Understanding Bangkok Middle-class Farmers
Social Practices on Urban Agriculture

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List of Acronyms

ACFS	National Bureau of Agricultural Commodity and Food Standards
AFNs	Alternative Food Networks
DOAE	Department of Agriculture Extension
EC	European Community
EU	European Union
FAO	Food and Agriculture Organization
ISS	Institute of Social Studies
SDGs	Sustainable Development Goals
UA	Urban Agriculture
UN	United Nations
UNDP	United Nations Development Programme
WCED	World Commission on Environment and Development

Abstract

I have noticed a discourse towards agricultural activity in the Global South, which is seen as the poor's livelihoods, subsistence activity, for food security, among other. This paper aims to study urban agriculture as social practices of middle-class dwellers in Bangkok, Thailand and factors around it by conduct qualitative interviews with farmers to explain the practices that are uncommon for inhabitants who have purchase power to access food. By that, this study discusses the social practices through Shove, Pantzar and Watson's three elements. Firstly, meanings and motivation of why the middle-class were motivated to involve farming activity. Secondly, what materials do they have or have access to. Lastly, what are the skills they have; how did they own it? Also, the practices are influenced by diverse actors, namely, friends, family, civil society and government. I analyze form, role, function and impact of civil society and public policies policy when civil society is having part on people's practices. Also, I discuss over the implementing policies, its impacts on the urban farmers, vulnerabilities, why it is not fulfilling the objectives and how urban agriculture is still absent in the policy level.

Relevance to Development Studies

Looking through the lens of post-development, nowadays all over the global are focusing on economic growth when the meaning of 'development' is concealed with westernization. One of the effects from trying to be 'developed' is urbanization, especially in 'developing' countries, which has consequences such as economic implications, ecological footages, various kind of pollutions, and social cost (Abanyam and Dankano, 2019) including food security and malnutrition due to the rising of food demands with less capacity to grow food while economic value of land increases. Hence, urban agriculture is one of the approaches to pursue more sustainable development when is believed to have capability to reach United Nations Development Programme: UNDP's Sustainable Development Goals (R. and Gupta, 2018). Besides, I attempt to make the understandings of social sectors who have roles and impacts in urban agriculture development, which I hope to have ability to take the lead to more sustainable development, not only in Bangkok but all over Thailand, Moreover, in the western term of development, there is a discourse upon agricultural activity in Global South as the poor's subsistence activity, differ from the Global North. This can be an obstacle for development in many terms which I hope realizations on the missing gap will lead to the improvement of development means.

Keywords

Urban agriculture, urban farmer, social practice, civil society, policy, Bangkok.

Chapter 1 Introduction

1.1 Introduction

One of the world's major spectacles happening in this era of capitalism is urbanization. This phenomenon greatly affects food security, which may result in less sustainability on food regime in cities. For instance, higher number of human populations is likely to relocate from rural to urban areas nowadays, and 68 percent of the world's population is projected to be urban dwellers by 2050. Now, Asia has approximately 50 percent of urban dwellers, considered to be less urbanized than other regions (United Nations, 2018). This increase in urban population is causing social challenges, as Giddens (2008, as cited in Abanyam and Dankano, 2019) noted, "many urban areas in the developing world are overcrowded and under-resourced. Poverty is widespread and existing social services cannot meet the demands…" (p. 247). Moreover, there is also an increased instability on food security and malnutrition due to the rising of food demands amid limited land for agricultural activity. In addition, it has been said that "urban residents often also lack land and other inputs to be able to produce their own food and thus buffer shocks" (Cohen and Garrett, 2010, p.470). Since urban dwellers are purchasing most of their basic needs such as food, housing, health care, etc., some of the dwellers cannot access (enough) resources (Cohen and Garrett, 2010). This condition is likely to be a barrier for those in the low-income group, but people with higher purchasing power can comfortably access the resources in normal circumstances. Given these problems, many actors around the world are paying close attention to sustainable development to slowdown and reduce future impacts on ecological systems, well-being of creatures, economy, among others. Hence, Urban Agriculture is one of the focal points in reducing and decelerating negative impacts of such activities. Furthermore, government actors in some countries are also supporting urban agricultural implementations and self-reliance in food. Nigeria, for instance, allowed people to use all vacant public lands in urban areas for farming free of charge. Also, many institutions and programs have been created to promote urban agriculture for technical and collaborating supports (Mougeot, 2000). These efforts can address food demand, food security and sustainability. Therefore, from my hypothesis, urban agriculture have potentials to strengthen sustainability in Bangkok, also related to some of the Sustainable Development Goals (SDGs), introduced by United Nations Development Programme (UNDP) as a global 2030 Agenda. Furthermore, this research studies those in the middle-income group who have resources, money and land(s), which are the important factors to pursue agricultural activities that may intentionally or unintentionally lead to more sustainable development. While there are many studies on urban agriculture in the Global South, most of the scholars are looking at the urban poor or the marginalized when it comes to farming activities. These activities are mostly undervalued and ignored in discussions on developing countries achieving 'western development', with economic growth on the spotlight despite agriculture being one of the most important sectors in the overall development discourse. This is also different from studies on middle class or mixed classes that are normally present in the Global North researches.

In developing world, farming is frequently seen as a poor man's activity to generate food and income, as we can see from Taguchi and Santini's point (2019) about Food and Agriculture Organization of the United Nations (FAO) perspective on urban agriculture in the global north and south,

> "The Global South often employs urban agriculture to fulfill food security and nutritional needs. In Latin America and in Africa, people cultivate in very limited spaces through

> innovative methods but for the end goal of food security, for them to feed their families and be able to survive. In comparison, urban agriculture in the Global North tends to be used as a mean to lead a more sustainable way of life or to create social ties within a community. There, urban agriculture has functions that are distinct from food security per se." (p.17).

Here we can see that the writer noted that urban agriculture in the developing countries is pointing at the urban practitioners who needs food security for survival at the minimum, while the western world is expecting more than basic needs. This western discourse leads to an absent of study and awareness of the existence of urban agricultural practice among middle-class in the Global South which is an important tool for sustainable development in UNDP's '2030 Agenda'.

Focusing on the case of Bangkok, Thailand, the crops grown in urban and peri-urban areas are rice, vegetables, fruits, grass and ornamental plants in the area of 144,045 rai, with 121,568 rai of the area is used for growing rice (Boossabong, 2016). Interestingly, not only those in the lower class are conducting urban agricultural activities but also middle-classes who have purchasing power to access food as they intend to gain extra incomes from other sources or economic sectors to support the expensive living condition in the city. Furthermore, a number of middle-class practitioners joining urban agriculture Facebook groups is increasing in the past decade. This online groups are considered to be one of the main platforms for these urban farmers to connect with each other and access sources. Such practices of middle-class farmers can be discovered in urban and peri-urban area, and this study will look at Urban Horticulture, where majority of production of food in the city is linked given the limited spaces and kind of lifestyle of urban dwellers.

Urban agriculture is becoming a new social practice for many middle classes in Bangkok, where it is not common for urban middle-income to grow food in the city of rush where food can be found in almost every corner of the streets. These social practices are founded on diverse reasons, such as safer food and health concern, self-reliance, making surplus, expense and tax reduction, recreation, among others. At any rate, these rationales are caused by diversity of social structure, networks and influences including civil society, government and personal connections. Thus, urban agriculture is not only about growing vegetables as it also touches on social practices with social connections between individuals and other factors. As briefly mentioned, this study will pay attention to the middle-class farmers' motivations and meanings, assets, knowledge, and skills toward the existing urban agriculture, which is currently under-researched in the Global South. Given this, this study has the potential to contribute to a more sustainable approach to development in the future.

1.2 Research questions

Main question:

- What is the motivation of urban middle-class Bangkok residents to engage in urban farming?

Sub-questions:

i. Can the existing urban agriculture practices be considered as a social practice as a whole among the middle-class farmers of Bangkok?

ii. What are the meanings and motivations of food production/choices of Bangkok's middle-class residents who engage in urban agricultural practices?

iii. How does each relevant actor shape the overall agricultural practices in Bangkok?

1.3 Analytical Framework

1.3.1 Typology of urban agriculture practices

Yves Cabannes (2006) from University College London introduced a typology of urban agriculture practices to explain variety of urban agriculture that can be found in the same region. Here, urban agriculture is divided in four (4) different types of practice:

(1) Subsistence economy: these type of UA practices plays part in subsistence, livelihood and crisis mitigation. It primarily increases food and medicine accessibility and reduces household expenses, but does not create surplus from the production outputs.

(2) Market-oriented activities: this type of UA practice builds a wider level of food security such as city food security (Boossabong, no date). Furthermore, this practice "…can be individual or family based through micro-enterprises or through larger cooperative or producer associations. They refer to the whole food chain from the production of vegetables, milk, fruit, and other products to the agro-processing activities and marketing…" (Cabannes, 2012, p.9). Outputs from this practice can be distributed through formal and informal channels, for instance, by opening a stall in an event or in front of their farm, markets, online platforms or supermarkets.

(3) Leisure and recreational activities: this type of practice is being spotted more in richer countries than developing countries. It can be a practice for leisure, health, recreation, culture, education or to raise ecological awareness (Boossabong, no date). Moreover, for urban dwellers, the activities can connect them with nature, seen to be lacking in the lifestyle in most the urban areas.

(4) A mixture of the mentioned practices: in some case, two or three practices can be found in the same producer. For example, plants are grown for safer food for a family and the surplus can be sold.

1.3.2 Social Practice Theory

Social Practice theory has been an active discourse among social scientists for decades, and still further developing. As Hargreaves (2011) suggested, to study social practices, instead of individual performers or the surrounded social structures, we have to look closer at the practice especially in a form of daily routine performance which is reflecting the link between agency and structure. As Giddens (1984) noted: "The basic domain of study of the social sciences…is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time." (p.2). Moreover, one of the well-knowns, Bourdieu (no date, cited in Sumalee, 2015) paid attention on the linkage between objective structure and subjective phenomena by focusing on practice that believed to be the outcome of dialectic between 'Agency' and 'Structure' and reflecting a relation of Habitus and Field.

On the other hand, Giddens (1984, cited in Sumalee, 2015) focused on dialectic between 'Structure' and 'Consciousness' of human which is producing practice. Also, he believes that human practices are interdependent and are inherited from the past. (p.29) Logically speaking, to understand social practice we have to make sense out of the meaning of 'practice' which Reckwitz (2002) has explained as "a routinized type behaviour which consists of several elements, interconnected to one other: 'forms of bodily activities, forms of mental activities, "things" and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge" (p.249). On a parallel note, Spaargaren, M. Lamers and D. Weenink (2016) have suggested combined definition: "social practices are shared, routinized, ordinary ways of doings and sayings, enacted by knowledgeable and capable human agents who – while interacting with the material elements that co-constitute the practice - know what to do next in a non-discursive, practical manner." (p.5).

