is unfair. A study in China has indicated that the benefit sharing mechanism among the stakeholders is

not fair as farmers recieve lowest benefit [68]. A study in Indonesia has indicated that the benefit of affected farmers reduced over time. The local government and manufacturing sector obtained almost all of the benefits (at a net loss to social welfare) by buying the land use rights at the low prices of agricultural land and reselling them at the high prices of urban land [69]. According to studies conducted in Vietnam, the benefit distribution in ALAFU projects is unequal among the various stakeholders. In general, the affected farmers tend to benefit the least. Therefore, ALAFU in Vietnam has raised social conflicts since the voices and rights of affected people are limited while the decision-making power of the state is extensive. As a result, the most beneficiaries are not affected people, but others [68,70]. Another study in Ethiopia by measuring development of local infracstructure, technologial assignation, job opportunities, agricultural production, indicated the local communities received unsignificant benefits from ALA projects [71]. Peng et al have found that the ALAFU projects in China skyrocketed the price of the converted agriculture land, causing the social tension over land in urban areas [72]. This happened in Mali as well. The price of farmland after conversion to urban land increased a hundred times[73]. A study in Wuhan, China found that the well-being of affected farmers has decreaed after losing their farmland [74]. According to Wang et al, Chinese farmers could receive a good rate of compensation if they are able to participate in the local power framework [75]. These studies have mainly suggested improving the land price of acquired land but have not mentioned the support program of ALA projects for affected people.

ALAFU has also caused environmental and biodiversity problems. According to several studies, ALC has caused serious negative ecological effects such as erosion, salinization, forest cover depletion, desertification, agricultural land fragmentation, destroying vegetation cover, water and soil pollution and groundwater depletion. These effects occur not only at the present time but will also likely persist in the future [71,76,77]. Farmland is open space that provides valuable habitat for many wildlife species, but ALAFU completely changes its structure and inhabitants, leading to biodiversity decline [78,79]. Other research, which used spatially explicit probabilistic forecasts to study the direct effects of urban expansion on biodiversity, indicated that urban expansion would result in significant habitat loss in key biodiversity hotspots. The study concluded that although urbanization is frequently mentioned as a problem at local level, the overall impacts at global level of estimated urban development will call for important changes of policy to mitigate the negative impacts on vegetation cover and biodiversity at global level [16].

Many studies have discussed the impact of ALAFU on income activities at both the household and national levels. Some studies have also indicated that ALAFU is the cheapest option for urbanization and national economic development which is why many countries have applied and why it will continuously occur in the future [14,69,80–84]. In developing countries, the correlation between agricultural land conversion, urban population growth, and labor productivity is positive, which contributes to the rapid growth and structural transition of the economy [1]. At a large scale, a study in China showed urbanization decreased cropland fragmentation and predicted that in 2050 total crop production would still be higher than in 2015 [85]. However, a study which took place in developed countries revealed that urbanization causes farmland abandonment due to labor migration to cities [86]. At the household level, several studies have applied quantitative methods and revealed that after ALAFU household income in affected communes has significantly improved and has mainly come from non-farm jobs. These studies found that, while ALAFU disrupts livelihoods, the development of infracstructure paired appearance of business enterprises due to urbanization have created more non-

farm job opportunities and contributed to poverty reduction in affected communes. However, these studies have also argued that affected people have faced difficulties in finding good job opportunities and managing the compensation cash [68,87–89]. On the other hand, other quantitative studies have found increasing unemployment, loss of income, poverty, and change in livelihoods in the affected communes after ALAFU. This is because most of the affected people have not only a limition in education and working skills but also a strong dependence on farmland resources, causing their low adaptive capacity to new conditions after ALAFU [90–92]. These studies have deeply analyzed non-farm job opportunities and highlighted them as a benefit of ALAFU that rural households should pursue in the future. Analyzing situation of agricultural activities in affected communes, which have been the important income sources of households in the past, has not received much attention yet after ALAFU.

Losing agricultural land and food insecurity have also been mentioned as notable problems due to ALAFU. The acquisition of farmland to convert to urban land reduces the available amount of land for food production and employment opportunities, while post-ALC urbanization has increased food prices, including grain and vegetables, and decreased purchasing power [20,78,93]. Some studies in China concluded that the rapid loss of agricultural land due to with urbanization causes a serious impact on China's food security and recommended that ALC be limited [22,85,94]. In contrast, Deng et al used satellite images of land cover change in China to examine the potential agricultural productivity. They discovered that while some cropland was converted due to urban area expansion, newly cropland actually increased, but the quality of new land is lower than that of converted cultivated. In general, ALC from 1985 to 2000 did not harm China's national food security, but the pressure to convert agricultural land is projected to decline in the future. Therefore, this study also suggested that national land use planning, both short-term and long-term, be carefully implemented [95]. In general, ALAFU caused pressure on food security and farmland resources in almost all countries around the world [96–98]. In terms of agricultural land scarcity due to ALAFU, questions remain as to whether the remaining agricultural land areas can be protected and how to use these land areas efficiently. Unfortunately, these issues have not been analyzed in the above studies.

The gender issues under the impact of ALA or under the impact of urbanization have also been examined by many studies. Studies in India have shown that ALA has forced women to move away from traditional domestic work to get paid employment outside their commune to earn money and their savings have subsequently increased. Therefore, their position in the family has improved [99,100]. However, ALA has also increased the school dropout rate of female member in landloss households [99]. Another case study has shown affected women in rural India become totally dependent on their male members after ALA, causing higher risk for women [101]. This result has also been reported in Vietnam [102]. A study about ALA to develop palm oil in Indonesia revealed that employment opportunities for affected women increased, but their employment conditions were not decent, resulting in gender inequalities and food insecurity [103]. Meanwhile, many studies have shown that urbanization creates many non-farm job opportunities for rural labor (including both women and men), changes in rural livelihood patterns, greater independence for women, and improves rural infrastructure [104–109]. Urbanization has also improved gender preconceptions that women are freer and their voices and their positions in society are higher [107]. However, being urban women, they still have to face barriers such as gender inequalities and injustices in the working environment and access to services [110]. In the case of ALAFU when both ALA and urbanization occurred at the same time, what are benefits and challenges associated with ALAFU for gender issues in affected communes?

These questions have been given less attention so far while at the same time the number of communes affected by ALAFU is increasing.

1.2.2 Aim of the research and research questions

Because of the importance of the improvement of gender and smallholder agriculture in research contexts and based on the scientific evidence referred to above, the thesis aims to address issues concerning the benefits and the constraints of ALAFU to and transition of smallholder agriculture and gender issues in affected communities. Following the theory of access to natural resources and sustainable livelihoods framework, the thesis provides an insight into the connection between ALAFU, agriculture, and gender, suggesting interventions that can benefit both agricultural and gender issues in the affected communities. The main questions are:

(1) How has smallholder agriculture in affected communes transformed under the context of ALAFU?
(2) How have gender issues changed in affected communes after ALAFU?

The thesis uses the case study in Huong Thuy town, Thua Thien Hue province, located in central Vietnam to answer these questions. ALAFU in Vietnam in general, and in Thua Thien Hue in particular, have mainly focused on city expansion on agricultural land. This has led to a huge amount of farmland lost and changed infrastructure and social-economic conditions in affected communes. The study sites are detailed in chapter III, IV, V and VI.

The thesis focused on two different aspects of affected communities, which are changes in the livelihoods of affected households and gender issues in affected communes. Following this analysis were indications of these two aspects. I integrated different research concepts, including access to land use rights, urbanization, smallholder agriculture, agricultural activities, social-economic status (SES) and household gender equality (HGE), to analyze the impacts of ALAFU on household's livelihoods and gender issues. These research concepts are presented in chapter II.

The first part of the study analyzes the change in livelihood activities of affected households that focuses on smallholder agriculture, in the context of natural assets of households (access to agricultural land) which were reduced due to ALAFU. However, other livelihood assets (financial, physical, human, and social assets) could increase due to compensation and support programs and urbanization. The publication Nhung et al. "Impacts of Agricultural Land Acquisition for Urbanization on the Agricultural Activities of Affected Households: A Case Study in Huong Thuy Town, Thua Thien Hue Province, Vietnam" (presented in chapter IV) provides a scientific discussion on transforming the agricultural activities of affected households by using a case study.

The case study is a comparative analysis of the main indicators of agricultural activities of affected households, including crop cultivation (rice, vegetables, potted flowers) and animal breeding (castle, pigs, and poultry) at two times, before ALAFU (2012) and after ALAFU (2017). The basic indicators of each activity include the percentage of participating households, production scale, cost, income, and the contribution to household income structure. I have also tried to find out the challenges and opportunities for each activity after ALAFU by using SWOT analysis. To get an in-depth understanding, the study was conducted with the following research questions:

(i) How have the agricultural activities changed under impacts of ALAFU?
(ii) How does agriculture contribute to the household income after ALAFU?
(iii) Are there any challenges and opportunities for smallholder agriculture at these affected areas as a result of ALAFU?

The second part of the thesis investigates the change of the socio-economuc status (SES) of affected women and household gender equity (HGE) to get a better understanding of gender issues in affected communes under the impacts of ALA. In this part I conducted two case studies, one focuses on the SES of affected women, while another focuses on HGE in affected communes.

The case study with a comparative analysis of the SES of affected women, Nhung et al. "Improving the Socioeconomic Status of Rural Women Associated with Agricultural Land Acquisition: A Case Study in Huong Thuy Town, Thua Thien Hue Province, Vietnam" (presented in chapter V) reveals changes in the SES of affected women by comparing indicators of SES before and after ALA. The comparison is made among three different groups of affected women, including group 1 in zone 1 where ALA for urbanization, group 2 in zone 2 where ALA for industrial development, and group 3 in zone 3 where ALA for hydropower development. A comparative analysis was conducted both before and after to determine whether the SES of affected women has been improved or worsened. The comparative analysis was made among groups of affected women to see the different impacts between ALAFU and ALA for other purposes as well. Indicators of SES are varied, but in this study, I selected indicators that could be changed based on the analysis and compared. These included: employment, income, and social status of women. The study focuses on the following questions:

(i) How has ALA impacted the SES of rural women?
(ii) Whether ALA for different purposes leads to different impacts on SES of rural women?
(iii) How have stakeholders of ALA projects supported and influenced the search for new jobs for rural women after ALA?

One more case study with a comparative analysis of indicators of HGE, the publication Nhung et al., "Benefits and Constraints of Agricultural Land Acquisition for Urbanization for Household Gender Equality in Affected Rural Communes: A Case Study in Huong Thuy Town, Thua Thien Hue Province, Vietnam" (Presented in Chapter VI), indicated the changes in HGE by comparing indicators of HGE before and after ALA between two household groups. Like SES, the comparative analysis was made before and after ALA to see the impacts of ALAFU on HGE. The comparative analysis was made between two household groups to see the different impacts of ALAFU on HGE of non-affected households and affected households. The indicators of HGE included: employment, income, participation, time allocation, and unpaid work burden of both wives and husbands. The study focuses on these following questions:

(i) How has HGE in the two household groups changed before and after ALAFU?
(ii) What are the benefits and constrains of ALAFU on HGE in affected communes?

1.3 The structure of the thesis

For analysing the impacts of ALAFU on agricultural development and gender issues, I applied concepts which are further mentioned in chapter II. Chapter III provides details about the research methods that included mixed methods between qualitative and quatitative research, data collection techniques, the selection process of the study area, as well as the method of data analysis.

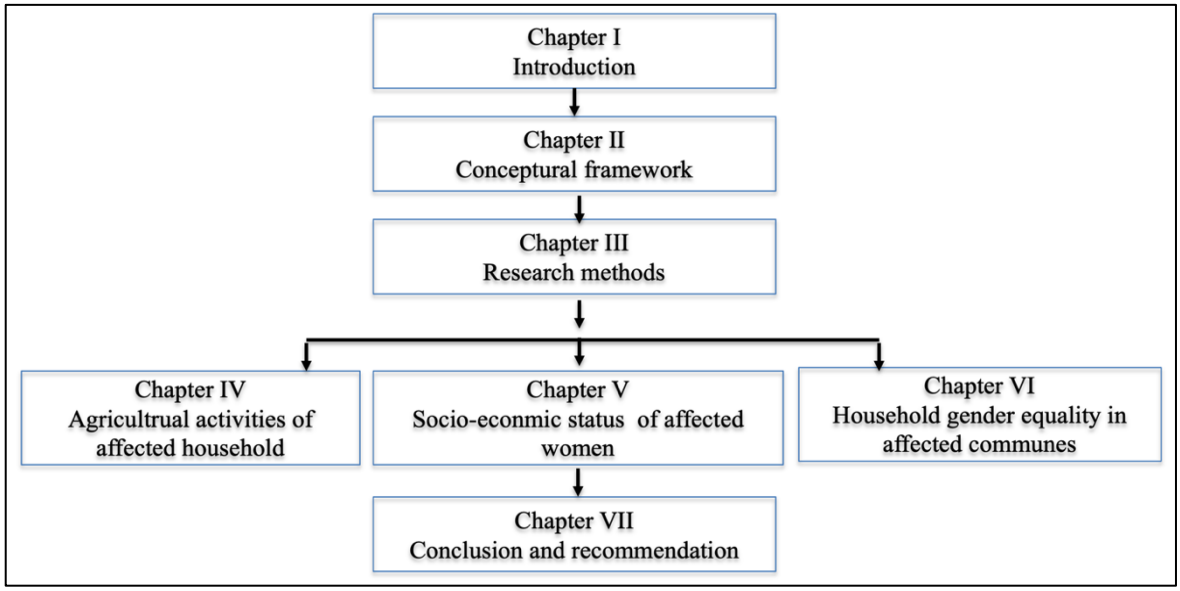


Figure 1.1: The thesis structure

In chapter IV, the analysis of part 1 of the thesis focuses on the impacts of ALAFU on agricultural acitivities by comparing the situation both after and before. Chapter V and chapter VI feature analysis about gender issues including social economic status of women (SES) and household gender equality (HGE) in affected households. Chapter V dicusses the changing SES of women by comparing groups in three zones. In these areas, ALA took place for different purposes including for city expansion, industrial zone construction and hydropower development. Here the aim was to see the different impacts of each type of ALA. Following chapter V, we continue to discuss about HGE in chapter VI because SES is one of the important factors influencing HGE. In this chapter we compare between two groups of women in households both affected and not affected by ALAFU. Finally, in chapter VII, I draw conclusions from this research and provide recommendations for ways that policy-makers in Thua Thien Hue province and Vietaman can think differently when it comes to policy making processes related to ALAFU.

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Chapter II: Conceptual framework

There is a connection between ALAFU, smallholder agriculture, and gender issues in affected communes. ALAFU is an independent factor and directly affects the other two. I assume that ALAFU causes both negative and positive impacts and has both direct and indirect impacts on agricultural activities and gender issues. This thesis consists of three parts: ALAFU, smallholder agriculture, and gender issues in affected communes after ALAFU. In these three parts, I explain what ALAFU is and then I deeply analyze the changing agricultural activities and gender issues in affected households. The final part gives an indication as to which changes are associated with ALAFU.

In order to analyze the changes and indicate the impacts of ALAFU on agricultural activities and gender issues in affected households, the conceptual framework of the thesis is based on the theory access to natural resource. This gives an indication as to what "ALAFU" is (2.1), as well as the concepts of "smallholder agriculture" (2.2.) and "gender issues" at the household level (2.3).

2.1 Agricultural Land Acquisition for Urbanization

2.1.1 Access to agricultural land as a critical rural livelihood assets.

Land is a critical natural resource for maintaining all terrestrial ecosystems and for the survival and prosperity of humanity as well [1]. To manage and use land resources better, land is classified based on the land use purposes. The United States Geological Survey has developed a major land-use classification system with multiple levels. The most general classification has classified land into seven types of land use, including agricultural land, built-up land, forestland, water, wetland, rangeland, and barren [2]. Of which, agricultural land is defined as land area that is either cultivable (including land forannual crops, temporary grassland, garden land, temporary fallow land), under permanent crops, or under permanent pastures [3]. Until now, agirucultural land accounts for about 50% of the global habitable land and this figure continues to increase due to the population and human demand for land [4]. In Vietnam, according to Decree 42, land law 1993, the term "agricultural land" refers to land area that is initially used for agricultural production, such as crop cultivation, animal breeding, aquaculture, and experimental agriculture. Then, the term "agricultural land group" was used instead of "agricultural land" in the land law of 2003, which includes all types of land used for crop cultivation, livestock, aquaculture, salt production, forest, and other agricultural purposes. This term is still used in the land law of 2013 [5].

Land in general, and agricultural land in particular, has been identified as a crucial factor in determining the power and position of an individual or a group in society. In rural areas, agricultural land is the most significant asset of almost all households' livelihoods. Therefore, access to agricultural land is an extreme importance to each household's or individual's economic status, power, and position in the commune [6].

Because land is a natural resource, access rights to land have different levels that depend on the land tenure systems of each country. Regarding access to natural resources, land resource is categorized into private access, state access, common access, and open access. Of which, Private access means that the land is allocated to a private party that can be a person, group, corporation or a non-profit organisation. State access indicates that the land has been delegated to some authority in the public

sector. Common access is defined as the land that belongs to a given community so that every member of the community has the same right to access. Open access means all members inside and outside the community have the same access rights to the land [6]. Based on power of access, Schlager and Ostrom (1993) state that there are five different levels of access rights to land: (1) access, (2) withdrawal, (3) management, (4) exclusion, and (5) alienation [7]. Rights to land resources are diverse and, especially, the multiple rights could be assigned to an object. According to FAO, access rights to land include three forms: use rights, control rights, and transfer rights [6]. In reality, private access to agricultural land exists, and this can create great economic defendability. But, the fact that many agricultural areas such as natural forests, meadow or are defined as common asset and open-access or common access may be the best [8].

After the Doi Moi reforms in 1988, agricultural land use rights in Vietnam were transferred from collectives to individuals or groups. In 1993, the first land law was established and the land tenure system was also identified. Then it was updated in the land laws of 2003 and 2013. According to these laws, land resources are situated to all people, and the representative owner is the State. The State has the power to manage land resources and distribute land use rights to people. Selling, renting, exchanging, mortgaging, and heritaging the land use rights are legally allowed. Regarding agricultural land, the State distributes this land to all rural people in an equitable manner. The duration of land use rights is over 15 years (50 years in the land law of 2013), but the State has the authority to acquire agricultural land use rights without the consent from landholders whenever necessary to support national development purposes [5]. This advancement gave farmers security in the long term, so they can bravely invest in their land as much as possible to get benefits [9]. As a result, productivity and output in agriculture have broken through and Vietnam became a rice exporter in 1989 [10]. However, there are still limitations on access to agricultural land. When the State acquires land, farmers can only make claims for unadequate compensation or other related issues, not for gaining the land use rights [11]. They also have to use the land for the use purposes identified by the State. For example, farmers are not allowed to cultivate other crops to get higher benefits if the farmland was identified for rice cultivation. Moreover, due to the equitable manner of agricultural land allocation, the agricultural land of each household is fragmented. Each household has the right to use a total of 0.25ha, but it is located in 4-5 different plots. The distance between plots is far [11,12]

In the sustainable livelihood framework of DFID 1999, the types of livelihood captital are classified into five groups that are human capital, social capital, financial capital, natural capital, and physical capital. These capitals play an essential role in household decision-making and are exchanged between them in order to engage in livelihood strategies [13–15]. This means that natural assets can be converted into other assets, and vice versa. The way these assets are used and combined creates various livelihood strategies [16,17]. Among these, natural assets (including accessibility to natural resources) are a prime livelihood asset of rural households. In natural assets, access to agricultural land contributes directly to agricultural production, which is the main income source of rural people[16]. The value of access to agriculture is measured by the power of right access, duration, volume and quality of the accessed agricultural land. Increasing access to agricultural land is the basis for sustainable economic growth, supports farmers to escape poverty, reduces migration from rural to urban migration, mitigates social risks and narrows gender issues. This is totally true in developing countries [18]. In Vietnam, despite these limitations referenced above, access to agricultural land still plays an

important role. This is true not only for agricultural activities, but also for the positions of family members within the community and in society in general.

2.1.2 ALAFU as a way to convert natural assets to other assets

While access to natural resources keeps an crucial position in alliviation of poverty and gender inequality in rural areas, ALA (it is understood as the compulsory land acquisition in this thesis) also happens at the same time due to socio-economic development. ALA is the government's authority to acquire land use rights from the owners without their consent, to benefit society. This power is an essential means for governments to develop and ensure that land for essential infrastructure is available whenever required [19]. This power has different names based on a country's land tenure system, such as expropriation, takings, compulsory purchase, and acquisition. However, there is an expectation that the government should try to deal fairly with land use rights owners before using the power of compulsory acquisition [19,20]. In the context of rapid change in land use and economic growth, ALA has always been a complicated issue and that is increasingly the case. Many recent discussions on land have emphasized land acquisition including conflicts and inefficiency which acts as a constraint to sustainable development [20,21].

In Vietnam, land acquisition is a process where the State uses their power to acquire land use rights for owners without negotiation. In return, the land use right loser can be compensated by cash or by new land use right to other places. They also recives the support in rehabilitating their livelihoods. So, in this thesis the term of ALA is understood that is the process afftected people having to return the agricultural land use rights to the State and receiving the compensation and support as regualtions in the land law. The compensated price of the acquired land was decided by only the State and provincial authorities [5,22,23]. Compensation and support are often inadequate and insufficient, so affected people frequently make tensions or claims, but they seldomly achieve adequate responses for the State or investors [24-26]. Whether the compensation is fair or unfair, we can recognize that ALA has caused a reduction in natural assets for some households, but an increase in financial and human assets through cash compensation and vocational training courses provided by livelihood recovery programs. In other words, part of a household's natural assets have been suddenly converted into financial and human assets that could pose challenges as well as provide opportunities for household livelihood development.

According to the United Nations, urbanization is a complex process that changes socio-economic condiction, transforms formerly rural areas into urban settlements by developing building, infrastructure and economic activties . By this process, rural residents in affected communes become urban dwellers, dominant livelihoods, lifestyles, culture, and behaviour of people also change. Many rural areas have gradually merged into cities where they have developed into hubs for economic activity, transport, trade, innovation, information, and public and private services[27]. Urbanization in developing countries, including Vietnam, often occurs typically through urban expansion on agricultural land to support industrialization and economic development. That could be understood because agricultural land acquisition in these countries is always at the heart of urbanization [21].

In this thesis, ALAFU means the process that ALA occurs to convert agricultural land to other types of land, such as built-up land, parks, road to support the urbanization process. Regarding rural

livelihoods, ALAFU is the process whereby affected households' natural assets are reduced, but their financial and human assets could be increased through compensation and support programs and benefits of urbanization. Physical and social assets could actually benefit from urbanization processes such as infrastructure improvement and urban lifestyle changes.

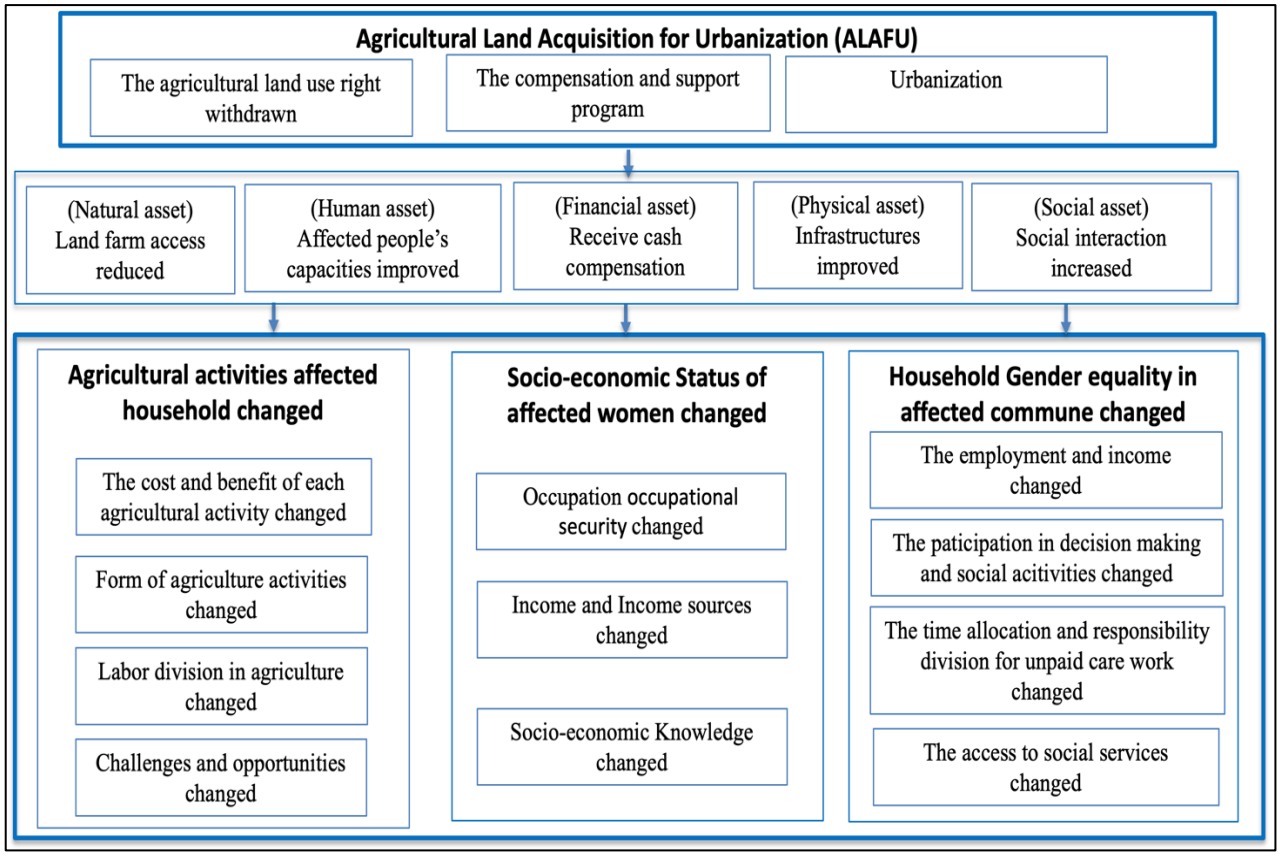

Figure 2.1: Research framework

2.2 Smallholder agriculture is threatened by ALAFU

In developing countries, agriculture keeps a key role in development of economy, poverty reduction, and food security. ILO defined agriculture as the practice of plant cultivation and animal breeding [28] to supply fiber, food, medicine, and other products to enhance life. It is a critical component of development [29]. The Main of State also defined "agriculture as the utilization of natural resource systems to produce commodities which sustain life, including food, fiber, forest products, horticultural crops, and their related services" [30]. This means natural resources play a core factor in agriculture. Based on the FAO's classification, farms were classified into six types, including small family farms for subsistence-oriented purposes, small family farms for semi-subsistence or semi-commercial purposes, small family farms for independent specialized purposes, small family farms for dependent specialized purposes, large family farms for commercial purposes, and commercial estates [31]. Most family farms in Asia are semi-subsistence or part-commercial family farms or small, independent, specialized family farms, and are concentrated in the rural areas [32,33]. According to the Geography Revision, agriculture is divided into 13 main types of farms, including from the local culture application such as shifting cultivation and normadic hearding to the intentisve technical application such as intensive subsistence farming, commercial grain farming and arable farming. Of which, intensive subsistence farming with rice as the dominant crop is very popular in Asia [29].

