A STUDY OF OBSTRUCTIONS FOR THAI FARMERS FROM ORGANIC FARMING

BY

MISS BENJAWAN SIHSOBHON

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE PROGRAM IN MARKETING
INTERNATIONAL PROGRAM
FACULTY OF COMMERCE AND ACCOUNTANCY
THAMMASAT UNIVERSITY
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ABSTRACT

A study of obstructions for Thai farmers from organic farming is a contemporary topic in applied marketing. The aims of this study are 1) To identify underlying root causes that limit Thai farmers from organic farming and 2) To determine ways to tackle limitations from organic farming. Findings of this study provide audience a better understanding on the root causes that obstruct Thai farmers from organic farming, suggestion of ways to deal with those limitations as well as educating Thai farmers how organic farming works and how it can improve their quality of life.

Data and insights were collected using exploratory research method through secondary data research and qualitative research. Qualitative research was employed through face to face semi-structured in-depth interviews of 18 people which can be categorized into four groups as 1) Five existing organic farmers, 2) Five traditional farmers that are making the transition to organic, 3) Six traditional farmers who do not wish to become organic and 4) Two government agencies.

Variables of this study are 1) Farmers' characteristic such as age, educational, and income 2) Internal and external factors which affect farmers' decision making. The example of internal factors are their past experiences, their characteristics, and their motivations. The external factors are the climate, government support, and organic farming products market.

In conclusion, the study provides audience a better understanding on the root causes limit Thai farmers from organic farming, suggestion of ways to deal with those limitations as well as educating Thai farmers how organic farming works and how it can improve their quality of life.

Keywords: Organic farming, conventional farming, chemical-free farming, food security

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1
INTRODUCTION

1.1 Problem Statement and Research Purpose

A study of obstructions for Thai farmers from organic farming is a contemporary topic in applied marketing focusing on the area of Thai society. The objectives of this study are to identify underlying root causes that obstruct Thai farmers from organic farming as well as to determine ways to deal with those limitations.

Organic farming trend is rising as people are more health conscious. The market size of organic farm products was 2.33 Billion Baht in 2014 according to the research from the Earth Net Foundation while the total market of agricultural products in Thailand was 665.8 Billion Baht in the same year from the report of the Bank of Thailand. Hence, there is an opportunity for organic farm products to grow.

Moreover, organic farming was promoted as way to sustain the environment and the human communities given no agrochemical exposure. However, most of the Thai farmers are still doing the same practice; the conventional farming, which they have been done for decades even though they know that organic farming system is superior in many ways and can provide them more benefits. For these reasons, it is very interesting to study, to understand and to find the solutions to handle with root causes that obstruct Thai farmers from organic farming.

In a nutshell, the finding will answer what are the root causes limit Thai farmers from organic farming, how to deal with those limitations as well as educating them how organic farming works and how it can improve their quality of life.

1.2 Research Objective

1.2.1. Identify underlying root causes that limit Thai farmers from organic farming

1.2.2. Determine ways to tackle the obstructions from organic farming

While conventional farming uses pesticide, synthetic chemical fertilizer, genetically modified organisms, and other chemical substances to boost crop growth, organic farming relies on ecological process through crop rotation, using animal and

plant manures as fertilizers, some labor for hand weeding and biological pest control. The chemical substances used in conventional farming do not harm only the worker who sprays but also the environment whereas organic farming sustains the health of soils, ecosystem and the humanity.

By shifting to organic farming, farmers will be able to reduce production cost by using natural ingredients found in their farms instead of chemical substances. Moreover, organic farming system gives farmers and consumers a better health. These create a better standard of living for everyone. Even though organic farming has many advantages to farmers, social and environment, but, still, Thai farmers are conventional farmers who stick to conventional farming.

