

Enhanced Entry of Young Generation into Agriculture: A Case Study in Prachinburi, Thailand

By

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ABSTRACT

Research indicates the decreasing involvement of young generations in agriculture. Researchers have put forward as well the external factors that precede the low or decreasing *participation* of young people in farming. This qualitative and quantitative case study was designed to explore with a sample of young people in rural areas the internal factors or driving forces that might divert young people's *interest* away from farming; whether young people's current (decreasing) *participation* on farming is a reflection of their actual *willingness* or *interest* to get involved in agriculture. The rationale for this study is based on the need to better inform policy to tackle the issue of aging farmers. In order to enhance the installation of new young farmer, we need to understand whether young people *do not want* to do farming due to a generational shift on their preferences, or they *want but are not able to* due to their perception on agriculture and the current constraints it involves.

The selected sample was composed of a total of 86 young people: 26 respondents from Hua Phai (village 1), 40 respondents from Bang Rung Rot (village 2) and 20 respondents from Pho Yen (Village 3). All villages are within Bang Sang district in Prachinburi Province, Thailand. The primary data-collection method was in-depth interviews. Secondary data was gathered from Bang Sang Registration District Office. The data were coded and organized according to the research question. Analysis and interpretation of findings were organized by the three objectives of the research study:

- a) Young people's perception on farming problems (chapter 5)
- b) The conditions under which young people would re/consider to get involved in agriculture (chapter 6)
- c) To review the incentive policies for young farmers in response to the decreasing involvement of young generations in agriculture (chapter 7)

The main finding of this research is that, despite the low involvement of young generations in agriculture young people in fact, would like to become farmers, they have not lost interest. It is due to the current rural conditions that farming is not viewed as an economically reliable occupation. Owing to this demeaning conditions and perception of young people of farming that from early ages they steer their professional future towards the alternatives to agriculture they consider feasible, mostly factories (an increasing sector in the area). It is at this point that when young people consider the option to do farming as income-generating activity, they perceive *knowledge* as their turning point to become successful farmers. Due to current rural trends of high migration of young people, Thai rural settlements may go through a profound transformation. Rural villages where young people are still lured by agriculture as economic activity may preserve the viability of small farmers and thus, a self-reliance development path. On the other hand, rural villages where young people do not perceive farming as an economically reliable activity may become a place of residence but may not remain a place of work. Rural settlements may become economically reliable on migration towards the industrial sector and urban areas; hence remittance may stand as a key source of incomes for rural villagers.

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LIST OF ABBREVIATIONS

FAO	Food and Agriculture Organization
UN	United Nations
IOM	International Organization for Migration
ILO	International Labor Organization
YFS	Young Farmer Scheme
CAP	Common Agricultural Policy
ALRO	Agricultural Land Reform Office
MOAC	Ministry of Agriculture and Cooperatives
FFTC	Food and Fertilizer Technology Center
YESS	Young Entrants Support Scheme

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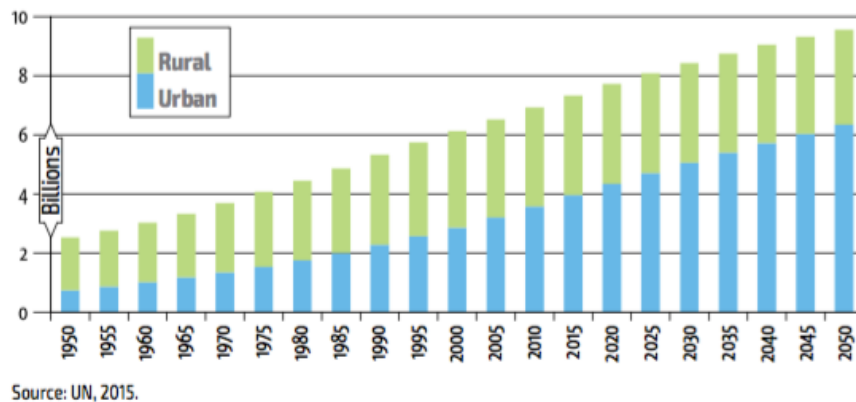
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CHAPTER 1 INTRODUCTION

1.1 Background

For centuries, the world's population was predominantly rural. Thirty-five years ago, more than 60 percent of all people lived in rural areas. Since then, the urban-rural balance has changed drastically, and today slightly more than half of the global population (54 percent) is urban. It is projected that more than two-thirds of all people may be living in urban areas in 2050 (UN, 2015). In absolute terms, global urbanization to 2050 could lead to a net addition of 2.4 billion people to towns and cities, which is more than the total global population increment of 2.2 billion people; by mid-century, two-thirds of the global population will live in urban areas. This means that rural populations may see a net reduction of nearly 200 million people (Figure 1).

Figure 1: Growth in global urban and rural populations to 2050



In the coming decades, the world is likely to be not only more populous and urban, but also demographically older, both in rural and urban areas. By the end of the century, the share of young children could decline to 5.8 percent, while the proportion of older people is forecast to rise to 22.7 percent (UN, 2015). Rural ageing has major implications for the composition of the rural labour force, patterns of agricultural production, land tenure, social organization within rural communities, and socio-economic development in general. Agricultural innovations, such as the diffusion of new agricultural technologies and the introduction of improved tools and seeds, often dismiss older farmers, as many have neither the financial resources to buy additional inputs, nor the skills (e.g. literacy) to invest in adopting new practices.

Youth in agriculture is one of global priorities issues. UNESCAP (2012) data shows that 750 million young people, or over 60 percent of the world's youth, live in the Asia-Pacific region. In 2010, India registered the highest number of young people in the world at 234 million, or 19% of the country's total population. Up to 70 percent of the youth in sub-Saharan Africa and Asia live in rural areas. For many decades, the rural youth have been under-tapped and neglected by their communities, governments, and international organizations, and thus are

unable to make full use of their energy and potentials in the agriculture sector (Basnet, 2015). The rural youth is often unemployed or work informally in unpaid or underpaid, low skilled, insecure and hazardous jobs. The lack of opportunities and decent jobs^[1]_{SEP} in the rural areas compel youth to migrate to cities. Sons and daughters of farmers are often reluctant to go into agriculture due to economic instability and climate-vulnerability, thus this has resulted to another problem: ageing of the farming population.

The increasing attention to urban development has resulted into urban drift of rural population; young people consciously decide to move to the towns seeking for greater opportunities for employment and better education for their children (FAO, n.d.). The push of poverty in rural areas is at least as great as the pull of the bright lights (FAO, 2000). As a consequence the towns become increasingly overcrowded putting pressure on limited services. For some, opportunities are indeed found in the urban areas, and this increases the lure of the towns for the many others who then find themselves worse off than they would have been in the rural areas. The challenge is to develop the rural areas to make them attractive to young people in terms of employment prospects, education and training opportunities, health services and social life.

Due to the displacement of youth from rural areas, the agricultural sector remains under pressure having a great impact on rural economic activities. The major consequences and effects of youth migration from rural areas include a (1) reduction in agricultural labour force (the displacement of youth may be characterized by a drained of the most skilled and innovative in the community, a phenomenon known as “brain drain”, hence rural areas and the agricultural sector become trapped in a vicious cycle of poverty (Uma *et al.*, 2013)), (2) low agricultural productivity (destabilizing traditional farming systems at household and community levels; (ii) leading to a significant ageing of the rural labour force and thus to a reduction in labour productivity and farm income; and (iii) adopting land intensification practices, such as shorter fallow periods and increased weeding, to counterbalance the loss of labour productivity (Vargas-Lundius and Lanly, 2007)), (3) high cost of labour, (4) reduction of household annual income, (5) farm work mostly done by aged parent, (6) unavailability of farm labour and (7) food insecurity in households.

Moreover, as noted by several writers (Olayide, 2009; Lewis, 2004; Osondu and Ibezim, 2001) this phenomenon have been associated with decline in food production, farming activities, fishing, urban congestion and inadequate infrastructural facilities in urban areas. Furthermore, the risk of losing the younger, most dynamic and vital part of their workforce may lead to feminization of rural populations and increased work burdens on those left behind, especially when migrants encounter hindrances in finding decent jobs at their final destination, sending remittances to their families, or adapting their skills to the urban work demand. In some cases, they might force children to work (Van de Glind, 2010). The social impact on those left behind, known as “care drain”, may lead to a drop in the time available for and quality of child care, and the youth left behind are sometimes forced to drop out of school to undertake responsibilities previously assumed by other adults (Deotti, Laura; Estruch, 2016)

Thailand has experienced the same problems. Thai rural settlements are undergoing a profound transformation in structure, constitution, and functioning, along with the people who are connected with such rural places and spaces. Rural settlements are under pressure since the

young are leaving in even greater numbers, and it seems, staying away for longer. Geriatrification of farming is becoming a staggering trend in Thailand. As many countries of Asia, Thailand is facing an unprecedented ageing of its population (Oizumi, 2013).

A study of two villages in the Northeast of Thailand showed that over 25 years (1982–2008), the average age of the farmers increased from 36 to 55 years (Rigg, 2012). Another study in one village of the same region showed a wide gap in the age pyramid: young people (between 20 to 40 years old) were absent, and elder farmers were often living with their grandchildren. Moreover, two thirds of the households were receiving remittances, which were on average the largest sources of income (Nilsen, 2014). In these villages, farming is not the main source of income anymore. Moreover, cultural preferences have changed and many rural inhabitants (both younger and older generations) see now farming as a hard and low-status activity (Rigg et al., 2012)

1.2 Problem Statement

The rapidly ageing farming population in Thailand may stand as a key obstacle for the agricultural sector to face current economic and environmental challenges. Agriculture remains one of the main sectors for Thai economy. Its share on GDP has been declining throughout the years, from 32.2% in 1960 to 8.3% in 2013, however agricultural sector still employs most of its population. In 2009 agriculture was employing 44.28% of the total population. How to support the installation of young farmers is becoming an increasingly discussed issue, since today's youth will be the future of agriculture tomorrow. Thailand's shrinking labour pool does not come without challenges. The Kingdom's birth-rate has fallen dramatically and it is also the third-most rapidly ageing society in the world, making it one of the middle-income countries facing the dual challenge of a shrinking labour pool coupled with a greying population. By 2040, Thailand's aging population is set to increase to 17 million, meaning that one out of every four Thais will be a senior citizen (W. Baxter, 2017)

Following Cohotel (2017) reasoning, a countryside occupied by grand-parents and grand-children, the aging farmers may be less inclined to innovate and to look for "effective" and productive farming system as long as they practice farming for their self-sufficiency. This may lead to non-innovative and low-profitability farming. Because of low profits, elderly farmers may not want to take risks and farming does no longer attract young people (Cochetel, C., 2017). It's a vicious circle where young people are less and less seduced by a rural life and innovation is deprived from agriculture. Agricultural innovations, such as the diffusion of new agricultural technologies and the introduction of improved tools and seeds, often dismiss older farmers, as many have neither the financial resources to buy additional inputs, nor the skills (e.g. literacy) nor energy to invest in adopting new practices.

Therefore, new trends have emerged in the early 21st century, which were insignificant during the last few decades. Rural settlements are going through an unprecedented evolution and will lead to new challenges. This decreased presence and involvement of young people is a key factor in the establishment of a vicious circle of low profitability of farming leading to limited incomes. The current types of production have a low profitability per hectare, which combined with small areas for most farmers, lead to limited income. Therefore, young people do not want to work in rural areas. Elder people work themselves or use paid labour, which

decreases more the profitability of farming. All these factors (aged farmers, low income and the presence of paid labour) constitute strong constraints to the initiation of changes (new practices, changes towards more profitable crops), which in turn contribute to the low profitability of the agricultural activities.

The farming sector is already showing signs of weakness as competitors in the region, such as Vietnam, are starting to do better in many products (Thailand Development Research Institute, 2018); therefore there is an urgent need to understand young people's mindset and their view on farming (expectations and needs) in order to attract new technological innovation, and therewith keep the Thai agricultural sector competitive at a global level. If the youth is the future of the nation, and the rural youth is the future of agriculture, under what conditions young rural people would perceive farming as a satisfactory way of living? What kind of policies and programs are needed to make them see that a good future awaits them and then decide to stay, by choice, in agriculture? Youth are the primary productive human resource of socio-economic development. It is therefore, essential to locate the role of youth in mainstream development, so that this technological transformation can take place in agriculture and rural areas, a transformation driven by innovation, research and development. Young farmers could be the bridge between technology and agriculture.

Once the salience of youth in agriculture is acknowledged, this study aims to carry out an in depth assessment on the root-cause of the decreasing involvement of young generations in agriculture in order to understand young people's mindset and the conditions under which they would consider their involvement in farming. Understanding young rural peasant's expectations will contribute to couple youth rural needs and policy in order to avoid the collapse of the agricultural sector and ensure it remains competitive at a global level.

1.3 Objectives of the study

The overall objective of this study is to explore young rural people's *willingness/ interest* to get involved in agriculture and assess whether the current rural setting is suitable to achieve their *vision/dream*. The study specifically aims:

1. To understand the determinants that push young people's *interest* away from farming.
2. To identify the backdrop under which young people would consider their engagement on farming.
3. To review incentive policies for young farmers in response to the decreasing involvement of young generations in agriculture

1.4 Rationale of the Study

Young rural population moving away from farming is a global concern, and is coming from precedents generations. The driving forces of the changes on Thai rural settlements are: an aging population and a decrease on agricultural profitability. This rural backdrop sets the conditions for the decreasing *participation* of young peasants in farming practices as source of incomes.

Many researches have attested the absence of young people in rural areas at a global and national (Thailand) scale. A study of two villages in the Northeast of Thailand showed that over 25 years (1982– 2008), the average age of the farmers increased from 36 to 55 years (Rigg, 2012). Another study in one village of the same region showed a wide gap in the age pyramid: young people (between 20 to 40 years old) were absent, and elder farmers were often living with their grandchildren. Moreover, two thirds of the households were receiving remittances, which were on average the largest sources of income (Nilsen, 2014). In these villages, farming is not the main source of income anymore.

Researchers have put forward as well the external factors that precede the low or decreasing *participation* of young people in agriculture. A study in Northeast Thailand, which surveyed 77 households over 25 years, showed that the decrease on land holding size has turned farming into a less productive and profitable source of incomes. Land has not been bought or sold but transferred between generations, thus leading to a decline in average land holdings from 3.2 to 1.9 ha from 1982–83 to 2008 (Rigg, Salamanca, & Parnwell, 2012). Formoso (2016) also explains the decline on agriculture due to an increase number of landless households.

Furthermore, there is a proliferation of off-farm jobs. The same study (Rigg et al., 2012) in the northeast part of Thailand stated a sharp generational divide in terms of work. Among those villagers aged 45 years or less, a significant majority worked outside the village; for those aged 46 years or more, the majority remained farmers. Off-farm work has become as common as farm work among the surveyed villagers. Rural producers become urban consumers; peasants become workers and housewives; and peasant children become urban youths. In addition, the same study describes a shift in cultural preferences, especially among the young, such that farming is not infrequently avoided as a hard, low status, even demeaning activity. This is not just a view held by the young; it is also recognized by the older generations. Parents generally supported their children in their efforts to avoid farm work (ibid)

These external and preceding factors: diversification of off-farm activities, insecure land ownership, multifunctionality of rural areas, cultural perception on farming, shift in occupations (becoming farming a side-line activity or second source of incomes), the decrease of average land holdings and delocalization of livelihoods, are shrinking rural productivity and profitability thus decreasing its attractiveness for young people to make farming a way of living, and eventually compelling them to migrate.

However, less research has been carried out on the internal factors or driving forces that might divert young people's *interest* away from farming. In fact, there is a need to assess whether young people's current (decreasing) *participation* on farming is a reflection of their actual *willingness* or *interest* to get involved in agriculture. This will lead as to the conditions under which young people would consider their participation on farming.

In order to address the issue of the decreasing involvement of young generation into agriculture from a grassroots level, there is a need for greater understanding on young people's perception of farming. What are their aspirations despite the current demeaning backdrop that involves farming. And whether their perception on farming has been built upon the external factors which makes farming a non-worthwhile activity to support their families, which has led to a decreasing *participation* of young people in agriculture. In order to better inform policymakers, we must draw a line between the differences of:

- Attracting them back to agriculture due to an objective lost of interest. There has been a generational shift of preferences, thus young people do not *want* to pursue agriculture as their livelihood.
- Enabling the conditions needed to achieve the vision and expectations of young people on agriculture. There has been a shift on economic preferences due to the lack of (economic) opportunities perceived by young people, thus they would like to do farming but does not meet their expectations.

As described above, the literature already puts forward the lack of *participation* of young people in agriculture, hence following this reasoning the researcher aims to understand the decreasing *participation* of young people in agriculture based on their mindset (*interest* and *willingness*). Through this insight, we will be able to understand the conditions young people expect in order to make farming a way of living. As Pamwell puts it: "migration would not continue in such massive volume if people did not perceive their prospects to be better through migration and if many were not indeed benefiting from migration".

The discussion on policies to support young farmers in Thailand is still incipient. In the past 10 years, a series of programs have been launched to support the installation of young farmers (Faysse, 2017). The core component of most of these programs is capacity-building (Tapanapunnitikul and Prasunpangsri, 2014). Apart from a small amount of land provided by the Agricultural Land Reform Office, limited support for accessing land, capital and market is provided. During the Fifth Plan (1982-1986) rural migration has become one of the major issues for development planning. The 10th National Economic and Social Development Plan (NESDP) (2007-2011) mention that Thailand is becoming an aging society. In the 11th NESDP (2012-2016), this issue is related to the agricultural sector: "Labour shortages are rising in the agricultural sector, as Thailand becomes an aging society." The document points out that the labour shortage in the agricultural sector will come from two trends: the ageing of the society and a shift of workers to the industrial and service sectors (Office of the National Economic and Social Development Board, 2011).

In this context, the research questions have been designed to analyse the distribution of rural population by age and the determinants that hinder rural youth to get involved in farming. This research would inform policy-makers to better understand the needs and expectations of

rural youth in order to design a policy framework that conciliate the needs of rural youth as the next farmer generation, and agricultural and rural development policies that may lead a sizeable number of Thai young people to consider it worthwhile to stay in rural areas, hence boosting the 21st century technological transformation. The research, would answer the specific question as follow:

1. What are the factors/reasons underneath the limited interest of youth in agriculture?
2. How would be a future prospect that may lead a sizeable number of Thai young people to consider it worthwhile to stay in rural areas?
3. What kind of policies and programs are needed to support the installation of young generations in agriculture?

Studying the diversion of youth from rural areas is important because it is an increasing phenomenon, involving growing populations with potential significant social and economic problems for the agricultural sector. Empirical studies on transition to adulthood in Asia indicate some common risks and challenges that rural youth faced in Asia including: high rates of unemployment, and uncertainty and precarious employment (Yeung & Alipio, 2013). Understanding these dynamics is particularly important academically and for public policy purposes. These investigations would be key to support a discussion about what kind of policies may be implemented in Thailand, not only to decrease the trend of aging farming population, but also to cater for the diversity of projects of young famers and to make sure that the agricultural sector remains competitive and an important component of the economy and of rural life.

This is therefore, why we will carry out a small-scale study, to inform policy to better address the specific needs of youth in order to strengthen rural attractiveness and enhance rural productivity and profitability. Although in Thailand there are some programs to attract young people to farming, such as “The New Farmer Program”, promoted by the Agriculture Land Reform Office and “Young Smart Farmer Program” promoted by the Agriculture Extension Office, there is a need to asses the effectiveness of the dissemination and implementation of such initiatives in order to conciliate the needs of rural youth and rural and agricultural development policies.

To further this discussion, there is a need to better understand the situations and mindset of young people, as well as the constraints of young people that may be interested to start farming. There is also the need to assess the future prospect that may lead a sizeable number of Thai young people to consider it worthwhile to stay in rural areas.

CHAPTER 2 LITERATURE REVIEW

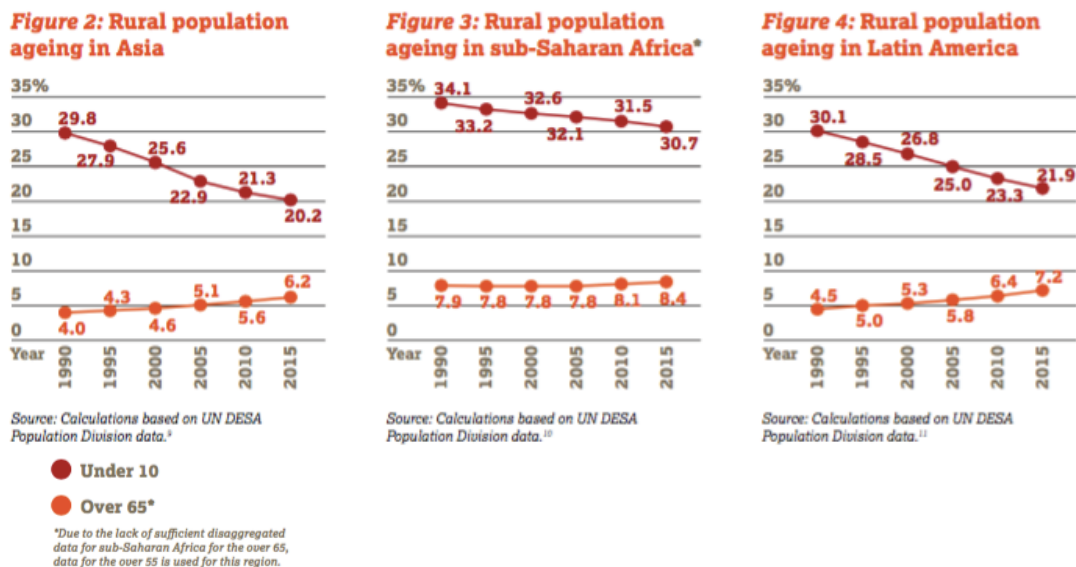
This chapter presents a review of related literature on rural aging population and the decreasing involvement of young workforce in agriculture at a global level, regional (Asia) and more specifically in Thailand.

2.1 Global trends on rural labour: aging population and the decreasing involvement of young workforce in agriculture

2.2.1 Generational gap and aging rural population at a global level

Demographic aging is a highly topical issue worldwide. In most countries, population aging tends to be greater in rural areas than in cities (Gerardo, 2005). This is because rural-to-urban migration is usually highly age-selective, involving mostly young adults who migrate to cities to seek urban employment (Gustavo, 2008). As a result, the population left behind in the countryside typically have higher proportions of older people (Gerardo, 2005). According to National Statistical Office (2011), in Thailand the agricultural population, over 65 year old occupied nearly 10% of the population. In Africa, Asia and Latin America the numbers of rural elderly are projected to double or quasi double between 1995 and 2025, expecting 50 million in Africa and 337 million in Asia by the year 2025 (ibid). The data shows a universal increase in the proportion of older people and a decline in the proportion of younger people living in rural areas. Figures 2, 3 and 4 illustrate this trend for Asia, sub-Saharan Africa, and Latin America.

Figure 2: Rural population aging at a regional level



Moreover, the proportion of older farmers specifically is significant and growing. The percentage of farmers over 55 is 7.1 percent in sub-Saharan Africa, 12.1^[SEP] percent in Asia, 25.3 percent in the Caribbean and 12.3 percent in Latin America (Heide-Ottosen, 2014). This leads to a decrease in agricultural productivity especially since fewer younger people prefer to

stay and work in the urban areas (Jeonju, 2014). In all three regions, older people are more likely than other age groups to be working in agriculture than in other industries. In Asia, agriculture represents the largest proportion of employment for the older population. Data shows that 75 percent of people over 60 reported agriculture as their main income-generating activity (Jacques du Guerny, 1997).

The small-scale farming system encounters severe structural problems, particularly the rapid ageing of farmer population and scarcity of young farmers entering the profession. The consequences of unsolved structural problems will hamper sustainable agricultural development (Ilbery, Chiotti, and Rickard, 1997). An example is the decreasing number of young farmers involved in European agriculture. With continuously diminishing numbers of European farmers less than 35 years of age, while one-quarter are over 65, effective measures are needed to encourage new entrants into the agricultural sector (European Communities, 2012). Only 7 percent of the farmers in the EU-27 are under the age of 35, and nearly 24.5 percent of farmers are aged 65 or more (European Communities, 2012). The demographic ageing problem is more severe in Asian countries than in the EU (Oizumi, Kajiwar, and Aratame, 2006). The percentages of the aged over 65 farmers to the total farm population are 34.3, 31.8, and 31.2 percent for Japan, Korea, and Taiwan, respectively (FFTC, 2014).

Moreover, in Vietnam, the difficult conditions of rural areas (climate change, food insecurity, rising economy, etc.) have triggered difficulties in finding and/or being satisfied with farming jobs in the rural areas. This caused a significant proportion of the rural workforce to find off-farm occupations – particularly the young generation – resulting in the increase in average age of farmers (30% of agricultural workforce is older than 44 years) and rise in the proportion of women in the current agricultural workforce (Jeonju, 2014). According to the Census of Agriculture in Japan, the population of farmers engaged mainly in farming decreased from 4,128 thousand in 1980 to 2,051 thousand in 2010 (a 15% reduction), and the proportion of 65 years old and over to all of them rose from 27.8 percent up to 74.3 percent during the same period. The average age is 66.1 years old in 2010 and the decreasing and ageing of farmers' population has caused the decline of Japanese agriculture (Jeonju, 2014). The same trend appears in Indonesia, agricultural labour less than 35 years old in 1993 was 25.8 percent, but ten years later (2003) it was reduced to 20 percent. In the next decade, the Agricultural Census in 2013 confirmed further decline of the younger workers (aged under 34 years old) to 12.9 percent. On the other hand, the data showed a growing number of ageing farmers, aged over 65 years (CBS, 2003, 2013).

This current trend of aging of producers in the low capital-intensive agriculture, and the exodus of rural youth presents a myriad of challenges; being agriculture at the frontline and having a great impact on income-generating rural activities, hence jeopardizing rural community's development. A study in Thailand and Japan highlights the effect of ageing population in agricultural labour force as the number of agriculture labour force has continually decreased due to the exodus of young farmers from agriculture. This has significantly impact on food security. The major consequences and effects of youth diversion from rural areas include a reduction in agricultural labour force, market competitiveness, rural economic viability, low agricultural productivity, high cost of labour, farm work becomes tedious, reduction of household annual income, farm work mostly done by aged parent,

unavailability of farm labour and food insecurity in households. It has also been associated with urban congestion and inadequate infrastructural facilities in urban areas.

Furthermore, the risk of losing the younger, most dynamic and vital part of their workforce may lead to feminization of rural populations and increased work burdens on those left behind, especially when migrants encounter hindrances in finding decent jobs at their final destination, sending remittances to their families, or adapting their skills to the urban work demand. Work in Cambodia has also shown how migration interlocks with farming, reshaping the latter in the process, leading to both a feminization and a nascent geriatrification of farming. In Cambodia, rural female migrants are mostly young and unmarried, and take up factory-based work. By the age of 30 most have returned to their villages of origin where they re-engage with farming so that farming is both feminized and, relatively speaking, geriatrified. In the process, older women have become the mainstays of the farm economy (Rigg et al., 2012).

In some cases, they might force children to work (Van de Glind, 2010). The social impact on those left behind, known as “care drain”, may lead to a drop in the time available for and quality of child care, and the youth left behind are sometimes forced to drop out of school to undertake responsibilities previously assumed by other adults (Deotti, Laura; Estruch, 2016). Previous studies indicate that, compared to their older counterparts, young farmers have more potential to improve farm competitiveness and achieve better social viability for rural communities. Moreover, young farmers can also promote a wider range of rural socio-economic activities, such as food safety, rural tourism, conservation of traditions and cultural heritage, awareness of the negative effects of farmland abandonment, and participation in local associations (Bryant and Gray, 2005; European Communities, 2012). Therefore, the renewal of farming generations has become an urgent need for the adjustment of the agricultural sector.

1.2.2 Decreasing involvement of young workforce in agriculture: factors, challenges and consequences

There are many factors that make agriculture unattractive to young and educated workforce. These consist of push factors such as the increasing scarcity of agricultural land, and pull factors such as more promising and higher income in the non-agricultural sectors. Moreover, from the cultural value system point of view, the majority of youth consider that working in non-agricultural sectors is more prestigious. They prefer going to the cities to work as construction labourers, merchants, or civil servants. This phenomenon occurs almost consistently in all regions of the world.

Despite its predominance in the agricultural structure, family farming¹ encounters several difficulties in remaining economically viable, such as expensive land cost, low farm efficiency and productivity, high input prices, lacking accessibility of credit or other financial resources,

¹ Family farming is synonymous with small, semi-subsistence farms. Indeed, family farming is the most common business model in small-scale agriculture. On the contrary, large incorporated farms account for only a small proportion of the global farm system. Given that the unique and substantial contribution of family farms to the production of food and public goods, as well as ensuring balanced rural development, the FAO has designated 2014 as the “*International Year of the Family Farm*” (Tropea, 2014).

weak bargaining power within the supply chain, fluctuating market prices and being particularly vulnerable to climate change (European Commission, 2012). A study in rural Ethiopia found that youth in rural south have limited access to agricultural land because of land scarcity and land market restrictions which forces the youth to abandon agriculture in search of other livelihoods. The study shows that only 9% of the rural youth plan to pursue agriculture as their livelihood (Bezu & Holden, 2014).

The abovementioned challenges can also be identified as the barriers for young people to enter into farming, especially the relatively scarce, as well as expensive land, and the limited access to credit. A large body of literature has shown that many young farmers are credit constrained; this demonstrates negative consequences for farm development (Swinnen and Gow, 1999; Davidova et al. 2013). Gaining accessibility to credit is widely acknowledged as a major challenge facing young farmers attempting to establish, expand, invest in, or modernize their businesses. Most current schemes targeting young farmers aim to encourage those who are under 40 years of age to choose a farming career, by providing financial support measure. Therefore, entry to farming other than through inheritance is difficult in family farming system. Essentially, agricultural work is regarded as a “3D job”: dirty, dangerous, and difficult; which is in contrast to white-collar job with higher income (Osawa, 2014). Thus it is difficult to recruit young people to enter into farming. Moreover, three main causes for new entrants to farming decision should be taken into consideration: farm productivity and profitability, volume of employment generated and the ability to earn a satisfactory livelihood (Regidor, 2012); these three factors may become major obstacles to running a small-scale holding.

The Common Agricultural Policy of the European Union pinpoints the challenges that have to be tackled by young farmers as economic in nature, such as food security and globalisation, a declining rate of productivity growth, price volatility, pressures on production costs due to high input prices and the deteriorating position of farmers in the food supply chain. Other challenges are environmental in nature, relating to resource efficiency, soil and water quality, and threats to habitats and biodiversity. Others still are territorial, especially where rural areas are faced with demographic, economic and social developments, including depopulation and relocation of businesses (European Commission, 2013).

The high rates of mobility and migration are an indicator that depicts this phenomenon: the scarcity of young farmers and the rapid ageing of the farmer population. In rural areas, households face labour and financial market constraints, and migration is a strategy to diversify income sources and cope with risks (WB, 2006a; Herrera and Sahn, 2013). In particular, rural to urban migration has become an emerging trend over the past few decades in low- and middle-income countries in Asia and Africa (IOM, 2015). The two Asian countries with the largest number of internal migrants are India and China. India had recorded about 191 million internal migrants by the 2001 Census (Abbas & Varma, 2014); and China has more than 220 million internal migrant workers (one sixth of its population) according to the 2010 census (IOM, 2015). It has been reported that internal migration is likely to increase at a faster rate than international migration, where the rural to urban migration stream accounts for the largest volume of migrants out of all the internal migration directions (Deshingkar, 2006). It was reported that in Vietnam by 2012 nearly half of all internal migrants were youth aged between 15 and 24 (GSO, 2012). In fact, many young people in rural areas are attracted to

urban areas to seek employment because of the higher average salary. It shows that the average salary of workers in urban areas is about 63 per cent higher than that of rural workers (ILO, 2011b). Distress migration is particularly acute among rural youth. For most of them, migration is not an informed and voluntary choice but the only perceived option for improving their employment and life prospects and meeting their particular aspirations and needs (Deotti, Laura; Estruch, 2016).

Violence, conflicts, and natural disasters exacerbated by climate change, are among the root causes of migration and forced displacement. However, many migrants are compelled to move because of socio-economic factors, including poverty, food insecurity, lack of employment opportunities, limited access to social protection, natural resource depletion and the adverse impacts of environmental degradation. High rates of unemployment and underemployment are among the root causes of distress out-migration from rural areas. Work in rural areas, and especially in the agricultural sector, is associated with low and insecure incomes, poor occupational safety and health conditions, gender inequality in pay and opportunities, and limited access to social protection (FAO, 2013). Young men and women in agriculture often lack access to land, financial services and community decision-making. The propensity to migrate is highest among young adults and decreases with age, as a result of the combined effect of cultural norms, traditions and economic opportunities (Bell and Muhidin, 2009; Bell and Charles-Edwards, 2014). In Ghana, Ackah and Medvedev (2010) found that the probability of being a migrant rises until a person turns 36 years old and then it begins to decrease.

The declining interest of young workforce to work in agriculture is not without consequences, particularly for the future sustainability of this sector. In the future, with the increasing number of population, the burden to agriculture will be much more difficult, particularly in fulfilling the increasing demand for food. Therefore, the role of the government in promoting the increase of food production and productivity becomes very challenging. For that reason, the interest of young people to become the next generation farmers must be fostered.

1.2.3 Young generation of farmers in Asia

Over the past decades in the Asian Region, there has been a considerable decrease in the number of young generation who were into farming in the region. By contrast, their outbound flow to urban cities has considerably increased in various Asian nations. Consequently, aged populations of over 65-year old are successively increasing in the agriculture sector (FFTC, 2014). In Japan, Korea and Taiwan, for instance, the ratio of the aged farmers to the total farm household population are 34.3%, 31.8% and 31.2% respectively in 2010. China follows suit and starts increasing the age-farmer's ratio due to its fast economic growth, and most of the remaining Asian countries seem to follow the same destiny as the preceding countries in the very near future.

There are a couple of serious bottlenecks that hamper the young generation's entry into farming; nearly 80 % of Asian farmers belong to the small-scale group. This has led to a lot of issues such as lots of financial/legal/economic constraints to compete with other sectors; serious constraint imposed on agricultural land use; buying and selling in agricultural land by

law, lack of technological innovation for increased competitiveness; old-fashioned management of farming and rural society (ibid).

Many attempts have been made to attract the young generation into farming. Many Asian countries have already tested a variety of stimulating packages to enhance young people's entry into farming such as a loan with lower interest rate and longer repayment period, pre-training and pre-educating for young farming candidates, free consulting after engaging in farming, providing welfare service and even salary compensation for a certain period of time. Some countries introduce a direct payment system for an early retirement of aged farmers. Although various stimulating countermeasures were taken, the shortage of young farmers becomes more serious year by year (FFTC, 2014).

Recently a number of free trade agreements (FTAs) and/or economic partnership agreements have been concluded bilaterally or multi-laterally in some Asian countries. Active entry of young generation into farming is a key factor to revitalize the Asian agriculture and rural areas which many consider to be under siege. Therefore it is a matter of urgency to understand the bottlenecks of hindering the entry of young generation into farming and seek viable and practical solutions to enhance their entry into agricultural pursuits. It is only a practical way for the agricultural sector to become sustainable and further develop.

1.2.4. Policy interventions to support young generation into farming

There are three possible entry channels for young farmers to set up a business: (a) family inheritance; (2) taking over from other retiring farmers (related to early retirement scheme); and (3) first installation of farming (for the beginning farmer or new entrant) (Jeonju, 2014). With the predominance of family farming in small-scale agriculture, the inheritance from an older family member is the most favourable and most feasible way among these channels to recruit young farmers (Sotte, 2003; Quendler, 2012; Regidor, 2012). Moreover, the early retirement scheme uses a subsidy measure designed to encourage older farmers to retire early, and is awarded when agricultural holdings are transferred to young entrants. Hence, the early retirement scheme is also a useful instrument to accelerate generational renewal outside the family farm. The last channel, from the beginning to entry farming, is particularly difficult for young people to involve in farming career. Accessing affordable land and capital plays a critical role for beginners to establish their farm. Furthermore, the high price and limited land market poses a significant barrier to new entrants and to expanding young farms.

With the increasing population, the demand for food also keeps increasing. To meet the food needs, the agricultural sector plays a very important role. The increase in agricultural production and productivity is a key factor in the success of a country in providing food for its population. This is where the role of the next generation of farmers is very essential. Having acknowledged the problem, many developed countries as well as developing countries have come up with various incentive schemes so that young and beginner farmers can start their business in agriculture easily.