To study and understand the middle-class farmers in Bangkok and their urban agricultural practices, we need a conceptual framework that takes into account previous and ongoing discussions on urban agriculture. Shove, Pantzar and Watson (2012) have given three elements to look at namely, (i) Materials (e.g., tools, infrastructures, objects, bodies, technologies and hardware), (ii) Meanings (e.g., ideas, aspirations, symbolic meanings and mental activities) and (iii) Competences (e.g., skills, understand the practice, practical knowledge to conduct the activity, and know-how) (p.23). In addition, to understand the practices, it is worth noting that there is interdependence between three elements above with three possibilities to take into account: (i) 'Practices' means all the elements are connected, (ii) 'Proto-practices' the links between elements is not yet existed and (iii) 'Ex-practices' when the links are disappeared and no longer existed (Shove, Pantzar and Watson, 2012). For example, when a person is growing plants for consumption in daily basis, it does not happen on its own but is rather connected with resources, society, public policy, environment, etc. and vice versa.

These elements and conditions will be used to help understand urban agriculture as a social practice. A study on such practices through this lens will also support an under-researched academic field of urban agriculture of middle-incomes in the Global South. Moreover, understanding elements, reasons, and influences of the social practice will assist related departments for further development plans.

1.4 Methodology and Methods

The study is based on primary data by semi-structured in-depth interviews with farmers of all ages and genders, who consider themselves middle-class, including those involved in the network around the farmers. About half of the participants are involved in the same online social network (e.g., Facebook Group), and the other half are individual farmers who have connection with one another.

Urban horticulture is a main focus of this study with additional small livestock raising (e.g., worms and chickens). The interviews took place in August - September and were conducted through online platform when a research assistant in Bangkok helped in organizing and cooperating the meetings, together with some participatory observation virtually through online channels, if possible, to observe their lands, conditions, farming techniques and processes.

The interviews used questionnaires with prepared questions to the interviewees. Appropriate data reflecting the research objectives and answering the questions were analyzed using descriptive statistics. Then, interviews were examined together with the secondary data for the research paper. Finally, I reviewed related literature again to find evidence that supported my arguments and juxtaposed with the collected data and information. The interviews occurred in Thai and recorded by phone devices or a feature on Zoom. Out of 13 discussions, 8 interviews were transcribed by me and third parties, then 1 of the 8 was decided not relevant and left out from the data analysis. The other five (5) were not transcribed. The selection was based on interesting findings and level of relevance to the research questions, and the rest of the conferences was not fully transcribed and I referred to notes along with voice records taken during the interviews.

For secondary data and literature review, the available academic articles and documents about urban agriculture, organic farming, social practice, behavioral theory and sustainability were studied. Furthermore, official documents, online websites, Facebook Groups and Pages were also used as additional sources for this research. The mentioned references were all found online or in a library in the Netherlands, as well as offline documents in Thailand, with a help from research assistant if needed.

1.5 Risks and challenges

These research processes were conducted during the COVID-19 pandemic, which might have influenced primary data collection because of the stressful and 'unusual' situation. The unfavorable circumstances caused by the pandemic might have affected the people mentally, socially, and economically. Number of COVID-19 cases in Bangkok is comparably lower than many countries worldwide, for reference. The interviewer in Bangkok observed the safety protocols to ensure safety of both interviewer and interviewees. Moreover, the researcher underwent Thai state quarantine and self-quarantine for a minimum of three (3) weeks. Also, the political situation in Thailand is traumatic as of writing, with daily demonstrations on the street and online platforms. Overall, the COVID-19 circumstances and political situation in Thailand challenged both data collection and analyses.

There is a possibility for the interviewees to have different background, ethical and political opinion. The interviewer and researcher took this into account and observed respect for the differences.

Chapter 2 Urban, Peri-Urban Agriculture and Sustainability

2.1 Urban and Peri-Urban agriculture in the Global South

The meaning of Urban and Peri-Urban Agriculture has been a discussion, considering not only location within the urban area or the fringe of the area but also socioeconomic factors. It can be briefly defined as "…the growing, processing, and distribution of food and other products through plant cultivation and seldom raising livestock in and around cities for feeding local populations" (Game and Primus, 2015). As mentioned, the meaning of Urban Agriculture is not only influenced by location and scale, but also activities and stages, stakeholders, and motivation. Activities and stages are (1) acquisition and utilization of resources for the production, (2) the production, (3) post-production like distribution of goods, and (4) consumption. Stakeholders are those who are involved in the agriculture activities. And lastly, motivation refers to why the activities are being practiced. (Baumgartner and Belevi, 2001)

There are several known agricultural practices such as Horticulture, Aquaculture and Livestock Raising, and we will be focusing on Urban Horticulture which is "…the most competitive branch of urban farming due to the high cost of urban land and with the need of high water- and fertilizer-use efficiency." (Orsini et al, 2013, p.695). Urban horticulture is the practice of growing vegetables, plants, herbs within or around a city, which is understandably popular in Bangkok given the Thai people's food consumption. In 2017, National Statistical Office reported that 41.1 percent of the population consume fresh fruits and vegetables every day, while only 9.4 percent consume fish and lean meat and 7.7 percent consume meat daily. This data, backed by my experience as a Thai, is fairly unquestionable as Thai cuisine consists mainly of vegetables, hence the importance of our focus on urban horticulture. Furthermore, due to the limited space in urban area, growing horticultural products seemed to be more suitable especially when there are many techniques to maximize the use of space such as roof garden, vertical garden, green walls, etc.

Eigenbrod and Gruda (2014) also said "[u]rban horticulture is the most competitive branch of urban farming. Due to the high cost of urban land, vegetables with high water and fertilizer efficiency are more profitable than growing other crops. Furthermore, they have the advantage of having a special nutritional value and the absence of further processing after harvest. As vegetables have a very short cycle, they can supply growing demands very quickly…" (p.483).

The major influences for farmers to engage with urban agriculture activities are food (in)security and income (Baumgartner and Belevi, 2001). Moreover, there are some studies about urban agriculture in developing countries that show urban agricultural practice's ability to increase food security, especially "…when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (Food and Agriculture Organization of the United Nations, 2006, p.1). Furthermore, urban farming production reduces the cost on household-consumption and sometime makes some extra income for the producers.

More recently, urban agriculture is becoming a common practice observed from people from various status worldwide. The middle-class or higher-class individuals are likely to grow or buy vegetables due to food safety than financial reason, as they have more purchasing power (Kantamaturapoj, 2012) than the low-income groups who are farming to save money or have extra income. In addition, for some of the higher-income dwellers, food for their consumption is preferably grown by them or known producer while some of them are selling it (Boossabong, 2014).

Moreover, there are several case studies in developing countries that show evidence of urban farmers comprising of the poorer ones. For instance, Mwangi (1995) says "…A case study on Nairobi established in 1994 that about 44% of the urban farmers belonged to the very low income group, and about 16% to the low income bracket. About 85% of these urban farmers had been residing in the city for more than 14 years" (Baumgartner and Belevi, 2001). The poor involving agricultural activities around urban area face more challenges as a result of (1) fast changes due to unstable conditions and inputs, an (2) fast rotate from land uncertainty (ibid.). Even though, there are not many studies focusing on upper-, middle- or mixed- classes farmers in developing countries like commonly in developed ones, there is a good number of other classes practitioners in developing countries, including Thailand.

It appears that there are many types of urban agriculture that can be found in intra-urban and peri-urban, with the former area likely to be small-scale farming and the latter which placed in the city fringe seems to be bigger scale and more market-oriented (Food and Agriculture Organization of the United Nations, 2007). One of the factors of this phenomenon is that lands in urban area are seen as having high economic value compared using them for agriculture for consumption, especially in intra-urban district. In the Global South, economic growth is often used as a major tool to measure 'development', which then affects the given value of lands.

Feola et al. (2020) made a point about development and urban agriculture and noted, "When development is defined in terms of technological and infrastructural 'progress', productivity, economic growth, and 'modern' and global cultural connections, urban agriculture is often 'othered' discursively and in practice as a backwards, localized, low-tech and economically poorly performing activity—a legacy of past underdevelopment that should be abandoned in order to make space (land) for a 'productive' economy" (p.2).

As I have mentioned in the introduction, the activity is ignored by a discourse of agriculture that treats it as a practice and responsibility of the poor, especially in the global south or 'poor' countries, receiving poor wages. This limitation leads to lack of research on the middle-class with purchasing power and assets in developing countries on the urban agriculture matter. For instance, Mougeot's (2015) work focused more on urban agriculture of the lower-incomes and the landless in the Global South and on food security, economic security, and sustainable urban development. Similarly, Bruld's (2003) article on urban agriculture in developing counties is hardly mentioned middle-class farmers, but the writer paid close attention to the urban poor, agriculture, and policies around it. Zezza and Tasciotto's (2010) took a similar track and added dietary diversity and calorie intake topics. Finally, De Zeeuw, Veenhuizen and Dubbeling's (2011) stated an existence of middle-class farmers but mainly looked at majority of the population or the poorer ones and how urban agriculture has role in gaining resilience including topics of food security, poverty alleviation, environment challenges, urban agricultural policies and sustainable development.

All in all, the number of scholars who studied related topics on the poor, at the same time, study on middle class farmers or mixed classes in developing countries is still small compared to the Global North's.

Generally in the Global South, urban agriculture-supporting measures are put in practice to build and maintain food security and to become more self-reliant in food with support from various sectors such as governments, private sector, civil societies and international agencies. For example, Rosario, Argentina, faced economic crisis and urban agriculture is one of the major policies they use to build their resilience. After their huge economy crisis, about 60 percent of the population had income lower than the poverty line and could not access enough food since the price had significantly increased. Then, the government together with other sectors pushed urban agriculture program and they found vacant lands that could be used for farming. The program was supported and many policies have been implemented. As a result of the first phase of the program, "(i)n 2004, Rosario was awarded the UN-HABITAT International Award for Best Practices in urban development. An evaluation found that some 10,000 low-income families were directly involved in gardening, and that producers were earning from sales up to US$150 a month, well above the poverty line" (Food and Agriculture Organization of the United Nations, no date). This was an outstanding example of the government actions and support on building more sustainable city, both directly and indirectly. Besides, civil society in many countries are paying more attention to urban agriculture and have been actively supporting and trying to cooperate with government sector to increase capacity of urban agriculture, for example, in Peru, Cuba, Haiti, Brazil, Zimbabwe, et cetera. (Mougeot, 2000).

