



Smallholder farmers' crop combinations under different land tenure systems in Thailand: The role of flood and government policy



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ABSTRACT

Land use decision making is influenced by various factors including tenure security, natural disasters and farm characteristics. Smallholder farmers operate under different land tenure systems, which influences their crop combinations. This paper investigates smallholder farmers' crop combinations under different land tenure systems in Thailand in the context of the 2011 flood and government policy on rice. The empirical results of the *t*-test revealed that the land area of rice increased significantly in 2013 under different land tenure systems, which may be attributable to the government policy on rice. However, the land area of fruits and vegetables decreased significantly in 2013 under different land tenure systems. These results have implications for the role of government policy regarding the effect of natural disasters on crop production.

1. Introduction

Smallholder farmers play a crucial role in developing and emerging economies. Agricultural growth has positive impacts on rural and economic development, especially in countries where agriculture is dominated by smallholder farmers (Rosegrant and Hazell, 2000; FAO, 2014; Graeb et al., 2016; Wiggins et al., 2010; Birner and Resnick, 2010). For instance, in Pakistan, agriculture has been the most important sector of economic growth, contributing approximately 20.9% to the gross domestic product and providing a source of livelihood to 43.5% of the rural population in 2014–15 (Rehman et al., 2015; Chandio et al., 2016). In Brazil, there are 4.3 million family farms involving more than 11 million working people. Food produced on family farms in Brazil accounts for 36% of the national food production and contributes one third of the agricultural and food sector's GDP (Medina et al., 2015). In the Asian region, including Thailand, there is a strong causality link between agricultural growth and GDP growth (Awokuse and Xie, 2015). In Thailand, agricultural contribution to GDP was approximately 9% in 2015 (Fiscal Policy Office, 2016).

Nevertheless, smallholder farmers are confronted with numerous challenges which adversely affect their performance. For example, farmers in Pakistan are confronted with problems including a lack of mechanization and modern technology, credit availability, low labor productivity and a lack of education for farmers about farming techniques (Rehman et al., 2015). Similarly, most family farmers in Brazil

face structural constraints both in terms of limited assets and unfavorable institutional environments that hinders their performance (Medina et al., 2015). Smallholder farmers in Thailand are also faced with numerous problems including access to credit and land tenure issues (Sakprachawut and Jourdain, 2016; Suwansin et al., 2017). As in other countries, they operate under different land tenure systems and this influences their production practices and crop combinations, especially in the context of natural disasters and government policy (Nara et al., 2014; Mensah-Bonsu et al., 2011, 2017).

Land tenure is the relationship, whether legally or customarily defined, among people (individuals or groups) with respect to land. This includes rules created by societies to regulate behavior on how property rights to land are to be allocated, including how access is granted to use, control, and transfer land, the patterns of land distribution and protection, as well as the associated responsibilities and restraints necessary to achieve policy objectives (FAO, 2002; Bruce and Holt, 2011). Land rights can be simplified in three ways: use rights, which are the rights to use the land for grazing, growing subsistence crops, gathering minor forestry products, etc.; control rights, which are the rights to make decisions on how the land should be used, including deciding what crops should be planted for financial gains; and transfer rights, which are the rights to sell or mortgage the land, to transfer the land to others through intra-community reallocations, to transfer the land to heirs through inheritance and to reallocate use and control rights (FAO, 2002; IFAD, 2008).

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Land tenure is often categorized in the following four ways. The first is private land tenure which specifies the assignment of rights to a private party who may be an individual, a married couple, a group of people, or a corporate body such as a commercial entity or non-profit organization. For example, within a community, individual families may have exclusive rights to residential parcels, agricultural parcels and certain trees. Other members of the community can be excluded from using these resources without the consent of those who hold the rights. The second category of land tenure is the communal land tenure system that specifies that a right of commons may exist within a community where each member has a right to use independently the holdings of the community. For example, members of a community may have the right to graze cattle on a common pasture. The third category is the open access land tenure system in which specific rights are not assigned to anyone and no-one can be excluded. This typically includes marine tenure where access to the high seas is generally open to anyone; it may include rangelands and forests, where there may be free access to the resources for all. A significant difference between open access and communal systems is that, under a communal system, non-members of the community are excluded from using the common areas. The fourth is the state type of land tenure system in which property rights are assigned to some authority in the public sector. For example, in some countries, forest lands may fall under the mandate of the state, whether at a central or decentralized level of government (FAO, 2002). Tenure security is basically the security of tenure of the land and this is the certainty that a person's rights to land will be recognized by others and protected in cases of specific challenges. Security of tenure cannot be measured directly, and to a large extent, it is what people perceive it to be. The attributes of security of tenure may depend on the context under consideration. For instance, it can relate to the length of tenure in the context of the time needed to recover the cost of investment. The sources of security may also vary, and these include the recognition of government, community and its specific groups such as local farmers' organizations, and the administrative state and the formal legal system (FAO, 2002).