In general, the predominant form of agriculture are smallholder farms, which occupy 90% of the total farms in the world and are located mainly in rural areas. There are many ways to define a smallholder farm. FAO and the World Bank have a similar definition that smallholder farms have a limited amount of resources such as land, assets, skills, and labour [34,35]. A smallholder farm is also defined as a farm having lower than 2 ha of farmland and being operated by household members to produce staple food for the household's consumption as a primary purpose [36].

In the context of Vietnam, since applying Resolution No. 10 in 1988 (namely Khoán Mười), smallholder farms have recovered after a long time of collectivization following the Soviet model. They have become a core livelihood activity in rural areas and an important sector of national agriculture. Almost all rural households are distributed agricultural land use rights, and then they have the right to manage and operate cultivation based on regulations on land-use issued by the government [32]. Smallholder agriculture has been gradually transformed from traditional agriculture to intensive agriculture, from subsistence-oriented purposes to small semi-subsistence or part-commercial purposes. This pattern is also seen in other countries in Asia, such as India, China, and Indonesia [32]. The smallholder agricultural structure has also varied between livestock and cultivation. Of these, crop cultivation, which has been a traditional and long-lasting activity, has slightly improved. The grain crops include mainly rice, maize, and beans. The industrial crops include coffee and peper. Aninal breeding with chickens, ducks, pigs, cows, and bufalow has been highlighted with industrial breeding models on a large scale to harvest both eggs and meat [23,37]. During the last census, the percentage of households breeding declined by 35%. Households breeding on a small scale are still dominated. For example, in 2011, the percentage of households breeding pigs with 1-2 units per cycle still represented half of the total pig breeding households [38]. Some studies have shown that households in affected areas still practice smallholder agriculture as a form of PUA to adapt to agricultural landlessness [39,40].

Meanwhile, the agricultural land use rights of farmers in developing countries, which are critical to their agricultural actitivies, are limited. Moreover, smallholder agriculture has to deal with low productivity, low wages and high risks due to climate change [32]. But recently, it is also threatened by the loss of access to agricultural land associated with ALA for non-farm purposes, such as energy development, infrastructure, urbanization, and conservation projects. As a result, it has lost its importance to rural livelihoods and is being replaced by non-farm activities associated with urbanization [41]. In this context, to maintain and develop smallholder agriculture because it is still considered as a good solution to food security concerns [42], farmers have been encouraged to improve their agriculture activities, such as by applying fertilizer and pesticides to gain higher productivity [37,43,44]. Regardless of this effort, compared with the value chain of global agriculture, its value is still low [44]. However, the loss of access to agricultural land associated with ALA for non-farm purposes has also created a new trend of smallholder agriculture in affected areas [41]. Some studies have revealed that smallholder agriculture could have transformed into peri-urban or urban agriculture (PUA). PUA is the practice of smallholder agriculture in peri-urban and urban areas and includes cultivation, livestock, fishing, and forestry [45]. Although it is not mentioned as a main activity in urban areas, it plays an important role in supplying valuable food for families, generating income, and providing ecosystem services for urban areas [46]. It is also recognized as a good intervention to mitigate the negative effects of urbanization in developed countries [47].

Based on these above definitions of agriculture, smallholder agriculture could include crop cultivation, animal breeding, horticulture, and forest plantations. A smallholder farm can do one or several agricultural activities at the same time. A typical smallholder farm often integrates crop cultivation on agricultural land and animal breeding in the space around their house or on nearby grassland. Many factors effect on agricultural activities, such as land resources, capital inputs, the agricultural products market, the labor force, and policies related to agriculture [48]. With smallholder farms, various farm resources that are inputs to agricultural production are considered important. Of these, accessibility to agricultural land resources (size of land, quality of soil and water, land use rights), the labor force of the household (experience, labor division), and market are the key components that directly determine the agricultural structure of smallholder farmer [31]. Smallholder agriculture also plays a function in the rural economy, understand about it is necessary [48]. To understand the agriculural transformation caused by ALAFU, the main factors investigated and analyzed in this thesis include costs and benefits, labor division, the form of agricultural activities, and challenges and opportunities of each agricultural activity of affected households.

2.3 Gender issues

FAO, 2002, defined gender as: "Gender is the relations between men and women, both perceptual and material. Gender is not determined biologically as a result of the sexual characteristics of either women or men, but is seen socially. It is a central organizing principle of societies, and often governs the processes of production and reproduction, consumption and distribution "[6]. Frank Ellis (2000) has stated that gender is the social allocation of roles, power, rights, and responsibilities for men and women in the family and society. This division is usually unfair [17]. FAO, 1999, showed the main gender gaps in work (lack of job opportunities for women, unpaid work, feminization in agriculture), poverty (feminization of poverty), family life (domestic work burden, rights to make decisions, and property rights), health and nutrition (unequal access to health care and related services), education (unequal access to education services), the environment (women at higher risk than men in the context of pollution), and public and policy-making spheres (women participate less than men in public and policy-making) [49]. Seen another way, these gaps cause the low socio-economic status of women and gender inequality in both households and society. Following the theory of access to natural resources and rural livelihoods, equal access to land resources could improve the power of women in the agriculture sector where female labor is more dominant than male labor. This could in turn increase the power of women regarding access to credit and financial services and other livelihood opportunities as well. Therefore, access to land resources for rural women, which is very low compared with men at present, needs to be improved [6,17]. So, in the context of ALAFU that transforms natural assets into other livelihood assets, gender issues in affected communes certainly change. This thesis focuses on the socio-economic status of women and household gender equality in affected communes.

2.3.1 Social- economic status of women

Socioeconomic Status (SES) is a complicated concept used to categorize society into various groups [50,51]. In general, SES is reflected through the combination of the social, economic, and work status of a person, family, or group. Social status is measured through education, including the number of years in school completed. The higher the number is, the higher the social status is. Economic status

is measured through income sources (simple or diverse), income amount (low or high), income frequency (regular or irregular), properity (property and property rights), and saving (cash, saving in the bank or in kind). A diverse, high and consistent income and saving dertermine a good economic situation. Work status is measured by occupation, including educational requirements and working skills, title, power, and insurrance of occupation. The higher the requirements, title, power, and insurrance are, the higher the work status is [51]. Basically, social, economic and work status interact and influence each other. A good economic status, for example, can help improve one's social and occupational status, and vice versa [52]. Based on these indicators and the interaction among components of SES, many ways can be applied to increase the SES of a person, family, or group, such as earning a high income, gaining a high education level, obtaining a good job, or all of the above. Of these, gaining a high educational level has been selected as a sustainable option for young people.

Regarding the SES of rural women, it is often reflected by limited education, low and irregular income, and unstable and unpaid employment. Most rural women often work as farmers, houseworkers, tailors, agricultural product sellers, and sweepers because they are not educated and must undertake domestic work for the family. Many rural women work in agriculture, which is mostly dependent on natural resources, including land, water, and natural forests [53]. But their access to these natural resources is limited, which causes their work status to be less powerful. Improvement of their SES is mentioned as a crucial target in sustainable development strategy at the global level, focusing on developing and less developed countries [54,55]. Many interventions to increase access to agricultural land for rural women have been implemented to improve the SES of rural women [56]. At the same time, ALAFU has reduced access to agricultural land for affected people, including both women and men, resulting in livelihood changes and new job opportunities [57]. Whether ALAFU benefits or hinders the SES of affected women? The changes in indicatiors of the SES give the answer. This thesis compares the SES of women before and after ALA to the change in SES, and compares the SES of affected women's groups by different ALA projects to see the different impacts of each ALA project.

The indicators, including type of job, number of working days per year, working pressure, working security, challenges and opportunities in the work of affected women, are assessed to see the change in work status. Most affected women are middle-aged with a given education level that can not be improved anymore [58,59], but their socioeconomic knowledge and vocational skills could be changed under the impact of ALAFU. Therefore, these indicators represent social status. Regarding their economic status, we only focus on their average income and saving.

2.3.2 Household gender equality

Gender equality is when the division of rights, power, roles and responsibilities between men and women is equal and fair, and their differen demands, behaviors and aspirations are equally valued [60]. Based on this definition, household gender equality means to equal and fair division of responsibilities, roles, and power between male and female members in all household activities and social activities as well. The responsibilities and roles of women in the family often relate to agricultural activities, obtaining food for the family, caring for family members, and domestic work, while those of men are often related to non-farm work and public work. This difference causes an unequal division of power in family decision-making and property rights [6,53]. When access to farmland, which is the

main asset to household livelihoods, is reduced in the context of ALAFU, women could be released from agricultural activities and have non-farm job opportunities [60,61]. The change in the employment of women could create a domino effect, leading to changes in the position and division of power between women and men in the family. As a result, household gender equality has changed.

In Vietnam, most of the farming households in rural areas in Vietnam are in the middle-aged group. Children and young laborers in rural areas who have not been allocated farmland are not willing to participate in agriculture. So they have not been directly impacted by ALA projects and they are not involved in this study. In these households, the wife often works in agriculture to provide food and undertakes the domestic work of the family. So they often stay in communes. The husband could take jobs that provide a good income for the family. They work off-farm, in two or more jobs, or even in multiple jobs [62].They could also work in the cities or outside of the commune. Hence, both husband and wife could be strongly impacted by ALAFU, causing changes in their livelihoods, their time allocation, their participation in decision-making, and their access to services [24,63,64]. In which, the wife could be impacted more than the husband [65,66]. Affected women can abstain from traditional agriculture work to take other employment opportunities with higher incomes from the non-farming sector if their working capacity is good, which leads to an improved status of employment [67]. On the other hand, it can also increase unemployment and dependency of women on men [68]. Additionally, ALA increases the burden of family food supply that is often the responsibility of women [66,69]. Furthermore, ALAFU contributes to rural-urban migration [70], leading to the feminization of agriculture [66]. This increases the responsibilities of women in unpaid care work such as caring for children and the elderly, washing, cleaning, and cooking.

In this thesis, household gender equality is assessed by comparing the changes in employment, income, unpaid work burden, time allocation, participation, and access to services between husband and wife in affected households.

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Chapter III. Research methods

This chapter includes a detailed description of the study sites, the research methods, the techniques of data collection and the limitations of the study.

3.1 Study sites

Vietnam is a developing country in Southeast Asia where agriculture is the main livelihood of 70% of rural people and contributes significantly to the national economy. Since the 2000s, agricultural land acquisition for urbanization in Vietnam has happened all over the country, especially in the north and the south. This process has significantly improved the socio-economic condition of the country. The urban population has reached 35 million people and the urbanization rate could reach 50% by 2025. Agriculture, forestry, and fishing have contributed decreasingly to the national GDP from 18,38% in 2010 to 14,68% in 2018 [1].

Thua Thien Hue province, a central province of Vietnam, has a severe climate and poor soil resources. Agriculture here doesn't have many advantages when compared with other provinces in the north, south, and highlands of Vietnam [2]. Agriculture has been facing challenges because the soil quality of agricultural land areas is poor, while flooding and drought are increasing [2]. The share of agriculture-forestry and fishing in the GDP of the province is 12.56%, lower than the average of the country. Cultivation and livestock are the main activities, contributing 65% and 25% of the total value of the agricultural sector respectively. Rice is a staple crop of the province's cultivation. Its share is about 54% of the cultivation value. Pigs are a staple animal for livestock and their share is about 65% of total livestock value [3]. The province consists of 6 districts (Phu Loc, Nam Dong, A Luoi, Phu Vang, Phong Dien, Quang Dien), 2 towns (Huong Thuy and Huong Tra), and 1 city (Hue City). Of these, Huong Thuy, Huong Tra, and Phu Vang are the satellite urban areas that border Hue city in the south, the north, and the east respectively. The maps of study sites are presented in the next chapters.

From 1558-1945, Hue city was the capital of the south of Vietnam under nine generations of Nguyen Lords, then was the capital of Vietnam under the Nguyen dynasty (1802-1945). Hue retains a tangible and intangible patrimony of culture that reflects the typical values of the Vietnamese soul and mind. Life and people here have been mild and rather quiet [4]. Hue is also a romantic city with beautiful landscapes, so it has been a tourist city, which explains why the share of services in the GDP of the province dominated, e.g it was 48.23% in 2018 [3]. Since the 2000s, however, under the pressure of economic development, the provincial authorities have promoted urbanization and industrialization by expanding Hue city to the south of the province [4]. As a result, between 2010 and 2015, 7083 ha of agricultural land has been acquired to convert to non-agricultural land. In 2014, the Government planned to extend Hue city to be five times larger, so 19,000 ha of agricultural land will be converted in the period 2016–2020 [2,5]. Most of the acquired land is located in the satellite urban areas namely Huong Tra, Huong Thuy, and Phu Vang [4]. The urbanization rate reached 52.7% and the average income per person was 41 million Vnd/year (around 1700$) and for only rural areas this was 35 million Vnd/month (around 1500$) [6].

Under the long-lasting culture of the Nguyen dynasty, the division of the roles of women and men in economic activities and the family has been typical and rooted deeply in each family. In traditional

culture, women only stay at home, take care of family members and do all the domestic work that is requested rather fussily and strictly than in other places, while men go out, ensure the family economy and participate in public events (village meetings, weddings, funerals) and family events (death anniversary, family meetings). So, men often make all the decisions for the family, and women accept this division. Talking about the traditional Hue family, people often think about the virtuous, capable, and resigned behaviors of women, the patriarchal behaviors of men, and male chauvinism [7].

Table 3.1: Genneral information of Thua Thien Hue province

I. Structure of GDP by economic sector (%)	**2013**	**2018**
1.1 Agriculture-forestry and fishing	14.6	12.56
1.2 Industry and construction	48.68	30.91
1.3 Services	36.37	48.23
1.4 Other	0.35	8.3
II. Income sources (Million Vnd)		
1.Income per person per year	20.8	41
2 Income per rural person per year	16.6	35
III. Population structure (%)		
Urban population	48.36	48.7
Rural population	51.64	51.3
IV. Changes in agricultural an urban land	2010	2020
Urban land (ha)	36,203	53,247
Urban land (%)	6.3	9.1
Unused land (ha)	31,977	742
Unused land (%)	5.5	0.13
Agricultural land group (ha)	382,814	385,948
Agricultural land group (%)	66.36	66.45
Total area of agricultural land converted to non-agricultural land in the period 2010-2020 (ha)		26,941
Total area of unused land converted to agricultural land in the period 2010-2020 (ha)		27,149
Total area of other land converted to agricultural land in the period 2010-2020 (ha)		2926

(Data sources: Statistical yearbook 2019 and resolution 72/NQ-CP 2018)

We selected Huong Thuy town, Thua Thien Hue province, which has a total of 45,466 ha of land area, located in the south of Thua Thien Hue province and bordering Hue City. Since 2010, it has been planned to be developed for industry and tourism, so in the period 2005–2018, 3527.8 ha of agricultural land has been acquired to convert to non-agricultural land. Given the province's land use plan, a further 2000 ha of agricultural land will be converted to support urbanization in the period 2019–2020. The share of agricultural land area has been reduced to 69.56% in 2020, compared with 80.9% in 2010 [8]. Most of the acquired agricultural lands are rice land and forest land. It has directly impacted about 3000 farming households (around 10% of total households in the town) and has led to a substantial decrease in the agricultural labor percentage in the town. The main agricultural activities here include crop cultivation, animal breeding, and forestry. Rice is the main crop, using 90% of the

total available agricultural production land. Besides that, perennial crops like pepper and Thanh Tra (a special crop in Thua Thien Hue Province that belongs to the grapefruit family) have been developed in recent years. Other crops like vegetables and grains have been cultivated in a limited area due to the severe climate and poor soil quality. Regarding livestock, cattle (cows and buffalo), pigs, and poultry (chicken and duck) are the main domestic animals. Of these, the breeding scale of cattle has been reduced gradually because of diminishing grasslands, whereas the breeding scale of pigs and poultry has increased due to industrial breeding methods. However, the contribution of agriculture to the town's income structure decreased from 6.62% in 2010 to 3.4% in 2017. The average income per person per year in the town was around 2250$ in 2018, instead of 1670$ in 2011 [8]. The rate of urbanization here reached nearly 70% in 2019 [6]. To meet the research objectives of the thesis, we selected three zones including zone 1 (Thuy Van, Thuy Thanh), zone 2 (Thuy Phu, Phu Bai), zone 3 (Duong Hoa) to be our study sites.

Thuy Van and Thuy Thanh communes (zone 1) are close to Hue city. More than 200 ha of former agricultural land here has been acquired for urbanization purposes. Most of the acquired agricultural land was used for the development of roads, residential buildings, and office buildings. These communes will be merged with Hue city in the next few years. Most households whose land was acquired were not entirely dependent on agriculture before ALA. In 2020, the average income per person in these communes reached around 45 million Vnd per year, which is higher than that of the whole province. Agriculture contributes around 38% of the zone's income structure and rice production is one of the main agricultural activities. This zone was selected as the core study site for the thesis. The collected data in this zone relates ~~to~~ the SES of women to compare with zone 2 and zone 3, as well as household gender equality to compare between non-affected and affected households, between after and before ALAFU, and to agricultural activities in the affected households to compare between after and before ALAFU.

Thuy Phu commune and Phu Bai ward (zone 2) have good roads that connect them to the cities of Hue and Da Nang. Phu Bai international airport, the only airport in Thua Thien Hue province, is located in this zone. A total of 198.7 ha of acquired agricultural land were converted to construct the Phu Bai industrial zone and to expand the national highway connecting Thua Thien Hue to Da Nang. Before ALA, these households were completely dependent on agriculture [9]. The collected data in this zone relates to the SES of affected women to compare with SES of affected women in zone 1 and zone 3.

The last commune is Duong Hoa (Zone 3), located in the mountainous area of Huong Thuy town, far from Hue city. A total of 1929.7 ha of agricultural and forest land in this commune was converted for the construction of the Ta Trach dam. A total of 1312 households lost their land in late 2004, with an average acquired land area of 1.5 ha per household. Their remaining land area was about 1.6 ha per household. As in Zone 2, affected people in this commune had been totally dependent on agriculture before ALA [10]. The collected data in this zone related the SES of affected women to compare with zone 2 and zone 1.

3.2 Mixed method

The mixed method, which originated in the social sciences, promotes the systematic integration or mixing of quantitative and qualitative data within a single investigation or long-term program of inquiry.

This method really works well for intervention research [11,12]. Using this method, the researcher can prioritize both qualitative and quantitative methods, or choose to emphasize one of the two. This thesis aims to understand the impacts of ALAFU on the livelihoods of local people and gender issues in affected communes in order to suggest policy interventions. Therefore, we applied the mixed-method. Moreover, the focus of this research was on the processes that affected people could benefit from and the damage their livelihoods sustained as a result of ALAFU. Although quantitative research can explain and confirm the isolated relationships between causes and effects of a given phenomenon, a qualitative research approach, by using an inductive approach, seeks to explore and understand complex processes and relations. Qualitative approaches often attempt to get participants' voices and perspectives, so that researchers can have meaningful insights and get good answers to research questions [13]. Therefore, we applied the mixed-method and prioritized the qualitative method.

Quantitative data was collected by household surveys, then analyzed to show the changes of basic indexes of agricultural activities and gender issues between before and after ALAFU. While qualitative data, which ~~is~~ was collected in group dicussions, in-depth interviews, village walking and observation, explains the impacts of ALAFU on agricultural activities and gender issues through listing, categorizing, and ranking all the reasons for the changes agricultural activities and gender issues. The qualitative data also explains the challenges and opportunities for agricultural activities and gender issues, gaps associated with ALAFU by using the SWOT analysis, power mapping as well as stories and quotations from key imformants. We attached much importance to these data because these are the voices and perspetives of local people which can offer significant suggestions for interventions or solutions for community development.

3.3 Case study method

The case study is a method in which a social unit such as an individual, a family, a group, or even the entire community is carefully examined through qualitative analysis and comprehensive observation. It was recognized as a useful tool in social studies such as education, poverty, unemployment, gender, etc. It could be applied to understand the processes that occur in the social unit and their interrelationship. There are many types of case studies. One of these is "the program effects case study" that can discover the impact of programs that were implemented on the social unit. It can indicate success, failure, weakness, and strength of the program as well as the reasons for and solutions to existing problems [14,15].

This thesis applied "the program effects case study". ALA projects have been implemented in many communes of Huong Thuy town, Thua Thien Hue province. However, we could not investigate all these communes. Instead, we used the qualitative data from in-depth interviews and secondary data from the existing reports to find out the communes that represented the different purposes of ALA projects. Then, we investigated the changes in agricultural and gender issues in these communes through mixing qualitative and quantitative data. Based on the in-depth analysis, we indicate the impacts of the ALA projects in Huong Thuy town, Thua Thien Hue province.

3.4 Data collection techniques

To collect valuable qualitative and quantitative data, the rural rapid appraisal method is used because it supports researchers having good communication and interaction with all stakeholders, especially

local people while collecting data [16]. The tools from this method were applied in this study, including household surveys, group discussions, in-depth interviews, village walking, and observation of study sites. To collect data, two colleagues and a student from my university have supported me during field trips. Before beginning the field trip, I explained all the questions in the questionnaire as well as the purpose of group discussions and in-depth interviews to make sure everyone understood and had the same outlook, and could support each other during the field work. With all the in-depth interviews and group discussions, I took a lead role and my colleagues supported me as facilitators or assistants to promote the participation of local people in discussing and sharing their perspectives or to document information during the interview.

3.4.1. Household surveys

Household surveys are interviews with representative people to collect primary socio-economic data at the household level through a structured or semi-structured questionnaire. This method has become a popular form of data collection and the rural poverty reduction programs often apply and give an insight into household livelihoods[17].

With three different research objectives, I surveyed a total of 200 households in three study zones. The first household survey with 150 affected households in three zones occurred from February to March 2018. This survey aimed to collect data on the SES of women in affected households and is detailed in Chapter V. The second household survey with 50 affected households and 50 non-affected households in zone 1 was conducted in May 2018. After checking the analyzed data of this survey, we had to come back to zone 1 in November 2019 to collect more kinds of data. This survey aimed to collect data on household gender equality and agricultural activities and is detailed in Chapter IV and Chapter V. To conduct the household surveys, we designed a questionnaire including three main parts in proportion to the three research objectives. The questionnaire is attached in the annex. My colleagues and I tested the questionnaire by conducting a survey with ten affected households, then revised it before conducting the official surveys. To ensure the quality of the surveyed data before conducting the survey, we referenced the data from the reports of ALA projects and other previous surveys of colleagues before the ALA. This was done to help interviewees recall their memories in case they forgot information or when we wanted to crosscheck to verify data. We were also supported by local people (heads of villages) during the household surveys to contact and make appointments with interviewees.

3.4.2 Group dicussion

This method can obtain qualitative data on social issues by discussing them with a selected group of individuals. While the data from the household survey comes from individual interviewees, the data from group discussions are raised, discussed, and agreed upon by the group. These data can supplement, support and interpret statistical data obtained from household surveys. Moreover, during the discussion, not only researchers but also participants have the opportunity to gain insight into the topics discussed [18].

In the course of this research, I talked with a total of 8 focus groups. I identified a list of discussion topics and selected the tools and participants. The list of topics is attached in the annex. During household surveys, my colleagues and I observed and selected interviewees who could have insight

into the impact of ALA on the discussion topics and then invited them to attend the group meeting. Each group consisted of 8-12 people, and the duration of the discussion was around 90 minutes. At the beginning of the group discussion, we introduced the purpose of the discussion, then we presented the analyzed data from the household surveys. This aims to inform participants and to cross-check the data through the feedback of participants. This task took around 30 minutes. After that, we gave the topics to discuss, explained the tools used in the discussion, and started a discussion. This task took around 60 minutes.

The discussion of the three affected women's groups representing three zones was conducted in April 2018 to collect data relating to the SES of women and is detailed in Chapter V. Four group discussions in zone 1, including an affected women's group, and affected men's group, a non-affected women's group, and a non-affected men's group were organized in June 2018. These group discussions collected data related to HGE and agricultural activities, and are detailed in Chapters IV and IV.

3.4.3 In-depth interviews

An in-depth interview is an important qualitative research method for obtaining the views, experiences, and perspectives of an interviewee on a research topic. Such interviews often take place at the beginning of a research project to help researchers understand the context of study sites and identify the core research questions [19]

In this research, I applied this method to select study sites, collect the perspectives of interviewees about ALA projects, social-economic conditions, main changes in gender issues, and agricultural activities in study sites. I conducted interviews with a total of 17 key informants, including 5 representatives of the women's union, 8 representative people of local authorities at the commune and district level, 2 representatives of the farmer's unions, and 2 farmers. I designed checklists including open questions that are attached in the annexes.

Firstly, I interviewed 3 people, including the president of Huong Thuy town, a chairman, and a staff member of the Department of Natural Resources and Environment (DoNRE) of Huong Thuy town. These interviews were conducted before starting the household surveys and gave me an overview of social-economic conditions, ALA projects, and land use plans of the town. Based on these, I selected three zones to be study sites. These interviews also gave me views and perspectives from interviewees about ALA projects and their impacts on gender issues and agricultural activities at the district level. Then I conducted in-depth interviews with five representatives of the Commune People's Committee in three zones to get an overview of social-economic development, land use planning, agricultural development, and gender issues in the affected communes. These interviews focus on the main changes, challenges, opportunities, and plans for agricultural activities and gender issues.

Secondly, I conducted interviews with five representatives of five women's unions in three zones. These interviews focused on the main changes, challenges, and opportunities for affected women. These interviews were conducted at the same time as the first household survey of 2018.

Lastly, I conducted interviews with 2 people representing farmer unions in zone 1. These interviews focused on the main changes, challenges, and opportunities for agricultural development. I also interviewed 2 farmers, one of which had success in a potted flower plantation, the other works as an

agricultural production service provider. Two farmers gave me interesting stories and their perspectives about agricultural development in zone 1. These interviews were conducted when I came back to the study sites in November 2019.

3.4.4 Participatory observation

Observation is a data collection method that is used in both quantitative and qualitative studies. This method helps the researcher collect data about people, processes, cultures, and phenomenons existing or occurring in society or experiments. Observation can be one of two major types which are direct and participant observations. Of these, participant observation is a method that researchers or data collectors use while they interact with objects or people and local events. Participant observations are very useful in helping researchers understand the participants' world and views. It also is used to verify or cross-check findings the data collected from other methods [20].

In this thesis, we visited and walked around the villages many times. During these walks, we observed and got into conversation with any farmers or local people who were willing to share their stories and views about agriculture and ALAFU. We also tried to take pictures that could reflect the information about livelihoods, working environments, and agricultural activities in the study sites. We also used participant observation methods during group discussions and local events occurring during the field trip. Through observing the way that men and women interact with us, we could get qualitative data about attitudes and perspectives of local people about gender, roles of women and men in the family, ALA projects, and their livelihoods as well. This information was mostly used to supplement or cross-check the data from the household surveys, group discussions, and in-depth interviews with key informants.

