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Why Does Tobacco Agriculture in Thailand Persist?

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Abstract: The rigorous tobacco controls advocated by both international policy players and national government are foreseen to lowering demand in tobacco consumption, and consequently, the contraction of tobacco agriculture. This paper seeks to reveal why tobacco agriculture, albeit with the declining trend of tobacco farms, continues to persist. Theoretical guiding the investigation is based on the institutional arrangement of contract farming system, the idea that derived from New Institution Economics, and farmers' striving to attain livelihoods. The study adopts qualitative methods, utilising purposive sampling, with 53 tobacco farmers recruited from four provinces, namely Phrae, Phetchabun, Roi-et and Nongkhai, who took part in four focus group discussions. In addition, in-depth interviews were conducted with two provincial agricultural promotion officers, three provincial excise officers and four staff members of the local office of the Thailand Tobacco Monopoly. The data was analysed using content analysis. This paper found that supportive institutional arrangements, the adaptation of communities and households creating a favourable environment and the emergence of new markets for roll-your-own cigarettes are contributing to the persistence of tobacco agriculture. In light of tobacco control, two policy measures are proposed. First, the regulations for roll-your-own cigarette industries – both smallholders and manufacturers – must be revised and instituted. Second, to encourage tobacco farmers to move away from tobacco growing, institutional support for alternative crops, such as price guarantees, inputs and technical support should be provided in the same manner that the tobacco growers currently receive.

Keywords: Tobacco control; Tobacco agriculture; Tobacco farmer; Roll-your-own cigarettes; Thailand

1. Introduction

The growing recognition of the negative impacts of tobacco consumption on health has been heightening over the last several decades. Consequently, national tobacco control policies have been instituted to reduce the number of smokers (Hoek & Smith, 2017; Lee et al., 2020; Sterling et al., 2016). In principle, the reduction or smokers (demand side) following the enforcement of tobacco control policy (Chantornvong & McCargo, 2001; Lee et al., 2009) would inevitably result in the reduction of tobacco agriculture (supply side), which would cause tobacco farmers to suffer (Roemer et al., 2005). However, the reduction of domestic tobacco consumption may not affect the tobacco agriculture, particularly where channels of exports of tobacco agricultural products are available. In developed countries, the escalation of pressures on tobacco industries, particularly compensation for the costs of illnesses caused by tobacco consumption, heightened the costs to firms, resulting in the relocation of the tobacco industry from the West. The expansion of smokers and cigarette markets in developing countries continue to provide a conducive environment for the industry to grow. More importantly, the growth of the tobacco industry is driven by the interests and the influences of multinational tobacco corporations. On the one hand, the growth of the tobacco industry in developing markets results in incoherence or inconsistency within public policies regarding health. On the other hand, it raises the question of how tobacco control can impact tobacco agriculture.

Most governments of developing countries adopt inherently contradictory tobacco control policies. On one side, the state seeks to prevent tobacco use in the interest of health. The government primarily employs demand reduction strategies such as cigarette tax increases, health warnings, advertising bans and the creation of smoke-free environments. On the other side, the governments also promote tobacco agriculture for the economic benefits of the tobacco growers,

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albeit with a recognition that tobacco consumption increases the costs of public health services (Barraclough & Morrow, 2017). The latter aspect is particularly true for countries where government revenue and farmer livelihoods are relatively dependent on tobacco exports. From the end of 1980s, the tobacco controls in developing countries become conditioned by a neoliberal paradigm where the interests of multinational corporations in the tobacco industry were advanced (Lencucha & Thow, 2019). Tobacco corporations are effective in using their political power to create pressure for developing governments to open up for cigarette products and tobacco farming for the use of the tobacco multinationals. The developing countries opened for markets of tobacco industry of developed countries is largely in exchange for some economic privileges such supports as quota of exports into developed economies (Vateesatakij, 2006). To avoid legal liability, the tobacco industry was reallocated from North America to developing countries (Chitanondra, 2005), which offer better access to new markets and abundant cheap supplies from tobacco agriculture. As a result, the tobacco industry of developing countries continues to grow amidst the institutionalisation and enforcement of tobacco control. The questions remain how tobacco control policy impacts tobacco agriculture and what the future holds for tobacco farming in developing countries.

Evidence from research carried out in developing countries shows that tobacco agriculture encompasses negative livelihood outcomes for farmers (Appau et al., 2019; Choenkwan & Fisher, 2018; Drope et al., 2004; MacKenzie et al., 2017). Lecours (2014) noted that tobacco farmers in many developing countries struggle with low net gains, high levels of indebtedness and a heavy burden from hazardous work. The Centre for Disease Control and Prevention (2012) argues that instead of promoting poverty reduction, tobacco farming instead entraps farmers within a 'vicious circle' of poverty. A study of the economics of tobacco farming in Indonesia revealed that tobacco farmers usually 'miscalculate' their investment, that is, large numbers of tobacco farmers underestimate costs while overestimating returns (Appau et al., 2019). In addition, the tobacco industry also constructs misconceptions that endure in tobacco agriculture. As Lecours (2014) mentions, 'The tobacco industry plants and perpetuates myths, half-truths and fabrications concerning the immediate economic consequences of tobacco control for tobacco farmers and attempts to cast farmers in the role of victims of tobacco-control policy' (p. 248). These claims require further explanation of why tobacco farmers continue to farm tobacco under such unfavourable conditions. Our paper offers an explanation in the case of Thailand.

Studies on tobacco control have well established that tobacco consumption causes negative impacts while simultaneously increasing public spending on health (Pocnet et al., 2017). As health is the top priority, these studies are mostly focussed on the demand side, which is also true for studies of tobacco control in Thailand (Chantornvong & McCargo, 2001). According to the Tobacco Control Research and Knowledge Management Centre, Thailand had over 12.26 million smokers in 1991. Over 26 years, the figure decreased slightly to 10.70 million smokers in 2017 (Aungkulanon et al., 2019; Hammond et al., 2008). Although the effectiveness of tobacco control policy on smoking prevalence is well studied, the effect of these policies on tobacco agriculture remains cloudy. Our paper seeks to understand the relationships between tobacco control and tobacco agriculture with regard to the persistence of tobacco agriculture. We argue that the consequences of tobacco control policies are mediated by supportive institutional arrangements, the efforts of farmers to secure their livelihoods, and the emergence of new markets related to roll-your-own cigarettes.

In this paper, Section 2 provides guiding concepts of the analysis. Section 3 presents the historical background of the tobacco industry in Thailand. Section 4 outlines methods and study sites, followed by Section 5, where our findings are presented. Finally, in Section 6, we discuss and conclude our analysis.

2. Contract Farming, A Dependence Path and Tobacco Control

Since early 1980, the neoliberal era (from the period of President Ronald Regan of the US and Prime Minister Margaret Thatcher of UK onward), the interests of agrarian relations in the developing countries have shifted to shed light on 'hyperglobalisation', marketisation and livelihood diversification, while the peasant past remains superficially tenacious. Hirsch (2020) notes that two forms of capitalist production evolved in Southeast Asia. The first is the establishment of large-scale

agriculture, such as palm oil plantations in Indonesia and Malaysia, and sugarcane plantations, which primarily involve land concessions, which are common in Cambodia and Laos. The second is contract farming. In Thailand, farmers are smallholders by nature (Falvey, 2000); meanwhile, agribusiness giants such as the Chareon Pokhaphand (CP) conglomerate, the Mitr Phol Group, and others have a strong presence. These agribusiness giants do not only invest in agriculture, but their conglomerations dominate agricultural inputs, real estate, food retailers and more. The influence of conglomerations over smallholders, therefore, not only covers what and how to produce but also what to consume. The growing presence of agribusiness giants has coincided with the growing prevalence of contract farming – an institutional arrangement bridging smallholders and agribusinesses.