At the same time in Bangkok, there are also policies supporting urban farming, such as in some local governmental offices where they executed their own farming activities like roof farming or organize farming workshops for citizens to participate in were developed (Boossabong, 2019). Moreover, Bangkok Metropolitan Administration (BMA), the local government organization responsible for urban development, also supported urban agriculture, through implementing local policies and providing inputs for residents or producers in the city. An example by Boossabong (2019), "…the 'City Planning Act 1975' proposed by BMA was endorsed by an agreement with the central government. The act controls land use in order to maintain peri-urban farming areas as a green belt. It works with the 'Land Development Act 1982', which attempts to preserve the peri-urban farm area as an agriculturally valuable area by developing agricultural infrastructure…" (p.53). They also have role in supporting agribusiness in the city such as supermarkets, minimart, and markets that accessible for urban dwellers.

Furthermore, civil society has parts in reaching sustainable goals by supporting urban agriculture in the city, for instance, the City Farm, an umbrella programme operated by the Sustainable Agriculture Foundation (Thailand) in partnership with network partners such as the Media Center for Development and Agricultural Training Center in the city since 2010 – present, under the support of the Health Promotion Fund Office. Their project goals are to raise the level of food self-reliance of the city, to include the cultivation of non-chemical vegetables and other self-reliance in the way of urban life. They also aim to enhance the idea of raising awareness of agriculture's key role in the city as it helps to develop food systems and alternative lifestyles that support and consider ecological matters. They also intend to impel changes in the policy of the city to focus on urban agriculture as part of urban development and expand to the national policy for other cities (Thai City Farm, no date).

These example of variety of sectors are mainly focusing on building food security and self-reliance which are important compositions for sustainable development.

Recently, the Land and Buildings Tax Act B.E. 2562 began to come into effect on January 1, 2020, which came out to enforce land holders to pay taxes for their lands. However, since the policy was just recently released, it is difficult to evaluate the policy implementation, whether the result is meeting the policy's objectives or not. This research is also giving attention to result of implementing the approach and how it has affected urban farming in Bangkok which will be discussed further in Chapter 3.4.

2.2 Sustainability in Urban Agriculture

The meaning of sustainability has been an ongoing debate for a longer time. In 1987, the World Commission on Environment and Development (WCED) defined sustainable development as "…(a) development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs." (Imperatives, 1987, p.16). Moreover, sustainable development has been an important agenda for both national and international sectors, with the most recent SDGs as a global '2030 Agenda' with seventeen goals addressing global collective issues such as agriculture-related problems and development.

R. and Gupta (2018) stated that urban agricultural activities' contribution in the SDGs --- linking food-related rural agriculture, nature and intra- and peri-urban activities to economic, social, ecological benefits --- is related to Sustainable Cities and Communities goal (Goal 11). Moreover, growing own food for consumption and increasing green space for better quality of life are supporting the Responsible Consumption and Production goal (Goal 12). Likewise for Climate Action goal (Goal 13), the urban agricultural actions directly and indirectly impact climate change by practicing farming technics (e.g. vertical garden, roof garden, green walls and more). Lastly, farming activities potentially decrease land degradation and increase biodiversity and thus contribute to for Life on land goal (Goal 15) (p.10).

Generally, sustainability can be seen from different points of view and has received attentions among scholars including Brown et al. (1987, cited in Yunlong and Smit, 1994). He categorized sustainable agriculture into three dimensions:

- *Ecological sustainability*. A main focus on this study, is looking at nature capitals and resources such as land surface, ground water, biodiversity, climate and more for the quality to be maintained. Agricultural practices can negatively affect the environment causing, for example, deforestation, climate change, soil degradation, water pollution, genetic diversity lost, resistance of pesticide, etc. (ibid.).
- *Social sustainability*. Brown et al. (ibid., p.303) explained the social dimension as "[t]he continued satisfaction of basic human needs, food and shelter, as well as higher level social and cultural necessities such as security, equity, freedom, education, employment, and recreation". Consequently, those human demands are expected to be met and some can be achieved by agricultural products (ibid.). Furthermore, the growing world populations requires a food production system that is sustainable of meeting the rising demand, or food sufficiency.

- *Economic sustainability*. It is considering long-term profits from natural resource capitals for the farmers, noting that "…the concern here is with future productivity and production rather than with the nature resource in its own right…focuses on the economic performance and viability of farming…" (Yunlong and Smit, 1994, p.10). As the downward trend of quality of natural resources can affect ecological sustainability, so it does to economy for the farmers.

There are also discussions over blind spots of sustainability approach in many levels, including the meso level of the household, interconnection and interaction between friends, family members and reasons/objectives of the practices that need to be taken into consideration (Reid, Sutton and Hunter, 2010).

Chapter 3 Understand urban agriculture in Bangkok

Thailand, a country in Southeast Asia with a good reputation on food production, is suitable for cultivation as temperatures, weather, soil and water are suitable for agricultural activities. This allows the country to produce sufficient products for the population of slightly higher than 66 million (National Statistical Office, 2019), with almost one-sixth of the inhabitants living in the capital city of Bangkok (World Population Review, 2020). Generally, food in Bangkok is accessible to almost all of the occupants as evident in Thai food culture where street foods and convenient stores can be found in mostly everywhere in the city and anytime of the day. Moreover, shopping malls hosting restaurants and supermarkets are also popping up in nearly every district in the urban and peri-urban areas. Central fresh food markets such as 'Talat Thai' and 'See Mum Moung' also have important role in food distribution in the city (Boossabong, 2016).

All things considered, it is not difficult to say that fresh food (or food in general) is attainable in normal circumstances especially for middle class or higher who have purchasing power. Understably, people in urban areas such as Bangkok tend to buy food instead of growing them as limited lands in this area have high economic value and living spaces (e.g., condominium, apartment) are not designed to grow food, then requiring to invest time and supply. As one of the interviewees who lives in a condominium said:

> *"…If looking at the current urban living conditions, social conditions, living conditions, condominium does not support people to cook anymore. So, it made the need for farming or any of these growing crops disappear…"*

As she said, the living conditions do not encourage people to cook, hence lacking the need to grow food for self-consumption when they buy food instead.

However, agricultural activities can be found in inner and peri-urban areas, and interestingly are being practiced by bourgeois group who have low to no barrier to access food in the market. By studying 12 individual urban farmers who are growing food in Bangkok, it is observed that all of them are questioning the quality and safety of food being sold by commercial market considering food production process and its freshness from distribution process. For instance, one of the farmers who is growing vegetables on his lands said:

> *"…when we buy [vegetables] from the supermarket or fresh market, we cannot be sure if the vegetables we get are actually organic or not. Which, sometimes, they said that their vegetables are really good [no chemical], but it is not a guarantee that it [what they have claimed] is true or not, because we used to test vegetables bought from a fine supermarket or from a fresh market then took them to a Lab for testing, and then pesticide residues are found in some extent..."*

Other middle-class interviewee growing fruits and vegetables on the roof of her resident has also mention:

> *"Cayenne pepper in the market is very dangerous. They come from chili peppers that use chemical sprays to prevent termites and weevil, everything. It's very dangerous..."*

For that reason, organic farming practices became a solution for some of the middle-class urban farmers who own land(s) to address this food safety concern. In addition, a study

has found that Thai people with older age, higher income and better education background are likely to worry more about pesticide safety and consider organic food (Roitner-Schobesberger et al, 2007).

Furthermore, this study found that urban farmers of organic growing in Bangkok all have a higher income than thirty thousand baht, even reaching more than three hundred thousand baht a month, excluding surplus from urban agriculture products, and hold at least an associate's degree up to doctoral degree.

Even though all of the farmers interviewed are conducting urban farming for their healthy and more hygienic consumption, there are different levels of priority and varying reasons behind starting and practicing such activities. Reasons include leisure interest, supplementary income, land tax reduction, to be self-sufficient, common or community interests or inherited from a family member, etc. Moreover, their activities take into account social practices shared among other actors through online and offline platforms, then showing some form of informal civil society. Furthermore, this civil society as well as the government sector shape individuals' behaviours, and vice versa. For more clear statements, I will use Cabannes's (2006) three urban agriculture typologies to explain this social practice together with theory lens of social practice by Shove, Pantzar and Watson (2012), which have been briefly explained in conceptual framework sector in the Chapter 1.3. Other beneficial frameworks will be introduced as well.

3.1 Urban Agriculture as a Social Practice of Bangkok middle-class farmers

In general, this group of farmers is conducting farming activities on their own lands as a routine activity. Observable in their planting activities is that areas have similarities and differences, depending on suitability of the field and the preference of the grower(s). For instance, plantation in houses is usually by growing in pots, walls or rooftop and growing in a ground is usually observed in larger lands that are mostly located in peri-urban areas. Furthermore, urban organic farming conducted by Bangkok middle-classes has noticeable chemical safety control procedures by using non-chemical fertilizer and insecticide, together with other adapted techniques learned from networks around them, both offline and online. At the same time, growing food also makes food more accessible while ensuring food security. This addresses uncertainties in access, taking into account market-oriented and recreational activities that might weigh in on food accessibility. To explain these practices, we will be looking through a social practice theory lens, featuring three elements: meanings, materials, and competences. Each component of the three elements all together are important factor that shapes different social practices, which will be analyzed later along with urban agriculture typologies.

3.1.1 Meanings of urban agricultural practices

The most shared meaning to conduct urban farming is to increase 'food security' to be self-sufficient and to consume 'safer food' for better health. As a reference, meanings of social practices in each typology of urban agriculture include subsistence economy, market-oriented activities and leisure and recreation, which differ based on motivations, objectives, aspirations, et cetera. as categorized and described below:

Meanings of subsistence economy practices

To start with, it appears that Cabannes's (2006) explanation on three urban agriculture typologies can be found among middle-class farmers in Bangkok. To illustrate, the most observable agricultural activities are part of subsistence economy, but 'subsistence' here is not to 'survive' but to improve the quality of life and consumption. This is the case as this group has purchasing power, making the production as not mainly for financial gains but for safer food, expediency and only partly for reduced household expenses including land tax reduction. These subsistence economy activities as a social practice are formed by the variety of 'meanings' that are found among the urban farmers, as expanded below.

As noted beforehand, the middle-class farmers are concerned about food security especially against contaminants that could affect their health, pushing this group of people to get involved in urban agriculture in a form of organic methods as their own produce are more trustworthy for them in terms of quality and safety compared to organic sources (claimed to be chemical-free) in the commercial markets. Based on a report on examining fruits and vegetables in Thailand, high content of chemical contamination had been found in fresh products even with 'pesticide-free' labels (Hardeweg and Waibel, 2002, cited in Roitner-Schobesberger et al, 2007).