3.4.5 Secondary data collection

Secondary data relating to agricultural development, ALA projects, and urbanization was collected from documents, ALA project proposals, annual reports at the levels of commune and district, and statistical books of Thua Thien Hue province from 2012 and 2019. Other data sources such as scientific papers and daily magazines relating to research topics were referred to as well. In this research, I have referred to the data collected by our colleagues at Hue University who have done their master's and Ph.D. research related to ALA projects in our study sites. These references helped me with information about the past situation (before ALA) of affected households. Based on that, we could support interviewees in recalling their memories of their livelihood activities before ALA better. This data gave me information about policies of ALA projects in Thua Thien Hue province as well. I also used Google Earth to collect satellite images of study sites before and after ALA. These images showed the changing land cover of the study sites.

3.5 Data analysis

All the primary data collected from household surveys was coded and entered into excel software to analyze statistical data such as percentages and average values of indexes relating to general information about households, agricultural activities, SES of affected women, and HGE in affected communes. After having a set of statistical data from household surveys, we showed them to affected

people in group discussions to cross-check data one more time. The statistical data was accepted or explained in more detail by the participants.

The qualitative data were recorded and classified according to the research topic and were then filtered, documented, and summarized as tables, stories, quotes, and pictures. These data then were linked with the statistical data from the household surveys. This link helps me to give comprehensive arguments and explanations for each research finding.

3.6 Limitations of study

In this thesis, we could not meet all laborers in affected households at the time of the survey. This was especially true for laborers working in the cities or outside the communes, so collecting detailed data of non-farm activities of such laborers was impossible. Moreover, we could not have a long interview with every affected household because their time is often limited. We had to do the interviews with them at noon or late afternoon when they had free time. So this thesis only focused on interviewing wives and husbands about their jobs, agricultural activities, their role divisions in the family and gender equality. This means that not all income activities of affected households were considered. This leads to an incomplete picture of the livelihoods of affected people in the thesis.

In addition, qualitative data collection takes a lot of time, while the time and financial resources for the study are limited. Conducting a household survey with a huge number of households is out of my capacity. That led to the statistical data in this study not being strong enough to run a regression model, which is often used to show the impacts of independent variables on dependent variables. To compensate for that limitation, we have tried to collect as much qualitative data as possible during field trips.

In general, the study of land acquisition is a sensitive issue, so data related to the area of the acquired land at each ALA project is very difficult to collect and verify. As a result, this thesis was unable to provide data on the acquired land area for each year and each project in order to demonstrate trends of ALA over time. These data, which can be found in documents (reports of land use at commune, district, and provincial levels), do not totally coincide because ALA projects were revised many times. So I have only based this research on data in the land use planning and the province's statistical book to give an overview of ALA. I was not able to contact or make appointments with any investors of the ALA projects to interview as was the initial plan because they are always busy. So the thesis lacks perspectives from investors about ALA projects and the impacts of ALA projects.

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Chapter IV: Impacts of Agricultural Land Acquisition for Urbanization on Agricultural Activities of Affected Households: A Case Study in Huong Thuy Town, Thua Thien Hue Province, Vietnam

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Abstract: Agricultural land acquisition for urbanization (ALAFU) has strongly impacted agriculture in Vietnam during the last decades. Given the mixed data obtained from a survey with 50 households who lost 50% of their farmland area (in-depth interviews, a group focused discussion and observation) this study shows the different impacts of ALAFU on each agricultural activity of affected household by comparing before and after ALAFU. Rice cultivation and animal breeding have sharply declined, but potted flower plantation (PFP) has quickly grown and is the main income of 34% of surveyed households. Rice cultivation has declined not only as a result of agricultural land acquisition, which has resulted in the loss of rice land, but also as a result of urbanization, which has resulted in rice land abandonment. Conversely, PFP is growing due to advantages associated with urbanization, such as a good consumer market and upgraded infrastructure. However, whether they are declining or increasing, all agricultural activities have to face challenges related to the shortcomings in agricultural land allocation and agricultural development plans. This study suggests that if ALAFU projects are continued, the government should evaluate agricultural development and forecast farmland abandonment after ALAFU. Simultaneously, they should put more effort into maintaining agriculture in the form of peri-urban or urban agriculture, which is significant for sustainable development in affected communities.

Keywords: agricultural land acquisition; urbanization; farmland fragmentation; farmland abandonment; peri urban agriculture; potted flower plantation

4.1 Introduction

After more than two decades of implementing the national strategy of industrialization and urbanization, many parts of rural area in Vietnam have quickly transformed to peri-urban or urban areas, and rural people's livelihoods have gradually moved to the non-farming sector [1]. The statistical data of the country in 2019 shows that the contribution from the non-agriculture sector to the national GDP and its share of employment increased to 82% and 64.7%, respectively. Previous studies have revealed that taking non-farm jobs is a good alternative livelihood strategy that affected people should pursue following agricultural land acquisition (ALA), to restore and improve their economic household [2,3]. This is one of the important achievements of urbanization and industrialization [4].

However, estimations about 10 million hectares of land (agricultural land and forestland) in Vietnam were acquired and converted to support the above strategy. Meanwhile, agricultural land resources in Vietnam are essentially poor compared with other developing countries in Southeast Asia [5,6]. Moreover, in recent years, many farmers have left farm jobs in rural areas to obtain non-farm jobs in cities, resulting in wasted farmland resources [7]. This situation could be more serious in communities affected by ALAFU, where almost all farmers have lost a part of farmland and have more opportunities to take non-farming jobs. As in many developing countries such as China, India and Indonesia, Vietnam's economic development is advancing toward diversifying occupation structure, agriculture is not only one of the crucial economic sectors of the country, but it also plays important roles in food security, food safety, and protecting the landscape and environment in both rural and urban areas [8–10]. Therefore, going along with fostering urbanization, developing sustainable agriculture, and protecting farmland resources has also been mentioned in the sustainable economic development strategy of the nation [5]. So, what happens to the remaining farmland areas and agriculture in affected communes after ALAFU? Exploring this issue is necessary not only to make a good farmland use plan, but also to find out potential solutions for agricultural development in the context of farmland limitation, which will be more serious in the future in developing countries. It also supports the creation of livelihood rehabilitation plans for affected house- holds.

Unfortunately, having focused primarily on analyzing non-farm jobs and gaps in land acquisition policy, previous studies did not pay much attention to sustainable agricultural development after ALA. Therefore, we conducted the study with the following research questions: (1) how have the agricultural activities of affected households changed under the impact of ALAFU, (2) how does each agricultural activity contribute to household incomes after ALAFU, (3) what determines these agricultural activities after ALAFU, and (4) are there any challenges and opportunities for each agricultural activity by ALAFU? To answer these questions, Huong Thuy town, located in Thua Thien Hue province, Vietnam, has been selected to be our study site because a large area of agricultural land has been acquired here since the 2000s to support Hue city's expansion. The research findings show the transformation of each agricultural activity and its roles and discover the challenges and opportunities after ALAFU. Given these findings, we recommend whether agricultural activities should continue or be replaced by non-farm activities in affected communities. We assume that agricultural activities and their contribution to household income after ALAFU have gradually decreased and that difficulties and challenges have increased further under the pressure of urbanization than advantages and opportunities.

4.2 Context of Research

4.2.1 Agriculture Transformation in Vietnam

Vietnamese agriculture, a leading income source in rural households, has been a crucial economic element of the country. Having changed positively by applying the Doi Moi policy in 1986 and the land law in 1993, agriculture has transformed the country from a food insecure country to one of the world's top exporters of agricultural products such as coffee, rice, and pepper [5]. During the 1990s, the Vietnamese Government promoted expanding agriculture to uncultivated land areas in remote rural communes. Since the 2000s, when almost all the uncultivated land area was exploited, new tech agriculture has been intensively applied to obtain high yields and output. Throughout this period, overusing fertilizer and pesticides and overexploiting agricultural land has primarily resulted in

agriculture with rapid growth. As a result, in only 15 years (1995-2010), Vietnam transitioned from an agriculture-based to a transition country [5]. As a result, agriculture has been dealing with serious pollution of land and water resources, which threatens sustainable agricultural development [11-13]. Although showing many positive changes, Vietnamese agriculture is still in the stages of low value-added products compared with the global value chain [14]. Recently, the models of clean agriculture, bio-agriculture, and climate-smart agriculture have been considered and applied, aiming for sustainable agricultural development. This has been the newly emerged tendency for Vietnamese agriculture [13,15]. This situation of agriculture in Vietnam is rather similar to those in other developing countries, especially China [16,17]. Besides, labor productivity in the agriculture sector is low, only 30%in the industry sector and 33.7% in the service sector [11]. A startling statistic is that nearly half of all households that were solely engaged in agriculture in 2008 had found another income activity at least by 2010 [5]. Agriculture contributed by 19.9% to national household in- come in 2012, down from 28.6% in 2002. Primary agriculture's income share in rural households was 31.8% in 2012, down from 43.4% in 2002, and had been surpassed in proportion by "salaries and wages" in 2010 [5]. Farming is losing its importance and position in rural household livelihoods in Vietnam in particular, and in Southeast Asian countries in general [1].

Although being less attractive in rural areas, agriculture has emerged in places on the fringes of urban areas, which had been former rural areas before ALAFU, called Peri- Urban or Urban Agriculture (PUA). Although PUA is considered a marginal activity in urban areas, it continues to make a significant contribution to urban households' food security and income [18]. Several studies have indicated that the maintenance and development of PUA is one of the solutions to reduce the negative impacts of urbanization [19,20]. As in other developing countries, PUA in Vietnam contributes to and diversifies household income, reduces economic risk, ensures food security, and generates job opportunities for family laborers who cannot find new off-farm jobs in the labor market after ALAFU [9,21,22]. In other aspects, PUA plays a significant role in the maintenance of traditional community relationships and the environment [23].

In 2016, due to the effort of agricultural development and management under the context of urbanization, 9.32 million households were participating in the agriculture sector [24] which plays a central role in food security, poverty reduction, and foreign exchange earnings in Vietnam [25]. The structure of agriculture has changed between livestock and cultivation. While cultivation (a traditional long-lasting activity of Vietnamese agriculture with main crops such as rice, coffee, cashews, and pepper) has not changed much, livestock farming (an emerging sector in the last decades with main animals such as poultry, pigs, and cattle) has been notably developing [11,26]. The agricultural production scale of Vietnam is smaller than that of other Southeast Asian countries [27] and is rather similar to that of China [28]. Cultivation with a scale over 2 ha is still limited, but several livestock farms at larger scales are developing. Comparing between 2006 and 2011, the percentage of households breeding pigs with over 50 units increased by 80%, and the number of households breeding poultry with over 1000 units increased by 4.32 times. In general, however, the total of breeding households decreased by 35% and the households breeding pigs at a small scale (1-2 units) still counted for 50% of total pig breeding households in 2011 [29]. In the period 2017-2019, the livestock was faced with the outbreak of African Swine Fever (ASF) and H5N1, leading to a sharp reduction of production [30].

4.2.2 Agricultural Land Resource in Vietnam

In Vietnam, the state is the representative owner of land resources. They manage the land, make land use planning decisions, and distribute the land-to-land users (individuals and organizations) through the issuance of land use rights certificates. With agricultural land, the state delivered the long-term land use rights equally to all rural people in 1993 (the first version of land law in vietnam), aiming for efficient agriculture [31]. Agricultural land users have the right to use, sub-rent, inherit, and sell their agricultural land to other users, but they have to pay land tax and to return the land use rights when the state requests, to support national development purposes. When returning the land use rights to the state, land users will be compensated by cash or new land areas that are equal to or larger than their acquired land areas, but only the state has the authority to determine the price of agricultural acquired land [26,31,32]. Moreover, there has not been much change in agricultural land redistribution since 1993, leading to the young generation (born after 1993) in rural areas or in farmers' households not being issued agricultural land use rights. This could be one of the reasons why many young laborers in rural areas have not chosen the agricultural sector to work in. Having the same land tenure system as china, the land use rights of farmers in vietnam have been significantly advanced over recent decades by referring to experience and learning from the land policy of this country [33].

Going with establishing and improving the land law over time, the Government also made efforts to expand agricultural land, which is poor compared with other Asian countries. Since the 1990s, the Government expanded agricultural land by promoting domestic migration to reclaim the uncultivated land in remote rural areas, leading to an increase of almost 70% of the total agricultural land area during this period. This continued to increase slightly in the 2000s [26]. By 2012, the total crop land area reached 10.8 million ha, composing 35% of the total agricultural land resources of the country, in which 60% cultivates annual crops, 34% cultivates perennial crops and 6% is grassland supporting cow livestock [26]. The average arable area per agriculturally active person in the country is 0.34 ha, which is roughly half that of Cambodia, the Philippines or Myanmar [5]. Agricultural households or farms own nearly 90% of agricultural land, and the average land area per household is small. The percentage of households with less than 0.2 hectares, between 0.2 and 0.5 hectares, between 0.5 and 1 hectares, between 1 and 2 ha, and more than 2 hectares is 30%, 26%, 18%, 15%, and 12%, respectively. Furthermore, agricultural land was distributed in an equitable manner to individuals, which means that each household has several plots in different locations based on differences in soil quality, access to water sources, and distance [14]. This led to cropland fragmentation, where each household of ten has 4-5 plots in different places [34]. This situation also occurs in China, where each household has around six plots [28]. Recent studies have shown that a small area of farmland and fragmentation caused limitations on agricultural growth [11,34]. Therefore, to improve efficiency of agriculture, Government implemented land consolidation programs in many communes around the country. Hence, between 2004-2014, the plot number per household was reduced slightly from 4.27 to 2.83 [14,35].

While agricultural land fragmentation and scarcity are still mentioned as considerable constraints on agricultural modernization, it could be exacerbated in affected communes due to a huge area of agricultural land acquired to support to urbanization and industrialization [36]. According to GSO, the rice land area has been reduced by about 2.6 million hectares, while nonagricultural land area increased 1.8 million hectares in the period 1995-2009 [37]. About 10 million ha of land (agricultural

land and forest land) was converted to other types of land in the last three decades [6]. Moreover, most of the converted land area is flat land located in lowland areas where agricultural activities could have more convenience than upland areas and others [38].

This phenomenon has also been occurring around the world. If current trends in population density continue and all areas with high probabilities of urban expansion undergo change, then by 2030 the urban land cover of the world will increase by 1.2 million km^2, nearly tripling the global urban land area circa 2000. As a result, 1.8% - 2.3% of global croplands will be lost. Of that, 80% will occur in Asia and Africa [39,40]. Notably, much of the cropland that will be lost is more than twice as productive as national averages. Asia will experience the highest absolute loss of cropland, whereas African countries will experience the highest percentage loss of cropland [39]. The problem of farmland conversion is witnessed all over the world [12]. In developing Asian countries, losing farmland associated with urbanization has been especially rapid and has been recognized as a silent disaster [41]. In 1996-2003, around 6.7 million hectares of farmland in China were lost to economic development of the country [42,43]. In Indonesia, the conversion of land use from irrigated paddy fields to non-agricultural purposes reached 110,000 hectares, per [44].

4.2.3 Urbanization in Vietnam

Until 2018, a total of 833 urban areas had been formed in Vietnam with an urbanization percentage of around 38.5%. This figure is expected to increase by 50% by 2025 [45,46]. Between 1990 and 2017, the urban population has increased from 19.51 to 35.03 million people [47,48]. In general, despite great achievement of the national economy, Vietnam is facing numerous challenges caused by rapid urbanization, which is placing burdens on its technical and social infrastructure and leading to many severe consequences [45]. The national economic situation has been sharply improved, but conversion of massive areas of agricultural land to urban land as mentioned above has strongly impacted on agricultural land loss [49]. According to the Vietnam Farmers' Union, between 2003 and 2008, land conversion has affected the livelihoods of 2.5 million people, with over 53%of these households experiencing a reduction in income after land conversion [50]. Moreover, urbanization also promotes the movement of almost all young labor and male labor from rural to non-farm jobs in cities, leading to aging and feminization of labor in the agricultural sector [51]. In addition, due to inefficient management of ALAFU projects, the urbanization process has changed a part of acquired agricultural land into wildland instead of residential or industrial land, as was the plan, thereby wasting farmland which is naturally limited in Vietnam. However, one of the important achievements of urbanization and industrialization is an increase in incomes in rural households from the non-agriculture sector which has contributed to rural poverty reduction [47]. Urbanization will continue to be an important feature of Vietnam's development [47]. This means farmland conversion will continue and both challenges and opportunities from urbanization will continue to lead to the transformation of agriculture in the future.

4.2.4 The Nexus between ALAFU and Agriculture at Affected Communes

Based on the nature of ALAFU, we formed the nexus between ALAFU and agriculture, as shown in Figure 1 below. In our research, ALAFU includes three elements, which are agriculture land acquisition (ALA), a compensation and support program for losers of farmland, and urbanization activities on acquired land areas such as construction of roads, buildings, and infrastructure. Firstly, ALA is the

process by which the state withdraws the land use rights of agricultural land users. As a result, access to agricultural land for households has been reduced. Secondly, compensation and support programs occur after ALA. Almost all ALAFU projects in Vietnam could not compensate land losers with a new land area, instead of with cash. Along with compensation, there is a support program to recover livelihoods after ALA, which provides food for all people in affected households for 12 months and vocational training courses. If affected workers do not want to take these courses, ALA projects can provide them with cash to help them find new jobs. As a result, the compensation and support program has the potential to change the affected people's household capacities, financial assets, and facilities. This monetary compensation can assist affected households in improving their financial capacity and access to utilities. Finally, urbanization occurring on acquired land areas could include the construction of residences, office buildings, roads, power systems, and other facilities that support urban living. These activities then upgrade infrastructure in and out of affected communities that could support agricultural activities and attract a number of people to move there to live or to work, resulting in increasing agricultural product consumption. These activities also create many opportunities for non-farming jobs, causing labor in affected households to leave agricultural fields. All these above changes from three elements of ALAFU together can contribute to the transformation of agricultural activities, including crop cultivation and animal breeding in the affected households. The transformation could be seen in the changes in cost and benefits, labor division, the form of agricultural activities, and challenges and opportunities for agriculture as well.

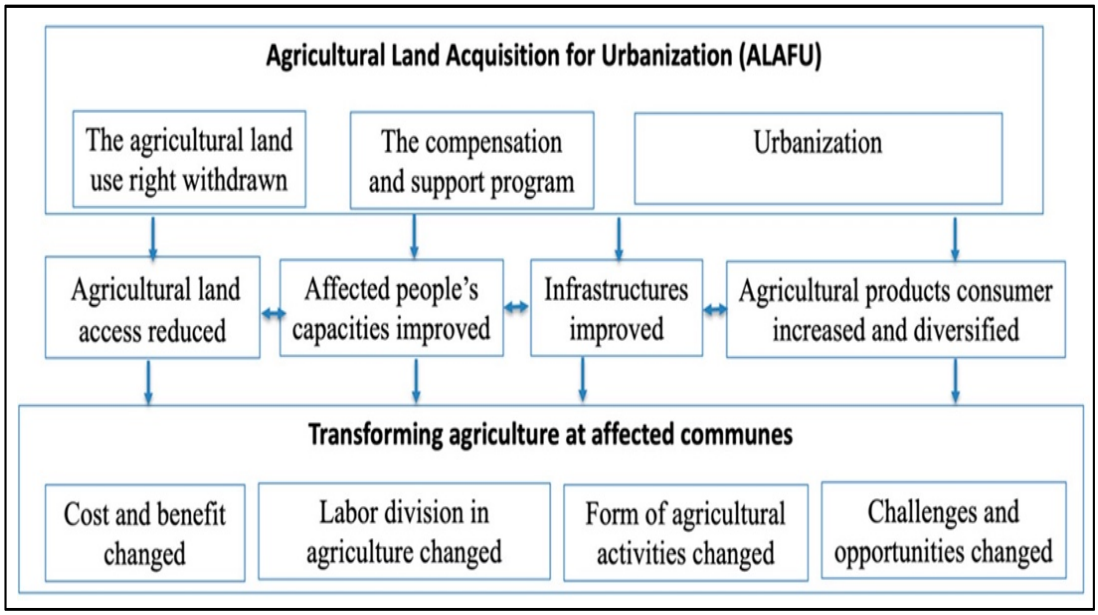


Figure 4.1: The nexus between ALAFU and agriculture in affected communities.

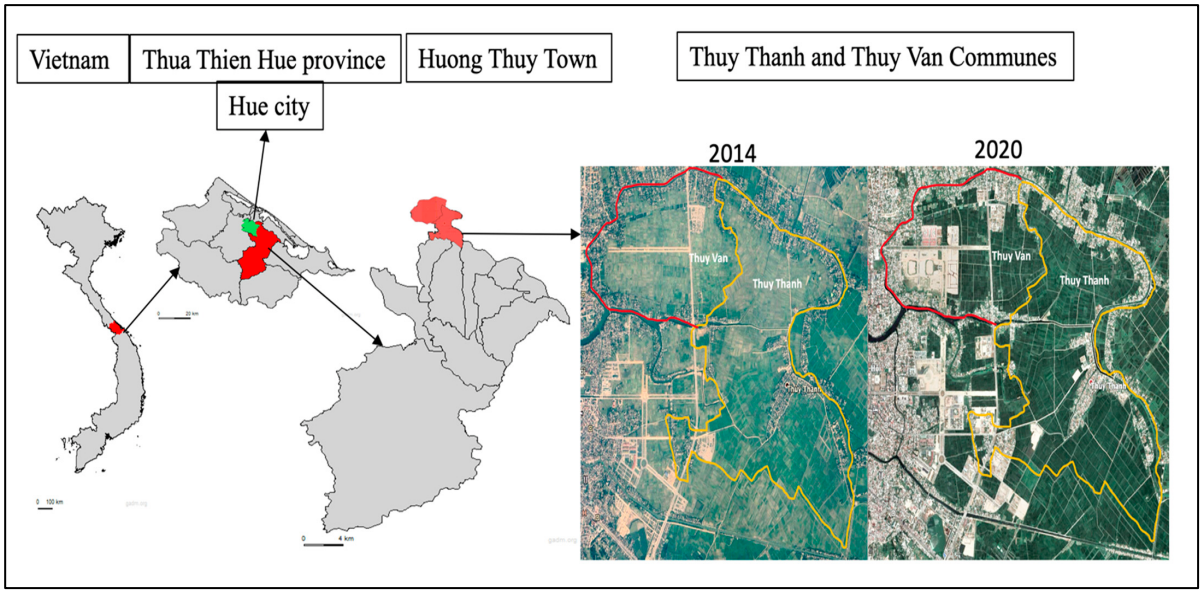
4.3 Research Method

4.3.1 Study Site

Being a central province of Vietnam with a severe climate and poor soil resources, agriculture here does not have many advantages compared with other provinces in the North, South and highlands of Vietnam [52]. Rice is a staple crop that is important in Thua Thien Hue province's agriculture. However, it faces challenges because the soil quality of agricultural land areas is poor, and flooding and drought are becoming increasingly severe [52]. Since the 2000s, however, under the pressure of economic

development, the provincial authority has promoted urbanization and industrialization by expanding Hue city to the south of province. As a result, between 2010 and 2015, 7083 ha of agricultural land has been acquired to convert to non-agricultural land. In 2014 the government planned to extend Hue city to be five times larger, so 19,000 ha of agricultural land will be converted in the period 2016-2020 [52,53]. The share of income from agriculture in the province was reduced from 21% in 2005 to 11.62% in 2017 [54,55]. the urbanization rate reached 52.7% and the average income per person was 41 million Vnd/year (around 1700$) and for rural areas only was 35 million Vnd/year (around 1500$) in 2019 [56].

Huong Thuy Town has a total of 45,466 ha of land area, located in the south of Thua Thien Hue province and bordering Hue City. Since 2010, it has been planned to develop industry and tourism, so agricultural land has been reduced by 6.3% (around 3527.8 ha) in the period 2005-2018 due to conversion to non-agricultural land. Given the land use plan of the province, 2000 ha of agricultural land has been converted to support urbanization in the period 2019-2020. The share of agricultural land area has been reduced to 69.56% in 2020, instead of 80.9% in 2010 [57]. Most of the converted agricultural land area is rice land and forest land. The main agricultural activities here include crop cultivation, animal breeding, and forestry. Rice has been the main crop, occupying 90% of total agricultural land. Besides this, perennial crops such as pepper and Thanh Tra (a special crop in Thua Thien Hue Province that belongs to the grapefruit family) have been developed in recent years. Other crops such as vegetables and grains have only been cultivated in a limited area due to the severe climate and poor soil quality. Regarding livestock, cattle (cow and buffalo), pigs, and poultry (chicken and duck) are the main domestic animals. Of these, the breeding scale of cattle has been reduced gradually because of diminishing grassland, whereas the breeding scale of pigs and poultry has increased due to industrial breeding methods. However, contribution of agriculture to the income structure of the town decreased from 6.62% in 2010 to 3.4% in 2017. The average amount of income per person of the town was 51.6 million Vnd/year in 2018 (around 2250$) [57]. In 2019, the rate of urbanization here reached nearly 70% [56]



(Source: Global Administrative Areas (GADM) 2018 and google earth 2021).

Figure 4.2: Study sites

Thuy Van and Thuy Thanh communes, two of eleven communes of Huong Thuy Town, were selected to be the study sites because more than 200 ha of former agricultural land there has been acquired to construct industrial parks, roads, and buildings. These communities have been planned to be a part of Hue city soon. Most households here had a diverse income source from both agriculture and non-agriculture before ALA. In 2020, the average income per person in these communities reached around 45 million Vnd per year, which is higher than that of the whole province. Agriculture contributes around 38% of the income structure, and rice production is one of the main agricultural activities. The map of study sites is shown in Figure 2.

4.3.2 Research Method

The mixed method, which originated in the social sciences, promotes the systematic integration or mixing of quantitative and qualitative data within a single investigation or long-term program of inquiry. This method works well for intervention research [58,59]. Using this method, the researcher can prioritize both qualitative and quantitative methods, or emphasize one of the two [60]. This study aims to understand the impacts of ALAFU on the livelihoods of local people, namely on agricultural activities, to suggest policy intervention. Therefore, we applied the mixed-method and prioritized the qualitative method. The quantitative data is collected and analyzed to show the basic dimensions of each agricultural activity between before and after, such as farmland scale, cost, and income. While qualitative data explains the impacts of ALAFU through listing, categorizing, and ranking all the reasons for the change in each agricultural activity by local people, who deeply understand the changing progress in agricultural activities. The challenges and opportunities of agricultural activities are also discovered by using qualitative data collected from the SWOT analysis. We attached much importance to these data because they are the voices of local people that are very significant in suggesting the interventions or solutions for community development.

Because qualitative data collection takes a long time, while the time and financial issues for the study are limited, we could not conduct a household survey with a huge number of households. This could have led to the statistical data system in this study not being strong enough to run a regression model, which is often used to show the impacts of the independent variables on dependent variables. To compensate for this limitation, we have tried to collect as much qualitative data as possible during field trips.

4.3.3 Data Collection

To collect the valuable qualitative and quantitative data, the rural rapid appraisal method was used because it supports researchers having good communication and inter- action with all stakeholders, especially local people, while collecting data [61]. The tools from this method for data collection were applied in this study including household surveys, group discussions, in-depth interviews, village walking and observation study sites.

To conduct the household surveys, 50 of over 200 affected households whose land was reduced by more than 50% of total former agricultural land area due to ALA were randomly selected from a list of affected households provided by the Commune People Committee. We have designed a questionnaire for the survey to collect quantitative data regarding the income of households, farmland area, and costs and income generated from each agricultural activity of the affected household after

ALAFU (2017) and before (2012). This questionnaire also considered the causes of the change of each activity.

