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Household Dynamics, the Capitalist Economy, and Agricultural Change in Rural Thailand

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Agriculture in Thailand is undergoing significant change. The present paper addresses this change from a social perspective, focusing on the role of household dynamics and expansion of the capitalist economy into rural areas. It draws upon data from different sources. Changes in household dynamics over the past decades have resulted in not only unprecedented below-replacement fertility levels and small households on average but also labor and land constraints in most rural areas. In this environment, rural households are under pressure to modify their farming practices. Meanwhile, the expansion of the capitalist economy brought about by the Green Revolution and new socioeconomic policies since the early 1960s has opened up new opportunities and choices for rural households to participate in market-oriented production. It is the response of households to this environment that is leading to agricultural transformation in rural Thailand.

Key aspects of agricultural change identified in this analysis include a shift from subsistence production to market-oriented production; widespread agricultural mechanization and adoption of other new technologies; emergence of agribusiness and large-scale commercial farming; and structural change in land use and land-holding, resulting in land concentration.

Changes in agriculture are likely to alter other aspects of rural life. It is, therefore, important to have a short-term safety net as well as long-term policy that will lead to a holistic agricultural reform.

Keywords: demographic transition, mode of production, mechanization, agribusiness, land concentration, rural society

Introduction

In Thailand, as in most countries of Southeast Asia, agriculture is not only the main source of livelihood but also the foundation of the economic, social, and cultural life of rural people, who form the largest part of the national population. As such, changes in agriculture have significant impacts not only on the national economy but also on social and

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cultural aspects of rural life. Due to their great significance, agriculture and many aspects of agricultural communities in Thailand have been a focus of investigation by social scientists since the middle of the twentieth century. Notable among these are early studies by American researchers under the Cornell-Thailand Project initiated by Lauriston Sharp in 1947 at Cornell University. The program's groundbreaking study was conducted by Sharp himself at Bang Chan (บางชัน), a farming community on the outskirts of Bangkok, to collect baseline data on farming villages in Thailand (Sharp 1953). Following Sharp, many researchers conducted their studies at Bang Chan, looking at different aspects of village life: the village economy (Janlekha 1955), interpersonal behavior of Thai peasants (Phillips 1965), and agricultural ecology—particularly the interface between sociocultural and agricultural aspects of peasant life (Hanks 1972). In the following decades, several investigators looked at diverse issues related to sociocultural and agricultural aspects of village life in other parts of the country. To mention just a few, the issues studied included the relationship between peasants in rural communities and the state (Keyes 1966), agricultural change and how choices were made by the peasants (Moerman 1968), land tenure and social organization (Lefferts 1974), and family structure in rural Thai communities (Foster 1975).

Perhaps the most comprehensive and long-term study focusing on social and agricultural aspects of a rural community was carried out by a team of Japanese scholars from the Center for Southeast Asian Studies, Kyoto University. This ambitious project built on the pioneering ethnographic work of the late anthropologist Mizuno Koichi (1933–79), who looked at the social system and social organization at Don Daeng village (บ้านดอนแดง), near Khon Kaen city, an urban center of the Northeast region, in the 1960s (Mizuno 1971). In the early 1980s, a large project was launched to carry out comprehensive studies at the same village. This project involved a team of Japanese and Thai researchers from different disciplines, including sociology, economics, geography, and environmental and agricultural sciences. The project culminated in a number of publications by agricultural scientists, including Fukui Hayao's seminal volume *Food and Population in a Northeast Thai Village* (Fukui 1993). This monograph presents a microscopic examination of agriculture as practiced by the people of Don Daeng village, which is believed to share key characteristics with most villages in the Northeast region of Thailand. The author explores possible links between agriculture on the one hand, and key demographic behaviors—family formation, inheritance, migration, fertility, and mortality—on the other. Fukui also provides a thorough analysis of how key aspects of social organization—kinship relations, inheritance, and pattern of migration—are in turn shaped by the requirements of rice production and other environmental conditions.

Despite the past investigators, few studies have adequately addressed agricultural

change from a socioeconomic perspective. This paper is an attempt to fill this gap. It proposes that the interplay of key social and economic factors, taken here to include household dynamics and expansion of the capitalist economy into rural areas, can shed light on changes in Thai agriculture. This is important because household dynamics strongly influence shifts to new agricultural practices and the adoption of new farming strategies, while the expansion of the capitalist economy into rural areas makes it possible for rural households to participate in new economic opportunities characterized by market-oriented production. This process has resulted in a transformation of agriculture where a growing number of rural farm households are increasingly moving away from traditional subsistence production toward production for the market.

Agricultural change here is understood as transformations at both the practical and structural levels. At the practical level, this change involves the transition in farming practice from the traditional method, relying mainly on human labor and simple technology, to an increasing use of machines and modern technology—hence capital intensive. At the structural level, the locus of change lies in a steady shift in the mode of production from subsistence- to market-oriented agriculture. Along with this, there is the emergence of agribusiness and commercial farming, which has transformed the agricultural profile in many areas. Structural change is also associated with patterns of land use and landownership that, in the absence of appropriate measures for regulating land tenure, have led to a state of land concentration. Such structural transformation is ongoing in many parts of the country.

The following exposition begins with a brief account of different theoretical perspectives on agricultural change to provide a background for subsequent discussions. This is followed by a comprehensive overview of household dynamics and expansion of the capitalist economy into rural areas with a special emphasis on how these new socioeconomic circumstances facilitate agricultural change. The next section examines key aspects of agricultural change in rural Thailand. The final section recapitulates and discusses the future prospects of agriculture and rural farm households. Some short-term and long-term policies for agricultural development in rural Thailand are also discussed.

Perspectives on Agricultural Change

Previous studies have employed different theoretical perspectives on agricultural change. For our purpose here, agricultural change will be discussed under the concepts of involution, evolution, and revolution.

Agricultural Involution

According to Clifford Geertz in his well-known study on Javanese peasants of Indonesia, “agricultural involution” refers to an internal elaboration of the existing pattern of farming practices (Geertz 1963). This is an “inward-turning type of change” (White 1983) and, as such, not a shift from an existing pattern to a different one. There is no new form emerging to replace the old one; rather, the existing pattern is rigidified or elaborated so that its yields are increased. The key characteristic of agricultural involution lies in intensification in the use of labor, land, and crop variety. Put simply, this is a strategy to get the most out of limited land by investing more labor without having to invent an entirely new farming method. Geertz interpreted this farming practice as a strategy that Javanese peasants employed to increase production on their limited land in order to meet tax demands from the Dutch colonial rulers in the past.