Relatedly, Gregory et al. (2005, cited in Ziervogel and Ericksen, 2010) stated a description of links between food system and food security which Ziervogel and Ericksen (2010) have explained "These food system activities contribute to four food security outcomes, namely availability, accessibility, stability, and utilization of food." (p.526) It is then fair to say that in normal circumstance, middle-class farmers are more concerned on food utilization or quality of food than they are on food accessibility as they have higher purchase power. Increasing food accessibility for this group of farmers makes it easier and faster for them to get fresher food for consumption while reducing travel cost of going to the market and lowering overall household expenses. As mentioned by one of the respondents:

> *"Instead of having to go out and buy from the market which has logistic cost by traveling, also time and transportation costs, this we walk only less than 3 minutes. We may take it from our house, in our family that we have planted. This can save household expense moderately."*

And a rooftop farm grower has said:

> *"[if] we want to eat, we walk up to the deck, we pick [the products] and eat it. It is safe, crispy and delicious, not to be left as rotten vegetables in the refrigerator"*

Also, some of the practitioners in the group started to get involved in urban agricultural practice after they faced Bangkok Flood Disaster in 2011 that resulted in lack of food accessibility, with food supply becoming either unavailable or unstable. One of the farmers said:

> *"Started in the days in Bangkok said the flood… while the surrounding [peri-urban] was completely flooded. Even though, our house is in the centre of the city was preserved for the most part, the water was not flooded. But eating was difficult. The vegetable and else. At that point, we had come to think about it, we have to start doing something that will find our own stability. And with [her] interest, likes, then*

[started to do] research about it [urban agriculture]. Because originally, [I] was not a farmer's relative…"

During the flood, people depending highly on external food sources experienced challenges in food (in)security. The transportation of goods and the food distribution from outside the city were interrupted, so the goods hardly reached the city. With very limited amount available in Bangkok, there was a huge discrepancy in the demand and supply of food in the market. Then, "food prices increased by 3-4 times, while in the case of vegetables, prices were even ten times higher…about 41,500 households could not access enough food, while others lacked specific types of food (mainly fresh products)" (Boossabong, 2014). In other word, it was more difficult for city dwellers to access foods, both geographically and economically, during crisis. Additionally, the government had rarely provided supports in such matters. At the same time, their food aid system mainly provided dried, canned and instant foods while not all the inhabitants had access to the food distribution. The provided instant and tinned food could be temporarily enough, but, as mentioned, food security is not only about the quantity of the consumption but also nutrition, especially among bourgeois who are not suffering from hunger. Not to mention that some group of people did not receive enough goods or did not at receive them at all.

Another evidence of the meaning given by food systems insecurity is that after the flood, awareness of the people on the relevance matters has increased as more city dwellers started to attend urban farming workshops with wider range of age, different occupations and genders to build self-reliance. A manager of an urban agricultural training centre called "Suan Pak Ban Khun Ta" *(Grandpa's vegetable garden)* has realized significant rise of workshop participants after the disaster, owing to the change of groups of people from older agers and retirees who have more time and concern on the matter of health to various groups of Bangkok inhabitant, still bourgeoisie, with diverse reasons but mainly to be self-sufficient. She noted:

"In the first started the training, it was an elderly people in order to [know how to] find [make] beneficial free time and with cost reduction, but in the last 3-4 years, health trend is coming. Therefore, [people are] concerned about reducing the use of chemicals and consumption without chemicals… or self-reliance, people became more interested. Started since the flood of Bangkok in B.E. 2554 [2011] since then, As noted, Interest in this has increased dramatically. During that time, my family also faced the problem as well. Therefore, realized that having a self-reliant home, grow our own vegetables, it hardly needs to wait for external help…"

She also added:

"If in the period with no crisis, as I said, most people who are interested in this field are elderly, retirees who is looking for an activity as a hobby, but nowadays, the matter of self-resilience and gardening are for all sexes and ages, and the greater proportion is working agers and adolescents that are obviously increased perhaps more than the elderly who came training in the early days…"

In addition, not only natural disaster but also any crisis that impacts food security or the mentioned food systems has notable influence on middle-class dwellers' demand on urban farming interest and involvement. According to a hearsay from a practitioner who has significant contribution to educate people in a Facebook group called 'Muer Kon Muang

Yak Prook Pak' *(When urban dwellers want to grow vegetables*) or 'City Friends, City Farm' and is an author of books called 'Prook Pak Gun Ter' *(Let's grow vegetables)* and 'My Organic Life', when Covid-19 pandemic has started, there is a noteworthy number of new joiners in the Facebook group and her book increased sales. Sha said:

> *"During the lockdown, the book was selling very well. The [Facebook] page was sending it every day until it wasn't enough for sale."*

She also gave an opinion on why people are starting to be interested in urban farm:

> *"They may have a lot of free time and…maybe afraid of closing the town? and won't be able to find something to eat so planting vegetables is easy to be picked up, right? Just have a clump of the morning glory, [takes] 3 to 4 days to grow and eat it. This should help in the matter of food to some extent. If growing for self-consumption, that is, [they] don't want to drive outside, malls close quickly, some of them wasn't open at all."*

On the 26th of March 2020, the government had announced 'the Declaration of an Emergency Situation in all areas of the Kingdom of Thailand' to control the COVID-19 situation. In the announcement, there were several requests for people's cooperation, including prohibition of entering high-risk areas, closure of locations at risk of virus transmission, closures of the kingdom entrance, prohibition of hoarding goods, and so on. (Prime Minister, 2020) This resulted in more difficulties to access foods since only some parts of a mall can be open, street foods were not allowed together with limitation on time to use public spaces, among others. It is likely that this government action has directly impacted food accessibility and stability, as people start to hoard food and food availability becomes a challenge. In my opinion, the situation resulted in people spending longer time closer to the place with possibility of growing vegetables, resulting in higher interest on agricultural activities.

There is another interesting factor: the Land and Buildings Tax Act B.E. 2562, which gives meaning to form the practices, pushed to reduce the possible hike of household expense on paying higher taxes for those owning piece(s) of land. All in all, government sector has important role in shaping urban agricultural practices, which has been proven as a social practice.

Such policy has been in force earlier this year, in 2020, and two of the practitioners paid close attention to this regulation when conducting agricultural activities. One of them said:

> *"I have bought many plots of land in Bangkok…Later on, the law in our town has changed how its taxed land, ie if the land was desolated, it would be taxed quite expensive. So, I use this land for urban agriculture"*

Then explained how he began to involve in urban agriculture:

> *"The district had informed me to adjust [the land] and coincidentally, there was a land tax issue, so I thought I wanted to make it an agricultural land so that [I] don't have to pay taxes and to make a good use of my father's old lands instead of leaving it alone for 40 years [already]"*

To conclude, meanings of farming engagement in Bangkok are found in the features of a subsistence economy, namely, food security, cost reductions, and to be self-sufficient to handle uncertainties.

Meanings of market-oriented activities practices

When some meanings are not aiming to make surplus, some of the middle-class farmers are found having meanings of making profits by practicing urban agricultural activities, for instance, by selling the products, processed products, or expertise earned from participating in the field. From the research, I would suggest dividing market-oriented activities into three forms of making surplus from urban agriculture outputs and outcomes: (i) excess from household consumption, (ii) market-based production, and (iii) subjective outcomes from agricultural involvement, with mixtures of two or three forms is possible as each form of practice has meaning(s) of social practices.

First of all, the common meaning for this group of participants is earning extra income, even though they are also receiving cash from other source(s). From my research, all the market-oriented farmers have started with production for household consumption, and sometimes gave away the products to people in their networks such as family, friends, or neighbours. Then, some factors have influenced and given them meanings, and changed their behaviours toward urban agriculture. As I have stated, all the interviewees applied organic methods to farming practice as the demand for safer food is increasing in Thailand. This is partly shaped by the government's 'Road Map of Food Safety' approach that partly resulted in higher citizens' awareness on their consumption (Srithamma et al, 2005, cited in Roitner-Schobesberger, 2008). This may have effects on organic food production and demand of consumption, which should be studied on in further level. Nonetheless, some of the practitioners received more information on the organic food demand that leads them to a meaning of producing food to respond to the demand of consumers. To expand, *excess food from household consumption* with the meaning of making surplus combined with knowing the demand on food has fashioned the farmers' selling practice, with the buyers who are usually people from their networks (e.g., friends, family and neighbors). Examples of statement:

> *"Not selling seriously, selling for fun in the house area. [I] grow a lot of scallions, then taking it for sell, 5-10 baht, not selling it conscientiously…not expecting money…maybe selling some when I go out to an event with friends at their booths, I help they sell…sit and chat with friends."*

> *"At first we planted what we like to eat. When we started to sell, we learned ourselves that this kind [of product] wasn't enough, this one people liked it. And then we expanded the vegetable that looks like it has a market [to sell to]."*

Some of the growers have taken the demand into other forms of social practice, taking into account their materials and competences in the next sections. However, these farmers have conducted *market-based food production* to feed public organic food demand, and got the idea of trading channels with shared demand of joiners, for instance, Facebook Groups, Facebook Pages, Line Official, and 'greenmarkets'.

> *"Like Monday, we broadcast out what vegetables we have this week. Then let them [customers] order in then within a week, it will be shipped out…or in some weeks if we have less vegetables, it will not be announced, we will only sell to regular customers or restaurant customers"*

These 'alternative' platforms are accessible for averages with same meanings, at the same time giving ideas to the seller of what the purchasers' food desires are and popular vegetables at the moment, outperforming growers' social practices of selling products based on market information. To expand the meaning given by Facebook platform, firstly, there are organic farming groups for sharing and selling organic products. I have also discovered that consumer's purchasing decision is based on 'trust' if the food is really organically produced, the same with greenmarkets that people are likely to buy from the stalls they trusted or known before personally and from online channel. Secondly, dynamic of vegetable trend is supported by sharing Facebook posts with recommendation, especially by people with credibility, and has influences on agricultural behaviors of growers. One of the sellers said:

> *"I am not sure if it is related to public [Facebook] post sharing or not. Perhaps there was a nutrition coach who shared our [Facebook] page and introduced some vegetables, then there were people asking about those vegetables, especially, so we understood that it was the demand, but in fact, we did not know that it was caused by a small point…then they disappeared…".*

Also, she stated that sometimes it is difficult to predict the amount of food to grow within one plant's life cycle when the trend is changing quite quickly. These meanings given by diverse factors are shaping the urban growers' social practices toward agriculture.