1.2.3.1 European Union

Support for young people entering into farming has been at the centre of the common agricultural policy (CAP) in the EU since the 1980s. There are different young farmers scheme (YFS) which provides different financial measures for setting up young farmer. In the European Union, a young farmer is officially defined as someone who is less than 40, and who has started less than 5 years ago (Adamowicz and Szepelek, 2016). These measures can be classified into three groups:

- **Installation aid for young farmers:** (called Measure 112) provides access to maximum setting up subsidies for young farmers. Such subsidies have been available to young farmers in the form of special aid payments for their first installation of farming. In addition to age requirement (under 40 years), the eligibility for payment entitlements is usually subject to attaining a minimum level of education or participating in certain agricultural training course, as well as offering a business plan.
- **Early retirement scheme:** measures that encourage elderly farmers (aged between 55 and 64) to transfer their holdings to qualified young farmers by providing them with an annual fixed pension payment; for instance, be eligible for a pension of up to €15,000 a year for up to 10 years in Ireland (Caskie et al., 2002; Regidor, 2012). This measure ended in this form in 2013, because of criticisms about its efficiency. In France, this measure was replaced by a one-time subsidy.
- **Farming improvement scheme:** subsidy measures that provide special support for farmers to invest in farm modernization, particularly with regards to obtaining access to land. This measure will complement the installation aid for young farmers by subjecting eligibility to compliance with the business plan requirement.

In United Kingdom, the National Federation of Young Farmers Club in Coventry introduced a program that was running in Wales called the Young Entrants Support Scheme or YESS. The assistance package includes a grant payment for eligible capital expenditure when a young entrant (under 40) is setting-up for the first time (within the previous 12 months), and access to funded mentoring services from established farmers and/or professionals. To qualify applicants are required to submit a business strategy.

France is the country that by far spends the largest budget in supporting young farmers in the European Union (Gregory, 2010). In 2008, France spent approximately 160 million euro in the implementation of Measure 112, which benefitted 7,000 young farmers Davis et al., 2013)

1.2.3.2 United States

In the United States, public policies generally use the concept of “beginning farmer” rather than the one of young farmer. A beginning farmer is considered those who have started farming less than 10 years ago (with no definition of age limit). The Farm Service Agency of the US Department of Agriculture proposes long-term loans to farmers (Dodson and Koenig, 2009; Kauffman, 2013). If the farmer and the farm project meet some criteria, this agency can provide up to 100% of the loan required to purchase land (up to 200,000\$).

Several states of the United States implement complementary policies. In Iowa, farmers

who sign a lease with beginning farmers can save on taxes (Freedgood and Dempsey, 2014). Tax incentives will be higher for farmers that sign a crop-share agreement (according to which they invest and share risks with the beginning farmers), compared to a fixed rental fee, which entails that the lessee bears alone the risks.

In the states of Vermont and Massachusetts, public and private funds buy land from farmers and sell it again on the market. They sell land with the obligation that afterwards the land should be sold at its agricultural value. The funds decide this agricultural value, considering that it is the amount farmers would be ready to pay, when competing with other farmers, to own the land for the purpose of operating a profitable farm business. The funds have the right to prior purchase of the land if they consider that the land will not be adequately used after purchase. This process aims to lower the price of agricultural land so that beginning farmers can access them (Plotkin, 2015). Thus this process is similar to the French SAFERs system, with the difference that in the US farmers selling land to these funds do it on a voluntary basis.

1.2.3.3 Australia

Victoria-Australia has a Young Farmer Finance Scheme through Rural Finance that is available to people 40 years of age or under and provides three loan facilities with an interest rate concession. Which includes:

- *Purchase stock and equipment*: These loans have a term of up to eight years with two percent concession off Rural Finance's commercial interest rate for the first three years and then commercial rates apply for the rest of the loan term.
- *Purchase land*: These loans have a term of 15 years with two percent concession off Rural Finance's commercial interest rate for the first five years and then commercial rates apply for the rest of the loan.
- *One to grow*: This loan is aimed at young farmers who are looking to purchase their first block of land as a first step towards owning and operating a commercial farm. These loans have a term of up to 12 years with a one percent discount off Rural Finance's commercial interest rate for five years and then commercial rates apply for the rest of the loan (Murphy, 2012).

1.2.3.4 Canada

Canada includes a number of different assistance measures on financing young farmers. It included assistance to beginning farmers, loan guarantees, innovative lending products, interest rate protection and interest rate reduction for education and training. Financial assistance will take the form of a grant payment (made in arrears upon successful completion of an approved project) for an investment made in setting up as head of holding for the first time. The grant is for 50 percent of agreed eligible expenditure or maximum grant of £15,000 (Murphy, 2012).

In Alberta, Canada, the Agriculture Financial Services Corporation (AFSC) does not take into account the age of the loan applicant but uses a net worth calculation to determine if the applicant qualifies for an interest rate concession. The Beginning Farmer Incentive offers an interest rate concession of 1.5 percent for the first five years of a loan and is available to any

individual with a net worth of \$500,000 or less at the time of application. A couple applying jointly for the loan could receive the Beginning Farmer Incentive on loans up to \$1 million provided both have an individual net worth of \$500,000 or less at the time of application (Murphy, 2012).

Manitoba Agricultural Services Corporation (MASC), Canada has an interest rate rebate for farmers less than 39 years of age. The Young Farmer Rebate which is an annual rebate of 2 percent on the first \$150,000 of principal of a loan for each of the first five years which is \$3000 annually and \$15,000 total after five years. The applicant also has the choice of a 90 percent financing option that reduces the deposit required or five years of interest-only payments to assist with cash flow. These loans have a maximum limit of \$2 million (Murphy, 2012).

Table 1: Policy interventions to support young generation into farming

No	Country	Programs/ Incentives	Targeted Object
1.	European ¹	New entrance scheme for farmer : – Working capital installation grant – Interest subsidy on a farm	Farmers under 35 years
2.	Victoria – Australia ²	Three loan facilities with an interest rate concession 1. Purchase stock & equipment 2. Purchase land 3. One to grow.	People 40 years of age or under
3.	France ²	- lump sum or subsidized loan to help young farmer to buy the land - a reduction in taxes over five years	Young farmers (under 40)
4.	United Kingdom ²	Young Entrants Support Scheme (YESS): – A one-off grant payment for a young entrant as head of holding for the first time or	People under 40

Source: ¹Davis, et.al, 2013; ² Murphy, 2012; ³ Kauffman , 2013; ⁴ National Young Farmers Coalition, 2013; ⁵ Jieying Bi, 2014

		as head of holding for the first time within the previous 12 months. – Access to funded mentoring services from established farmers and/or professionals	
5.	Canada ²	– Loan guarantees, innovative lending products, interest rate protection and interest rate reduction for education and training. – Farm Credit Canada (FCC) Loan up to \$500,000 at a variable interest rate of cost of funds plus 0.5%.	-Young farmer and Beginning farmer -People under 40 years of age
6.	Alberta-Canada ²	The Agriculture Financial Services Corporation (AFSC)'s programs: – Interest rate concession of 1.5% for the first five years of a loan	– Beginning farmer – Available to any individual with a net worth of \$500,000 or less at the time of application.
7.	Manitoba-Canada ²	Manitoba Agricultural Services Corporation (MASC) – Annual rebate of 2% on the first \$150,000 of principal of a loan for each of the first 5 years which is \$3000 annually and \$15,000 total after 5 years. – 90% financing option that reduces the deposit required or five years of interest-only payments to assist with cash flow	– Young farmers less than 39 years of age
8.	USA ^{2, 3, 4}	1. United State Department of Agriculture (USDA) Farm Service Agency (FSA): “Lender of First Opportunity” to help farmers graduate to commercial credit - Guaranteed Loan Program - Direct Loan Program - Land Contract Guarantee Program 2.Iowa Agricultural Development Authority (IADA) - Beginning Farmer Loan Program (BFLP) - Loan Participation Program (LPP), - Beginning Farmer Tax Credit Program (BFTC). 3. Farm Credit System ³ : -Provide credit at competitive interest rates -Lower loan fees, or loan covenants for owning land and leasing equipment	Young Farmer under 35 years of age, beginning farmer and socially disadvantaged farmers Beginning farmers are defined as those having 10 years or less of experience – Young farmers as 35 years of age or younger – Beginning farmers
9.	China ⁴	Ministry of Agriculture: - loans and tax benefits	Young Farmer

Source: ¹Davis, et.al, 2013; ² Murphy, 2012; ³ Kauffman , 2013; ⁴ National Young Farmers Coalition, 2013; ⁵ Jieying Bi, 2014

1.2.3.5 Other countries

In Korea, as part of the Farm Successor Fostering Program, young farmers can get 10-year loans (Ma, 2014). In Japan, a scheme provides pensions to farmers that retire between 60 and 65 and farmers get an additional amount if they transfer their farms to a successor (Uchiyama, 2014). This subsidy increases if the land is transferred to a successor less than 35 years old. Moreover, in order to prevent the fractioning of land when a farm succession takes place, if the farm is given to only one heir, the latter is exempted from heritage taxes (Uchiyama and Whitehead, 2012).

In several other countries, groups of young farmers are selected for support in the frame of pilot programs: they receive training and loans to start their activities. This takes place for instance in Taiwan (Kuo and Coa, 2014) and Botswana (Williams, 2012). In Tunisia, a public agency supports the agricultural projects of young people who obtained a diploma in agriculture. The agency provides long-term loans, accompanies the young farmers in the design of business plans and visits the farms during the first years to provide support (Tunisian Agency for the Promotion of Agricultural Investments, 2016). Several states of Canada and Australia also provide specific loans to young farmers (Murphy, 2012). Among all previously-mentioned countries, those of the European Union have implemented the widest – and also most costly – range of policies to support young and

2.2 Rural youth and the agricultural sector in Thailand

2.2.1 Rural population trends in Thailand

Thailand's population is mostly rural. It is concentrated in the rice growing areas of the central, northeastern, and northern regions. Its urban population—principally in greater Bangkok—was 45.7 percent of the total population in 2010 according to National Economic and Social Development Board (NESDB). The dominant settlement pattern in Thailand remains the rural village, where the primary occupation is wet-rice cultivation. Migration to urban areas has increased significantly since the mid-20th century, but the majority of the country's people still consider their principal place of residence to be the village, even when they live and work for extended periods in urban environments (Achana Vutthisomboon, 1998). Thailand is in the midst of transforming itself from a predominantly rural country to an increasingly urban one. In as little as ten years, the country has shifted from 36 percent urban to almost 50 percent urban, which means that half of the population now lives in cities and urban areas (ibid). Urbanization in Thailand, as in many other developing countries, has proceeded rapidly since World War II, but growth has been highly uneven. The Greater Bangkok Metropolitan Area, which generally includes Bangkok proper and its twin city, Thonburi, and the contiguous cities of Samut Prakan to the southeast and Nonthaburi to the north, remains the dominant and major urban centre in the country.

Thailand's total population stands at over 69 million (Worldometers, 2018). Thailand is an aging society with the lowest population growth rate (0.3% per annum) and the second lowest total fertility rate (1.5) in Southeast Asia (UNESCAP 2016). More than half of the Thai population (50.5%) live in urban areas (UNESCAP, 2016). Internal migrants in Thailand

constitute a substantial population: According to the 2010 Thailand Population and Housing Census, 8.3% of the Thai population had migrated internally during the previous five years, and overall 21.8% of the population did not live in their home town² (National Statistical Office 2010b). According to internal migration in Thailand, from 2005 to 2010 30.6% of migrants moved within a province, while 61.7% crossed provincial lines (National Statistical Office 2010). Long-term migration is mainly rural-urban, while short-term migration is mostly urban-rural and, in a slightly smaller proportion, rural-rural. Migration also varies seasonally, moving from the North and Northeast regions towards the Bangkok Metropolis and the Central region during the dry season, and in the reverse direction during the wet season (Guest et al. 1994). Some evidence suggests that these trends still hold today: in the 2016 Migration Survey 41.9% of migrants indicated they had moved from Central to Northeast Thailand, while 30.2% had moved in the reverse direction, from Northeast to Central Thailand (National Statistical Office 2016).

45.1% of Thailand's internal migrants moved between the ages of 20 and 29 (National Statistical Office, 2010a). Among migrants who moved in 2016, 54.5% of were aged 25-29, and 30.1% 15-14 (National Statistical Office 2016). Both male and female migrants consider employment-related purposes as the main motivation for migration (46.8%). However, men are more likely to migrate to seek work or because of a job assignment and women to study or as dependents (ADB 2012). The 2016 survey indicates that 34.7% of migrants moved for occupational reasons, 33.2% to follow or re-join family, 17.5% to change residence, and 6.4% for education.

During the early stage of economic development in the 1960s and 1970s, agriculture contributed to the growth of industrialization. The policies were biased against the agricultural sector, for while they protected and promoted the manufacturing sector, they imposed heavy taxes on agricultural exports. A study by Siamwalla and Setboonsamg (1989) estimated that from 1963 to 1984 there was a net transfer of 30,000 million baht from the agricultural sector through taxation imposed on rice exports the price bias against the agricultural sector plus the structure of investment incentives directed resources away from the agricultural sector. This have significantly benefited the urban consumers at the expense of rice growers, increasing income inequalities and leading to the massive migration from the rural area to urban areas, Bangkok in particular (Achana Vutthisomboon, 1998). The studies on rural-urban migration in Thailand and elsewhere consistently indicate that social and economic disparities encourage migration from areas of low to areas of high production (Tirasawat, 1985:494). It has also been claimed that wide urban-rural income differentials stands out to be an important determinant of rural-urban migration and responsible for the existing pattern and trend of migration and urbanization in Thailand (ESCAP, 1993).

Rural-urban migration has played a crucial role in the growth of urban areas in Thailand. An examination of Thailand population census data has demonstrated that rural-urban migration has become more prominent as the development process accelerated (Achana

² The population census only records moves of at least six months' duration, excluding high levels of seasonal migration. These numbers are hence likely to be significantly underreport the actual number of internal migrants. To provide a point of comparison, the National Migration Survey of 1992 found that 22.0% of the population had moved elsewhere for one month or more in the past five years (Chamrathirong et al. 1995)

Vutthisomboon, 1998). Regional and rural-urban inequalities have continued and may continue to stimulate migration to already overburdened areas (Goldstein and Goldstein, 1986). Since migrants are predominantly young and better educated adults, there is a need to assess the determinants that push people away from rural areas to urban centers seeking for a better life, and enhance rural livelihood and productivity so agriculture remains a competitive sector. The lack of engagement of youth on income-generating rural activities is depicted on the high migration rates to urban areas. Migration is a result of uneven development caused by political, social, and economic policies favoring urban areas (Achana Vutthisomboon, 1998). Thus, it should not be seen as a problem but as a response to inequalities since the process provides a means for rural populations to widen their sources of family support. Therefore, more heed should be paid to the rural conditions and youth needs to tackle inequality and avoiding rural areas and agriculture becoming an obsolete sector in Thailand.

2.2.2 Agricultural sector in Thailand

In the face of population growth, the world's per capita food consumption is also growing, requiring 60 percent more food by 2050 (Onanong Tapanapunnitikul and Siriluk Prasunpangsri, 2014). Thailand could be referred to as the “kitchen” of the world, since it is one of the world's leading food exporters. The major export commodities are cassava, sugar, fish products, and rice. However, the labour force in the agriculture sector has decreased gradually. Agriculture has long been an important industry for the development of Thailand and has been viewed as the “backbone” of the country. Over the past five decades, the agricultural sector used to be the key engine of economic growth in Thailand. In 1960, the share of agriculture in GDP was higher than the industrial sector with 32.1 and 22.1 percent, respectively (Suwannarat, 2014). In 1961, the value of agriculture sector was about USD 781 million while the national GDP was USD 2,562 million (Ministry of Agriculture, 2011a). However, it decreased dramatically to 8.3 percent in 2013 whereas Thailand's labour force working in this sector is relatively high with 39.1 percent. Until now, Thailand has encountered difficulties that the number of labour force in agriculture sector has declined gradually.

Table 2: Thailand's top agricultural export commodities and its world ranking

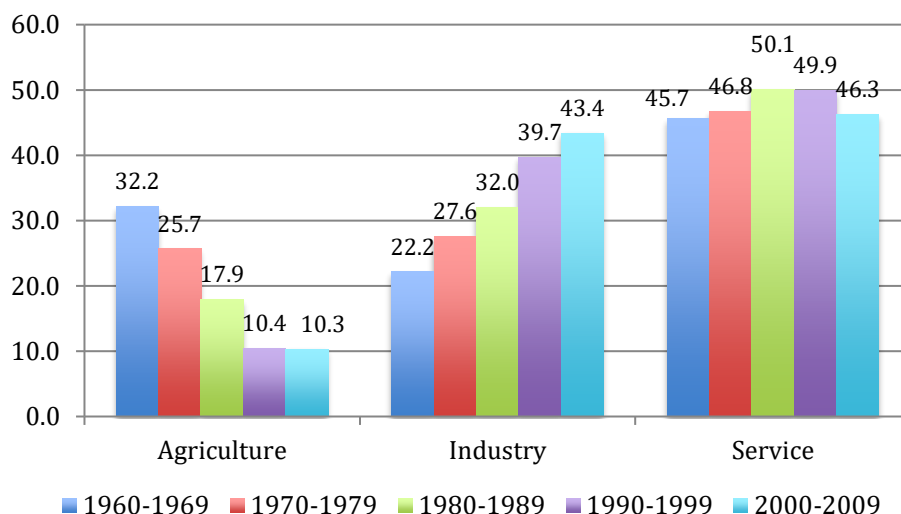
Commodities	World ranking
Sugar	Nº 1
Casava	Nº 2
Fish products	Nº 3
Rice and grains	Nº 6

Source: Suwannarat, 2014 (The Board of Investment of Thailand, 2013)

Over the past five decades, the agricultural sector was the primary mechanism of economic growth in Thailand. In 1960, the agricultural value-share to GDP was higher than the industrial sector with 32.1 and 22.1 percent, respectively. The agricultural share in GDP has declined from 32.19 percent in 1960 to 10.33 percent in 2009. In contrast with the industrial value-share in GDP, it has increased dramatically from 22.15 percent in 1960 to 43.40 percent

in 2009. Therefore the agricultural share in GDP was smaller than industrial sector with 10.33 percent and 43.40 percent, respectively (Figure 2).

Figure 3. Sectoral Value-Added in Thailand (%GDP)



Source: Suwannarat, 2014

In 2013, the agriculture sector contributed only 8.3 percent to the GDP (Table 3). Contrary to the macroeconomics, income from agriculture sector was distributed to most of Thai population, since 39.1 percent of Thailand's labour force is engaged in this sector (Bank of Thailand, 2014).

Table 3. Structure of the Economy in Thailand, 2013

Sector	GDP by sector (%)	Labour force by sector
Manufacturing	38.1	13.8
Wholesale and Retail Trade	13.4	15.3
Transport, storage and communication	10.2	2.7
Agriculture	8.3	39.1
Construction and mining	4.3	6.6
Other sectors*	25.7	22.5

* Financial, education, hotels and restaurants, etc

Source: Bank of Thailand, 2014

2.2.3 The role of agriculture in Thailand: Agricultural productivity and Poverty

Agriculture used to be the engine of Thailand's industrial growth. In the 1960s and 1970s, agriculture facilitated industrialization by supplying cheap food and labour, generating tax revenues and foreign exchange, and providing a market for industrial output (Medhi 1995). Since the 1980s, however, industrial growth has been self-sustained, driving Thai agriculture from "engine of growth" into a declining status. As of 1995, agriculture's share of GDP and

total exports was 10 percent and 17 percent, respectively; the corresponding shares of industry were 29 percent and 82 percent, respectively (Poapongsakorn, Ruhs, & Tangjitwisuth, 1998). The simultaneous decline of agriculture and rise of industry, and the associated shift of comparative advantage from the former to the latter, are well-established facts of economic development. Thailand's industrialization has always been associated with continuously widening gaps of inter-sectoral productivity and wage levels (Poapongsakorn et al., 1998) leading to inequality between urban and rural areas. Furthermore, poverty is increasingly concentrated in rural areas. Although trickle-down effects have reduced the country's poverty incidence most of Thailand's poor lived in rural areas (World Bank 1997); NESDB (2008) indicated that households in agricultural sector are among Thai poorest. Their livings depend solely on farm and non-farm performances (Timmer, 2003). Low agricultural production would directly reduce their income and standard of living.

Additionally, Thai agriculture is well known as a major agricultural exporter in the world with the rank of fifteenth; thereby agriculture turns to be a key source of export earning and rural income (Suphannachart and Warr, 2010). Agriculture also plays a crucial role of shock absorber for unemployed labours in non-agricultural sectors during adverse circumstances, such as Asian financial crisis in 1997 and sub-prime crisis in 2008-2009 (Suwannarat, 2014). Unemployed labours from non-agricultural sector went back to agriculture as the second-best solution at their hometown. Furthermore, Thai agriculture suits for the future source of income and growth if Thailand could be able to maintain a net food supplier during an anxiety of food security around the world (FAO, 2008). The number of previous studies, such as Suphannachart and Warr, (2010), Tinakorn and Sussangkarn (1998), Brimble (1987), Tinakorn (2001), Timmer (2003), and Warr (2006), recognizes the contribution of agricultural productivity to the economic growth and the economic growth to reduce poverty in many countries including Thailand.

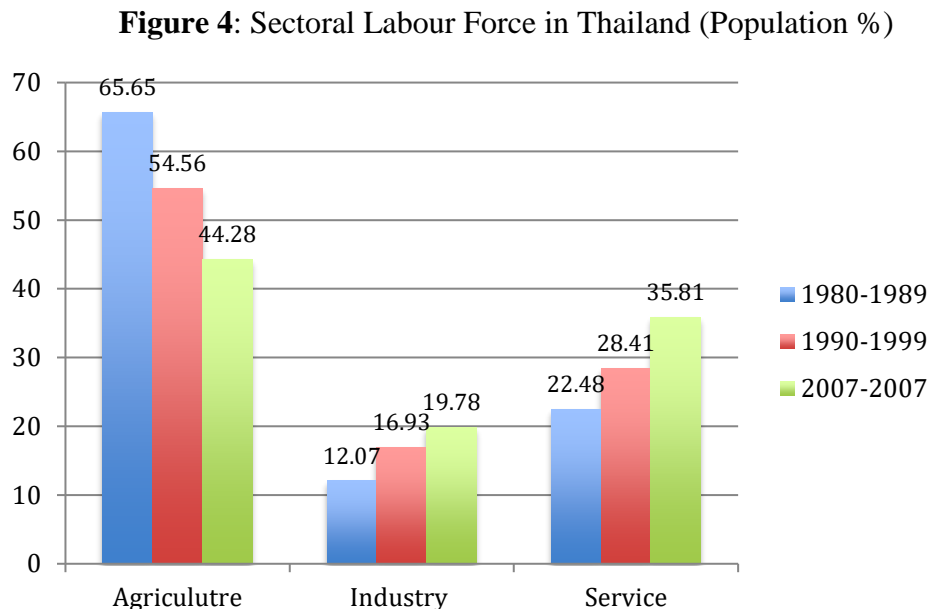
Even though Thai agricultural sector's economic clout is dwindling, most of Thai's labour force still belongs to this sector (44.28% in 2007), which may have an overall impact on the economy of the country and poverty of its peasants.

2.2.4 Labour force and the agricultural sector: Rural youth in Thailand

Agricultural sector is still one of the most important economic sectors in Thailand, since it employs most of its population. In Thailand the main goal of national development in 1980s was given priorities to industries and other sectors rather than the development of agriculture for the last few decades. As a result, the industries and services were encouraged to grow up and required a high number of labour, hence most of the labour force especially young workers shifted to work from rural areas to industries and services. Consequently, the labour force in agriculture shrunk gradually. Therefore the number of Thai farmers has been continuously declining along with agricultural productivity, albeit the demand of labour in agriculture is still high (ALRO, 2009).

According to the National Statistical Office (2014), the amount of Thai farmer has decreased gradually since last three decades; decreasing from 65.65 percent in 1980s to 44.28 percent in 2000 (Figure 4). Most of people leaving the farm move to the service sector and some to the industrial sector. Consequently, increasing the labour force in industrial sector

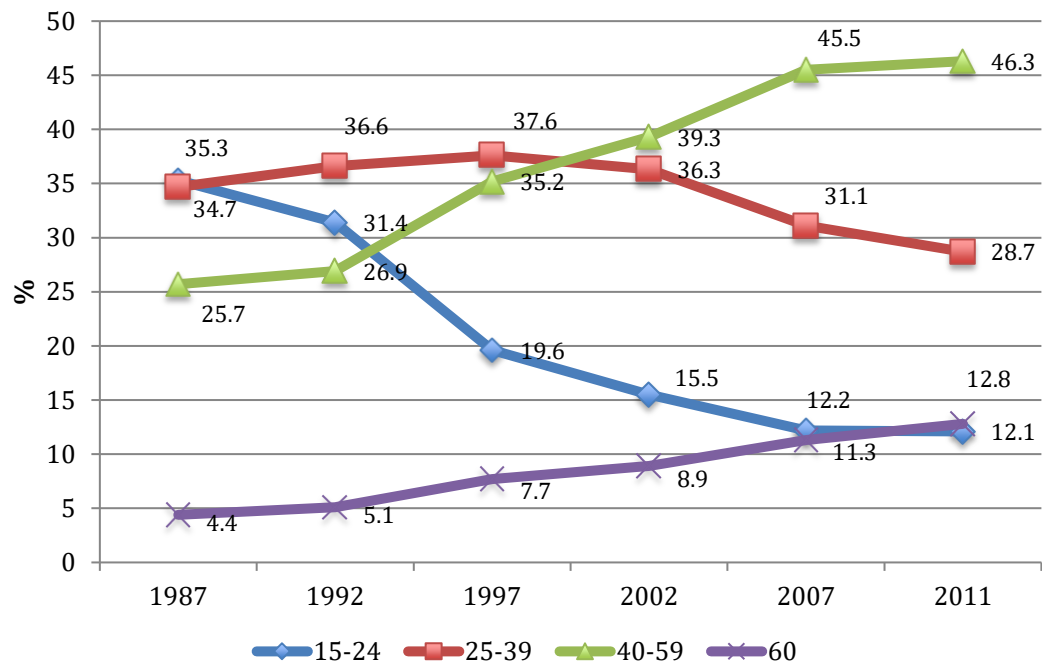
from 12.07 percent and increasing the labour force in service sector from 22.48 to 35.81 percent (Figure 4), (Suwannarat, 2014). Nevertheless, figure 4 shows that the majority of labour force still belongs to agricultural sector even an employment is in the decreasing trend.



Source: Suwannarat, 2014

In the 1990s, 19 million people (63.4 percent of total labour) worked in the agricultural sector; but in 2011 only 16.1 million people (41.1 percent) were left working in farms (Onanong Tapanapunnitikul and Siriluk Prasunpangsri, 2014). About three million people left the farm, most of them moved to the service sector and some to production sector (Figure 4). Significantly, almost three million people have left farming within last 20 years. Unfortunately, young generations left the old farmers behind (ibid). Specifically, the number of 15-24 years old farmers has decreased dramatically from 35.3 percent to 12.1 percent since 1987 to 2011. In addition, the number of the older farmers has decreased from 34.7 percent to 28.7 percent. Contrasting with the proportion of old farmers, the number has increased gradually from 4.4 percent to 12.4 percent. At present, the average age of Thai farmers has increased steadily at 51 years old (Thailand Research Fund, 2010).

Figure 5: Labour Force of the Agricultural Sector in Thailand



Source: Thailand Research Fund, 2010

Hence, following this trend, farming has become in many areas of Thailand an activity of elder people. Rigg et al. (Rigg S. a., 2012) studied a village in the North East region and found that, over a period of 25 years, farmers' average age had increased from 35 to 55 years. At household level, Nilsen (2014) studied a village in the North East region and identified a wide gap in the 20-40-age interval of the age pyramid: all young inhabitants had moved to find a job in the cities. Moreover, agriculture has become only one component among other sources of income for rural inhabitants. Formoso (2016) also found this generational gap in two Villages of Northeast Thailand. The rate of people aged of 65 and over has increased from 3,5 percent in 1984 to 12,9 percent in 2014 in Village 1 (Ban Amphawan), and from 4,7 to 14,6 percent in Village 2 (Ban Han)(Formoso, 2016). At the same time, the proportion of the population under the age of 20 has significantly decreased in both villages. In the case of Ban Amphawan, people under 20 counted for 54,7 percent of the total population in 1969, 50,5 percent in 1984, and only 24,4 percent in 2014. In Ban Han, the figures are about the same: people under 20 counted for 56,1 percent of the population in 1969, 43,5 percent in 1984, and 24,5 percent in 2014 (Formoso, 2016).

Figure 6 shows the fast evolution of the position of Thailand between 1993 and 2013. In a village in the North East region of Thailand, farmers were in 2008, 55 years old on average while they had been 36 years old on average 25 years ago (Rigg et al. 2012).

Figure 6: Farmer's age distribution in different countries



Source: Nicolas Faysse, 2017

According to Onanong Tapanapunnitikul and Siriluk Prasunpangsri (2014) the number of farmers leaving their land is increasing gradually due to the following reasons: attitude (negative attitude towards farming), poverty (debt, have no land of their own), economics (low income, unreliable agricultural product price), hard labour in farming, and the conversion of agricultural lands to industrialize areas.

In terms of attitude fundamentally, the study's result indicates that most of young people who grew up in a farmer family do not want to become a farmer as the main income-generating activity due to the low profitability. In their perspective, a rice farmer is a career that that requires hard labour in the field all day long but with low returns, consequently, considering farming as a not worthy profession. Furthermore, being a rice farmer indicates lower social status in society. As a result, they discourage their children from farming. Therefore, when their children face career choices, non-agricultural options are highly encouraged by the parents. According to the Knowledge Network Institute of Thailand (2014), only 8.8 percent of students in the university registrar majored in the agriculture program. In addition, farm work is perceived as hard labour work with unequal payment in Thailand. This coincides with Rigg's finding on a study research carried out in Northeast Thailand, where after a following 77 households throughout 25 years he concludes that there is a shift on cultural perceptions. Cultural preferences had shifted, especially among the young, such that farming is not infrequently actively avoided as a hard, low status, even demeaning activity. This is not just a view held by the young; it was also recognized by the older generations. Parents generally supported their children in their efforts to avoid farm work (Rigg et al., 2012).

Another indication comes from uncertainty of revenue. Cost of operation is high, in contrast with the low/unstable prices of products. These issues are caused by seasonality

and bad weather, which result to large and unpredictable losses (Onanong Tapanapunnitikul and Siriluk Prasunpangsri, 2014) (Figures 7a and 7b). Moreover, Rigg points out the shift in occupation. Work had become generationally differentiated; household income sources had diversified into a range of non-farm activities; the geographical location of work for an increasing number of household members had become spatially far more dispersed (Rigg et al., 2012). A significant part of the reason for the changing spatial pattern of work and livelihoods in the two districts of Northeast Thailand was because farming alone could no longer deliver an adequate income and therefore standard of living for the large majority of households. Pluriactivity emerged, in part, therefore as a “survival” strategy in the context of widening and intensifying needs set against the backdrop of a small farm sector than was unable to meet these needs.

Figure 7a: Total Production cost of industrial crops

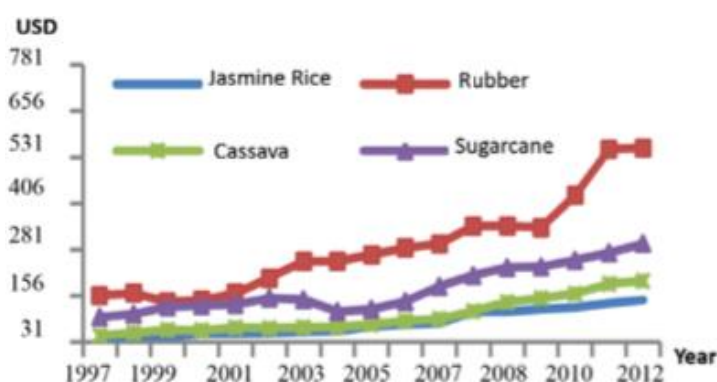
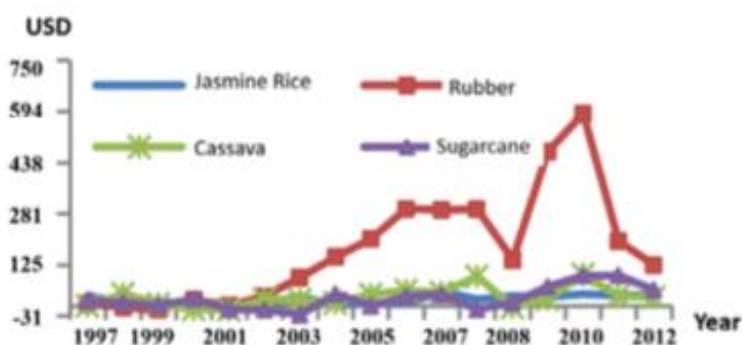


Figure 7b: Net income of industrial crops



Source: Onanong Tapanapunnitikul and Siriluk Prasunpangsri, 2014

According to the Office of Agricultural Economics (2011), 29 percent of farmer household gained the average income below the poverty line (USD 592 per year). In 2011, the national Bureau of Statistics announced that two out of three households of farmer had debt about USD 4,388 (Nuansoi and Penkleng, 2012). The low income and the debt caused the farmer and their descendants to lose their interest in working on their farmland and move to another labour sector, hence, 19.6 percent of Thai farmers lost their farmlands.

Formoso (2016) also argues that subsistence cultivation has become a modest component of the rural households' economy, and non-agricultural incomes are now more significant than farming for a great many rural households. He concludes that while in 1969 and 1984 farming was the main occupation of more than 80 percent of the labour force in the two villages under research in Northeast Thailand, the imbalance between farm and off-farm activities has progressively evolved during the last three decades to the point that in 2014 only 37,5 percent of the workers of Village 1, and 60 percent of Village 2 declare farming as their main activity. More significantly, in 2014, 87,5 percent of the households of Village 1 and 65,4 percent of those of Village draw the main part of their income from off-farm activities or money sent by relatives. In both villages, off-farm activities are far more diversified today than in the 1980s. They include government employment and positions within the sub-district administration, but also clerical works, jobs as driver, gardener, watchman and cleaner. They are however, for an increasing part of them, becoming sideline farmers.

Furthermore, Formoso (2016) concludes the decline of agriculture in the two villages correlates with an increasing pressure on land. Landless households were a marginal phenomenon in 1984 (they accounted for 6,5 percent in Village 1 (Ban Amphawan) and 7,2 percent in Village 2 (Ban Han)). They now reach significant proportions in the two villages. In 2014, forty households in Village 1 (Ban Amphawan) (21,7 percent) and thirty-four in Village 2 (Ban Han) (12,7 percent) are not involved in farming, partly because they have no more land of their own. Rigg (2012) also pinpoints the problem of decreasing land holdings. Instead of the amalgamation of farm plots into large holdings, there has been a proliferation with the number of small holdings expanding from 1.7 million in 1975 to 2.7 million by 2005 (Rigg et al., 2012). Set against a land frontier reached in the mid-1980s, this has led to a decline in the average size of farms from 4.5 to less than 3.4 hectares over the same period. A similar process can be seen in the two study villages: in large part, land has not been bought or sold but transferred between the generations, leading to a decline in average land holdings from 3.2 to 1.9 ha from 1982–83 to 2008.

One of key drivers of the decrease on landholding's size is the uncertainty in securing job outside agriculture. This could be explained with the migration process, which differs to the one happening in Europe during the XXth Century. In Europe, from 1950s onwards, many farmers sold their land and went to live permanently in urban areas. Thus, the remaining farms became increasingly large and thus could implement changes to increase labour productivity and the overall farm income. However, In Thailand, many rural families do not sell their land and remain cultivating rice, albeit in an extensive and labour-extensive way. This is due to an emotional link that rural inhabitants have with land and the fact that farming represents a form a security asset in a context where jobs in the cities are informal and unstable. In particular, many workers in urban areas were laid off during the 1997 crisis and more recently during the 2011 floods in Bangkok (Rigg J. S., 2015). Another reason is that land cost is much too high for those (young or middle aged farmers) that would have the drive to expand theirs farming area. All these factors lead to not to an evolution towards highly mechanized farming in large areas, but towards *low intensity farming*.

Table 4. Summarize of Cases Study of the decreasing involvement of young workforce in agriculture.