'Contract farming' refers to a type of production characterised by a vertical coordination between small-scale agricultural commodity producers and buyer-processors where the roles or functions of parties involved in the coordination are specified by contracts (Little & Watts, 1994; Simmons, 2002). Contract farming is an institutional solution to overcome existing market failures (Grosh, 1994; Key & Runsten, 1999). In developing countries, market failures are usually caused by a lack of information and insufficient economic infrastructure. In this situation, risks are high for economic actors playing roles on demand and supply sides, and the imperfection of information retards both production and exchange. Institutional arrangements in the form of contract farming on the one hand distribute risks to parties involved in production, while on the other hand they develop incentives, particularly to smallholders, sharing foreseeable returns. This type of arrangement is seen as a 'win-win' solution or a mutual gain for both sides. Smallholders secure their commodity markets while agribusinesses can avoid the risks of variations in the quality of supplies while having access and control over land and labour. In this light, contract farming has been promoted by international policy players or finance institutions (FAO, 2001; The World Bank Group, 2014). Studies on contract farming have revealed that the primary reasons farmers adopt contract farming include market certainty and price stability (Sriboonchitta & Wiboonpoongse, 2008). However, reports have highlighted negative consequences of the contract on farmers. The contract normally binds farmers into agreements to purchase seeds, fertilizers and pesticides while farmers are obliged to sell their crops to the contractors at fixed prices (Delforge, 2007).

Despite the growing domination of agribusiness giants in agriculture, farm households or smallholders persist as forms of agricultural production. The enduring 'peasantry' mode of production has been the topic of unresolved academic debates; in particular, the decision-making of family farms over production that does not conform to standard economic models (van der Ploeg, n.d.). The persistence of smallholders is explained by academics in two ways. One is rested on the struggle of individual and household of farmers to survive – an idea conceptualised under the sustainable livelihood framework (SLF) (Carney et al., 1999; Chambers & Conway, 1991). The second view considers the persistence of farmers from institutional angles. Among these, David (1985) and Arthur (1989) propose the path-dependence concept. The path-dependence framework emulates three steps wherein smallholders are eventually entrapped and unable to escape. First, a prototype model of a solution to a given problem is adopted where a previous event encompassed a mistake and a consequent opportunity results in far-reaching, long-term institutional development. Second, after a solution is made, other options become unavailable or irrelevant because the generated solution also created specific circumstances to enable the selected 'path'. Finally, those who adopted the solution or path were locked in, which continues until the solution is broken by an exogenous shock (Arthur, 1989; David, 1985). North (1990) further develops the institutional change model, arguing that past events are not the only factor determining institutional change. He maintains that institutions reduce transaction costs, which permits the viability of firms. The path-dependence and institutional change model can be classified within New Institution Economics. These concepts are applicable to the continuity of tobacco farmers, which informs our analysis.

In a recognition that the tobacco control can result in negative consequences for smallholders, the World Health Organization Framework Convention on Tobacco Control stipulates that the viability of smallholders engaged in tobacco agriculture and environments must be protected (Article 16 and 17). However, tobacco agriculture is virtually out of the range of the 2nd National Tobacco Control Plan. The plan charts six goals to be attained, including (1) building capacity for

tobacco control, (2) preventing new smokers in children and youth, (3) smoking cessation, (4) control and disclosure of ingredients contained in cigarette products, (5) promoting cigarette-free smoke environments and (6) deploying both tax and legal measures to control tobacco (Department of Disease Control, 2016).

Existing research is divided into two streams. Studies on the demand side assess tobacco controls, such as smoking prevalence, risk perceptions, positive impacts of tobacco controls on health (Hoek & Smith, 2017; Lee et al., 2020; Sterling et al., 2016), and the impediments to and effectiveness of policy enforcement in reducing the number of smokers (Sangthong et al., 2012). On the supply side, studies are concerned with tobacco agriculture, focussing on agronomy (Kittiwatcharachareon, 2013), economic perspectives (Cholwatanapong, 1985) and sociocultural aspects (Promphakping et al., 2007). In short, while policy measures to curb the numbers of smokers are enforced, tobacco farmers remain clinging to the same solution.

Our paper shows that the impacts of tobacco control on tobacco agriculture cannot be estimated from the response of smokers to demand-side policy measures. We consider the link between demand and supply of the tobacco industry from broad agrarian relations where the manufacturers, farmers and the state interact. In the next section, we provide background on tobacco agriculture in Thailand to contextualise the issues to be further analysed.

3. The Dynamics of Tobacco Agriculture in Thailand

Thailand has strived to 'modernise' the country since World War II, and the modernisation process has resulted in a profound change in the agricultural sector. In the case of tobacco agriculture, the government established the Thailand Tobacco Monopoly (TTM), in 1939. TTM was changed into the Tobacco Authority of Thailand (TOAT) in 2018. The primary aim was both to develop the tobacco industry and make the industry a source of revenue for the government. The British-American Tobacco (BAT) played a major role of advancing tobacco industry in Thailand before 1943. During World War II, the tobacco industry was severely affected due to the lack of raw materials for cigarette production (Mo-on, 2003). The government at that time took measures to secure revenue sources, one of which was the Tobacco Act (1943). This act stipulated that all cigarette industries were to be under the control of the state. Subsequently, BAT withdrew their staff and quit their businesses in Thailand in 1949.

The present regulations of the state on tobacco agriculture were instituted in the 1966 Tobacco Act (Royal Gazette, 1966). This act granted monopoly power over tobacco manufacture to TTM and developed the tobacco contract farming system. At present, the tobacco contract farming system comprises three parties. First, the state regulates tobacco agriculture with a licensing and registration system. The Tobacco Act stipulates that the license must be only granted to 'farmers' (not to cigarette manufacturers or exporters), and that the size of the land licensed is typically small. The second party is a manufacturer – TTM. In provinces with large areas of tobacco cultivation, TTM establishes provincial tobacco offices to oversee and supervise tobacco leaf stations within the province. While TTM owns cigarette factories and enjoys domestic cigarette market protection, TTM, by law, is not qualified to operate the tobacco farm. TTM thus allies with small farmers, that is, smallholders are supported under the contract to grow tobacco to ensure the sufficiency of raw materials. Only farmers who obtain a license to grow tobacco are eligible to enter into a contract with TTM. The contract stipulates the quantity, type and quality of leaves that growers are to deliver to the tobacco leaf stations at a set price. Simultaneously, the contract details inputs and technical support to be provided by tobacco leaf stations in the form of credits. In a recent year, the contract includes an outline of 'good practices' of tobacco growing to ensure leaf quality, particularly without chemical contamination.

The third party in a contract is farmers, who are typically smallholders. The persistence of smallholders – a peasant mode of production – has been a continual subject of academic debates (Bernstein, 2001). In the case of Thailand, it is argued that farmers continue to hold small plots of land partly due to favourable state land policies (Walker, 2012). Although the dividing line between farmer and business operator is arguable, the state subscribes to the view that a farmer is opposite to a 'business owner', who tends to be larger. That is, large farms are classified by the state as business farms, while 'farmers' represent family farms in the view of the state, which are typically

small. In this light, 'farmers' who are eligible to obtain a license to grow tobacco represent small or family farms.