Last market-oriented practice I want to mention is urban dwellers *selling their subjective outcomes* from participating in urban agriculture. These experiences are commoditized in a form of knowledge and expertise transformation through different methods. This research also found some of the farmers with longer time engaging in the field, occasionally organize workshops and give lectures, with some of them selling 'how to' books. Moreover, these 'experts' are not focusing on making profits from selling the grown food itself, but indirectly making surplus from those products. One of the urban farming 'experts' said:

> *"Urban farming is not a profession; it is a hobby. I really don't have any profession; I am a housewife. And the income came from conducting workshops at home teaching urban inhabitants to grow vegetables."*

She also added:

> *"Mainly there is a book for sale on growing vegetables [Let's grow vegetables] written since B.E.2557 (2014) and being sold today. This, I receive income from the percentage that they [publisher] give me."*

On the other hand, there is also a producer who sells food products and sometimes conducts paid workshops. Also, one of the growers, who is making surplus from workshops, is as well using her specialization to earn with proceeds given to a community farm that gives the benefits and profits back to the foundation that operates it and community members. Moreover, the result shows that farmers have positive perspective on urban farming and believe that it is beneficial for conductor's livelihood. They also educate urban dwellers and pursue actions for common goods.

For this group of farmers, they have credibility as a result of compliments or testimonials received from others on urban farming and organic methods, giving them meaning and encouraging them to commoditize their existing capitals together with the will to educate people in the subject and bracing common good. Hovland et al. (1953, cited in McGinnies and Ward, 1980) said two key elements of credibility are trustworthiness and expertise, which are important factors given by and received from others when they believe the person has competence, knowledge, honesty and integrity (ibid.). The last two are referred to as 'trustworthiness', not as highlighted as 'expertise' in the case of making surplus from 'strangers' by selling urban agriculture knowledge in different contexts (e.g., books, workshops, lectures), but trustworthiness as likely to be found among personal or known connections giving advice to one another and usually with no financial profits.

So, for farmers with knowledges 'expertise' is a major element to make the practices of making income from strangers successful, though it is also indirectly advantageous for their merchandising, giving the experts a meaning of demand. Moreover, marketing is an action found on this form of retailing. For example, one can build trust by getting qualified for an organic food certificate from the Department of Agriculture, promote through online and offline news, social medias and networks, etc.

In conclusion, meanings of market-oriented activities as a social practice are mainly to make surplus, know and build the demands, and aim to educate people on the related matter. For the farmers, these practices are believed to give positive outcomes to their finances and to their and others' livelihood.

Meanings of leisure and recreational practices

Lastly after I have explained meanings of subsistence economy and market-oriented practices, another important practice is agriculture as leisure and recreational activities that are found among the interviewed urban farmers in all ages. Generally, for middle-class farmers who have capitals, it is highly possible for them to apply urban farming on a daily basis. It also seems to me that there is no impossible barrier for the farmers to do so. Most of the participants are enjoying the growing of their plants, taking care and applying new techniques to improve the gardens and for some, as a family activity. Some of them are 'proud' of the results of production and enjoy consuming the food grown by their hands. As some growers said:

> *"[I am] hoping for happiness in doing what I want to do and the safety that we receive from both, products and foods"*

> *"It is tiring but feeling happy doing it, like a hobby."*

One of the practitioners said:

> *"…[I] planted dragon fruit, when it produces fruit, it is our pride. The dragon fruit is small but mine species is sweet, delicious. I am proud."*

Seems like foods they grow are giving them more than 'better for health' benefit but also some value to make them satisfied of the results. Moreover, as I have mentioned the urban agricultural knowledge transference practiced by experienced farmers are meant for

educational purposes without any profits involved, conducted with networks of people who share the same interest. Furthermore, it brings connection between urban life and nature for family member(s) who has spent most of their life in the city. Lastly, a connection between the activity and a circle of life is seen in one of the farmers as she said:

> *"Some plants have a lot of aphids, [I] had to let it die. We can learn the truth from our garden. There is birth, beauty, sickness, disease, death." which reflected a link between recreation and religion beliefs.*

Growing food as leisure or recreational activity is sometimes difficult to measure if it is a subsistence economic activity, or not when all the producers are also consuming their 'safer' products. In any case, mixtures of meanings and typologies are conventional.

Juniu and Henderson (2001, cited in Carr, 2016, p.141) said "leisure activities are socially structured and shaped" supporting by "'Between them, the market and the state play an active role in constructing leisure." (Clarke and Critcher, 1985, cited in Carr, 2016, p.141) This leaves a question, is leisure a freedom? Godbey (2003) said "the important thing in defining an experience as leisure is that individuals believe that they are free or that they are controlling events rather than being controlled by events" (p.5). From the study, the urban farmers are believing that they are the ones who have control over their decision to conduct such practices of leisure, which I partially agreed. Still, each element is socially constructed such as social class, economy status, assets, or even perceived financial freedom. By using social practice framework, we are discussing the link between actor and structure, which in this case, looking at structures can be beneficial to help understand the practice when the reasons and results of the leisure actions are subjective.

There are a handful of studies about the connection between human and nature and how it benefits our beings. As such Bowler et al. (2010) had proved that human well-being can be positively affected by natural environments which can be supported by Hawkins et al's (2011) research found "Allotment gardeners reported significantly less perceived stress than participants of indoor exercise classes." (p.577). On the other hand, green space is hardly found in urban area, especially megacity in developing countries. In the case of Bangkok, a report says:

> "…only 4.2% of Bangkok's total area is green space (excluding agricultural land), mostly tree cover that includes street trees and naturalized areas, and 1.2% in developed green space: parks (including trees), sports field and golf courses. This 1.2% developed green space is almost evenly split between actual parks accessible to the entire population, and to golf courses which are not readily accessible to average citizens of Bangkok, and the remainder is in athletic fields." (Thaiutsa et al, 2008: 222).

In other word, the statistics shows the distance between Bangkok inhabitants and nature that has been taken by the growth of constructed area while the government is not providing enough accessible green area for its people, leading to practices that make them closer to nature.

Furthermore, expectation of receiving 'leisure satisfactions' from urban agricultural activity is also an important meaning for the practice. Beard and Ragheb (1980, cited in Cheng et al, 2010) categorized leisure satisfaction into six integrals: (i) psychological, (ii)

educational, (iii) social, (iv) relaxation, (v) physiological and (vi) aesthetic. This study have found that the urban agricultural as leisure activity is giving practitioners the satisfaction on the components namely, enjoy practicing, feeling of accomplishment, learning about themselves and environment, connection with others, stress-relief, health benefits and enjoyment of beauties, etc. In short, these factors have influenced urban dwellers to do agriculture as a leisure activity which is also a social practice.

Overall, combinations of different meanings are resulting in typologies of urban agricultural practices. In short, minimum of two out of three typologies are discovered in organic farming among middle class farmers when the main purpose of organic grow is safer food for health and when most of the practitioners are enjoying the agricultural activity or either making profits out of the products or from subjective outcomes. Furthermore, their urban agricultural decisions and practices are not found individualistic in any case, instead a social practice with connections to family, society, organization or government policies which will be explained in later in this research.

3.1.2 Materials of urban agricultural practices

To begin with, the materials to perform urban agricultural activity can be categorized into five types of capital by briefly using Sustainable Rural Livelihoods Approach (Scoones, 1998):

- Natural capital, what middle-class farmers have in common is an ownership of land(s), access to infrastructure including water, electricity and other biological resources.
- Physical capital is composed of tools, buildings, roads, machines including mobiles and online data. These can be called 'Producer good'.
- Human capital refers to labours, both in the household or hired ones.
- Financial capital, these middle classes have enough wealth from their savings or 'main' source of income to survive, also enough to invest and process farming activity.
- Social capital is not only the community which individuals and families belong to, but also supports from other sectors as a material, namely, policies, subsidies and inputs, civil society and marketing platforms (e.g., reporter, visitors).

Generally, most of the practitioners have similar assets, especially, natural capitals. However, the amount, size, scope, and quality can be different depending on their meanings and competences in farming activities. Moreover, the type of capitals they own also shape their practices. To expand, this research has found various formations of natural capital, such as, backyard, house land, empty large field with nutritious soil and with toxic topsoil. Therefore, a variety of urban agricultural methods is applied to suit the existed natural capital; for example, vertical farming, greenwalls and container garden are more likely to be implemented in smaller space like backyard, patio, balcony, or available spaces in the house area. On the other hand, growing plants directly on land surface, is a practice recognized in bigger lands with healthy soil, when lands with acidic soils need to apply other type of capitals into their agricultural practices to be able to grow and to improve land productivity.

Likewise, Physical capital has important role in constructing the practices when empty lands and spaces in Bangkok are less natural than physical. Some of the farmers who live in

a building, which means they do not own natural land, are noticed to be utilizing their roof for urban farming. Moreover, disparate tools are also detected in each practice; for example, small-scale farm for household consumption, leisure, or excess sell, usually has basic farming instruments such as, pots, shovel, watering can, shelter, sprinkles, timer and other simple assets. While bigger scale farming, which means more density and/or larger area, are owning physical productivity tools to increase quality and quantity of the outputs. For instance, the farmer selling organic vegetables has greenhouses to intensify growth and to control the quality. She has a labour-saving machine to make huge amount of fertilizer within 16 hours to fasten the production and be able to respond to the food demand. These greenhouses are a substitute for poor quality natural capital, land with sour topsoil. The farmer mentioned:

> *"I have a machine that can turn leftovers from food industry… it turns to organic fertilizer in 16 hours… This is an industrial scale, one ton at a time."*

Another interesting physical capital is mobile devices with online data. Nowadays, the farmers are using devices to access information and education, with action is observable among middle-class farmers in Bangkok. They have financial capital, own a device and possess know-how to make use of it for urban farming improvement, including to access online networks.

Moving to human capital, numbers of labour found can reach up to 40 labourers among market-oriented urban farming, but some are as small as one farmer in households. Anyway, both can be household-labour and hired labour in a trade of wage or/and goods. Importantly, this research has discovered that farming scale and amount of laborers do not have fixed formula of direct variation, as smaller size farm with 2 laborers can also produce enough products for public sell which might require knowledge and skills of human capital to densify the farm.

On financial capital, middle-class farmers have purchasing power and receive income from other source(s) which is an important asset for food accessibility and in conducting urban agriculture that requires investment on materials and time (when time is economically valuable). For example, the same case of greenhouse farmer with a toxic land surface, the practitioner has invested significant amount of money because growing in greenhouse method is expensive. For this case, they are able to do agriculture even though the land is unfarmable, due to their high financial capital. All in all, none of the farmers have financial obstacle to access urban farming.