Author	Year	Findings on the decreasing involvement of young people in farming and aging population in rural areas	Suggestions/Conclusion
J. Rigg, A. Salamanca, M.Parnwell	2012	<p>Following 77 households over 25 years (1980-2004), the paper traces agrarian change in two settlements in Northeast Thailand. The study depicts the geratrification of farming, finding that, over a period of 25 years, farmers' average age had increased from 35 to 55 years. Among those aged 45 or less, the majority work outside the village. There was an important shift in occupation and delocalization of livelihoods from rural areas mainly due to a shift on cultural preferences (regarded as hard and delivering low returns), decrease on landholdings and the positive impact of migration on rural dwellers. In 1980 84% of economically active households were primarily involved in farming. By 2008 only 52% of working age villagers were involved in farming.</p>	<p>The study suggests that rural settlements are under pressure, changing on its structure, functioning and constitution. It also illuminates the challenges involved in tracking the turbulence of such changes which cannot be often revealed from government statistics. People may increasingly move from their rural villages to build urban lives and undertake urban work, but one would not always know it from the data. Data on residency and employment are not structured in such a way that they can pick up the nuances of everyday lives and living where households are spatially divided and employment cuts across sectors and spaces. Policy interventions need to acknowledge the mixed nature of rural living, the split personality of households, the hybrid identities that many rural people embody, the mobility of much of the rural population, and the diversity of activities that occur in the countryside.</p>
O. Tapanapunnitikul, S.Prasunpangsri	2014	<p>In the 1990s in Thailand, 19 million people (63.4% of total labour) work in agricultural sector; but in 2011 only 16.1 million people (41.1%). Specifically, the number of 15-24 years old farmers has decreased dramatically from 35.3% to 12.1% since 1987 to 2011. The proportion of old farmers, the number has increased gradually from 4.4% to 12.4%. At present, the average age of Thai farmers has increased steadily at 51 years old. The number of farmers leaving their land is increasing gradually due to the following reasons: attitude (negative attitude towards farming), poverty (debt, have no land of their own), economics (low income, unreliable agricultural product price, uncertainty of revenue, cost of operation), hard labour in farming, and the conversion of agricultural lands to industrialize areas.</p>	<p>The author suggests that understanding the reasons why farmers have abandoned their farmland is vital; however, it also suggests a national level of collaborative strategy is needed to push the agenda further, which Thailand is already targeting though national policies and programs. This is not only to stimulate the collaboration at national, regional, and local levels but also to engage international players</p>

Suwannarat	2014	<p>After 1980 Thai's economic growth was mainly focused on the industrial and service sector, hence most of the labour force especially young workers shifted to work from rural areas to industries and the services 'sector. Consequently, the labour force in agriculture shrunk gradually. Even though agriculture's share to GDP has dwindled (10.33% in 2009; in contrast with the industrial sector 43.40%), it still employs most of Thai population (44.28% in 2014). About three million people left the farm, most of them moved to the service sector and some to production sector. Specifically, the number of 15-24 years old farmers has decreased dramatically from 35.3% to 12.1% since 1987 to 2011</p>	<p>More than half of poor belong to agricultural sector, thus enhancing agricultural productivity might be one of many solutions to aid escaping from poverty.</p>
B. Formoso	2016	<p>The study found a generational gap in two Villages of Northeast Thailand. The rate of people aged of 65 and over has increased from 3,5% in 1984 to 12,9% in 2014 in Village 1, and from 4,7% to 14,6% in Village 2. The proportion of the population under the age of 20 has decreased in both villages. In Village 1, people under 20 counted for 54,7% of the total population (1969), 50,5% (1984), and 24,4% (2014). In village 2, people under 20 counted for 56,1% of the population (1969), 43,5% (1984), and 24,5% (2014). The author argues that non-agricultural incomes are now more significant. While in 1969 and 1984 farming was the main occupation of more than 80 percent, it has decreased to 37.5% and 60% in both villages. One of the main reasons of the decline on agriculture correlates with an increasing pressure on land (landless households), and the modest returns in the rice sector.</p>	<p>The study concludes that villagers are still peasants but becoming side-line farmers. A substantial proportion of their income is now earned off-farm, from private sector and government employment.</p> <p>The challenge remains to avoid subsistence disruption whether caused by climatic hazards, market prices' fluctuations, or over indebtedness. Peasants in Thailand not only confront economic disparity with urbanites, but also from one community to another within the same province, and within the villages themselves. A comprehensive appraisal of improvements in rural standards of living implies to take simultaneously into account economic and social aspects.</p>

Peasants in Thailand not only confront economic disparity with urbanites, but also from one community to another within the same province, and within the villages themselves (Formoso, 2016)

2.2.5 Policy related projects in Thailand that encourage the young generation into farming: The roles of the Public and the Private Sectors, and Universities

Agriculture sector has long served as the critical instrument of culture and economy in Thailand. Traditional agriculture has suffered from declining labour force, and consequently it has decreased its contribution to the national GDP as shown above, thus Thailand face challenges to revitalize young professional farmers and contribute to their installation in agriculture. Arguably, there are several sources of evidence that show the public and private sectors, and universities in fostering a joint force to encourage the young generation to go back into farming in Thailand. Public and private sectors diagnosed the shortage of farmers which would cause problems on food safety, decrease on production, profitability, export situation and so on. Thus, public and private sector especially financial institutes have established several projects to encourage the society to be aware of and to cooperate for creating urgently the new generation of farmers. Regarding strategy, there are a few ways in relation to promoting the youth, new generations, and skilled labour to engage in agriculture. (Onanong Tapanapunnitikul and Siriluk Prasunpangsri, 2014).

In terms of the public sector, it can be seen that the government has an intention to develop projects in the long-term. An example is the project “New Farmer Development Project” established by the Agricultural Land Reform Office (ALRO) under the Ministry of Agriculture and Cooperatives. ALRO gives opportunities to new farmers to access land and financial resources. Anyone could access this program, with no requirement of land holding. Farmers who wish to join the program must be over 20 years old. Participants have to attend a 6-month training. ALRO will provide them with 4.2 rai of land, and will follow up their activity in order to ensure productivity. After 2 years of monitoring, participants will have the option to rent or buy the land at a lower price.

And the “Young Smart Farmer Program”, promoted by the Agriculture Extension Office and established in 2014. This program is a Thailand Ministry of Agriculture and Cooperatives’ initiative (MOAC), and carried out under the Department of Agriculture and Extension, under the concern of aging farmers and aiming to increase the capacity of farmers in terms of marketing and leadership. The objectives are to initiate new generation of farmers by using data for decision-making, and to create smart officers to be consultants of smart farmers. The program is held every year with a number of 30 young farmers participants. The criteria to select the participants consist of: age between 17 and 45 years old, and having a strong eagerness to do farming. Education is not a requirement to join this program. The average age of farmers is 37 years old, most of them being small-scale farmers and rice is the main production. This program is addressed to three kinds of young farmers:

- Young people who just graduated from the University but do not have any background on farming
- Young people who worked on the industrial sector but would like to start farming

- Young farmers who would like to increase their capacity in terms of knowledge, and building network with other farmers

In terms of the private sector, Charoen Pokphand Group founded its own university and has provided Bachelor of Science in Innovative Agricultural Management. Regarding University's initiative to boost the installation of young farmers, there is a joint project called "My Little Farm Project". It is the collaboration among Kasetsart University, Cooperative Auditing Department, Ministry of Agriculture and Cooperatives, and Bank for Agriculture and Agricultural Cooperatives. The objective is to inspire pupils to be a new generation of farmers. Several universities in Thailand such as the Kasetsart University, Chulalongkorn University, and Mahidol University have opened new courses for producing agricultural entrepreneurs from 2015 and onward. For example, Kasetsart University opened new curriculum in Bachelor of Science in Agricultural Resources and Production Management. However, their goals have not been reached yet due to several difficulties such as unclear key indicators and loose integration among entities. Hereinafter, the researcher presents only a few significant projects.

Table 5: Projects supported by the public and the private sectors, and universities in fostering the young generation into farming in Thailand

Project	Responsibility	Objectives	Activities
1. 1.New Farmer Development Project (2008-2012) (<i>Agricultural Land Reform Office, 2012</i>)	ALRO and MOAC, VEC, TRF, BAAC	1. To establish new farmer equipped with theoretical and practicing knowledge. 2. To develop sustainable agriculture.	1. Access knowledge: TRF and VEC established courses and invite young generation to the classes 2. Opportunity to access the land resource: the Agricultural Land reform permit interested persons utilize the land. 3. Opportunity to access occupations: increase the capabilities of land use for farming and generate sustainable income though the adoption and diffusion process 4. Opportunity to access finance resources from BAAC
2.School of Rice and Farmer (<i>Rice department, 2013</i>)	Rice Department	1. To Prepare and develop training courses and rice. 2. To knowledge in all aspects of rice grain production chain. 3. To demonstrate the rice field.	Establish courses: 1. - Intensive Professional Farmers 2. - Healthy drink made from rice 3. - Initial course of farming 4. - Intensive skin care from rice bran oil 5. - Rice production course souvenirs 6. - Course cooking and baking with rice
3.Volunteer Spirit Network (<i>Volunteer Spirit</i>)	OHM	1. To broaden farming perspective for the university student	Training course: - Farming experience - Field work in royal project

<i>Network, 2013)</i>		2. To make social aware to volunteering	
4.The Young Farmer Group (<i>Young farmer development department, 2012)</i>	DOAE	To set up the volunteering group aged 10-25 years old to get knowledge of local agriculture in the area	Training Course: - Local farm knowledge Run the farm project: 7. - local farm projects
5.Smart farmer Smart officer (<i>Committee of Smart Farmer and Smart Officer, 2013)</i>	MOAC	1. To initiating new generation by using data for making decision 2. To create smart officer to be a consultancies for smart farmer	Set up provincial online database center to provide crucial information for farmer
6.New Business Fund (<i>Bureau of Cooperation and Promotion, 2014)</i>	OHEC, VEC Joint BAAC	Funding for under graduated student or new graduate	Incubation: Formulate and analyze the project by University Business Incubator, funding: By BAAC
7.Farmers Welfare Fund (<i>Ministry of Agriculture and Cooperation, 2011b)</i>	Rice Department	To give farmers' compensation for disability and subsidization, that to make Thai farmer more secure	Set up and run farmers welfare fund
8.Rice camp (<i>Rice Foundation, 2014)</i>	Thai Rice Foundation	1.To keep young people to engaged in the traditional rice farmer skill 2. To knowledge young people in technology for farming	Annual summer camp

MOAC = Ministry of Agriculture and Cooperatives

ALRO = Agricultural Land Reform Office, Ministry of Agriculture and Cooperatives

BAAC = Bank for Agriculture and Agricultural Co-operatives

DOAE = Department of Agricultural Extension, Ministry of Agriculture and Cooperatives

OHEC = Office of the Higher Education Commission

OHM = Office of His Majesty the King Principal Private Secretary

QLF = Quality Learning Founding

TRF = Thailand Research Fund

VEC = Office of Vocational Education Commission

Table 6: Projects supported by Thailand universities in fostering the young generation into farming

Project/Curriculum	Responsibility	Objectives	Activities
My Little Farm Project (<i>Kantana Group, 2012)</i>	Kasetsart University Joint BAAC CAD Farm Chanel	To motivate pupil to be a new generation farmer	Reality farming contest
B.Sc.(Agricultural Resources and Production Management) (<i>KUCSC, 2011)</i>	Kasetsart University	To produce new generation of agricultural entrepreneurs	New curriculum (open in 2012)
B.A. (Agricultural Resources Administration) (<i>School of Agriculture Resources, 2014)</i>	Chulalongkorn University	To produce new generation of agricultural entrepreneurs	New curriculum (open in 2012)
B.A. (Cultural Landscape Management)(<i>Ministry of Education, 2013)</i>	Mahidol University	To produce new generation of agricultural entrepreneurs	New curriculum (will establish in 2015)

* CAD = Cooperative Auditing Department, Ministry of Agriculture and Cooperatives

* KUCSC= Kasetsart University, Chulermphrakiat Sakon Nakhon Province Campus

As reported by the Office of the National Economic and Social Development Board (2011), at the national level, there are some strategies in relation to the increase of youth and skilled labour to engage in agriculture in Thailand. However, when the national plan was implemented, there were no key performance indicators (KPIs) that directly support the agriculture strengthening strategies (Onanong Tapanapunnitikul and Siriluk Prasunpangsri, 2014)

Table 7: Policy related projects in Thailand that encourage the young generation into farming

Policy	Related strategies	Related Development guideline	Related Key Indicators	Arguments
National Policy 2012-2016 (Office of the National Economic and Social Development Board, 2011)	Strengthening of the agricultural sector and security of food and energy	Creating job and income security for farmers by: 1. Integrating income insurance system together with crop insurance 2. Developing fairness for farmers and stakeholders in the contract farming system 3. Increasing better quality of life for farmers 4. Inducing youth, new generations and skilled labor to engage in agriculture 5. Empowering small farmers affected by free trade agreements for maintaining their living conditions	(1) Overall national development: Main indicators are: -The Thai Green and Happiness Index -The Institute for Economics and Peace (IEP) - The ratio between 10% highest income and 10% lowest income -The ratio of workers in the informal sector accessed social protection -The Corruption perception index	No key indicator directly support the agricultural strengthening strategies
Agricultural development Policy 2012-2016 (Ministry of Agriculture and Cooperatives, 2011a)	Promoting better quality of life for farmer	1.To increase security for farmer 2.To establish knowledge for farmer 3. To empower farmer for ASEAN 4. To ensure food security for household 5. To promote young generation to agriculture	1. Increasing the Thai Green and Happiness Index to 80% 2. Expecting the GDP growth more than 3% 3. Managing the land used for agriculture	No key indicator directly support the promoting of young generation to agriculture

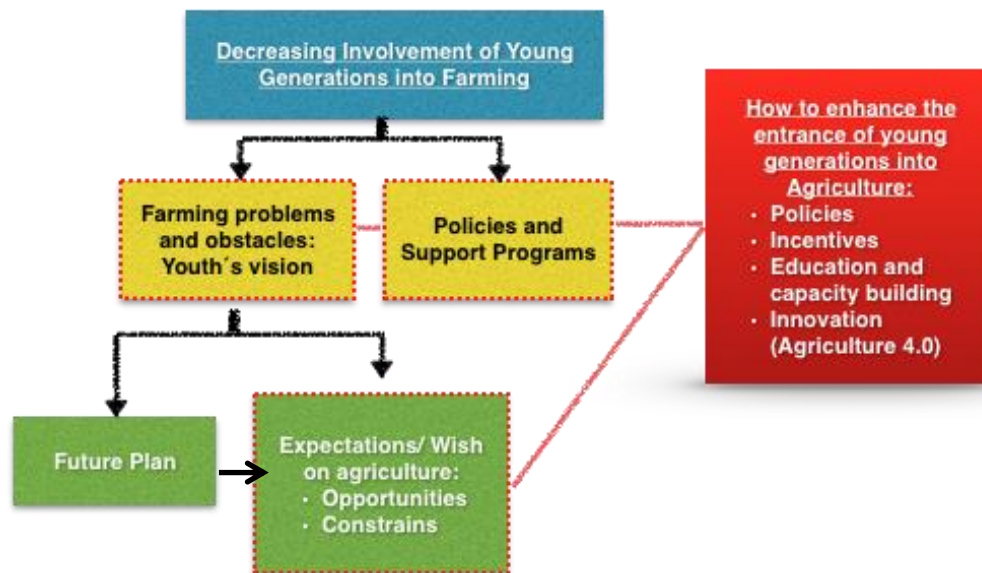
CHAPTER 3 METHODOLOGY

This chapter describe the conceptual framework, site selection, research design method and data analysis and techniques.

3.1 Type of Research and Conceptual Framework

This thesis is a qualitative and quantitative study, which aims to develop an in-depth understanding of the decreasing involvement of young rural peasants on the agricultural sector and what are the conditions that would make young people to consider farming a economically viable livelihood. Specifically, the researcher sought to understand how the experience of rural youth may have inhibited their involvement in agricultural and push them to other economic sectors. It is also important to understand how rural youth perceive the agricultural sector, which is meaningful to understand their behaviours and future actions, and they key drivers that push them away in order to better inform policy and understand this growing trend to address the challenges youth face today in rural areas.

Figure 8: Conceptual Framework of the Study



The conceptual framework has been designed based on the decreasing participation of young people in agriculture, already pinpointed by previous studies as we have put forward in the literature review. We aim so assess young people's perception of farming and the problems they perceive. Based on young people's future plan we aim to identify the factors that determine their involvement in agriculture; and through assessing their willingness to become farmers as a hypothetical situation (wish or dream) we aim to identify the conditions under which young people would reconsider their participation in farming.

3.2 Site selection

The research will be carried out in Prachinburi Province (*changwat*) in Thailand. Neighboring provinces are (from north clockwise) Nakhon Ratchasima, Sa Kaeo Chachoengsao, and Nakhon Nayok. The province is divided into two major parts, the low river valley of the Prachin Buri River, and the higher lands with plateaus and mountains of the Sankamphaeng Range, the southern prolongation of the Dong Phaya Yen Mountains. The total population is 484,829 (National Statistical Office, 2017)

Map 1. Prachinburi Province, Thailand



The province is divided into seven districts (*amphoe*). These are further subdivided into 65 sub-districts (*tambon*) and 658 villages (*muban*). The 7 districts are: Mueang Prachinburi (1), Kabin Buri (2), Na Di (3), Ban Sang (6), Prachantakham (7), Si Maha Phot (8), Si Mohosot (9)

Map 2. District in Prachinburi Province, Thailand



The study area has been chosen based on previous research (Cochetel, C., 2017) which highlights the issue of the decreasing involvement of young generations in farming and the aging population. At first the research was focused on 2 villages from Bang Sang district. These 2 villages were chosen based on the following the next criteria:

- Village where young people tend to work on non-farm sector
- Village where young generation involve themselves to some extend on farming activities

Initial study area;

- Village with young people that tend to move and don't involve on farming: village 3 (Hua-Phai village) at Ban Sang sub-district, Ban Sang district: this village has around 300 villagers with 500 rai of rice and 100 rai of fish.
- Village with young people that do engage on farming: village number 10 (Bang Rung village), Bang Yang sub-district => this area has 2,800 rai of farming (540 rai is rice production and the rest is fish production). There is around 40% of young people who involve in farming. The total population of this village is around 356 villagers.

However, the researcher deemed necessary to increase the study area adding one more village to the research in order to have a clearer picture of young people in the area:

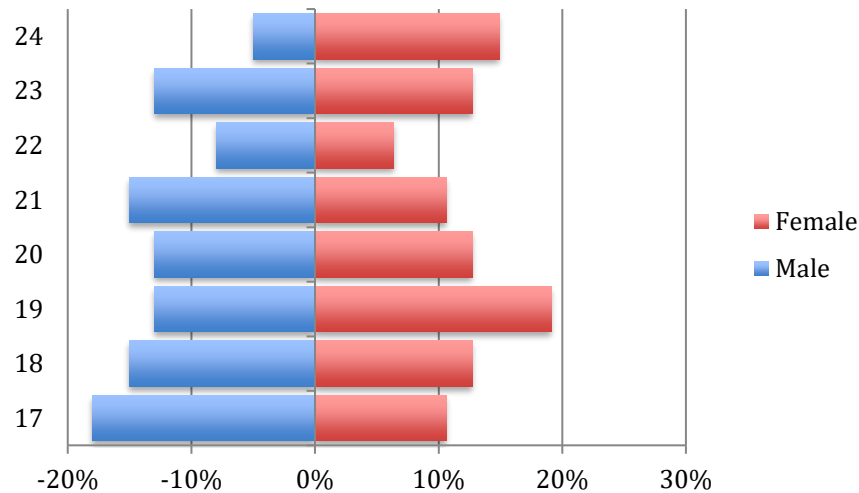
- Pho Yen (village 11) located at Bag Sang district in Bang Yang sub-district. The main farming activities are rice and fish and shrimp, with 3,000 rai of paddy fields and 100 rai of fish and shrimp production. The total population of this village is around 323 villagers.

Note: these 3 villages are located in Ban Sang district.

3.2.1 Sample size

In each village interviews were performed focusing on *young people*. To define young people we will use the age range of 17 to 24 years old. The aim was to target young people which future's is still uncertain and might not be settled down, thus have not taken any decisive step yet. The total number of respondents is 86 (47 females and 39 males inhabitants): 26 respondents from Hua Phai Village, 40 respondents from Bang Rung Rot and 20 respondents from Pho Yen Village. The average age of the young people that took part on this study is 20.2, among which 74 of them were single and 12 were married.

Figure 9: Respondents age distribution



3.3 Research Design

This research is an exploratory type using in depth interviews. Specifically, the study has employed this tool aiming to understand the experience of rural youth that may have inhibited their involvement in agricultural and push them to non-farming economic activities.

3.3.1 Secondary data

This research is based on the analysis and synthesis of two types of data. First, the study collected secondary data from official statistics (primarily local authorities and the census), which covers the first research question. The aim was to carry out a demographic analysis based on population age structure to identify if there is a generational gap on the rural population, and analyse the current structure of the labour force. Secondary data based on the population distribution by age was gathered using as benchmark the year 2007, 2012 and 2017, in order to see the variations on the farming population by age at a district level. The researcher aim to assess the population distribution, and see the changes experienced in a timeframe of 10 years (2007-2017)

Secondary data will be used as well, to review the incentive policies for young farmers in response to their decreasing involvement in agriculture, mainly from the concerned government organizations, concretely the Agricultural Extension office and Agricultural Land Reform Office.

3.3.2 Primary Data

- *In-depth Interviews*

Secondly, primary data from 86 in-depth interviews from all three villages were

conducted to understand the determinants that push young people away from farming and why it has become less appealing for them to making a living from farming, to identify the backdrop under which young people would consider their engagement on agriculture, and to assess the experience of young farmers on the different support programs aiming to foster the involvement of young generations into farming. The same topic (farmer's perception on farming) has been addressed with different approaches in order to get a broader understanding of their mindset. The research design stipulated that respondents should be between the age of 17 and 24 at the time of recruitment.

The interview aimed to assess their experiences and the main constraints they have tackled to start farming (if any). We assessed to what extent they benefitted from support programs. These programs can be specific to young farmers (e.g., with a criterion on age for being able to get involved) as well as non-specific (any farmer can benefit from them). Governmental bodies (i.e., a public agency or a university) or private organizations (NGO, foundation, company) implement these programs.

To this end, the interview is structured in 7 different parts (see annex 1) which covers last three research questions:

- 1° General information
- 2° Household data
- 3° Vision on Farming
- 4° Future Plan
- 5° Expectations/wish on farming
- 6° Alternatives to agriculture
- 7° Policy and Support programs for the installation of young farmers

3.4 Data analysis and Techniques

Qualitative analyses was applied based on the information gathered through primary sources for this research. The data and information collected from the primary survey and the secondary data was coded, entered, processed, and analysed by quantitative and qualitative analysis techniques.

3.4.1 Quantitative Analysis

- Descriptive Statistics

Statistical data obtained from Registry Unit, Ban Sang Registration District Office, (2017) was analysed in order to carry out a demographic study based on age distribution. Data collected from surveys was used as quantitative information to extract details on age, sex, main and secondary occupation, incomes, education, major, trajectory after school, farming experience, parent's occupation, land size, and type of crop. Pie, line, charts and tables were employed in the representation of quantitative data. This set of statistics were used to describe demographic and socio-economic conditions in the study area, in addition to illustrating factors that push young generations away from farming activities and the hindrances encountered.

- **Analytical Statistics**

- Chi square: It was employed in order to analyse the statistically association between farming problems (pinpointed by young people from an open-ended question) and socio-economic factors (gender, farming experience, and parent's occupation). It was also employed to analyse the association between young people's current participation on farming, future plan (whether they plan to become farmers in the future or not), and wish/dream (and socio-economic factors gender, farming experience and parent's occupation).
- Independent T-test: It was employed to analyse the relationship between socio-economic factors (Likert scale items) and the respondents parent's occupation (whether they are direct descendants of farmers or not)
- One-way ANOVA: It was employed to analyse the correlation between farming problems (likert scale items) and socio-economic factors (education, economic status, landholding of their parent's farm, and type of crop of their parent's farm).

Table 8: Variables Description

Variable	Description	Measurement
Gender	Gender of respondents	0= male; 1=female
Farming experience	Refers to whether respondents have been involved in agriculture or not in any possible way (eg, helping their parent's, school activities, trainings, etc.)	0= yes; 1=no
Child of farmer (parent's occupation)	Whether respondents are direct descendants of farmers or not	0= yes; 1=no
Land ownership	Refers to the landholding of the respondents parent's farm, whether they own land or not	0= yes; 1=no
Parent's support	Refers to whether respondent's parents support them on becoming farmers or not	0= yes; 1=no
Education	Refers to the educational level of respondents based on educational degree levels	1= Informal Education; 2= Primary School (Grade 1-6); 3= Secondary School (Grade 7-12); 4= Vocational Certificate; 5= Bachelor's degree (4 years of study)

Economic status	Based on respondent's incomes	1= Lower incomes (0-5,000 TBH); 2= Middle incomes (6,000-12,000 THB); 3= Higher incomes (13,000 and above)
Landholding	Land size of their parent's farm	1= Landless; 2= small holder (1-15 rai); 3= medium holder (16-30 rai); 4= large holder (31-100 and above rai)
Type of crop	Refers to the type of crop of their parent's farm	1= not farmer; 2= (only) rice farmer; 3= (only) fish and shrimp farmer; 4= rice + fish and shrimp farmer
Environmental problems	Environmental farming-related problems including climate-event problems (eg. weather variability), water-related problems (eg. water acidity) and other problems (eg. overuse of chemicals). All environmental problems identified by respondents out of an open-ended question.	0= yes; 1= no
Economic Problems	Economic-related problems including high input cost, price fluctuations, indebtedness and low returns. All economic problems identified by respondents out of an open-ended question.	0= yes; 1= no
High capital investment	High capital required for all the different stages of farming activity (starting a farm, management of the farm, marketing of the product)	1= due to this fact, I am not interested on farming; 2= It is a major issue; 3= small inconvenient; 4= It is an issue, but does not affect me; 5= not a problem at all, i don't see it as an issue
Limited access to land	Refers to the inability to use land and other natural resources, to control the resources and to transfer the rights to the land and take advantage of other opportunities.	1= due to this fact, I am not interested on farming; 2= It is a major issue; 3= small inconvenient; 4= It is an issue, but does not affect me; 5= not a problem at all, i don't see it as an issue
Hard work	Refers to the job's nature of farming (eg. Working long hours under the sun)	1= due to this fact, I am not interested on farming; 2= It is a major issue; 3= small

		inconvenient; 4= It is an issue, but does not affect me; 5= not a problem at all, I don't see it as an issue
High-risk activity	Refers to the uncertainty and unpredictability of all the factors that involve farming activity (eg. Weather, price fluctuations, etc). Farmers have to take decisions taking into account factors that are beyond their scope.	1= due to this fact, I am not interested on farming; 2= It is a major issue; 3= small inconvenient; 4= It is an issue, but does not affect me; 5= not a problem at all, I don't see it as an issue
Low profitability	Refers to the low profits made from farming activities	1= due to this fact, I am not interested on farming; 2= It is a major issue; 3= small inconvenient; 4= It is an issue, but does not affect me; 5= not a problem at all, I don't see it as an issue
Lack of opportunity of increasing incomes in the future	Refers to the lack of potential of economic growth in farming activities	1= due to this fact, I am not interested on farming; 2= It is a major issue; 3= small inconvenient; 4= It is an issue, but does not affect me; 5= not a problem at all, I don't see it as an issue
Low social status	Refers to the honour or prestige attached to farming occupation	1= due to this fact, I am not interested on farming; 2= It is a major issue; 3= small inconvenient; 4= It is an issue, but does not affect me; 5= not a problem at all, I don't see it as an issue
Future plan	Refers to respondent's future plan, whether they plan to become farmers or not	0= yes; 1= no

3.4.2 Qualitative Analysis

After the interviews, the responses of the selected respondents were coded into Microsoft Excel and SPSS for analysis. We have address the same item (decreasing participating of young people in agriculture) with different approaches (future plan, expectations or willingness, their perception on young people's interest toward farming in the area, their parent's opinion on them becoming farmers) in order to have different perspectives of the same matter, and to avoid any preconception (parent's experience, current issues) that might shape their vision on farming. The aim is do dig deep into their concept and attitude towards farming.

CHAPTER 4

PROFILE OF THE RESPONDENTS AND STUDY AREA

4.1 Qualitative description of the study area

The study has been carried out in Prachinburi Province, located in the East of the Central Plain of Thailand. In Thailand, each province is divided into districts called *Amphoe*, themselves divided into sub-districts, *Tambon*, which are further divided into *Mubaan* (villages). The province of Prachinburi is composed of 7 *Amphoe* (districts). The research was conducted in Bang Sang district and it was focused on 3 Villages: Hua Phai (Village 1), Bang Rung Rot Village (Village 2), and Pho Yen Village (Village 3).

4.1.1 Village 1: HUA PHAI

Hua Pai (Village 3) is located in Prachinburi Province (Thailand), Bang Sang district in Phluang sub-district. According to the census data of 2017 from Bang Sang district, the total population is 561 (265 male and 269 female inhabitants). The main farming activities are rice and fish; with a total of 500 rai of paddy fields and 100 rai of fish production.

The bulk of the area is dedicated to rice production. The medium farm size is of the parents of the interviewees is 38.44 rai. The price of rice has been falling in recent years from 8,000 TBH to 6,300 TBH per tonne, hence rice farming is not considered a profitable occupation anymore. The turning point dates back to the end of 2014, when the government withdrew the rice subsidy scheme (a price-support program with a plan to purchase rice at above market prices). Currently, the national objective of the government is to reduce the area dedicated to rice production and to expand other crops. This is one of the reasons why farmers in Hua Phai village do not earn enough incomes from rice production to support their families, with an average of 4.7 members in a household, and thus they need to ask for loans falling into a indebtedness cycle or get a secondary job, mainly working in factories due to a high employment demand in the area (with an average salary of 17,000-20,000 TBH per month). Owing to low returns from rice, farmers cannot invest and increase their production, and most of them do not have enough capital to buy land, and thus increasing their input cost on rented land.

In addition, parents generally support their children in their efforts to avoid farm work. The Village Head told us that she did not want her children to become farmers, in part because of the sheer hard work involved: “I don’t want my children to work in farming. I want them to get better jobs so they can earn higher incomes”. She herself is child of farmers but sold the land in order to start a recycling business.

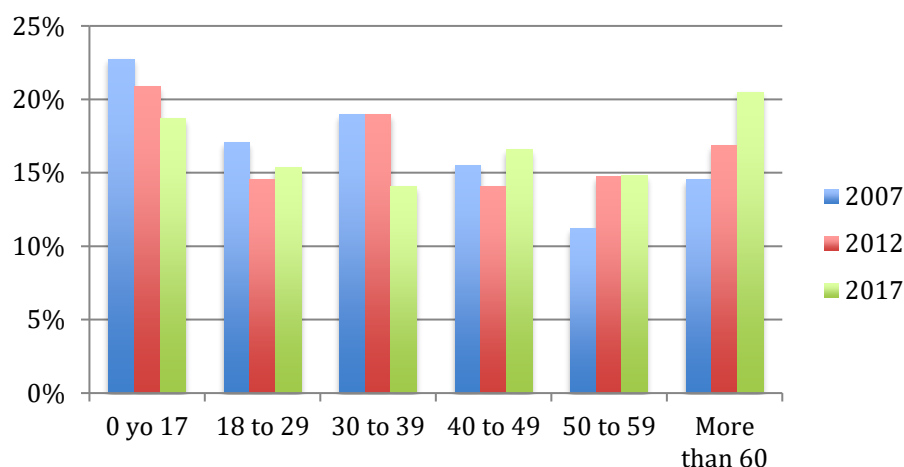
Despite the low interest of young people on farming, the Village Head said villagers hire labour from other villages or provinces to work in the farms, therefore to this point it has not become a major issue; however she is aware and asserts the aging farmers phenomena at a national level. She believes if incomes from farming would be higher, more young people would be interested. According to her, the main reasons why young people do not get engaged on farming are high investment/input cost, low returns, lack of access to

market channels and bargaining power and hard and tedious job due to a lack of mechanization.

Regarding the household structure, the average family size of the respondents interviewed in Hua Phai is 4.7 members, and we found that in many cases 3 generations live under the same roof (from grandparents to grandchildren). The average number of children in a household is 2 and the average age is 22.7 years old. In Hua Phai there are 9 households (interviewed for this research study) out of 26, dedicated to farming. The average number of family members working full-time at the farm is 1.1, and at the time of the interview 2 children were working at their parent's farm (full-time) and 3 of the respondents stated to help their parents at the farm as secondary occupation.

According to the database of household registration of Ban Sang Registration District Office³ (Graph below), the population from 0 to 39 years old has been shrinking from 2007 to 2017. The target group of this study (those persons between the ages of 17 and 24 years old) has also experienced a decline from 62 young people in 2007 to 58 in 2017. On the other hand the population between 40 and 60 and above has been increasing, especially the eldest cluster (60 and above) from less than 15% of the total population, to 21%.

Figure 10: Hua Phai Population Distribution by age (year 2007, 2012 and 2017)



(Source: Registry Unit, Ban Sang Registration District Office, 2017)

The number of young people interviewed in Hua Phai Village is 26 (12 female and 14 male), and the average age is 20.15. Among the respondents, 16 are students, 7 are employed and 3 are unemployed. Out of those who are working, 1 is a farmer who took over his parent's farm after their retirement, hence becoming the main person in charge of the farm management and decision-making; however due to the insufficient revenues from farming owing to the falling of agricultural prices he has to work in factories as secondary job during night-time. The other 6 respondents that are employed, 2 work in factories, 1 is

³ The data from Bang Sang Registration District Office does not depict an accurate picture of the actual population since a high number of people (specially young people) move out of the district to study or work but do not change their official registration.

a middleman (shrimp seller), 2 of them are sellers (small food and beverages shop at the roadside) and one produces chilly paste and sells at home. The average income per month is THB 12,060. Among the 26 respondents 3 help their parent's on the farm as secondary occupation, among which only 1 get some allowances from their parents when needed, the other 2 receive no stipend

Table 8: Main Occupation (Hua Phai)

MAIN OCCUPATION		
Category	N° of Respondents	%
1. Student	16	62%
2. Employed	7	27%
Farmer	1	4%
Factory	2	8%
Shrimp seller (middleman)	1	4%
Vendor*	2	8%
Small Family business*	1	4%
3. Unemployed	3	12%
Just graduated*	1	4%
housewife	2	8%
TOTAL:	26	100%

Notes:

- Vendor includes occupations such as small convenient stores on the road side and food and beverages stores
- Small Family business includes occupations such as chilly paste producers (homemade and small-scale sellers.)
- Just graduated are those who finished their studies within this year 2018 and haven't taken any step yet (either further education or job)

4.1.2 Village 2: BANG RUNG ROT

Bang Rung Rot (Village 10) is located in Prachinburi Province, Bang Sang district in Bang Yang sub-district. According to the census data of 2017 from Bang Sang district, the total population is 653 (315 male and 338 female inhabitants). The main farming activities are fish and shrimp and rice with 2,260 rai of fish and shrimp production and 540 rai of paddy fields.

In contrast to Hua Phai Village, Bang Rung Rot farmers are mostly dedicated to fish and shrimp production. The medium farm size of the households that took part on this study is 28.81 rai, and most of them own their land. In the last 10 years, farmers in Bang Rung Rot Village shifted from rice production to fish and shrimp due to higher returns. This increased on production have caused a slight dropped on prices, according to K. Manoth; however it is still consider a profitable occupation. According to the Village Head, young people in Bang Rung Rot are still interested in farming. He states that young people

between the age of 25 and 50 still get involved, and mostly there are interested on fish and shrimps production rather than rice, which provides lower incomes. He believes that the young people that would get involved in agriculture are those whose parents are farmers so they can inherit the land, since the first capital investment is unbearable for their purchasing power. Young people could not start farming without their parent's economic support; hence parents who are farmers would positively encourage their children to take over their farms.

When we asked about the reasons why young people might lose interest on farming the K. Manoth pinpointed education, and price fluctuation: "when people graduate, they might find better jobs in urban areas. However, the living cost in cities is higher than in rural areas, savings are lower and work becomes tedious due to strict and long working hours. Thus, young people might come back to work in their parent's farm."