Parallel with the survey, we held group discussions that included 10 representatives of affected households to identify and classify the causes of the changes, challenges, and opportunities for each agricultural activity. We requested that participants list all the reasons, and use a couple of comparisons, to rank the importance of each reason. Based on this, we identified the causes, challenges, and opportunities associated with ALAFU. In addition, the in-depth interviews with six key informants (the head of a farmer's union, the head of the people's committee, and local people) at study sites were also conducted by using the checklist. We asked open questions that focused on their opinions about general information regarding agriculture, its transformation, and the contribution of ALAFU to the transformation. Last, but not least, we visited and walked around the villages multiple times to observe and take pictures of the agricultural activities in different seasons. During these walks, we talked randomly with any farmers or local people who were willing to share their stories and views about agriculture and ALAFU to obtain more information. This information was mostly used to supplement or cross-check the data from the affected households, group discussions, and in-depth interviews with key informants.

All these primary data were coded and entered excel software to analyze statis- tical data such as percentages and average values of indexes relating to each agricultural activity. The qualitative data was filtered and documented as stories, quotes, and pictures which support from the quantitative data to give comprehensive arguments for each research problem.

The secondary data relating to agricultural development and ALAFU were collected from documents, ALAFU project proposals, annual reports at levels, and statistical books. Other data sources such as scientific papers and daily magazines relating to research topics were referred to as well.

4.4 Results

4.4.1 Characteristics of Survey Households

The basic information of 50 surveyed households at times before and after ALAFU is listed in Table 4.1. The average income per person has increased from 19.7 in 2012 to 31.5 million in 2017, and it is a little higher compared with the average income of the whole study site at present. The share from agricultural activities to household income structure dropped from 45.6% to 34%, lower than that of the whole study site. This means the surveyed households' livelihood still depend rather much on agriculture. On average, each household is compensated 138 million Vnd for losing agricultural land of 0.225 ha. This amount is very significant to develop or rehabilitate the livelihoods of affected households after ALAFU, and especially to invest in non-farming jobs and small business.

Table 4.1: Characteristics of surveyed households

N=50

	Unit	Before(2012)	After(2017)
Average age of household leader before ALAFU(2012)	Year old	48.8	53.8
Average income/person/year	Million Vnd	19.7	31.5

Contribution of agriculture to total income household structure	%	45.6	34
Average agricultural land area of household	Ha	0.305	0.08
Average agricultural acquired land area	Ha		0.225
Average amount of compensated cash	Million Vnd/HH		138
Average number of persons in household	Person		4.1
Average number of laborers in household	Labor		2.4

(Source: Household survey, 2018-2019).

* Note: 1 USD ≈ 20,000 Vnd in 2012 and ≈ 22,000 in 2018

4.4.2 Changing of Crops Cultivation

Regardless of the scarcity of agricultural land resources, crop cultivation is a long-standing agricultural activity that plays an important role in contributing to rural livelihoods in Viet Nam and in our study sites as well. The staple crops are rice, maize, sweet potato, cassava, cafe, and pepper, of which the rice is the most important and popular crop because it is the main food in all Vietnamese families. Unfortunately, most of the agricultural land area that has been converted to urban land during the urbanization process consisted of rice paddies in the lowland areas. Therefore, the impacts of ALAFU on cultivation activity is very clear. In our study site, the impacts are investigated and shown in Table 4.2.

Table 4.2: Changing of crop cultivation activities of affected households

N=50

Indicators	Unit	Rice		Potted flower		Vegetable	
		Before (2012)	After (2017)	Before (2012)	After (2017)	Before (2012)	After (2017)
Percentage of surveyed household participated in	%	100	22	10	34	40	22
Average scale	Ha/household	0.305	0.08	500*	890*	0.01	0.015
Number of harvests per year	Harvest	2	2	1	1	3	4
Total cost	Million vnd/year	11.6	3.8	25	100	1.2	4.8
Average income of active household	Million vnd/ year	13.5	3.5	50	100	6.3	16.8
Its share of income in surveyed households	%	16.7	0.6	6.1	26.1	3.1	2.8

(Source: Data from household survey 2018-2019)

*Note: Flowers are planted immediately into pot from the beginning stage, so the production scale of this crop is measured by the number of flower pots.

Because rice is a main and important food crop for Vietnamese families, we counted all surveyed households participating in rice cultivating activity, no matter whether their activity was for family food only or for income generating purposes. However, with flowers and vegetables, just households that planted for an income-generating purpose were counted because the planting scale of these crops for family food is too small to investigate the costs and income. The data in Table 2, compiled from the household surveys, shows the clear change of each crop in the affected households. The indicators

of rice cultivation consisting of percentage of households, scale, income, and the average contribution to household income was reduced greatly from 88% to 22%, from 0.305 ha/household to 0.08 ha/household, from 13.5 million Vnd to 3.5 million Vnd, and from 16.7% to 0.6%, respectively. In contrast, these indicators of Potted Flower Plantation (PFP) increased sharply from 10% to 34%, from 500 flowerpots/household to 1000 flowerpots/household (around two pots per m2), from 50 million Vnd to 100 million Vnd, and from 6.1% to 25.1%, respectively. However, vegetable cultivation also increased slightly above the average scale and income, but the number of households dropped sharply so its share of household income was reduced slightly. However, the percentage of surveyed households planting vegetables for family food purposes only is not much different before and after ALAFU. At present, PFP has been developing and, being the highest income crop, its share of income of surveyed households has increased up to 26.1%, however, it occurs mainly on temporary land area or space around residential land area (Figure 3). In contrast, rice has been a marginal crop associated with lower income, and its share of income of surveyed households is almost zero.

Table 4.3: Reasons for the change of crop cultivation activities of affected households

Reasons of the change of crop cultivation		Rice (N=50)		Flower (N=17)		Vegetable (N=20)	
		%	Rank	%	Rank	%	Rank
ALA	Farmland fragmentation is exacerbated	78	2				
Compensation	Compensated cash is used to develop other jobs	30	3				
Urbanization	Increasing non-farm jobs	60	1			80	2
	Value of crop is increased			100	2	100	3
	Consumer market increased			100	1	100	1
	Infrastructure is upgraded			52.9	4		
Other	Field-rat damage	30	4				
	Severe climate	20	5				
	Need less farmland			47	3		

(Source: Data from household survey and group discussion 2018-2019)

*Note: Interviewee can select more than one reason for the change, ranking done by group discussion.

"*The PFP had been developed by few households before ALAFU, however after ALAFU, it has quickly been the main income of more than 300 households in our commune including non- affected and affected households. Most of these households undertake by themselves all steps of the PFP by consisting of making cement flowerpots in March -April, germinating saplings and pre- paring land from May-Jun, planting saplings into the cement pots, caring from July to December, and sale at the Tet festival (Lunar new year). Therefore, the labors participating in this activity are busy all year, they don't have to take the second job, but their income is still good. In general, a main female labor of the family works on this activity as a full-time job. Compared with other crops, PFP requests highly about technique, financial capital and number of working days, in return, the income from this activity is higher*". (Source from a depth interview an officer of famer union).

To discover how these changes relate to ALAFU, we investigated the causes obtained by the household surveys, group discussions, and in-depth interviews, and then analyzed the data. The results are listed in Table 4.3. The causes were listed and categorized into four groups including ALA, compensation, urbanization, and other. We mixed statistics data from household surveys and rankings from group discussions. The reasons for the change of each crop are rather different.

Only the surveyed households participating in each crop cultivation were asked the reasons for the changes, so there are 50, 17, and 22 surveyed households participating in rice cultivation, PFP, and vegetable plantation, respectively. With rice cultivation, there are many reasons for the changes. However, almost all surveyed households (78% and 60%) selected "farmland fragmentation is exacerbated" and "increasing non-farm jobs" as the main reasons for reducing rice cultivation, of which the second one is ranked the most important reason by group discussion. It was explained that "*Rice is a low-value crop and rice land fragmentation is more exacerbated by ALA; meanwhile non-farm jobs are more and more available due to the rapid urbanization. As a result, farmers are attracted to these non-farm jobs instead of keeping rice cultivation. Moreover, drought, flood, and field-rat damage are more and more severe, leading to more difficulties for rice cultivation. Rice land abandonment has been occurring*". (Source: in-depth interview with a farmer).

The survey data shows that 78% of surveyed households have left this activity after ALAFU, although they still access a small area of rice land. Of this small area that remains, 58% of households either sublet or give their rice land free to others, and 20% completely abandoned their rice land.

1. Flowerpots are placed on sidewalk
2. Flowerpots are placed around a house of worship.
3. Flowerpots are placed on the campus of the commune health station.
4. Flowerpots are placed on anti-flooding frame in garden.
5. Flowerpots are placed residential converted agricultural land. This area is fallow but could be used for construction any time.

(Source: Picture number 1, 2, 3, 4 taken by main author 2019, picture number 5 taken by photographer Nguyen Phong, 2019).

Figure 4.3: PFP occurs mainly on the temporary land areas or spaces in study sites

While walking around the study sites, we collected a story from a farmer who sup- plies the service of land preparation and rice harvesting by machines: "*We worked directly with rice planters inside and outside commune since 2010 and can deeply understand about rice cultivation. Under the impacts of urbanization, not only in our commune but also in many other communes around, farmers have increasingly left rice cultivation. This leads to two different trends, one is rice land abandonment, the other is rice land concentration in a few households up to 1ha per household by renting or receiving rice land from others. While the rice land abandonment caused increasing rat damage, the land*

concentration caused increasing benefit of rice cultivation. Rice planters are often elders and mid-age women who have fewer opportunities to take non-farm jobs or have to stay for housework. They also spend a short time for rice cultivation (around 20 days per season)". (Source: a story of Nguyen Van A, Thuy Van commune).

However, during the in-depth interview with the local authority, they revealed that: "*We knew but still could not control about the rice land concentration because the house- holds themselves negotiated each other to sublet or give free the rice land. However, we also recognized rice land concentration does not only maintain rice cultivation but also creates high benefit for rice planter*" (Source: in-depth interview of an officer of the Commune's People Committee).

While many affected households have left rice cultivation to focus totally on non- farming jobs, some others have switched to the PFP. All potted flower planters selected "value of crop is increased", "infrastructure is upgraded" and "consumer market extended" as reasons for developing PFP, of which the last one is ranked as the most important reason.

"*Increasing urban population due to urbanization created a high consumer market of the pot- ted flower on the Tet festival. In addition, after ALAFU, the upgraded infrastructure including electricity system, water, and road has also supported much for PFP such as watering, setting up temporary lighting system and transportation*" (Source: a statement in group discussion)

4.4.3 Changing of Animal Breeding

Before the 1990s, the livestock at the rural household level related closely with crop cultivation that supported food sources for it. In return, it supported the pulling capacity and organic fertilizer to facilitate crop cultivation. Out of that, the function of this activity mainly supplemented meat for family on important events (deaths, anniversaries, new year's party, etc.). The popular animals were poultry (chickens and ducks), pigs, and cattle (cows and buffalo). The animals were freely bred on natural spaces such as rice paddies, grasslands, gardens, backyards, and rivers. Since the 2000s, however, this activity has been developed by applying the industrial breeding model. It has since been one of the main income sources of households. The food sources for animals also no longer totally depend on crop cultivation and natural sources. Instead, industrial food sources have commonly been used. So, how has ALAFU impacted the animal breeding of affected households? The surveyed data are shown in Table 4.4.

The same as with crop cultivation, we only count surveyed households whose animal breeding is oriented as an income-generating activity in Table 4.4. First, we can see the number of bred animals in study sites is monotonous and the breeding scale is small, both before and after ALAFU. The percentage of the surveyed households participating in breeding fell dramatically to under 10% of all animals. However, the average breeding scale increased. For example, the scale of pig livestock increased from 10 unit/cycle to 20 unit/cycle and that of poultry increased from 50 unit to 200 unit/cycle. The average scale has increased not because these breeding households increased the scale of their operations, but because only breeding households operating at the larger scale before ALAFU continued breeding after ALAFU. Despite this, the contribution of each breeding activity to the surveyed household's income structure has been reduced. However, similar to the vegetable

plantations, the number of households breeding chickens as a food source for family use (meat and eggs) is still rather high (50% of surveyed households).

Table 4.4: Changing of animal breeding activity of affected households

N=50

	Unit	Cattle		Pig		Poultry	
		Before (2012)	After (2017)	Before (2012)	After (2017)	Before (2012)	After (2017)
Percentage of household	Percentage	20	4	52	10	44	10
Scale	Unit/cycle	2.6	3	10	20	50	100
Number of breeding cycle	Cycle/year	1	1	2.5	2.5	2.5	3.2
Average cost of active household	Million vnd/year	12	15	70	166.7	6.25	25.6
Average income of active household	Million vnd/year	13	18	20.5	45	6.1	8
Its share of surveyed household's income	%	3.2	0.5	13.2	3.4	3.3	0.6

(Source: Data from household survey, 2018-2019)

In Table 4.5, there are 10, 26, and 22 surveyed households who participate in cattle, pig, and poultry breeding, respectively. With cattle breeding, the main reasons for households stopping after ALAFU are "grassland is reduced" and "non-farm jobs are available", of which the last one is ranked as the most important reason. Meanwhile, with pig and poultry breeding, "The commune is merged with the city" and "Disease breakout" are the main reasons, of which the first one is ranked as the most important cause.

Table 4.5: Reasons for the change of livestock activity of affected households

Reasons for the change		Cattle (N=10)		Pig (N=26)		Poultry (N=22)	
		%	Rank	%	Rank	%	Rank
ALA	Grassland is reduced	50	2				
Urbanization	Increasing non-farm jobs	80	1				
	Free space is reduced			50	2		
	The commune is merged with the city			50	1	100	1
Disease breakout	Africa Swine Flue			76.9	3		
	H5N1					100	2

(Source: Data from household survey and group discussion 2018-2019)

*Note: interviewee can select more than one reason for the change, ranking conducted by group discussion.

"*As the agricultural development plan of the province, we have focused to develop breeding oriented industrial mode with big scale in rural communes that are far away from Hue city to avoid*

environmental pollution and disease as well, so reducing breeding at affected communes is reasonable and the breeding households understood this situation too." (Source: in-depth interview of an agricultural officer). However, a few households still continue their breeding because *"they have tried to take advantage of the firm facility that has been built before ALAFU. However, they have also had the plan to leave this activity when the commune is merged into the city next year*.". (Source: in-depth interview of a breeding household)

4.4.4 Challenges and Opportunities

Animal breeding does not have much opportunity to develop as an income generating activity of these communities in the future, because of merging with the city. As a result, we only analyzed strengths, weaknesses, opportunities, and threats (SWOT) related to crop cultivation through group discussion. The results are shown in Table 4.6

Table 4.6: Results of SWOT analysis of crop cultivation in the affected commune

Activity	Strengths	Weaknesses	Opportunities	Threats
PFP	+ A high value crop + A high adaptative capacity with flooding and loss of farmland + A landscape value crop + Laborers have good experience + Generates good income	+ Planting techniques and financial capital costs are high + Laborers are aging	+ Having a good consumer market + Having an opportinity to be one of the destinations in the trade villages in the tourism network of Huong Thuy Town	+ Spaces to put flowerpots are reduced
Rice cultivation	+ Laborers have good experience + A main food crop	+ A low value crop + Laborers are aging and feminized	+ Rice land is concentrated + Application of agricultural machines	+ Severe climate + Rat damage
Vegetable Plantation	+ Laborers have good experience	+ Quality of land is unsuitable + Laborers are aging and feminized	+ A good consumer market	+ Severe climate + Garden land will be reduced

(Source: Information from group discussion, 2018)

4.5 Discussion

Farmland is the most important requirement for agriculture production [62], so reducing access to farmland due to ALAFU could decrease agricultural production. This is especially true with crop cultivation activity that depends the most on farmland [63–65]. Therefore, many studies recommend that ALAFU should be carefully considered under the high pressure of urbanization [66]. In our study,

each agricultural activity of the affected households has changed in different ways. The previous studies have generally concluded that ALAFU leads to a reduction in agricultural production. However, our research findings show that ALAFU caused different trends in changes in each agricultural activity.

4.5.1 Rice Land Fragmentation and Abandonment

However, PFP as a horticultural activity has been increasing and is becoming the main income generating activity. This trend has not popularly appeared in affected communes by ALAFU around the country but has been mentioned in some recent studies about urban agricultural development [23,67]. The previous studies have generally concluded that ALAFU leads to a reduction in agricultural production.

Rice cultivation, which heavily depends on agricultural land, has sharply decreased. After ALAFU, besides decreasing the scale of rice cultivation as an inevitable consequence of ALA, the number of households participating in this activity has also decreased sharply. Twenty percent of households abandoned the remaining rice land and 58% sublet or gave the remaining land area to others. As a result, the share of rice cultivation of household's income is reduced. This situation coincides with many previous studies in Vietnam and developing countries [2,64,65,68,69]. Increasing non-farming jobs due to urbanization was ranked as the most important reason for leaving rice cultivation for households. This means that in the context of ALAFU, rice cultivation and rice land access have not been significant to livelihoods of the households surveyed. In reality, stopping rice cultivation (giving rice land away or abandoning rice land) has recently occurred not only in affected rural communities due to ALA, but also in non-affected rural communities. This is especially true in rural communities in the north and central parts of Vietnam, where farmland fragmentation is higher than other places [7,70–73]. This situation has also been warned against in many previous studies in Vietnam, China, Thailand, Indonesia about agricultural land fragmentation and the impacts of urbanization on rice production [11,34,74,75]. A review of global farmland abandonment shows that farmland abandonment has occurred primarily in developed countries in Europe and North America through changing socio- economic factors such as urbanization and migration [76–79].

Although this finding has been mentioned in many countries, increasing farmland abandonment in Vietnam, a developing country with a scarcity of farmland resources, is very serious. Furthermore, the abandoned land in developed countries is mainly located in mountainous and hilly areas due to their unfavorable farming conditions [76–79], but that in Vietnam this is located in peri-urban or lowland areas, where both soil quality and infrastructure are the most suitable for rice cultivation. Some studies in China and Thailand have also shown this problem [73]. The finding also indicated that ALAFU projects do not only directly occupy the rice land area through ALA but also indirectly accelerate rice land abandonment. Losing an agricultural land area for ALAFU projects has been accepted as a trade-off for the urbanization process that Vietnam and other developing countries have recognized, but rice land abandonment as the unexpected impact of ALAFU has been not carefully considered and controlled yet. It reflects the unreasonable planning of urbanization strategy that could lead to unsustainable development and threaten food security.

4.5.2 ALAFU Versus Animal Breeding at Household Level

Just as with rice cultivation, animal breeding at the household level has been at a small scale and has mainly played the role of food provision for families before ALA. This situation is very common in rural areas of Vietnam [5]. Although it does not depend much on agricultural land, it also has been shown to decline after ALAFU. This change, however, relates to urbanization and disease more than ALA. The breeding process has no opportunity to maintain itself or develop in the affected communities because the urbanization process has gradually merged these communities into the city. This means that breeding at any level is either limited or requested to move on to other places that are far away from urban residential areas. Moreover, the Africa Swine Flu (ASF) and H5N1 epidemics broke in the period 2016-2018 around the country and caused almost all breeding households to lose all of their business [80]. Our study sites are not an exception and, as a result, the number of surveyed households participating in breeding was sharply reduced at the survey time. This change, however, coincides with the breeding development plan of the country, and the government has also oriented towards increasing breeding operations at larger scales and reducing breeding at the household level. The number of big breeding farms increased 3,38 times between 2011 and 2017 [81]. As part of the plan in 2017, 70% of the output of pig production was to be from big farms. During the period 2012-2017, the number of pig breeding households was reduced by five percent per year [82]. Therefore, the ALAFU, especially urbanization, by creating more non-farm jobs for local people, has supported the livestock development plan of the country. In another word, the ALAFU is the main factor that has broken up traditional animal breeding at the household level.

4.5.3 Development Peri-Urban Agriculture after ALAFU

Opposite the reduction in rice cultivation and animal breeding is the development of PFP, a horticultural activity. PFP has been notably increasing after ALAFU. It has been the main income source of 34% of surveyed households and its share of the average income of surveyed households increased by up to 26.1%. Not only affected households but also non-affected households participated in this activity. In our case study, PFP has been developed due to advantages associated with urbanization, not by ALA. The potted flower consumer market is higher and higher every year due to the increase of urban dwellers, and PFP is more convenient due to the upgraded infrastructure system such as water, electricity, and roads. Potted flowers are a non-food crop but have a high value. Although the cost of PFP is high and the planting technique is rather complicated, its income is also higher than other crops or some non-farming jobs. Therefore, the potted flower planters have tried to learn the techniques well and have taken advantage of all free spaces alternating between the residential land areas and temporary fallow land areas (due to the delayed ALAFU) to develop their business.

PFP is an agricultural activity which has a high value, a good consumer market, a good adaptive capacity to the severe climate (flooding), and a low dependence on farmland. In the context of Vietnamese agriculture, where the value of agricultural production is low, climate change is more serious and farmland resources are poor and constrained by urbanization, developing agricultural activities such as the PFP is interesting and therefore promoted [5,15,83–85]. Furthermore, PFP could contribute to urban landscape value and support the trade village tourism mode around Hue City, which is rather significant for sustainable urban development. Unfortunately, while urban agriculture

has been mentioned as a necessary solution for sustainable urban development in previous studies [19,20,86], it has received little attention in the plan of social economic development of study sites after ALAFU (peri urban areas). The evidence is that the local authorities have recognized the PFP as a good livelihood activity, but they still have not allocated any permanent land areas for this activity nor made any plans to retain or develop it. This will lead to challenges to PFP in the future.

In general, disregarding horticultural development has popularly been seen in affected communes in Vietnam because both affected people and local authorities believe that moving to non-farming jobs is the best option for the livelihoods of households [2,65]. Furthermore, after being a peri-urban area, the price of residential land has been rocketing, so people have tried to convert garden land (normally it is around the house) to resident land in order to obtain benefits [87]. In some cases, horticulture has been a long-lasting traditional livelihood activity and the main income of households since before ALAFU. People have tried to maintain it but have changed from vegetables to flowers and ornamental plants to obtain a higher income [23,67,88]. Some studies in China and India have also revealed that horticulture in the peri-urban areas has to face challenges associated with scarcity of land, water, and labor, and opportunities such as good markets and high demand for horticultural production [89,90] To avoid these challenges, urban agriculture in Japan, which has long been the primary source of food for city dwellers, has been given much attention. Japan has released a new conceptual approach called “Satoyama”, which states that the surrounding areas of small cities must be planned for agriculture and play important roles in agro-ecological production, food, and other services. Furthermore, payment for urban ecosystem services, the establishment of a consumption production network, and the integration of urban agriculture development into the national environmental strategy are applied to the development of sustainable urban agriculture [91].

4.6 Conclusions and Recommendation

4.6.1 Conclusions

ALAFU has caused a reduction in rice cultivation in both the number of households and rice land size, not only by losing rice land through ALA, but also by abandoning the rice land of farmers due to urbanization. The decreasing rice cultivation in our study also coincides with many previous studies in Vietnam and other countries about rice production and rice land abandonment. However, ALAFU projects have not considered this phenomenon yet in estimating and assessing the damage to rice cultivation in particular, and to agriculture in general. ALAFU, on the other hand, has provided an opportunity for the development of PFP, a horticultural activity, through urbanization benefits. PFP has increased and is the main income of 34% of surveyed households. Developing a new form of cultivation is not popular in the communities affected by ALAFU, but in this study, PFP is called a kind of peri-urban agriculture which has also been considered in many previous studies in peri-urban or urban areas. Unfortunately, the development of PFP has not been predicted yet. This has resulted in challenges such as a lack of space or land area for PFP, but also a waste paddy land. Besides this, many surveyed households have still maintained vegetable plantations and chicken breeding as family food-supplying activities. As a result, agriculture remains after ALAFU, but the total contribution of agriculture to the income structures of households has been reduced from 45.6% to 34%.

These research findings also contribute to more evidence that agricultural land, although it is a crucial material for agricultural development, does not totally decide the existence or development of

agricultural activities, but other factors, including the consumer market, infrastructure, and income. Moreover, besides ensuring agricultural land use rights, the increasing value and income of agricultural activities is an important force for farmers to improve their capabilities themselves and achieve success in agriculture. This could be important evidence for land use planners, agricultural developers, and agricultural development programs.

4.6.2 Recommendations

Agriculture can still develop as a form of PUA in affected communities after ALAFU. However, to achieve sustainable agricultural development, firstly we recommend that there be more studies about the impacts of ALAFU on agriculture to create a comprehensive database to warn about food insecurity associated with ALAFU. Secondly, we recommend that, besides looking for solutions to minimize the area of agricultural land acquisition that was mentioned in many previous studies, the ALAFU projects should predict the situation of abandoned farmland after ALAFU. This effort could calculate the total amount of the real farmland damage caused by ALAFU projects, thereby supporting better decision-making, and forecasting better agricultural transformation after ALAFU. In addition, to minimize paddy land abandonment, the paddy land remaining in affected communities should be concentrated at the same time with ALA. The government should design and pilot an agricultural land concentration policy by revising the current policy of ALA, such as acquiring the remaining land area after ALLFU and then delivering it to farmers who demonstrate a long-term commitment to crop cultivation. In non-effected communities, the farmland consolidation policy should continue to be efficiently implemented to reduce farmland fragmentation. Finally, instead of allowing agriculture to develop freely as a marginal activity as it is now, local authorities should create a master plan for agricultural development in affected communes, such as allocating a given land for PFP. At the national level, urban agriculture development should be seriously considered and the solutions to urban agriculture from Japan should be referred to while making plans for land-use, urban expansion, and agricultural development that are moving toward peri-urban and urban agriculture.

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Chapter V: Improving the Socioeconomic Status of Rural Women Associated with Agricultural Land Acquisition: A Case Study in Huong Thuy Town, Thua Thien Hue Province, Vietnam

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Abstract: Since the 2000s, agricultural land acquisition (ALA) for urbanization and industrialization

has been quickly implemented in Vietnam, which has led to a huge socioeconomic transformation in rural areas. This paper applies the sustainable livelihoods framework to analyze how ALA has impacted the socioeconomic status (SES) of rural women whose agricultural land was acquired. To get primary data, we surveyed 150 affected households, conducted three group discussions, and interviewed nine key informants. The research findings reveal that ALA, when applied toward urbanization, has significantly improved the occupational status of rural women by creating non-farm job opportunities that have improved their income, socioeconomic knowledge and working skills. While their SES has been noticeably enhanced, these positive impacts are still limited in cases where ALA is applied toward industrial and energy development, since these purposes do not create many new jobs. Moreover, the unclear responsibility of stakeholders and inadequate livelihood rehabilitation programs of ALA projects have obstructed the opportunities of rural women. To improve the SES of rural women, we recommend that ALA policy initiate a flexible livelihoods support plan based on the purpose of ALA and the concrete responsibilities of stakeholders and investors.