Lastly, in this part, social capital is needed to be discussed when the 'buyers' is also one of the materials for selling-practice. On the other hand, purchasing practices of the consumers also play an important part to the sellers when the buyers have materials, meanings and competences which formed social practices of purchasing and consuming organic products. First of all, for the practices of making financial benefits by selling urban agricultural outputs, these actions have meaning to sell the products to their existing networks such as friends, family, neighbors and other farmers who share network. In other words, this group of people are the producers' social materials. On the other hand, the practitioners can also 'build' and 'sustain' their own social capitals by using other assets. For example, some farmers have created their own social capital to sell organic products by learning the demand and using material such as marketing platforms (e.g., Directly at the farm, Facebook, printed media and 'green' events) to increase number of buyers. For

instance, one of the producers allow customers to harvest vegetable themselves directly from the farm which makes more people interested. Another example, another farmer is using other existing material to build social capital, as she stated:

> *"Fortunately, growing vegetables on rooftop receives a lot of attention. Therefore, there will be reporters making news, it is promoting in itself.".*

All in all, online and offline channels are used to promote their businesses by reaching a wider group of people. Moreover, the growers are sustaining the consumers by providing convenience to access food, namely, created membership for the targets to register in automatically receiving goods weekly or monthly, also a platform to pursue direct marketing and handling information to the target (e.g., direct broadcast message to subscribers) with simple direct order and delivery.

To summarize, existing networks and newly formed groups are an important material for the farmers who want to make surplus from urban agricultural practices, the same with the involvers who are selling subjective outcomes from urban farming activities. However, for these 'experts', they have added materials, their credibility received from the others, and their 'skills', 'knowledge' and 'expertise' on the related subject. These are the materials that differ them from other sellers selling objective products. To add on, civil society of the people sharing same interest is also a social asset by being a network to promote and trade the products. This also serves as a source to provide knowledge and other materials for the farmers, like sharing experiences on urban agricultural activity, or allocating and exchanging goods such as plants, seeds or organic fertilizers. Besides these materials, there are also subsidy and input as part of a policy, which may be considered as social capital. The reason to put subsidy and input as a social capital instead of others is that these sources are from social sectors that have role in supporting urban agricultural activities and also where the practitioners are a part in, with and without realization of involvement. Lastly, policies from the government are also an important asset as they are providing, supporting, servicing and pushing in urban farming affair though handing out assets, conducting workshops, supporting projects, releasing policies, etc. However, this research paper will expand more on the social sectors later in the article.

3.1.3 Competences of urban agricultural practices

After we discussed two of the social practice elements, we will talk about 'competence' which refers to skills, know-how, understandings, knowledge and capacities on the urban agriculture that the farmers have, and how did they earn it. First of all, all the practitioners share the same competence on organic methods, which means planting with no synthetic substances. At the same time, they happen to understand the food (in)security situation and how to improve it using their ability. All of the farmers are learning how-to's and techniques from online sources (e.g., articles from Google search, YouTube, and Facebook), with a minimum of seven (7) out of thirteen (13) interviewed middle-class growers are involved in a Facebook group called 'Mure Kon Mueng Yak Prook Pak' where experiences on urban agriculture are shared. This group serves as a main platform for urban farmers to connect with each other and learn how-to urban farm for new and experienced ones.

> *"…I did some research from the internet. It began with having friends that exchange, questions and talk with each other. Then, there is an online group setting up amoung known people…a Facebook called 'Mure Kon Mueng Yak Prook Pak',*

formed to talk about growing vegetables, sharing seeds…gain knowledge that can be applied to the vegetables we grow. Because I'm not that good [at growing] and didn't know anything about it…I asked in the group, of what and how."

"[In the beginning of the group] I rarely share anything, and I went to look at it [shared information]. Now, it grew and became a learning center. From the past, I was the one who were there to learn, now, I am a sharer."

"…some of the joiners are already there have planted, and heard the name of this group. Therefore, they wanted to join in case there is something to add to their knowledge…"

Even though the participants are sharing techniques, the skills are learned from self-experiences by applying the absorbed techniques and information on their field(s) and adapt into their context and land's conditions. As said:

"Growing vegetables depends on the dirt, weather and the environment which each household is not the same. Like to imitate your roof like mine, it can't be the same…It has to be learned by yourself, that is, you [have to] read a lot, listen a lot, but you have to have your own way of planting, to take care of your plants."

Besides exploring the internet, there are some practitioners who learned urban agricultural skills from offline sources such as workshops. Earlier in the days, the workshops were organized by 'Suan Pak Ban Khun Ta', as already mentioned and will be expanded more in latter section. The workshops were teaching how to grow organic food in the household with limited space, hence, this way of learning is giving the urban dwellers practical experience and help them visualize the actual implementation. Also, the learning center provides plants examples and sometimes giveaway seeds, plants, and sprouts to the practicians. A participant said:

"I found them standing a booth…it was interesting, so I went to the workshop, then started planting…I went to the learning center of the City Farm programme, called 'Suan Pak Ban Khun Ta'."

From the discovery, the urban farmers have similar sources of knowledge to gain competences, in which may have influence on much close form of practices towards urban farming, yet differences occurred relying on meanings and available materials. Just as I have mentioned earlier about the similarities of the interviewees' organic agriculture practices, for example, the farmers are using compost from food waste in their household, fermented bio-extracts, microorganisms, manure and earthworm to fertilizing the soil and to promote the plant production and growth. Moreover, some of them are using non-chemical pesticides while some are not using any, depending on availability of assets and inputs and the convenience to access the sources. Although all the growers are using non-chemical inputs, some of them have different techniques and methods. For example, one of the producers who is conducting market-oriented urban agriculture and growing vegetable in greenhouses is using organic fertilizer instead of using compost to reduce the risks of having pests from lied insect eggs that may arise during the composting process, which can make the vegetables unattractive for buyers. To add, other grower also use compost as a fertilizer, but the ingredients come from fresh products, not leftovers like the majority, so the quality and

cleanliness of the fertilizer is under control. To conclude, the basic organic methods are discovered similar to one another, yet showing some differences.

Moreover, family institution also has impact on urban agricultural practices. To explain, nowadays, urban inhabitants rarely have connection with natures especially for middle-class, because their living conditions are surrounded by urban environment. However, influences from older generation family member(s) who has history of connection with nature and agriculture, so called family inheritance, have impact on participants' practices towards agricultural activities. Even though urban agriculture is a relatively new phenomenon for Bangkok middle-class, for Thailand as a whole, agriculture is in harmony with Thai culture. This is believed to be lacking lately in urbanized society and area. Anyway, some of the farmers have absorbed this culture from relatives including the techniques and skills, nevertheless, improving their competence from other learning sources. The manager of the "Suan Pak Ban Khun Ta' learning center said:

> *"…He [dad] was interested in being self-reliant… so he turned his attention seriously to start growing own vegetables, start doing things himself…Then, when he has a child, he became more concerned in chemicals [contaminants] and health…As far as I can remember, [I was] born with a small vegetable field next to the house to grow our own vegetables. And gradually began to seriously develop until it became a training center"*

A farmer selling vegetable from apartment rooftop farm said:

> *"[My] uncle started to grow vegetable, so when retired, he will have a vegetable garden. He learned how to grow continuously then he got very sick, so he passed on the knowledge to the building staffs to help him taking care of vegetables. Later, when the uncle passed away, the staffs still took care of the vegetables with more studies on how to make vegetables prettier…[we] kept doing until we felt that the vegetables are already good"*

Another attention is given to the farmers' competence on understanding self-situation and possibility of food (in)security, which made them learn how to be self-reliant and to sustain their living by urban agriculture. As I have stated, the situations made the urban dwellers realized the importance of food security and the relation between safer food and better health. For this reason, the plants they grow are mostly edible and organic, such as various kind of vegetables, herbs, and fruits for consumption. Furthermore, some of the partitioners grow plants up to more than 100 species, which is unintentionally rich biodiversity. For the ones making surplus, they usually plant fast-grown vegetables, mostly salad greens. Besides, they are also increasing and maintaining land's productivity by their known organic methods and other techniques, such as vertical farming and other forms of land's intensification. On the other hand, improving and intensifying lands is also a practice found for producing goods for sell to respond to the existing demand, which shows the farmers' competence on selling and marketing. For a figure to make financial benefit from a practice, understanding of the market is an important requirement to achieve their goal as these producers are discovered to have marketing strategy to work on their targets, as a seller has said:

> *"We increase the amount of the vegetables that known to have market [to sell to] and [what they usually have] still not enough [for the demand]…It was a little difficult because each cycle of its life is about 6 weeks. Perhaps, we think that during*

this period, this one was popular. Then we filled it up, but 6 weeks later, it [the demand] changed a bit. Anyway, the trend isn't changed that fast, the trend is like that. But it is us expecting more or less."

Furthermore, practitioners also use external sources to promote their business. For example, besides offline and online platforms that are direct marketing, reporters are dragged in to help campaigning a rooftop farm when this type of agriculture was highlighted as a new practice for Bangkokians. In addition, organic agriculture certification is also one of the tools to improve buyers' confidence on the product, at the same time, promote the business. These certificates are provided by both public and private sector, for instance, a certification of organic agriculture, called 'Organic Thailand' provided by National Bureau of Agricultural Commodity and Food Standards or ACFS. ACFS is a department under the Ministry of Agriculture and Cooperatives, a governmental office that verifies and measures the quality of the organic process to pass the standards. Still, the certification is not required to be able to process the sell.

There are also some issues discovered from an interviewee's experiences that will be explained in the next section. Private sector, such as supermarkets, also has their own certifications for the standards to be met by producers who want to sell organic products on the shelf. However, the expense to get a certificate from them is significantly high and getting from the public sector is free of cost, making it a barrier for small producers to access the conventional distribution channels. These are examples of business, selling and marketing skills of the farmers that shaped social practices. Meanwhile, the urban farmers have competence to create alternative food market for their own business throughout online platform (e.g., Facebook, Line Official) and offline (e.g., events, booth, open farms, membership and delivery).

"Organic vegetables, high prices, right? I don't do the modern trade at all, I do the 'farm to table' style, that is, deliver directly from the farm to the customers"

"The main channel to connect to customers is Line Official Account…we broadcast out what vegetables we have this week."

For example, the greenhouse farm came up with an idea of self-harvestable vegetables for consumers to reap the leaf themselves. This strategy is killing two birds with one stone, having their own food network and increasing buyers' interests because this cannot be found in conventional market at the moment. With the trust of commercial market's food safety being questioned, alternative markets became a considerable option for city dwellers.