From the early 1990s, the government increased measures to curb tobacco use by increasing the consumption tax. Cigarette production and the domestic cigarette market remained under the control of TTM (the state). The growing mainstreaming of the neoliberal public policy paradigm increasingly demands that developing governments liberalise their economies. The multinational tobacco corporations mounted pressure on the government, demanding that the domestic cigarette market be opened for international products. The entry into the neoliberalism era observed a decline in the number of tobacco growers. Khoasa-ard (1983) reported that 335,357 tobacco farms obtained licenses in 1983. From the early 1990s, the number of tobacco farms steadily declined. In 2013, government statistics recorded that there were only 43,369 tobacco family farms that obtained a license to grow tobacco (Vateesatakij, 2015). The average size of a tobacco farm in 2013 was 0.6 hectare per farm (Department of Agricultural Extension, 2019). In addition, from early 1990, TTM domestic cigarette market shares has been steady decline, while international cigarette shares increased. The AFTA that began to implement the agreement to reduce their taxes among members to 0% resulted in the multi-international cigarette businesses relocated their factories into ASEAN countries, particularly to the Philippines (DITP, 2013). As a consequence, the domestic cigarette of Thailand will be further shrinking, and this could potentially undermine tobacco agriculture in Thailand.

According to the 1966 Tobacco Act, private firms were not allowed to grow tobacco or manufacture cigarettes. However, regulations in the act on tobacco agriculture provided room for local firms to get involved in the tobacco industry. In particular, as the raw material for cigarette manufacturing, tobacco leaves must be cured, which requires technology and capital beyond the ability of small farmers. Local firms invested in curing plants and contracted with local farmers in a manner similar to that of TTM. The leaves of local curing plants could either be sold to TTM under quota contracts or exported (Tantakitti & Taworanant, 2003). In addition, the local curing firms are normally allied to or joint ventures of multinational tobacco corporations. Among the top are Siam Tobacco Export Corporation (STEC), or 'Tepaworng Group', Indranon, Thai-am and Inter-Asian Tobacco Exporters. The alliance of these local firms includes Trans-Continental Leaf Tobacco, Universal Leaf Tobacco Co., Gerruder Kulenkampff and Okura Co. Ltd. (Cholwatanapong, 1985). As noted by Cholwatanapong (1985), the export of Virginia tobacco was the highest in the 1980s. The yields and exports of Virginia tobacco evidently declined from the end of the 1980s, which coincided with the exit of local curing firms from tobacco agriculture. At present, only a few private firms continue to engage with tobacco agriculture directly, for instance, STEC. In addition, private firms shifted away from Virginia to Burley tobacco, and the curing plant businesses no longer exist.

Note that the exemption of traditional tobacco from most regulations was stipulated in the 1966 Tobacco Act. In particular, a license is not required. The reason was that the traditional tobacco is not used as a raw material in tobacco manufactures. Traditional tobacco is defined in the Act as 'tobacco that has been originally grown in Thailand, the leaf turns brown when cured with sunlight' (Royal Gazette, 1966). This definition apparently describes a set of distinctive traditional tobacco plants including Virginia, Burley and Oriental, which were perhaps introduced after the First World War, and these tobacco varietals are raw materials for cigarette manufactures. In practice at present, it is difficult to distinguish traditional tobacco from Virginia, as both Virgina and Burley may cross-breed well with traditional tobacco. The rampant growth of roll-your-own cigarettes partly stems from the link of roll-your-owns to traditional tobacco (Promphakping et al., 2010), where the regulations imposed on Virginia, Burley and Oriental are not applied.

In the subsequent section, we discuss whether the dynamics or the persistence of tobacco agriculture reflects tobacco control policy in Thailand. The next section presents materials and methods, followed by results.

4. Materials and Methods

4.1. Study sites

Our study is a part of a research project titled 'The Response of Tobacco Farmers to the National Tobacco Control Policies'. The data we present in this paper is limited to Phase I – qualitative research. In Thailand, tobacco farmers are found in 20 provinces in the north and northeast regions. The majority of tobacco farming, up to 80%, is concentrated in seven provinces, namely, Phetchabun, Sukhothai, Nakhon Phanom, Roi-et, Phrae, Nongkhai, and Phayao (Department of Agricultural Extension, 2019). Four provinces were purposively selected from these seven provinces in our study: namely, Phrae, Phetchabun, Roi-et and Nongkhai. There are two criteria guiding the selection; the density of tobacco agriculture and the diversity of types of tobacco grown. Phrae is dominated by Virginia while farmers in Roi-et are entirely growing Oriental varietals. Meanwhile, tobacco growers of Phetchabun and Nongkhai are mixed; Phetchbun combines Burley, Virginia and local varietals, while farmers in Nongkhai grow Burley and Virginia.

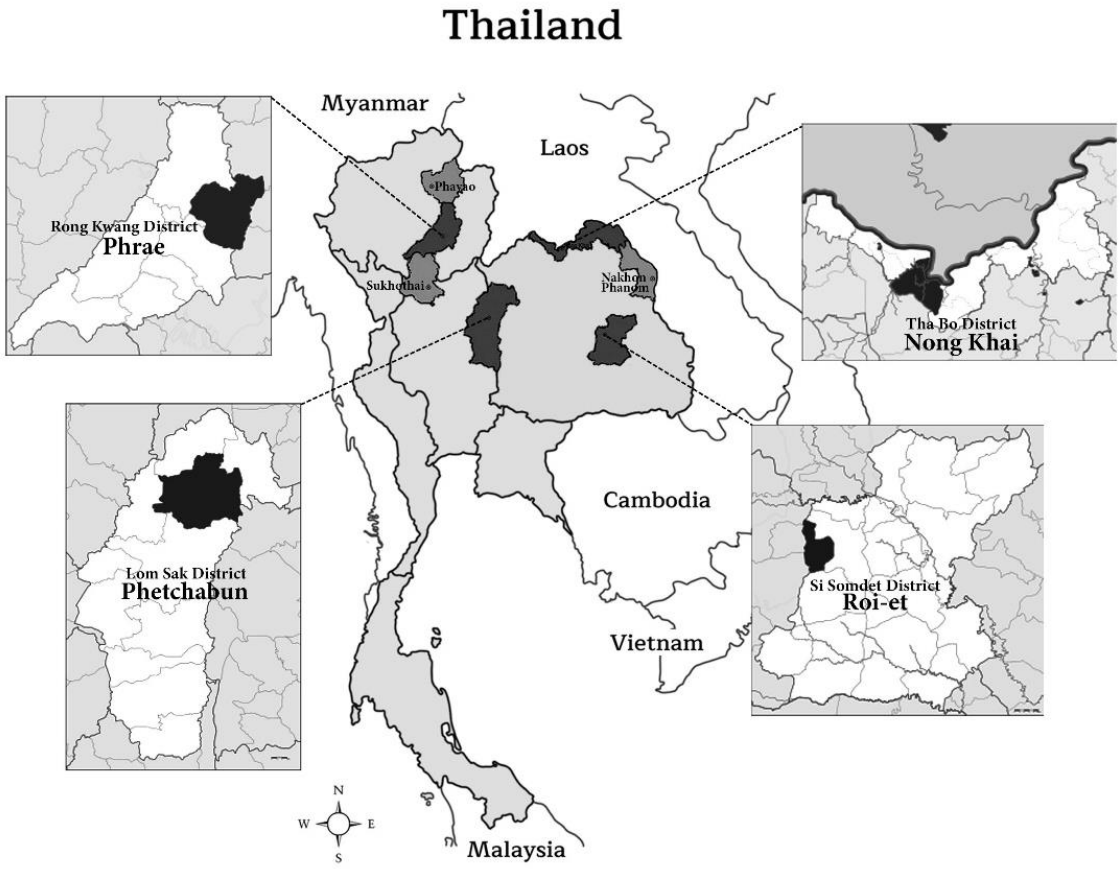

Figure 1. Map of Study Sites.