Khun Manoth. 54 years old. Head of Village and Shrimp farmer (2018)

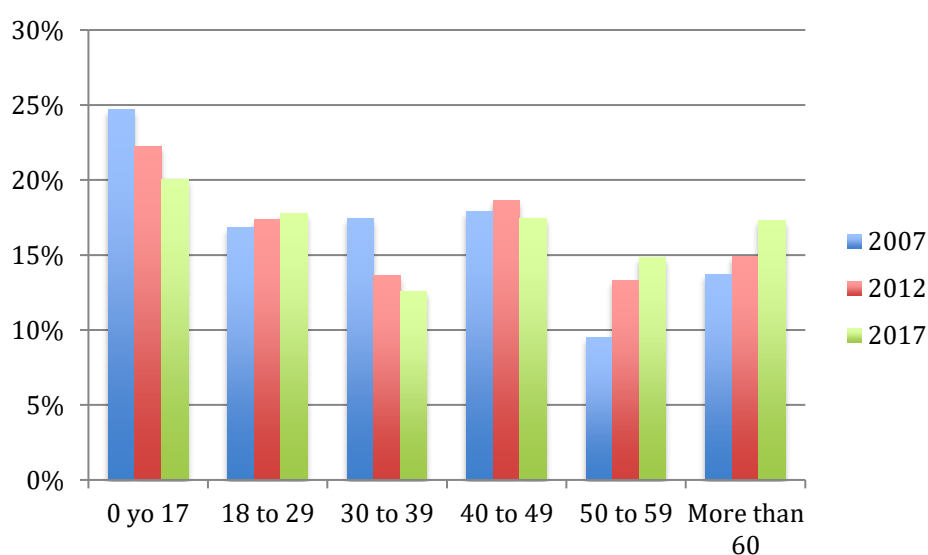
K. Manoth suggests that in order to attract more young people back to farming there must be support on the price of agricultural output, so incomes are more stable and young people perceive agriculture as feasible and profitable occupation. He also believes access to land is a key issue among young people.

In Bang Rung Rot, the household structure is similar to Hua Phai Village. The average family size (of the young people interviewed) is 4.7 family members (including the interviewee), the average number of children is 1.8 per household, and the medium age (of children) is 20 years old. Among the young people interviewed, 35 (out of 40) are children of farmers. The average number of family members working at the farm is 2. At the time of the interview 8 children (considering the interviewees) were involved on their parents farm

as main occupation, and 16 of the interviewees mentioned helping their parents at the farm as secondary occupation.

According to the population database of the Registry Unit, Bang Sang District Office, the population between 50 and 59, and more than 60 years old has been increasing in a 10 years period (from 2007 to 2017). On the other hand, the youngest group (between 0-39, excluding the age range of 18-29) has been decreasing. However, as mentioned above, the Registry Unit database does not reflect the population flows and mobility to other villages or districts, especially of the younger groups who often move in pursuit of jobs or education, but do not change their official registration.

Figure 11: Bang Rung Rot Population Distribution by age (2007, 2012 and 2017)



Source: Registry Unit, Bang Sang District Office, 2017

The number of respondents of this study in Bang Rung Rot Village is 40 (25 female and 15 male inhabitants). The average age is 20 years old. Among them 35 are single and 5 are married. Regarding their main occupation 25 of the respondents are students, 10 are employed (4 farmers and 3 working in factories) and 5 are unemployed. Among the 4 respondents who are farmers, only one of the respondents manages her own plot of land that has inherited from her parents (4 rai); the other 3 respondents help their parents on their farms. The average net income per month is THB 14,540, though most of the young people interviewed (60%, 24 respondents) do not generate any incomes.

Table 9: Main occupation (Bang Rung Rot)

MAIN OCCUPATION		
Category	N° of Respondents	%
Students	25	63%
Employed	10	25%
Farmer	4	10%
Factory	3	8%
Staff at Company	1	3%
Government Official	2	5%
Unemployed	5	13%
Just graduated	2	5%
housewife	3	8%
TOTAL:	40	100%

4.1.3 Village 3: PHO YEN

Pho Yen (Village 11) is located in Prachinburi province, Bag Sang district in Bang Yang sub-district. According to the census data of 2017 from Bang Sang district, the total population is 323 (162 male and 161 female). The main farming activities are rice and fish and shrimp, with 3,000 rai of paddy fields and 100 rai of fish and shrimp production.

In Pho Yen, the situation is similar to Hua Phai Village. Farmers do not get satisfactory incomes from rice production (which is the main crop of this area) due to continuous price fluctuation, therefore young people do not consider farming as a profitable occupation for their future. However, in contrast to Hua Phai Village, the economic dissatisfaction towards farming seems to be a more recent phenomena, since 16 respondents out of 20 are children of farmers, while in Hua Phai 17 out of 26 are not children of farmers; which reveals that in Hua Phai the evolution of moving away from farming comes from previous generations.

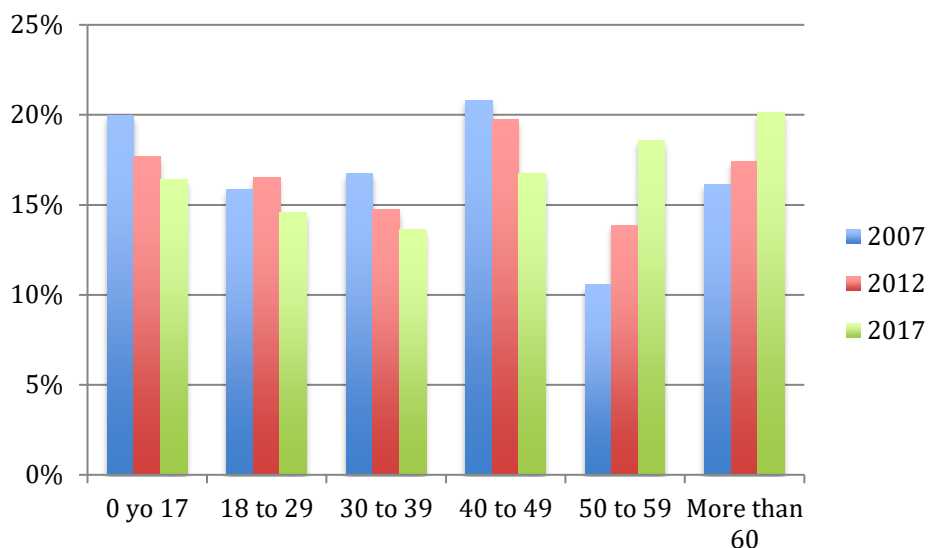
The average land size of the households interviewed in Pho Yen (31.64 rai) is smaller than in Hua Phai (38.44 rai). This might explain the decreasing interest of young people in Pho Yen to take over their parent's farm, which is the most frequent way to become farmers in the area under research. Furthermore, when we asked young people in Pho Yen why they did not continue their studies (70% -14 respondents- have Secondary School level) they mention economic issue and the need to earn incomes. 7 of the respondents in Pho Yen are working in factories and 60% (12 respondents) generate incomes; in contrast to Hua Phai, where only 8 respondents (31%) make money and the majority of them are still students (62%, 16 respondents). The high percentage of young people in Pho Yen are already working and the low educational level reflects the economic shortages among households in the village, which might force them to seek for stable jobs and incomes to support their families.

According to the Village Head, farmers keep growing rice (with high input cost and low output price) due to climate constraints, especially floods, which makes the area only suitable for rice. Only those whose parents are farmers, so they can inherit the land, would consider taking over their parent's farm, though as secondary income-generating activity or planning to add other crops, especially shrimps. Parents, based on their experience, do not encourage their children to do agriculture because it is considered as hard job and incomes are not stable (which is climate-dependent, and price keep decreasing). Rather, young people perceive working in factories or urban areas as more secure future, with stable incomes and not working long hours under then sun. Farming is a last choice option for young people in Pho Yen, and they would only work in agriculture if they cannot find non-farm jobs. It is common for young people in Pho Yen not to have permanent residency in the village, instead they move to other provinces or urban areas specially Bangkok to study but mostly work in factories, coming back to the village approximately once a month.

Regarding the household structure, the average family size (of the households that took part on this research study) is 4.35 members. The average number of children is 1.8 per household, and the medium age is 17.6. Out of 20 households, 16 are involved in agriculture as income-generating activity. The average family members working at the farm full-time is 1.19, and at the time of the interview 2 children are working at their parent's farm (full-time), and 3 of the interviewees help their parents at the farm as secondary occupation.

As shown in the graph below the population between 0 to 49 years old has been gradually shrinking throughout the year 2007 until 2017, according to the population database of the Registry Unit, Bang Sang District Office. The target group of this study is young people between the age range of 17 and 24 years old, which has dwindled from 12% in 2007, to 10% in 2017. On the other hand, the population between 50 to 59 and 60 and above years old has increased, following the national trend of aging farmers, from 11% in 2007 to 17% in 2017 (50 to 59 years old), and 16% in 2007 and 20% in 2017 (60 years old and above).

Figure 12: Pho Yen Population Distribution by age (2007, 2012 and 2017)



Source: Registry Unit, Bang Sang District Office, 2017

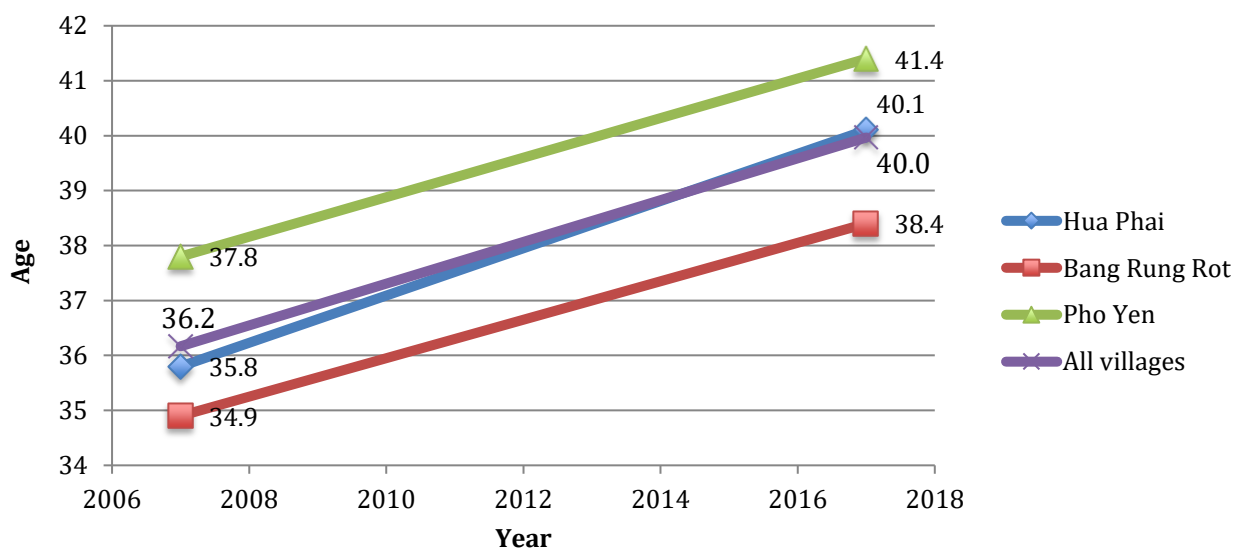
The number of young people interviewed in Pho Yen Village is 20 (10 female and 10 male). The average age is 22.55 years old, and 19 of the respondents are single and 1 is married. With regard to the main occupation of the interviewees, 6 of them are students, 11 are employed and 3 are unemployed. Among those who are working the majority work in factories (manufacturing-related activities), and only one of them is a farmer, who help his family on the farm but gets no stipend or remuneration, but at the same time he is part of a young farmers' group (5-6 members) working as farm labour for other villagers, (i.e., seed sowing, applying fertilizer, feeding, and catching shrimps). As secondary occupation, 4 of them are doing farming, 3 of them helping their family and one as general employed, only working once in a while. The average net income per month is THB 12,850. 12 of the respondents do generate incomes, 8 of them do not. Among the 6 students, 3 of them study in other village or provinces, and 5 of the respondents who are working also move out of the village to work (such as Bangkok, Amnat-Charoen province, Chachoengsao province), coming back few times a month or during weekends.

Table 10: Main Occupation (Pho Yen)

Main Occupation		
Category	N° of Respondents	%
Student	6	30%
Employed	11	55%
Farmer	1	5%
Factory	7	35%
Unemployed	3	15%
Just graduated	1	5%
housewife/Stay at home	2	10%
TOTAL:	20	100%

4.1.4 Population Assessment

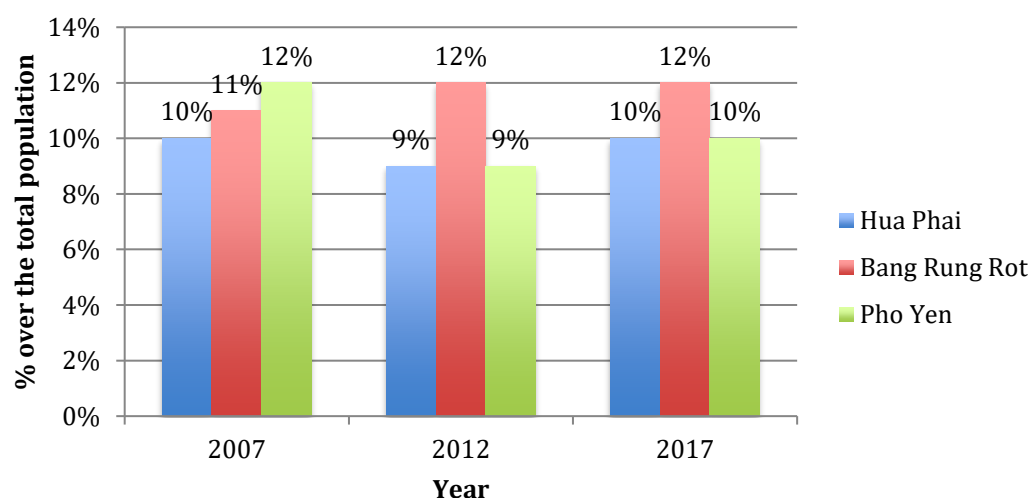
As we have shown on the graphs above, the population on the three villages has change at a rampant speed. In a holistic approach, the youngest population (0-39 years old) has deceased on the three villages (only in Bang Rung Rot the population between the age range of 18 and 29 years have experienced a slight increase from 16% to 17%, however the data does not record the temporary flows of population since people doe not change their registration when they move out to work or study). At the same time the eldest population (between the age of 50 to 60 and above) has raised on the three villages. Furthermore, over a period of 10 years rural people's average age has increased from 36.2 to 40 years old. In general terms, the diversion of young people from rural areas is triggered by the increasing tendency of young rural people pursuing higher education and the lack of job opportunities in rural areas, hence this phenomena is speeding up the geriatrification of rural population.

Figure 13: Demographic evolution within 10 years (2007-2017): Average age

Source: Registry Unit, Bang Sang District Office, 2017

A more detailed assessment of our study group (age range between 17 and 24 years old), according to the demographic data from Bang Sang District Office, shows that it has remained stable without dramatic changes. However we should take into consideration the inaccuracy of the data to record temporary movements of population. The most noticeable change among the villages is in Pho Yen Village. In 2007 the share of young people over the total population was 12%, in 2012 it was reduced to 9% and in 2017 the young population recorded was 10%. Among the young people interviewed in Pho Yen, 55% (11 respondents) are employed and 7 of them are working in factories, and only 1 is a farmer. Young people in Pho Yen might move to other provinces or urban centres in order to seek for jobs. On the other hand, the official data from Bang Sang district office does not record any significant change of young rural population in Hua Phai and Bang Rung Rot in the last 10 years.

Figure 14: Young people (17 to 24 years old) percentage over the total population



Source: Registry Unit, Bang Sang District Office, 2017

The process aging of population in rural areas is happening at a faster speed comparing to the national average age. The average age in Thailand in 2005 was 32.7, while the average age of our study area (rural area) in 2007 was 36.2. After 10 year's time, the average national age (2015) was 37.8, while the average age in our study area was 40. The process of aging population in Thailand is happening at a national level, however in rural areas seems to happen at a faster speed concentrating a big number of elder people. This is triggered by the high migration flows from rural areas to urban ones. According to the National Statistics (2010) 45.1% of Thailand's internal migrants moved between the ages of 20 and 29 and it is mainly due to occupational reasons, and in order to pursue an education.

4.2 Qualitative description of the respondents

4.2.1 Occupation

The 55% of the young people interviewed (47 participants) are students, 33% (28 participants) are working, and 13% (11 participants) are unemployed. Under the working group (Table 1), 14% of the young people are employed in factories – which mainly involves manufacturing related-activities; 7% are farmers (mostly working/helping at their parent's farms). The data depicts a slight hint of the different attitudes (participation and economic satisfaction) towards farming in each village. As mentioned above, in Bang Rung Rot village (mainly fish and shrimp production) farming is still considered a profitable occupation, with 4 of the young people interviewed being farmers, and 3 of them working in factories. Whilst in Hua Phai and Pho Yen (mainly rice production), only 1 respondent in each village are farmers and 2 and 7 respondents respectively work in factories. Especially in Pho Yen, young people move out of the village during weekdays to work and come back during the weekends.

There are very few students in Pho Yen Village (6), comparing to Hua Phai (16) and Bang Rung Rot (25). Most of the young people interviewed in Pho Yen are working, and 7 out of 11 are working in factories. When the interviewees from Pho Yen were asked why they did not continue their studies they said they were not interested (2), they had to quit owing to economic issues, thus they had to work and make money (4), others said they had health issues which hinder them from working (2), and one had to quit due to drug addictions, even though he was interested in getting an education. Young people's parents in Pho Yen also have lower incomes (THB 12,854.17) than in Bang Rung Rot (THB 14,537.50), so parents might not be able to afford further education

The other 6% are self-employed, which mainly involves small-scale vendors at local markets; 3% are employees -which includes occupations such as staff at convenient stores, shopping malls, and companies (administrative paperwork); and 2% are Government officials, which mainly includes Tambon (local) officers. The 11 participants that are unemployed are either housewife or have just graduated this school year (2018) and neither study or work at the time of the interviews.

Chi-square statistic was calculated to examine if there is significance association between *young people's current participation on agriculture* and some socio-economic factors. Results show to be statistically significance on *parent's occupation* ($p < 1$), *parent's landholding* ($p < 1$), and *farming experience* ($p < 1$). Thus the null hypothesis has to be rejected; there is statistically significance difference between these variables. These associations identify the determinants that affect young people's current involvement in agriculture. It is those whose parents are farmers, own land and have farming experience that currently work on farming as primary or secondary occupation.

Table 11: Association between young people's current participation on farming and socio-economic factors (Chi-square results)

Current Participation			
Item	X2	P	Df
Farming experience	17.609	.000	1
Parent's support	2.687	.101	1
Parent's accupation	12.281	.000	1
Landholding	8.897	.003	1
Gender	.629	.428	1
Environmental Problems	2.920	.087	1
Economic Problems	1.176	.278	1
Socio-Institutional Problems	.027	.869	1



Khun Amita- Mother and housewife. 23 years old. Studied Public Administration Degree. (May 22nd , 2018)

Table 11: Main occupation (All villages)

MAIN OCCUPATION					
Category	N° of Respondents	%	Hua Phai (N° YP)	Bang Rung Rot (N° YP)	Pho Yen (N° YP)
1. Student	47	55%	16	25	6
2. Employed	28	33%	7	10	11
Farmer	6	7%	1	4	1
Factory	12	14%	2	3	7
Self-employed	5	6%	4		1
Government Official	2	2%	-	2	-
Employee	3	3%	-	1	2
3. Unemployed	11	13%	3	5	3
TOTAL:	86	100%	26	40	20

Notes:

- Self-employed: includes vendors at local market, small family business such as chilly paste producers, food and beverages stores at the roadside, and small-scale online business (e.x, clothing).
- Government Officials includes mainly TAO officers
- Employee includes occupations such as staff at convenient stores (Seven Eleven, Tesco Lotus) shopping malls and companies (administrative and paperwork).
- Unemployed are those who either are housewife, stay at home or just graduated during this school year (2018) and neither study or work at the time of the interviews.

21 of the respondents (24%) have stated to help their parents on the farm as secondary occupation. Even though it has been labelled as secondary occupation they do not necessarily get a fixed salary and they work during school vacations or free time. In exchange of their contribution some get weekly/monthly allowances, others live at home and their parents cover their living expenses, and others get stipend for their studies or when needed.

In general terms, inheritance of the farm is a gradual process; first they start getting experience helping their parents farming, around their 20s they are devolved with decision-making power and farm management responsibility of a smaller plot of land, and later on they take full responsibility after their parents retirement. In Bang Rung Rot Village, where farming is still considered profitable, 16 of the respondents stated to help their parents on the farm as secondary occupation, while in Hua Phai and Pho Yen only 3 respondents respectively, hence a highest percentage of respondents in Bang Rung Rot getting first hand experience on farming, thus reflect their future plan to get involved in agriculture.

Moreover, among those who have secondary occupation (42% of the total of respondents) 1 respondent is a farmer, 1 respondent works in factories (manufacturing), 4 are self-employed (vendors at local markets), and 6 are general employed, including

occupation such as farm labour (spreading pesticides, seed sowing), driver, and construction labour.

Table 12: Secondary Occupation (All villages)

SECONDARY OCCUPATION					
Category	N° of Respondents	%	Hua Phai	Bang Rung Rot	Pho Yen
Employee	3	3.5%	2	0	1
General employed*	6	7%	0	5	1
Farmer	1	1.2%	0	0	0
Factory*	1	1.2%	1	0	0
Self-employed*	4	4.7%	1	3	0
Help their parents farming	21	24.4%	3	16	3
TOTAL:	36	42%	7	24	5
None	50	50%	19	16	15
TOTAL of respondents	86	100%	100%	100%	100%

Notes:

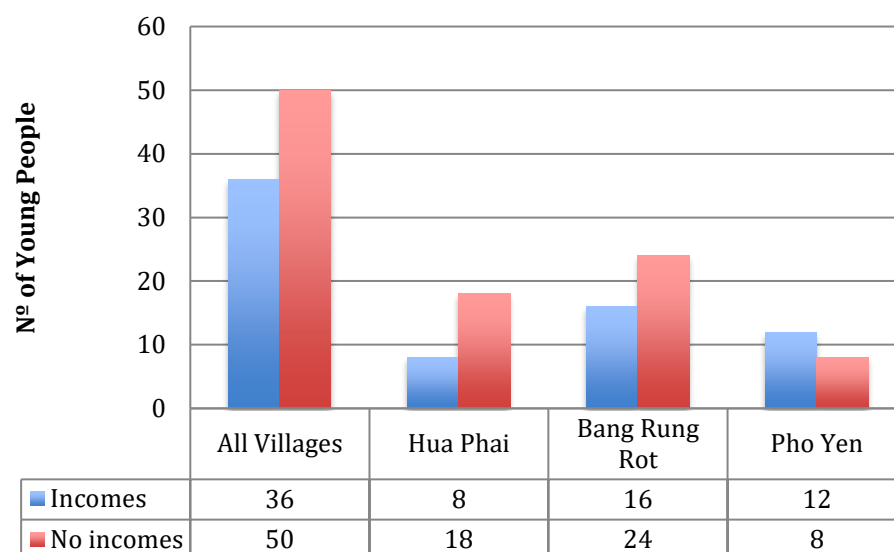
- Employee: same as Table 1
- General Employed: Temporary jobs (generally) employed by villagers and their local needs such as farm labour, driver and construction labour.
- Factory: manufacturing related-activities
- Self-employed: same as Table 1

The average income per month is 13,250 TBHT among the 42% of the total participants that generate incomes as main and secondary occupation (36 respondents), against the 58% (50 respondents) that do not generate any incomes and mostly live with their family (parents/spouse) and share the household incomes and expenses. There is a slight difference between the average income of Hua Phai and Pho Yen, and Bang Rung Rot, having the latter one the highest (14,537.50) comparing Hua Phai (12,062.50) and Pho Yen (12,854.17)

Table 13: Average incomes

Average Income			
All Villages	Hua Phai	Bang Rung Rot	Pho Yen
THB 13,426.39	THB 12,062.50	THB 14,537.50	THB 12,854.17

Figure 15: Incomes

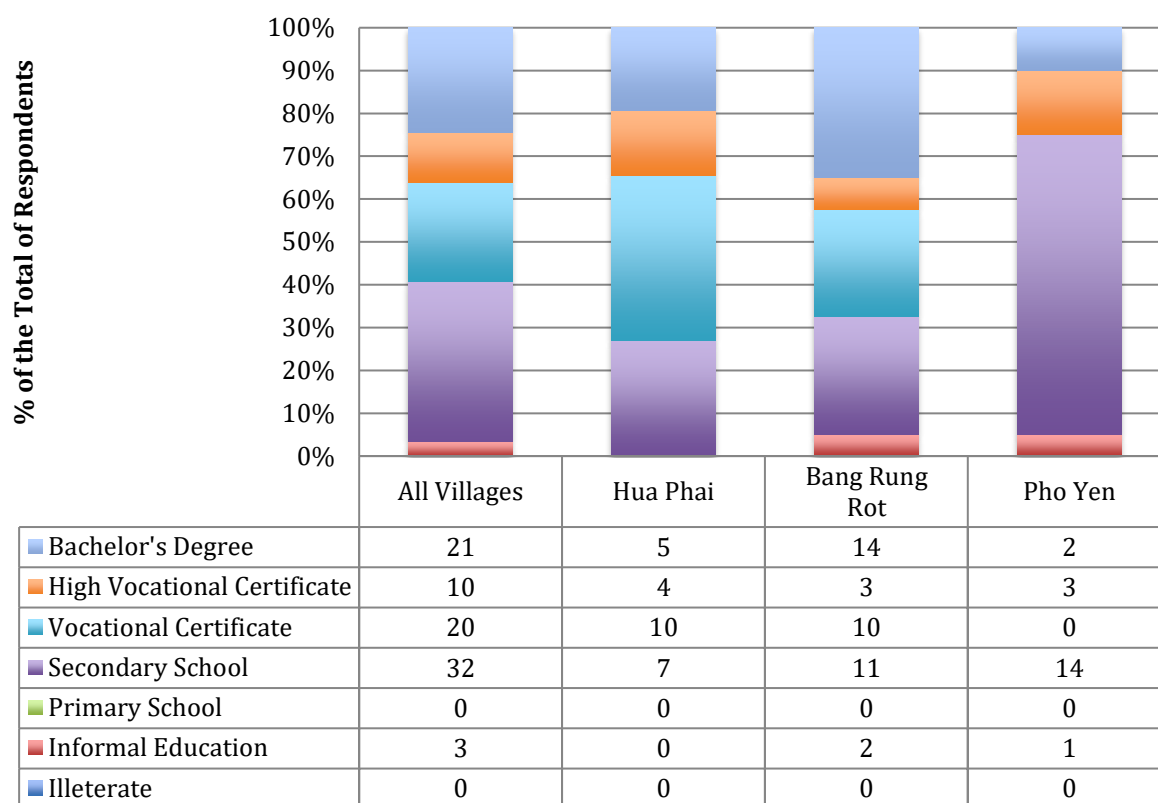


4.2.2 Education

Regarding the educational level, none of the respondents are illiterate, being the lowest level of education among the respondents Informal Education with 3 young people under this group, followed by Secondary Education, with 32 young people (37% of respondents), Vocational Certificate with 20 young people, High Vocational Certificate with 10 people and 21 respondents which have completed or are completing Bachelor's degree.

As shown in the graph below, there is a different regarding the educational level between Hua Phai and Pho Yen, with only 5 and 2 respondents respectively doing Bachelor's degree, and Bang Rung Rot Village with 14 respondents (35%) with Bachelor's degree. This might be due to the higher incomes in Bang Rung Rot so parents can afford to pay University and cover their children's expenses if they need to move to other provinces. In contrast, in Hua Phai, 7 respondents have Secondary School level and 14 Vocational Certificate, most of them with the future prospect of working in factories (manufacturing-related job) or companies based on their field of study chosen (ex. mechanics and business management). In Pho Yen, 70% (14 respondents) have Secondary School level.

Figure 16: Educational Level



Notes:

- Primary School: Grade 1 to 6
- Secondary School: Grade 7 to 12
- Vocational certificate: 3 years of study. The age is around 16 to 18
- High Vocational Certificate: 2 years of study. The age is around 19 to 20
- Bachelor's Degree: 4 years of study. The age is around 19 to 22

Among those who are studying to get High/Vocational Certificate, 14 of the respondents chose mechanics as field of study with the future prospect of working in factories. None of the respondents chose farming or any related field. Even though some of the young people interviewed expressed their willingness to become farmers, and despite the high level of education of young people, none of the interviewees steer their academic curricula towards agriculture. In contrast young people learn by doing and from their parent's experience. Due to price fluctuations and low returns, farming becomes an unstable occupation, and therewith the economic source to support an entire household. Khun Paphawin Padungrat, a 24 years old rice farmer from Hua Phai explains that currently farming revenues are not enough to support his family (5 family members including himself): "I am a full time rice farmer but I also work in factories at night because the price of rice has decreased, thus revenues are not enough to support my entire family. So my dad and I have to work in the farm during day -time, and in the factory overnight."



Khun Paphawin. Father and farmer. 24 years old (15th May, 2018)

He always planned to take over his parent's farm (100 rai), however he did Vocational Certificate on Mechanics because there are more jobs opportunities, as he is now working in factories to generate more incomes and cover the household's expenses. 37% of the respondents share the same view (19 respondents) at the time to choose their field of study. Young people select their majors considering the job opportunities as an alternative to agriculture when incomes are not enough and prices fall. When we asked one of the respondents how to support the installation of new farmers she suggested: "young people could do farming in their *free time*". They do not conceive the option to rely on agricultural revenues as their main-income generating activity.



Khun Kodchaporn. Mother of 2 children and housewife, 24 years old (27th May, 2018)

Table 14: Major on High/Vocational Certificate

MAJOR ON HIGH/VACATIONAL CERTIFICATE		
Category	N° of Respondents	%
Mechanics	14	47%
Bussiness Management	1	3%
Electronics/ Electro Technician	6	20%
Industry Engineering	1	3%
Marketing	3	10%
Accounting	3	10%
Computer Science	2	7%
TOTAL:	30	100%

The total number of students doing Bachelor's degree is 21 (24% of the young people). Among them, 29% are specialized on Accounting and Management, and 24% are specialized on Public Administration. Most of the young people who chose Public Administration as major is due to the characteristics of the job opportunities that offered this field of study: secure and stable jobs and the welfare contribution system (ex. health insurance, and retirement pension), this is why it is common for young people to be encouraged by their parents to study Public Administration. As shown in the table 3 and 4, none of the respondents have chosen Agriculture or any related field as their major or specialization.

Table 15: Major on Bachelor's Degree

MAJOR ON BACHELOR'S DEGREE		
Category	N° of Respondents	%
Airline Bussiness	1	5%
Accounting & Management	6	29%
Education	1	5%
Public Admin.	5	24%
Logistics	1	5%
Public Health	1	5%
Mechanics	1	5%
Political Science	1	5%
Buss. Mngt.	1	5%
Communication & info.	1	5%
Law	1	5%
Tourism	1	5%
TOTAL:	21	100%

As the table below depicts (Table 5) most of the young people have chosen their field of study since they believe there are more job opportunities or it is easy to find a job. Among this group of respondents (37%), 8 of them study Vocational Certificate on Mechanics, 5 are specialized on Accounting whether Vocational Certificate or Bachelor's Degree, 2 are specialized on Electronics (Vocational Certificate) and the rest are specialized on Logistics, Public Health, Public Administration and Computer Science. Those who are specialized on Mechanics or Accounting mainly work in Factories (manufacturing) or Companies (administrative paperwork). Those who choose their major so they can work in factories are specialized on Electronics, Mechanics and Industry Engineering. The one respondent that chose the major in order to help his/her family on the farm is specialized on Accounting.

Table 16: Why did you choose this field of study?

Why did you choose this field of study?		
Reasons	Times checked	%
So I can work in factories	7	14%
More job opportunities/easy to find a job	19	37%
I want to work on this FoS	9	18%
Practical/Useful on daily life	1	2%
Useful to help my family on the farm	1	2%
Scholarship	2	4%
I like this field of study	15	29%
No specific reason	3	6%
TOTAL TIMES CHECKED:	57	112%
Respondents:	51	100%

When the respondents were asked why they did not continue their studies (among which 33% are employed and 13% are unemployed) the most repeated reason is due to their need to work and earn money (10 respondents) and owing to economic issues (6 respondents). Some other got married and had to take care of their family/children (3 respondents), some stated not to be interested on studies (5 respondents), and 3 did not continue their studies because they wanted to help their parents farming.

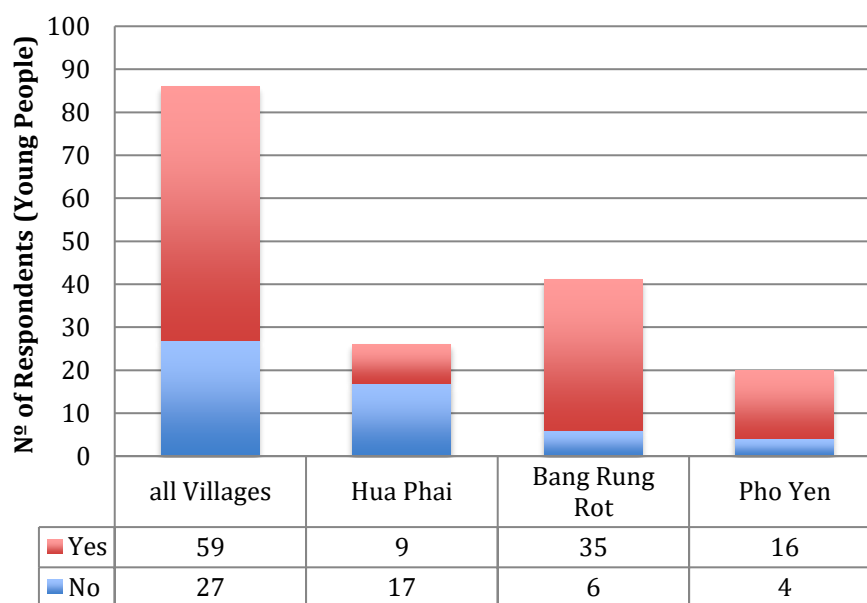
After school, those who did not continue their studies started helping their family on the farm (7 respondents), 9 of them stayed at home either to take care of household chores or because they have just graduated and haven't taken any further step yet, and 20 of the respondents started to work in factories, as local officers, self-employed (mainly vendors at local market or small family business), or employees.

Table 17: Young People that worked after School

YP that worked after school		
Category	N° of Respondents	%
Factory	11	50%
Govt. Official	2	9%
Employee	3	14%
Self-employed	5	23%
TOTAL:	21	100%

4.2.3 Family Background and Farming Activity

Taking into account the rural backdrop of this study, 59 interviewees are children of farmers, while 27 of them are not. Among those who are not children of farmers their parents mainly own local business (restaurants, beverages and food shop, car/bike repair shop), work in factories or are already retired. Hereinafter we will mainly focus on those whose parents are farmers.

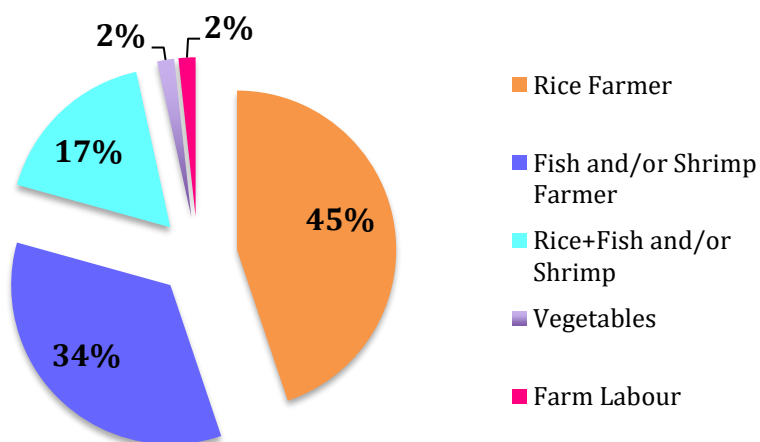
Figure 17: Parent's occupation; Child of Farmer

As shown in the graph above (Graph 2), there is a significant difference among villages. In Hua Phai, most of the young people interviewed are not children of farmers (65%); while in Bang Rung Rot and Pho Yen, the majority of them are children of farmer,

with 88% and 80% of the respondents. The evolution of people moving away from farming in Hua Phai -which is coming from the preceding generation- depicts the low level of economic satisfaction of farmers toward agriculture. In contrast, seems to be a newer trend in Pho Yen among young people, since their parents are still involved in agriculture (16 interviewees are children of farmer, while 4 of them are not).

