



## FFTC Agricultural Policy Platform (FFTC-AP)

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### **AGRICULTURAL LABOR POLICIES UNDER THAILAND 4.0**

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#### **INTRODUCTION**

Historically, Thailand's agriculture has long been the root of the nation since the start of its era, but the agriculture production was introduced by the West after the influence of the Bowring Treaty of 1855 with Britain. The treaty led to an increase in diversification of national crops to supply global trade.

During the mid-1900s, the exportation of agricultural products has become the national source of income and driven the growth of the economy. Agriculture becomes the main occupation for a large pool of the Thai population. Those labors are the "backbone of the nation" as they have been feeding the people within the nation and the rest of the world

However, after the devaluation of the baht in 1997, agricultural exportation was financially affected. Many farmers in Thailand have been driven into debt. Ever since then, the number of people in agriculture seems to decline and move out of the sector. Nowadays, issues related to farmers in Thailand are establishing ownership rights to the land they cultivate, and trying to make a profit with the rising cost of fertilizers and the drop of crops' price that is so low they earn virtually nothing.

Future planning is coming. The nation has introduced the global trend of the fourth industrial revolution or what they called "Industry 4.0" in the National Strategic Plan (2018-2037) to help out these people. The topic of Industry 4.0 has been the agenda of Thailand for the past several years until this year; the plan is finally completed. Therefore, this report will be reviewing the agricultural labor policies under this national strategic plan, and suggesting some of the issues within the sector and how the plan can be advantageous and disadvantageous to those workers in the sector.

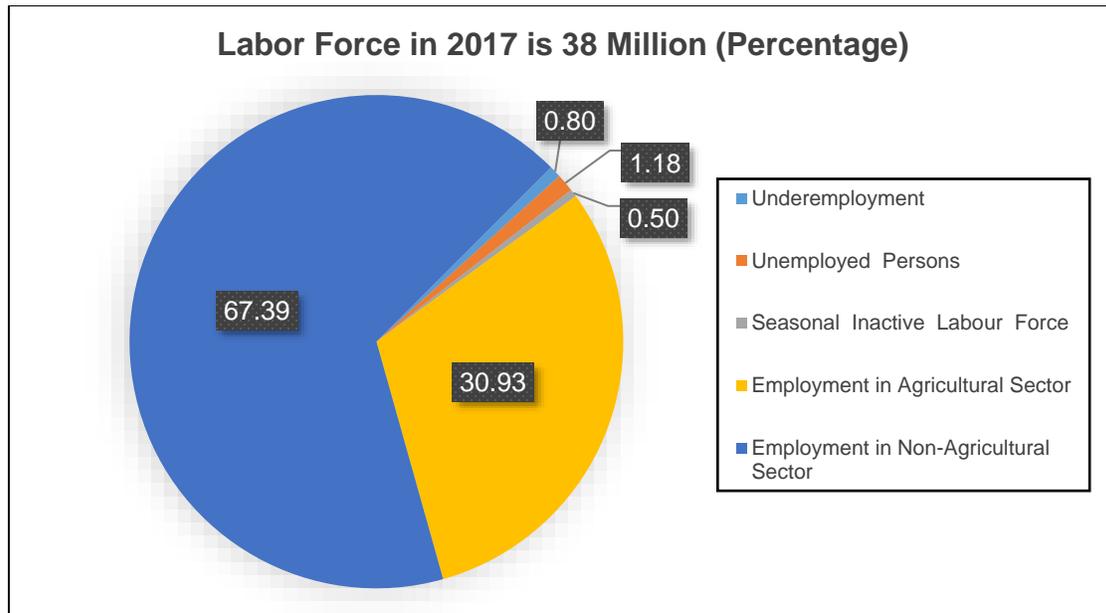
Based on the topic, the definition of agricultural labors for this article will include agricultural workers who perform physical labor and operate machineries. They also may or may not own lands. Thus, the word "farmer" (in this content is defined as households who cultivate small plots of land.) will be used sometimes as agricultural labors in this article. Also, the article will not be entirely focusing on labors in fishery and forestry productions.

#### **CURRENT ISSUES IN THAI AGRICULTURAL LABOUR**

Last year in the third quarter, the Thai economy grew by 3.3%. The rise was supported by the increase in private consumption and investments on a demand side, but a slowdown of exports which continuously affect the production in agriculture sectors on a supply side.