Keywords: agricultural land acquisition; alternative job; socio-economic status; rural women and land use policy

5.1 Introduction

Since the Doi Moi Policy of 1986, Vietnam has promoted a strategy of industrialization and urbanization [1]. This strategy has significantly increased the economic performance of the whole country [2]. As a result, however, over 10 million hectares of agricultural land have been acquired to be converted to non-agricultural land, most of which has fertile soil [3]. According to the General Statistics Office (GSO), Vietnam is an agricultural country, with approximately 70% of the population living in rural areas that are dependent on agriculture [4]. Access to natural resources (especially land resources) is an essential factor to rural livelihoods [5]. The agricultural land acquisition (ALA) policy, which has changed rural livelihoods and the socio-economic status of rural people, has had both negative and positive consequences. Several researchers have brought attention to the increasing unemployment and poverty in the affected communes after ALA [1,6,7], while other researchers have revealed that agricultural landlessness led to an increasing rural labor force in the non-farming sectors, which can significantly contribute to poverty reduction in rural areas [8]. Other studies have shown that

the income of affected households has increased more than before ALA [9,10]. Furthermore, the country report of 2013 concluded that the lack of productive land promoted the migration of rural labor to urban areas; therefore, ALA positively changed socioeconomic conditions in rural areas [11–13].

Women are one of the most vulnerable groups in the rural society [14]. In Vietnam, the Government has made impressive progress for rural women regarding access to productive resources, improved income, health care and education to narrow gender inequity. However, the socioeconomic status (SES) of rural women depends mostly on natural resources [15]. According to United Nations Women (UNW), 63.4% of rural women in Vietnam work in the agricultural sector and have low incomes [16], leading to the limited occupational and economic status of most rural women. The International Labour Organization (ILO) also reported that most rural women are not well educated, as 86.5% of rural women do not have any vocational skills [17]. As a result, their social status is still low [16].

In the context of ALA, we focus on (i) how ALA impacts the SES of rural women, (ii) whether ALA for different purposes leads to different impacts on SES of rural women, and (iii) how stakeholders of ALA projects have supported and influenced the search for new jobs for rural women after ALA. Previous research has not considered these questions; therefore, we assess the change of occupation, income and socioeconomic knowledge of rural women before and after ALA to determine whether their SES has increased or decreased. We then compare their changing SES in three different zones of Huong Thuy town in Thua Thien Hue province, where agricultural land has been quickly acquired since the 2000s, to determine the different impacts on SES of rural women. Zone 1 is where ALA is used for city expansion and is very close to the city, Zone 2 is where ALA is used for industrial zone construction and is far from the city (yet has good roads connecting to the city), and Zone 3 is where ALA is used for hydropower construction and is located in remote areas. Moreover, we list stakeholders of ALA projects and evaluate their support and influence on the changing SES of women. Based on this, we show the gaps of ALA policy that need to be improved.

We assume that both ALA and gaps in the ALA policy lower the enhancement of SES for rural women. Furthermore, different purposes of ALA can lead to different impacts on rural women. We apply the sustainable livelihoods framework of the Department for International Development (DFID) to analyze the change of occupation and income of rural women. While analyzing the change, we also aim to understand the causes of the change in order to identify causes that are related to ALA. We also discuss with rural women and stakeholders to identify what challenges and opportunities ALA brings them and how stakeholders support and influence the SES of the women. With this information, we show the gaps of ALA policy and the link between ALA and SES of rural women.

For data collection, we used the gender approach and the bottom-up approach to increase the participation of the local people, rural women and stakeholders. We mixed both quantitative and qualitative data to provide comprehensive arguments in our paper. The research method is described in Section 5.3 and results are contained in Section 5.4, followed by discussion and policy implications in Sections 5.5 and 5.6.

5.2 Conceptual Framework

In practice, the conversion of agricultural land for urbanization and industrialization is an indispensable trend in developing countries [18]. In Vietnam, ALA for non-agricultural purposes is also a fundamental

institutional framework to support the economic development that will turn Vietnam into an industrialized country by 2020 [2]. According to the land law of 2003, land resources belong to the Vietnamese people, with the Vietnamese State as the representative owner. The State manages the land, makes land use planning decisions, and distributes land resources to people (land users) by issuing land use certificates. Land users can be individuals, households or organizations. They have the right to use the land, and they can also sell or transfer their land use right. Generally, most people living in rural areas are farmers and have an equally distributed agricultural land use right in the long term. When the State wants to convert agricultural land to other types of land for investors, however, the State and the investors have to create an ALA plan, compensation and livelihood support program. Then, they announce the plan and program to the affected land users to have them (the land users) return their agricultural land use right to the State. In return, the affected land users receive compensation for losing the land use right through a monetary payment or a land use right elsewhere. They are also supported in rehabilitating their livelihoods. Therefore, the term "agricultural land acquisition" in our study is the process of the State recovering agricultural land use rights from land users and compensating them based on the compensation and livelihood support policy that was issued by the State in the land law. Affected people are required to return their land use right without any negotiation of the amount of compensation with the State or investors. Therefore, ALA leads to a decrease in access to agricultural land for affected people (rural women included). The affected people can also receive other indirect benefits associated with implementing non-agricultural projects, such as non-agriculture job opportunities in factories, companies or small businesses, improved infrastructure, and various services. In many cases, however, ALA has led to a conflict between the affected people and the investor or the State because of the inadequate compensation and support policy [2,19].

Socioeconomic status (SES) is a complex term used to classify a group or an individual in a society [20,21]. In recent decades, many definitions of SES have been released, most of which incorporate education level, representing social status; income amount, representing economic status; and type of occupation, representing work status. Income is an important index of SES because it directly impacts health, access to goods, access to services, and increases the power in the family, but is also controlled by occupation and education level and vice versa. We can measure income through various aspects, namely family income, individual income, wealth, or savings. Education can be measured through either the number of years of school completed or the level of the education program completed. A high education level often relates to a high income and good occupation [21]. We can evaluate occupation based on occupation prestige (goodness, status, worth, power), social class (working position, occupational title) or based on education requirements [22].

Based on this, there are many ways to improve the SES of an individual or a group, such as increasing income, improving education level, attaining a better job, or all of the above. With rural women, improving SES is an important target in the sustainable development strategy all over the world [23,24]. Characteristics of their SES are a low education level, low income and unstable employment. So, the stability and security of occupations, types of job and income amounts are the main aspects in assessing the work and economic status of rural women [24]. In terms of social status, vocational skills and socioeconomic knowledge must also be assessed [23].

To assess the SES of rural women in our research, aspects of work status are investigated including the type of job, stability of job (number of working days per year), occupational security (working contract and working insurance), independence (self-employment, employee or employer), working pressure (number of working hours per day), and income. Most rural women are adults or middle-aged with a given education level that does not change over time [25,26]. To determine their social status, we focus on socioeconomic knowledge and vocational skills more than education level. For economic status, we only focus on their average daily income.

The SES of rural women is the consequence of their livelihood activities, which are mostly dependent on natural resources, including land, water, and natural forest [27]. Among these resources, agricultural land is the most important factor for rural development, as access to it is key to the livelihoods of farmers as well as economic growth [5,28]. Decreasing access to land resources might lead to difficulties in the livelihood activities and SES of rural women [28]. In recent decades, increasing access to land resources has been one of the solutions that has been applied in most developing countries to improve the SES of rural women [14].

To show the link between ALA and the SES of rural women, we use the sustainable livelihoods framework designed by DFID that has been already applied in many rural livelihood development programs [29]. According to this framework, natural resources are one of five livelihood assets. The accessibility of these natural resources has impacts on the other assets and vice versa. Along with the other assets, vulnerabilities and institutions/policies control the livelihood strategies, contributing to livelihood outcomes such as income, wealth, well-being, and food security [30]. Based on this framework, we built a conceptual framework for our study. This framework shows the relationship between ALA and SES for rural women (Figure 5.1).

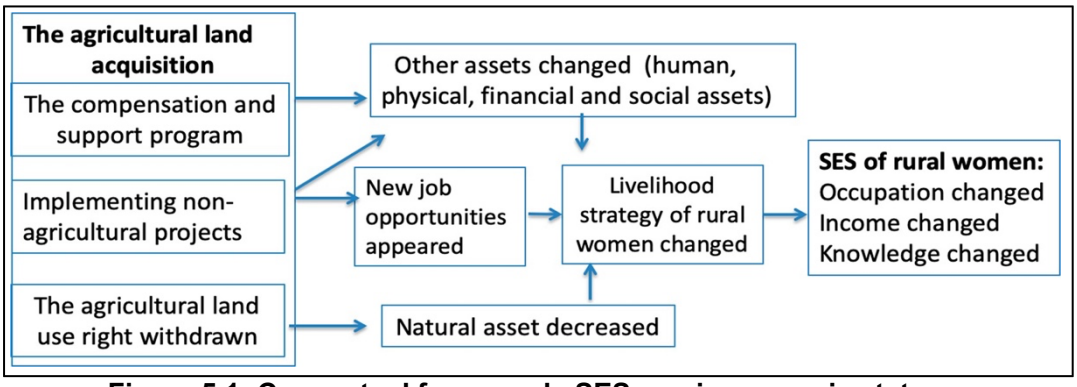


Figure 5.1: Conceptual framework. SES: socioeconomic status.

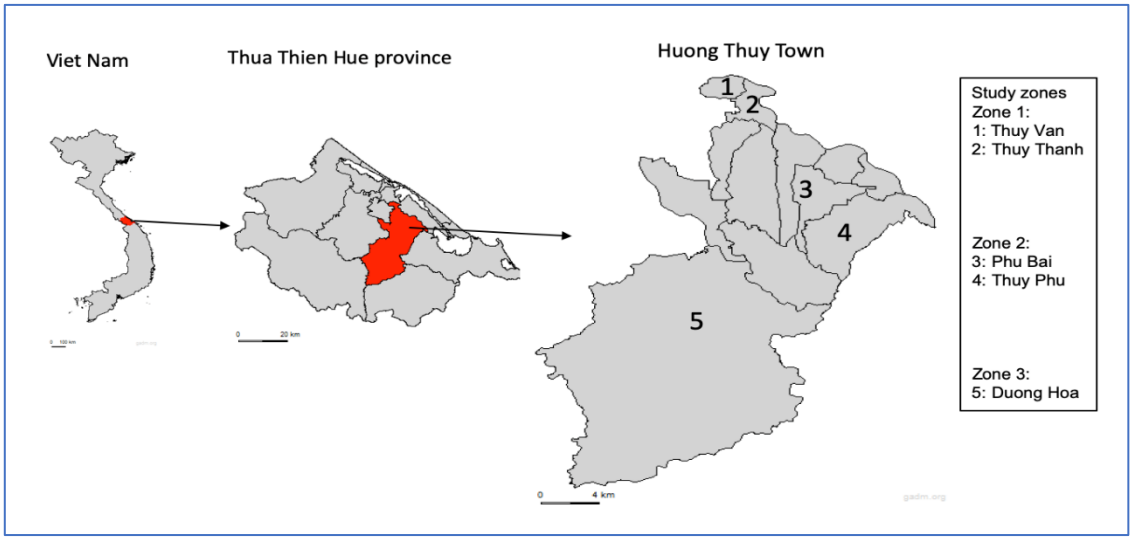
Following this framework, ALA includes three components. The first component is the agricultural land use right recovery that leads to the loss of agricultural land as well as other natural resources, meaning reduced natural assets. The second component is the compensation and support program, in which the compensation could increase financial assets directly via cash payment, and the support program could increase human assets via vocational training courses. The final component is the non-agricultural project implementation, which could create new job opportunities and increase physical assets through an infrastructure construction project. Changing livelihood assets and new job opportunities lead to changing livelihood strategies of rural women, and as a result, their SES changes.

5.3 Study Site and method

5.3.1 Study Site

Thua Thien Hue is a central province of Vietnam that is not well suited for agriculture, even though 70% of the population still relies on agricultural productivity. However, since the 2000s, industrialization and urbanization have increased with more than 5000 ha of agricultural land being converted to non-agricultural land, impacting over 6000 households [10]. According to "Resolution No 72/NQ-CP of the Government of Vietnam", 7083 ha of agricultural land was converted to non-agricultural land during the period 2010–2015, and more than 19,858 ha will be converted during the next period (2016–2020). This means ALA is continuing to increase over the coming years. ALA occurred quickly around the province, mainly for industrial development, hydropower, highway construction, and city expansion.

Huong Thuy was a district of Thua Thien Hue province from 1990 to 2010 (see Figure 5.2). Since 2010, Huong Thuy has become a town, located south of Hue city and encompassing five wards (Phu Bai, Thuy Chau, Thuy Duong, Thuy Luong, and Thuy Phuong) and seven communes (Thuy Van, Thuy Thanh, Thuy Phu, Thuy Tan, Thuy Bang, Phu Son, and Duong Hoa). The total land area is 45,466 ha, in which agricultural land occupies 80.9%, non-agricultural land occupies 18.3%, and unused land makes up 0.8%. According to reports from the Huong Thuy Town People Committee (HTTPC), 3,527.8 ha of agricultural land area was converted to non-agricultural land during 2005-2018, occupying 6.3% of the total agricultural land area of the town [31]. According to "Resolution No 37/2017/NQ-HDND of Thua Thien Hue province", more than 1000 ha of agricultural land in this town will be converted to non-agricultural land by 2020. This conversion has directly impacted about 3000 farming households and has led to a substantial decrease in the agricultural labor percentage in the town (20%) [32].



(Source: Global Administrative Areas (GADM), 2018).

Figure 5.2 Mapping of study sites

To meet the research objectives, we selected four communes (Thuy Van, Thuy Thanh, Thuy Phu, and Duong Hoa) and one ward (Phu Bai) to be our study sites. Thuy Van and Thuy Thanh communes (Zone 1) are close to Hue city and include converted agricultural land areas of 105.6 ha and 67.8 ha, respectively. Since 2012, most of this area has been converted to residential land and roads for the

purpose of expanding the city. On average, each household lost about 1500 m^2 of agricultural land, so that only 400 m^2 remains per household [33]. In the near future, these communes will be merged with Hue city. Most households whose land was acquired were not entirely dependent on agriculture before ALA.

The commune of Thuy Phu and Phu Bai ward (Zone 2) have good roads that connect them to the cities of Hue and Da Nang, which have a total of 54.1 ha and 144.6 ha of land that was converted from agricultural to non-agricultural, respectively. The land was converted in 2008 to construct the Phu Bai industrial zone and to expand the national highway. On average, each affected household lost about 2000 m^2 (for a remaining land area of about 600 m^2 per household). Before ALA, these households were completely dependent on agriculture [33].

The last commune is Duong Hoa (Zone 3), located in the mountainous area of Huong Thuy town, far from Hue city. A total of 1929.7 ha of agricultural and forest land in this commune was converted for the construction of the Ta Trach dam. A total of 312 households lost their land in late 2004, with an average acquired land area of 1.5 ha per household. Their remaining land area was about 1.6 ha per household. As in Zone 2, affected people in this commune had been totally dependent on agriculture before ALA [34].

We selected these study sites although the ALA period of each zone is different; however, they are the typical areas for each purpose of ALA. Zone 1, Zone 2 and Zone 3 represent the urbanization purpose, the industrial zone development purpose, and the energy development purpose, respectively. Moreover, we assume that the ALA for the energy development purpose creates more difficulty for affected people than other purposes because it may not create any job opportunities and other indirect benefits; therefore, we want to highlight that improving the SES of affected women after ALA in Zone 3 can be much slower than in other zones even though their time to restore or improve their livelihood is longer (15 years) than others (10 years in Zone 2, and 5 years in Zon 1)

5.3.2 Methods

The approaches of gender and development are based on specific characteristics of women and men to help understand the similarities and differences between them with respect to economic development, how they have responded and adapted to changes of socioeconomic conditions, and to identify the roles and responsibilities of women and men. This is important information for sustainable development [35]. In this paper, we applied this approach to see how rural women have interacted with, responded to, and adapted to ALA.

The bottom-up approach is an approach that allows local people and the community to express their voices, views, problems, needs, and expectations with researchers and other stakeholders [36]. This approach helps researchers to understand the study site better, resulting in recommendations for policies which are more suitable to local communities. We applied this approach during the data collection process, which included communicating with household leaders, women, women's groups, and key persons at each study site.

To get the primary data for our research, we used the Rapid Rural Appraisal tools (RRA). RRA supports efficient communication and interaction with communities. Researchers can use these tools

to collect data and answer research questions [37]. In this paper, we used tools such as semi-structured questionnaires, power mapping, and village walking to collect primary data at two periods including before ALA (in 2004, 2008, 2012 at Zone 3, Zone 2 and Zone 1 respectively) and after ALA (at the research survey in 2018).

To select the research sample, we collected the list of households whose agricultural land was acquired from the Commune People Committee at each zone. Based on this list, we filtered and made a list of all households whose acquired agricultural land exceeded 50% of their former agricultural land area. Then, we randomly surveyed 50 affected households in this list at each zone. Most affected household are still staying at their commune, but with the households for which we came but did not meet the head of the household or adults who are willing to participate in our survey, we came back later or replaced these with other households in the list. According to the labor law in Vietnam, women in the working age from 18-55 years old are the main laborers of society. Therefore, we only considered women who had been laborers before ALA (over 18 years old) and were still laborers at the time of the survey (under 55 years old). Women who were retired or had only been laborers after ALA were not included in this paper because these people may not be clearly impacted by ALA.

First, we conducted the household survey in 2018 in 150 households using semi-structured questionnaires. This survey collected data regarding the occupational status, the economic status, and the social status before ALA and at present as well as the reasons for the changes in the SES of affected women. To ensure the quality of the surveyed data, before conducting the survey, we referenced the data from the reports of ALA projects and other previous surveys of colleagues before the ALA period. We used these data sources to support interviewees to recall their memory in case they forgot information or when we wanted to crosscheck to verify data. Second, we talked with three women's groups, with each group in each zone containing ten women. In these group discussions, we applied power mapping to determine how other stakeholders supported and influenced the women in the process of looking for alternative job opportunities. Third, we conducted in-depth interviews with nine local key informants, including the head of a women's union and of the people's committee at four communes and a ward. Most questions focused on their views about occupation, income, difficulties, and opportunities after ALA, but also included how they have and will continue to support women under their responsibility as leaders and local authority representatives. Fourth, we visited the villages and working places of women multiple times to check in and talk with them about their daily activities and their jobs. With these efforts, we could more deeply understand the situation of the rural women. At the same time, we collected available secondary data from reports of the Commune People Committee, the Women's Union, and the Town People Committee; we also analyzed a broad variety of other sources (science papers, daily magazines, etc.) related to our research topic.

5.4 Results

5.4.1 Characteristics of Surveyed Households and Women at the Study Sites

The similar percentage of laborers of the surveyed households and the average percentage of laborers in each zone as a whole indicate that our study sample is representative of the population. This sample size is also representative of the entire population when based on female laborers (Table 5.1). In each of the 50 surveyed households, the number of women who had been laborers before ALA (over 18 years old) and were still laborers (under 55 years old) at the time of the survey is different between

the studied zones. A total of 60 women in Zone 1, 56 women in Zone 2, and 52 women in Zone 3 were included in the study. Although each zone was different before the ALA period (2004, 2008, 2012), data from the survey show that the average age of affected women is rather similar (around 40-45 years old). This is explained by the application of the agricultural land policy in 1993 and the rural context in Vietnam. The agricultural land was equally allocated for all people who were residing in the rural area from 1993 until now. This means that people who were born after 1993 in rural areas were not issued agricultural land, and for people who died after 1993, their land belongs to their family after their death. In addition, since the 2000s, education and industry have been strongly promoted across the country; many young people who were born after 1980s in rural areas have been highly educated and have moved out of agricultural activities or no longer depend on agricultural land. Put another way, at present, most of the people who still depend on agricultural land were born in the period before the 1980s in rural areas because they still have agricultural land use rights, and their education is limited (especially women). From this situation, the age of affected women in our research is not different between the three zones although each zone has different ALA implementation periods.

Table 5.1: Characteristics of surveyed households and women at the study sites.

		Zone 1		Zone 2		Zone 3	
		Surveyed households	Average of zone	Surveyed households	Average of zone	Surveyed households	Average of zone
Percentage of laborers (%)		73.4	77	78.5	78	80.5	81
Percentage of female laborers (%)		46.5	47	45.5	46	46.1	44
Characteristics of women who had been laborers before ALA (over 18 years old) and were still laborers (under 55 years old) at the time of the survey							
Number of women within the 50 surveyed households				60		56	52
Average age				44.3		41.2	44.7
Education level (%)	Primary school			58.3		53.6	100
	Secondary school			41.7		46.4	

(Source: Household survey 2018)

In Zone 1 and Zone 2, the women had passed primary and high school education, but in Zone 3, all women had only primary school education because they lived on boats until 1975, when they resettled in the Duong Hoa commune. Furthermore, before the 2000s, girls in rural areas of Vietnam were educationally limited due to male chauvinism. Given these influences, women may have faced difficulties in looking for new jobs after ALA.

5.4.2 Changing Work Status of Rural Women

Work status is one of the key factors that may hinder or improve the lives of rural women and also change their attitudes [38,39]. We studied how the employment of women has changed after ALA. The data in Table 5.2 shows the employment changes of the women in each zone. The biggest change occurred in Zone 1, where women have changed their jobs from agriculture to non-agriculture; the

percentage of women specializing in agriculture decreased from 36.7% before ALA to 11.7% at present. During this same time period, the percentage of women running small businesses increased from 10% to 31.7% and the percentage of women working as hired labor rose from 11.6% to 20%. The total percentage of women participating in non-farm jobs dramatically increased from 63.3% to 88.3%.

Table 5.2: The employment of rural women before ALA and at present

(Unit: Percentage of women)

Kind of job	Zone 1 (N=60)		Zone 2 (N=56)		Zone 3 (N=52)	
	Before	Now	Before	Now	Before	Now
Civil servant	1.6	1.6	0	0	1.9	1.9
Small businesswoman	10	31.7	10.7	19.6	1.9	5.7
Worker	16.7	11.7	0	7.1	0	1.9
Hired laborer	11.6	20	3.6	12.5	0	9.5
Farmer	36.7	11.7	69.6	12.5	96.2	11.4
Dual jobs (both farmer and small businesswoman)	11.7	10	0	0	0	0
Dual jobs (both farmer and hired labor)	11.7	13.3	16.1	48.2	0	70.6

(Source: Data from household survey 2018)

The employment of women in Zone 3 is less diverse than in Zone 1. Before ALA, 96.2% of women were specialized in farming; they cultivated rice and vegetables, bred animals, exploited natural forestry, and planted forests. However, this percentage is now only 11.4%, and most of the women have participated in animal breeding and forestry. At present, a high percentage of women (70.6%) in Zone 3 have been working as both farmers and hired labor. The hired laborers mainly care for the plants of the forest owners; however, this job is neither always available nor near their commune, and they have therefore tried to continue cultivation and animal husbandry in their yards or on their remaining agricultural land in their free time to provide food for their family.

In Zone 2, women also had to change their occupation. Many women (69.6%) were specialized in agriculture before ALA, while others were hired laborers (3.6%) or dealers with small-scale businesses (10.7%). At the time of the survey, many women are working as hired laborers and farmers (48.2%), while others have become small businesswomen (19.6%), workers in industrial zones (7.1%) or specialized hired laborers (12.5%). When the construction of the industrial zone started, all people who had lost land had been promised jobs in the factories or companies of the industrial zone, but most of them especially women were turned away because of their age and lack of working skills. Women then started to look for alternative jobs, of which hired labor is the most popular.

Besides changing occupations, the characteristics of each type of job also show the occupational status of rural women. In Table 5.3, we see the differential increases in working days, working hours and the income of each job. However, based on the ranking in the group discussion, there is no change in job classification. Civil servants, workers and small businesswomen are ranked as a good status (the good job group) both before ALA and presently because these jobs have a high number of working days (from 270 to 360 days/year), a good income, and working contracts (or are independent work).

Table 5.3: Aspects of occupation of rural women before ALA and at present

N=168

Occupation	Working days/year (Day/labor)		Working hours/day (Hour/day)		Income (1000 vnd/working day)		Working contract & insurance		Occupational position*		Ranking level**	
	Before	Now	Before	Now	Before	Now	Before	Now	Before	Now	Before	Now
Civil servant	270	270	8	8	78.2	176.8	Yes	Yes	1	1	1	1
Small businesswomen	142.9	360.0	8.5	10	120.4	191.2	No	No	2	2	2	1
Workers	270	270	8.8	9.6	126	197.9	Yes	Yes	1	1	1	2
Hired laborers	241.2	247.1	9.2	9.8	120.4	191.2	No	No	1	1	4	5
Farmers	109.9	173.7	8.4	9.1	56.4	180.8	No	No	2	2	5	6
Both farmers and small businesswomen	360.0	315.0	9.3	8.5	117.1	193	No	No	1	1	3	3
Both farmers and hired laborers	158.5	256.3	8.8	9.6	101.2	178.7	No	No	1,2	1,2	4	3

(*Source: Household survey and group discussions, 2018)*

*: 1 = employee, 2 = self-employment; **: ranking level: the best occupation status is 1, the worst is 6.

In contrast, farmers and hired laborers are classified in the bad status (bad job group), both before ALA and at present, because these jobs have a low number of working days per year and high working pressure without a contract (hired labor), respectively. "*Although women could get an alternative job quickly and avoid unemployment, some kinds of jobs entail high risks and pressure. Hired labor could involve spiritual violence (such as being despised, disrespected, and sworn at by the owner) or overuse by the boss. Most women have also not been trained or learned any working skills related to their work in advance and thus have to spend between one and three extra hard-working months to be accepted. During this time, they could lose their job at any time because they do not have a working contract and insurance.*" (Source: Key informant interview, Phu Bai ward, Zone 2).

Based on this result, we recognize that the occupational status of rural women at present has improved, with the clearest improvement being in Zone 1, where the total percentage of women who are working in the good job group increased to 45%. In Zone 2 and Zone 3, although the percentage of women working in the good job group is still low, the percentage of women working in the bad job group decreased from 73.5% to 25% and from 96.15% to 21.57%, respectively. While the percentage of job changes for rural women is different among the studied zones, the trend from agricultural to non-agricultural jobs is the same. To understand how ALA contributed to this change, we asked the women about the reasons for their job changes and then grouped these reasons into three main groups: directly due to ALA (landless, compensation and support), indirectly due to ALA (infrastructure development of non-agricultural projects which came from ALA, new job opportunities from new businesses around industrial zones and expanded zones of city), and other reasons (age, health, working skills, common trend, etc.).

Table 5.4: Reasons for job changes of women

		Zone 1 (N=60)	Zone 2 (N=56)	Zone 3 (N=52)	Average
Number of women who changed jobs (person)		42	40	45	
Percentage of women who changed jobs (%)		70	71.4	86.5	75.6
Reasons women changed their job (%)*					
Direct reasons due to ALA	Agricultural landlessness	52.4	62.8	100	72.4
	Have money and support from compensation	14.3	17.9	4.4	11.8
Indirect reasons due to ALA	Infrastructure developed by non-agricultural projects	47.6	52.5	0	32.3
	New jobs from new business facilities around industrial zones and expanded zones of the city	83.3	40	11.1	44.1
Other reasons (age, health, working skills, etc.)		11.9	25	6.7	14.2

(Source: Household survey and group discussions, 2018)

* Women can select more than one reason for their change of job; Source: Household survey and group discussions, 2018.