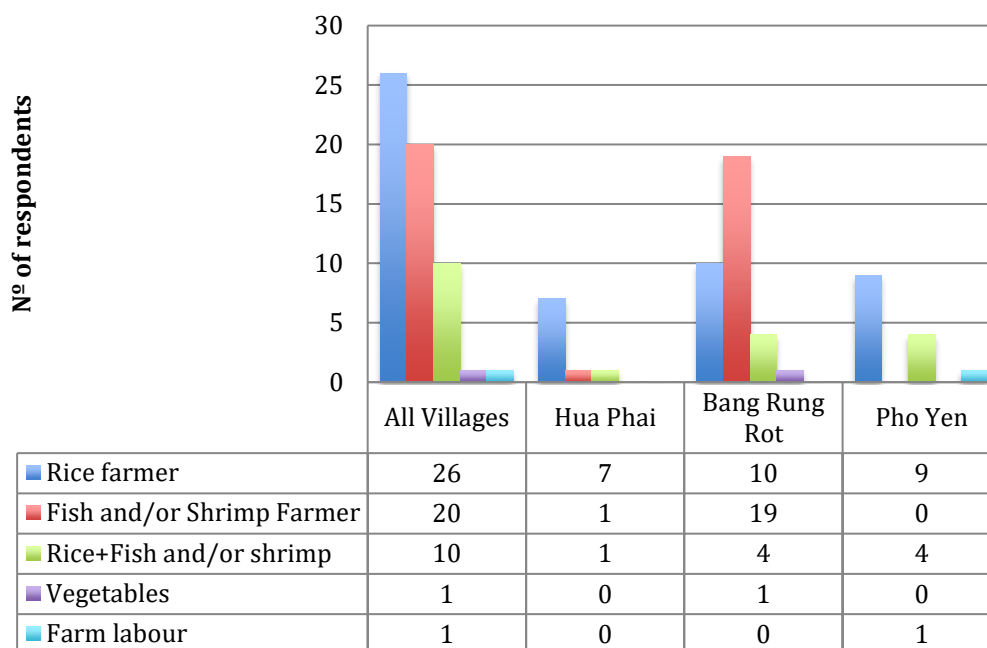
The farming activity or crop type among those whose parent's are farmers (59 respondents) is 45% children of rice farmer, 34% children of fish and/or shrimp farmer and 17% children of mixed crop farmer: rice and fish/shrimp (See the pie below: Chart 3)

Figure 18: Farm Activity of their Parents



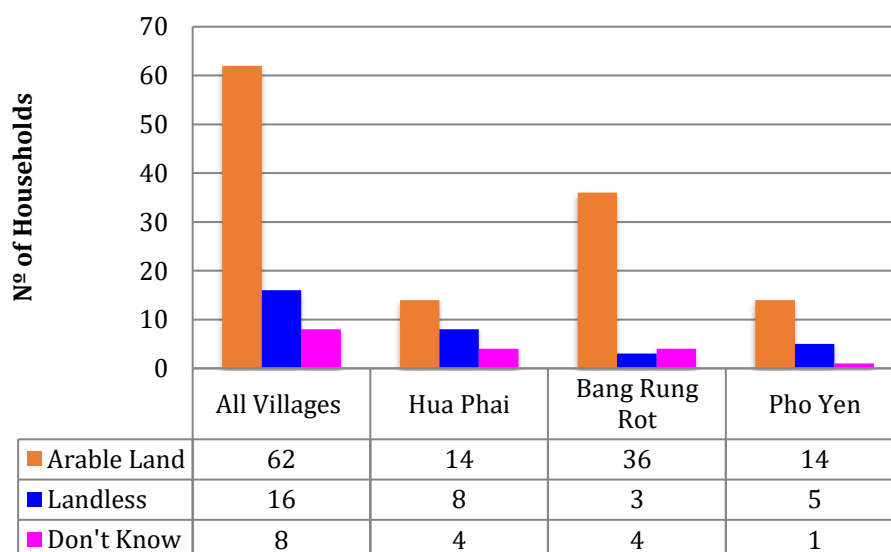
The data also depicts a difference among villages in terms of crop type of their parent's farm. Despite the fact that in Hua Phai only 35% are children of farmer, under this group, 78% are children of rice farmer. In Pho Yen, there is also a predominance of children of rice farmer, as shown in the graph below. On the other hand, in Bang Rung Rot most of the young people interviewed –whose parent's are farmers- are engaged in fish and/or shrimp production.

Figure 19: Type of crop of their parent's farm



The average size of their family's farm among the three villages is 31.94 rai. 72% of the respondent's family have arable land, either under ownership or rental, or given on rental to other farmers (In Hua Phai village 5 households own land but have rented it out, thus they do not practice any farming activity) 19% of them do not have any land; hence they don't practice any farming activity. 9% of the respondents (8 young people interviewed) were not aware of their family's land holding.

Figure 20: Household Landholding



It is important to shed light on the relation between land ownership and the type of crop. Among those households that have paddy fields (44 households), 27 of them have rented land, 15 owned the land and 2 of them gave the land on rental to other farmers; hence having the highest percentage of rented land on the production of rice. On the other hand, among the 31 households that grow fish and/or shrimp, 3 households have rented land, 26 owned the land and 2 borrowed the land from relatives, thus most of the households growing fish and shrimp own the land. One reason might be the lower return from rice production which is not enough to save and invest, therefore farmers cannot afford to purchase the land and are compelled to rent, which at the same time increases their production cost. On the other hand, fish and shrimp farmers, due to higher returns can save and invest capital on expanding the land and production, thus being able to increase incomes in the future due to the capacity to save and invest. Furthermore, farmers have more confident to invest on the land when they are the owners and there is no risk for the lease agreement to be withdrawn

Table 18: Land holding (medium size and type of crop)

HOUSEHOLD LAND HOLDING									
Category	Rented land		Owned land		Rented-out land		Borrowed from relatives		Total (household)
	Freq.	Average Size (rai)	Freq.	Average Size (rai)	Freq.	Average Size (rai)	Freq.	Average Size (rai)	
Rice	27	34.04	15	22.13	2	6.5	0	0	44
Shrimp and/or fish	3	20.33	26	27.27	0	0	2	15	31
Vegetable	0	0	1	2	0	0	0	0	1
TOTAL	30	18.12	42	17.13	2	2.17	2	5	
% (86)	35%	-	49%	-	2%	-	2%	-	

Note: Each category is not exclusive from one another. One respondent could have Rice land rented and owned, as well as one same respondents could owned rice and shrimp.

4.2.4 Farming Experience

Regarding the farming experience of the interviewees 38% of the respondents (33 young people) do not have any farming experience, and 62% (53 young people) of them stated to have some experience, either helping their family, school activities, because they are already farmers or because they help their relatives/neighbours on the farm. Again, the data shows the different attitudes (participation and economic satisfaction) of young people towards farming depicted on the high number of people (33 respondents, 38%) who has no farming experience. Among those 33 respondents with no farming experience, 14 of them are children of farmers (5 respondents in Hua Phai, 4 in Bang Rung Rot, and 5 in Pho Yen).

As mentioned before parents do not encourage their children to do farming since based on their experience it requires hard and tedious work and provides low returns, therefore young people do not get involved on farming activates having no experience or knowledge on agriculture.

Table 19: Farming experience

Do you have farming experience?					
Category	Total (N=86)	%	Hua Phai	Bang Rung Rot	Pho Yen
No	33	38%	20	7	6
Yes	53	62%	6	33	14
TOTAL respondents:	86	100%	26	40	20

The total of respondents of this study is 86 as mentioned above. Within the total of respondents, 59 young people are children of farmers (69% -Graph 2-), and among the children of farmers 46 respondents have ever helped their parents farming (78%). On the other hand, the other 22% (13 respondents) that are children of farmers have never helped them on farming.

Among the 46 young people that have helped their parents faming (out of 45 responses) the 73% do not take part on the farm management; hence they do not hold any decision-making power. They just help on the farm, but their parents are still the main person in charge. The other 12 respondents, (27%) stated their participation on the farm's management and decision-making power. Among these 12 respondents, farming is either their main or secondary occupation. According to their responses farm management involves mainly fixing the price of farm outputs and choosing the fish/shrimp/rice breed. Only three of them are considered the main person in charge of the farm management, while the rest of the interviewees are involved in a consultation process among the family members. Those who are the main persons in charge of the farm took over the management due to their parent's retirement or because they have been handed over a plot of land, around 30-35 rai (management not ownership) as part of the inheritance process, so they get to learn in a piecemeal way (learning by doing).

The devolution of decision-making power is a gradual process, and takes place generally, around the age of 23-24. In Hua Phai, 1 rice farmer (100 rai) took over the management after his parent's retirement (55 and 60 years old). At the beginning he would help his parents on the farm getting no allowances, but now he is 24 years old and married, and he is the main person in charge of the farm. The second famer who holds decision-making power is from Bang Rung Rot. The total landholding of the household is 120 rai (fish and shrimp pond), and all the family members (5) work at the farm. The interviewee is 24 years old, and at the time of the interview, she manages 4 rai (within the 120 rai of the household). She explains that gradually she will get up to 32 rai.

Among the 46 young people that have ever helped their parents farming (out of 46 responses) 16 of the respondents stated they received some allowances/salary for their work on their parent's farm (around 200-300 bath per week). On the other hand, 30 of them (65% of the young people that ever helped their parents farming) do not receive any allowance or contribution for helping their parents farming. Notwithstanding 12 of them said they have no fixed salary but their parents cover their expenses.

The majority of the respondents, 81 young people, do not take part on any group or cooperative. A small minority of 5 respondents, on the other hand, hold membership of a group or cooperative, such as *Bank for Agriculture and Agricultural Cooperatives*, *Village Fund* (microcredit programs such as loans), Saving Cooperatives and local farm groups.



Khun Than. Informal education student and general employed (shrimp tractor driver).
20 years old. (24th May, 2014)



Khun Arisa. Housewife and helps on her husband's farm. 23 years old (May 23nd , 2018)



Khun Monkul. Worker at a paper factory. 23 years old (May 22nd , 2018)

CHAPTER 5

YOUNG PEOPLE'S VISION OF FARMING PROBLEMS

5.1 Farming problems

In a holistic approach, the main problems pinpointed by young rural people in Prachinburi Province are related to: economic, environmental and social/institutional problems. This analysis is the result of an open-ended question. Out of a wide array of responses, we have clustered them on different categories, and quantified answers for further analysis. When we refer to “main problems”, the study aims to focus on young people’s perception on farming problems in general (agriculture-related problems in the region), and not specifically about their parent’s farm. There is a common concern among young people regarding environmental problems, with 70.90% of respondents, against 32.6% on economic issues and only 3.5% on socio-institutional issues. Considering each variable individually, *pest and diseases* (including weed problems) and *price fluctuations* are the most mentioned by young people (open-ended question), with 34% and 27% of cases respectively.

Table 20: Frequency of all farming problems

		Responses		Percent of Cases
		N	Percent	
Farming problems	Droughts	16	10.4%	18.6%
	Floods	11	7.1%	12.8%
	Weather Variability (changes in temperature)	13	8.4%	15.1%
	Lack of water	16	10.4%	18.6%
	Water Pollution from factories	2	1.3%	2.3%
	Water Acidity	6	3.9%	7.0%
	Pest and Diseases	29	18.8%	33.7%
	Soil Fertility	4	2.6%	4.7%
	Overuse of Chemicals	4	2.6%	4.7%
	Poor quality of breeds	1	0.6%	1.2%
	High Input/Investment Cost	12	7.8%	14.0%
	Price Fluctuation	23	14.9%	26.7%
	Indebtedness	1	0.6%	1.2%
	Low Returns	4	2.6%	4.7%
	Ineffective Policies	2	1.3%	2.3%
	Decreasing Involvement of young people	1	0.6%	1.2%
None		9	5.8%	10.5%
Total		154	100.0%	179.1%

Figure 21: Farming Problems

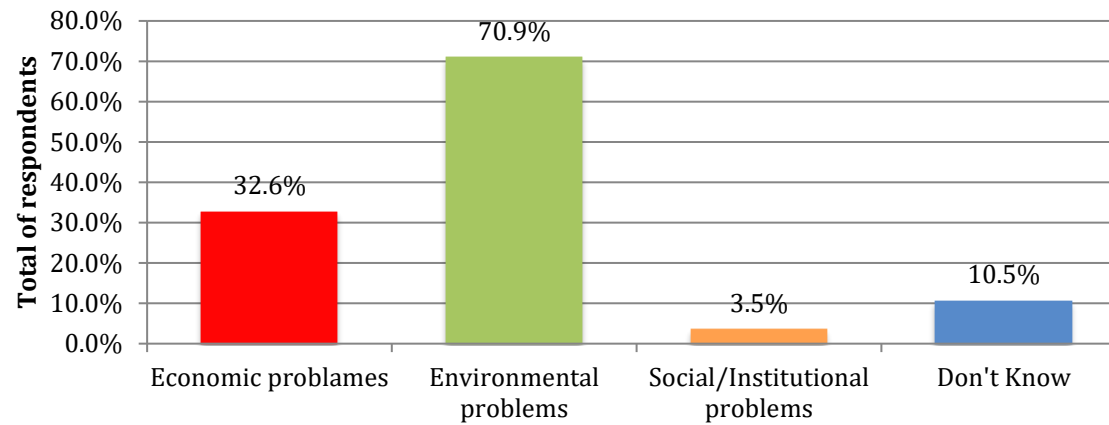
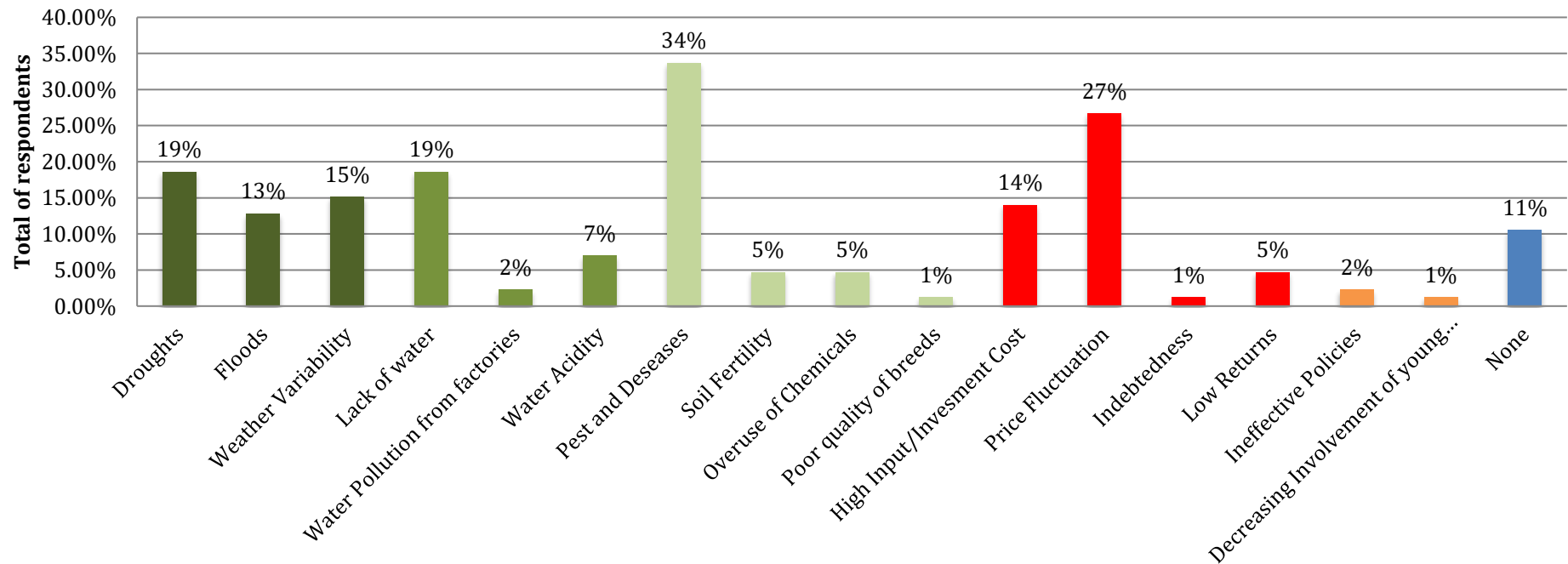


Figure 22: All farming problems

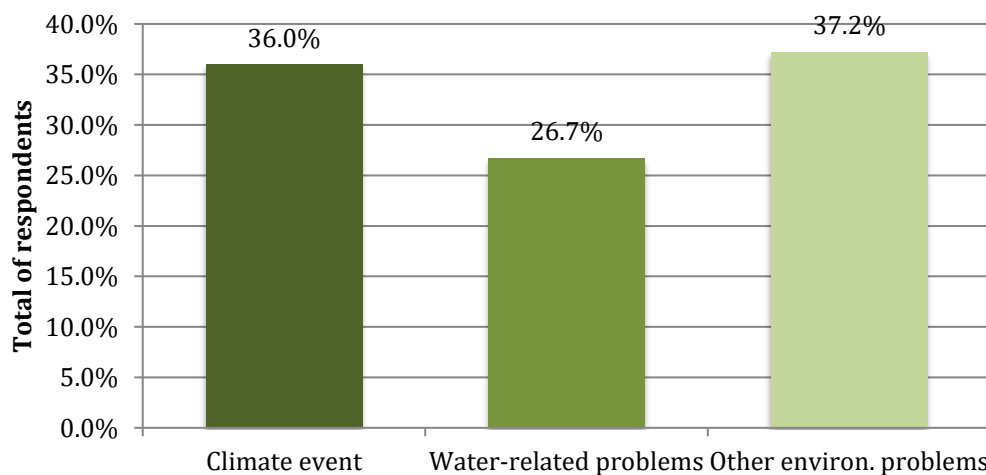


5.1.1 Environmental Problems

When young people were asked about their perception on farming-related problems, they highlighted the main problems farmers have to bear on daily life basis and regarding farming activity. They referred to the hardship of what involves being a farmer: the first-hand problems of a farmer's life in rural areas. They describe the issue as they see today and based on their parent's experience, and not as future-wise expected income-generating activity. Due to this reason and the variety of issues cluster under environmental problems pinpointed by young people (droughts, floods, weather variability, pest and diseases, etc.), environmental issues comes first with a high percentage. Though it is directly interlinked with the economic sphere since it is the environmental factors that make farming a high-risk activity, due to pests and diseases, floods, droughts, lack of water, and so on, causing big losses to farmers and gradually decreasing yields and profitability, and with it, farmer's economic satisfaction towards farming. According to young people's vision, environmental problems make farming climate-vulnerable and economically unreliable.

As noted earlier, young people mentioned a myriad of problems related to the environmental sphere. Their responses were based on their parents' experience and what they have observed in the village. 29 respondents (34%) are aware of the risk that suppose pest and diseases, (under *other environ. problems*) specially on shrimp production since it is very sensitive and diseases spread fast causing the lost of entire crops -after a high capital investment that it requires. Some young people claim that better shrimp's breed would make it less vulnerable and would increase the quality, thus returns. Droughts (under *climate event*) during dry season (November to February) and lack of water (under *water-related issues*) is also highly mentioned with 16 respondents respectively. Last time Thailand was affected by droughts was in January 2017, and floods in 2016. Thai rice farmers are facing an environment of deteriorating profitability

Figure 23: Environmental-related problems



We also aimed to identify whether there is a common pattern between young people's profile and the problems they have pinpointed. To do so, we have carried out Chi square test to evaluate the association on the environmental-related problems and some socio-economic factors: *gender*, *farming experience* and *parent's occupation* (child of farmer or not). We have chosen these socio-economic independent variables since it reflects young people's exposure to farming. However there is no statistically correlation as results show bellow, the null hypothesis cannot be rejected

Table 21: Farming environmental problems correlation with socio-economic factors (chi square)

Item	Environmental		
	X2	P	Df
Gender	0.407	0.524	1
Farming Experience	0.39	0.842	1
Child of farmer	0.006	0.938	1

5.1.2 Economic Problems

Regarding economic problems, 23 respondents mentioned *price fluctuation* as a major farming-related problem, which is directly linked with *low returns* (4 respondents), especially rice farmers. Owing to low returns, farmers do not have enough capital to buy inputs (pesticides, fertilizer, land rental, breeds, etc.); henceforth they need to ask for loans and since agricultural prices fluctuates farmers cannot undertake debt servicing, which makes them fall into indebtedness cycle (*high input cost*, 12 respondents). Low prices from agricultural products and high inputs cost makes agriculture a dead-end road for farmers.

Furthermore, because returns are low, farmers cannot save to buy the land or even expand the crops (out of 44 households with paddy fields, 27 have rented land), again increasing the production cost. Price decreases not only in rice production due to the withdrawn of the Paddy Pledge Scheme, but shrimp and fish as well, due to an increasing number of farmers shifting to this production since it provides higher returns. A growing supply decreases the price of agricultural outputs and increases competition. Young people also highlight the lack of government policies to stabilize agricultural prices. According to the respondents, the price of rice has deceased from 10,000-8,000TBH per tonne to 6,300-5,000TBH approximately since 2014.

We also aimed to identify the correlation between economic-related problems and some socio-economic factors. To do so, we have carried out Chi square test to evaluate the correlation between the economic-relate *problems* and the following socio-economic factors: *gender*, *farming experience* and *parent's occupation* (child of farmer or not). Results indicate that there is no statistically relationship between these variables:

Table 22. Farming economic problems correlation with socio-economic factors Chi square results)

Item	Economic		
	X2	P	Df
Gender	0.616	0.433	1
Farming Experience	3.139	0.076	1
Child of farmer	0.788	0.375	1

5.1.3 Socio-Institutional Problems

Within socio-institutional problems only 3 respondents are under this group. Respondents mentioned the lack of incentives policies for rice production, which is indeed jeopardizing the situation of rice farmers. Young people concretely mentioned the withdrawn of the Paddy pledging Scheme to support rice farmers, which is directly linked with price fluctuations mentioned above.

In 2011, Yingluck Shinawatra pledged to support rice farmers with a plan to purchase rice at above market prices in order to influence the price at international markets. In June 2011 rice prices were at record highs and Thailand was the world's leading exporter. The Yingluck promise was to buy unmilled paddy rice at 15,000 baht per tonne and premium Hom Mali rice at 20,000 baht per tonne, prices 50 percent or more above the market. The government moved to buy every grain of Thai rice and store it. This, it was thought, would cause world prices to spike. The Thai government would then sell the stockpiled rice at record prices for a profit. Yingluck was elected in September 2011. One week later India lifted its ban on rice exports. Ten million tons of Indian rice flooded the market. Vietnam then lowered its prices. Global prices plummeted.

A year later Thailand was no longer the leading rice exporter, dropping to number three after India and Vietnam. Thailand had stockpiled 17-18 million tons of rice that could not be sold at prices covering the purchase price, administration, and storage. In its first year, the cost to the Thai government was US\$12.5 billion and was expected to rise to US\$15 billion in 2014. The scheme foundered. Costing over US\$19 billion, the program left Thailand with millions of tonnes of rotting rice in warehouses and a government engulfed by allegations of corruption. In its final year, government financing for the scheme dried up, leaving hundreds of thousands of farmers unpaid. In June 2014, the military government put an end to the price-support program. Starting in 2010 the government went from encouraging rice production to discouraging it. It initiated a program to encourage rice farmers to switch to other crops. The government's policy offered a 2,000 baht per rai subsidy for paddy fields converted to other crops.

The decreasing involvement of young people in agriculture was also viewed as a socio-institutional problem by one of the respondents. He explains that due to the decrease of involvement of young people, farmers need to hire labour from other villages or provinces that increases the production cost of farming.

5.1.4 Socio-economic Problems

In order to carry out a further analysis on farming issues, the interview included a Likert scale question aiming to assess different items which are presented below. Figure 24 shows very contrasting results regarding young people's perception about the following issues. With a score from 1 (blocking constraint) to 5 (not an issue at all), 6 of the items have a score below 3, meaning a relatively common concern in all issues. As an exception to the common trend of results, "low social status", (social recognition) with an average of 4.78, is not regarded as an issue for young people in order to get involved in farming. Being children of farmers they do not label the occupation with any social status.

Most of young people tended to perceive *high-risk activity* as a major issue regarding farming activities. With an average score of 2.36, 68.6% of the young people consider it a major issue. Young people explained that farmers are frequently exposed to the uncertainties of weather, prices fluctuation, and diseases. Farmers do not know whether rainfall will be good or bad over a season; they do not know the prices they will receive for produce sold; and they do not know whether their crops will be infected by disease. Managing these risks are outside farmer's reach and these risks affect production and therefore their incomes. Owing to the myriad of risks they have to face, when crops are lost farmers -specially rice farmers, are compelled to ask for loans increasing the probability of falling into the indebtedness cycle. Their monthly incomes to sustain their families therefore, relies on a series of factors that are beyond their knowledge and control.

Low profitability and *high investment cost*, which are closely interlinked, have a similar score with 2.67 and 2.74 respectively. While returns from farm outputs keep decreasing, the input cost increases. In order to produce farmers need to pay for fertilizer and pesticides, land rental, varieties, labour and sometimes machinery. They mostly use chemicals, which decrease the soil quality over time making it chemical-dependent. Since returns are low, farmers have not enough capital to buy inputs; hence they need to ask for loans, and again on the edge to fall into the indebtedness cycle.

Regarding young people's purchasing power, they do not have capital to start farming from scratch. Only those who inherit land from their parents would become farmers, and some of them are not even encouraged to do so. Limited access to land becomes a main constraint for young people to start farming, with 51.2% agreeing on this issue with an average score of 2.85. One of the main reasons why parents do not encourage their children to do farming is due to low returns and tedious and hard work (28 respondents considered *hard work* a major issue). They want their children to have easier lives and not having to work long hours under the sun. Young people also rather to work in offices with AC and avoiding sunbanned.

Figure 24: Socio-Economic Problems

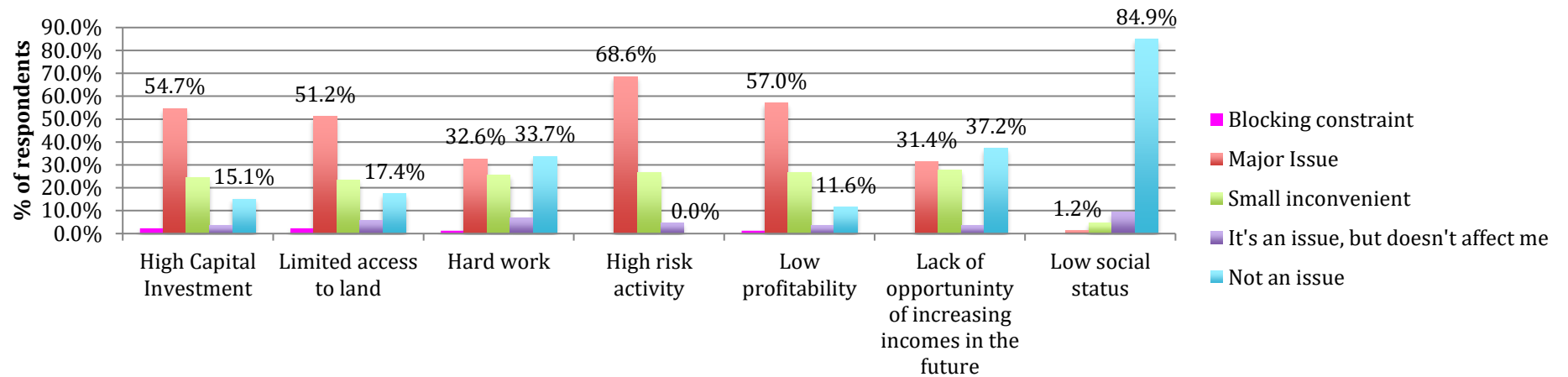


Table 23: Frequency of socio-economic problems Likert Scale

Item	Blocking constraint		Major Issue		Small inconvenient		It's an issue, but doesn't affect me		Not an issue		Average
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%	
High Capital Investment	2	2.3%	47	54.7%	21	24.4%	3	3.5%	13	15.1%	2.74
Limited access to land	2	2.3%	44	51.2%	20	23.3%	5	5.8%	15	17.4%	2.85
Hard work	1	1.2%	28	32.6%	22	25.6%	6	7.0%	29	33.7%	3.4
High risk activity	0	0.0%	59	68.6%	23	26.7%	4	4.7%	0	0.0%	2.36
Low profitability	1	1.2%	49	57.0%	23	26.7%	3	3.5%	10	11.6%	2.67
Lack of opportunity of increasing incomes in the future	0	0.0%	27	31.4%	24	27.9%	3	3.5%	32	37.2%	3.47
Low social status	0	0.0%	1	1.2%	4	4.7%	8	9.3%	73	84.9%	4.78

According to the responses on the Likert scale of the 86 young people interviewed, firstly we have carried out an Independent T-test to understand if there is a difference in the socio-economic farming problems results based on their parent's occupation, whether they are farmers (59 respondents) or not (27) -independent variable. However cannot reject the null hypothesis, the difference in socio-economic farming problems and children of farmers and no children of farmers is not statistically significant (no difference between the means). Results are reported on table 24.

Secondly, we have carried out One-way Anova test to compare the means and report if there is any significance difference between the items of the scale –dependent variable (*High initial capital investment, limited access to land, hard work, high risk activity, low profitability, lack of opportunity of increasing incomes in the future, and low social status*) and some socio-economic factors –independent variable.

After running One-way ANOVA test to compare means, there was a statistically significant difference between groups as determined by one-way ANOVA on the following:

- There is no statistically significance difference between groups (*economic status*) and item 4 (*high-risk activity*). However the homogeneity variances have been violated by Levene Test, $F(2,83)$, $p < 0.01$. According to Welch test there is statistically significance variance difference between groups ($p = 0.01$). After a pair-wise comparison according Games Howell Test, result show that there is statistically significance ($p = 0.01$) difference between higher-incomes and lower-incomes groups. Those with a higher economic background will be able to tackle agricultural shortages with less difficulty than those whose incomes rely on their seasonal crops. For those with lower incomes, agricultural shortages will force them to ask for loans which push them to the indebtedness cycle.
- An analysis of variances showed that the effect of *type of crops* on item 6 (*lack of opportunity of increasing incomes in the future*) was statistically significant $F(4,81) = 4.982$, $p = 0.001$. However the homogeneity of variances have been violated by Levene Test, $F(3,81)$, 1. According to Welch test there is statistically significance difference between groups ($p < 0.01$). After a pair-wise comparison according Games Howell Test, result show that there is statistically significance difference ($p = 0.01$) between *not farmers* and *fish and shrimp farmers*; and *rice farmers* and *fish and shrimp farmers*. As we have mentioned earlier rice farmer's returns are very low and keep decreasing, while inputs cost increases. This dynamic hampers rice farmer's potential to save capital and invest on the farm with the future prospect to increase incomes. Moreover, due to the lack of capital rice farmers cannot afford to buy the land; hence insecure landowners will divert effort away from investing in the farm. In contrast, fish and shrimp farmers acknowledge the potential of increasing incomes in the future if the right decisions are taken.
-

Table 24. Relationship between YP's vision on farming problems and socio-economic factors (One-way ANOVA)

Item	1. High capital Investment			2. Limited access to land			3. Hard work			4. High-risk activity			5. Low porfitability		
	Mean	F	P-Value	Mean	F	P-Value	Mean	F	P-Value	Mean	F	P-Value	Mean	F	P-Value
Education	2.74	1.484	0.225	2.85	0.929	0.431	3.4	0.986	0.403	2.37	1.465	0.243	2.67	0.421	0.738
Economic status	2.74	1.448	0.241	2.85	0.147	0.864	3.4	2.27	0.11	2.36	1.948	0.149	2.67	0.242	0.786
Land size	2.81	2.856	0.043	2.85	1.31	0.268	3.47	2.91	*	2.33	0.812	0.491	2.68	1.375	0.257
Type of crop	2.74	1.974	*	2.85	0.252	0.908	3.4	0.623	0.647	2.36	0.901	0.467	2.67	1.554	0.195

Item	6. Lack of opportunity of increasing incomes in the future			7. Low social status		
	Mean	F	P-Value	Mean	F	P-Value
Education	3.47	1.965	0.126	4.78	0.915	0.438
Economic status	3.47	0.167	0.847	4.78	0.071	0.931
Land size	3.49	0.483	0.695	4.76	0.294	0.83
Type of crop	3.47	4.982	0.001	4.78	1.411	0.238

Note: The boxes with a star means the data did not meet the requirements for Anova

Table 24. Relationship between YP's vision on farming problems and socio-economic factors (child of farmer): Independent T-Test

Item	N	High capital Investment			Limited access to land			Hard work			High risk activity		
		Mean	SD	P-Value	Mean	SD	P-Value	Mean	SD	P-Value	Mean	SD	P-Value
Yes	59	2.68	1.058	0.416	2.88	1.19	0.704	3.34	1.295	0.551	2.34	0.576	0.61
No	27	2.89	1.219		2.78	1.121		3.52	1.282		2.41	0.572	
Total child of farmer	86												

Item	N	Low profitability			Lack of opportunity of increasing incomes in the future			Low social status		
		Mean	SD	P-Value	Mean	SD	P-Value	Mean	SD	P-Value
Yes	59	2.54	0.914	0.185	3.41	1.288	0.535	4.78	0.527	0.989
No	27	2.89	1.188		3.59	1.279		4.47	0.698	
Total child of farmer	86									

In order to assess a further comparison between the problems perceived by young people depending on their parent's farm (*type of crops* and *land size*) based on the statistical results above, we have clustered young people into two groups:

- Young people whose parents are fish and shrimp farmers with 30 rai and above (group A).
- Young people whose parents are rice farmers, or fish and shrimp farmers with less than 30 rai (group B).

On group A, out of all villages (86 young people) we have 9 respondents. On group B, there are 47 respondents. We have used 30 rai as the threshold, since 31.94 is the average land size of farmers in the three villages (Hua Phai, Bang Rung Rot and Pho Yen), thus we consider that those who have less than 30 rai are small holders. We could observed in the graph bellow that there are some differences regarding *hard work*, *low profitability* and *lack of opportunity of increasing incomes in the future* on young peoples' responses regarding their parent's type of crop and land size. Those whose parents are fish and shrimp farmers with 30 rai and above (group A) do not consider farming as a hard activity (only 1 respondent considers it a major issue, and 6 of them state it is not an issue at all). On the other hand, on group B, out of 47 responses, 29 of them consider *hard work* as an issue (16 as a major issue, 13 as a small inconvenient).

Regarding the item *low profitability*, both groups (A and B) consider *low profitability* as an issue, with 7 respondents (78%) on group A and 44 respondents (93%) on group B. The difference remains on those who do not consider *low profitability* as a constraint. Within group B, out of 47 respondents, only 1 of them (6%) would say is not an issue; however on group A out of 9 respondents, 2 of them (22%) stated *low profitability* is not an issue. Due to the small number of respondents within group A results are not very contrasting, however seems evident the low economic satisfaction of young people whose parents are rice farmers.

More revealing is the different perception of both groups regarding *lack of opportunity of increasing incomes in the future*. On group A, most of the respondents do not regard this item as an issue (6 respondents, 67%), and none of the respondents consider it a major issue. On the other side, on group B many respondents (19) consider it a major constraint. As we have mentioned earlier rice farmer's returns are very low and keep decreasing, while inputs cost increases. This dynamic hampers rice farmer's potential to save capital and invest on the farm with the future prospect to increase incomes. Moreover, due to the lack of capital rice farmers cannot afford to buy the land; hence insecure landowners will divert effort away from investing in the farm. In contrast, fish and shrimp farmers acknowledge the potential of increasing incomes in the future if the right decisions are taken.

These facts shed light on the differences between young people's perception towards farming problems regarding their parent's crops and land size. Children of shrimp and fish farmers do not considered agriculture such a hard job and the non-satisfaction towards economic returns is lower. Young people believe as well, that fish and shrimp farming is a relatively promising occupation in terms of increasing incomes in the future.

Less appealing is agriculture for those whose parents are rice farmers, or fish and shrimps farmer with small landholdings. It is considered hard job, profits are low, and the capacity to save and willingness to invest is lower.