The statistic on agricultural labor number on the national labor force report was around 31% of the total labor force in 2017 with the number of households in the agricultural sector is around 6.6 million or 27.5 % of total registered households. It is a large number, but since the agriculture is one of the country's main occupations, it can be doubted that there are some agricultural labors in the groups of underemployed,

seasonal inactive<sup>1</sup> and even unemployed workers, which are accounted for around 2.48 % of the total labor force (Figure 1).

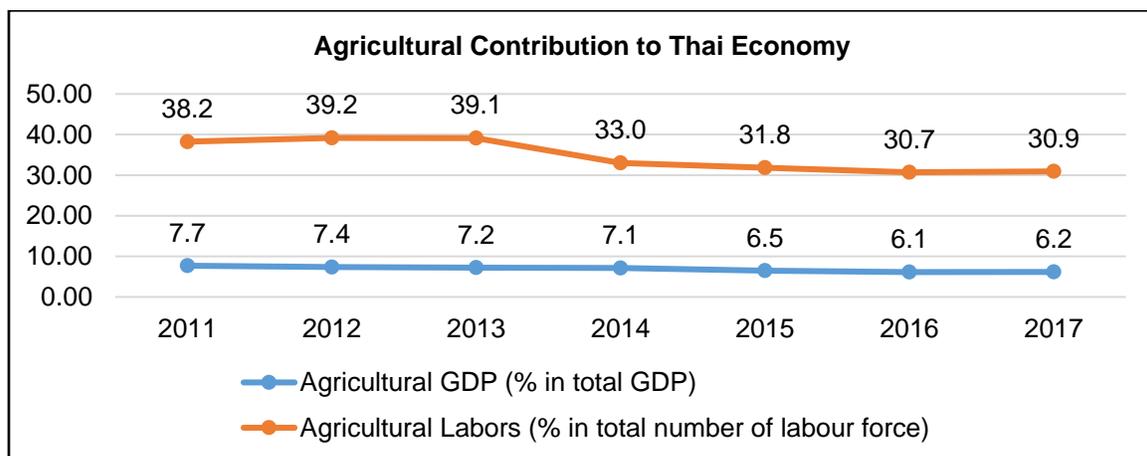


Source: National Statistical Office, 2017.

Note: Labor force numbers exclude persons who are less than 15 years old.

Figure 1: Thailand Labor Force, 2017

The agricultural contribution to Thailand's economy has always been underperformed. In Figure 2, it illustrates the percentage of agricultural GDP and number of agricultural labors from 2011 to 2017. There seems to be the higher percentage of labors' number compared to the outputs, meaning each labor in the sector contributes to the economy less than other sectors. Also, the percentage of labors' number to the total labor force is declining, indicating the movement of the labors to other sectors.

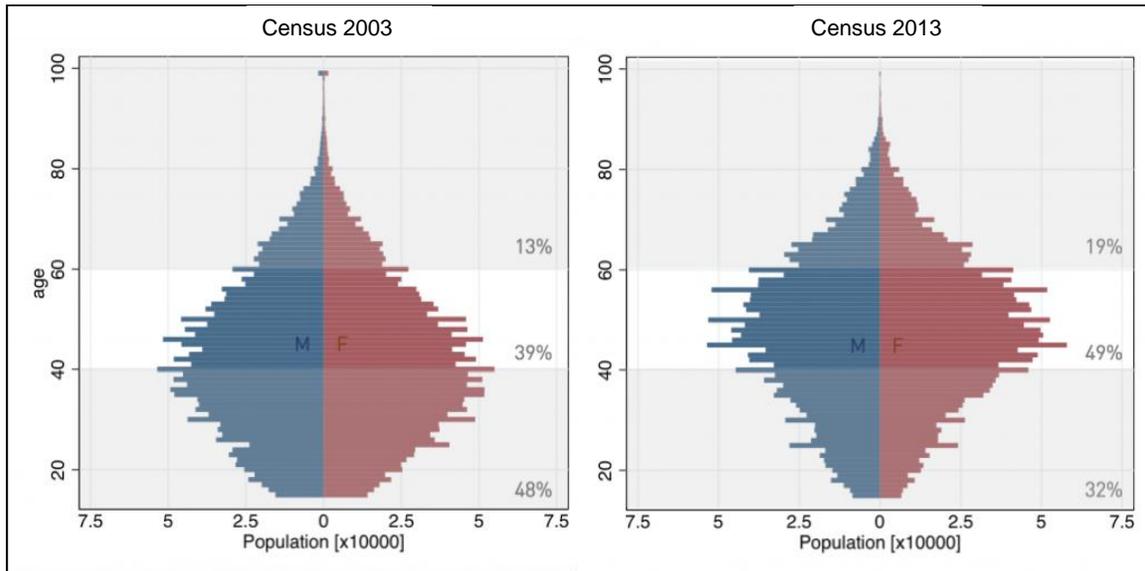


Source: National Statistical Office, 2017. Office of National Economic and Social Development Council, 2017.