Land is a major agricultural factor and is regarded as a tool for poverty reduction and rural livelihood improvement. Land use and management decision making is influenced by various factors including tenure security and farm characteristics (Mensah-Bonsu et al., 2011, 2017; IFAD, 2012). Farm households with secure land rights normally invest in longer term investment and higher-profit production (Feder and Feeny, 1991; Quinn et al., 2010; Wannasai and Shrestha, 2008). Land tenure security affects the decision making of farmers about which crop to cultivate and whether to do so for commercial or subsistence purposes (IFAD, 2012). Secure land rights can be a stimulus to investment in agriculture that can increase land owner productivity and influence farmers' decisions on production as well as the sustainability of farmer livelihood (IFAD, 2007).

Land tenure systems are vastly complex. In many developing countries, tenure systems on any single parcel of land may be complicated and dynamic, consisting of multiple rights by numerous parties to a mixture of actions (Wiebe and Meinzen-Dick, 1998). In some societies, land is constitutionally the state property, but individuals can hold the exclusive rights to use land under contractual arrangements (Feder and Feeny, 1991).

There are five main types of land documents under the following Land Codes in Thailand: (i) NS4 (*Land title deed*), (ii) Title deed maps, (iii) NS2 (*Pre-emption certificate*), (iv) NS3 (*Certificate of utilization*), and (v) SK1 (*Possessory document*). The NS4 and title deed maps are land title deeds which provide ownership status, whereas NS2, NS3, and SK1 provide certificates of utilization as possessory rights (Department of Lands, 1954; Suwansin et al., 2017).¹ Moreover, there are land

documents under other laws i.e., SPK (*Certificate of utilization in land reform area*), STK (*Permit of utilization document in national conservative forest area*), NK3 (*Permit of utilization document in land settlement cooperative community*), and KSN5 (*Certificate of utilization in land settlement cooperative area*) that are usufruct and are administered by the Agricultural Land Reform Office, Royal Forest Department, Department of Social Development and Welfare, and Departments of Cooperative Promotion, respectively. The degree of security of tenure varies for each type of document (Department of Lands, 1954; Sakprachawut and Jourdain, 2016; Suwansin et al., 2017). For instance, NS4 and title deed maps are title deeds which are more secure, have full unrestricted ownership, and can be sold, rented, and mortgaged, whereas NS3 is a certificate of use, which is secure, and can be sold, transferred, mortgaged, but can also be converted to title deed NS4 (Sakprachawut and Jourdain, 2016; Suwansin et al., 2017).

The land tenure system of Thailand can be divided into state land and private land. Private land refers to the lands which are held by a private party. However, private land can be utilized by the owner or renter. State land refers to the lands which are held by the state or government agencies. This includes land for public uses, land for state purposes, and land for allocation to people. The following four types of lands fall under the category of state land: forest land, common use land, Ratchaphatsadu land, which is the land for special use by the state or to rent out to people under long-term contract, and agricultural land reform areas (Gine, 2005). As of 4th August 2017, the agricultural land reform area (ALRO land) covers 5.72 million ha in 72 provinces in Thailand (ALRO, 2017).

In rural areas where the land is mostly used for agricultural activities, the major land tenure types are private land and agricultural land reform areas. Private land can be utilized by the owner and some may be rented out for landless farmers. Another type of public land which is allocated to people in the form of community land rights (i.e., community land title) was introduced in 2010. Thus, a law was introduced in the country on the issuing of community land titles and was put before the Cabinet in May 2010 (Ermi, 2010). The government set a land policy in an attempt to push for land distribution and to resolve the issue of land rights for the poor. In addition, in the same year, a new office, which is located in the Office of the Permanent Secretary of the Prime Minister's Office, was established to handle the issuance of community land titles (UNPAN, 2010). Under this policy, a community is allowed to occupy, manage cooperatively and to use public land under the "Community Land title". Security of their settlement and use of communal land are the objectives of this law (Tawe, 2015). By August 2017, the following four communities had received a community land title: (i) Baan Klong Yong Cooperatives community, Phuthamonthon district, Nakhonpathom province, (ii) Mae Ao community, Pasang district, Lamphun province, (iii) Baan Rai Dong community, Pasang district, Lamphun province, and (iv) Baan Phra That Khing Kang community, Chun district, Payao province. Notwithstanding this effort by the government, many farmers are still landless and have to rent land for their living (i.e., dwelling and agricultural production). The agricultural statistics from the Office of Agricultural Economics (OAE) showed that in 2015, more than 50% of farmers' landholding in Thailand is rented land (OAE, 2016a). Rented land is another land tenure type that was examined in this paper.

The rice pledging scheme (RPS), implemented by the government of Thailand to support farmers, is aimed at minimizing the problem of low prices during the harvesting period by buying harvested rice from farmers across Thailand. Under the scheme, in the 2011/2012 crop year, the government increased the price of paddy rice to higher than the prevailing market price and bought all quantities produced by farmers. The pledging price was 14,800 THB and 15,000 THB per metric ton for 5% white rice and 100% white rice, respectively, and the market price at that time was only 10,026 THB per metric ton (OAE, 2016b). As a result, rice farming seemed to be a stable and secure form of agriculture because it was supported heavily by the government.

¹ Usufruct lands rights are rights to use and manage the land for economic activities with the aim of deriving benefit from it as long as the land is not in any way damaged or altered.

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