Agricultural involution has been observed also among peasants in other parts of the world. A. V. Chayanov (1966), for example, reported that among Russian peasant households in the early twentieth century, those with high consumer-laborer ratios were more likely to increase labor inputs by working harder or working longer hours (i.e., labor intensification) in order to get enough food to meet their consumption needs. Another form of agricultural involution is found in the complex farming practice of northeastern Thailand (Grandstaff 1988). This practice, according to Terry Grandstaff, is the farmers’ response to the variation and uncertainty of natural resources and environment. It is characterized by diversification of crops and farming methods, which often vary from year to year or even from season to season, depending on land types and rainfall situation. Where possible, farmers often supplement this strategy by engaging in other economic activities outside subsistence agriculture, such as growing cash crops, cottage industry, and temporary off-farm employment in the local area or elsewhere. In this type of farming practice, the specific composition of the “diversified livelihood portfolio” of rural households constantly changes, but the basic farming pattern persists. This strategy is viewed as an effective adaptation to the physical environment of the Northeast, which is characterized by diverse terrain and uncertain rainfall.

The “mixed farming” strategy currently adopted among some small farmers in Thailand may also be included as a form of agricultural involution. In this farming strategy, farm households allocate their lands into a variety of farm activities—growing rice, fruit trees, vegetables, and other crops as well as raising animals. This practice is operated predominantly on a small scale based on land, labor, and resources available to the farm household, with the primary aim of achieving food security. Although modern agricultural technologies may be utilized by some households, the pattern of farming remains traditional and subsistence-oriented rather than market-oriented production.

Agricultural Evolution

Evolutionary change in agriculture is characterized by a gradual shift from an extensive farming practice to a more intensive one in order to achieve higher yields. Like involution, agricultural evolution is driven by some kind of pressure, particularly the need for more food to feed the growing population. When the population pressure on food supply reaches a high level, change in agricultural practice is necessary. Conceivably, people in the past responded to this need by relying first on working harder to produce more food (i.e. labor intensification or involution). When such a strategy was no longer effective, new farming methods were invented, perhaps after several acts of trial and error. Over time, the old practice gave way to a new innovative one that could produce higher yields. In Boserup's view, population pressure is the key condition leading to agricultural development (Boserup 1965). In this perspective, global agricultural evolution gradually proceeded from the stage of a simple method requiring high labor investment to a complex one involving greater use of technology.

In some contexts, the pressure that leads to agricultural evolution comes also from market demand in addition to the consumption needs of farm households. According to anthropologist Lucien Hanks (1972), this is how rice production in Thailand evolved. Based on his study of a rice-growing community in the Lower Chao Phraya Delta of Central Thailand, Hanks found that the method of rice production evolved in three stages: from shifting cultivation to broadcasting to transplanting. This evolution took place over the course of 100 years or so since the mid-nineteenth century. In each stage of the evolution, farming practice became increasingly complex, involving not only more use of technology but also greater attention to water management and crop care. Hanks attributed this evolution to the need of households for consumption and their response to the growing rice trade that Siam (Thailand) had with some Western countries.

Agricultural Revolution

Toward the end of the twentieth century, agricultural practices in most regions of the world underwent a rapid transformation characterized by an increasing role of technology and market-oriented production. This process of transformation, which will be referred to here as an agricultural revolution, was driven by research and development and subsequent transfer of new technology to farmers to increase food production. The best-known revolutionary change in agriculture is the Green Revolution, initiated in the 1940s with the coordinated efforts of scientists in agricultural, biological, and social sciences. The effort was a response to the perceived need to produce more food to feed the increasing world population (Hazell 2009). However, it was not until the 1960s and thereafter that farmers in most developing countries were able to benefit from it. Indeed, since the

emergence of the Green Revolution, development of agricultural technology has been the key force transforming agricultural practice in many parts of the world, including Thailand.

The Farm Household as the Key Actor in Agricultural Change

Although the concepts of involution, evolution, and revolution can provide an understanding of agricultural change, they deal largely with change at the macro level. The three concepts focus mainly on the role of external factors driving agricultural transformation. As such, not enough consideration is given to the micro level, namely, individual farm households that are the real actors and the locus of change in the context of the environment within which they operate. In many societies, while external factors such as population pressure, market demand, and technological development are still operative, they are not sufficient to account for change in agricultural practice at the level of farm households. After all, it is the individual farm household that makes decisions affecting agricultural practices. Therefore, in order to have a better understanding of agricultural change, it is important to look at the rural households that operate under their own circumstances within the larger system.

This paper addresses how household dynamics and expansion of the capitalist economy are together influencing agricultural practice at the household level in rural Thailand. It is argued that labor and land constraints resulting from the long-term process of household dynamics associated with expansion of the capitalist economy into rural areas have resulted in changes not only in agricultural practice among farm households but also in the structural transformation of agriculture. This process of agricultural change has been under way for some time, but the nature of the change has become clearer since Thailand entered a new era of socioeconomic development in the early 1960s.

The underlying idea for argument here is very much in line with the perspective of the system approach in agriculture, which views farm households as the locus of change. According to this approach, the farm household operates within a system consisting of physical, biological, and socioeconomic environments. In its operation, the household draws upon a set of well-defined existing practices while taking into consideration its goal, preferences, and available resources (Shaner *et al.* 1982). In view of this perspective, agricultural change is an outcome of the response of farm households to the changing environment within which they exist. As such, switching from one crop to another is not only an act influenced purely by physical and biological conditions (soil type, rainfall condition, crop type, etc.) but also a response to household needs and goals. Thus, switching from a staple crop such as rice to a cash crop such as sugarcane is caused not only by availability of land suitable to the crop of interest (e.g., the land being better for

sugarcane than for rice) but also by the household's need for cash income. Similarly, switching from a labor-intensive method to a technology-intensive method of cultivation reflects not only the availability and accessibility of new technology but also the resources and labor at the disposal of the household. Moreover, in making such a choice the farm household also takes into consideration its preferences and goals. Over a long period of time, such changes in practice by individual households constitute agricultural transformation at the macro level. It is from this perspective that agricultural change in rural Thailand is discussed below.

It is important to be clear at the outset about the environment within which rural households in Thailand have been hitherto operating. This environment consists of two components: one is the social environment defined in terms of household dynamics, and the other is the economic environment characterized by expansion of the capitalist economy into rural areas. As will be seen below, household dynamics bring about constraints in labor and resources (land), which leads to the need to modify agricultural practices on the part of farm households, while expansion of the capitalist economy into rural areas brings with it new agricultural technology and economic opportunities. Both these forces underlie agricultural change in rural Thailand.