Figure 2: Agricultural GDP and Labors, 2011 - 2017

<sup>1</sup> Percentage of seasonal inactive labors in the agricultural sector will mostly be low in the third quarter due to the harvesting season,

The primary issue at the moment for Thailand is the future of demographic population change in age; aging society. This contributes to numeral challenges to the nation including a drop in the number of labors within the agricultural sector. The proportion of the elderly workers aged 40-60 years increases from 39 % in 2003 to 49 % in 2013 according to the agricultural census, as well as the increasing proportion of workers over 60 years (13 to 19 %). In contrast to the proportion of young workers aged 15-40 years declines significantly from 48 % to 32 % in the same period (Figure 3), which indicates a lack of new generation in the agricultural sector.



Source: National Statistical Office, 2003 and 2013.

Figure 3 Age and Number of Labors in Thai Agricultural Sector, 2003 and 2013

There are several reasons that the new generation are skeptical or are even afraid to move into the sector. First, the attitude toward agriculture is considered a hard job. Since there are struggles, such as limited sources to water and a second job during the offseason, leading them to walk out of the pool. Second, the cost of production for economic crops has always increased, especially the cost of chemical fertilizers that are expected to account for up to 35 % of production costs. It is therefore unattractive to the new generation. Finally, agricultural insurance system (Crop Insurance) is still not widely educated and known among farmers. Due to the lack of support in this matter, high risk of products' loss due to uncertain of weathers increases, the number of labors will keep steadily declining (Tonsri, 2012).

### OVERVIEW OF AGRICULTURE LABOR POLICY IN THAILAND

Thailand has always been focusing on the development of agriculture and trying to strengthen the policies to catch up with global changes. A significant part of agricultural development is the human resource. Thus, in this article, the writer will be discussing current agricultural policies affecting the human resource aspect, as well as the Thai Industry 4.0 that will be a significant change to Thai agriculture, thus, agriculture labors.

The Office of the National Economic and Social Development Board (NESDB)<sup>2</sup>, Ministry of Agriculture and Cooperatives and Office of Agricultural Economics<sup>3</sup> are trying their best to establish a strategy to strengthen the agricultural sector. They are focusing on goals-setting in the agricultural sector. The goals are to make Thailand become a production base for bio-based products, to have a better management system within the sector, to increase a living standard for agricultural people and most

<sup>2</sup> The 11<sup>th</sup> and 12<sup>th</sup> National Economic and Social Development Plan

<sup>3</sup> Agriculture and Cooperation Strategic for 20 Years (2017-2036)

importantly, and to involve technology and innovation to increase the efficiency within the sector, following the global trend of Industry 4.0.

The 4th Industrial Revolution or Industry 4.0 is the current topic at the global level. The increasing of smart technologies in everywhere such as cyber-physical and the Internet systems cause changes the people's ways of living and work. This revolution is expected to explode in all disciplines, industries, and economies, affecting every nation's policies around the world. Hence, Thailand 4.0 is an economic model that targets to unlatch Thailand from several economic challenges like the middle-income trap and inequality. The past economic development models which emphasize agriculture (Thailand 1.0), light industry (Thailand 2.0), and advanced industry (Thailand 3.0).

### **National strategic plan 2018-2037**

There are five strategies of the Thailand 4.0 which are National Security, Competitive Advantage, Human Resource Development, Opportunity and Inequality, Environmental Protection and Development of the Government's Management System. However, only three out of the five strategies are related and have aspects toward agriculture people.

The first strategy is the competitive advantage of Thailand. To increase competitiveness, the nation has to increase a value driven by technology and innovation, as well as creativity. Under the agricultural core, the model is planning to increase agricultural value by raising local agricultural identity to niche itself to global market, raising concern on local food safety to increase the cultivation of organic products like Thai herbs, and increasing research studies in order to apply new technology and innovation to have a better efficiency in terms of production per area. These will affect the agricultural labors with the way to do agriculture. They will need to learn to adapt and to be openminded with different approaches to agricultural work.