Many women selected direct or indirect reasons for their job change (Table 5.4). A total of 70% of women in Zone 1 changed their job, of which 52.4% changed their job because of agricultural landlessness, 83.3% changed their job due to jobs from new businesses around industrial zones and expanded zones of the city, and 47.6% changed their job due to infrastructure development of non-agricultural projects after ALA. "*Since 2010, ALA for city expansion has led to infrastructure development in and around our commune. Many new residents have moved to our commune and many new businesses have opened. We don't have land anymore, so we have carefully learned from each other how to improve our skills in order to get new full-time jobs from the non-farm sector. As a result, we can not only take new jobs, but our working days are also higher. Until now, we still have a small agricultural land area, but we hope it will be acquired soon, so we can get compensation and then totally invest our time in off-farm activities*." (Source: Key informant interview, Thuy Van commune, Zone 1).

In Zone 3, 86.5% of women have changed their job and 100% of them changed because of agricultural landlessness due to ALA. At present in Zone 2, 72% of women have changed their job, of which 62.8% changed jobs due to ALA, 52.5 % of them changed jobs associated with infrastructure development, and 40% of them changed jobs because of new business facilities around industrial zones and expanded zones of the city. "*After ALA, we could easily and quickly go to Hue city, Phu Bai ward or Huong Thuy town to work because the infrastructure developed. We can spend all our time on new work, so we can get to new jobs as sellers, maids and babysitters easier than before ALA. Therefore, our working days increased. Outside of working time, we can quickly go back home, cultivate vegetables and breed chickens for family food purposes. Ever since the industrial zone started operation, more workers have come to the area, so some women with good enterprise skills have opened small and cheap food shops or small variety stores*." (Source: Key informant interview, Thuy Phu commune, Zone 2).

5.4.3 Changing Economic Status of Rural Women

Due to the different employment opportunities between the three zones, the total working days and income of women in each zone changed compared to before ALA. The average number of working days per year of women in all three zones has dramatically increased (Table 5.5); the number of working days in Zone 1 is the highest, with 315.7 days per year, and the lowest is in Zone 3, with 208.4 days per year. Women in Zone 3 are jobless nearly five months out of the year, which has notably increased compared to before ALA. This also means that the average level of daily income of women in Zone 1 is highest and lowest in Zone 3.

In this table, we do not compare the income of affected women at present and before ALA because the value of money has changed during this time. We also do not compare the income per affected woman between three zones because the economic status in each zone is not similar. We do compare their income with the average income per person in each zone to indicate how it has developed. Moreover, we also compare their income with the average income per local woman to see how ALA impacted this.

This comparison demonstrates that the income difference between the average income per affected woman and the average income per person in Zone 1 at present is very wide (173.2 vs. 83.3), while before ALA it was narrow (63.9 vs. 56.7). Moreover, the average income per affected woman is also much higher than the average income per local woman at present (173.2 vs. 108.2), although it was similar before ALA. "*At present, women in our commune are respected more than in the past because they have become a main income generator in their families. Even in some families, husbands stay at home and support their wife's business. ALA still has many problems with compensation that people are still not satisfied with but compared with the women in other nearby communes where ALA does not occur, the income of the women in our commune is higher and unemployment is lower. Therefore, many people are still expecting that their agriculture land remainder will be acquired soon for city expansion*." (Source: Key informant interview, Thuy Van commune, Zone 1).

Table 5.5: Income of rural women before ALA and at present

	Zone 1 (N=60)		Zone 2 (N=56)		Zone 3 (N=52)	
	Before	Now	Before	Now	Before	Now
Average working days of woman per year (day/year/woman)	226.3	315.7	160.4	248.4	120.3	208.4
Average income per woman (1000 Dong/woman/day)	63.9	173.2	30.9	127.9	9.9	96.6
Average income per person in the respective zone (1000 Dong/person/day)*	56.7	83.3	55.6	111.1	20.1	101.1

(Source: Data from household survey and the annual report of communes, 2018)

* This data is taken from the annual reports and annual statistic data of communes before ALA (2004 in Zone 3, 2008 in Zone 2, 2012 in Zone 1) and at present (2018) in all three zones. Source: data from household survey and the annual statistic data of communes, 2018.

The average income per affected woman in Zone 2 was lower than the average income per person

before ALA (30.9 vs. 55.6) but is now slightly higher (127.9 vs. 111.1). This means women are the main income generators in the family and the commune. In the comparison with the average income per woman in the respective zone, the income per affected woman is slightly higher (127.9 vs. 120.1)

"*The new jobs request that women work hard, but we earn more money and are more respected as well. We are more independent and have higher income compared with women in other villages where agriculture is main income. We can buy anything we desire, like clothes, cosmetics, or jewelry. Some of us can even give money to our parents and close relatives, which we could not do before ALA.*" (Source: Key informant interview, Thuy Phu commune, Zone 2).

However, this change does not apply to women in Zone 3; although their income improved significantly over time, it is still lower than the average income per person of the commune (96.6 vs. 101.1) and the income per woman in the respective zone as well (96.6 vs. 106.2) *"There are no new job opportunities associated with ALA for dam construction in our commune. We have low education, are advanced in years and live far from Hue city and Huong Thuy town. We didn't have enough time to improve our capacity before ALA to adapt with the situation of landlessness because ALA was implemented in a hurry. Our income is still slow and unstable*." (Source: key informant interview, Duong Hoa commune, Zone 3).

5.4.4 Changing Social Status of Rural Women

In our research, we did not analyze the education level of these affected women because, at their age level and living condition, their education level is not possible to change. Instead, we considered the changing of their socioeconomic knowledge and ability to evaluate their social status, because these can also help women integrate into society. At group discussions in the three zones, women stated that their social interactions and social knowledge have clearly increased, especially in Zone 1. According to these women, before ALA, most of the women in all three zones stayed at home, took care of the children, and did agricultural work and housework. Their social relationships were only with family members, relatives, and neighbors. Their social knowledge was also limited due to limited social interactions and low levels of education. In the past, rural women were not expected to have high education and social knowledge because it might make it harder for them to marry. However, the social status of women has been notably enhanced since ALA. First of all, women state that they understand their family's economic activities more. Before ALA, most women only practiced agriculture under the management of their husband, who played the role of the cost–benefit calculator, but now the women themselves have to control the costs and benefits from non-farm activities. When they go out of their village to do a non-farm job, they receive more social knowledge than in the past as well. "*Working in a non-farm sector helped us to have more relationships with other people from outside the commune such as customers, bosses, colleagues and new friends in the working place. We communicate and interact with each other about our employment and social information. We opened our minds and have since felt more confident and active*." (Source: Key informant interview, Thuy Van commune, Zone 1).

Besides that, increasing accessibility to social media helps both women and men access more information. According to the household survey, 58% of households used the money from compensation to buy or replace televisions, and 60% of households also bought mobile phones from

that money source. Presently, 100% of households have at least one television and one mobile phone. "*We have money from the compensation and support policy, so we used a part of this money to buy a television, as well as a mobile phone or smart phone. Such equipment has quickly connected us to social knowledge and information. Consequently, we are more confident and braver when arguing with other people*." (Source: Key informant interview, Thuy Phu commune, Zone 2).

Moreover, after ALA, most men work in the city or town, so they are often not available at home. This situation encourages women to play their husband's traditional roles, such as participating in social events in the commune and with their family. As a result, day-by-day, women are more active in social interactions. "*Before ALA, my wife only stayed at home, took care of our children, and did housework. But after ALA, I took a job in Da Nang city and do not have much free time anymore; she has had to participate in social events as the family representative. She is not shy anymore when interacting with people in the commune and with our relatives. In addition to my wife, most women in our village now are more active and confident. They also take care of themselves better with respect to clothes, beauty and health.*" (Source: Key informant interview, Duong Hoa commune, Zone 3).

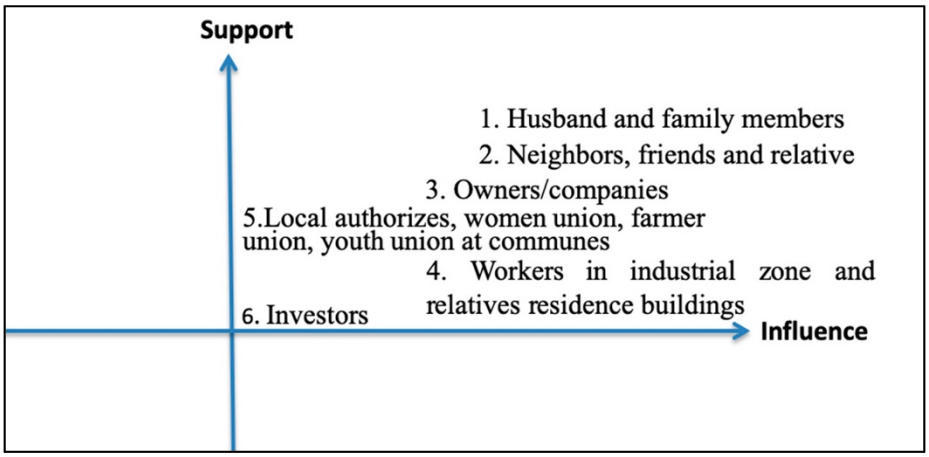
Since most women now participate in non-farm activities, they receive a higher income, more social knowledge, and vocational skills. Besides that, increasing social media accessibility also helped men change their mind about equality in the family. As a result, the voice of women has risen in the family. In the group discussion, women revealed that before ALA their husbands asked for their ideas for all decisions in the family, but their ideas would be ignored. However, at present, their ideas seem to be more accepted due to their social knowledge increasing. Moreover, the more money women earn, the more respect their husbands give them. This opportunity is clearest with women in Zone 1. At the group discussion, women in Zone 2 reported that gender equity has improved because women have understood their rights and can live more independently than before ALA.

5.4.5 Support and Influence of Stakeholders of the ALA Project on Rural Women

The support and influence of stakeholders of the ALA project on women is very significant because it can directly impact the process by which women change their occupation, income, and socioeconomic knowledge. We used power mapping in the women's group discussion to discuss this issue. We asked women to list all stakeholders who supported and influenced them in the livelihood rehabilitation process, then grouped stakeholders by their amount of support and influence. Based on the influence and support of each group that they defined, they arranged these groups in a figure. Then, they evaluated and prioritized these groups on a scale from 1 to 6 (Figure 5.3).

The women listed and evaluated six groups of stakeholders who have supported and influenced them. Among these, husbands, family members, friends, neighbors, and relatives have strongly supported and influenced them through financial support, experience, job information sharing, employment connections, and spiritual encouragement. In contrast, investors, and local authorities, as well as the women's unions, farmers, and youths were less supportive and influential. Investors only provided a small amount of money following ALA policy regulations, while local authorities only supported women if the employer requested that women submit individual documents with certificates to the Commune People Committee. "Our land use right is inadequately compensated, and their support is not significant. After taking our land use right, they forgot us, so we don't dream about support from

investors after ALA in either the short term or long term." (Source: Key informant interview, Thuy Van commune, Zone 1).



Source: Result of three group discussions, 2018.

Figure 5.3: Support and influence of stakeholders on women of ALA projects

Women expect that investors will support them to find alternative jobs and to connect them with employers or companies. This support is very important to ensure that women can get an alternative job quickly and safely. In reality, some women have given money to people who promised to find a job for them, but after receiving money, such persons disappeared. If investors or local authorities had a clear support mechanism for alternative jobs, women would not have to face such problems. "If investors had supported us before ALA by providing vocational skills training courses suitable to the working market and connected us with employers or companies, or developed new jobs at our commune, most of us would have found alternative jobs after ALA." (Source: Key informant interview, Duong Hoa commune, Zone 3).

5.5 Discussion

The Food and Agriculture Organization (FAO) concluded that access to agricultural land is very important to rural women [40], and many previous researchers have shown the negative impacts of ALA [7,9,41]. This study, however, reveals that while ALA led to decreasing access to agricultural land, it has also created new chances for rural women to break out from the typical social preconceptions and improve their SES. Indeed, the research results show that having an agricultural land use right is a reasonable cause to ask women to stay at home, practice agriculture with low income and provide food for the family. Moreover, due to having agricultural land, most rural women also accepted that they should stay in the village to maintain their agricultural activities while their husbands migrate to the city to earn money. This point of view does not only exist in our study site, but is also very typical in other rural areas of Vietnam [42]. However, when agricultural land accessibility ceases or is reduced by ALA projects, the men have no reason to request the women to stay at home, and the women are freer to look for non-farm jobs with higher income. Of course, looking for a new job is not easy for rural women because their skills are limited. However, with money from a compensation and support program, new job opportunities related to urbanization and industrialization, upgraded infrastructure due to non-agricultural projects, and agricultural landlessness are the main factors that create an ideal environment for women to improve their

occupation and income. Taking advantage of this occasion, many rural women have successfully changed their jobs and have become the main income generator of the family. Whether pushed into or attracted to non-farm activities after ALA, most women can independently live or even provide money for their entire family. Their economic status has been noticeably upgraded. This is one of the main goals that the sustainable development and gender equality programs are expected to achieve [43]. In addition to being the main income generator, rural women's income sources have also diversified more than before ALA. Even with their limited education, some kinds of non-farm jobs that ALA created for urbanization and industrialization are suitable to rural women's skills. This evidence is also very significant for rural development because the income diversification from the non-farm sector is one of the most important issues in rural sustainable livelihood development under the context of degradation of natural resources [30].

Not only has economic and occupational status increased, but ALA has also indirectly provided chances for women to improve their working capacity and socioeconomic knowledge. They become more confident after working in non-farm sector jobs because the new working environment gives them chances to learn and exchange socioeconomic information, cultural skills, vocational skills, and working market knowledge. Their thinking is more open and active. As a result, their ideas and arguments are more respected, and their position and voice in the family have improved. This is one of the indirect impacts of ALA. Many gender equity programs were applied during the past few decades, but these above-mentioned changes are not easy to achieve in rural areas in Vietnam because of long-lasting gender discrimination [42,44]. This study does not reject the importance of access to agricultural land to rural women, but in the context of low affective agricultural production, urbanization and industrialization, ALA for non-agriculture projects could also be a good solution to improve the SES of rural women.

In the argument at the Expert Group Meeting in 2001 at Ulaanbaatar, Mongolia, UNW stated that the change of socioeconomic conditions might provide opportunities for rural women to improve their income, but the changes also impact them negatively because they do not have important skills to achieve sustainable success [9,13,23,38]. Results from this research also support the UNW's argument. Although after ALA, women could get new employment from non-farm sectors, most of these jobs were informal paid work without working contracts and health insurance. Working requirements also seemed to be higher than the average woman's skills, so they were faced with more pressure from the new working environment and the instability of an alternative job. These problems have also occurred in many other rural areas in Vietnam, especially in places where urbanization and industrialism have strongly increased [42,45]. This means ALA projects have improved the SES of rural women, but this improvement has not yet been sustainable. Data and information in this study also show that these above-mentioned difficulties derived mostly from the unreasonable support and compensation plans of the ALA projects. Many researchers have mentioned the inadequate compensation price and support for livelihood rehabilitation, since affected people need more support in the long term. A vague and late announcement about an agricultural land acquisition plan also pushes people into a defensive position. Most steps of ALA projects did not involve the participation of the affected people, yet this is key for the success of the rural development program. This situation has also occurred in many ALA projects around the country [46–48] and could have been limited if all steps of ALA projects had been set up logically with participation from the affected people.

United Nations Women also emphasized that to reduce the vulnerability associated with the change of socioeconomic conditions, rural women need an appropriate support system that assists them in the short term and that improves their human capital and resource access in the long term [23]. This means that when agricultural land (i.e., an important factor of their livelihoods) is acquired, rural women need to be supported to improve their skills as soon as possible. Research findings in this study also show that although the educational levels of women are quite similar, women who had improved their working skills before ALA (women in Zone 1) got a new job more easily compared with others who had not yet improved their skills (women in Zones 2 and Zone 3). This paper also indicates that the support and influence of important stakeholders such as investors and local authorities are very low, even though these stakeholders are the main beneficiaries of ALA projects. Moreover, although women were listed as the most vulnerable group in rural society, the ALA projects do not have any specific support policy or action to help them after ALA. The support for affected people including women does not differ among ALA projects while the benefits from each ALA project are different. In this research, ALA projects associated with urbanization often create more new livelihood opportunities, but ALA projects associated with hydropower or highway development often create more difficulties for affected people. These gaps have led to different impacts on women, which lead to conflict or inequity in community development and gender equality

5.6 Conclusions and Recommendations

This paper studies the impacts of ALA for non-agricultural purposes on the SES of rural women by comparing their SES before and after ALA. The occupational status of women has changed from agricultural to non-agricultural activities. ALA is one of the important causes of this shift because it has not only required women to change jobs but has also indirectly created new non-farm job opportunities, as well as developing infrastructure and other services. Moreover, this shift has led to an improved economic and social status of rural women. As result, the SES of rural women has increased, but not equally. The SES improvement of rural women is different between ALA projects. When ALA took place for city expansion purposes, the SES of women significantly improved. The indirect benefits of ALA for this purpose supported women in quickly finding new jobs with higher incomes. Their new working environment gave them opportunities to improve their social knowledge and vocational skills. Many women have become the main income generator, have better occupations, and have gained more social knowledge and vocational skills. Vice versa, in Zone 2 and especially in Zone 3, the SES improvement is still slow because ALA for industrial development and hydropower dam construction does not create many new job opportunities that are suitable for the skills of women. Hence, some of them still face unemployment, and many of them have to accept unstable jobs. In general, direct and indirect impacts of ALA have significantly contributed to SES improvements; however, they are not yet sustainable and are not equal among the different zones.

This study also shows that rural women are not yet satisfied with the compensation and support policy. The responsibilities of stakeholders, especially of investors, are few and unclear. The support and influence on SES of rural women from investors after ALA are very low and insignificant, although they are main beneficiaries of ALA. This situation is quite similar in three zones even though the ALA period at each zone is different. Moreover, ALA for different non-agricultural purposes caused differential job opportunities, leading to different impacts on the SES of women. Support policies of ALA projects,

especially vocational support policies, were only seminally applied. All these problems lead to inequality for affected women.

This paper strongly recommends that the support policy for women be flexible, not only in terms of payments but also action. First, ALA projects should cooperate with rural research organizations or social development researchers to study the social and economic consequences for laborers and women, including both direct and indirect benefits. The ALA projects also need to cooperate with stakeholders such as the Center of Support and Vocational Training for Farmers, the Center of Agricultural Consultancy and Support, the Agricultural Extension Center, the Industrial Extension Center, the Women's Union, local or regional companies, enterprises and the affected women to build and implement a concrete support plan for women, such as providing vocational training courses, occupational consultancy, connection with employers, and supporting financial capital. This step should come first and should be well planned before starting ALA to ensure that women are able to find an alternative job. Finally, in the first years after ALA, the SES of women should be surveyed to provide more support to women who have not found an alternative job or whose job is not stable. Certainly, all steps of this support model need to be explicitly and equally discussed among stakeholders. The investor needs to take responsibility for the implementation of this support model until success is achieved. These recommendations can be combined with other support programs from the Government and Women's Union to achieve the best results.

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Chapter VI: Benefits and Constraints of the Agricultural Land Acquisition for Urbanization for Household Gender Equality in Affected Rural Communes: A Case Study in Huong Thuy Town, Thua Thien Hue Province, Vietnam

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Abstract: The Vietnamese Government has implemented agricultural land acquisition for urbanization (ALAFU) since 2010 which has caused a high level of social-economic transition in the country. In this paper, we applied the gender and development approach to discover how ALAFU has influenced the household gender equality in affected areas in Thua Thien Hue province, Vietnam. The data for this paper was mainly collected from two household group surveys, four group discussions, and six key informant interviews. Group 1 covers 50 affected households whose agricultural land was acquired for urbanization, while Group 2 consists of 50 households whose agricultural land was not taken away. The findings reveal that ALAFU has led to reduced access to agricultural land for group 1 but has contributed to an increase of economic status for women in both groups by creating non-farming job opportunities with a good income. However, most of their new jobs are still informal, contain potential risks, and the unpaid care work burden is heavy. Moreover, although the rate of women participating in household decision making has increased, the quality of participation is limited. Their participation in social activities and vocational training courses has improved insignificantly. Therefore, if the Government continues to promote ALAFU, they should take structural gender inequalities into account to achieve their sustainable development goals.

Keywords: agricultural land acquisition; urbanization; household gender equality; unpaid care work; women's economic position; women's participation in household decision making

6.1 Introduction

Agricultural land acquisition for urbanization (ALAFU) is the popular and cheap option of the urbanization process of developing countries [1–4], but it has disordered the life and livelihoods of people in the affected rural areas because they have strongly depended on agricultural land, and have low education and working skills causing low adaptive capacity during social-economic change [5–7]. Indeed, some research has shown negative impacts associated with ALAFU, such as decreasing farming employment, increasing poverty and environmental degradation, and rural-urban migration, which reduces arable land, degrades soil quality, raises the price of food commodities, and increases competition between the agricultural and residential uses of natural resources [7–12]. However, new opportunities have also appeared including high access to developed extension services, good educational systems, and medicinal health care, a high demand for agricultural products and diversified non-farming employment [7,13,14].

Gender equality is one of the important components of sustainable development [15,16]. It relates closely to agricultural land accessibility [17] and urbanization [18,19]. In fact, the Food and Agriculture Organization (FAO) has stated that unequal access to land resources between men and women, which is common in rural areas, has hindered progress toward rural gender equality [20]. Additionally, according to Frank Ellis (2000), access to land is the most important asset of rural people. In many cases, it is a valuable unique asset for their livelihoods [21]. Hence, losing access to land has a direct impact on their livelihoods, causing a change of gender-based income and labor division in the family. In addition to the loss of access to agricultural land, urbanization has gradually merged the affected rural communities into urban areas [22]. One study revealed that urbanization has worsened the female dual burden of paid and unpaid work, and that the sharing of unpaid work within the family has increased for males [18]. A second study via United Nation Women (UNW) concludes that urbanization does not yet advance gender equality [16]. Both papers do not consider gender equality in affected households (GEIAH). Another recent study shows that ALAFU has contributed to improving the socio-economic status of women in affected households, [23] but this is not enough evidence to conclude that GEIAH has generally improved. Unfortunately, the above-mentioned studies have not adequately considered GEIAH, therefore research on the benefits and constraints of ALAFU for GEIAH could significantly contribute to sustainable development in both urban and rural areas.

Over time, the social-economic transition has gradually improved gender equality in Vietnam's rural households. However, there are still inequalities between male and female members in families (especially between wife and husband) in terms of economic status, participation in household decision making and social activities, unpaid care work burden, as well as the access to social services [15,24,25]. These terms could be deeply affected by ALAFU.

Therefore, the objectives of this paper are to discover the changes in GEIAH through comparison of the above aspects between wives and husbands before and after ALAFU in Huong Thuy Town, Thua Thien Hue province, Vietnam, where ALAFU has been implemented over recent years [26]. Moreover, to understand whether such changes are associated with agricultural land acquisition (ALA) or urbanization, we compared two household groups in the affected areas. Group 1 consisted of 50 affected households whose agricultural land was acquired for urbanization, while group 2 consisted of 50 households affected through urbanization but with remaining agricultural land. We assumed that ALA could decrease the GEIAH, but then new opportunities associated with urbanization could also improve GEIAH.

This paper shows the gender impact of ALAFU that policymakers and planners, local authorities, women's unions, NGOs, and investors who acquired agricultural land for their business need to consider in planning, decision-making, and policies related to land management and gender development as well as rural and urban development. The structure of the paper is as follows: Section 6.2 introduces land acquisition policy and practice in Vietnam; Section 6.3 describes the conceptual framework of the study; Section 6.4 is about the research methods and study site; Section6. 5 contains the results; followed by the discussion and policy implications in Sections 6.6 and 6.7

6.2 Agricultural Land Acquisition for Urbanization in Vietnam

According to the land law in 2013, land resources belong to the Vietnamese people and the

Vietnamese state as the representative owner. The state issues land use rights for people through land use certificates. People can sell, transfer, inherit, and offer their land use right to others, but they have to return their land use rights when the State requests support for the social-economic development of the country. So ALAFU is a process whereby the State withdraws the agricultural land use rights from farmers in order to extend the urban area, develop infrastructure and industrial zones. The State compensates the loss of land use rights through financial and other support measures based on regulations of the land law [27]. Thus, ALAFU consists of three main components: the ALA (1) compensation for losing farmland use rights and support to recover livelihoods (2), and urbanization (3). The first is the ALA component, which states that farmers have to return their agricultural land rights to the State. In the land use plans for each province, the Department of Natural Resources and Environment (DONRE) and the Land Fund Development Center consider and propose ALA plans based on the social-economic development strategy of the provinces and then submit the plans to the Ministry of Natural Resources and Environment (MONRE). Farmers do not have a voice in this step, and they only receive ALA announcements from local authorities before ALA implementation. The second is the compensation component, which consists of compensation for losing land use rights and support in allocating alternative jobs or recovering livelihoods. In the Land Law, the State regulates compensations for the affected farmers, either financially or through provision of new land use rights in new areas depending on the land funds of each affected area. If by cash, the State decides on the compensation for each type of acquired land without the participation of affected farmers, and then totals the compensation based on the area of acquired land. If by land use right, the land area for which the affected people receive compensation must be equal or bigger than the acquired land area. The support includes vocational training courses and rice for 12 months (12 kg of rice per month per person). The support can also be converted into cash depending on the decision of the affected people. The last component is urbanization, which leads to the growth of cities due to industrialization and modernization. Urbanization in Vietnam always goes along with infrastructure and industrial development, creating non-farming employment, developing technology, and social equality [28].

In practice, to support the rapid urbanization since the 2000s, the State has acquired over 10 million hectares of agricultural land, most of which with fertile soil [29–32]. ALA projects have selected monetary compensation methods, and many studies have indicated that the compensative land price is inadequate compared to the value of the acquired land, and that compensation is often delayed for a long time [30,32,33]. Nevertheless, the cash amount is still significant enough to recover livelihoods, and is used for many purposes such as repairing or building houses, buying new equipment (e.g., motorbikes, washing machines, fridges, kitchen equipment, mobile phones), investing in children's education, investing in a new job, paying for health care, and adding to savings in the bank [7]. The vocational training courses offered do not coincide with the labor market demand and the affected people, and have not improved working capacities, especially of the middle-aged population group who are facing unemployment or must accept temporary jobs [34]. Considering urbanization, the Ministry of Construction (MOC) states that there was a total of 833 urban areas across the country with a current urbanization percentage of around 38.5% in 2018. The figures are expected to increase to 50% by 2025. Urbanization has created non-farming jobs for millions of rural laborers, contributing to socio-economic development and the infrastructure in both rural and urban areas [2,13]. However, the rate of urbanization causes many problems such as inadequate development between social infrastructure and technology, and it increases the poor–rich disparity [13] which could restrict the

livelihoods of affected households, especially of women through their low adaptive capacity.