Household Dynamics and the Expansion of the Capitalist Economy

Household Dynamics

Put simply, household dynamics is a change in size and structure that occurs as the household develops through different stages in its life course. The size of the household expands and contracts as new members are born or move in and some members die or move out to other places. Along with the change in size, the age-sex composition of the household also changes, thereby affecting the household structure. This, in turn, results in different consumer-worker ratios at different stages of household development. In the context of rural Thai society, the process of household dynamics develops in a cycle of expansion and contraction that extends beyond the lifetime of the founding couple's household. The cycle of expansion and contraction repeats in the households of the children, who perpetuate it in successive generations. Some anthropologists refer to the cyclical development of households in this fashion as a "developmental cycle in domestic groups" (Goody 1958). In rural Thailand, this developmental cycle is often associated with the breaking up of the household's resources, particularly farmland, to allocate to all children when they start independent households of their own.

Change in household size and structure over the household's life course is closely

associated with the demographic transition brought about by changing patterns of fertility and mortality. In Thailand, the decline in fertility rate was a result of the successful National Family Planning Program (NFPP) established in the early 1970s. About three to four decades after the establishment of the NFPP, the widespread use of modern contraceptive methods for family planning significantly brought down the average number of children per woman to a very low level. Before the NFPP was implemented, a Thai woman had an average of 6 children throughout her reproductive age. Now the average number of children per woman is only 1.6, that is, well below the replacement level of 2.1 children. The below-replacement fertility rate of the Thai population is likely to continue in the coming decades (Patama and Pramote 2014). During the same period, the average family size also reduced significantly, from 6 to about 3 persons at present. Indeed, family size in Thailand now is virtually as small as in most developed countries.

The prolonged decline in the birth rate associated with increasing longevity as a result of improved nutrition and public health services over the past decades has led to growth in the number and proportion of old persons in both urban and rural areas. At present, it is estimated that 16.5% of the total Thai population is aged 60 and older (*Mahidol Population Gazette* 2016). With this proportion of old people, Thailand is becoming an aging society. In 2009, nearly one-third of the total 19.8 million households had at least one old person. It is worth noting that as the proportion of old people increases, there is also a tendency for the number of households consisting of only old persons to increase. In 1988, there were 260,969 old-person-only households; the number increased rapidly to about 1.1 million in 2009, an increase of more than three times over a period of 21 years. In relative terms, old-person-only households accounted for 5.6% of the total number of households (Mingsan and Natthakorn 2013). The increase of this type of households in rural areas is due partly to the demographic transition noted above and partly to the high rate of out-migration of working-age adults to seek employment in urban areas. The impact of a growing number of old people on Thai agriculture has not been thoroughly investigated. Yet, it is conceivable that since many old people need caretakers, who are often household members of working age, this could result in a labor constraint in many farm households.¹⁾

The mass outflow of rural workers to urban areas over the past several decades reflects, among other things, a relative decline in the importance of agriculture as a source

1) The reverse could also be true for some households where old people help free nursing parents from child care and hence enable them to engage more fully in farm work. Nevertheless, the impact of an old population on labor supply is largely negative.

of income, while off-farm employment is becoming more important. This has been an outcome of the economic and social development policy initiated in the early 1960s. The policy gives considerable importance to industrial development. That in turn opens up employment opportunities in the industrial and service sectors, which are available largely in urban areas. This has had a significant impact on the availability of labor for agriculture, as will be discussed below.

The growing proportion of old people in the population and the continued outflow of rural workers have two related consequences that bear directly on agricultural change. First, a peculiar form of household, often referred to as “skipped generation household,” has emerged. This is a household where old grandparents and their young grandchildren (below age 15) live by themselves most of the time without the presence of adult members in working age. According to an analysis by the Thailand Development Research Institute, there were more than 1.3 million skipped generation households in 2009, a substantial increase from 267,380 in 1986. In 2009 skipped generation households accounted for 7% of the total 19.8 million households, compared to only 2% in 1986 (Nibhon 2011). In relative terms, the annual rate of increase of this type of household was the highest of all. For example, between 1986 and 1998, the rate of increase of skipped generation households was 7.5%, and between 1998 and 2009, it decreased slightly but was still at a high level of 6.9%. Four out of five skipped generation households were in rural areas, with the largest share in the North and Northeast, where the rural exodus was most prominent (Mingsan and Natthakorn 2013; UNFPA and National Economic and Social Development Board 2015).

Second, the increase of the old population and mass outflow of rural workers over the past decades have caused a labor constraint in rural areas. In the period of 25 years from 1985 to 2010, for example, the proportion of agricultural labor as a percentage of the total labor force decreased substantially, from 67.6% to 40.7%. During the same period agricultural workers were getting older: their average age rose from 32 to 43 years (Fig. 1). There was also a substantial decline in the percentage of young adults aged 15–34 in the agricultural sector: their proportion substantially decreased from 60.5% in 1985 to 30.1% in 2010. This is in contrast to older adults aged 35–54 and 55 years and older, whose proportions increased slowly but steadily (Fig. 2). While other factors may have also contributed to this change, rapid aging of the population and the constant outflow of rural workers undoubtedly played a significant role.

At a certain stage in the household’s life course, farmland is divided up and allocated to children who are married and starting their own independent households. Typically, the division of household property such as farmland is based on customary practice by which all children, regardless of sex and birth order, are entitled to equal (or fair)

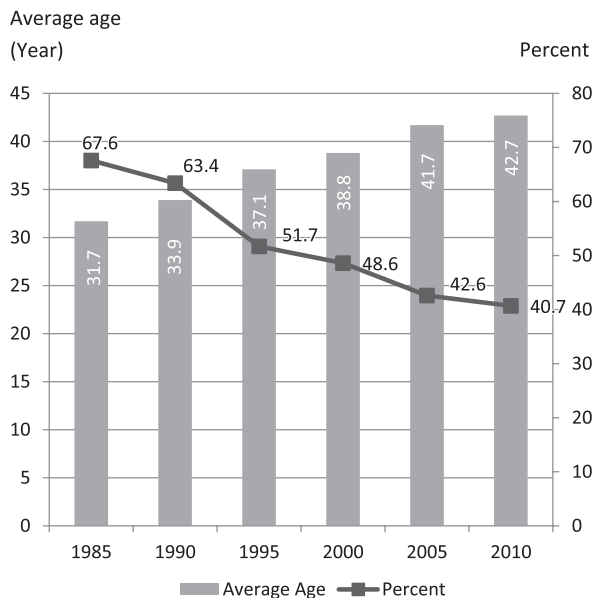


Fig. 1 Percentage of Agricultural Laborers as Proportion of the Total Labor Force and Their Average Ages, Selected Years 1985–2010

Source: Calculated by the author based on data from National Statistical Office (1985; 1990; 1995; 2000; 2005; 2010).

shares.²⁾ Fair and reasonable as it may be, in the long term this partible inheritance system has led to an increasing fragmentation of the household's farmland. Since land is constantly divided in this manner from generation to generation, land constraints could particularly affect those whose land is already limited. Indeed, the constraint has already become serious for many households of the younger generation.