Second, is the development of human resources that is envisioned to open up a variety of skills in the market. The model is targeting to increase the people education level with more quality. Eventhough there is not a direct mention of how to develop human resources within the agricultural sector, focusing on education overall has an indirect impact on agricultural labors in terms of their ability to learn and handle new approaches within the sector.

The third strategy is to increase overall social well-being without "leave no one behind". The plan is to adjust the economic foundation, so it is fair to everyone in a society, and to create an ecological map for each area development and still be environmentally friendly to agriculture. Due to an expectation of new technology within the sector (the first strategy), it can be challenging to balance an inflow of technology and ability to the benefit of it and still be cost-effective. Because if it is not, there will be more people left behind.

### **Ministry of agriculture and cooperatives**

The Ministry of Agriculture and Cooperatives envisions Thailand 4.0 as "Moving agricultural sector forward with technology and innovation, Market leads production, the Better capability of farmers, and Balancing and sustaining agricultural resources". When considering implementation toward the labors and farmers, the Ministry is focusing on lifting the standard of living, increasing the people's pride in agricultural occupation and profession, increasing income, reducing debt and climbing out of middle-income traps. Since the National Strategic Plan 20 years (2018-2037), Ministry of Agriculture and Cooperatives will be emphasizing two significant projects that relate to agricultural people, which are the Maga Farm Promotion and Smart Farmers.

Mega farm promotion is one of the ministry agenda's past projects. The Ministry of Agriculture and Cooperatives is now preparing to drive this promotion along with the Thailand 4.0. There are three mechanisms to raise the farmer's income. (1) the government and private enterprises support the development, monitoring, evaluation farmers and supervision and cooperate in the project. (2) Private enterprises help to buy products, provide marketing information to farmers, organize training on modern agricultural methods to create added value to farmers' products. Private enterprises and farmers will share mutual benefits under the Agricultural Extension and Development System Act, 2017. (3) Cooperation among farmers who own large plots of land to manage and take decision together on the right approach. With modern technology, called "Agri Map", they will be able to decide the suitability of crop planting to their area and with the right

amount of market demand, thus, completing the "Market lead production" policy of the ministry. The promotion increases the government and private sector's roles to involve with farmer groups in order to manage large-scale agriculture effectively. The goal of this project is to raise the level of agricultural income and support the development of Thai agricultural systems.

Smart Farmers is another project led by the Ministry that directly indicates the importance of agricultural people. Smart Farmers (Smart Agricultural Groups) will focus on agricultural products with quality standards that meet the needs of the market (Smart Agricultural Products) and cultivate on agricultural areas that have potential. (Smart Area / Agriculture). There are five critical strategies within the project as follows.

- Strategy :1 Strengthening farmers and farmers' institutions: Establishing stability in agricultural occupation and managing agricultural and technology workers to replace labor systematically to support the elderly agricultural society
- Strategy :2 Increase production efficiency and raise product standards: Improving production efficiency and product quality standards to international standards using science, technology and holistic knowledge and promoting agriculture throughout the supply chain in line with market demand.
- Strategy :3 Increase the competitiveness of the agricultural sector with technology and innovation: developing technology and innovation for agricultural 4.0 under Thailand 4.0, managing information technology for agriculture, allowing farmers to access and use thoroughly, and developing research and information to be more commercialized at the world stage.
- Strategy :4 Manage agricultural and environmental resources in a balanced and sustainable way: Managing sustainable agricultural resources that are under the SDGs (Sustainable Development Goals).
- Strategy :5 Develop government management systems: developing personnel and researchers to be the Smart Officers and Smart Researchers to link and integrate the work of every sector. Having a human resource to improve and develop agricultural laws to support the changing context further in the future.

Affirmative action has been taken. On March 2019, there are financial supports of 700,000 million baht (approximately US\$ 22 billion) from the financial institution called Bank for Agriculture and Agricultural Cooperatives for SME owners in the agricultural sector to be able to start in this revolution era. Moreover, at the beginning of 2019 as well, Thailand Board of Investment has been promoting Smart Farming and modernization of the agricultural sector to attract more foreign direct investment to the country's sector.

### **The Future of Agricultural Labors**

The positive impact of Thailand 4.0 on agricultural labors is the number aspect. Labor population of Thailand in the future will decrease, but the proportion of the elderly will be higher. Many of labors in the agricultural sector moved into industrial and service sectors instead, resulting in a decrease in the number of agricultural workers in Thailand. Although labor is reduced, at the same time, technology and innovation have increased, which can be an opportunity for the nation to adjust the number of workers in the agricultural sector. However, there are still several concerns toward the effect of Thailand 4.0 toward agriculture and the labors that need to emphasize.