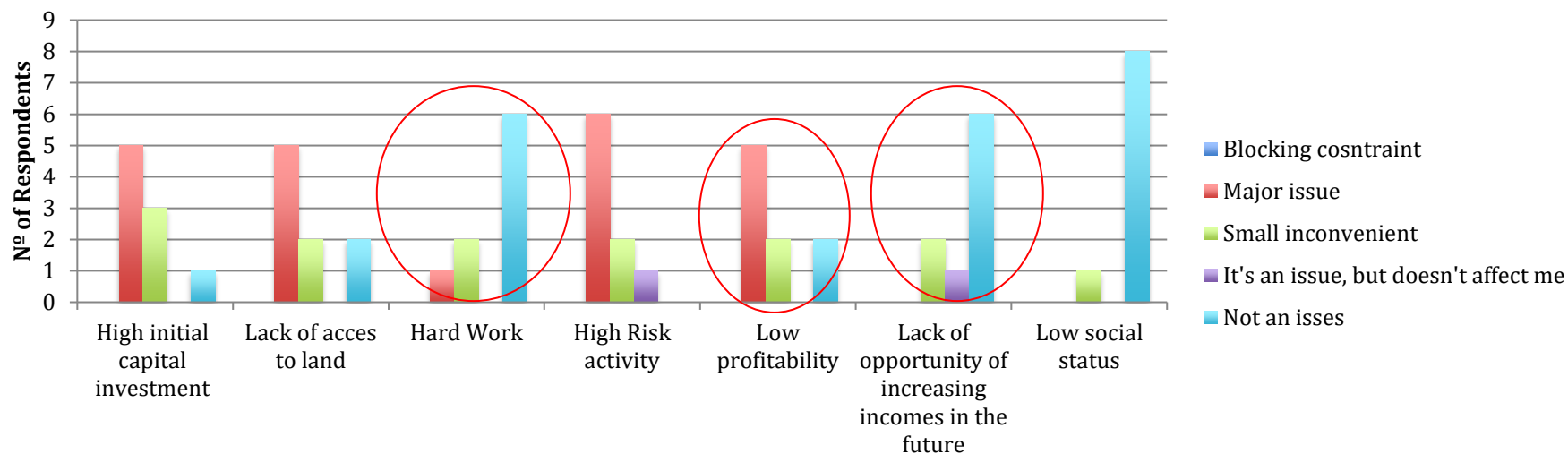
On the left Khun Sawittree, Secondary school, 17 years old. Khun . On the right, Khun Kamonwan, Vocational Certificate on Computer Business. 18 years old. (26th May, 2018)



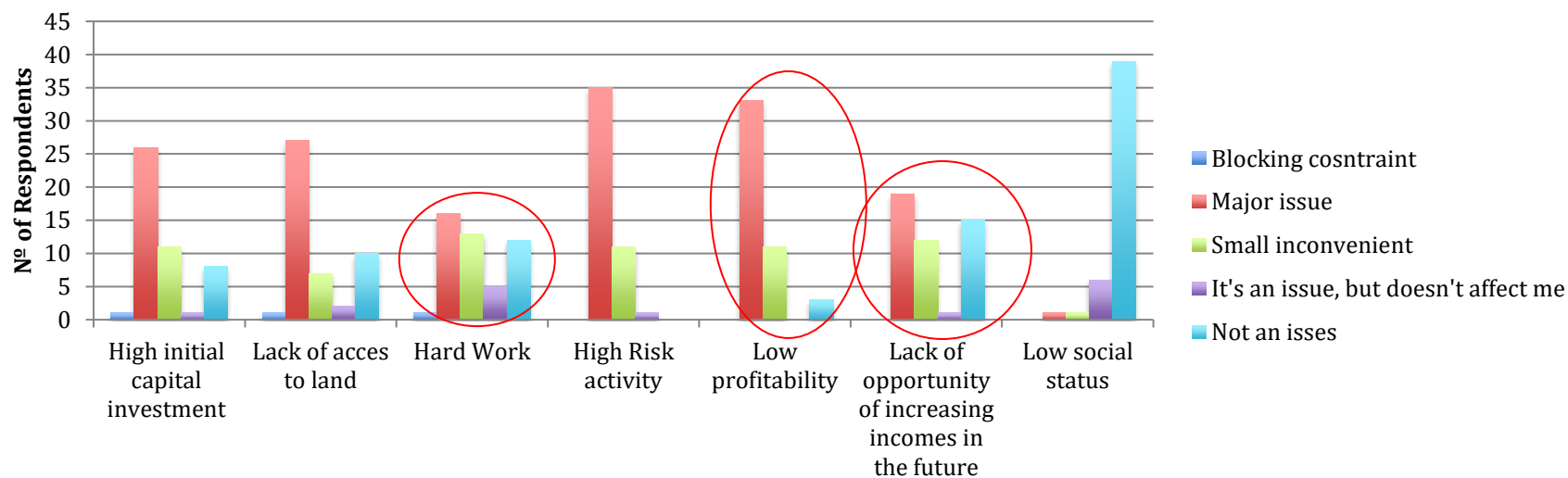
Khun Mayurachat. Undergraduate. 22 years old (Bachelor's degree on Public Admin. (May 24th, 2018)

Figure 25: Problems related to farming: Parent's type of crop and land size

Group A: (9 Young people) Fish and Shrimp farmers (land size: 30 rai and above)



Group B: (47 Young people) Rice farmers, and fish and shrimp farmers (land size: bellow 30 rai)



CHAPTER 6 YOUNG PEOPLE INVOLVEMENT IN AGRICULTURE

6.1 Future plan

The section above highlights the problems perceived by young people regarding farming activities, what are the main constraints they see. Hereinafter, the research study will focus on two aspects: *future plan* (based on their experience) and *expectation* (wish or dream); aiming to address research question 3: the backdrop under which young people would consider their involvement in agriculture.

On this section (*future plan*) we aim to assess young people's future plan, meaning if they would like to become farmers in the future (taking into account their current situation, environment and experience). Secondly, based on a hypothetical situation, young people were asked to reconsider the option to become farmers if they could receive government support to tackle all the constraints. The aim is to assess if young people's attitude towards farming has been built upon the constraints they have observed on farmers in their village, and to dig deep into their real expectations about their future and agriculture. In other words, the difference between young people's current perception and *participation* on farming in the area, and their willingness (*wish or dream*) to get involved in farming.

6.1.1 Driving forces on young people's *future plan*: whether to become farmers or not

Within the sample of this research study (86 young people), there is an equal distribution of those who plan to do farming in 10 years from now (43 young people, 50%), and those who don't (43 young people, 50%). Among those who do not plan to do farming in the future (43 respondents), 14 of them are children of rice farmer, 3 are children of fish and shrimp farmers, 6 mixed crops (rice plus fish and shrimp) and 1 is a farm labourer. The average land size of their parent's farm is 37 rai. 19 of the are not children of farmer (and 12 are landless -their families do not own any land)

Among the young people that plan to do farming, 21 respondents said as part time job or additional source of income, 9 as main occupation, and 2 of them just to help their parents on the farm. Within the same group (young people that plan to do farming, 43 respondents), 19 of them have secondary school level, 12 vocational certificate, 5 High Vocational Certificate and 7 of them Bachelor's degree. Among the 40% with Vocational certificate (including High Vocational Certificate) the major young people chose are: Mechanics (7 respondents), Electro technician (4), Marketing (1), Accounting (3) and Computer Science (2). Among those with Bachelor's degree, 3 are doing Management and Accounting, 2 Public Administration, 1 Public Health, and 1 Political Science. Despite their future plan to get involved in agriculture, their educational background is not steer toward farming practice. Young people learn from their parents and by experience, but they do not pursue any educational degree in order to further their knowledge on agricultural practices. In contrast, most of them pursue studies in order to have an alternative to agriculture, such as working in factories (3 respondents). They stated they chose their major because there are more job opportunities (12 respondents), or because they like that field of study (6).

Regarding their family background, 35 of the respondents (81%) who plan to do farming are children of farmers; 17 of them children of fish and shrimp farmers, 12 children of rice farmer, 5 children of rice plus fish and/or shrimp and 1 grows household vegetables. Out of 43, 8 of the young people who plan to do agriculture in the future (19%) are not children of farmers; therefore they will not inherit land and will need to start from scratch. The average land size of the parents of those who plan to do agriculture is 34 rai (above the average land size of the 3 villages), and 5 of them are landless.

From this data, we could pinpoint some socio-economic factors that affect and determine young people's decision on whether they would like to get involved in agriculture in the future or not. Among those who do not plan to do agriculture, most of them are not children of farmer (19 YP), or they are children of rice farmer (14) or landless (12). Thus, young people whose parents are farmers (35 out of 59) and are dedicated to profitable crops -fish and shrimp (17 out of 20) are more willing to get involved in agriculture. On the other hand, those whose parent's farm are not economically satisfactory (rice farmers -14 respondents), have no land (12 respondents) or their parents are not farmers (9) do not consider becoming farmers in the future. We have calculated Chi square as measure of association between these two variables: future plan and parent's occupation (farmer or not farmer), to test if they are independent from each other or not. The result were found to be significant as described above, $X^2(1, n = 86) = 6.53, p < .05$. We have also measured this correlation (chi square) between future plan and landholding of their parent's farm (whether they own land or not). Statistically, there is correlation $X^2(1, n = 86) = 4.38, p < .05$.

Table 25. Association between Young people's future plan and socio-economic factors (child of farmers and land ownership) –Chi Square results

Determinants on YP's Future plan			
Item	X2	P	Df
Child of farmer	6.532	.011	1
Landholding	4.388	.036	1

However, the land size of young people's parents is not a determinant influence on the respondent's decision to become farmers in the future. We have cluster the respondents regarding their parent's type of crop (rice, fish/shrimp, and rice plus fish and shrimp) and the land size of their farms: type 1 are those with landholdings of less than 30 rai, and type 2 are those with landholding of 30 rai and above (we are using our threshold of 30 rai used in the section above). As shown in (1) –children of rice farmers- most of bigger holders (Type 2; 30 rai or above) do not plan to become farmers (8 out of 14), while the smaller holders do (Type 1; 7 out of 12); and the same trend depicts graph (3) on children of rice plus fish and shrimp farmers. Notwithstanding, children of fish and shrimp farmers whose land holding is 30 rai or above (Type 2; 7 respondents), all of them plan to become farmers. Those respondents within type 1 (less than 30 rai), 2 of them, do not consider farming as a future option.

Table 26. Determinants on young people's future plan

Future Plan -Determinants			
Category	Plan to do farming (freq.)	Do not plan to do farming (freq.)	Total
Not child of farmer	8	19	27
Child of farmer	35	24	59
Landless	5	12	17
Landholder	38	24	62
Child of rice (only) farmer	12	14	26
Type 1: rice	7	6	13
Type 2: rice	5	8	13
Child of F/S (only) farmer	17	3	20
Type 1: F/S	9	2	11
Type 2: F/S	7	0	7
Child of rice+F/S farmer	4	6	10
Type 1: rice + F/S	2	2	4
Type 2: rice +F/S	2	3	5
(rice +F/S) Don't know land size	0	1	1

*Note: Type 1 clusters young people whose parents are farmers with less than 30 rai.
Type 2 are young people whose parents own 30 rai or more

Figure 26: Determinants on young poeple's decision to become farmers in the future

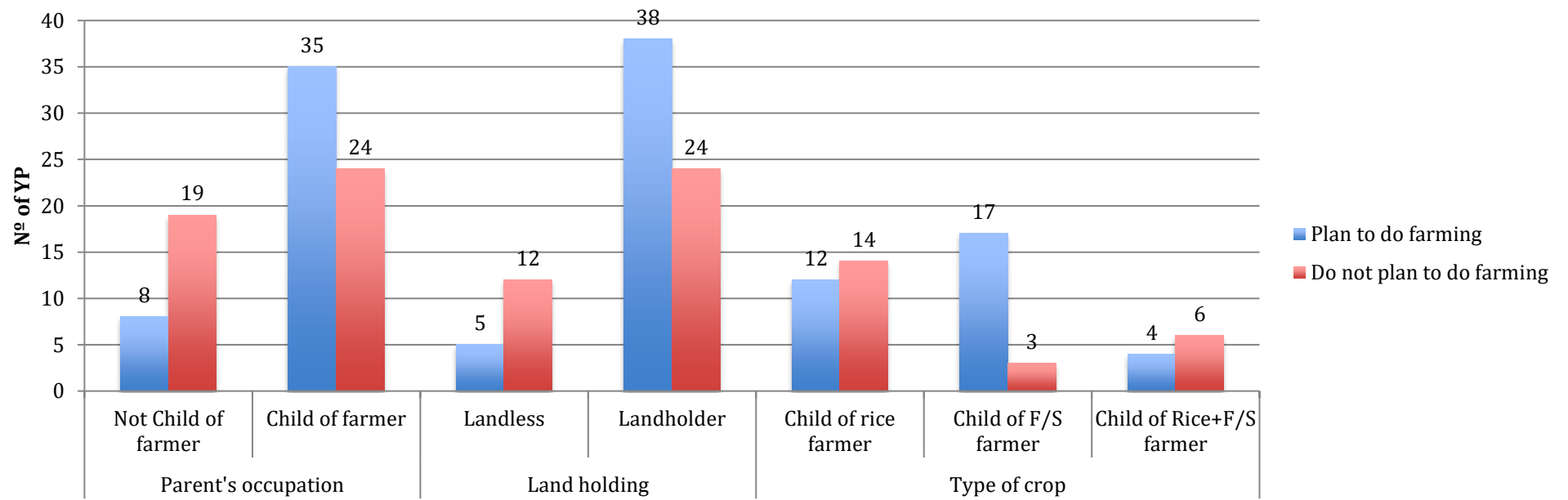


Figure 27: Future plan of rice farmer's children (land size)

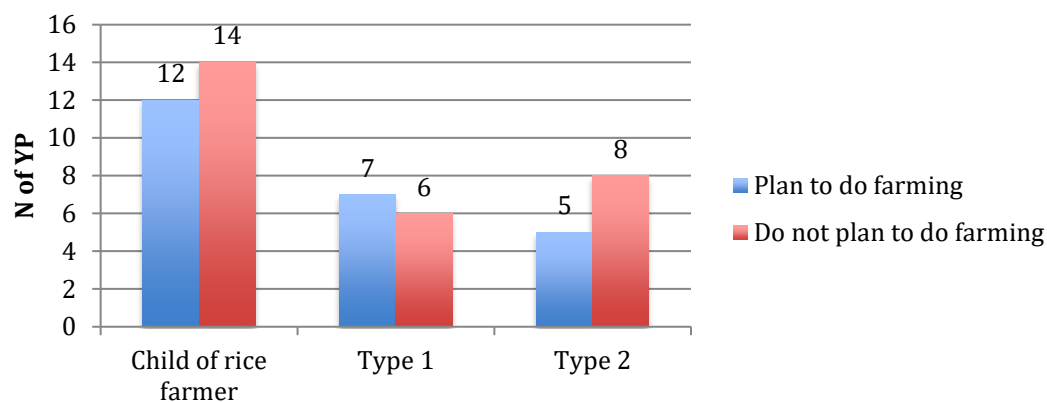
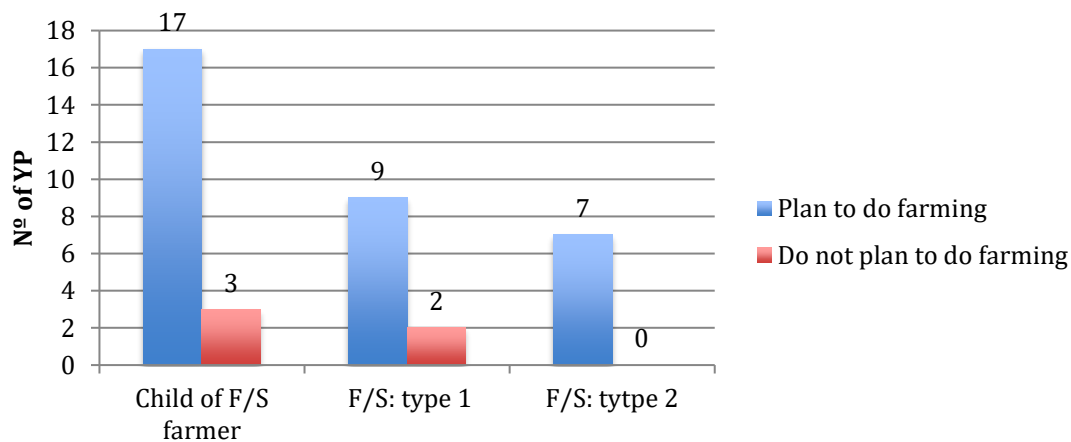
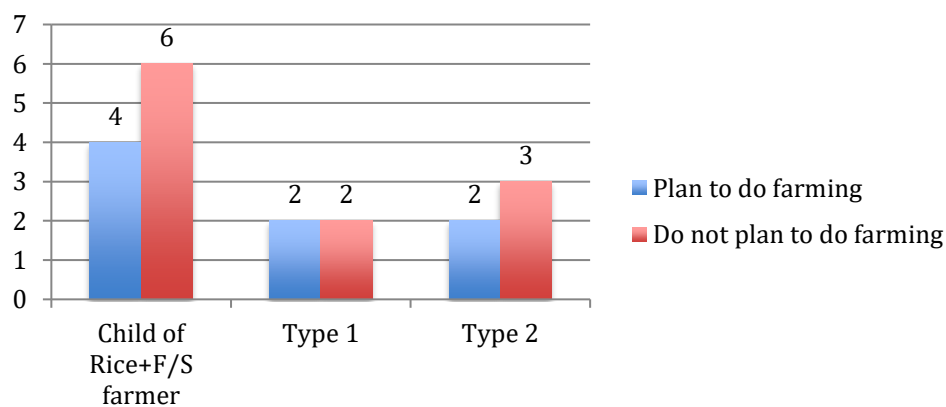


Figure 28: Future plan of Fish and Shrimp (F/S) Farmer's children (land size)



*Note: Within the 3 respondents that do not plan to become farmers, 1 of them do not know the land size of their parent's farm

Figure 29: Future plan of Rice + Fish & Shrimp Farmer's children (land size)



*Note: Within the 6 respondents that do not plan to become farmers, 1 of them do not know the land size of their parent's farm

A chi-square statistic was calculated to examine if there is significance correlation between young people's decision on their future plan (whether they want to get involved in agriculture or not) and their *farming experience*; we would like to assess whether these two variables are independent from each other or not. The result were found to be significant, $X^2(1, n = 86) = 8.31, p < .01$. Those with farming experience (53 respondents) are more willing to get involved in agriculture (64%), in contrast with those that do not have experience (70% out of 33 respondents with no experience). This fact comes along "parent's occupation" (whether their parents are farmers or not), since it is those whose parents are farmers that get exposure to agriculture helping their family's on the farm. Both factors have an influence on young people's decision.

Whether their *parents support* them on becoming farmers or not, does also shape young people's opinion about their future. We have also conducted Chi-square to assess the correlation between these two variables (future plan and parent's opinion). The test indicates that there is significant correlation, $X^2(1, n = 86) = 15.88, p < .01$; among those whose parents do not support them, the 73% do not plan to work in agriculture, on the other hand, those who receive support from their parents (18 respondents), 83% of them would like to work on the farm.

With regard to their *level of education*, there is a decreasing interest towards farming as their educational level increases. One of the respondents from Hua Phai who is pursuing Bachelor's of Laws told us: " My future plan is to become a lawyer. If it does not work, I would like to be a policeman. Becoming a farmer is the last option I would go for."



Monkul. Bachelor's student of Law. 23 years old. (May 2nd, 2018)

Gender (male, female), on the other hand, does not show very contrasting differences in terms of their future plan. The correlation between these two variables was tested as well using Chi square, however the null hypothesis cannot be rejected; there is no significance correlation between future plan and gender ($p=.51$): 56% and 46% of males and females respectively consider farming as a future option.

We have also carried out a Chi Square test to assess the correlation between young people's future plan and their vision on *farming problems*: economic, environmental and social (section 2.1). The results indicate that there is no statistically significant relationship between respondent's future plan and their vision on farming problems. Thus, young people's future plan and their vision on farming problems are independent from each other. The results on the *farming problems* question (likert scale, Graph X) are quite sharpened, with more than 50% of the respondents giving the same answer on all items, which might explain why there is no association between *future plan* and *farming problems*. Furthermore, the question was address to all respondents regardless their future plan, but considering the farming problems they envision in the area with a general approach (not regarding the problems they would have to tackle as farmers, which we will address on the next chapter.)

Table 27: Association between Young people's future plan and socio-economic factors (Chi-square results)

Future plan			
Item	X2	P	Df
Farming experience	8.31	.004	1
Parent's support	15.088	.000	1
Gender	0.422	.516	1
Farming economic problems	3.389	.066	1
Farming environmental problems	0.508	.476	1
Farming social problems	0.345	.557	1

Figure 30: Determinants on young poeple's decision to become farmers in the future

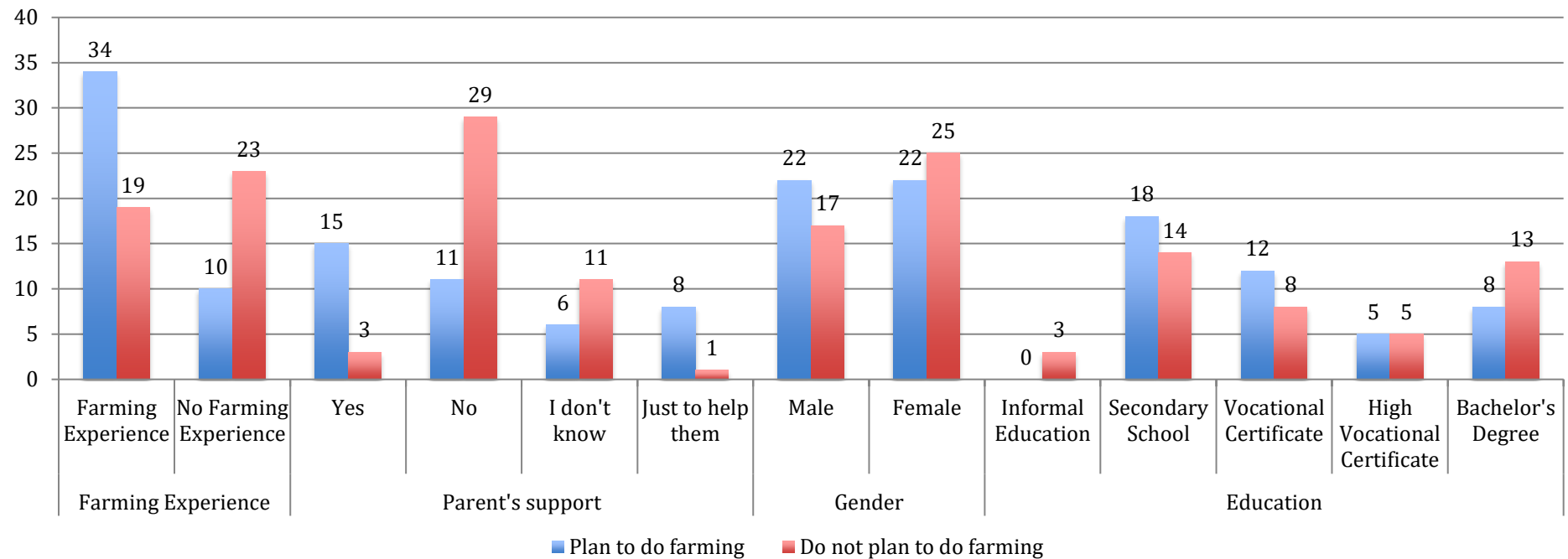


Table 28. Determinants on young people's future plan

Future Plan- Determinants				
	Category	Plan to do farming (freq.)	Do not plan to do farming (freq.)	Total
Farming Experience	Farming Experience	34	19	53
	No Farming Experience	10	23	33
Parent's support	Yes	15	3	18
	No	11	29	40
	I don't know	6	11	17
	Just help them	8	1	9
Gender	Male	22	17	39
	Female	22	25	47
Education	Informal Education	0	3	3
	Secondary School	18	14	32
	Vocational Certificate	12	8	20
	High Vocational Certificate	5	5	10
	Bachelor's Degree	8	13	21

Into a nutshell, the socio-economic factors that affect and shape young people's decision on whether they would like to get involved in agriculture in the future or not are:

- Their **parent's occupation**, whether they are farmers or not; 59% of those who are children of farmers plan to get involved in agriculture; while the 70% of those who are not children of farmers do not plan to do agriculture in the future. If young people's parents are farmers, there is a higher chance that they would get exposure to agriculture helping their parents on the farm. Moreover, as we have put forward on the *farming problems* section above, *high initial capital investment* is one of the main hindrances for young people to start farming, thus young people whose parents are farmers (specially if they grow profitable crops) would be lured to take over their farms, due to personal bonds (staying with their families and keeping on their parents efforts) and economic opportunity due to inheritance of the farm.
- **Land ownership (of their parent's farm)**: 61% of those whose parents own land (landholders) plan to become farmers; while 71% of those whose parents are landless do not plan to get involved in agriculture. The lack of access to land and capital hampers young people's willingness to get involved in agriculture, hence if their parents do not own land, most of them tend to discard the option to become farmers as income-generating activity (as we have seen already on the *farming problems* section)

- **Type of crop:** Young people whose parents are dedicated to profitable crops – fish and shrimp- plan to get involved in agriculture (85% of F/S farmer’s children); while those who are children of rice farmers do not plan to get involved in agriculture (54% of rice farmer’s children). This is link with *low profitability and the lack of opportunity of increasing incomes in the future*. Since 2014 the price of rice has dramatically dropped, the rice support scheme has been withdrawn, and the current national objective of the government is to reduce the areas dedicated to rice production supporting the expansion of other crops. This backdrop diverts young people’s interest away from rice farming, and instead they seek for job opportunities in factories or urban areas.
- **Farming experience.** There is also a correlation between their decision on getting involved in agriculture and their farming experience. Among those who have experience (53 respondents, 24,4% of all respondents), 64% plan to become farmers in the future; among those who do not have experience (33 respondents) 70% do not plan to do agriculture. This is directly linked with their knowledge and experience they have on agriculture, which gives them the confident to make out of farming a sustainable livelihood.
- **Parent’s opinion.** Parent’s opinions have a strong impact on their children in Asian culture, such as in marital unions, education and professional career. Whether young people’s parents support them or not with regard to getting involved in agriculture in the future has a strong effect on the respondent’s opinion as well. Among those whose parents support them to get involved in agriculture (18 respondents), 83% have a positive attitude towards farming; though among those whose parents do not support them (40 respondents), 72% of them do not want to become farmers. Above all, we should pay heed to the high percentage of parents who do not support their children to do farming, 47% of the total.

Therefore we can conclude that due to the limited access to capital, and knowledge young people’s future plan and involvement in agriculture relies on their parent’s legacy, opinion, and the potential to inherit a profitable farm or not. It is therefore this rural backdrop that hinders young people’s potential to innovate and ties them up to the conditions already set by their parents. Young rural people’s future options and possibilities are tethered to their parent’s legacy, diverting youth entrepreneurship and innovation potential for rural development.

Moreover, the current involvement of young people in agriculture (7% are farmers as main occupation, and 24,4% stated to help their parents on the farm as secondary occupation. N=86) is much lower than the share of young people’s future plan to become farmers (50% wants to engage on agricultural activities). Which further highlights the inadequate rural conditions for young people to start farming.

6.1.2 Young people that plan to become farmers

Most of the young people that plan to do farming in 10 years from now (total of 43 respondents, 50%) want to take over their parent's farm (31 young people), and some of them want to continue their parent's farm as well but making small changes: expanding the land (8 respondents) and/or adding new crops (8 respondents). 12 of them want to start from scratch. Generally, young people do not have enough capital to start farming if it is not taking over their parents' farm. Within those 12 young people who want to start from scratch, 8 of them are not children of farmers; therefore, they will not inherit land. The other 4 are children of farmers (fish, shrimp or rice), however, they would like to start their own farm because they believe that type of crop is not profitable and most of them want to grow fruits or household vegetables. Some of them mentioned organic watermelon, coconut, or even sufficiency economy⁴ planning (meaning integrated farming according to respondent's answer). Generally, they do not have a specific plan (e.g. how to save capital for investment) however they are certain about the type of crop they want to grow in order to make satisfactory incomes.

Table 29: Young people that plan to do farm (Type of farm)

YP that plan to do farming		
Type of farm	N° of respondents (freq.)	%
Continue my family's farm	31	72%
Continue my family's farm and expand the land	8	19%
Continue my family's farm and add new crops	8	19%
Rice	2	5%
Fish and/or shrimp	3	7%
Fruit and vegetables	6	14%
Crop variety	2	5%
Self-sufficiency economy	1	2%
Total	61	142%
Total of respondents	43	100%

The 43 young people that want to do farming in the future, the needs they expressed (from an open ended-question) to start farming are mainly: capital (22 of them), knowledge (11) and land (12). Among the respondents that said land (12), 4 of them, their parents are landless, and 8 of them their parents own land, though the average land size of those respondents (27 rai) is below the average land size of the study area of this research (31.94 rai)

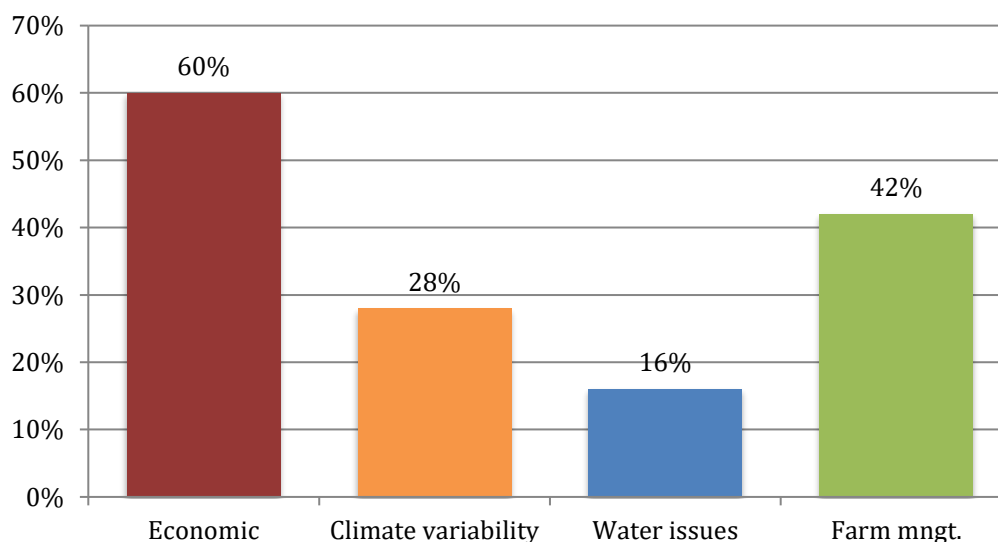
agriculture, embracing water resource development and conservation, soil rehabilitation and conservation, sustainable agriculture and self-reliant community development. The aim is to optimize farmland.

Table 30: Young people that plan to do farm (Needs)

YP that plan to do farming		
Needs	N° of respondents	%
Capital	22	51%
Knowledge	11	26%
Land	12	28%
Farm inputs	1	2%
Support on price	1	2%
Labour	1	2%
Better breed's quality	2	5%
Access to market and bargaining power	3	7%
Total	53	123%
Total respondents	43	100%

When young people were asked the problems related to farming on section 2.1, 70.9% of the respondents identified environmental issues, and 32.6% economic issues. On this section, the question was steered towards the constraint it involves regarding their future in farming, in a personal approach (and exclusively addressed to those who plan to do farming). In contrast with the previous section, an increased 60% (N=43) pinpointed economic issues. It is the main constraint envisioned by young people in order to do farming as income-generating activity.

Figure 31: Young People that plan to do farming: Constraints



I

n more detail, within economic constraints, 11 of the respondents pointed out *price fluctuation*, 16 of them *high capital investment* and 7 of them *climate variability*. This analysis is as well the result of an open-ended question. Out of a wide array of responses, we have clustered them on different categories, and quantified answers for further analysis.

Table 31: Young people that plan to do farm (Constraints)

YP that plan to do farming		
Constraints	Nº of respondents (freq.)	%
Price fluctuation	11	26%
High capital investment	16	37%
Climate variability	7	16%
Droughts and floods	6	14%
Water PH and salinity	3	7%
Access to water	4	9%
Overuse of chemicals	3	7%
Pest and diseases	1	2%
Access to land	4	9%
Soil fertility	1	2%
Time management	4	9%
Lack of knowledge	4	9%
Total	64	149%
Total respondents	43	100%

6.1.3 Young people that do not plan to become farmers

The main reason why young people do not want to get involved in farming (N=43) is because they are more interested on getting an education and seeking for jobs in their field of study (13 respondents), mainly business management and mechanics. Due to their ambition to study and the lack of support from their parents to get involved in farming, young people do not get experience and they believe they have no knowledge and confident to do agriculture (8 respondents). As one of the respondents told us: “I would like to take over my parents’ business (recycling enterprise). My parents are not farmers therefore I never got experience and I will not inherit land. I think I can make more money if I continue my parent’s business”.



Khun Bo. Student, Bachelor on Communication and Information. 21 years old (May 26th, 2018)



Khun Chakrit. Low Vocational Certificate on Mechanics. 17 years old. (May 27th, 2018)

Some of them even being children of farmers, they have no contact with the farm activity whatsoever. A high number of young people also justified their rejection towards farming since they have no land (9 respondents) and it is considered hard job (7 respondents), working long hours under the sun.

Table 32: Young people that do not plan to do farming (Reasons)

No plan to do farming, why?		
Reasons	N° of respondents (freq.)	%
Have no land	9	21%
Have no capital	1	2%
Have no knowledge/ experience	11	26%
I want to work in factories	8	19%
I want to work in my field of study	13	30%
Low and unstable incomes	3	7%
Hard work	7	16%
total	52	121%
total of respondents	43	100%

In general terms, those who become farmers are the young people that take over their parent's farm. As mentioned earlier, it is a piecemeal process. First they start helping their parents and gradually they increase their decision-making power, until they become the main person on the management of the farm. However, among the 20 young people that do not have farming experience, 12 of them are children of farmers. From this fact and based on the data bellow, we can assert the negative attitude of parent's towards their children working on agriculture.

6.1.4 Parent's opinion and young people's perception on the decreasing involvement of young generations in agriculture

As noted earlier, another diving force that pushes them away from farming is their parent's opinion. When young people were asked about the opinion of their parent's about their future (in general terms as an open-ended question), 24 of them felt free to choose and no constraints. 18 of the respondents stated their parents want them to work in factories, since it provides stable incomes and is not considered as hard wok as farming. 8 of them responded their parents want them to become farmers; one of the parents is a rice farmer (80 rai), 5 are fish and shrimp farmer (average land size is 70.25 rai) and mix crops (rice plus fish and shrimp with an average of 120 rai). Parents also encourage their children to get an education and work on that field of study (14 respondents).

Table 33: Parent's opinion about their children's future

Parent's opinion about their future		
Category	N° of respondents	%
I am free to choose	24	28%
Study and work in that field os study	14	16%
Family business	2	2%
Run my own business	3	3%
Work in factories	18	21%
Government Depart	12	14%
Farmer	8	9%
No opinion	5	6%
Total respondents	86	100%

On the other hand, when we asked specifically their parent's opinion about them getting involved on farming most of them said their parents do not want them to do farming as income-generating activity (40 respondents), 17 of the respondents said their parents support them to become farmers. Some of them (9 respondents) said their parents only want them to help on the farm, but not as main occupation. Those who are encouraged to do farming, their parents are mainly fish and shrimp farmers (10 respondents, 59%), 2 of them grow rice plus fish and shrimp and only 3 are children of rice farmer. The average land size of the parents who encourage their children to do farming is 48.47 rai (above the average: 31.94 rai)

Table 34: Parent's opinion on their children getting involved in farming

Parent's opinion on farming		
Category	N° of respondents	%
Yes, they support me	17	20%
No, they don't support me	40	47%
Just help them when I have free time	9	10%
They have no opinion	13	15%
I don't know	4	5%
Total	83	97%
Total respondents	86	100%

Table 34: Farmers who encourage their children to work on agriculture

Parents who encourage their children to do farming					
Rice farmer		Fish and Shrimp		Rice+Fish and Shrimp	
Freq.	Average land (rai)	Freq.	Average land (rai)	Freq	Average land (rai)
3	16.67	10	47.1	2	103

Parents do not want their children to work hard (15 respondents), some believe their children have not enough knowledge or experience (8 respondents), and some other mentioned the low and unstable incomes. They would rather like their children to have more secure and stable future to sustain their families and not to follow the same footstep as they had. They considered farm as hard and not worthwhile occupation.

Table 35: Parent's who do not encourage their children to work on agriculture

If no, why?		
Reasons	Freq.	%
It is hard work	15	35%
We have no land	1	2%
Have no knowledge or experience	8	19%
Low and unstable incomes	6	14%
High investment cost	2	5%
High risk activity	1	2%
They want me to work in factories	4	9%
They want me to work as govt. Official	1	2%
Just as additional income	2	5%
Total responses	40	93%
Total of respondents	43	100%

The interviewees were also asked their opinion about young people's interest on farming in the area, whether they believe young people are interested on farming or not (Table X and Y): 47 respondents said young people are not interested, 27 said they are still interested and 9 did not know (N=86. 3 missing respondents). Thus, farming is not a priority on young people's preferences; 47 respondents said young people are not interested on farming anymore, mainly because they rather work in factories (22 respondents), which provides stable incomes. They also believe, based on their parent's experience that farming is a hard job, requiring many hours under the hot weather. An increasing number of young people are getting more interested on getting an education in order to avoid farm jobs (7 respondents). Therefore, even though 50% of the respondents plan to do agriculture in the

future, they are aware of the difficulties it involves and they believe young people would not like to get involved on it.