Unless farmland is acquired through a possible means, some households may have to seek a livelihood outside agriculture. However, buying new farmland is extremely difficult, if not impossible, for most farm households nowadays. Until recently, encroaching into the frontier lands was a common strategy that many farm households used to acquire new farmland. For example, among farmers in the Central Chi River areas of the Northeast, where farmers experienced land problem (quantity and quality) more than other parts of the region, moving to the frontier areas within and across the region was prevalent during the 1950s (Keyes 1976). This practice is also documented in the anal-

2) The law regarding right to inheritance also follows this custom. However, when possible most parents prefer keeping a part of the land for themselves for "old age security." This part usually goes to the child (most often a daughter) who stays with the parents and takes care of them in their old age.

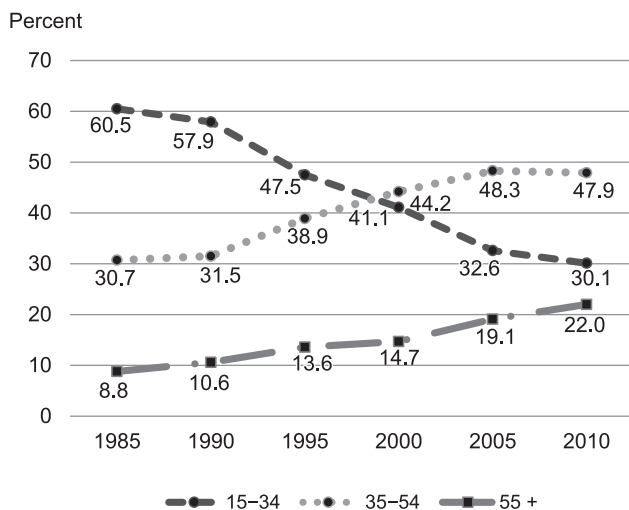


Fig. 2 Percentage of Labor Force in Agriculture by Age Group, Selected Years 1985–2010

Source: Calculated by the author based on data from National Statistical Office (1985; 1990; 1995; 2000; 2005; 2010).

ysis of internal migration in Thailand around the mid-twentieth century (Pramote 1977). The analysis has demonstrated that the dominant stream of migration was movement of people from one rural area to another less-populated area across provincial borders. Most of the migrants were rural people who moved in search of new and/or better farmlands in the frontiers. However, the “golden age” of migration in search of farmland is now virtually over as there is little unclaimed land left and legal penalties for encroachment on protected forestlands are severe.

Because of constant land division and limited opportunities to acquire additional land, the sizes of farms bequeathed to the next generation are increasingly smaller. The rate of farm size reduction is determined by three factors: the amount of land available in the parental generation, the number of children in each successive generation, and the household’s ability to acquire additional land. Thanks to the decline in the birth rate and out-migration of many young people to work and, for many cases, settle in the cities, the number of children remaining in the village to share their parental farmland has been reduced. These processes must have helped to relieve land pressure at the household level to some extent so that the average holding size per agricultural household is reducing slowly. Calculations based on a series of household socioeconomic survey data reveal that during the nearly 40 years from 1976 to 2013 the average size of agricultural land decreased from 27 rai (4.3 ha) to 20 rai (3.2 ha) per holder (Fig. 3). Note that the holding size in this case includes all the land that the holder used for agricultural purposes regard-

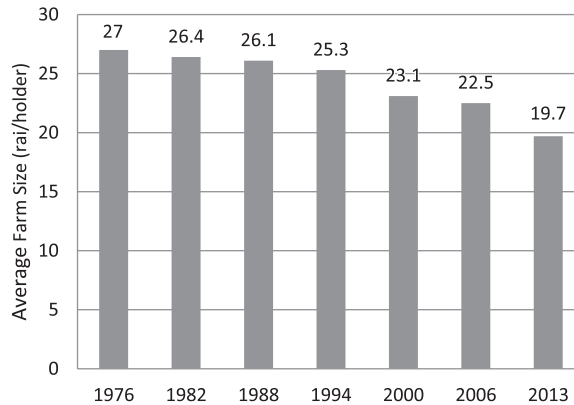


Fig. 3 Declining Farm Size, 1976–2013

Source: Calculated by the author based on data from the following sources: 1976–2006, data from *Agricultural Statistics of Thailand* (Office of Agricultural Economics 2009), selected years; 2013, data from *Agricultural Census 2013* (National Statistical Office 2013).

less of whether it was owned, rented, or acquired by other means.

Because of the shrinking farm size, more and more farm households have to supplement their income with off-farm employment available in the local area or elsewhere in the urban centers. Availability of off-farm employment makes it possible for members of the younger generation to find alternative livelihoods either as a supplement or as the main source of income. Indeed, a short visit to rural villages today is enough for an outside observer to notice how important off-farm employment is for most of the farm households. For some, off-farm employment, mostly in the urban areas, may be only a source of supplementary income, but for others it is the main source, without which it would be difficult to make ends meet. As such, the proportion of farm households with agriculture as the major source of income has declined steadily since 1986, when nearly 4 in 5 (78.5%) of farm households relied predominantly on agriculture, to just a little more than one-third (37.5%) in 2013. The decline was greater in the past 20 years or so (Fig. 4).

The transformation that resulted from the household dynamics described above has become a condition for rural households to act in ways that are suitable given their preferences, goals, and resources. It is this condition that makes a number of households willing to modify their agricultural practices, or even adopt a new farming strategy, when possible.

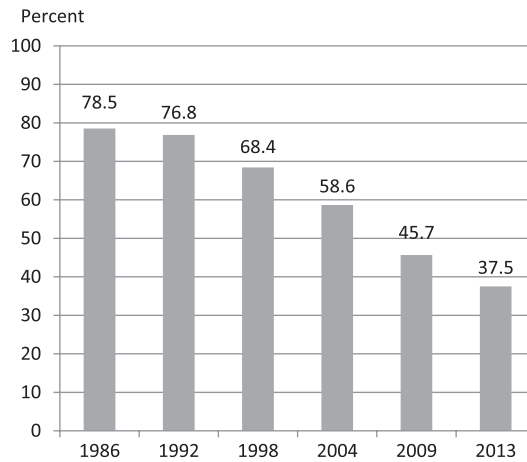


Fig. 4 Percentage of Farm Households with Agriculture as the Main Source of Income
Source: Calculated by the author based on data from household socioeconomic surveys, selected years, 1986–2013.