In the 1993 land law, all rural people were issued an agricultural land use right with an equal land area based on the land fund in each commune. From 1993 until the present, the Government has not re-allocated the agricultural land use rights of farmers, meaning that all rural people who were born after 1993 were not issued agricultural land use rights, and, in the case of people who died after 1993, their land belongs to their family after their death. Moreover, education and industry have been strongly promoted across the country since the 2000s, and, as the income from agriculture is low, many rural young people born after the 1980s have tried to get higher education to escape agricultural employment, and no longer depend on agricultural land. These people offer or sell their agricultural land use rights to others who still practice agriculture [23]

6.3 Conceptual Framework

Nowadays, gender researchers and development projects can apply different approaches to understand gender equality including Women in Development (WID), Women and Development (WAD), and Gender and Development (GAD). Of these, the Gender and Development approach of 1980 does not only focus on women like WID and WAD, but on both women and men through assessment of their relations and interactions with society and family. This approach defines specific characteristics of women and men to help understand the similarities and differences in respect to economic development and how they respond and adapt to changes in socio-economic conditions, and it helps to identify the roles and responsibilities of women and men [35]. Therefore, the approach taken in this study elucidates the changes of GEIAH.

FAO has defined gender as: “Gender is the relations between men and women, both perceptual and material. Gender is not determined biologically as a result of the sexual characteristics of either women or men but is seen socially. It is a central organizing principle of societies, and often governs the processes of production and reproduction, consumption and distribution” [36]. According to Frank Ellis (2000), gender is the socially determined division of roles, responsibilities, and power between men and women. These socially constructed roles are usually unequal in terms of power and decision making, control over assets and events, and freedom of action and ownership of resources, among other things [21]. Gender equality is when men and women have the same rights and opportunities in all sectors of society and their different behaviors, needs, and aspirations are equally valued [37]. Based on these definitions, gender equality on a household level refers to equal responsibilities, roles, and power division in all household activities.

In practice, gender equality in Vietnam’s rural areas has been considered by the socio-economic national strategy and rural development programs in the past decades. However, the position of women is still low. In rural areas, 65% of women work in agriculture and 45% work as self-employed without social security benefits and access to insurance. They still take strong responsibilities in the unpaid care work [38]. The participation of women in decision making has improved but is still limited and only a few rural women can access vocational training courses, extension services, finance, technology, markets and trader networks, as reflected by 70.9% of rural women laborers being unable to access vocational training [15,24,25,38]. Many aspects still need to be improved, including the economic position, the participation in household decision-making and social activities, the unpaid

care work burden, and the access to the social services of women. The gender preconceptions such as “men in public life, women stay at home”, “men build the house, women make the home” are still deeply rooted in rural households [15,24,25].

At present, most of the heads of farming households (husband or wife) in rural areas in Vietnam are from the middle-aged group and their children, who have not been issued agricultural land use rights, do not want to go into agriculture. In these households, the wife often stays at home, does agricultural work, and takes care of the family. The husband often takes a non-farming job or does both farm and non-farming jobs to secure the family’s income. [39]. Therefore, ALAFU could strongly impact husband and wife’s roles in farming households and cause a restriction in agriculture [31,32,39] in which women participate more than men [5,38]. ALA has also created non-farming opportunities through urbanization with the result that the affected people can abstain from traditional cultivation work and take other employment opportunities with higher incomes in the non-farming sector if their working capacity is good, which lead to improved status [23,40]. On the other hand, it can also increase unemployment and increase the dependency of women on men [41]. Additionally, ALA increases the family food supply burden that is often the responsibility of women [12,38]. Furthermore, ALA contributes to rural-urban migration [29,35], leading to the feminization of agriculture [38] and increasing the responsibilities of women in unpaid care work such as caring for children and elders, washing, cleaning, and cooking. Compensation and support measures could help the affected people overcome and adapt to the new situation after ALA.

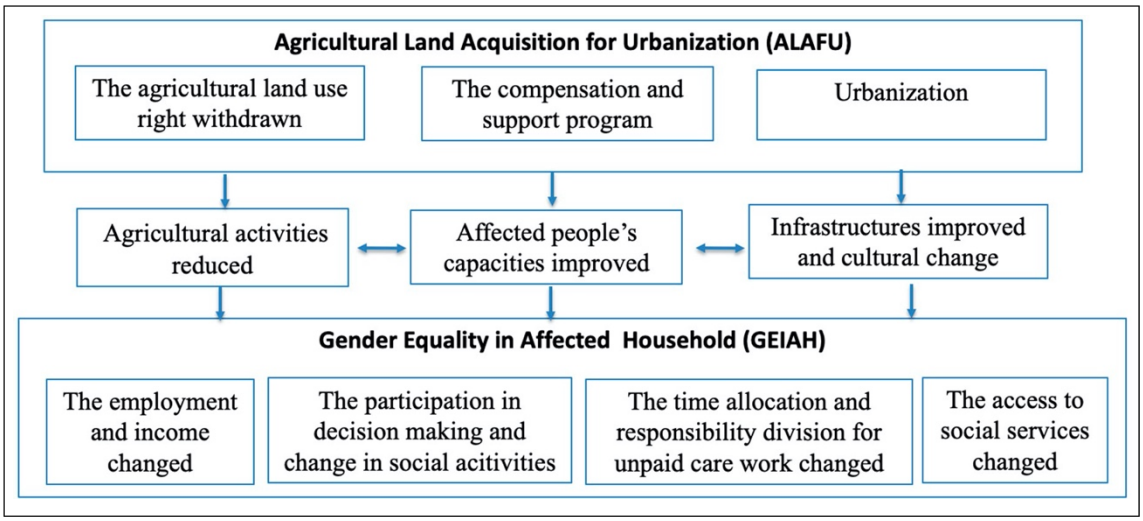


Figure 6.1: The linkage between ALAFU and GEIAH

In this study, we have selected the aspects that we assume might clearly be impacted by ALAFU, consisting of economic status, participation in decision-making and social activities, the burden of unpaid care work, and access to the social services for both wife and husband in the two affected household groups before and after ALAFU. Their economic status is measured by the type of employment, income, and working days; the participation in decision making and social activities is measured by the participation percentage of wife and husband; the burden of unpaid care work is measured by the time allocation and the division of responsibility between wife and husband; and access to social services is measured by the accessibility to vocational training courses, credit services, and health care. Based on these definitions and the situation in Vietnam, we have built this

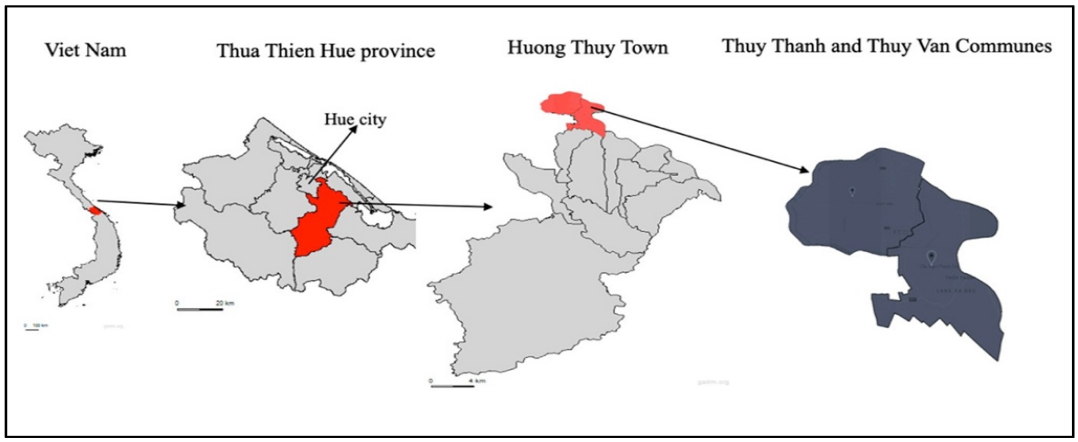
research framework, which shows the relations between ALAFU and GEIAH (Figure 6.1).

6.4 Study sites and Method

6.4.1 Study sites

Thua Thien Hue is a province of central Vietnam. According to the Department of Natural Resources and Environment (DoNRE) of Thua Thien Hue province, rice cultivation plays the main role in agriculture, but it has to face difficulties because most agricultural land areas have bad soil quality, and weather conditions are becoming more and more severe [42]. According to "Resolution No 72/NQ-CP of the Government of Vietnam", DoNRE of the province has converted 7083 ha of agricultural land to non-agricultural land during the period 2010–2015. In 2014, Government plans were that this province should become a centrally controlled city in the future, and they approved the agricultural land conversion of 19,000 ha during the period 2016–2020 to extend Hue to be five times larger in the near future [26,43]. In 2019, the rate of urbanization of the province reached 52.7% and could reach 60–65% in 2020. The average income per person in the province was 3,136,000 Vnd/month in 2018 [44].

Huong Thuy Town, adjoining the south of Hue city, has traffic and transport advantages including road, railway, and airway to connect with large cities such as Da Nang, Ha Noi, and Sai Gon. The total land area is 45,466 ha, in which agricultural land occupies 80.9%, non-agricultural land occupies 18.3%, and unused land makes up 0.8%. According to reports from the Huong Thuy Town People Committee (HTTPC), 3527.8 ha of the agricultural land area was converted to non-agricultural land during 2005–2018, occupying 6.3% of the total agricultural land area of the town [31]. Since 2010, Huong Thuy became one of three satellite cities of Hue city and undertakes the main functions of the industrial and tourist development of the province. According to decisions No 368/QĐ-UBND and No 123/QĐ-UBND of the province, Huong Thuy Town has converted 2000 ha of agricultural land in order to speed urbanization in the period 2019–2020. The average income per person of the province was 4,333,000 Vnd/month in 2018 and the rate of urbanization reached almost 70% in 2019 [44].



(Source: Global Administrative Areas (GADM), 2018).

Figure 6.2: Mapping of study sites

To suit the research objectives, we selected two communes consisting of Thuy Van and Thuy Thanh in Huong Thuy Town to be our study sites. These communes, located closely to Hue city and with more than 200 ha of previously used agricultural land, have been converted to non-agricultural land

such as road and residential land. On average, each household lost about 1500 m^2 of agricultural land, so that only 400 m^2 remains per household [33]. In the near future, these communes will be merged with Hue city. Most households whose land was acquired were not entirely dependent on agriculture before ALA. The Figure 6.2 shows mapping of study sites.

6.4.2 Methods

Important information for this study does not only build on statistical data but also on the thoughts, feelings, perspectives, stories, explanations, and expectations of interviewees, local people, or information suppliers, in order to better understand the progress of change in respect to GEIAH. Therefore, it applies a mixed methods approach combining quantitative and qualitative procedures. Quantitative data are collected through household surveys, whereas group discussions, key informant interviews, in-depth interviews, and observations provide the qualitative data.

To get both qualitative and quantitative data, we used the rapid rural appraisal tools (RRA). RRA supports sufficient communication and interaction with communities and provides tools to collect diversified data [45]. In this study, we used RRA tools consisting of semi-structured questionnaires, checklists, village walking, and observations to collect primary data during two time periods (before ALA in 2012 and the surveyed time in 2017).

To meet the research objectives, two groups from the Commune People Committee of Thuy Thanh and Thuy Van were targeted: A list of households whose acquired agricultural land exceeded 50% of their former agricultural land area (group 1), and a list of households whose agricultural land is still entirely owned (group 2). Then, we selected a new list of 50 households in group 1 and 50 households in group 2. As described in the conceptual framework, all 100 surveyed households were couple families consisting of husband and wife in order to reveal gender role changes between the couples. Lively group discussions during household surveys and in completing the study produced various views, thoughts, and stories, providing diversified information for ALAFU.

To collect primary data, 100 households were surveyed using a semi-structured questionnaire. This survey collected statistical data in respect to employment, income, working days, participation in household decision-making, unpaid care work division, and the access to social services of both wife and husband before ALAFU (2012) and after (2017), as well as reasons for the change in these terms. All the data from the household surveys were analyzed statistically, giving the average value of each index in percentage. To make sure we met both husband and wife, the heads of villages helped us to contact and make appointments with households from the list. In a second step, we held discussions with four groups: a wives' group, a husband's group, a mixed wives and husbands version of group 1, and a mixed wives and husbands version of group (2), with each group containing eight to ten people. In these group discussions, we showed the statistical data from the household surveys to receive their confirmation or feedback, then asked participants to list reasons for the change for each gender equality dimension to rank the importance level of each reason by using a couple comparison method.

Using this ranking scale helped us get more information from explanation, perception, and the feelings of the affected people whose voice is important for this study. Based on the result of ranking, we know which reasons are important and how these reasons related to ALAFU. Thirdly, we conducted in-depth interviews with six local key informants, including the head of a women's union and head of the

people's committee at two communes. Most open questions focused on their views about GEIAH and its change over time, the change of cultural issues and social norms in respect to gender issues, the benefits and constraints from ALAFU for improving the GEIAH, and their ideas about improving the GEIAH. Information from these interviews offered us alternative views about ALAFU to cross-check data, and information from the affected households, to avoid biased conclusions. Fourthly, we visited the villages multiple times, and attended village meetings and social events on the study site to observe the participation of men and women in order to better understand the situation of the GEIAH.

During primary data collection, we also collected available secondary data from reports of the Commune People's Committee, the Women's Union, and the Town People's Committee. We also analyzed a broad variety of other sources (e.g., scientific papers and daily magazines) related to our research topic.

6.5 Results

6.5.1 Characteristics of the Surveyed Households

As explained in Section 3, we selected 100 surveyed households based on the household lists supplied by the local authority. Some characteristics of the surveyed households are shown in Table 6.1. To see the different impacts of ALAFU between both groups, we compared characteristics of two surveyed household groups before ALAFU. Numbers are similar for the two surveyed household groups in respect to the age of household leader, household income, total agricultural land area of household, as well as income contribution from agricultural activities to the family's total income. The data also show that both household groups did not depend totally on agriculture before ALAFU. The income contribution from agriculture is just around 45% of the total household income. This could reduce the livelihood shock for them after ALAFU. However, the average age of the household leader in both groups is around 48 years, limiting flexibility to adapt to major career changes or to improve the household gender equality (HGE).

Table 6.1: Characteristics of the surveyed households

Characteristics	Unit	Group 1 (N=50)	Group 2 (N=50)
The average age of household leader before ALAFU	Year old	48.8	47.2
Income/person/year before ALAFU*	Million Vnd	19.7	19.3
Total agricultural land area of household before ALAFU	m^2	2050	2100
Rate of income from agriculture of household before ALAFU	%	45.6	44.5

(Source: statistical data from household survey, 2018-2019)

* Note: 1 USD ≈ 20,000 Vnd. (Source: Household survey, 2018–2019)

6.5.2 Changing Employment and Income

One of the most important factors that influence the HGE is the employment and income of wife and husband. Improving the income of women has been highlighted in many development initiatives to achieve gender equality [46]. Basically, the rural women's economic position is lower than men because most of them participate in agricultural activities with low income. As a result, their power and

position in the family are often lower than their husbands [47]. The question of ALAFU is how the employment and income of wife and husband in the affected households change and whether this change could improve GEIAH. We have listed our results in Table 6.2.

Table 6.2: Changes in employment and income of wife and husband

Percentage of household

Participation in kind of employment	Groups 1 (N=50)				Group 2 (N=50)			
	Before ALAFU (2012)		After ALAFU (2017)		Before ALAFU (2012)		After ALAFU (2017)	
	Wife	Husband	Wife	Husband	Wife	Husband	Wife	Husband
Civil servant	2	8	2	8	0	2	0	2
Small businessmen	10	6	32	6	12	4	12	4
Worker	16	8	12	8	16	8	20	8
Hired laborer	12	30	20	32	10	32	20	32
Farmer	36	30	12	22	36	36	10	36
Dual jobs (both farmer and small businessmen)	12	0	10	0	14	0	14	0
Dual jobs (both farmer and hired labor)	12	18	12	24	12	18	22	18
The average number of working day/year (day)	226	270	270	290	220	260	264	300
The average income/day (1000Vnd)*	101	181	170	220	100	183	170	220
Contribution to total income of household (%)	28.9	62	41.5	49	27.8	60.1	34.5	50.7

(Source: statistical data from household survey, 2018-2019)

*Note: 1 USD 20,000 Vnd, 22,000 Vnd before ALAFU and 2017, respectively (Source: statistical data from household survey, 2018–2019)

The change in employment and income between the wives and husbands in each group are not similar. In both groups, the income activities of the wives changed more clearly than the activities of the husband. Many wives changed from being farmers to being small businesswomen and hired laborers after ALAFU. In group 1, the percentage of wife farmers decreased from 36% to 12%, while the percentage of the wives being small businesswomen and hired laborers increased from 10% to 32% and from 12% to 20%, respectively. In group 2, the percentage of wife farmers decreased from 36% to 10%, most of them having changed to hired laborers or holding dual jobs (farmer and hired laborer). However, the income activities of the husband in both groups insignificantly changed. The percentage of the husbands in group 1 who are farmers slightly decreased from 30% to 22%, but dual job holders (both farmer and hired laborer) increased from 18% to 24%. It is interesting that while the employment of the wife in group 2 changed a lot, this did not happen with the husband's employment,

even though their main job also changed. For example, in group 2, 36% of husbands are farmers, but 77.8% of them changed from cultivating rice and breeding to floriculture, which developed into a high-income activity since 2010. Another example is that 32% of husbands are hired laborers but 37.5% of them have worked around their commune instead of going far away from home (as before ALAFU).

Table 6.3: The reason of the changing employment and income

Percentage of household

Reasons lead to changing economic status		Groups 1 (N=50)			Group 2 (N=50)		
		Wife	Husband	Important ranking*	Wife	Husband	Important ranking*
Changing employment	Losing agricultural land (ALA)	50	20	2	30	10	2
	Having cash compensation (ALA)	30	40	3	80	80	1
	Improving infrastructure and access information (urbanization)	40	30	4	56	52	3
	Increasing non-farm job opportunities (urbanization)	60	60	1	20	20	4
	Others	20	10	4	16	14	4
Changing income per day	Losing agricultural land (ALA)	20	10	3	0	0	
	Increasing non-farm job opportunities	80	70	1	80	80	2
	Others	30	20	2	20	20	1
Changing working day per year	Losing agricultural land (ALA)	20	20	2	0	0	
	Improving infrastructure access information (urbanization)	80	80	1	80	80	1
	Increasing non-farm job opportunities (urbanization)	30	30	3	20	20	2
	Others	20	10	4	20	18	3

(Source: Household survey and group discussion, 2018-2019)

* Note: Result from group discussion.

Besides the change in employment, the average number of working days and the income per day of both husband and wife in both groups also increased after ALAFU. Of these, the working days per year of the wives in group 1 and group 2 rose from 226.2 to 315.7 days and from 220 to 310 days, respectively. Their income per day rose around 86% in group 1 and 70% in group 2 compared to before ALAFU. As a result, their contribution to the total income of the household increased from

28.9% to 41.5% in group 1 and from 27.8% to 34.5% in group 2. For the husbands, there was not much change in their employment, but the average number of working days and income per day also increased. However, their income contribution declined to around 14% in group 1 and 9.4% in group 2 compared to before ALAFU. The data also show that the difference in income between wife and husband still exists, but significantly narrowed after ALAFU. This reveals that the economic status of the wives in both groups improved significantly compared to that of their husbands, especially for the wives in group 1. We investigated the reasons for the changes, which is reflected in table 6.3

We divided the reasons for change into three groups: (1) a reason associated with ALA (losing agricultural land, compensation, supporting vocational training courses); (2) a reason associated with urbanization (good infrastructure, new companies/factories opening, rise in number of residents, increasing access information, and modern culture); (3) other reasons (e.g., age, health, working skills). The interviewee could give more than one answer if their change was motivated by multiple reasons. The surveyed data in Table 3 show that the main reasons for both husband and wife changing their employment in both group 1 and group 2 are urbanization and ALA, of which urbanization is the most common and important. In the group discussion, the wives in group 1 stated, "*We have more advantages than the wives in group 2 because we are not concerned about agricultural land anymore, and we have received the cash compensation for losing the land. Therefore, we could get alternative jobs more easily than them*". It is surprising that 30% of the wives and 10% of the husbands in group 2 also answer that the ALA has caused their employment change. In addition, 70% of group 2 have the same explanation for their employment change such as, "*Although we still have our agricultural land, our neighbors have changed their jobs because of ALA. Their new jobs seem to be not only better than agricultural work but also suitable to our working capacity. The benefit from agricultural land contributes insignificantly to our family's income, moreover, we believe that our agricultural land might be acquired in the near future as well. Therefore, ALA is one of the reasons for our employment change*". Most surveyed households agreed with the statement from one key person in their communes, "*Urbanization has created many kinds of jobs that are not only suitable to our capacity and near our villages and homes, but also provide a good income. Besides that, an improving infrastructure offers us more conveniences to do with work*"

6.5.3 Changing Allocation of Time and Responsibility Division for Unpaid Care Work

Unpaid care work (UCW) mainly includes caring for family members (especially children, the sick, and elderly), buying and making food, washing, and cleaning [48]. Such work is very important to maintain family life but is not counted in the paid work system. Unfortunately, social preconceptions often reckon that women can do this work better than men, leading to gender inequality and hindering job mobility for women [48]. In this study, we assume that ALAFU could improve this issue. To understand the situation, we investigated the allocation of time and the division of responsibility for UCW between husband and wife for both groups through household surveys and group discussions. The results show the difference in the allocation of time between wives and husbands, and the change of time allocation for each of them after ALAFU. The total time allocated to UCW for both wives and husbands in both groups was shorter than before ALAFU. The total average of reduced time for the wife and husband is 2 h and 0.6 h, respectively. The wife still has to spend over five hours per day for UCW, while the husband spends just over one hour. This difference reveals that inequality still exists after ALAFU.

Table 6.4: Changing allocation of time for unpaid care work

Hours/day

Allocation of time	Group 1 (N=50)				Group 2 (N=50)			
	Before ALAFU (2012)		After ALAFU (2017)		Before ALAFU (2012)		After ALAFU (2017)	
	Wife	Husband	Wife	Husband	Wife	Husband	Wife	Husband
Preparing food	2.5	0	2.2	0.1	2.6	0	2.3	0.2
Cleaning and washing	2.5	0.7	1.8	0.5	2.5	0.7	2	0.5
Caring family members	2.2	1.4	1.2	1	2.2	1.3	1	1
Total	7.2	2.1	5.2	1.6	7.3	2	5.3	1.5

(Source: Household survey, 2018-2019)

In terms of time allocation, the division of responsibility for husband and wife is shown in Tables 6.4 and 6.5. It has improved a little but the wives in almost all the surveyed households in both groups still take the main responsibilities of UCW. Most of them have to take the main daily repeated UCW including buying food and clothes, preparing food, cleaning, washing, and caring for children, the sick, and the elderly. Meanwhile, most of the husbands take responsibility for building and repairing the house, which is not often required.

Table 6.5: Changing responsibility division in UCW

Percentage of household

Who take the main responsibility to	Group 1 (N=50)						Group 2 (N=50)					
	Before ALAFU (2012)			After ALAFU (2017)			Before ALAFU (2012)			After ALAFU (2017)		
	w	h	b	w	h	b	w	h	b	w	h	b
Buying food and clothes	100	0	0	100	0	0	100	0	0	100	0	0
Preparing food	100	0	0	90	0	10	100	0	0	70	0	30
Cleaning and washing	100	0	0	96	0	4	100	0	0	80	0	20
Caring for children, sick and elderly	68	0	32	50	4	46	70	10	20	50	20	30
Repairing the house and household equipment	0	80	20	0	70	30	0	86	14	0	50	50

(Source: Household survey, 2018-2019)

As with the changes in other areas, we investigated the reasons for changes in the allocation of time and responsibilities of UCW. The results from the two group discussions are similar (Table 6.6). A reduction of the women's time for UCW associated with improved household equipment and infrastructure, support from children, and changing employment can be seen. Of these, improving household equipment and infrastructure are ranked the most important. This is also confirmed in discussions with the husbands' group. One woman explained in our in-depth interview "*We have used*

a part of our cash compensation or income to buy new household equipment such as a washing machine, fridge and other things. They save time for us. Buying food and shopping is more convenient and takes less time because many food stores, street markets and supermarkets have appeared around our house. Moreover, our children have grown up we don't have to take care of them much, they can even share the housework."

Considering the change in dividing responsibility occurring in a few surveyed households, participants said the wife is absent all day, so the husband has to do some of the work. In discussions with the husband group, a male participant said, "*In a few households, due to the change in the wife's employment, she is absent all day because of a new small business. She tries to do almost every UCW in the early morning or late afternoon. Therefore, the husband does some of the simple work that she does not have time for, such as making simple food for lunch. Most of us have changed our minds and are more open, but honestly, we cannot do these jobs as well as they do. So, the women still undertake almost every UCW in a family*." And a female participant said, "*Although we have spent more time and labor-power for new paid work after ALAFU, all our family members have got used to the previous division of responsibility and don't want to make chaos. So, we women try to undertake the UCW as usual"*

Table 6.6: The reasons for changing allocation of time and dividing responsibilities in unpaid care work.

The change of participation in	Reasons for change	Important ranking
Changing allocation of time	Changing employment	3
	Improving household equipment and infrastructure	1
	Supporting from children	2
Changing responsibility division	Changing employment	1
	Changing attitude	2

(Source: Group discussions, 2018)

6.5.4 Changing Participation in Household Decision Making and Social Activities

The participation in household decision making or social activities of women and men is one of the dimensions that reflect the HGE issue. It normally relates to the economic position, culture, and ideology [46]. One study has shown that women's participation in household decision-making (WPHDM) positively relates to their income and occupation [49]. In this study, we assume that ALAFU leads to rising income and social change, and both of them promote the WPHDM and social activities as well. The change in the participation of both wives and husbands in the two groups is shown in Table 6.7.

The data shows significant improvement in the WPHDM in both groups after ALAFU and their limited participation before ALAFU. The men's participation in decision-making related to children and the elderly also increased. At present, around 50% to 80% of the surveyed households have made decisions through discussion and the agreement of both husband and wife. In other surveyed households, the decisions were mainly made by the husband. Such improvement is almost equal

between the two groups. In general, the participation of the wives is still lower than that of the husbands. In particular, the women's participation strongly increased in decision-making relating to family livelihoods and family finances. The decisions relating to housing and property are still often made by the men, although the women's participation in this also increased slightly compared to before ALAFU. As for participation in social activities, such as commune/village meetings, husband and wife's family events, neighbors, and relatives (e.g., weddings, funerals, anniversaries), the women's participation improved a little, but the men often remain the family representative here. This situation has similarly occurred in both groups. In addition, while the data were being collected, we casually visited two events at the study sites (a social event and a village meeting) and noted that over 80% of the participants were men.

Table 6.7: Changing the participation in decision-making and social activities

Percentage of household

Who have participated in	Group 1 (N=50)						Group 2 (N=50)					
	Before ALAFU (2012)			After ALAFU (2017)			Before ALAFU (2012)			After ALAFU (2017)		
	W	H	B	W	H	B	W	H	B	W	H	B
Making decisions relating to employment	4	60	36	4	34	62	6	54	40	4	34	62
Making decisions related to caring children and elder	52	0	48	20	0	80	50	0	50	38	2	60
Making decisions related to family finance	0	70	30	0	28	72	0	50	50	0	28	72
Making decisions related to housing and properties	0	80	20	0	56	44	0	76	34	0	54	46
Hamlet or village meetings	8	92	0	20	80	0	10	90	0	20	76	4
Social activities in commune	6	84	10	20	56	24	8	80	10	24	52	24
Events of the Family	0	60	40	8	40	52	0	92	8	8	82	10

(Source: statistical data from household survey, 2018-2019)

* Note: W= wife, H= husband, B= both wife and husband

We showed the above results in the group discussions to receive their confirmation and investigate the reasons for the changes. We asked people in group discussions to give reasons and then rank them according to importance. For the wives, the information in Table 6.8 showed three reasons for change.