4.2. Recruitment procedure

As our study focuses on the persistence of tobacco agriculture, we therefore include only farmers who are currently granted a license from Provincial Excise Offices to grow tobacco. The study conducted eight focus group discussions with 53 tobacco farmers, from the provinces of Phrae, Phetchabun, Roi-et and Nongkhai. The identification of focus group participants was assisted by local authorities, namly, the head of Provincial Excise Offices, and staff of Tobacco Leaf Stations, who are familiar to groups of farmers. The main criteria for selection are that participants must be presently growing tobacco and are available and willing to attend the focus group discussion. In addition, in every province the study also conducted in-depth interviews with four local staff of the Thailand Tobacco Monopoly, three heads of provincial agricultural extensions and three heads of provincial excise offices to gain the information related to policy processes. We also conducted in-depth interviews with three representatives of the Tobacco Farmers Association, while the

representatives of exporters at the local level declined to give us an interview.

4.3. Data collection procedures

The focus group discussions' question guide was constructed based on the objectives of our research. The question guide was piloted with tobacco farmers outside the sample groups of this research. The focus group discussions were moderated by research teams. Two trained note-takers were assigned to take notes and record (audio) of the interviews and discussions. The records were transcribed immediately after each discussion to ensure completeness of the data collection.

4.4. Data analysis

The notes of the interviews and audio records were transcribed and transformed into fieldnotes (see Table 1). In the first stage of data analysis, we checked the accuracy of all transcripts by comparing them with focus group discussion audio recordings. In the second stage, researchers reviewed the transcripts and noted down initial analytical ideas. These ideas form the basis for the construction of themes for the classification and organisation of the data using a combination of inductive approaches (Castleberry & Nolen, 2018; Vaismoradi et al., 2013). Two meetings of researcher teams were conducted to discuss and identify quotations from the fieldnotes.

Table 1. Summary of data and data analysis.

Types of informants	Transcribed files	Salient themes/ topics emerged
Staff of Provincial Agricultural Extension Office	Fieldnote #1.4, #4.2, #4.3	Agricultural policies, government supports
Staff of Provincial Excise Office	Fieldnote #1.7, #2.4, #4.4	Regulations stipulated by laws and practices to control tobacco agriculture, roll-your-own businesses
Staff of Tobacco Leaf Station	Fieldnote #1.6, #2.5 #3.4, #4.5, #4.6	Policies and supports of TTM to farmers, extension services.
Tobacco Farmers (focus group discussion)	Fieldnote# 1.1, #1.2, #2.2, #2.3, #3.1, #3.2, #3.3, #4.1	Practices in farming, livelihoods, perspectives of farmers on tobacco farming,
Representatives of Tobacco Farmers Association	Fieldnote #1.3, #1.5, #2.1	Political pressures

5. Results

The continuity of growers in tobacco farming that emerged from our analysis had little to do with the decrease or increase of smokers. Rarely, participants attending focus group discussions raised their concern about the decline of smokers that would affect their farms. The explanations of why they continue to grow tobacco that emerged from our analysis reveal three salient themes; (1) supportive institutional arrangements, (2) the path dependence of tobacco agriculture and (3) the emergence of new markets. We present our findings under these headings as follows.

5.1 Supportive Institutional Arrangements

Farmers growing tobacco and attending our focus groups revealed that they have been receiving continual support from TTM. As a tobacco farmer from Phetchabun said in a focus group:

> *We have grown tobacco since our parents did. This is because the prices of tobacco leaf are guaranteed. The Tobacco Leaf Station supported us in many ways in tobacco growing. We don't worry about the market because the leaf will be sold to the Tobacco Leaf Station. … My family was able to pay off debts with income from tobacco. We are able to support our kid's education with income earned from tobacco (Fieldnote #2.3).*

The above sentiment was repeatedly mentioned throughout the focus groups we conducted. Growing tobacco for most farmers attending focus group discussions has occurred since their

childhoods, and some respondents are now over 60. Only a few farmers were newly entered into tobacco agriculture (Fieldnote #3.2).

The long-term continuity of growing tobacco by farmers is largely due to institutional support. The set of similar supports, especially price guarantees, is unavailable for most other types of farmers (Fieldnote #1.4, # 4.2, #4.3). That is, the institutional support for tobacco farmers is more favourable than their counterparts, such as rice farmers and others.

An interview with the head of the Tobacco Leaf Station of TTM Lom Sak of Phetchabun Province reveals that farmers who submit a request for a quota contract are mostly the same farmers that have been growing tobacco for TTM for a long time. However, a few farmers discontinued therefore new quota contracts are also available. Normally Phetchabun Province receives 6 million kgs from TTM and these quotas are allocated to about 4 thousand farmers in Phetchabun Province.

There were frequently inconsistencies between growing areas approved by the Provincial Excise Office and the number of quotas set by TTM. This is primarily due to climate variability that results in the fluctuation of leaf outputs. In a bad year when the crop was damaged by floods or by plant disease the leaf price will be heightened as private exporters compete to buy leaf from farmers. In a good year, the outputs would exceed quota. Our interview with a representative of a tobacco farmer association revealed that some farmers offset the variation of outputs by going beyond the quota in terms of land size. For instance, a farmer was approved 5 rai (1.97 0.8 hectare) for growing tobacco, in a number of cases they actually grew 6 or 7 rai. The excess leaf outputs will usually be taken by private exporters (Fieldnote #1.3). There were occasions when private exporters declined to absorb the exceeding quota. In this situation tobacco farmers will turn to use political pressure to demand TTM buy the excess leaf production; a member of staff of Lom Sak Tobacco Station said:

> *This year we were allocated 5.8 million kilograms of Virginia tobacco, 200,000 kgs lower than the previous year. This is because in the last year farmers asked their MPs to pass on their demands to the government to order TTM to take exceeded quotas from farmers. The government often responds to the demands, to avoid the frustration being escalated. This year our quota was cut by 200,000 kgs as this amount of leaf was already in storage (Local staff member in Thailand Tobacco Monopoly, 11 March 2015, Fieldnote #2.5).*

The technical supports and inputs provided under the contracts can be varied between TTM and agribusiness exporters. TTM provides seeds, fertilizers, pesticides and these inputs are counted as credits. The head of Rong Kwaung Tobacco Station insisted in an interview that the use of these inputs must strictly comply with the instructions of the field staff of TTM. In recent years, TTM adopted Good Agricultural Practice (GAP) to prevent chemical contamination in tobacco leaves, and there are guidelines for farmers to follow. Leaves are inspected at the sale point, and if contamination is found, the leaves will be rejected. Loans are also available from either the Bank of Agriculture and Agricultural Cooperative or the Government Saving Bank, with the arrangement of the Tobacco Station (Fieldnote # 1.7). In Rong Kwaung District of Phrae, loans are made available from the Government Savings Bank. The size of the loan is based on the amount of quota allocated to each farmer. This year, the loan was set at 40 baht per kg (Fieldnote #1.3). For the agribusiness exporters, the local staff declined to give us an interview. Farmers attending the focus group said that they received some agricultural inputs from agribusiness exporters, but at a lower extent. The exporters use the price announced by TTM as a reference price, where they may buy leaves either a little above or lower than the price announced by TTM.