Expansion of the Capitalist Economy

The capitalist economy is one where the market and money play important roles in production, consumption, and maintenance of the day-to-day life of households. Throughout the largest part of its history, Thailand's economy was based on subsistence agriculture carried out by small farm households. Although trade with foreign countries dates back to at least the fourteenth century, in the early Ayutthaya period (Breazeale 1999), it was not until the mid-nineteenth century that the country was brought into close contact with world capitalism after the signing of the Bowring Treaty with the British government in 1855. This treaty opened the door for trade relation with the Western powers. After that rice exports increased substantially. However, only a minority of rice farmers, largely in the Chao Phraya Delta, benefited from the rice trade at that time. The great majority of farmers in other parts of the country remained subsistence producers. A historical study of village economy by Chattip Nathsupa and his colleagues revealed that subsistence agriculture remained a dominant mode of production in rural Thailand at least up to the early twentieth century. Although rice production, and consequently rice trade, increased substantially from the late nineteenth to the early twentieth century, the increase was largely a result of expansion in the Chao Phraya Delta. In other areas, expansion of the market economy and trade in agricultural produce were limited; subsistence agriculture remained the dominant means of livelihood during the first half of the twentieth century. Indeed, even after World War II market-oriented agriculture in most parts of the country was still poorly developed and by no means the principal element of

the rural economy (Chattip *et al.* 2010; cf. Ingram 1971, 36ff.).

It is the National Economic and Social Development Plans,³⁾ initiated in the early 1960s and continuing until the present, that have been strengthening the market economy in the rural setting. With a clear policy for agricultural and industrial development, the plans have been instrumental in driving the national economy toward export of both agricultural and industrial products as a means of raising national income. From the 1960s there was a substantial expansion of domestic and overseas markets for agricultural products. This opened up new opportunities to which farm households actively responded in many ways. Important among these were: (1) adoption of new cash crops (e.g., sugar-cane, cassava, maize, and rubber trees) and animal husbandry, especially swine, poultry, shrimp, and fish, all directly responding to market demands; and (2) widespread use of modern farm technology to improve production. In the process of expansion of the capitalist economy, farm households were active recipients of the government policy and assistance; they were “innovators” who actively took advantage of the new opportunities while the government played a secondary role, mainly providing agricultural infrastructure.⁴⁾ This was especially notable during the first seven or eight five-year development plans (1960s–1990s), when the adoption of cash cropping and the use of modern farm technology were widespread in all parts of the country. This was possible mainly because of the entrepreneurship of individual farmers.

As a consequence, agriculture in rural Thailand has undergone an unprecedented change. There has been a tremendous increase not only in the production of cash crops but also in the use of modern technologies among most rural households, while an increasing number of them have changed their farming strategy to produce largely for the market. Details of these changes are examined in the next section.

Agricultural Change in Rural Thailand

Although the process of transformation from traditional subsistence production to market-oriented production is far from being complete, there is some evidence that a significant shift from traditional to modern agriculture has been taking place in most parts of the country. Key aspects of changes currently taking place in rural Thailand include shifts

3) There has been a series of five-year development plans, with the first one initiated in 1961. In 2016 Thailand was in the 11th plan (2012–16).

4) It must be pointed out that the provision of agricultural infrastructure such as irrigation dams is far from being adequate everywhere in the country. Farmers in the Chao Phraya Delta of the Central region receive the largest share of benefit compared to those in other regions.

in the mode of production and farming method, the emergence of agribusiness/commercial farming, and changes in land use and landholding. Changes in these key aspects are likely to alter the agricultural profile of rural Thailand.

Mode of Production

Agriculture in Thailand is becoming predominantly market oriented. The market plays an increasingly important part not only in the sale of farm products but also in the process of farming. In some areas, such as the Lower Chao Phraya Delta, where rice farming is relatively more advanced, a majority of farmers sell virtually all the grain that they produce; they simply buy what is needed for their own consumption. This is particularly the case with the “off-season rice” (*khao naa prang*), which is grown in the dry season for the market. Similarly, in many areas a large number of farmers engage in growing only cash crops such as sugarcane, maize, cassava, oil palm, and rubber and fruit trees. Involvement in production for the market is so common nowadays that households that produce exclusively for consumption hardly exist. A survey in the 2001–02 crop year revealed that only about one-third of all farm households in the country used most, but not all, of their produce for consumption, while the rest sold most of it for cash (Office of Agricultural Economics 2009). The market also plays an important part in the production process. Most, if not all, farmers depend on the market not only for seeds but also for agricultural machines, fertilizer, and pesticides.

Farming Method

Another notable aspect of change is the farming method that involves widespread use of machines and other modern technologies. Most rice farmers, for example, regardless of farm size, now use machines in all activities ranging from land preparation to harvesting. Farmers also use improved seeds and chemicals to increase yields. A small number of farmers who practice organic farming (“alternative agriculture”) may not rely on chemicals, but their farming practices are no longer the same as in the past; at least many of them do not turn their backs on using farm machines. And like most “chemical” farmers, these organic farmers too are involved in production for the market.

It would not be an overstatement to say that mechanization is a dominant aspect of farming today. Traditional farming using simple plows pulled by water buffalo or oxen, so common in the recent past, has been nearly, if not completely, replaced by farming using petroleum-powered machines of different types. As of November 2015, the cumulative number of registered tractors and farm vehicles countrywide was reported to be 586,537 (Department of Land Transport 2015). This, however, seems to be too low an estimate; the actual number of machines used for farming purposes is believed to be

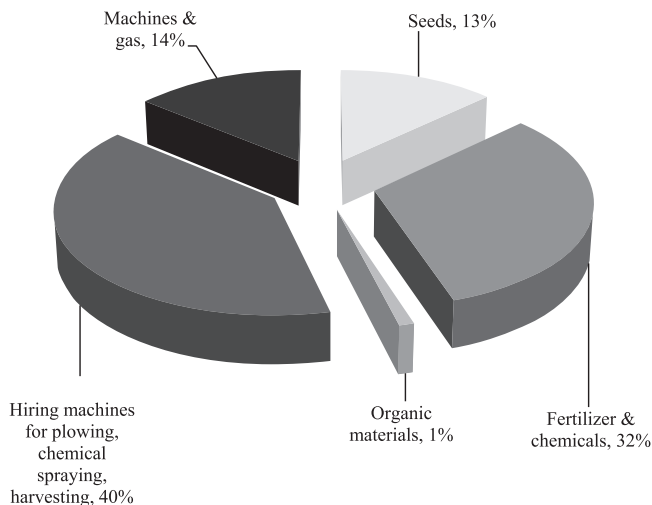


Fig. 5 Percentage of Financial Investment by Farm Households in a Community of Supan Buri Province, Lower Chao Phraya Delta, 2002-03 Crop Year

Source: Witoon and Suriyon (2008).

much greater if all kinds of farm machines are counted. For example, the number of “two-wheel hand tractors” alone must be in the millions; they are common among low-budget farmers and typically are not registered. Widespread use of farm machines is a direct response of farmers to two things: labor shortage in rural areas due to the continuing outflow of rural workers associated with demographic change and household dynamics discussed above; and the availability and accessibility of farm machines that can work better and faster. Whatever the reason behind this, the outcome is a change in farming method.