Table 36: Young people's opinion about those who are not interested on agriculture (Reasons)

YP not interested in farming, why?		
Reasons	N° of respondents	%
It is hard work	19	40%
Low and unstable incomes	7	15%
Lack of access to land	2	4%
High capital investment	1	2%
Lack of knowledge and experience	1	2%
Parents do not want them to work in farming	2	4%
They want to work in factories	22	47%
They want to work in urban areas	1	2%
They want to study and work on that field of study	7	15%
Other	2	4%
Total of responses	64	136%
Total of respondents	47	100%

Among those who said young people are interested on farming in the area (27 respondents) they said that only those whose parents are farmers and can inherit the land would consider to get involved in farming (17 respondents), and mostly young people are interested on fish and shrimps production since returns are higher. Our data also depicts the same results with 81% (N=43) of the young people who plan to work in agriculture being children of farmer, therefore having the potential to inherit land. Moreover, rice is not an appealing crop to make satisfactory incomes and increase revenues in the future since the saving potential is relatively low. Due to the above-mentioned reasons on this section, the involvement of young people in agriculture might decrease in the future (44 respondents). Farming is not considered an appealing occupation with regard to young people's view and their parents' perception.

Table 37: Young people's opinion about those who are interested on agriculture (Reasons)

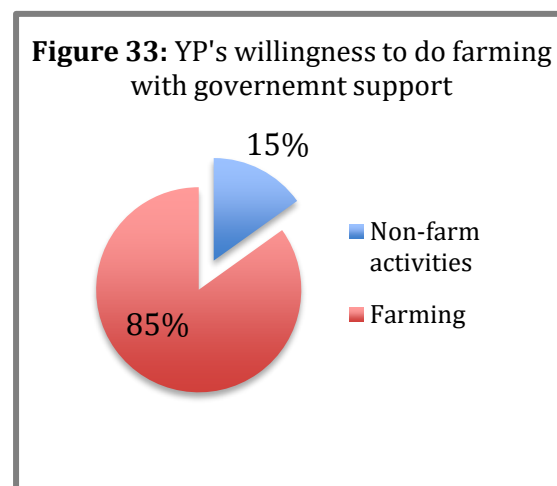
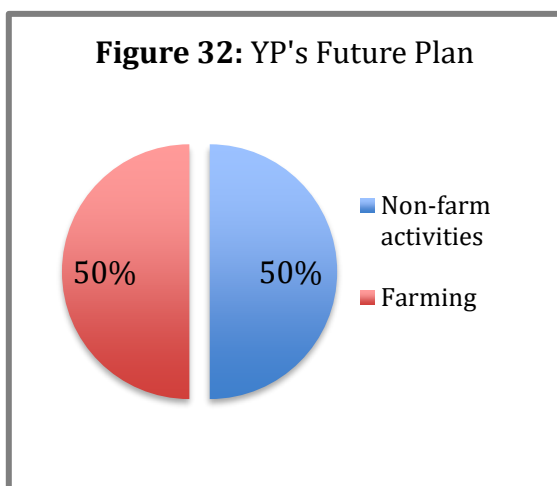
YP interested on farming, why?		
Reasons	N° of respondents	%
Those whose parents are farmers	17	63%
They are interested on fish and shrimp production	2	7%
As an additional income	1	4%
More independence	1	4%
Total of responses	21	78%
Total of respondents	27	100%

Into a nutshell, 50% of the respondents on this research study plan to do agriculture in the future, whether as main income-generating activity (9 respondents), secondary source of incomes (21) or helping their parents on the farm (2). The main constraints they perceive are economically wise (60%; N=43), and 72% plan to take over their parent's farm, which is directly linked with the main constraints pinpointed by young people in order to start farming: access to capital (22 YP), knowledge (11) and land (12). Among those who do not plan to do agriculture most of them are children of rice farmer (14) or landless (12 YP). Thus, young people whose parents are farmers and are dedicated to profitable crops (fish and shrimp) are more willing to get involved in agriculture. On the other hand, those whose parent's farm are not economically satisfactory (rice farmers -14 respondents), have no land (12 respondents) or their parents are not farmers (9) do not consider becoming farmers in the future. Therefore we can conclude that due to the limited access to capital and land, young people's future plan and involvement in agriculture relies on their parent's legacy and the potential to inherit a profitable farm or not. It is therefore this rural backdrop that hinders young people's potential to innovate and ties them up to the conditions already set by their parents. Young rural people's future options and possibilities are tethered to their parent's legacy, diverting youth entrepreneurship and innovation potential for rural development.

Moreover, the current involvement of young people in agriculture (7% are farmers as main occupation, and 24.4% stated to help their parents on the farm as secondary occupation. N=86) is much lower than the share of young people's future plan to become farmers (50% wants to engage on agricultural activities). Which further highlights the inadequate rural conditions for young people to do farming.

6.2 Wish or dream: willingness to get involved in agriculture

We have already assessed the current involvement of young people in agriculture: 7% are farmers as main occupation, 24.4% help their parent's on the farm as secondary occupation, and none of them chose agriculture or any related major as field of study. We have already assessed on the previous section their future plan, whether they intend to become farmers or not (50%). Those who do not plan to do farming (43 respondents) consider it is not economically appealing and physically exhausting. They believe there are many constraints to tackle and needs to satisfy in order to make farming a satisfactory occupation. However, when we asked whether they would reconsider to do farming if they receive government support, an increasing 85% of young people (73 respondents) responded affirmatively.



The tables below give more detailed information of those who would get engaged on farming with government support (N=73):

Table 38a : Would you consider faring in 10 years from no? (reasons)

Would you consider farming in 10 years from now?		
Yes...	N° of respondents	%
It is already my plan	34	47%
I am already a farmer	4	5%
If the Govt. Supports me	35	48%
Total	73	100%

Table 38b: Full time or additional incomes?

Yes...	N° of respondents	%
Full time	26	36%
Part time/ additional income	33	45%
Total of responses	59	81%
Total of respondents	73	100%

Young people claim a need for government support in terms of capital (60 respondents), knowledge (52) and land (47).

Table 40: Needs of the young people that would reconsider farming if the government supports them

Needs		
Category	N° of respondents	%
Capital	60	82%
Knowledge	52	71%
Land	47	64%
Access to market and bargaining power	1	1%
Stable prices	7	10%
Equipment and mechanization	3	4%
Access to international markets	1	1%
Decrease input cost	1	1%
Better breed's quality	2	3%
Labour	3	4%
Access to water	1	1%
Total of responses	178	244%
Total of respondents	73	100%

Young people's dream farms are diverse, from crop variety (5 respondents), fruits and vegetables (7 respondents), fish and shrimp (5 respondents), chicken farm (2 respondents), and some even mentioned rice (7 respondents). Some other would like to continue their parent's farm (6 respondents), adding new crops (2) or expanding the land (9). The minimum farm size young people dream to have is 21.67 rai, and they expected to get as incomes an average of 61,898.41 TBH per month. The average capital needed in order to achieve their dream farm is 324,091 TBH.

Table 41: Dream farm

Dream farm		
Type	N° of respondents	%
Dream same as plan	30	41%
Fish and shrimp	5	7%
Rice	7	10%
Fruits and vegetables	7	10%
Chicken farm	2	3%
Crop variety	5	7%
Continue my family's farm	6	8%
Continue my family's farm and new crops	2	3%
Continue my family's farm and expand the land	9	12%
Total of responses	73	100%

As we have mentioned in the section above (future plan), 50% of the young people interviewed plan to do farming in the future (43 respondents). When we asked all the interviewees whether they would reconsider to do farming in the future with government support an increased of 30 young people responded affirmatively, with a total of 73 respondents willing to get involved in agriculture. Among those who already planned to do farming as their future plan (43 respondents), 30 of them said, if the government supports, they would keep doing same as planned. However, 13 of them would reframe their vision: 7 would continue their family's farm but would increase the land size; one of them would as well continue their parent's farm (fish and shrimp) but would follow The New Theory adding new crops, and 5 of them would continue their parent's farm (rice farmers) but would add fish and shrimps. One of them even mentioned adding livestock such as pig and chicken.

On the other hand, there are 30 young people who did not plan to do farming, but would get engaged in agriculture if they receive government support. Among this group there are 16 children of farmer: 11 children of rice farmer, 3 mixed crops (rice and shrimp), and 2 are children of fish and shrimp farmer. They do not plan to work in agriculture due to unsecure (rented) land and unstable prices. However if the government supports them and they have secure access to land, prices are stables and they can add new crops, they would consider doing farming. They claim stable prices (mainly on rice), profitable crops (diversified crops such as fruits and vegetables) and they would like to expand the land between 5 and 12 more rai. Furthermore, within the 30 young people who did not plan to do farming, but would with government support, 14 of them are not children of farmer.

Therefore with stable prices and secure land ownership 85% of the young people interviewed would get involved in agriculture, in contrast with the current 7% of young people who are already farmers and 24.4% who are helping their parents as secondary occupation. Furthermore, results also change between those who plan to do farming (50%), and those who would get engaged in farming with government support (85%). Hence, young people's perception towards farming is highly linked with their parent's experience and the backdrop that surrounds them.

6.2.1 Driving forces on young people's willingness on whether to become farmers or not

A chi-square statistic was calculated to examine if there is significance association between young people's willingness to get involve in agriculture and some socio-economic factors. Results show to be statistically significance on the relationship between young people's wish or dream and their *farming experience*. Respondents who get experience on agriculture feel the confidence and determination to be able to make farming a source of living, and make it an economically sustainable occupation. On the other hand those who don't get experience do not feel they have neither the skills nor the knowledge to generate incomes from farming. Moreover, their *parent's opinion* still plays a big role on young people's dream. If they feel the support from their parent's they will have more confidence on themselves to become farmers. Their parents' support is also link to whether they will inherit a profitable farm or not since such are their parents that support their children to become farmers.

Young people's dream is also associated with their perception on *economic problems* such as price fluctuation and low returns. It is those who have a more positive perception on farming regarding economic profitability that will have the willingness to get involved in agriculture. On the other hand, young people that hold a negative perception of farming problems regarding economic problems do not perceive farming as a reliable source of incomes due to price fluctuations.

Table 42: Determinants on Young people's wish or dream (Chi-square results)

Wish or dream			
Item	X2	P	Df
Farming experience	6.167	.013	1
Parent's support	5.597	.018	1
Parent's occupation	.355	.551	1
Landholding	2.315	.128	1
Gender	.446	.504	1
Environmental Problems	2.168	.141	1
Economic Problems	4.313	.038	1
Socio-Institutional Problems	.554	.457	1

6.3 Alternatives to farming: Industry, a growing sector in Prachinburi province

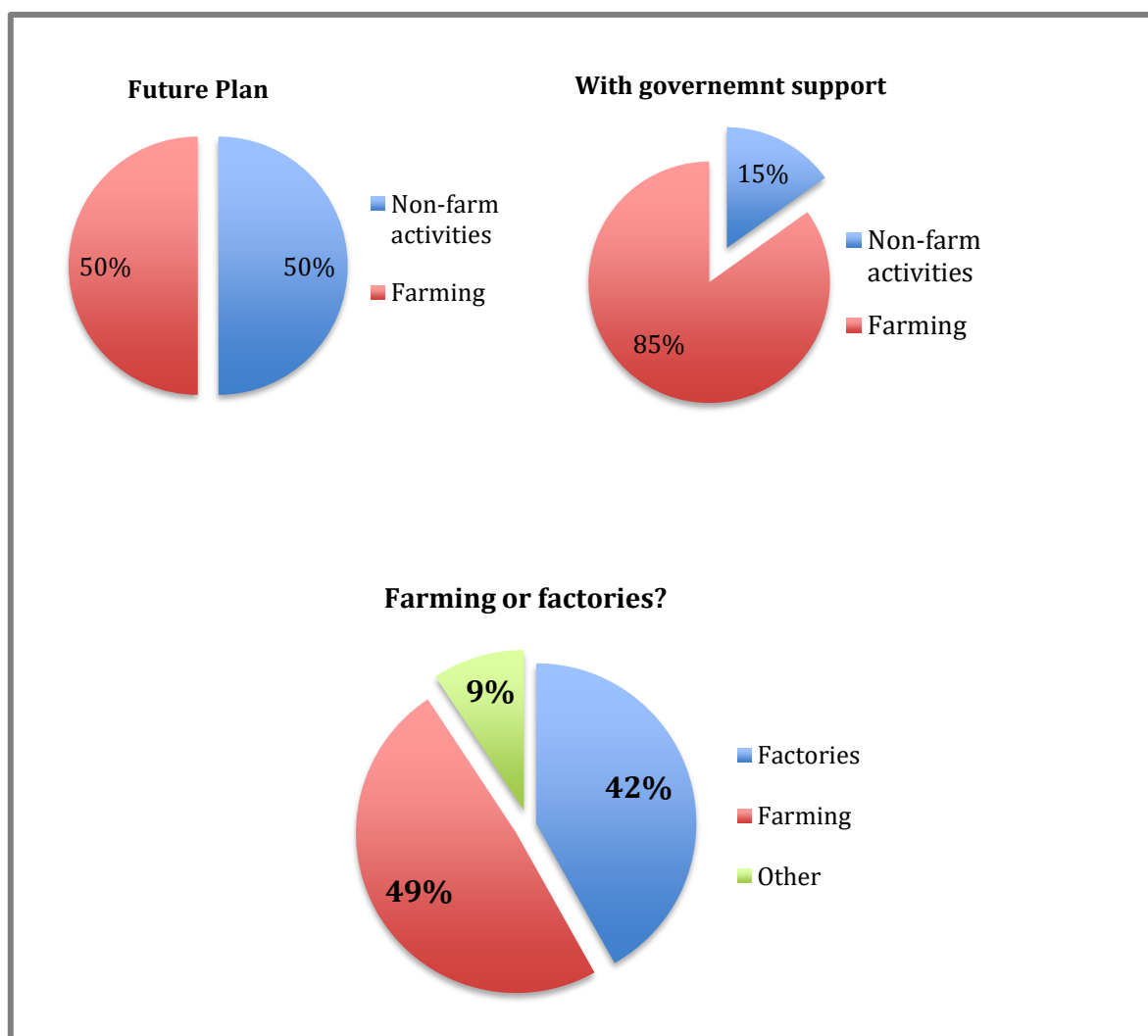
In rural areas the alternatives to agriculture are either working in factories or moving to the cities in order to find jobs. In Prachinburi province the demand for working in factories is quite high (Red bull company, car manufacturers...) and especially young people are lured by such alternative. The industry sector is expanding very rapidly in Prachinburi province (i.e., 304 industrial estate, Rojana industrial estate, etc). Many of our respondents work in factories such as the Red Bull and Seagull factories.

According to the interviewees, the average income in factories is THB 13,621 per month, and 21 respondents said factories offered transportation for free. For those companies that do not offer transportation, the average cost per month is THB 1,245.74. On the other hand, young people also tend to move to cities in order to seek for jobs. According to the interviewees, the average living cost in urban areas is THB 6,702.67, and THB 3,283.58 in rural areas.

We have asked the interviewees whether they prefer to work in agriculture or factories: 42 respondents said farming, and 36 respondents said factories. 5 of them said neither agriculture nor factories and 3 of them did not know. Regarding their future plan, 46 respondents said they want to be farmers; and 73 expressed their willingness on agriculture with government support. However, when we ask them to choose whether to work on farming or factories, 42 said farming (less number of young people that actually plan to do farming). This might be due to the current constraints perceived by young people on

agriculture, and the opportunities and stability they see on working in factories. So their preferences are more biased towards factories (a growing sector in Prachinburi) rather than farming.

Figures 34: YP’s engagement on agriculture: Future plan, “with government support”, wish or dream



*Note: others include those respondents who did not know, or responded neither both.

Young people that prefer to work on farming (42 respondents) is to have more independence and free time (23 respondents) so they do not need to follow the rules and schedule as they do in factories. Furthermore, family bonds in rural areas are very strong so young people rather to work in the farm so they can stay at home and take care of their families (9 respondents). The living cost is lower (THB 3,283.58 per month) than in urban areas (THB 6,702.67 per month) and there is no risk to lose the job (termination and retirement) and provide lifetime incomes.

Table 43: Reasons of the young people that prefer farming (vs working in factories)

Young people that prefer to work on farming		
Farming	N° of respondents	%
Higher incomes	4	10%
Independence and more free time	23	55%
Opportunity of increasing incomes in the future	1	2%
Lifetime job (no risk of being laid off)	2	5%
Less living cost	6	14%
Can stay at home and take care of family	9	21%
If: price increases, secure farmland	2	5%
Total responses	47	112%
Total respondents	42	100%

Among the young people that prefer to work in factories (36 respondents), they explain it provides higher and stable incomes (27 respondents). Farming is considered a high-risk activity and work is hard and profits low. Some other do not have land, so factories are a feasible alternative for them in rural areas. Working in factories also provide in some cases welfare package, including health insurance, school fees for their children and they can get bonus for extra hours of work in times of scarcity or when needed.

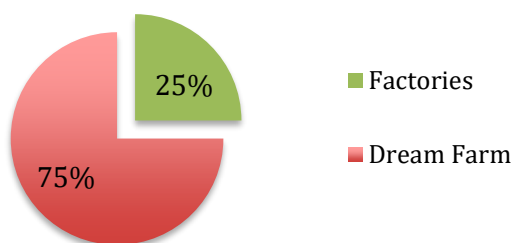
Table 44: Reasons of the young people that prefer working in factories (vs farming)

Young people that prefer to work in factories		
Factories	N° of respondents	%
Stable and higher incomes	27	75%
Landless	1	3%
Farming is a high risk act.	2	6%
Less risky for health (no exposure to chemicals)	1	3%
Social Welfare	1	3%
Not hard work	7	19%
Total responses	39	108%
Total respondents	36	100%

When young people were asked whether they prefer to work in factories or their *dream farm* (the farm they could have if they would receive government support to tackle all the constraints), 51 of the respondents said farming and 17 of them in factories. Some other (6 respondents) hesitated, stating that depends whether the price of farm outputs increases, and if they could have secure land (those who have land on rental do not have completely

freedom whether to adapt the land to other crops or even to extend the rental of the land over time).

Figure 35: Young people's wish or dream: What would you prefer?



When we asked the interviewees to compare the differences between working in agriculture and factories, the agricultural negative aspects viewed by young people are mainly economic (74 respondents), such as high-risk activity (38 respondents), price fluctuation (6), and unstable incomes (25). Even though it is considered to have a higher standard of living comparing to work in factories, young people also mentioned how farming can be hard work (30 respondents) due to the exposure to extreme temperatures, the sun, chemicals -from fertilizers and pesticides, and social isolation.

Figure 36: Farming Drawbacks

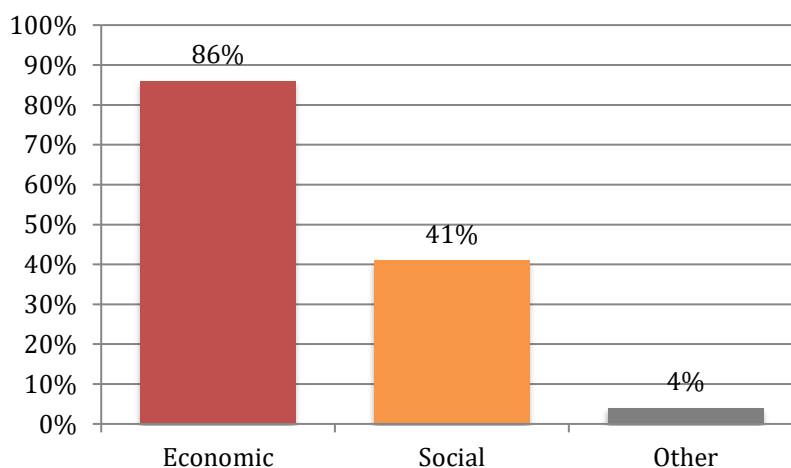


Table 45: Farming drawbacks

Farming -Drawbacks		
Category	N° of respondents	%
High risk activity	38	44%
Price fluctuation	6	7%
Unstable incomes	25	29%
Hard work	30	35%
Exposure to chemicals	1	1%
Soil degradation	1	1%
Water Issues	3	3%
Social isolation	1	1%
Total responses	113	131%
Total respondents	86	100%

The advantages of working in agriculture are mainly regarding social aspects, meaning better quality of life and working conditions, such as more independence and more spare time (73 respondents). As mentioned earlier being a farmer means you are your own boss and there is no need to follow strict schedules, rules and long working hours; this was highly mentioned by young people. Despite the high movement of young people towards urban areas, most of them prefer to stay at home so they can take care of their families (13 respondents).

Figure 37: Farming Advantages

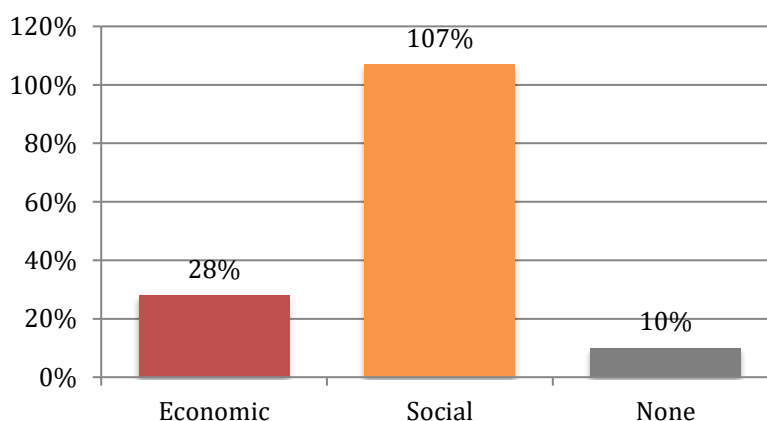


Table 46: Farming advantages

Farming -Advantages		
Category	N° of respondents	%
Saving potential	1	1%
Can provide additional incomes	9	10%
Higher incomes (sometimes)	8	9%
Low living cost	4	5%
Incomes increase potential	2	2%
Independence and more free time	73	85%
Inputs for consumption	4	5%
No need to commute	1	1%
Easier job	1	1%
Can stay at home with family	13	15%
Total of responses	125	145%
Total of respondents	86	100%

In contrast with agriculture, the drawbacks of working in factories are mainly related to social aspects (quality of life and working conditions), and the advantages are economically wise. Working in factories is considered as hard work (28 respondents): there is no free time, most of them have to work 6-7 days per week and they have to comply with strict schedules. There is more pressure and competitiveness; therefore there is a higher risk to lose the job, whether because of termination or retirement. There is no independence (18 respondents) and they have to follow strict rules. Some of them even mentioned it is risky for health due to the exposure to pollution and heavy machinery.

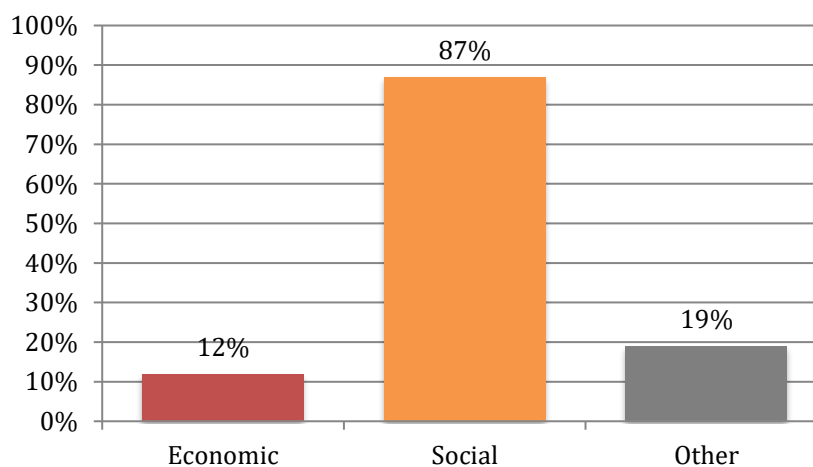
Figure 38: Factories Drawbacks

Table 47: Working in factories drawbacks

Factories -Drawbacks		
Category	N° of respondents	%
Lower incomes	3	3%
Higher living cost	7	8%
Hard Work	28	33%
No independence	18	21%
Cannot stay and need to commute	4	5%
Easy to loose the job (fired, old)	7	8%
Dangerous/risky	6	7%
Pressure and competitive	12	14%
Total of responses	101	117%
Total of respondents	86	100%

On the other hand, it provides stable and secure incomes (51 respondents), can increase incomes in the future through promotion, and incomes use to be higher than in agriculture. There are also positive social aspects, such as better working conditions.

Figure 39: Factories Advantages

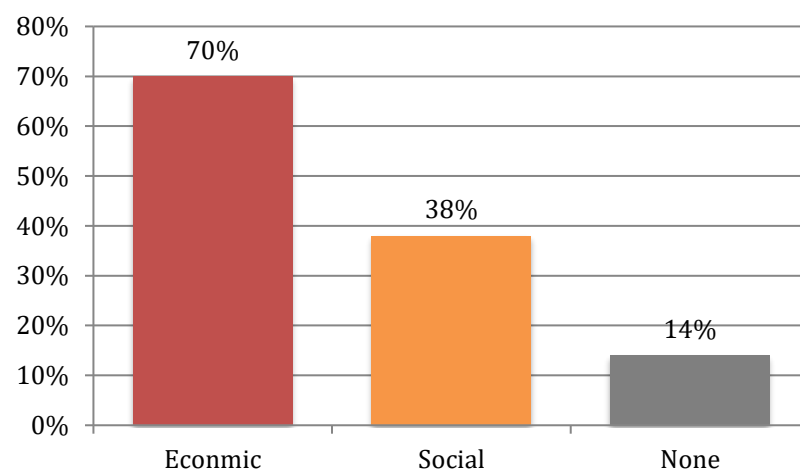


Table 48: Working in factories advantages

Factories -Advantages		
Category	N° of respondents	%
Stable and secure incomes	51	59%
Economic independence from family	1	1%
More job opportunities	1	1%
Promotion potential	4	5%
No investment needed	1	1%
Higher incomes	2	2%
Welfare package (education, insurance, bonus...)	8	9%
Not hard work/ Better working condition (AC)	18	21%
It is my field of study	1	1%
Can socialize	6	7%
No advantages	12	14%
Total of responses	105	122%
Total of respondents	86	100%



Khun Nifon. Mother and accountant. 20 years old. (May 26th, 2018)

CHATER 7
POLICY ASSESSMENT:
Support programs for the installation of new farmers

7.1 Young people Support programs in Prachinburi

In Prachinburi Province, there are 2 programs to support the installation of new farmers provided by public agencies:

- *The New Farmer Program* promoted by the Agriculture Land Reform Office (ALRO)
- *Young Smart Farmer Program*, promoted by the Agriculture Extension Office

The New Farmer Program

The New Farmer Program is addressed to all Thai citizens above 20 years old (and no maximum age) who are interested in agricultural occupation and want to become farmers. This curriculum takes 6 months for training with theory and practical sessions. After trained, land is allocated to those participants who have no farmland and are willing to become farmers. The size of the land provided by ALRO is not larger than 5 rai per person. After land is allocated to farmers, ALO would follow up with them every 3 or 6 months throughout 2 years. The aim of the program is to promote new farmers and provide them with theoretical knowledge and practical skills once they take up agricultural occupation. Furthermore, it would give the opportunity to new farmers to access not only knowledge but land. After 2 years of monitoring, participants will have the option to rent or buy the land at a lower price.

In Prachinburi province however, the program has been stopped since 2012, due to the lack of land availability in the area. According to an ALRO officer (2017), It has been only once that farmers from Prachinburi took part on this project, and had to take the training in Chonburi and Sakeangsaio province. There were 7 participants from Prachinburi who participated on this program getting 4.2 rai of land. The average age was above 45 years old, and 2 of them were 70. Even though it was addressed for Thai citizens above 20 years old, none young people took part on this project in Prachinburi Province.

Young Smart Farmer Program

The second programs that support the installation of farmers, particularly targeted to young people, is *Young Smart Farmer Program*, which emerges due to the concern of the Ministry of Agriculture and Cooperatives on aging farmers, and aiming to enhance the capacity of young farmers in term of marketing and leadership (Khun Nanthaporn Chamtha. Officer of Young Smart Farmer program, Prachinburi Provincial Agriculture and Extension office, 2017). The program was established in 2014 and is under the Department of Agricultural Extension. Since its inauguration, the program has been held every year with 30 participants (25 new young farmers, and 5 farmers who became role model in the previous program. After 1 year monitoring, those young farmers who get incomes of at least 180,000 TBH/year they will be selected as role model and take part in the next program to share their knowledge and experience). Participants must be between 17 and 45 years old and having a strong conviction to do farming. The program is carried out at a provincial level.

According to Khun Nanthapor, the average age of participants is 37 years old. Education is not a requirement to take part on this program, most participants are small-scale farmers and rice is the main production of those who join the training. The total number of young farmers who graduated from this program is 85 farmers approximately; from which 80% of them are succeeded and got benefits from program. The main reasons why participants joined this program are: to increase their knowledge about farming (half of them did not have any background on farming), and 2) to build a farming network.

The main objectives of the program are to support the installation of young farmers providing them with technical skills, and create a network platform among young farmers to share knowledge and experience. The program consists of 3 trainings per year on topics preferred by young people, mainly about farming management and techniques, and marketing, and one field visit/observation trip to the farms of those young people who became role models on the previous year.

7.2 Respondent's participation and expectations on Support Programs in Prachinburi

Among the respondents on this research study, none of the 86 respondents have ever taken part of any program for young farmers. Furthermore, 95% (82 respondents) of them are not aware of any support program for the installation of farmers. 4 of them said they got information from the Head of the Village or school, however none of them recall any detail of the program neither did they join. None of them were aware of the two programs mentioned above. Only one respondent is part of a social network targeted to farmers (*Facebook*), specifically shrimp farmers, but is not address to young people but farmers in general.

When we asked young people if they would be interested to join any young farmers support program, 74% responded affirmatively (63 respondents), and 24% (20 respondents) said they would not join either because they are not interested on farming or because they do not have enough time to join. 2 of them were not sure, and said it would depend on their availability. Among those who would like to join the program, 56% of them mentioned they would like to get knowledge on farming in general, decrease input cost, increase output's value, organic agriculture (since input cost is lower), access to market, and access to capital. 34% said they would need support in terms of access to capital, such as credits with lower interest; while 23% (20 respondents) said they would need support in terms of access to market and support on the price.

Table 49: Young people’s expectations on support programs to enhance the entrance of young farmers

Expectations on YF support program		
Expectations	N° respondents	%
Knowledge	48	56%
Land allocation	14	16%
Capital/access to credit	29	34%
Inputs cost and quality	10	12%
Access to market and pricing	20	23%
Technology and Innovation	3	3%
Competitiveness (increase outputs price and value)	1	1%
Compensation for crop loss	1	1%
Role models and experts	4	5%
No expectations	15	17%
Total responses	145	169%
Total of respondents	86	100%

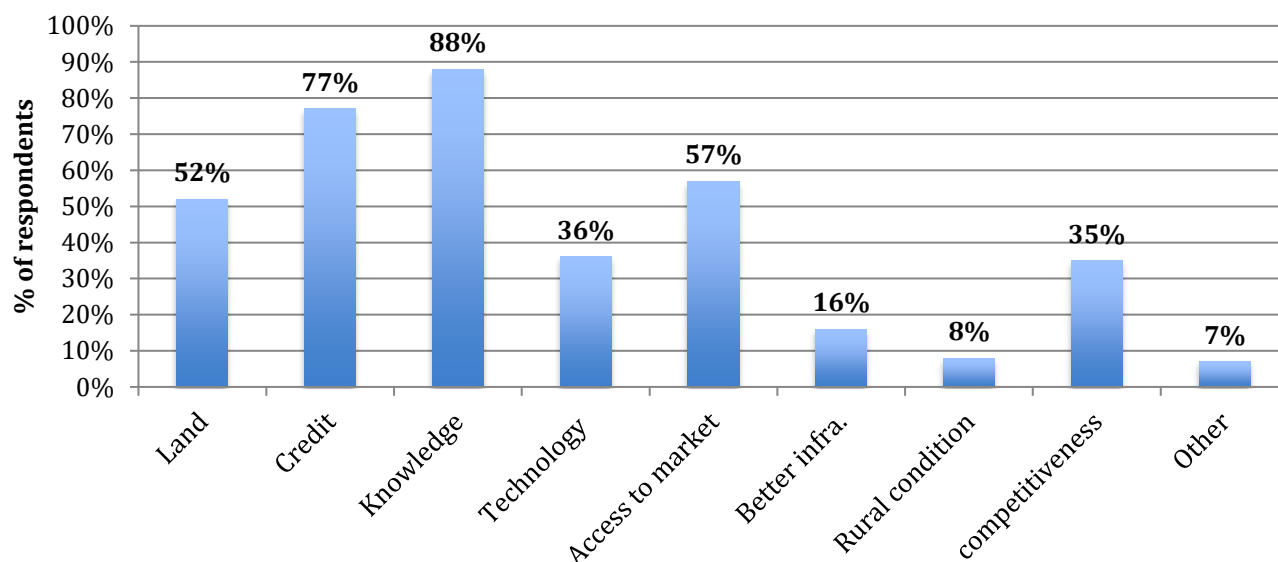
We asked the interviewees to select and rank those items which they believe the government should provide in order to encourage young people to start farming. The item with the highest percentage of times checked (76 respondents, 88%) is *knowledge*; as Khun Akandeth stated during the interview: “Land is necessary to do farming, but knowledge comes first”.



Khun Akandeth. Student of Secondary School and son of shrimp farmers. 17 years old. (May 20th, 2018)

Knowledge such as how to do agriculture (*know how*), the types of crop most suitable for the area, and how to decrease input cost and increase output's value. Following knowledge, with 77% of respondents, is *access to capital*. Young people expressed the need for credit due to the high investment cost that requires farming. They suggest access to loans with lower interest (financial services). Then, with 57% of respondents comes *access to market and support on pricing*. Young people are concerned about the instability and uncertainty of farm revenues due to price fluctuations; therefore they believe support from the government on agricultural prices would encourage young people to start farming. Within *others*, young people added what they believe was necessary and the government could provide (and was not included in the question), it includes farm inputs (or decrease its prices) and agricultural equipment.

Figure 40: Type of government support suggested by young people



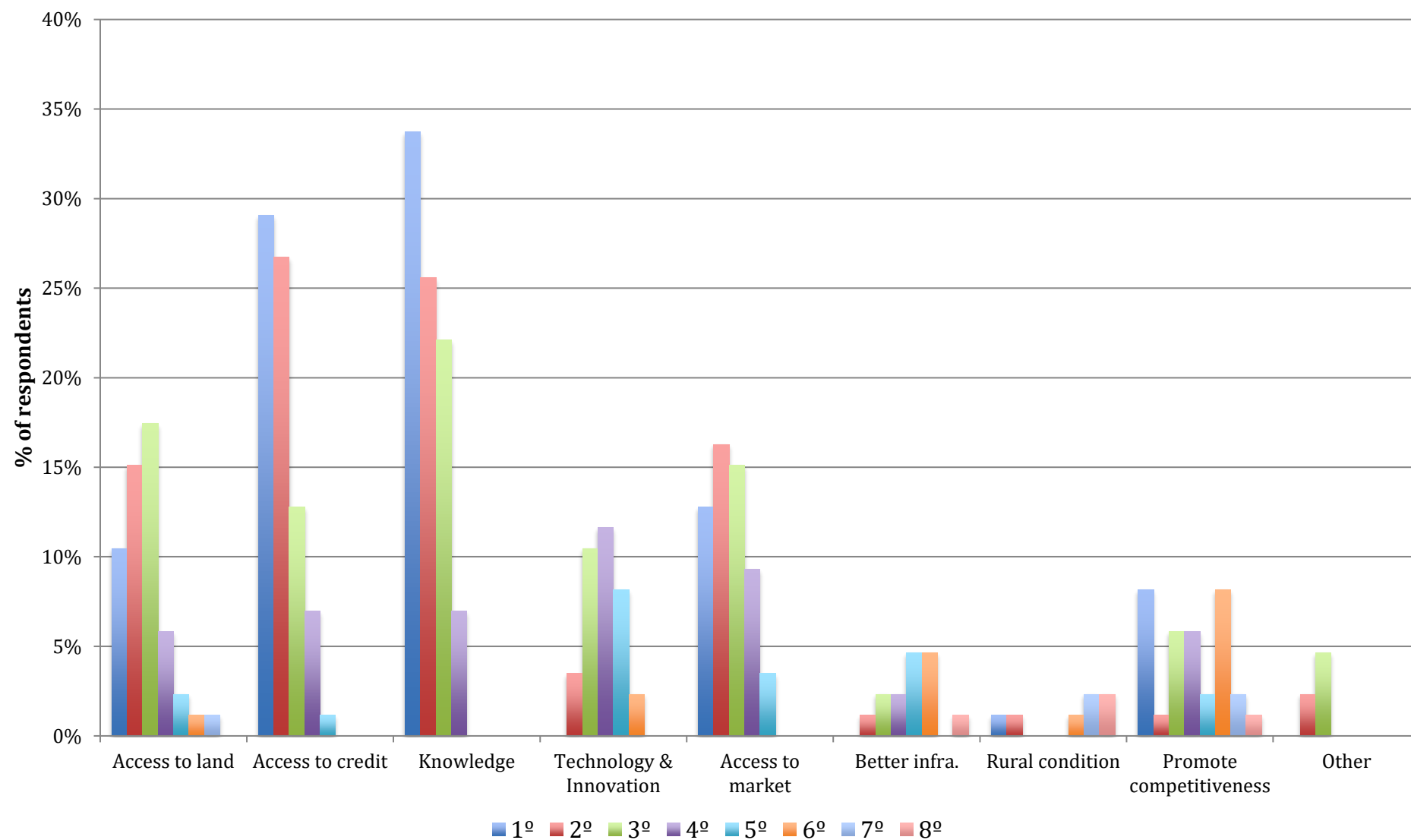
Within the same question, we asked the interviewees to rank those options they have selected in order of importance (1 most important, onwards) as shown in the table below (Table X). *Knowledge* is the most selected as rank 1^o, then *access to credit*, *access to market*, *access to land*, and *promote competitiveness*. Young people believe that better breeds and better quality of farm inputs would increase the value of their products and increase their incomes, as well as it would make crops more resistant to pest and diseases.