Tobacco farmers are evidently smallholders and no formal and legal farmers' associations have been formed. The size of land where they grow Oriental in Roi-et, on average, is lower than 3 rai (0.48 hectare). In the past, the land growing Oriental tobacco in Roi-et was smaller, due to hardship in watering, which was normally done using human labour. Lately, electric or gasoline water pumps have replaced traditional water fetching; therefore, farmers can grow Oriental tobacco on a larger plot of land (Focus group #3.3). Focus groups in the other three places revealed similar issues (Field note #1.1, Focus group #4.4). The smallholders are less able in acquiring inputs, seeking channels to distribute their products, and are particularly less capable of influencing the price. In this light, the

institutional arrangements are accepted to compensate for the weaknesses of being a smallholder. This bargain comes at the expense of being bound to the contract and inviting a long-term dependence on the institutional mechanisms (i.e., TTM and exporters).

The institutional arrangements also varied according to types of tobacco plants. As mentioned in Section 3, Phrae is dominated by Virginia tobacco, Lom Sak is mixed between Virginia and Burley, while in Nongkhai, the types of tobacco plants are combination of Burley, Virginia and traditional tobacco. Turkish tobacco is found only in Roi-et, as this type of tobacco requires specific environmental conditions (sandy soil and arid areas). The three types of tobacco plants are bought by different buyers. Virginia is taken by TTM Tobacco Station (Fieldnote#1.1, 1.2), while Burley and Virginia tobacco are bought by the TTM Tobacco Stations and agribusiness exporter (STEC). Although the contract stipulated that leaf must be delivered to specific buyers, sales of leaves to buyers outside the contract are common (Fieldnote#2.1, 2.2). Last year outputs of Virginia and Burley in Phetchabu and Sukhotai surmounted the quantities specified in the contracts. Farmers who signed contracts with STEC demanded the TTM to take the surplus from STECT contracts. In some years when the prices of tobacco leaf in international market increased, STECT bought unlimited quantity of tobacco leaf. In Nongkhai, Virginia and Burley tobacco are bought by Tobacco Station of TTM, and some quota owners from the North. But most farmers in Nongkhai shopped tobacco leaf, dried by air and sell to roll-your-own cigarette business (will be discussed in the next section). For Turkish tobacco that grown in Roi-et is entirely taken by ADAM (Fieldnote#3.1, 3.2). As different buyers, although operate under the same regulatory sets of Tobacco Acts, they also have their own arrangements. For instance, agribusiness tobacco exporter does not require farmers to observe the GAP. Different tobacco plants also require different inputs (pest, fertilizers) and methods of processing after harvest (dry air for Burley, heat cured for Virginia, sundry for Turkish and shopped traditional tobacco). All these alter arrangements. But overall, price guaranteeing and sets of technical supports constituted in contracts are bound farmers to continue tobacco farming.

5.2 Favourable conditions evolved under the path dependence

The long term and continuity of tobacco growing has resulted in favourable community settings that are favouring livelihood earning of tobacco farmers. In Rong Kwang of Phrae Province, farmers revealed that they grow tobacco after rice harvesting, tobacco thus fill the gap of fallow period from after harvesting to until the start of new paddy crop. Apart from the continuity of household labour employment after rice harvesting, tobacco agriculture also a source of employment for labourers whose households do not grow tobacco. During the peak of demand of labours, tobacco growers in Rong Kwang District informally formed small labour groups; they rotated the employment of labourers among the group members. This is to ensure the adequacy of labourers in tobacco agriculture (Fieldnote # 1.2). Turkish tobacco is the most suitable for the dry season and therefore tobacco provides employment, especially for those who remain in the village during the fallow period of the year (Fieldnote # 3.1, # 3.2, # 3.3). The availability of employment during fallow period enable both tobacco growers and non-tobacco growers obtain employments which are critical for their livelihoods.

The dependence of tobacco growers on incomes from tobacco is one among salient themes emerged from our focus group discussion. Farmers attending our focus group in Rong Kwang District of Phrae Province confirmed that tobacco is the main source of their incomes. For example, expnses on higher education of kids and paying off debts of the households are largely come incomes of tobacco (Fieldnote # 1.1). This is because the price of tobacco is guaranteed, while incomes from other crops are varied to market prices, and deficits or loss of incomes are common. The farmers of Lom Sak, Phetchabun Province said that although tobacco growing requires more intensive care than other crops, taking a longer period of time (about 5 – 6 months), farmers know the prices in advance (Fieldnote # 2.2). Although tobacco is coincided with other livelihood activities, incomes from other sources are unpredictable. The continuity of tobacco farming is largely due to the fact that the contract precludes price fluctuations, ensuring certainty of incomes.

The continuity of agricultural practice that results in path-dependence, on the one hand, secures sources of livelihood regarding employment and income. On the other hand, this path-dependence also limits choices of livelihood. As mentioned above, farmers who registered to obtain

a license for growing tobacco are mostly the same farmers from previous years. The duration of the contract they made with TTM and the license granted from the Provincial Excise Office are on a yearly basis, providing an opportunity for them to exit tobacco agriculture. However, most tobacco farmers continue primarily because they see tobacco farming as the best choice and most plausible option available. This preference is attested to in our focus group discussion where the issue of substitution crops to tobacco was raised. From the perspective of farmers, the shift to other crops would be feasible if similar price guarantees and technical support would be are provided (Fieldnote # 1.1, Fieldnote # 2.2).

Studies of some alternative crops that are potentially to replace tobacco reveal that returns are higher than from tobacco (Sirichai, 2009). However, farmers' views are different, so that they are reluctant and decline to change to substitute crops. This is because farmers views that the costs of finding markets are high and risk. Farmers are dependent on the path of tobacco agricultural practices evolved over the period of time they have involved. The licence they obtained from the state to grow tobacco is a part of bundle of assets that they invest to obtain livelihoods. They have learnt skills to grow tobacco through technical assistances, but these skills are valuable to apply only within the framework of contract farming they made with TTM. The community also evolved conducive environment for tobacco farming such as availability of hired labour that learnt skills from previous years of employment, and rotating labour groups among tobacco farming households. They are dependent on inputs provided by TTM and incomes that are better than other plausible livelihood options, but the incomes will be optioned only through their bonds to the contract. In short, tobacco agriculture is a livelihood option in the sense that they can exit from tobacco agriculture to another livelihood option at the end of the contract (a year-long). But practically most farmers are renewing the contracts and clinging on tobacco agriculture that they adopted for several years. One of the discontinuities of tobacco farming raised during focus group discussion was that younger generations have no interest in tobacco farming. Farmers in Rong Kwang District of Phrae and in Lom Sak of Phetchabune confirmed that the income from tobacco is the best compared with other crops (Fieldnote # 1.1, Fieldnote 2.2). However, this is not enough to provide an incentive for the younger generation to take up tobacco agriculture after they complete their education. This attests to the fact that agriculture in general is at the margins, while employment outside agriculture is obviously more lucrative. The urban jobs of the younger generation, in this respect, is the most critical factor unlocking tobacco farmers from path-dependence.