Increasing mechanization and the use of other modern technologies means that farming nowadays requires more financial investment and hence becomes more capital intensive. A case study of farming in a community in Supan Buri Province in the Lower Chao Phraya Delta revealed that the largest proportion (86%) of financial inputs was for buying/hiring machines, gasoline, and fertilizer and other chemicals, as shown in Fig. 5 (Witoon and Suriyon 2008). In terms of mechanization, small farmers in rural Thailand seem to share some characteristics with large commercial farmers in developed countries with advanced capitalist economies, although on a different scale.

Emergence of Agribusiness/Commercial Farming

Unlike in the past, key players in Thai agriculture now are not only small farmers who produce both for consumption as well as the market, but also entrepreneurs and large

corporations that produce exclusively for the market. In the past, the business sector's involvement in agriculture was typically limited to acting as intermediaries who made a profit through the buying and selling of agricultural products. Under global capitalism, where food has become an important commodity from which large profits can be made, agriculture becomes an attractive opportunity to more and more entrepreneurs and corporations at both the local and national levels.

At the local level there are entrepreneurs who may be wealthy individuals or retired government officers. They rent as much farmland as they can manage and then hire local "farming experts" or "contractors" to do all the farm work, ranging from preparing the land to harvesting the crops (Suriyon *et al.* 2010). One can say that these are a new type of farmers (or farm managers), who do the job without having their hands and feet dirty. They run the business solely for profit. Some of them may also act as brokers in contract farming, another form of agribusiness that is growing slowly but steadily in many rural areas. At the national level there are large business corporations that focus on food production. Of particular interest is that these large corporations (local, national, even multinational) engage in all stages of the food production process (or, rather, food industry)—from upstream crop growing to midstream food processing and all the way to downstream food marketing. Conceivably, these large corporations are in direct competition with small rural farm households, most of whom also produce for the market.

Meanwhile, there seems to be some prospect for change among the farmers themselves toward becoming entrepreneurs or "business farmers" of some kind. This is indicated in a survey of rice farmers in the Lower Chao Phraya Delta, where rice production for the market is the most advanced in the country. The survey asked respondents about their self-perception at three different points in time—at the time of the survey (i.e., in 2009–10), 5 years in the future, and 10 years in the future—whether they perceived themselves as traditional farmers, progressive farmers, or business farmers. At the time of the survey virtually all respondents (98%) perceived themselves as either traditional farmers or progressive farmers who routinely used modern farm technology; only 2% reported that they were business farmers. This was in sharp contrast to their self-image in the future. In the next 10 years, for instance, the proportion of farmers who perceived themselves as traditional and progressive farmers decreased to 75% (13% traditional and 62% progressive farmers respectively), while those who thought they would become business farmers in the next 10 years increased to 25% (Fig. 6). It remains to be seen whether the self-perceptions of rice farmers in Central Thailand are going to be realized. Fig. 6 does indicate the direction in which Thai agriculture may be moving in the future.

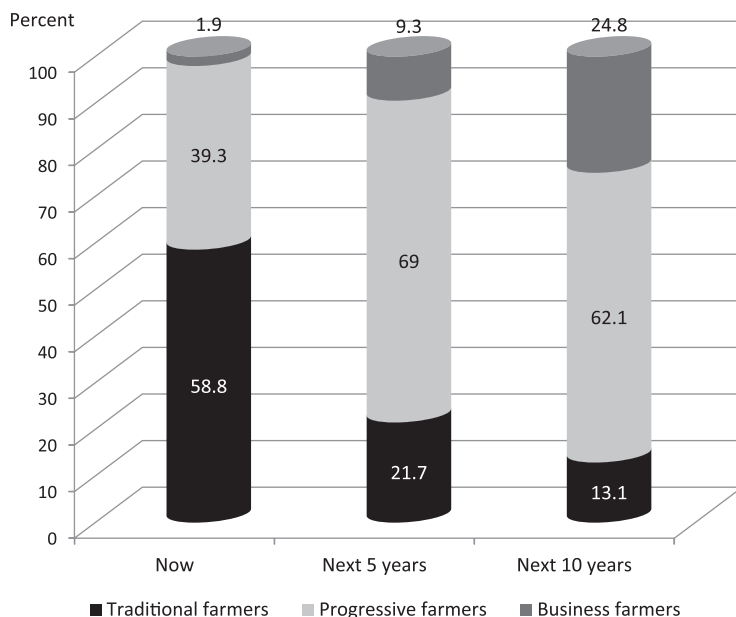


Fig. 6 Self-perception of Rice Farmers in Selected Provinces of the Lower Chao Phraya Delta, Central Region, 2009/2010

Source: Suriyon *et al.* (2010).

Changing Land Use and Landholding

The land areas used for different crops vary from year to year. This change has been reported annually in *Agricultural Statistics* over the past 30 years or so. Of course, variation in agricultural land use may be influenced by numerous factors; common among these are rainfall, land type, capital, technology, and household's consumption needs. However, in the context of the expansion of the capitalist economy into rural areas, change in agricultural land use is closely linked to the farmers' response to market prices, domestic as well as international. In addition to rice, this is the case for cash crops such as baby corn, oil palm, rubber tree, mung bean, soybean, onion and tomato (Table 1). Such variation in the land use is a form of agricultural change since it is a result of changing strategies and practices on the part of the farmers.

During the past decades there has been substantial urban and industrial development, often at the expense of agricultural land. While accurate data on agricultural land loss due to the process of urban and industrial expansion are yet to be compiled, a plain observation can give some idea of this loss. With increasing urban and industrial growth, much agricultural land around large urban centers such as Bangkok and other big cities has been converted to housing estates, commercial complexes, and industrial areas.