Table 50: Young People's suggestions on what kind of program the government could provide to encourage YP to start farming

Item	1°		2°		3°		4°		5°		6°		7°		8°		None		Total
	freq	%	freq	%	freq.	%	freq.	%	freq.	%	freq.	%	freq	%	Freq.	%	freq	%	
Access to land	9	10%	13	15%	15	17%	5	6%	2	2%	1	1%	1	1%	0	0%	40	47%	52%
Access to credit	25	29%	23	27%	11	13%	6	7%	1	1%	0	0%	0	0%	0	0%	20	23%	77%
Knowledge	29	34%	22	26%	19	22%	6	7%	0	0%	0	0%	0	0%	0	0%	10	12%	88%
Technology Innovation	0	0%	3	3%	9	10%	10	12%	7	8%	2	2%	0	0%	0	0%	55	64%	36%
Access to market	11	13%	14	16%	13	15%	8	9%	3	3%	0	0%	0	0%	0	0%	37	43%	57%
Better infra.	0	0%	1	1%	2	2%	2	2%	4	5%	4	5%	0	0%	1	1%	72	84%	16%
rural condition	1	1%	1	1%	0	0%	0	0%	0	0%	1	1%	2	2%	2	2%	79	92%	8%
Promote competitiveness	7	8%	1	1%	5	6%	5	6%	2	2%	7	8%	2	2%	1	1%	56	65%	35%
Other	0	0	2	2%	4	5%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	7%

*Note: The *total* box represents the total % of interviewees that select that item, regardless the ranking.

Figure 41: YP's Suggestions on Government Support Programs for the installation of Young Farmers



The results on this section, goes hand by hand with the lack of education, training and experience young people get on farming. Regarding education, none of them chose agriculture or any related discipline as field of study; only one of the respondents said she was studying accounting so she could help her parents on the farm. Moreover, a decreasing number of young people are getting farming experience. 38% of the total of respondents do not have farming experience, and among them, 42% are children of farmers. As we have seen previously parents (47%) don't encourage their children anymore to take over their farms.

Results on this study also show that young people are in fact interested on doing farming (in contrast with their current participation, 7% as main occupation and 24% helping their parents on the farm). When we asked whether they prefer to work on agriculture or factories (the most common alternative to farming in the three villages under research), 75% said agriculture since they believe it provides a higher quality of life and working conditions; they have more independence and free time, and can stay at home with their families.

With that in mind, despite the decreasing involvement of young generations in agriculture young people in fact would like to become farmers, they have not lost interest. It is due to the current rural conditions that farming is not viewed as an economically reliable occupation (as we have seen above in greater detail). Owing to this demeaning conditions and perception of young people of farming that from early ages they steer their professional future towards the alternatives to agriculture they consider feasible, mostly factories (an increasing sector in the area). It is at this point that when young people consider the option to do farming as income-generating activity they perceive *knowledge* as their turning point to become successful farmers.

CHAPTER 8

DISCUSSION, FINDINGS AND IMPLICATIONS

8.1 Discussion

Through the dynamic followed by this research study, considering the same matter with different approaches (young people's vision on agriculture: problems, future plan and expectations), we could conclude that the current participation of young people on farming (N=86; 7% as main occupation, and 24% as secondary occupation, meaning they help their parent's on the farm but they do not necessarily get allowances or hold decision-making power) is lower than the future plan of young people to become farmers (50%). This fact shows evidences of the absence of the necessary conditions and incentives for the installation of new young farmers, which are not getting an education (none of them) or experience (62%) on agricultural practices. The fact that young people are not getting agricultural experience (38%) give some hints on the future scenario of farming and the decreasing involvement of young people in agriculture, since their decision to whether become farmers or not in the future is directly intertwined with their farming practice ($p < 0.01$).

Our data shows signs of how Thailand is steering its rural development and industrialization efforts towards heavy industries, which is in fact attracting a big number of young people. However the agricultural sector is lagging behind which offers no effective incentives to lure the next generation; thus the future of farming is at risk to become an obsolete agrarian sector performed by the older farmers with no technology or innovation taking place and with an increasing number of young people moving to urban areas or looking for jobs in factories. This fact is more pressing on rice farming, in contrast with fish and shrimp farmers who are aware of the economic potential of agriculture.

The study emphasizes the difference between young people not *wanting* to do farming due to a shift on generational preferences and, a shift on young people's economic preferences (*wanting but not being able to*). With regard to the first option, Rigg (2012) points out; "farming is not infrequently actively avoided as a hard, *low status*, even *demeaning activity*". Moreover, as IFAD and FAO puts forward (2014): "they (young people) do not perceive agriculture as a remunerative or *prestigious profession*, and until they find meaningful economic opportunities and attractive environments in rural areas, they will continue to migrate to cities".

However our study can no longer sustain the first theory (generational shift of preferences; regarded as a low status and demeaning activity or non-prestigious profession). Evidences show that young people who are children of rice farmers hold a more negative attitude towards farming, in contrast with those who are children of fish and shrimp farmers, who acknowledge the economic potential if the right choices are taken. Young people whose parents are fish and shrimp farmers with 30 rai and above, did not consider *lack of opportunity of increasing incomes in the future* as a constraint to do farming. Furthermore, none of the respondents, neither rice nor fish and shrimp, perceived *low social status* as a blocking constrain to do farming (85%: *not an issue at all* –Likert scale). Moreover, their future plan to become farmers is also intertwined with their parents type of

crops: 85% of fish and shrimp farmer's children plan to do agriculture in the future, while 54% of rice farmer's children do not want to become farmers. All these facts shed light on the salience of the economic potential young people perceive on farming. Thus is not matter of a generational shift on preferences (*not wanting*), but farming is not longer perceived as a sufficiently satisfactory source of incomes, despite their desire to do so.

We have proved how with sound incentives and a satisfactory agricultural setting, young people perceive agriculture as a better way of living where they can stay in rural areas and build a life with their families. However, the current rural setting does not encourage young people to become farmers, unless their parents are farmers so they have the potential to inherit a profitable farm. Thus young rural people's future options and possibilities are tethered to their parent's legacy. Our data shows clearly the willingness of young people to get involved in agriculture (75%). However, due to the non-profitability of farming they are compelled to seek for jobs in industries and urban areas leaving their roots and dreams behind. Is not that their preferences that have changed, but the viability of the agricultural sector that can no longer provide sustainable livelihoods.

Therefore the focus should not be on how to attract young people's interest back to farming, but how to develop an agricultural scenario and sound incentives where young people can unfold their potential and fulfil the life they dream of: staying in rural areas with their families and becoming successful farmers, enabling the path towards economic prosperity. Through education it can be built a new generation with innovative, entrepreneur and technological skills that can build the bridge towards agricultural and rural development and innovation. They should be conveyed that through agriculture they could fulfil economic prosperity. There is a need to show young people that farming can actually be economically successful.

This study has been carried out at an individual level. The nature of the research question, young people's interest on agriculture, follows an inductive approach trying to explore each respondent's interest, and from specific conclusions we aimed to build general premises. Results shed light on the future development of each village. One of the main determinants on young people's decision whether to get involved in agriculture or not, is intertwined with their parents type of crop. If young people consider the potential to inherit a profitable farm, in our case fish and shrimp, they express more interest on farming as a way of living. Considering that all there villages are mainly agricultural areas, Hua Phai and Pho Yen, mainly rice growing areas might go through structural changes; in fact this transformation is already taking place. These two villages may remain a place of residence, but for many it will no remain a place of work. Most young people are steering their futures towards the industrial sector and moving away from agriculture due to the lack of interest on rice farming.

Rigg (2012) already put forward this dynamic. His paper traces agrarian change in two settlements in Northeast Thailand and he points out the shift in occupation. His results show that among those villagers aged 45 years or less, the very significant majority worked outside the village, thus *pluriactivity* emerged: "work had become generationally differentiated; household income sources had diversified into a range of non-farm activities; the geographical location of work for an increasing number of household

members had become spatially far more dispersed. The village may have remained a place of residence, but for many it had not remained a place of work”. Rigg explains this spatial change of work and livelihoods “because farming alone could no longer deliver an adequate income and therefore standard of living for the large majority of households. Pluriactivity emerged, in part, therefore as a “survival” strategy in the context of widening and intensifying needs set against the backdrop of a small farm sector than was unable to meet these needs (sometimes seen in terms of a “crisis” in farming)”.

Therefore Hua Phai and Pho Yen (rice-growing areas) may evolve following different patterns than Bang rung Rot (fish and shrimp area) that is already showing signs of agricultural development and self-reliance based on the development of the agricultural sector. On the other hand, Hua Phai and Pho Yen may become economically reliable on migration towards the industrial sector and urban areas; thus remittance may stand as a key source of incomes. However, Bang Rung Rot might develop a self-reliant economic structure based on agriculture and spurred by a young generation of farmers. Hua Phai and Pho Yen may remain residential areas, while Bang Rung Rot already shows signs of economic development.

Into a nutshell, if we aim to place the results of this study on the current research arena at a global level, the crux of the matter remains at an inadequate approach the issue of rural migration and the decreasing participation of young people in agriculture has been addressed or understood. The misunderstanding remains on the concepts of: root-cause (trigger) and consequences (results). Young rural people do not avoid farming work, young people do not migrate from rural areas to urban ones out of a deliberate choice, it is matter of survival and the need to seek for better options for their future. Young people have not lost interest; they have lost the viability of staying in rural areas and become the farmers they would dream of. Therefore there is need to look at this 21st century phenomena with new lenses and target the issue at its root-cause and not its consequence: the current rural conditions and not the willingness of young people to get involve in agriculture.

8.2 Findings and Conclusion

The main thrust this dissertation addresses is whether the decreasing *participation* of young generations in agriculture reflects young people’s *interest* (willingness) on becoming farmers. This fact is considered a watershed to better inform policy to tackle the aging of farming which is becoming an occupation of elder people that is hampering the entrance of new technologies an innovation. Through exploring young people’s mindset and perception of farming, we aim to identify the conditions under which young people would consider their involvement on agriculture. Whether there has been a generational shift on young people’s preferences, thus their interest has been moved to other sector, or if the current situation of rural areas do not enable them to become the successful farmers they would dream to be.

Chapter 4 confirms the process of aging population that is taking place at a global scale, in our case in rural areas in Prachinburi (Thailand). Based on the data from the Registry Unit of Band Sang District (2017), the average age of the three villages surveyed

for this study has increased from 36 to 40 years old in 10 years time. Our findings confirm the aging population in rural areas and the diversion of young generations from the agricultural sector that has been put forward by previous studies (Rigg, 2012; IFAD, 2014; Nilsen 2014; Jeonju, 2014; Formoso, 2016, Faysse, 2017). In Europe only 7% of farmers are under the age of 35 (IFAD, 2014). In Asia and Latin America 12.1% and 12.3% of farmers respectively are over the age of 55 (Jeonju, 2014). In Japan, the average age is 66.1 years old in 2010 and the decreasing and ageing of farmers' population has caused the decline of Japanese agriculture (ibid). The same trend appears in Indonesia, agricultural labour less than 35 years old in 1993 was 25.8 percent, but ten years later (2003) it was reduced to 20 percent.

A qualitative description on Chapter 4 also pinpoints the explanatory variable to this demographic change. Agriculture is moving away young rural people's life. None of the respondents chose agriculture or any related discipline as field of study. In contrast, they choose their major according to the job opportunities they perceive as economically reliable, which is leading an increasing number of young people to industries, a growing sector in the study area. Currently, the main occupation among working respondents (farming or factories) is: 1 farmer and 2 working in factories in Hua Phai (mainly rice growing area), 4 farmers and 3 in factories in Bang Rung Rot (mainly fish and shrimp production), and 1 farmer and 7 in factories in Pho Yen (mainly rice growing area). Educational level among young rural people is increasing (21 respondents pursuing Bachelor's degree), however none of them is steering their education towards farming practices.

Furthermore, a small number of young people is getting farming experience, which is directly intertwined with the future plan to get involved in agriculture ($p < 0.01$). Among all the respondents ($N=83$), 38% have no farming experience and 42% of them are children of farmers. 24% of all respondents stated to help their parents on the farm as secondary occupation, and 67% of them are from Bang Rung Rot (fish and shrimp area). This fact sheds light on the future of agriculture, since the entry to farming other than through inheritance is difficult in family farming system, and it is those who start helping their parents on early ages who will take over the farm. The result of this dynamic is a high number of young rural people with no contact, experience and knowledge in agricultural practices. Results are more sharpened in Hua Phai and Pho Yen, where young people are not been attracted by rice production with only 3 respondents respectively helping their parents on the farm.

Chapter 5 and 6 addressed Objectives 1 and 2 of this paper: to understand the determinants that push young people's *interest* away from farming and, if such is the case of their interest, to understand the backdrop under which young people would consider their involvement in agriculture. The main problems young people perceive on farming, based on their experience and what they have observed from their parents are environmentally wise (80% of respondents). Underneath this environmental sphere relies a concern on the uncertainty of revenues and fragility of farming as economic activity; it is considered a *high-risk activity* (69% -Likert scale) due to prices fluctuations (27%, -open ended question), pest and diseases (34%), droughts during rainy season (19%) and lack of water during dry season (19%); factors that are beyond farmer's scope. According to young

people's vision, due to environmental problems farming becomes climate-vulnerable and economically unreliable. Results regarding young people's perception of farming problems, specifically the *lack of increasing incomes in the future*, again differ based on their parent's type crop -rice or fish and shrimp ($p < .01$). Rice farmer's returns are very low and keep decreasing, while inputs cost increases. This dynamic hampers rice farmer's potential to save capital and invest on the farm with the future prospect to increase incomes. Moreover, due to the lack of capital rice farmers cannot afford to buy the land; hence insecure landowners will divert effort away from investing in the farm. In contrast, fish and shrimp farmers acknowledge the potential of increasing incomes in the future if the right decisions are taken.

Young people feel unsecure to make farming their main occupation to support their families since they perceive farming as fragile and unstable source of income (*high risk activity* 69%; *low profitability* 57% -Likert scale); especially those who are children of rice farmers who have seen and experienced how prices dramatically dropped since 2014 due to the withdrawn of the Rice Subsidy Scheme, a support program where the Thai government was purchasing paddy from farmers at prices 50% or more above the market. Among the respondents that plan to do farming in the future (50%, $N=86$), 49% (21 respondents) said as secondary occupation. This explains why young people, despite their future plan to work in agriculture do not steer their academic curricula towards farming or any related field (none of the respondents). In contrast, they pursue an education in order to have a feasible alternative to agriculture in times of agricultural shortages (when yields or prices fall). In Prachinburi the industrial sector is spreading, thus most young people choose their fields of study with the future prospect to work in factories (manufacturing-related activities) or companies (paper-work): mechanics (15 respondents), electronics (6), industry engineering (1), and management, accounting and marketing (14). The diversification of off-farm activities is on the rise, especially the industrial sector that is increasing in our study area. There is a proliferation of off-farm activities thus farming is becoming a side-line occupation.

The profile among those who want to do farming in the future tallies with young people's perception of farming, especially the difference we have pinpointed between children of rice and fish and shrimp farmers. The driving forces that shapes young people's future plan are: their parent's occupation ($p = .011$) –whether they are farmers or not, their parent's landholding –landowners or landless ($p = .036$), their parent's type of crop –rice or fish and shrimp, their farming experience ($p = .004$) and their parent's opinion ($p < .01$) – whether they support them on becoming farmers or not; hence those whose parents are farmers and are dedicated to profitable crops (fish and shrimp) are more willing to get involved in agriculture. On the other hand, those whose parent's farm are not economically satisfactory (rice farmers -14 respondents), have no land (12 respondents) or their parents are not farmers (9) do not consider becoming farmers in the future. Young people's future plan and involvement in agriculture relies on their parent's legacy and the potential to inherit a profitable farm or not. It is therefore this rural backdrop that hinders young people's potential to innovate and ties them up to the conditions already set by their parents. Young rural people's future options and possibilities are tethered to their parent's inheritance, diverting youth potential from rural development. Moreover, the current involvement of young people in agriculture (7% are farmers as main occupation, and 24.4%

stated to help their parents on the farm as secondary occupation. N=86) is much lower than the share of young people's future plan to become farmers (50% wants to engage on agricultural activities). Which further highlights the inadequate rural conditions for young people to start farming.

Results on this study also show that young people are in fact interested on doing farming (75%), despite their current low participation, (7% as main occupation and 24% helping their parents on the farm) and their future plan to do farming (50%). When we asked whether they prefer to work on agriculture (*dream farm*) or factories (the most common alternative to farming in the three villages under research), 75% said agriculture since they believe it provides a higher quality of life and better working conditions; they have more independence and free time, and can stay at home with their families. Therefore it is their perception on farming based on their current situation and parent's experience, and the potential of inheriting a profitable farm (fish and shrimp) that pull young people's interest back, and push them to the growing sector in the area, industries.

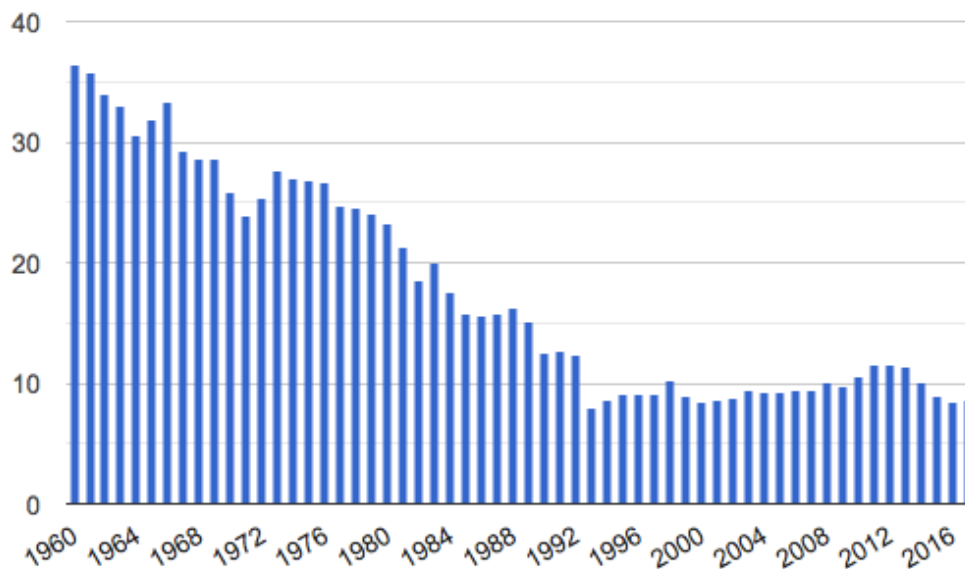
Owing to this demeaning conditions and perception of young people of farming that from early ages they steer their professional future towards the alternatives to agriculture they consider feasible, mostly factories (an increasing sector in the area). It is at this point that when young people consider the option to do farming as income-generating activity that they perceive *knowledge* as their turning point to become successful farmers, as we have put forward on chapter 7. There are already few programs (*The New Farmer Program* and *Young Smart Farmer Program*) in place that aim to enhance the installation of new farmers in our study area (Prachinburi), however none of the respondents who took part on this study were aware of these initiatives.

Thus, despite their decreasing involvement in agriculture, young people dream of becoming farmers. In order to start farming they need capital, land and knowledge. The average capital needed in order to achieve their dream farm is 324,091 TBH (according to the respondents). The minimum farm size young people dream to have is 21.67 rai, and they expected to get as incomes an average of 61,898.41 TBH per month. Young people claim stable prices, secure land ownership and profitable crops. Then, they can stay in rural areas with the family and become the farmers they dream of.

8.3 Policy Implications

Agricultural sector plays an important role for Thailand economy. Its share on GDP has been declining throughout the years, from 32.2% in 1960 to 8.9% in 2017. However despite its decline on GDP the agricultural sector still employs most of its population. In 2017 agriculture employed 32,8% of the total population.

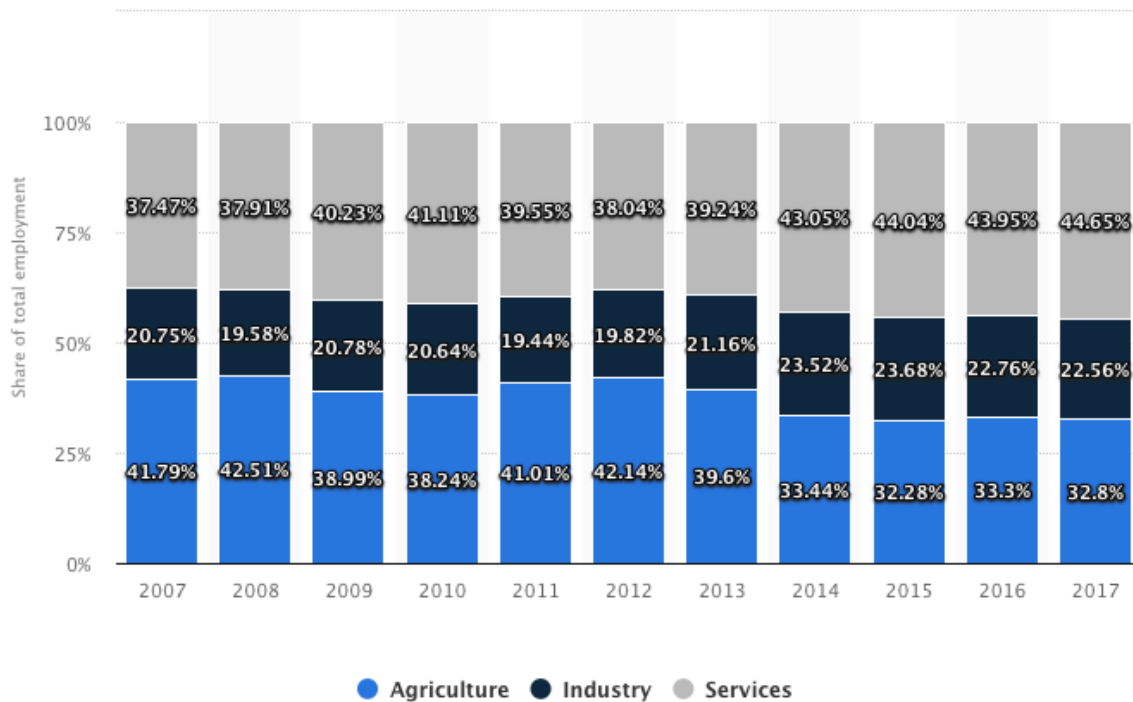
Figure 42: Thailand –GDP share of Agriculture (1960-2016)



Source: The Global Economy, 2017

Moreover, with the increasing population, the demand for food also keeps increasing. To meet the food needs, the agricultural sector plays a very important role. The increase in agricultural production and productivity is a key factor in the success of a country in providing food for its population. This is where the role of the next generation of farmers is very essential. Having acknowledged the problem, many countries have come up with various incentive schemes so that young and beginner farmers can start their business in agriculture easily.

Figure 43: Thailand: Distribution of employment by economic sector from 2007 to 2017



Source: Statista, 2018

Thailand has also put forward initiatives to tackle the aging of farmers such as *The New Farmer Program* under ALRO and *The Young Smart Program* under The agricultural Extension Office. *The New Farmer Program* (which stopped in 2012) aimed to attract farmers providing maximum 5 rai of land, and after 2 years of monitoring, participants had the option to rent or buy the land at a lower price. The *Young smart Program* is specifically addressed to young farmers (age between 17-45) and its objectives are capacity building (marketing and leadership) and to create a network of young farmers. Moreover, there are also initiatives from the private sector and Universities such as *My Little Farm Project*. It is the collaboration among Kasetsart University, Cooperative Auditing Department, Ministry of Agriculture and Cooperatives, and Bank for Agriculture and Agricultural Cooperatives.

There are three possible entry channels for young farmers to set up a business: (a) family inheritance; (2) taking over from other retiring farmers (related to early retirement scheme); and (3) first installation of farming (for the beginning farmer or new entrant). The results of this research study shows that the only way young people perceive as a feasible way to start farming is through family inheritance. Those who do not have the option to inherit a profitable farm would not consider farming as a future option, despite their desire to do so. The programs above mentioned designed by Thailand are not targeting the other two alternative options for the entrance of new young farmers. First of all, providing 5 rai of

land would not lead to a profitable farm, and secondly young people are not getting farming experience by deliberate choice. They are not interested on helping their parents on the farm because they don't perceive agriculture as a profitable occupation, thus they steer their education towards the industrial sector. Therefore, a capacity building program will not tackle the issue at a grass-root level. The urgency remains on bringing back young people's ambition and entrepreneurial skills to become commercial farmers and make agriculture a successful occupation.

The European Union and countries like Canada and Australia, in contrast to Thailand, have been targeting the other two alternatives to enhance the installation of young farmers: the early-retirement scheme (2) and first installation of famers (3), specially through financial assistance, which have been at the core of their agendas since 1980 in the case of Europe. Most of these countries' strategy is to provide financial assistant to young people (which often have lack of access to bank services and credits) so they can become farmers from scratch. Moreover, the *early retirement scheme* uses a subsidy measure designed to encourage older farmers to retire early, and is awarded when agricultural holdings are transferred to young entrants. Hence, the early retirement scheme is also a useful instrument to accelerate generational renewal outside the family farm. However, in Thailand farming is not considered only a source of income but a way of living so there is no such thing as retirement from farming. Therefore, the third alternative (first installation of farming) might be considered a more suitable alternative according to Thailand rural setting. The high price and limited land market poses a significant barrier to new entrants and to expanding young farms in our study area; thus accessing affordable land and capital plays a critical role for beginners to establish their farm. Up until now, Thailand's support programs have been mainly targeting capacity building, however young people getting farming experience would be a spillover effect (such as helping their parents on the farm and pursuing agricultural studies) once they perceive agriculture as a promising occupation and once they have access to a farm system.

As an example, In United Kingdom, the National Federation of Young Farmers Club in Coventry introduced a program that was running in Wales called the *Young Entrants Support Scheme* or *YESS*. The assistance package includes a grant payment for eligible capital expenditure when a young entrant (under 40) is setting-up for the first time (within the previous 12 months), and access to funded mentoring services from established farmers and/or professionals. To qualify applicants are required to submit a business strategy. The European Union *Farming Improving Scheme* has a similar approach: subsidy measures that provide special support for farmers to invest in farm modernization, particularly with regards to obtaining access to land. This measure will complement the installation aid for young farmers by subjecting eligibility to compliance with the business plan requirement.

This could be taken as a blueprint if Thailand aims to remain a global competitor in the agricultural sector. Access to financial assistance (such as grant) or *setting-up subsidies* that would enable young people to start their farms. If such programs aim to be successful there is a need to establish *incentives*, such as an eligibility criteria that encourage young people to design commercial farms and become business-oriented. The selection criteria of the two Thai programs mentioned above are only age-based and do not required any educational

level or business plan, thus not encouraging young people to get engaged on a business plan or long-term oriented profitable farm. Once young people perceive the possibility to be able to set up their own farm, will encourage a new generation to get involve in agriculture from early ages helping their parents on the farm and pursue agricultural studies. Then, more young people would join university projects such as *My Little Farm Project* (Kasetsart University, Cooperative Auditing Department, Ministry of Agriculture and Cooperatives, and Bank for Agriculture and Agricultural Cooperatives).

Financial assistance for young people to set up their farms could be the turning point the break the vicious circle of *farmer-inheritance*, giving new opportunities to a wide array of young people. There is a need to design incentives (such as eligibility criteria: business plan or educational requirement) to encourage young people to become competitive and business-oriented, and thus getting back to help their parents on the farm and choose agricultural-related field of studies. With financial push a new generation could develop a strong agribusiness sector that will boost Thailand's economy.

Microfinance, (the provision of financial services for poor and low income people that covers the lower ends of both rural and agriculture finance) could be another alternative for agricultural finance besides government support (grants and subsidies). Although rural areas remain underserved, with respect to financial services, more providers are entering the market. In fact, there are a number of examples often used in the literature of successful interventions in rural and agriculture finance. Specifically, BRI in Indonesia, Calpia in El Salvador, and Prodem in Bolivia among a handful of others are described as being successful providers of agriculture credit (in addition to other services) to rural populations.

One can therefore conclude that there are three main points the Thai government should address in order to tackle the decreasing involvement of young generations in agriculture:

1. Participation. Bottom-up policy design. There is need for a more inclusive policy dialogue to tally policy with the needs of the people. Results on this research pinpoints the missing link between the decreasing participation of young people in agriculture and the global understanding of the issue, which have led to a incomplete action from a policy level. The out-migration movement of young people from rural areas and the decreasing participation in agriculture is the consequence of the inappropriate rural conditions that does not enable young generations to build their lives and future. Therefore the locus of attention should be steer towards the current rural settings and conditions that would enable young people to become the successful farmers they dream of. Young people have not lost interest on farming, instead they do not have the sources or means to get involve in agriculture since farming-inheritance is the only possible entry channel to farming in rural Thailand.
2. Capacity building. Encourage a new young generations of farmers through pilot projects and role model farms that agriculture can actually be economically successful, such as organic farming (low volume high value

crops) to enable young people with more possibilities to make farming a economically satisfactory way of living.

3. Capital. Access to financial assistance so inheritance is not the only entry channel to agriculture, such as grants to set up their farms from scratch (public sector) and microfinance (private sector).

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APPENDIX 1: QUESTIONNAIRE

This interview aims to understand young people's mindset and view on farming. Based on their experience, we would like to assess their interest/ or not, and the facts and circumstances that build up the image of farming that young generation hold today.

Interview number
Date of interview
Name
Address
Tel.

1. GENERAL INFORMATION

- **Age:**
- **Gender:**
- **Marital Status:**
- **Occupation:**
- **Incomes:**
- **Are you child of a farmer?**
- **Do you have any experience on farming?**
- **Are you member of any group/cooperative?**
- **What is the last grade you got from school?**

- When did you finish school?
- If specialized in something, why did you choose this field of study?
- Why you did not continue your studies?

- **Trajectory after school**
- What did you do after school?
- More in detail, what did you do over the past 12 months? (May 2017- April 2018)
- If you got income from these activities (since end of school), what was the gross and net income per month?
- Did you ever help your parents in farming? If so, when and how?
- If so, did you take part in decision-making?
- Did your parents give you some money from the benefits of the farm?

2. HOUSEHOLD

- Household data base

Relationship	Age	Occupation	
		Main	Second

Farm of the parents (if any)

- Land holding

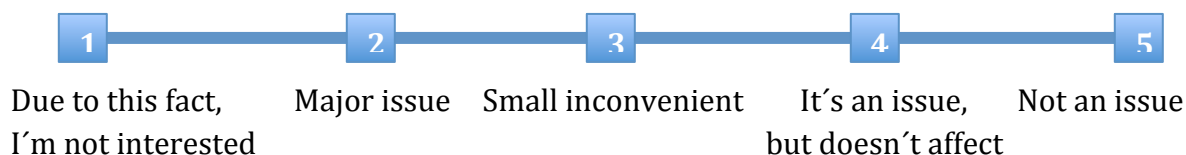
Land		Land use/Crops
Land area (rai)	Rented in / Owned	
Total land Area:		

3. YOUR VISION OF FARMING IN GENERAL

We want to discuss about your vision of farming in general, about the agriculture you know in the region, and not specifically about your parents' farms.

- In your opinion, what are the problems related to farming? And why so?
- Please, range from 1 to 4 the following problems that, in your opinion, are related to farming:
-

Score	Description
1	Due to this fact, I am definitely not interested in farming at all
2	I consider it a major problem
3	Small inconvenient
4	I see it as an issue, but doesn't affects me personally
5	Not a problem at all, I don't see this as an issue



1. High capital investment

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

2. Lack of access to land

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

3. Hard work and working condition (sun tan, no AC...)

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

4. Considered as a high-risk activity (droughts, floods, pests, lack of water, etc.)

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

5. Low profitability of farming in general (not specifically your parents' farm) 1.

☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

6. Lack of opportunity of increasing income in the future

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

7. Low social status (social recognition)

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

4. FUTURE PLAN

- Do you have a plan yourself to work in agriculture in 10 years from now (farm labourers, working at parents farm, start your own farm)?
 - o Full time (main income-generating activity) or as additional income?
- If yes,
 - What is your plan / strategy?
 - What kind of farm you would like to start/being involve with¹?
 - What would you need to start this plan? (how much money, land rai, knowledge, etc.)
 - What you would see as the constraint to achieve this “**plan**”²?

² “Plan”: Future prospect that the interviewee already considers as doable. Different from “dream”: desirable future considered as ideal, though the interviewee considers that it is out of their reach under current circumstances.

- **If not,**
 - If not, why you don't want to get engaged in farming in the long-term?
- What is the opinion of your parents about what you should do in the future?
- Do they have a specific opinion about you working in agriculture?
- To what extent young people in the village are currently involved in farming nowadays (and why so)?
- How do you see the future involvement of young people in your village in farming in the next 10 years?
 - Why?

5. EXPECTATIONS/WISH

OK, you may have or you may not have a specific plan, but...imagine that the government would provide a strong support to set up some farm, as you wish

- Would you be ready, for instance, to (re)consider that farming may be a possible future for you if you had some new opportunities to have a farm as you would like to have, in 10 years from now?
 - Full time (main income-generating activity) or as additional income?
- Please describe the farming system you would like to have (activities). *Here do not think about all the constraints that are here, now, in this village, but feel free to imagine a farm that you could consider and say: "yes, this is a farm that I would be ready to manage"*³. (**"Dream"**)
 - How much you expect to earn with this farm?
 - What you would consider as the minimum farm size, with this farming system, for it to be "worthwhile", investing time and effort on this farm?
 - How much capital you think you would need to start this farm?
 - What would you need to achieve that type of farm?

6. ALTERNATIVES TO AGRICULTURE

- What would you consider as feasible alternatives to farming for you in this area?
- If you work in factories (or any other sector –please specify, ex: selling food in the street), how much you think you can get in terms of salary?
- Is there an opportunity to live in your village and commute daily to factories? If yes, what are transportation costs?

³ At this point, we move away from present reality and we identify a wish, whatever is the distance between this wish and "present reality"

- If you work in **cities**, what would be the living costs?
- How do you compare your current situation with the one where you would go to work in a factory or in cities (or any other sector)?/ Compare how it would be to work in factories and farming?
- *Now lets think about your “dream farm”*. Do you think that this kind of farming system would enable you to earn more than what you could expect as net incomes (taking into account transportation and accommodation costs) in factories (or any other sector)?

- **Advantages and disadvantages of farming versus working in factories**

Working in Agriculture (or being a farmer)		Working in Factories/City	
Advantages	Drawbacks	Advantages	Drawbacks

7. POLICY AND SUPPORT PROGRAMS TO YOUNG FARMERS

- Are you part of any social network of young people interested in farming? If yes/no, why? What are the benefits/constraints?
- Are you **aware** of any existing programs that support young farmers in this area?
 - **If yes,**
 - How did you know about this program?
 - If yes, have you been **involved** in any program that support the installation of young farmers?
 - If yes, (content) what kind of support this (these) program (s) provided? (detail)
 - Was it successful? Why?
 - **If you have not participated yet,**
 - Would you be interested to register?
 - What are your expectations in terms of benefits from the program? What kind of program you would like to have?

- In your opinion, if you were in a position of decision making at government level, which kind of support the state could provide for young farmers to be able to start farming on a farm that will provide sufficient income?⁴
 - ☐ Access to land
 - ☐ Access to credit
 - ☐ Land entitlement
 - ☐ Enhance the heritance system
 - ☐ Knowledge, capacity building and leadership
 - ☐ Access to technology and innovation
 - ☐ Access to market and Strengthen bargaining power
 - ☐ Better infrastructure
 - ☐ Enhancement of rural conditions (health, education, etc.)
 - ☐ Promote competitiveness (marketing strategies, packaging, high-return yields –“high value, low volume crops”-, etc.)
 - ☐ Others (specify).....

According to their response, please rank. 1 most important, onwards less important

Do you have any other idea that you would like to put forward, on the question of the involvement of young people in farming?