Those are changing employment, improved knowledge and attitude, and encouragement from their husbands. Of these, changing employment was the most important. They stated, "*Most of us have changed our job due to ALAFU and we now work independently with our husbands, therefore, we have to make decisions connected with our jobs through discussions with our husbands to get the best options. Moreover, our income and social knowledge are also making us more confident in*

contributing ideas that our husbands could use to make the final decision. The participation is both our right and the way we share responsibilities with our husbands. We don't want to make decisions alone."

Table 6.8 Reasons for the change in participation in household decision-making and social activities

The change of participation in	Wife group		Husband group	
	Reason	Important ranking	Reason	Important ranking
Household decision making	Changing employment	1	Changing employment	1
	Changing knowledge/attitude	2	Changing attitude	2
	Encourage from husband	3		
Social activities	The husband is busy	1	Changing employment	1
	Changing attitude	2	The wife's participation	2

(Source: Group discussions, 2018)

The husband's group explanation reads, "*Urbanization has changed our lives-not only our income activities but also our attitudes to HGE. We have discussed issues with our wives to reach agreement. Making household decisions together is the way we respect each other and share responsibility as well. Our family is happier since most decisions are made by both of us*". However, in terms of the women's participation in social activities, participants explained that the social prejudice that "men go in public, women stay at home" still exists despite social changes due to urbanization. Both husband and wife argue that participation in such social activities are responsibilities rather than interests, so the husband should take them on. The wives only participate in these events when their husbands are busy, or the event requests the participation of both husband and wife.

6.5.5 Changing access to Social Services

Access to social services such as financial credit, training courses (including vocational and educational training), and the health care service can improve working capacity and health for both women and men, leading to positive changes in their attitudes, their working capacity, and their health. At present, the opportunities to access these services are increasing. According to our household survey, 100% of interviewees answered that they can access social services more easily now than before ALAFU. However, just 50% of wives and 30% of husbands have access to or have participated in these services. Others do not want to access them because they have good economic conditions and health, or they still hesitate. Of these, most of those accessing the financial service to get a small loan from banks are wives in group 2 and most of the participants in money-saving groups are wives in group 1. In terms of health care service, the access of wives in both group 1 and group 2 increased similarly. For both these services, women have taken part more than men.

The leader of a women's union said "Most women can take a small loan from the Vietnam Bank for Social Policies Or Vietnam Bank for Agriculture and Rural Development with low interest because of

the national policy for rural women since the 2000s. However, the percentage of women who could pay a loan on time increased after ALAFU because of their good income. Moreover, having a good income, many women have joined the money-saving group. Therefore, they can save money for themselves and use it in urgent cases. ALAFU is one of the most important reasons leading to this change. The percentage of women who have participated in the periodical health check is higher. In general, the accessibility to social services for people (women included) is better." However, our household survey shows that neither wives nor husbands have participated in vocational training courses after ALAFU. A leader of a farmer's union said. "At present, the vocational training courses are always available, and priority is given to households affected by ALAFU. However, most of the husbands and wives in the farming households are middle aged and they prefer to base their work on their experience and learning from others in communes rather than on learning from training courses. Moreover, vocational training courses seem not to suit their needs. Therefore, most of them have not participated in any vocational training courses after ALAFU, although many of them (farmers) have changed employment. The households affected by from losing land have accepted cash instead of participating in training courses supported by the ALAFU project. Yearly, only young people have participated in the vocational training courses."

6.6 Discussion

Previous studies have indicated that losing agricultural land has forced affected women to participate in non-farming jobs and has improved their economic position [23,50]. This study also supports the evidence that decreasing access to agricultural land due to urbanization has improved women's economic position in the affected households. Indeed, the factors of the ALAFU including the ALA, the cash compensation for acquired land, the improved infrastructure, and the high demand for non-farming jobs due to urbanization have incited women to move from the agricultural sector to the non-farming sector, from cultivation to breeding, from single jobs to dual jobs. As a result, their income and economic position in the family has improved significantly. It means that ALAFU has offered opportunities instead of difficulties in improving the affected women's economic position. This positive impact of ALAFU coincides with progress in socio-economic development in many rural areas in Vietnam. Since the 2000s, many rural areas have become peri-urban, and non-farming jobs have been attracting rural people, while the income from cultivating agricultural land is very low [23,51]. This has led to a male laborers' migration from rural to urban areas, and the feminization of agriculture [38]. Then, only a small group of rural women convinced their families to move on from the non-farming sector. These households allowed other people to cultivate their agricultural land for free, or even left the agricultural land uncultivated to focus totally on non-farming jobs [52]. One study has concluded that access to agricultural land is one of the causes that has limited the non-farming job opportunities of most rural women [23]. This explains why, after ALAFU, the women's economic position improved in group 1 (whose agricultural land was acquired) and is better than group 2 (whose agricultural land was kept).

However, other previous studies have revealed that the rural people affected by ALA, especially the affected rural women, have to face unemployment, and depend more on their husbands or male members in the family after ALA [7,53,54]. Increasing access to agricultural land for women has been recognized as a way of narrowing the gender gap, and this view has been applied in many development projects [17]. It has been urgently promoted in many developing countries where the

percentage of rural women participating in agriculture is still higher than men [41]. Although our research findings are different, they do not disclaim rural women's efforts to increase their access to the land. However, it supports the evidence that, in order to improve the rural women's economic position, changing from traditional cultivation on agricultural land to non-farming employment could be also one of the better options, but it should be a long-term strategy based on the actual rate of socio-economic development. The affected people (women included) in our study have some prerequisite conditions for successfully changing employment. The ALA has occurred near their communes since the 2000s. Meanwhile, the benefit from agricultural land is low (rice land) and their agricultural area is small, so they have had time to prepare and improve their capacity and have gradually switched their income activities to the non-farming sector.

The evidence shows that before ALAFU, their family's income due to agricultural activities was just around 40% of the total family's income, and not only most men, but also some women started take non-farming work as a full-time or part-time job. Moreover, the focus of ALA in our study site is on the Hue city expansion, where the infrastructure in and around their communes has improved. Thus, the travelling distances from their communes to Hue city, other cities, and industrial zones are shorter and more convenient, making non-farming jobs available in or nearby their communes. So, the ALA seems to be not only the last step to encourage affected women to escape agriculture, but also increases their finances through the cash compensation for losing the land use right, although the compensation is still inadequate. Consequently, ALAFU has positively impacted women's economic position. However, in the cases of remote rural areas where urbanization and industrialization are still far away, the livelihoods of rural people (women included) are still based totally on agricultural land, and the benefit from agricultural land is high. Thus, increasing access to agricultural land for women still needs to be promoted as, if ALA occurs, it will bring financial hardship and unemployment.

This study reveals the interesting point that 10% of wives in both groups continue to work in agriculture with their husbands, and their income has improved because most of them have changed from rice to flower cultivation. The new agricultural strategy, although requiring more skill, has succeeded because the women have carefully learned the cultivation technique from each other, and their output is meeting the high demand from urban residents. This reveals that increasing access to agricultural land for women should go together with improving the women's work skills and finding solutions to increase the benefits from the land. Otherwise, access to land is not very significant for enhancing household gender equality.

Improving the economic position and employment of women in the context of urbanization could improve other dimensions of household gender equality. A higher income has also positively affected the access to financial services by women because they are then able to repay a loan on time or even make small savings. This impact is very significant for the progress of GEIAH. Some studies have concluded that occupation and income positively affect WPHDM [49]. Moreover, traditional gender ideology, which could be counteracted by urbanization, also strongly controls the WPHDM [46]. This means that when both women's employment and gender ideology improve, the WPHDM also increases. Such impacts also show in our research. Although most of the interviewees believe that this change is related to ALAFU, it has also been identified in many studies as the indispensable result of developmental progress in Vietnam [55–57]. Moreover, though the income contribution of the wives in group 2 is lower than in group 1, the WPHDM improvement in both groups is similar. This indicates

that women's income does not seem to be an important factor influencing the WPHDM, which was found in some previous studies [48,58]. In addition, although women have made household decisions together with their husbands, most men still make the final decisions on most household issues, especially those related to housing and valuable property. This situation is very common in Vietnam in both urban and rural areas [57].

The positive effect of ALAFU does not occur within other areas of GEIAH as our hypothesis shows. Following an improvement in income and the WPHDM, participation in social activities and the UPW burden of women remain almost unchanged. Women in both groups still take the main responsibility for the UPW and their time allocated to the UPW is still more than twice that of the men. This shows that the gender prejudice in the division of UPW has not yet been broken despite the modern lives resulting from urbanization, rising income and employment, and escaping agriculture. Women continue to undertake the responsibility of supplying the family with food, caring for family members, cleaning, and washing. They still do not want or have an opportunity to participate in community activities which could make them more confident generally in their lives. The gender ideologies reflected in the sayings "men in public life, women at home", "men build the house, women make the home", and "men only do the big things, women should do the small things" are rooted deeply in rural people's thinking.

Many studies have also mentioned this as a challenge to GEIAH progress [48,57]. Although women are busier with their new paid work, they still take responsibility for the UPW as before ALAFU. Taking on both paid and unpaid work could put women in an overworked situation and lead to stress or vulnerability [58], even though their access to health care has increased. Unfortunately, ALAFU has led to such negative impacts on HGE, but the support policy for the affected households of ALAFU projects has failed to integrate any gender solutions so far. Moreover, increasing participation in vocational training courses for women, which could increase their work skills, did not occur as was expected through the support policy, which developed the ALA projects to support affected people (women included) through courses supporting employment recovery. Unfortunately, they have converted these courses to cash, and financially support affected people, and this way seems to be the best for both sides at present. However, because of lack of sufficient training, most of the new jobs with higher income that affected people have taken are temporary jobs. These jobs contain many potential risks as they do not come with a work contract or unemployment insurance [59]. Therefore, the change in women's employment may be better in terms of income but could not be sustainable unless their capacity is also improved through training courses.

6.7 Conclusion and Recommendation

This paper studies the impacts of ALAFU on GEIAH by comparing gender issues between women and men in group 1 and group 2 before and after ALAFU. Besides reducing access to agricultural land and the existing unreasonable issues of compensation and support, ALAFU projects have improved the infrastructure, created non-farming job opportunities and have begun to change the gender ideology. In this context, women's economic position in affected communes has improved and their employment has switched to non-agricultural activities, which has created a higher income for them. As a result, their income contribution and their savings have increased. The WPHDM has also increased, but its quality is still limited. The improved income does not have much influence. Other

dimensions such as the division of UCW, access to training courses, and participation in social activities have insignificantly improved. As a result, the ALAFU has contributed to the improvement of GEIAH, although women still have to face the potential risks of temporary jobs without security and continue to undertake the UCW burden.

Based on these findings, this paper recommends the ALAFU be a long-term plan prepared carefully not only to further economic development but also to create more gender equality in the affected communes. Besides improving the cash compensation mechanism, as was recommended in previous studies, projects to improve the affected people's working skills before they change to the non-farming sector should be implemented through vocational training courses or career consultation. To attract the participation of affected people (women included), the topic, content, and method should be based on their needs, on consultations with employers and the labor market. The support policy of ALAFU projects should integrate gender issues by estimating the gender impacts based on the gender situation in each affected area, in order to offer training courses to change gender preconceptions or to help affected households understand more about gender impacts and share UCW with women. This study also recommends agricultural land usage conversion if benefits of agricultural land access are small and without significance to the livelihoods of rural people. This should be considered as a solution to improve GEIAH. The conversion needs to be carefully prepared, should be based on the real situation in each rural area, and could include the transition from traditional agriculture (rice cultivation) to modern agriculture (such as organic cultivation or high-tech agriculture), or from agricultural land to industrial or urban land.

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Chapter VII: Conclusion and recommendations

7.1 Agricultural activities of affected households have transformed

Under the impacts of ALAFU, one of the most important livelihood activities of the affected households (agriculture) has changed drastically. In general, the average contribution of agriculture to the income of affected households declined from 45.6% to 34%. ALAFU wasted rice land but caused a lack of space for PFP and animal breeding. In other words, ALAFU has reduced the role of agriculture when it comes to affected households' livelihoods.

Cultivation activities have been gradually transformed into peri-urban agriculture that depends less on agricultural land, but requires increased technical capacity to increase both income and costs. The total share of cultivation to household income has slightly increased from 25.9% to 29.5%. There is a reduction in rice cultivation not only by losing rice land through ALA but also by abandoning the rice land of farmers due to urbanization. The damage caused by rats to rice cultivation has increased because abandoned land or rice plots are ideal places for rats to grow. As a result, the share of rice cultivation in the income of households has dropped from 16.7% to 0.5%. However, ALAFU also caused the phenomenon of rice land concentration for some households who still continue their cultivation through renting the rice land of other affected households. The end result is that the percentage of households cultivating rice is reduced, but the scale of rice cultivation of a few households in the study sites increased to 1ha. ALAFU, on the other hand, has contributed to the development of PFP, a horticultural activity that depends less on agricultural land but comes with higher costs and requires technical skills. PFP has grown along with some urbanization benefits such as improved infrastructure and the high demand for potted flowers by citizens. The percentage of households participating in PFP and the average scale of PFP increased from 10% to 34%, from 500 pots to 890 pots respectively. Therefore, its share of the household income climbed from 6.1% to 26.1%. PFP is recognized as a good agricultural activity and the main income source for not only 34% of surveyed households, but also some non-affected households in the study site. Unfortunately, the development of PFP has not been planned yet. As a consequence, PFP has to face challenges such as a lack of space or land area. Besides the two main cultivation activities, vegetable plantations have also slightly changed, but they still play the main role in the family food supply.

Animal breeding activities have strongly declined because ALAFU has narrowed free spaces and grassland, which are important factors of breeding. The total contribution of animal breeding to household income has fallen from 19.7% to 4.5%. The reduction is quite clear in pig breeding. It has been a traditional agricultural activity that almost all rural households have participated in, not only to have an income but also to have organic fertilizer sources for rice cultivation. However, due to a reduction in available space caused by urbanization, but also the difficulty in developing industrial breeding models that require long-term investment, as well as disease, the percentage of pig breeding households has declined from 52% to 10%. Although the scale and income of the breeding households have increased, its share of the total average income of surveyed households has declined from 13.2% to 3.4%. Cattle and poultry breeding is rather similar to pig breeding. Households have remained in these activities because they have tried to take advantage of the available facilities or abandoned land areas because animal breeding will be limited in their communes moving forward.

ALAFU has occupied agricultural land but has also given smallholder agriculture the opportunity to transform it into peri-urban agriculture (PUA). PUA has been mentioned as a good solution not only for providing food and income but also for enhancing the urban environment and landscape, but unfortunately local authorities have not paid much attention to transforming the agricultural activities of households into PUA. The transformation has freely developed through the reaction of affected people to the high demand for potted flowers, leading to challenges about space and land area for the development of PFP in the future, while the remaining agricultural land has been partly abandoned.

7.2 Main aspects of gender issues in affected communes have changed due to ALA projects.

ALA is a process that mostly focuses on city expansion, infrastructure, and economic development. However, it has highly impacted gender issues in study sites. Basically, the SES of affected households and women and HGE improved, but the UPW burden of women has slightly decreased and their participation in household decision-making and social activities is still limited.

By comparing the changes in SES of affected women in three zones where the purposes of ALA are different, the SES of affected women by ALAFU has improved the most through the benefits of urbanization. ALAFU has greatly contributed to changes in the jobs of affected women. After ALA, most affected women were pushed to work in non-farm sectors, such as self-employment, wage labor, or as workers in industrial parks. These jobs gave them higher incomes and also required them to be more active. Improving employment status has created domino effects on women's income and social knowledge. Rural women are considered a highly vulnerable group in the context of social-economic change, but the support program of the ALA project has not designed specific support for them in looking for new jobs and improving capacity after ALA. Each type of ALA has also created different opportunities and challenges to affected people. Of these, ALAFU has created the most opportunities, but the support programs of all ALA projects are the same and very limited. This causes inequality for affected people, especially affected women in ALA projects for hydropower development.

The change in HGE of in affected communes is also studied by comparing the roles of husband and wife after and before ALAFU, and by comparing the groups of affected and non-effected households. HGE in both groups has improved through the benefits of ALAFU, especially the HGE of the affected households group. The income contribution of women to household’s income has greatly improved and reached almost that of husbands. Women are busier with their income activities, however their responsibilities in the UPW and their participation in household decision-making and social activities have not significantly changed. As a result, ALAFU has a positive impact on HGE, but women still have to face the potential risks of temporary jobs without security and continue to undertake the UPW burden.

7.3 Recomendations

The findings of this thesis suggest some recomendations which support policy making proccesses related to support programs of ALA and urbanization in Thua Thien Hue province (and Vietnam as well). These recommendations could be useful with other countries such as China or developing countries where ALAFU has been occurring.

7.3.1 Paying attention to PUA development in affected communes by ALAFU projects

As mentioned in the analysis of the changes in agricultural activities, rice land abandonment, and lack of spaces for PFP, local authorities at study sites should make a plan of PFP development through allocating a given land area for PFP, instead of letting them develop freely as a marginal activity as it is now. Further, provincial authorities should consider a master plan for agricultural development that adapts to the lack of agricultural land in affected communes.

At the national level, the ALAFU projects should predict the situation of abandoned or wasted farmland after ALAFU. This effort could calculate the total amount of the real farmland damage caused by ALAFU projects, thereby supporting better decision-making and forecasting better agricultural transformations after ALAFU. The government should design and pilot an agricultural land concentration policy in affected areas by revising the current policy of ALA, such as acquiring the remaining land area after ALAFU and then delivering it to farmers who demonstrate a long-term commitment to crop cultivation. Such land concentration could reduce land fragmentation and abandonment. Going along with that, the government should give more attention to agricultural development in affected communes that are moving toward peri-urban and urban agriculture as well as sustainable urban development. Such agricultural development plan should be early integrated into the urban expansion plan and the land use plan. This could save agricultural land and ensure the role of agriculture in both generating incomes of affected households and providing ecosystem services in urban areas moving forward.

7.3.2 Improving the support program of ALA projects

Regarding study sites, in order to limit the challenges due to ALA (for affected women in particular and affected people in general), local authorities should cooperate with stakeholders such as the Center of Support and Vocational Training for Farmers, Department of Agricultural Consultancy and Support, Department of Agricultural Extension, Department of Industrial Extension, the Women's Union, companies and enterprises, the provinces, and ~~the~~ affected people to build and implement a concrete support plan. This could include measures such as providing vocational training courses, occupational consultancy, connecting affected labors with employers, and increasing gender perspectives. The support should consider gender aspects and place more emphasis on supporting affected women.

At the national level, ALA policy should be revised in light of the improved requirements of the support program for affected households and communes. First, the affected people need to be classified into different groups based on gender, age, educational level, working experience, employment status, the result of a survey or registration of affected people about the support they need in terms of looking for new jobs, access to financial services, vocational training courses, connection with employers, self-business skills, financial management, etc. The challenges and opportunities of each ALA project are different and depend mostly on the purpose of ALA, so the support program also needs to be designed for each specific ALA project. These will ensure the support meets the actual demands of each affected group and achieve efficiency. Second, the support program should not transfer cash at all, it should be the action plans that involve affected people to improve their working capacity and gender knowledge. In this way, affected people could take advantage of the opportunities and handle the challenges associated with ALA projects. Lastly, the investors of ALA projects need to take

responsibility for the implementation of support programs until the livelihoods of affected people are stable. They should cooperate with other support programs from the Government, Women's Union, Farmer Union to achieve the best results.

Annex

Annex 1: Questionaire

Questionaire

1. Genernal information
   1.1 Head of family…… age, family menber….. ,number of labor….femal….male……
   1.2 Total agricultural land area……..ha
   Total acquired agricultural land……ha. Total compensated cash…….Vnd
   Total remaining Agricultural land ……ha
2. Agricultural activities
   2.1 Crop cultivation
   2.1.1 Changes of crop cultivation

Indicators	Unit	Rice		Potted flower		Vegetable	
		Before (2012)	After (2017)	Before (2012)	After (2017)	Before (2012)	After (2017)
Scale	Ha						
Number of harvest per year	Harvest						
Total cost	Million vnd/year						
Average income of active household	Million vnd/ year						
Its share of income's surveyed households	%						

2.1.2 Reasons for the changes

Reasons of the change of crop cultivation		Rice		Flower		Vegetable	
			Rank		Rank		Rank
ALA	Farmland fragmentation is exacerbated						
Compensation	Compensated cash is used to develop other jobs						
Urbanization	Increasing non-farm jobs						

	Value of crop is increased						
	Consumer market increased						
	Infracstructure is upgraded						
Others							

2.2 Changes of animal breeding

2.2.1 Changes of animal breeding

	Unit	Cattle		Pig		Poultry	
		Before (2012)	After (2017)	Before (2012)	After (2017)	Before (2012)	After (2017)
Scale	Unit/cycle						
Number of breeding cycle	Cycle/year						
Average cost of active household	Million vnd/year						
Average income of active household	Million vnd/year						
Its share of surveyed household's income	%						

2.2.2 Reasons for the changes

Reason of the change		Cattle		Pig		Poultry	
			Rank		Rank		Rank
ALA	Grassland is narrowed						
Compensation	Compensated cash is used to develop other jobs						
Urbanization	Increasing non-farm jobs						
	Free space is narrowed						
	The commune is merged in the city						

Others							

3. Socioeconomic status of women

3.1 Changes in employment of labors of family

Labor	Age	Education level	Job		Reasone of change
			before	after	
Female 1 (wife)					
Female 2					
Female 3					
Male 1 (Husband)					
Male 2					

* Kind of Job

(1)Civil servant. (2) Small businesswoman (3) Worker (4) Hired laborer (5) Farmer (6)Dual jobs (both farmer and small businesswoman) (7) Dual jobs (both farmer and hired labor), (8) Other

3.2. Employment of labor

	Working Days/Year (day/labor)		Working Days/Year (day/labor)		Income (1000 Dong/Working Day)		Working contract and ensurance	
	Before	After	Before	After	Before	After	Before	After
Female 1 (wife)								
Female 2								
Female 3								
Male 1 (Husband)								
Male 2								

3.3 Reason for changes of aspects of employment

	Working time	Income	Working contract and ensurance
Female 1 (wife)			
Female 2			
Female 3			
Male 1 (Husband)			
Male 2			

4. Household gender equality

4.1 Changing allocation of time for unpaid care work (Hours/day).

	Wife		Husband	
	Before	After	Before	After
Preparing food				
Cleaning and washing				
Caring for family members				

4.2 Changing responsibility division in unpaid care work

Who Take the Main Responsibility in	Before		After	
	Husband	Wife	Husband	After
Buying food and clothes				
Preparing food				
Cleaning and washing				
Caring for children, sick and the elderly				
Repairing the house and household equipment				
Preparing food				
Others				

4.3 Changing the participation in decision-making and social activities (Percentage of household).

Who have participated in	Before		After	
	Wife	Husband	Wife	Husband
Decision-Making relating to employment				
Decision-Making related to caring for children and the elderly				
Decision-Making related to family finance				
Decision-Making related to housing and properties				
Hamlet or village meetings				
Other				

Annex 2: Check list for depth-interview

Topic	Key questions
Crop cultivation,	- Opportunities and challenges of crop cultivation - What are reasons for the changes - Are there any plan or policy to support this activities - How do you think about delopment of potted flower plantation - How do you think about rice land abanadonement and subleting
Animal breeding	- Opportunities and challenges of crop cultivation - Reason for the changes, which is the most important - Are there any plan or policy to support this activities
Role and participation of women	- Are the any change of role and participation of women compare between before and after ALA - What is the most important reason - Are there any support and plan to improve this issue - What should ALA program should do to support for this issue
Access to service of women and men	- Are the any change - What is the most important reason - What should ALA program should do to support for this issue
Socio-economic of women and men	- Are the any change - Reason for the changes, which is the most important - Your opinion about support and influence of stakeholders of ALAFU project to women in looking for new job - Can you share a speciall story of ALAFU that benifit affected women

Annex 3: Content of group diccussion

Before starting group dicussion, we always explain reasons, topic and the way to dicuss. We also explain the tool that we used to make sure participants understand and participate. We also have two persons, a Phd Student is a leader and her collegue is facilitator and assitant, to conduct and run the group dicussions.

I. Socio-economic of affected women
Organize three affected women groups in three zone to dicuss about these following topics
1. Support and impact of stakeholder for women (using Power maping)
2. Reason for the change of employment, aspects of employment (use ranking method)

II. For agricultural activities
Organize 1 mixed women and men group in Zone 1 to dicusss about these following topics
1. Reasone for the changing of animal breeding and crop cultivation
2. SWOT analysis of each agricultural activities

III. For houshould gender equaiity
Organize 1 mixed women and men group, 1 affected women group, 1 non-affected women group to dicuss about these following topics.
1. Household gender equalility
2. Reason for the change of the participation in decision-making and social activities
3. Reason for changing responsibility division in unpaid care work
4. Reason for changing accesss to service of wife and husband.

Annex 4: Agricultural activities in study sites

Potted flower plantation

Rice cultivation

Vegetable cultivation in garden land.

Cow breeding

Anex 5: Employment of affected women after ALA

Women work as famer in rice field.

Women work as seller at small open-air martket

Women work as craftman.

Women peddle tradditional food in afternoon

Women work as needlewomen for small owner.

Women work as shop owner

A temperatural small food shop of woman.

A small shop of woman

CURRICULUM VITAE

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Name and address of school, college or university	Dates attended	Subjects/courses taken and qualifications obtained
Hue university of agriculture and forestry Add: 102 Phung Hung street, Hue city, Thua Thien Hue province, Vietnam	2002-2006	+Extension and rural development. + Bachelor
Asian Institute of Technology Add:School of Environment, Resources and Development, AIT, Km 42 Paholyothin Highway, Klong Luang, Pathumthani12120, Thailand	2010-2012	+ Natural resources management + Master of science
Georg-August University Goettingen, Goldschmit str3, 37077, Germany	2017-2021	+ Human Geography + Phd Program
TRAINING COURSE		
Name and address of school, college or university	Dates attended	Subjects/courses taken and qualifications obtained
Hue university of agriculture and forestry Add: 102 Phung Hung street, Hue city, Thua Thien Hue province, Vietnam	2007	Training course on the Quantum Research in Rural Development.
Center for social work and community development research and consultantcy Add:273/51 Nguyen Van Dau, Binh Thanh district, Ho Chi Minh City	2008	Communicational skill in education
Hue university of agriculture and forestry. Add: 102 Phung Hung street, Hue city, Thua Thien Hue province, Vietnam.	2008	Finance and credit for farmers
Hue University. Add: 01 Dien Bien Phu street, Hue city, Thua Thien Hue province.	2007	The University Methodology and Research
Georg-August University Goettingen, Goldschmit str3, 37077, Germany	2021	Good Scientific Practice
Georg-August University Goettingen, Goldschmit str3, 37077, Germany	2019	Introduction to Public Relations for young scientists
Utrecht University, Heidelberglaan 8, 3584, CS Utrecht The Netherlands	2021	Land Governance for Development
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Nhung Pham Thi, Nguyen Thi Thanh Huong, 2009, income activities of fishman in Vinh Giang		

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