During our fieldwork, fears of quota depletion of licensed land for growing tobacco were looming. This is clearly felt in the interviews with representatives of formal farmers' association (Fieldnotes #1.1, 1.5, 2.1). The formal farmer association is distinct to the informal one mentioned earlier in that the association is registered and operated under the state regulatory framework, and membership of the association must be approved by the association committee. One representative of farmer association said:

> *Our association is formed to mediate between farmers and TTM. We currently have 576 members who obtained quotas and signed contracts with TTM. Our association did not officially register, but we gain recognition through working with TTM. Without TTM support, all the members of the association would be unable to survive (Fieldnote #1.3)*

The fears of the quota depletion are mounted by the increased liberalization of the cigarette markets, following to pressures of international corporations. The Head of Leaf Station of Lomsak revealed in the interview that the Lomsak Tobacco Farmer Association last year (2020) launched their demands through one MP to the government, to extend the 2020's quota to absorb the surplus of leaf, and the government obeyed to the demand. At the same time, the same petition also raised concerns of the change in cigarette taxation system that favours international cigarette products (Fieldnote # 2.5). Tobacco farmers view that the changes of taxation stipulated in the new law are favour international cigarette firms. This will result in the growing presence of international cigarette brands in Thailand, and therefore in the depletion of market shares of TTM in domestic cigarette market. Consequently, TTM would be inevitably scaled-down the institutional supports, particularly price guarantee, to tobacco farmers in order to maintain a profitable level of its

businesses. In this respect, the critical factors affecting tobacco farmers do not directly from tobacco control measures, but rather from the neoliberalism environment.

5.3 Roll-your-own cigarettes and emerging cigarette markets

In general, to maintain a good quality of tobacco, TTM and exporters do not buy all the leaves of a tobacco tree. The remaining, unused leaves become material for roll-your-own cigarettes, as a head of Provincial Excise mentioned:

> *The exporters strictly control the quality of the leaf; similarly, TTM has set standards where the lowest and the highest of the tobacco leaves on a tree must be discarded. In contrast, roll-your-own businesses purchase all kinds of leaves, including the lowest layer of leaves that contain higher concentrations of nicotine. The exporters and TTM require tobacco farmers to eradicate these leaves, but farmers usually keep them and sell them to roll-your-own buyers. (Fieldnote #2.4)*

Tobacco consumption and cultivation have existed for a long time before the start of TTM. In the Lom Sak District of Phetchabun Province, the geographical characteristics and quality of soil are most suitable for the traditional varietal of tobacco. This area has long been well-known for the best quality of pungent tobacco, and this type of tobacco is used to flavour the taste of traditional roll-your-own smoking. Our focus group discussion found that tobacco farmers in Lom Sak continue to grow the traditional varietal of tobacco (Fieldnote #2.2), obviously the traditional tobacco is not a raw material for cigarette manufactures of TTM and for exporters.

Among the four studied provinces, Nongkhai is the most active in roll-your-own tobacco. An interview with the head of the Provincial Excise Office revealed a loophole in the institutional rules that allows for the growth of roll-your-own cigarette businesses. As discussed, TTM requires farmers who want to grow tobacco to sign a contract with TTM. A condition stipulated in the contract is the quantity of leaves to be delivered to TTM (in kilograms), while the Provincial Excise Office requires contracts signed with TTM as a condition to issue an approval. The approval specifies the size of the land, not the quantity of leaves. The head of the Provincial Excise Office said that normally the size of land specified by farmers yields greater outputs of leaf than the quantity of leaf signed for. This feature of tobacco growing in Nongkhai Province has gradually facilitated the roll-your-own cigarette sector since the late 1990s (Fieldnote # 4.4). The growth of roll-your-own cigarette is coincided with the earlier stage of the adoption of cigarette taxation as a means to cube a heightening prevalent rate of tobacco smokers. The increase of cigarette prices resulted that some low-income smokers turned to roll-your-own-cigarette which the prices are lower, and consequently provides a conducive environment for roll-your-own cigarette businesses to grow.

As mentioned, Thailand embarked on a tobacco control policy focussing on the demand side in the 1990s. This policy resulted in the rise of market prices for cigarettes. Some smokers turned to roll-your-own cigarettes, consequently leading to the rampant growth of the roll-your-own cigarette businesses. This sector became an alternative market, as a farmer put it in a focus group discussion:

> *I chopped and dried the leaves myself. Each year, the buyers will come to buy chopped and dried leaves from me. Sometimes, I earned an income higher than selling the leaves to TTM. (Fieldnote #4.1)*

Materials (tobacco leaf) for roll-your-own cigarettes are mostly from Nongkhai and Lom Sak of Phethchabun Province. A focus group discussion of tobacco farmers in in Nongkhai revealed that a number of farmers own electric chopping machines. The leaves that are either left unused by TTM or those exceeding the quota can be absorbed into the roll-your-own cigarette business. Last year, the price of chopped and dried tobacco leaves was 150 baht per kg, while this year the price dropped to about 80 baht per kg (Fieldnote # 4.1). Above all, the emergence of new markets concerned with roll-your-own cigarettes enables the viability and continuity of tobacco growers in Nongkhai and in Lomsak of Phetchabun Province.

6. Conclusion and discussion

6.1 Overview of findings

Contract farming in tobacco agriculture protects farmers from the risk of price fluctuations in farm commodities (tobacco leaves) while ensuring farmers have access to inputs and technical assistance. Long-term engagement in tobacco farming earns farmers a set of capital assets such as skills, knowledge and networks, as well as favourable conditions for tobacco agriculture at community and household levels. In addition, the expansion of roll-your-own cigarettes maintains a level of demand of the tobacco commodity for smallholders. These explanations underpin why tobacco farmers continue to grow tobacco in Thailand. Moreover, our explanations suggest that the reduction of smokers resulting from tobacco control does not directly affect tobacco agriculture. The implications of tobacco control on tobacco agriculture are instead mediated by the factors summarised above.

Our finding on tobacco farmers being continue to engage in tobacco farming broadly reflects the debates on market failures (Grosh, 1994; Key & Runsten, 1999), i.e. the avialitlity of and the access to markets are critical to smallholders in developing countries. The lack of access to market of agricultural commodity explains why farmers striving to be under contract farming which largely offers maket channel and price guarantee for agricultural commodity (Sriboonchitta & Wiboonpoongse, 2008). In Southeast Asia, Appau et al. (2019), Nuddin et al. (2019) and Chu et al. (2019) found that institutional factors are critical for the viability (profitability, ready market, and environmental factors) of tobacco agriculture in the Philippines and Indonesia. Our findings are also consistent with broader studies finding that contract farming wards smallholders off from market calamities and yields positive outcomes (ADB, 2008; FAO, 2003). Note that the contract farming we presented has a distinctive nature. Apart from business firms and farmers, the state is also significantly involved in tobacco contract farming. In Thailand, this type of institutional arrangement is similar to the sugar industry in which the contract involves three parties: the state, sugar manufacturers and farmers (Manivong & Bourgois, 2017). The contract regulates the industry through quota-setting (for domestic consumption and exports) and sharing net profits between manufacturers and farmers. In contrast, contract farming adopted in tobacco agriculture regulates the industry through licenses to grow tobacco crops issued by the state.

Previous studies have highlighted the negative aspects inherent in tobacco agricultural livelihoods (Choenkwan & Fisher, 2018; Leppan et al., 2014), including the heavy use of chemical inputs and direct exposure to poisonous substances in tobacco crops. Our study revealed the tobacco agricultural practices under the oversight of TTM are well aware of inappropriate chemical use in tobacco farmers. The chemical uses are restricted by GAP of TTM and closely monitored by the staff of local tobacco stations. The adoption of tobacco farming as a livelihood is concerned with income security, while the tobacco agriculture, on the other hand, bonds tobacco farmers to be dependent on supports of TTM.