All in all, the urban inhabitants' competencies on urban agricultural activities, knowledge and realization on food security, and selling and marketing strategies are forming various urban agricultural social practices when taking meanings and materials into account.

3.4 Civil Society and Policy Environment

As I pointed out earlier, civil society and public policy are considered social capitals in material element of Shove's (2012) social practice conceptual framework. The study confirms this as I noticed the significant roles of civil society and government sector in urban agricultural practices of the Bangkok dwellers, which I will attempt to expand in this chapter.

3.4.1 Civil Society

From the data collecting process, I have discovered some form of action and involvement from the interviewees in a Facebook group called 'City Friends, City Farm'. This online platform was created in 2011 to share experiences, technique and knowledge as well as material resources such as plants and seeds on organic farming. Contents are encouraged to applicable, if not exclusively relevant, to urban context and strictly not for commercial purposes. The group also provides links with other Facebook pages and groups, albeit minimally.

The research found that all the farmers searched online and gained their 'how-to' skills on urban agriculture from the internet, mainly from websites, social network platforms and YouTube. These online learning gains greatly influenced the way they conduct farming practices, while constantly adapting their learnings to their respective growing environment and conditions. Given the play of these factors, there appears to be some similarities on their practices, particularly on organic farming technique and perceptions about food and its safety. Furthermore, the farmers are not only sharing farming process and results by posting, sharing and commenting on posts in the group but are also building connections and relations with fellow members of the group. This is evident on members who have longer participation time in the group. Some members even organized 'Kin Kao Nai suan' *(Eating in a Garden)*, an activity where members gather to have organic lunches made of organic products they grew or bought within the group. However, the event stopped a few years ago due to lack of organizer. One of the senior participants says:

> *"Members of the pioneer generation… had created an activity 'Kin Kao Nai Suan' [Eat in the garden]…We took the food we cooked at home or our own produces or… maybe bought, but had to be sure it was something that is safe and clean then joined each other, talk, shared to eat…1-2 times a month." she also added: "New generation [members], no one will be the one to arrange [the activity] here because there is a lot of members in this group [nowadays]"*

In this study, I find it worthy to bring in the concept of 'Social Influence', which refers to "change in an individual's thoughts, feelings, attitudes, or behaviours that results from interaction with another individual or a group" (Walker, 2015, p.1). Reading from this perspective, individuals' participation in the City Friends, City Farm group is also shaping their actions and thoughts towards urban agriculture. Their practices and technique on organic farming, for example, how they compost fertilizer from wastes, get rid of insects, even making organic shampoo from their products, are somehow a result or were largely influenced by these factors. It is also worth noting that even members who rarely interact and participate in the group practice the same techniques shared online. Overall, these connections do only influence farming practices but also shape perspective towards agriculture as shown in all the interviewed farmers who have positive attitude on urban

organic farming and products, as well as believe it would be beneficial for others to do the same.

Generally, urban agriculture is a new thing for most Bangkokians despite its existence for quite a long time. It only recently became an alternative food choice for middle-classes, roughly no longer than two decades ago, as we can see some local governmental agencies have started to conduct urban farming and providing learning centres (Boossabong, 2019). More recently, after the big flood in Bangkok, more participants have joined such practices. This trend is largely popularised not only through the Facebook group but also surrounding factors such as friends, family, magazines, newspaper, policy and more, as mentioned earlier. Nonetheless, this Facebook group was one of the pioneering, convenient and accessible community to have access to urban agricultural knowledge. The group is then likely to have more influence on how the farmers are approaching agricultural activities when this platform was still the main source. The people who have (or had) major role in the Facebook group also take part or cooperate with City Farm, part of a government-supported foundation. They were sharing awareness in the group and simultaneously shaped the City Farm programme as it coincides with its commencement in 2010. 'Suan Pak Ban Khun Ta' provided learning centre and workshops for people who were interested to do urban farm and participated in the programme. As I can see, this shows bottom-up approach to the implicated sector as Suan Pak Ban Khun Ta is family-based.

In late 2020, this group has almost sixty thousand joiners and many are actively participating toward group objectives, including some of the interviewees. While this group is not officially part of any organization, it is involved with the City Farm programme which is operated by the Sustainable Agriculture Foundation (Thailand). The foundation has a main support from the Thai Health Promotion Foundation (ThaiHealth), an autonomous government agency chaired by the Prime Minister with Minister of Public Health as a Vice-Chairman (ThaiHealth, no date). Moreover, the ThaiHealth gives significant support on both the City Farm and City Friends, City Farm projects through green markets, workshops, lectures, etc. In other word, the City Friends, City Farm group has been instrumental in the implementation of relevant agricultural policies.

3.4.2 Government sector

Government sector and public policy are an important variable in supporting urban agriculture in Bangkok. This study has discovered that other government actors were involved in formulating and implementing policies, especially at the local or street level. These agencies are Department of Agricultural Extension under the Ministry of Agriculture and Cooperatives, Locals Government Organization under the Ministry of Interior, Ministry of Finance and others. These actors utilized policy as a tool to develop agriculture in the state, and this study found three major relevant programs: (i) Land and Buildings Tax Act B.E. 2562, (ii) Farmers Registration and (iii) Certification of organic agriculture standards. As briefly mentioned, the Land and Buildings Tax Act B.E. 2562 will be discussed in this part of the study.

The Land and Buildings Tax Act B.E. 2562 began into force for land holders at the start of 2020. Non-agricultural and housing lands such as commerce, industry, hotels or wasteland are taxed higher compared to the lands being used for agricultural activities or production. This intends to reduce the wealth inequality gap as it requires people who have a lot of land and buildings and have never paid taxes or paid it on low rates for the past many years, to

pay higher upon implementation of the policy (Thairath, 2019). Moreover, this policy aims to support agricultural practices and to encourage utilization of vacant lands in the city area, which is deemed supportive of more sustainable development and aligned with a few of the SDGs such as Goal 11 (Sustainable Cities and Communities) that aims to sustaining human settlements. The policy also aims to empower the local government and make it more transparent while helping them to have additional revenues for more sustainable development in their area of responsibility.

Meanwhile, the government is releasing ancillary laws to the act due to the difficulties to put the policy into force amid Covid-19 circumstances combined with a downward trend of the economy. The Royal Decree on Land and Building Tax Reduction B.E. 2563 decree was released to mitigate taxation and inequality in providing information and enforcement. Even though the tax has been temporarily reduced and the timeframe has been extended, there were some implications on the practices found in the study. Still, further implementation and evaluation is needed to analyze the result of the policy.

Local governments and street-level bureaucrats are the leading factors for this top-down policy implementation as the act gives them the power to collect, keep, and use the taxes from the land or buildings in their area as a representative of the government. It also gives authorities a part of the power to interpret the law at its discretion, supporting Lipsky's (1969) given definition of Street-level Bureaucrats as "…are identified as people employed by government who: 1) are constantly called upon to interact with citizens in the regular course of their jobs; 2) have significant independence in job decision-making; and 3) potentially have extensive impact on the lives of their clients." (abstract).

In mid-December 2019, an opposition party has submitted an urgent motion for the House of Representatives to set up an Extraordinary Commission to study the impact with the intention to delay or cancel the collection of taxes according to the Land and Buildings Tax Act B.E. 2562. They are doubting that the outcome of policy implementation as it does not seem to reach the policy's objectives in both short and long-term (The Secretariat of The House of Representatives, 2019). Then in February 2020, during the censure debate, representative Sutin Klungsang presented three major problems of the act: (i) unclear provisions, (ii) unfair tax calculation principles, and (iii) impact on people and practitioners [local governments]. The spokesperson also showed that the act does not narrow the inequality gap nor increase the income of local governments, especially when it was reported that large private sector pays lower taxes than before the act, unlike the general public who were charged more taxes (Voice TV, 2020). Moreover, after reviewing the Royal Decree on Land and Building Tax Reduction B.E. 2563, the people who benefit from the 'up to 90 percent tax cuts' decree are large private individuals such as housing estate, industrial estate and energy business (e.g., power plant).

Another representative, Piyabutr Saengkanokkul also pointed out in January 2020 that only the minority of local government has increased income from land and building taxes, with the majority even had less. He also reiterated that if the policy continues, the local government will lose income (Bright TV, 2020). Even though, the policy was put into force in early 2020, with reduction and extension of paying taxes, the achievement of policy objectives is still being questioned as well as who are the real beneficiaries.

There were also questions about the availability of implementation and imposition of local government. Although this study has found result of the policy implementation through new urban farmers practicing agricultural activities for tax reduction, policy evaluation is still needed when especially when 'window dressing' practices reported in the media, which means people with high economic value land(s), especially in intra-urban, are growing plants without sustaining 'agricultural practice' just to evade the higher taxes they are supposed to pay (Thai PBS, 2020) Loss of government income and causing questions about urban agriculture encouragement.

Another government tool is registration as a farmer, a part of management policy of Department of Agriculture Extension (DOAE) under Ministry of Agriculture and Cooperatives. When the implementers are the local government, 'Office of Agriculture, Bangkok Area' and street level bureaucrats are in-charge. In 2019, the number of registered farmers is 46,698 households with 43.11 percent as a secondary or additional occupation (Department of Agricultural Extension, 2020). This policy is to have a database of situation of the production for nation agricultural development planning, to support farmers and processing governmental policies, and to assist farmers in the event of disasters (Department of Agricultural Extension, 2018). On the other hand, advantages for the urban farmers of being registered farmers are conveniences in exercising rights, requesting support, and receiving services from the government (Krabi Provincial Agriculture Office, 2020). For example, seeds distribution to farmers affected by floods projects, distribution of assets and subsidies, agricultural education, among others. To get verified as a famer, there is a requirement to have agriculture as a primary or supplementary occupation, meaning they must make income from the operation of such activities.

There are also restrictions on types and quantities of agricultural production. For the urban farmer from this study, growing vegetable is obliged and the farming size requirement is minimum of 400 square meters. This may be a limitation for some urban farmers to access registered farmers' welfare due to objective and outputs of their production and the limited land area that more on the form of intensification rather than extensification which requires more space. On the other hand, when the middle class has financial and other capitals to purchase tools and access knowledge, they are not convinced to enroll as a farmer to receive governmental-provided benefits and welfares.