The question about income inequality and technology relation is still a concern. Will an increase in technology and industrialization cause a gap between rich and poor within the sector? In the recent research of sociology, it shows that ancient societies that had more significant food surpluses tended to have a higher level of inequality due to its character that is highly desirable to control (Charles, 2017). In the Thai context, it clearly shows that there are relatively around 40 % small-scale farmers in which many are landless. They have to pay the cost of the monthly rent. They have to bare a risk of unpredicted weather affecting their crop growth. Along with the uncertain market price of a crop, the cost of being among the small-scale farmers is much higher than the large-scale farmers. These are the reason for them to gain zero profit or even loss from their crop production. From the statistic of Thai household, around 30 % of them are in the agricultural sector which consider being poor households earning 5,000 baht monthly (Chantapong and Thepkham, 2018). By increasing the use of technology to help them gain more value in their production, one needs to realize who

will pay for the cost of new technology? The cost of technology can be a risk factor for a current household debt that can be greater. The cost will further hurt them, and there will be less and less farmers and labors in the sector.

The capacity to learn new technology is required in the era of 4.0. How much can the people in the agricultural sector learn? Most agricultural workers have a lower level of education than in other sectors. In 2016, there is only 10 % of total labors in the agricultural sector that graduate from high school. Not to mention the increase of elders in the sector is one of significant factors that can be very challenging. Ricult is one of the agricultural businesses focusing on using big data to help small farmers reduce the risk of cultivation and unpredicted weather in Thailand and Pakistan. They have been in contact with a different age range of farmers. Only 25 % of total farmers in their program, mostly young farmers, are willing to learn about the new approach to farming, but 25 % (mostly the elders) will not listen and learn at all even the productions are positive. They still believe in their way and experience in a plantation.

### **Policy Recommendations**

One part of the intention under Thailand 4.0 is to increase research and innovation. Under the agricultural labor policies, research studies are needed to understand two essential dimensions; technology and innovation development, and agricultural, human capital development. (1) Poapongsakorn (2017) said that the path toward agriculture 4.0 requires funding from the government to monitor best practices of new technology around the world in order to determine a feasibility study in Thailand at a local context. The process should be continuous and systematic to be able to show private investors to invest in agricultural technologies. (2) Moreover, in the dimension of human resource, Pupphavesa (2019) said that Thailand needs more human resource for agricultural research to conduct depth research on how to better understand ways of their lives. The government should also take responsibility in funding postgraduate studies and Ph.D. scholarships in agriculture; thus, more human capitals within the sector to develop at the fullest. Research studies can be one of the processes to reduce income inequality among labors in the sector. Also, there are concerned topics like how to attract a more new generation to be farmers, how to persuade elders to learn new approaches on a plantation, and how to ease the flow of knowledge for people within the sector to educate themselves more. Research studies are vital to this transition period into Agriculture 4.0.

Other interesting looks at how to use technology such as Big Data in different ways rather than what the Plan has suggested, not only provide information and try to teach farmers new way of plantation, but rather take data and conduct an in-depth analysis to predict and track the development of a market yield, price, cost, and liabilities of farmers to help policymakers implement a better decision on new policies. The government can also use data available to design social protection project for the labors and create a better environment that motivates workers to develop skills to meet the needs of the market (Amarade, 2019).

However, one point of view that is lacking from the Thailand 4.0 plan is the mention of immigrants to fill up the lack of labors supply in the future due to the country's aging society. Immigrant labors could be the answer to the future labor supply. The study from Chalamwong and *et al*, the attitude of Thais toward immigration found that in the economic aspect of the country, Thai people have a positive outlook toward immigrants. They understand that an aging society will be a future issue; hence, the need for immigrants is required. Still, the Thai government should establish a well-constructed and cost-effective insurance policies to support this group of labors.

Even though the Plan has a good intention toward agricultural labors overall, and some actions, mostly relate to technology and innovation, from the government institutions have been implemented, the questions still lay on how to best use the new technology to better the current situation, income inequality, productivity and efficiency, and the future challenges; aging society and a lack of labor supply, that are going to come along soon. One good news that we all know is that there are many innovations that exist, but the challenge lies on how to choose them from a pool and still be inclusive to the labor in the sector.

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