The rampant growth of roll-your-own cigarettes raises a question of links between the demand and supply sides in tobacco control policy design. The increase of taxes heightens individual costs for smokers; however, the traditional and roll-your-own business is not subject to the same tax (Santisas, 2009). As smokers seek to minimise their spending, roll-your-own cigarettes is one of their choices, which increases the prevalence of roll-your-own cigarette smokers. The emergence of the roll-your-own cigarette market also raises a question regarding the contradictory nature of tobacco control policy (Barraclough & Morrow, 2010). That is, while tobacco control makes efforts to cub prevalent rate of smokers, the existing restrictions are not enough to obstruct the tobacco manufacturers to boost new market of cigarette commodities. In the near future the costs of cigarette manufacturing technologies will be more accessible to tobacco farmers and small producers. The plausible scenario can be foreseen is that more cigarette commodities are more available to smokers, the case of roll-your-own cigarette that we presented earlier is suggestive to this point.

6.2 Practical implications

Our findings have two important contributions to policy practice. First, the rampant growth of roll-your-own cigarettes suggests that measures directed to regulate roll-your-own cigarette smokers must be put in place. Measures and standards for roll-your-own manufacturers need to be developed to prevent health risks from improper processes in roll-your-own production. Second, should tobacco growers be encouraged to move away from tobacco, they would strongly demand that the price of alternative agricultural products must be guaranteed, and that agricultural inputs and technical support must be at the same level as those TTM currently provides to tobacco farmers. These demands are obviously going against the neoliberalism paradigm, but must be taken seriously by policy-makers for the reason that smallholders are less able to bargain with other actors in tobacco industry.

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References

ADB. (2008). *Asian Development Bank: Annual Report 2008*. Retrieved from https://www.adb.org/sites/default/files/institutional-document/31323/annual-report-2008-vol01.pdf

Appau, A., Drope, J., Witoelar, F., Chavez, J. J., & Lencucha, R. (2019). Why do farmers grow tobacco? A qualitative exploration of farmers perspectives in Indonesia and Philippines. *International Journal of Environmental Research and Public Health, 16*(13), 2330. https://doi.org/10.3390/ijerph16132330

Arthur, W. B. (1989). Competing technologies, increasing returns, and lock-in by historical events. *The Economic Journal*, *99*(394), 116-131. https://doi.org/10.2307/2234208

Aungkulanon, S., Pitayarangsarit, S., Bundhamcharoen, K., Akaleephan, C., Chongsuvivatwong, V., Phoncharoen, R., & Tangcharoensathien, V. (2019). Smoking prevalence and attributable deaths in Thailand: predicting outcomes of different tobacco control interventions. *BMC Public Health*, *19*(1), 1-11. https://doi.org/10.1186/s12889-019-7332-x

Barraclough, S., & Morrow, M. (2017). Tobacco and the Malays: ethnicity, health and the political economy of tobacco in Malaysia. *Ethnicity & Health, 22*(2), 130–144. https://doi.org/10.1080/13557858.2016.1244620

Bernstein, H. (2001). The Peasantry in Global Capitalism: Who, Where and Why. *Socialist Register, 37*, 25-51.

Carney, D., Drinkwater, M., Rusinow, T., Neefjes, K., Wanmali, S., & Singh, N. (1999). *Livelihoods approaches compared: a brief comparison of the livelihoods approaches of the UK department for international development (DFID)*. CARE, Oxfam and the United Nations Development Programme (UNDP), London.

Castleberry, A., Nolen, A., 2018. Thematic analysis of qualitative research data: is it as easy as it sounds? *Currents in Pharmacy Teaching and Learning, 10*(6), 807–815. https://doi.org/10.1016/j.cptl.2018.03.019

Centers for Disease Control and Prevention (CDC) (2012). Current cigarette smoking among adults - United States. *Morbidity and Mortality Weekly Report, 61*(44), 889–894.

Chambers, R., & Conway, G.R. (1991). *Sustainable rural livelihoods: practical concepts for the 21st*

century. IDS Discussion Paper 296. Institute of Development Studies.

Chantornvong, S., & McCargo, D. (2001). Political economy of tobacco control in Thailand. *Tobacco Control*, *10*(1), 48-54. http://dx.doi.org/10.1136/tc.10.1.48

Chitanondra, H. (2005). *Knowledge Package #1: Be Aware the Cheats of Tobacco Multinational Corporations*. Thai Health Foundation.

Choenkwan, S., & Fisher, M. (2018). Introduction to the special section: Agrarian transformation in Thailand - Commodities, landscapes, and livelihoods. *Forest and Society, 2*(2), 112-120. http://dx.doi.org/10.24259/fs.v2i2.5356

Cholwatanapong, P. (1985). *The export marketing problems of Virginia tobacco for European economic community market* (Master Thesis). Faculty of Business Management (in Thai).

Chu, T. V., Thoai, T. Q., An, C. Q., Toai, P. M., Camacho, L. D., & Sam, H. V. (2019). Contribution of forest to rural households' livelihood: evidences from Da river basin in the northwest mountainous region of Vietnam. *Forest and Society, 3*(2), 235-247. http://dx.doi.org/10.24259/fs.v3i2.7050.

David, P. A. (1985). Clio and the Economics of QWERTY. *The American Economic Review*, *75*(2), 332-337. https://www.jstor.org/stable/1805621

Delforge, I. (2007). *Contract Farming in Thailand: A View from the Farm: A report for the Focus on the Global South, Thailand.* Chulalongkorn University Social Research Institute, Chulalongkorn University.

Department of Agricultural Extension. (2019). Tobacco – Agricultural Information (in Thai). Retrieved from: http://www.agriinfo.doae.go.th/year60/plant/rortor/agronomy/31.Tobacco.pdf

Department of Disease Control, Ministry of Public Health. (2016). *The 2nd National Tobacco Control Plan*. Nice Earth Design (in Thai).

Department of International Trade Promotion (DITP), Ministry of Commerce, 2013. 'Tosak Chotemongkol : Not aiming to beat international cigarette, but only to survive and maintain domestic market' (Prachachart Business, 35 (4502/3702) 4- 6 March, 2013, p. 15 (Available at https://www.ditp.go.th/contents_attach/74177/74177.pdf) (in Thai).

Drope, J., Bialous, S. A., Glantz, S. A. (2004). Tobacco industry efforts to present ventilation as an alternative to smoke-free environments in North America. *Tobacco Control, 13*(1), 41–47. https://dx.doi.org/10.1136%2Ftc.2003.004101

Falvey, L. (2000). The Role of Smallholders in Thai Agriculture Development. *Kasetsart Journal of Social Science, 21*(2), 199-213.

FAO. (2001). *Contract Farming: Partnerships for Growth.* FAO Agricultural Series Bulletin 145 Retrieved from http://www.fao.org/3/y0937e/y0937e00.pdf

Grosh, B. (1994). Contract farming in Africa: an application of the new institutional economics. *Journal of African Economies, 3*(2), 231–261. https://doi.org/10.1093/oxfordjournals.jae.a036805

Hammond, D., Kin, F., Prohmmo, A., Kungskulniti, N., Lian, T.Y., Sharma, S. K., Sirirassamee, B., Borland, R., & Fong, G. T. (2008). Patterns of smoking among adolescents in Malaysia and Thailand: Findings From the international tobacco control Southeast Asia survey. *Asia Pacific Journal of Public Health, 20*(3), 193–203. https://doi.org/10.1177/1010539508317572

Hirsch, P. (2020). The political economy of land and agrarian relations in Southeast Asia. In Carroll, T, Shada Hameiri and Lee Jones (Eds.) *The Political Economy of Southeast Asia: Politics and Uneven Development under Hyperglobalisation* (pp. 341-365). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-28255-4

Hoek, J., & Smith, K. (2017). A qualitative analysis of low income smokers' responses to tobacco excise tax increases. *International Journal of Drug Policy, 37*, 82–89. https://doi.org/10.1016/j.drugpo.2016.08.010

Key, N., & Runsten, D. (1999). Contract farming, smallholders, and rural development in Latin America: the organization of agro-processing firms and the scale of outgrower production. *World Development, 27*(2), 381-401. https://doi.org/10.1016/S0305-750X(98)00144-2

Khoasa-ard, M., (1983) Tobacco: Markets and Incomes of Tobacco Growers. Journal of Public Administration and Development. 25, 2, May 1983 pp. 179 – 197 (in Thai).