Table 1 Change in Land Areas Planted with Selected Crops, 2000–09 (area in thousand rai, * except for baby corn, onion, and tomato)

Year	Rice	Baby Corn (rai)	Oil Palm	Rubber Trees	Mung Bean	Soybean	Onion (rai)	Tomato (rai)
2000	66,492	153,895	1,660	11,651	1,845	1,396	19,922	67,897
2001	66,272	232,372	1,827	12,144	1,892	1,154	17,448	68,649
2002	66,440	233,630	1,956	12,430	1,831	1,130	15,143	50,729
2003	66,404	217,905	2,057	12,619	1,520	961	17,672	49,362
2004	66,565	244,802	2,405	12,973	1,170	945	12,161	50,991
2005	67,677	217,638	2,749	13,617	1,015	929	9,456	48,791
2006	67,616	181,856	2,968	14,359	954	886	11,726	38,737
2007	70,187	225,483	3,228	15,362	951	816	12,099	39,591
2008	69,825	231,544	3,676	16,717	906	753	10,131	38,229
2009	71,542	230,724	3,888	17,254	900	758	11,076	38,741

Source: Office of Agricultural Economics (2009).

Note: * 1 rai = 0.16 ha or 1,600 m²**Table 2** Distribution of Landholding, by Quintiles of Owners, 2012

Quintile	Number of Owners	Land Areas (rai)*	Average Area per Owner (rai)*	Percent of Total Land Areas
Q1—smallest landowners	3,181,406	232,790	0.07	0.25
Q2	3,180,094	860,042	0.27	0.91
Q3	3,178,480	3,351,173	1.05	3.53
Q4	3,180,085	14,597,194	4.59	15.39
Q5—largest landowners	3,179,982	75,827,412	23.8	79.93
Total	15,900,047	94,868,611	5.97	100

Source: Duangmanee (2014).

Note: * 1 rai = 0.16 ha or 1,600 m²

About 40–50 years ago, for example, much of the land on the outskirts of Bangkok was used for growing rice, vegetables, and fruit trees; now virtually all of it has been turned into housing estates and commercial centers. The same has happened in other big cities throughout the country: Chiang Mai, Khon Kaen, Nakhon Ratchasima, Chonburi, Rayong, and Hat Yai, to mention just a few. Similarly, expansion of industrial areas has taken up large areas of agricultural land in many provinces in the Lower Chao Phraya Delta and along the east coast. Needless to say, most of the land lost to urbanization and industrialization is among the best-quality land for rice, vegetables, and fruit trees.

Perhaps the most important change that can have a long-term impact on farm households, and on the agricultural landscape in general, is change in the structure of landholding. A recent analysis of national landownership based on data from the Department of Lands revealed a very high degree of land concentration in Thailand, as shown in Table 2. In this analysis, people who owned land of any kind in 2012, agricultural and non-

Table 3 Change in Number and Proportion of Agricultural Landholders* by Size of Land, 1993, 2003, and 2013

Size of Landholding (rai)**	Number of Landholders			Percent of Total Landholders			Change (%)	
	1993	2003	2013	1993	2003	2013	1993–2003	2003–13
<6	1,114,038	1,372,215	1,377,499	19.7	23.6	23.3	23.2	0.4
6–9	745,982	816,588	817,473	13.2	14	13.8	9.5	0.1
10–39	3,064,632	2,970,571	3,000,043	54.3	51.1	50.7	–3.1	1
40–139	694,292	625,917	688,825	12.3	10.8	11.7	–9.8	10.0
140+	28,547	29,388	27,727	0.5	0.5	0.5	2.9	–5.7
Total	5,647,491	5,814,679	5,911,567	100	100	100	3	1.7

Source: National Statistical Office (2013).

Notes: * Agricultural landholders include all farmers, individuals, and legal entities who farm the land that they own, rent, or have access to by other means.

** 1 rai = 0.16 ha or 1,600 m²

agricultural, were divided into five groups (i.e., quintiles), with Group 1 having land of the smallest size and Group 5 having the largest-sized holdings. It was found that 80% of the total owned land area was in the hands of the wealthiest people, individuals, and legal entities, including politicians and “powerful” persons, who constituted only 20% of the total landholders (Q5 in Table 2). Only 20% of the land area was shared by 80% of the owners in Groups 1–4 (Q1–4 in Table 2), who were less wealthy (Duangmanee 2014). Note that landownership in this analysis is limited to ownership with title deed (*chanode*) only and does not include ownership with other kinds of documents.⁵⁾ Among the largest landowners, there were 837 cases (359 individuals or families and 478 legal entities) who owned land of 1,000 rai (160 ha) or more. The largest land area owned by individuals of a single family was 631,263 rai or about 101,002 ha, which is nearly two-thirds of the total area of Bangkok metropolis of 980,461 rai or 156,874 ha. (Data are not shown in the Table.) These data clearly show that there is indeed land concentration in Thailand.

In agriculture, land concentration is difficult to estimate due to a lack of data. For our purpose here, an inference is made from the 2013 Agricultural Census data as shown in Table 3, which displays changes in the number and proportion of agricultural landholders over a period of 20 years, from 1993 to 2013. A closer look at these changes gives the idea that agricultural land tenure in Thailand in the past two decades underwent a shift toward large landholders. In Table 3, landholders are divided into five groups according to the sizes of land used for farming: (1) smallest holders with land less than

5) In Thailand, there are several types of land documents. Except for a “title deed” (*chanode*) that gives full right of legal ownership to the holders, others are of secondary importance and relatively less secure. Although holders of these other documents have the right to use their lands, some of them are prohibited from participating in land transactions. Data on landownership with other types of documents are not available.

6 rai; (2) small holders with 6–9 rai; (3) medium-size holders with 10–39 rai; (4) large holders with 40–139 rai; and (5) the largest holders with 140 rai or more. In the first period, 1993–2003, there was a substantial increase in the first two groups (smallest and small landholders): 23.2% and 9.5% respectively. However, in the second period, 2003–13, the increase for these two groups dropped drastically to 0.4% and 0.1%, i.e., virtually no growth. This is in contrast to Groups 3 and 4 (medium-size and large landholders), whose growth rates were negative—–3.1% and –9.8% respectively—in the first period but rose to a positive growth of 1% and 10% in the second period. The change from –9.8% to 10.0% among the large landholders is notable. As for Group 5 (the largest holders, with 140 rai or more), its growth rate was 2.9% in the first period but dropped considerably to a negative growth rate of –5.7% in the second period (National Statistical Office 2013).

In the absence of adequate data, it is difficult to assess the direction in which agricultural land tenure will develop in the future. If the conditions observed in the past decade or so remain, and if the capitalist economy continues to expand in rural areas, concentration of agricultural land could be intensified unless effective countermeasures are taken.