> *"If registered as a farmer, there are a lot of support, free material for planting, and a lot of privileges. I feel it is quite good"*

> *"They ask for evidence that you have sold to someone, maybe ask to check your bank account that customers have transferred money to, and we actually have income from farming. They also take a look at the garden."*

In addition, being a registered farmer allows a person to be considered for organic agriculture certification. Nowadays, there are many certificates, domestic and international, but 'Organic Thailand' is the one provided by National Bureau of Agricultural Commodity and Food Standards (ACFS) as I have mentioned earlier. The objectives of the certificate are to increase the number of organic farmers, raise the proportion of organic products exportation and to support local organic agriculture (National Bureau of Agricultural Commodity and Food Standards, no date), as the stated goals of National Organic Farming Development Strategy B.E. 2560 – 2564. This certification is also used in conjunction with other certifications according to the Agricultural Standards Act B.E. 2551 (National Organic

Agriculture Development Board, 2017). The reason for the organic standards, including Organic Thailand, as mandatory standards are (a) consumer protection, (b) the recognition of foreign, and (c) obtaining financial support from the government.

However, the certification's existence and objectives are questionable, and this research has found that the certification is not as trusted by the citizen as expected. As Thailand Pesticide Alert Network (Thai-PAN) has reported that 25 percent of the total samples of organic fruits and vegetables that have been certified Organic Thailand and should not contain any chemicals, have found to exceed the standards because of some farmers and entrepreneurs claiming to use the Organic Thailand logo despite not being certified (Thailand Pesticide Alert Network, 2016).

There were also questions raised on the need of this certification to be accredited by foreign countries as each country has different import conditions for organic products. For instance in 2000, Japan has implemented a standard for organic products called 'organic JAS', which is required in case an exporter to sell organic products in Japan (Ministry of Agriculture, Forestry and Fisheries of Japan, no date). To export organic products to European Community (EC), there are also steps to follow and standards to meet, which vary depending on which country. In the case of Thailand, it needs to meet the EU standards when they are a non-equivalent country which has been said are difficult to meet since there are only 13 counties on the list (European Commission, no date). All in all, the universality of the Organic Thailand certification and the aim to be internationally accepted are still controversial.

Lastly, even if producers may receive state funding as surfaced during the interviews and research, the Bangkok middle-class does not pay attention to the state-provided supports because they believe they have the ability to purchase and perform the production. They also do not want the hassle of going through bureaucracy system. Below are statements given by growers:

> *"I feel like the do-it-yourself style is more predictable, anything from the state, we do not know when the aid will come and how. Therefore, we do not rely [on them]."*

> *"I don't need anyone's support. Some friends suggested me to write a project asking for funding. No, I don't like it…I will have to do as they said, then need to report…I have the potential to do it [farming]…I have power to buy equipment."*

There is one interviewee who has applied and certified for the Organic Thailand just for marketing purpose only.

> *"We have registered as a farmer with the province. Sometimes they provide microorganism for fermentation. We also have right to have organic agriculture certification, they certified it with no cost...it has consequences on making confidence of our customers [on the products]. That helps with our marketing a lot as well."*

The farmer also found some troubles getting certification due to the required number of vegetables to be examined and the state-defined production model, which inconsistent and does not support urban farming methods especially in cases where space is limited. The broad standards and using the same conditions all over the country even there are diverse

natures of cultivation, reflect top-down system in public administration should be improved for better development.

> *"The state now has [organic farming] standards for inspecting big land farms. But when they check on the rooftop [farming] in the city, sometimes the officer gets a little confused because of the standards and rules that they have set up for farms, real farms."*

> *"Suppose the if they can come up with standards that suitable, able to inspect agriculture in the city, I think it will be good. People who grow in the city and [planning] to do business, it will be easier"*

> *"if they design the conditions to be suitable for people doing small-scale [farming], it would be nice. Some officers stick to those rules, some are negotiable. Now, it depends on the inspector. We maybe are not able to follow all the requirements due to some limitations."*

> *"An obvious example, there is a buffer strips model for us to plant, but we cannot do it here, then we explained to them. They took it to consideration and agreed that it cannot be made here, also no need to have.".*

From this statement, the farm is placed on a rooftop and the growing does not fit the purpose of the buffer zone which is to interpose between fields when rooftop is individual itself. These examples have shown that urban agriculture is missing and is considered a gap of the policy.

Chapter 4 Conclusion

As stated, not so many studies have looked at middle-class in urban agriculture in the Global South which led me to this study of the middle-class farmers' social practices to partly enrich the field.

As introduced by Spaargaren, M. Lamers and D. Weenink (2016), "social practices are shared, routinized, ordinary ways of doings and sayings, enacted by knowledgeable and capable human agents who – while interacting with the material elements that co-constitute the practice - know what to do next in a non-discursive, practical manner" (p.5). This research studied middle-class urban agricultural activities which are not a common practice for majority of urban dwellers who have purchasing power. By using Shove, Pantzar and Watson's (2012) social practice conceptual framework, the study has discovered variety of meanings, materials and competences that are important elements to form the inhabitants' practices. It seems to me that there are inspirations and motivations for urban citizens to conduct urban agriculture in organic methods such as (i) health and food safety concern, (ii) food accessibility, (iii) goal to be self-sufficient, (iv) land and building tax reduction, (v) household expense reduction, (vi) supplementary income, and (vii)leisure and recreation, which can be categorized into three typologies: (a) subsistence economy, (b) market-oriented activities, and (c) leisure and creational activities.

These meanings were influenced by diverse factors, namely (i) trustworthiness of food quality in conventional market, (ii) distance to access a market, (iii) disaster and crisis under government management, (iv) public policies, (v) market demands on organic products and production, (vi) credibility of growers, (vii) distance between urban inhabitants and nature, and, (viii) their materials and competences. Generally, what all the farmers have in common are landownership, infrastructure accessibility, labours, financial stability, and social capitals. Nevertheless, there are a variety of divergences in each case that shape their practices, such as roof on a building, greenhouses, size and quality of land(s), scale of tools, amount of labours, offline and online platform and different social supports. Lastly, competences, all the farmers have gained knowledges and learned urban agricultural techniques from online channels when some have absorbed from workshops, family institution, and self-experiences. Moreover, selling skills, marketing strategy and health benefits are also important.

Connections between individuals, formal and informal civil societies and government sector are recognized to be influencing factors on the social practices. Minimum seven (7) out of twelve (12) are, to varying extents, involved in an informal civil society called 'Mure Kon Mueng Yak Prook Pak', a Facebook group where they learn, receive and share urban agricultural techniques and assets. Practices of making connections between farmers were also found, especially among the first joiners. This platform is observed to be an intermediary for social influence on behaviours and attitudes between actors of urban and organic agriculture. The Facebook group is discovered to have connection with City Farm programme, a foundation supported by the government, through group members with significant roles. Conversely, the programme is also influenced by Facebook group members when they sometimes sought cooperation from experienced farmers to conduct workshops and lectures. Overall, it seemed to me that these civil societies are a channel for implementing

government's urban agricultural policies as well as distributing assets and information about benefits, welfares and policies for example.

Certainly, the government has impact on urban inhabitants' decision on food production, choices and has roles in agriculture development, directly and indirectly. Besides their questionable credibility on crisis management and food safety standards, three implementations were found: (i) Land and Buildings Tax Act B.E. 2562, (ii) Farmers Registration, and (iii) Organic Thailand certification. However, from our discussion, none of them were likely to meet most of the objectives and the policies are quite clearly implementing with top-down approach though local bureaucrats who have the power to interpret rules and standards.

Undoubtedly, urban agriculture is still absent from the performing policies, Organic Thailand for instance. Agriculture and farming are still perceived as rural livelihood and a poor man's activity, and growing on the ground of large area, which is largely a global south agriculture discourse. This prevents a clear push and support for urban agriculture through state approach. Meanwhile, some farmer welfare conditions are heavy on certain economic productivity and aimed at feeding market demand, but not as a response to the implantation for household-consumption which may have impact to the economic in short-term, with possibility for bigger and more direct results in the longer term. For instance, small producers may have already reduced conventional food market reliance, then in the future, larger number of practitioners have possibility of ability to slowly change the market and grow alternative market. In the end, I would come with an inference that civil society has closer relation with urban agricultural practices of the middle class than the governmental sector.

In addition, after studying urban agriculture activities, the research has also found sustainable practices and outcomes from growing food in the city especially by organic agricultural method as I have introduced Brown et al's (1987, cited in Yunlong and Smit, 1994) three categories of agricultural sustainability earlier in the Chapter 2. As we can see, organic farming is a method that avoids the use of synthetical inputs, resulting in maintenance of nutrients in soil and the outputs. Furthermore, some researches are presenting sustainability of organic agriculture for instance, Eyhorn et al's (2019) has mentioned benefits of organic agriculture as it is "…improved soil quality, enhanced biodiversity, reduced pollution and increased farm incomes…". Likewise, the Sustainable Agriculture Farming Systems project (SFAS) has reported that "Both organic and low-input systems resulted in increases in the organic carbon content of the soil and larger pools of stored nutrients, each of which are critical for long-term fertility maintenance" (Clark, 1998, cited in Vasilikiotis, 2000). Interestingly but not surprisingly, organic farming system has been claimed to be beneficial for the environment in long-term approach.

Another discovered indirect effect on sustainability is 'Alternative Food Networks' (AFNs). The study has found a network of selling self-provisioned food among middle class farmers in Bangkok, or so-called organic food network, which is one of the options that has been claimed to be ecologically sustainable in comparison with the conventional food system. There are still arguments on sustainability of AFNs and if urban agriculture can really increase sustainability in a macro scale in long term. Even though the practices are sustainable, this study has also discovered that it was not intentional, which can be relevant to the concept of quiet sustainability presented by Smith and Jehlička (2013) "…widespread practices that result in beneficial environmental or social outcomes and that do not relate directly or

indirectly to market transactions but are not represented by their practitioners as relating directly to environmental or sustainability goal." (p.1) This shows an existing strength which is worth studying further for more sustainable urban development.

From the results of this research, I would suggest for the policymakers and relevant actors to evaluate the policies and to use the advantage of the existing urban farmers civil societies to adopt and develop policies by applying bottom-up approach to pursue more sustainable development in the city. Moreover, this study has introduced the vulnerabilities of the implemented policies, with one of them being the absent of urban agriculture. Furthermore, studying the practices and factors around it should help to understand the compositions and what are still needed. These matters should be taken into account for comprehensive urban agriculture development that should not only be for economic indorsement but also for household-consumption and leisure activities, which seem to be missing in policy-level. Thus, further study on sustainability and quiet sustainability is highly recommended.

Hopefully, this study contributes to the better understanding of the Bangkok middle-class farmers' role on urban agriculture as well as their social practices and involving sectors. Also, it is deemed beneficial for policymakers to analyze and evaluate policies for more sustainable development, as well as for scholars to study further on urban agriculture of the middle class or mixed classes in the global south context.

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Appendix A

Sample pictures of urban farming in Bangkok.