Kittiwatcharachareon, W. (2013). *Tobacco: Cash Crop of Thailand*. Report for Promotion of Technical

Position Level 8, Agronomy Institute (in Thai)

Lee, J. K., Lin, J., Lim, M. J. R., Eijk, Y. V. D., Chia, K. S., & Tan. C. (2020). National tobacco control policies from the perspectives of Singapore young male adults. *Journal of Psychoactive Drugs, 52*(1), 5-12. https://doi.org/10.1080/02791072.2019.1706792

Lee, W. B., Fong, G. T., Zanna, M. P., Borland, R., Omar, M., & Sirirassamee, B. (2009). Regret and rationalization among smokers in Thailand and Malaysia: Findings from the International Tobacco Control Southeast Asia Survey. *Health Psychology, 28*(4), 457–464. https://doi.org/10.1037/a0014669

Lecours, N. (2014). The harsh realities of tobacco farming: a review of socioeconomic, health and environmental impacts. In Leppan, W., Lecours, N., Buckles, D. (Eds.) *Tobacco control and tobacco farming septerating myth from reality* (pp. 99–138). International Development Research Centre.

Lencucha, R., & Thow, A. M. (2019). How neoliberalism is shaping the supply of unhealthy commodities and what this means for NCD prevention. *International Journal of Health Policy and Management*, *8*(9), 514-520. https://dx.doi.org/10.15171%2Fijhpm.2019.56

Leppan, W., Lecours, N., & Buckles, D. (2014). *Tobacco control and tobacco farming septerating myth from reality*. International Development Research Centre.

Little, Peter D., and Michael Watts, eds. (1994). *Living Under Contract: Contract Farming and Agrarian Transformation in Sub-Saharan Africa.* The University of Wisconsin Press.

MacKenzie, R., Ross, H., & Lee, K. (2017). Preparing ourselves to become an international organization: Thailand Tobacco Monopoly's regional and global strategies. *Global Public Health, 12*(3), 351-36. https://doi.org/10.1080/17441692.2016.1273369

Manivong, P. and Bourgois, E. (2017). *White Paper: Thai Sugarcane Sector & Sustainability.* FairAgora Asia Co Ltd, Bangkok. Retrieved from https://www.fairagora.com/white-paper-bonsucro

Mo-on, S. (2003). A History of Tobacco Industry in Thailand. *Journal of Tobacco (Nittayasarn Yasoob), 54*(2). (in Thai).

North, D. C. (1990). *Institution, Institutional Change and Economic Performance.* Cambridge University Press.

Nuddin, A., Arsyad, M., Putera, M. I., Nuringsih, N., & Teshome, T. T. (2019). Making the case for institutional support on designing agroforestry technology models for rehabilitating critical lands. *Forest and Society, 3*(1), 49-63. http://dx.doi.org/10.24259/fs.v3i1.5975

Pocnet, C., Antonietti, J. P., Strippoli, M. P. F., Glaus, J., Rossier, J., Preisig, M. (2017). Personality, tobacco consumption, physical inactivity, obesity markers, and metabolic components as risk factors for cardiovascular disease in the general population. *Psychology, Health & Medicine, 22*(8), 932–939. https://doi.org/10.1080/13548506.2016.1255767

Promphakping, B. N. Promphakping, P. Nakhum, K. Klangseang, P. Sribhom and P. Pankhum. (2007). The Political Economy of Tobacco Control". *A Monograph Research Report of Centre for Tobacco Control and Knowledge Management.* WeSD; Khon Kaen University (in Thai).

Promphakping, B. N. Promphakping, K. Klangseang, P. Sribhom, P. Pankhum, A. Pontip and B. Pahkote. (2010). The Path of Traditional Cigarette: Tobacco Farmers, Cigarette Producers, Traders and Consumers. *A Monograph Research Report of Centre for Tobacco Control and Knowledge Management.* WeSD; Khon Kaen University (in Thai).

Royal Gazette. (1966). Tobacco Act. Vol. 83, Section 117 Dated 27 December 1966 (in Thai).

Roemer, R., Taylor, A., & Lariviere, J. (2005). Origins of the WHO framework convention on tobacco control. *American Journal of Public Health*, *95*(6), 936–938. https://doi.org/10.2105/AJPH.2003.025908

Sangthong, R., Wichaidit, W., & Ketchoo, C. (2012). Current situation and future challenges of tobacco control policy in Thailand. *Tobacco Control*, *21*(1), 49-54. http://dx.doi.org/10.1136/tc.2011.043331

Santisas, I. (2009). Roll-your-own Cigarette Tax. A Paper presented in The Eight National Tobacco Conference (24-25 August 2009). Grand Miracle, Bangkok (in Thai).

Simmons, P. (2002). *Overview of Smallholder Contract Farming in Developing Countries.* ESA Working Paper, FAO.

Sirichai, V. (2009). Flue-cured tobacco production cost and economic returns of farmers in Mae

Taeng District, Chiang Mai. MSc Thesis of Department of Agricultural Extension, Maejo University, Thailand. (Avialable at http://webpac.library.mju.ac.th:8080/mm/fulltext/thesis /2553/wasana_sirichai/fulltext.pdf (in Thai).

Sriboonchitta, S. and A. Wiboonpoongse, (2008). *Overview of Contract Farming in Thailand: Lessons Learned.* ADB Institute Discussion Paper No. 112. Asian Development Bank Institute. Retrieved from http://www.adbi.org/discussion-paper/2008/07/16/2660.contract.farming.thailand/

Sterling, K. L, Fryer, C. S., & Fagan P. (2016). The most natural tobacco used: A qualitative investigation of young adult smokers' risk perceptions of flavored little cigars and cigarillos. *Nicotine & Tobacco Research, 18*(5), 827–833. https://doi.org/10.1093/ntr/ntv151

Tantakitti, C. and S. Taworanant. (2003). *Tobacco Leaf Industry in Thailand*. Department of Agricultural Mechanics, Faculty of Engineer, Chiang Mai University (in Thai).

The World Bank Group. (2014). Contract Farming: Risks and Benefits of Partnership between Farmers and Firms. Viewpoint Public Policy for the Private Sector. World Bank.

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Qualitative descriptive study. *Nursing & Health Sciences, 15*(3), 398–405. https://doi.org/10.1111/nhs.12048

van der Ploeg, Jan Douwe, (n.d.). The Peasant Mode of Production Revisited. Retrieved from http://www.jandouwevanderploeg.com/NL/publicaties/artikelen/the-peasant-mode-of-production-revisited/

Vateesatakij, P. (2006). *Tobacco Trade War: A Historical Note #2*. Action on Smoking and Health Foundation (in Thai).

Vateesatakij, P. (2015). Pro and con of socioeconomic of tobacco control. In Presentation in the Consultative Meeting, convened by the Research and Development Committee of National Parliament and Secretariat Office of Senate (27 May 2015). Retrieved from http://61.19.241.96/w3c/senate/pictures/comm/1829/documentation.pdf

Walker, A. (2012). *Thailand's Political Peasants: Power in Modern Rural Economy.* The University of Wisconsin Press