Summary and Discussion

This paper addresses agricultural change in contemporary rural Thailand. It demonstrates how household dynamics and expansion of the capitalist economy into rural areas are changing the landscape of agriculture. In most rural areas today, farm households are facing labor and land constraints due to sustained demographic change and constant division of farmland associated with household dynamics. These constraints make it necessary for rural households to modify their farming practices by changing farming methods and strategies. These changes have been enhanced by expansion of the capitalist economy into the rural setting and widespread use of modern farm technology. Within three to four decades, there have been prominent changes in key aspects of agriculture. These include the following:

- (i) a gradual but steady shift from subsistence- to market-oriented production;
- (ii) a rapid increase of farm mechanization: a significant shift from traditional labor-intensive production to production methods involving substantial technological and capital investment;
- (iii) the emergence of agribusiness and commercial farming, which has brought in

“new farmers”—entrepreneurs and corporations that are fully involved in the agricultural business;

- (iv) changing structure of land use and landholding: land use is responding to the market price, and landholding is shifting toward large holders, resulting in a high degree of land concentration.

The changes outlined above are likely to alter not only the economic situation but also the social profile of the rural population. Indeed, many rural households have already felt the consequences of these changes, some of which are positive while others are negative. On the positive side, mechanization makes farm work less laborious so that the farmers now have more time for other activities. In addition, producing for the market is an opportunity to earn cash income, which is crucial for day-to-day life of household. Improved income has raised the quality of life of many farm households. Of course, all this is possible only if prices of farm products are favorable and relatively stable.

On the negative side, mechanization and use of other agricultural technologies, particularly chemical fertilizer and pesticides, require substantial financial investment, which is less affordable for many small farm households with limited resources. Many of them have to borrow money from financial institutions or local moneylenders, often at a high interest rate. The result is a household debt, which is rising at the national level (KU–OAE Foresight Center 2014). In the worst case, many households lost their farmlands, as they could not repay the debt. The use of farm chemicals, on the other hand, needs knowledge and skill, which are limited among small farmers. Thus, their health and environment are at risk.

Although the emergence of agribusiness and commercial farming appears to be positive for long-term agricultural development, it is not without negative consequences. With increasing agribusiness and commercial farming, small farm households are now in direct competition with large-scale “commercial farmers” who have the advantage in nearly every aspect—capital, technology, and bargaining power. In the modern capitalist economy, driven by free competition with only a weak regulation as existing today, those who lose out hardly have a place in the system. Consequently, economic and social inequality in agricultural sector is difficult to avoid.

So, where is agriculture in Thailand heading to? What is the future of small farm households? The answer to the first question has already been hinted at in the evidence presented above. There is little doubt that Thai agriculture is moving toward commercialization, although to a lesser extent compared to agriculture in the developed world today. If the current transformation continues, it is likely that subsistence-oriented farming will completely give way to market-oriented or commercial farming. In the past,

subsistence agriculture in Thailand was carried out by small farm households. It is possible that as agriculture becomes more commercialized, these small farm households will remain the key players for some time and then be completely overtaken by large-scale farm corporations. Until then, agriculture in Thailand may be “commercial” while much of the farm business is household based. Indeed, what is observed now seems to suggest this direction of agrarian change in rural Thailand.

The answer to the second question is complex and difficult. What is attempted here is based on the simple scenario that commercial farming continues to grow. Until farming is fully commercialized, small farm households face a choice between trying to persist within agriculture and giving it up altogether to seek other livelihoods. Whatever the choice is, the farmers are not without risk since each of these choices needs strategic adaptation, and the process is often complicated. To date, many farm households have opted for a “dual strategy” by trying to persist in agriculture while also seeking income from off-farm activities. One common strategy is to send selected members of the household (especially those who have potential for success) to earn income elsewhere in the industrial or service sector while other members carry on farm work mainly for food security or as a safety net at times of economic crisis. Another strategy, also common today among rural farm households, is to prepare children for other livelihoods in the future so that when they start their own families they do not have to rely on agriculture. This is a long-term strategy involving the allocation of household resources to children’s education and training to as great an extent as the household can afford. With this strategy, many households have succeeded resulting in their children’s settling permanently outside agriculture. How many of these young people are successful outside agriculture is another question, but the point here is that this is an aspect of agricultural change that is transforming social life of the rural people.

Agriculture, once considered the backbone of the country’s economy and the main source of income for rural households, has become less important. It is no longer the main source of income for the majority of rural households. There is good reason to believe that this decline will continue in the future. Despite agriculture being the major source of food production, it contributes only a relatively small proportion to the national income, with its share in GDP of only 7.4% in 2015 (Office of the National Economic and Social Development Board 2015).

Nevertheless, it would be an overstatement to conclude that small farm households are going to disappear entirely from the agricultural landscape in the near future. For decades to come, small farm households are likely to persist—but of course not in the condition that they are in today. The key questions are: How much can they adapt to the changing environment within which they will be operating? What are the options or

interventions available for them to survive? This leads to the question of what should be done if small farmers in rural Thailand are to survive, at least in the near future.

Assuming that commercialized farming continues to expand and competition between small farm households and large-scale commercial farmers is most likely inevitable, there should be a policy to tackle this problem. The policy should include both short-term and long-term measures. For the short term, there need to be realistic and feasible measures to keep prices of agricultural tools and equipment affordable for most farm households. There is also a need to keep prices of agricultural products at a level that is fair for both farmers and consumers through effective mechanisms. Among these, farmer-initiated cooperatives should be encouraged and strengthened in order to reduce the role of the intermediaries who often take advantage of small farmers. Meanwhile, farmers should be empowered such that they have more collective power to negotiate and protect their own interests.

The long-term policy should give priority to measures that will result in structural reform to tackle the problem of access to agricultural resources, i.e., land. Concentration of agricultural land should not be encouraged, and preferably it should be reduced in the long term. Land reform as a measure toward this aim has been discussed in public for many years now (see, for example, The Reform Committee 2011), yet it has not been realized. Under this policy, measures such as taxation should aim for a fair distribution of agricultural land so that it is not concentrated in the hands of the rich minority and speculators.

Land use also needs to be well planned in order to avoid conflicts among different sectors—agriculture, industry, and urban development. One measure for this that has attracted some public interest is agricultural zoning. For Thailand, this is new. If it is to be implemented, it needs a well-informed policy and public scrutiny. Its potential positive and negative impacts should be carefully weighed taking into account not only desirability and feasibility but also suitability in terms of its potential impacts on cultural practices, natural resources, and ecology. Above all, such policy must not lead to more social and economic inequality among sectors of the population.

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