CHAPTER 2
REVIEW OF LITERATURE

A literature review as part of secondary research is to capture the overview of organic and conventional farming. The literature review was mainly gathered from credible sources; online published sources and article from various contexts including Earth Net Foundation and Asian Development Bank (ADB) for trends and future growth of organic farming products. The essential information and insights were summarized as follows:

The rising of organic farming

In the early 1980s the Alternative Agriculture Network (AAN) was established by a group of farmers and local non-government organizations (NGOs) to promote the sustainable agriculture in Thailand (Green Net, 2016). They aimed to promote a sustainable agriculture to create a better quality of living and to sustain the environment. In 1990s, a local organic certification was founded for auditing and certification services resulted in many farmers participated in this campaign.

Apart from that, a group of businessmen who see an opportunity for Thai organic rice in abroad market, asking for collaboration from government agencies and researchers in supporting farmers shifting from modern farming to organic farming in order to provide supply for the need. These businessmen use the international organic certification bodies which are internationally well known as a tool for export. The demand for Thai organic rice is growing as it is now very popular especially in the European Unions and the United States.

Consumers worldwide, especially in developed countries considered organic farm products to be superior overall compared to conventionally grown produce (Byrne et al., 1991). In Thailand, organic farm goods are gaining more acceptance among urban consumers. They believe organic products are healthier and be more environmental friendly (Roitner-Schobesberger et al., 2008).

Benefits of organic farming

As stated by Rundgren & Parrott (2006) that organic farming practice involves both basic and advanced knowledge in science, together with traditional know-how that emphasizes the promotion of a better quality of life. In Thailand, farmers had been doing traditional practices for years before the green revolution.

Traditional farming knowledge is part of organic farming practice, the traditional know-how was developed based on environmentally sustainable ways of farming together with farmers' local farming knowledge handed down through generations. Organic agriculture was promoted as a way to sustain the environment due to its systematic approach throughout the food production chain (Borron, 2006). In addition, organic farming systems also improve agricultural efficiency (Suksri et al, 2008).

The organic farming concept aimed to help farmers who have limited farm size and farmers who lacked of access to irrigation facilities by using crop rotation to lessen dependence on single crops. This will ensure farmers of more steady income and crop diversification also help reduce insects and pests. Furthermore, organic farming uses all natural ingredients; animal and plant manures were used as fertilizers to give nutrients back to the soil. Once the soil is cured, water resources will be cleansed and safe for consumption. This reflects to the whole food cycle.

It is clearly showed that organic farming practice improving soil fertility as well as ecosystem but most of all is the improvement for well-being of farmers and consumers within the food chain (Jitsanguan, 2001).

Perceptions towards organic farming

However, there are some constraints, during the transition period as farmers face difficulties from lower production rate, lower price premium, fertilizer shortage and weeds issue. Other constraints to shift from modern farming to chemical-free farming are organic agriculture demands caring which means farmers need to hire more labor as well as bounded market, complicated rules and regulations for organic certification which takes many years to complete (Setboonsarng & Lavado, 2015).

It is the fact that organic farming practice has higher cost but it derives greater benefits in the end according to the higher production rate. In addition to Chouichom

& Yamao (2010), conventional farmers who has no interest in organic practice also believes that organic farming requires more organic fertilizers and tedious procedures for soil treatment.

They use agrochemical as part of their practices and they resist to stop using chemicals because they are afraid the production rate will be in small size and the products will not be in a good shape. Part of the reasons why farmers tend to receive lower yields after transition to organic is due to the amount of chemicals inputs they used before they converted to organic farming as it affected soil fertility (Halberg et al., 2006).

An example of organic rice farmers from Surin province in Northeastern Thailand shows farmers are not happy to use agrochemical but their belief was that if they stop using chemical, they will get less production. “In order to gain more yield, we had to take some loans from the bank to invest in chemical fertilizers, which opened the way to indebtedness.” (Manpati, 2016) As time passed, conventional farmers could not compete with fluctuation in rice price, they entered debt cycle. Moreover, exposure to chemical started to cause them health problems.

Factors drive farmers to organic farming

Although it is widely acknowledged that the Thai agriculture reduced its role in Thai economic since 1970s because of low productivity. Farm lands were turned into industrial plants. However, in rural areas, many people who lives there are still doing farm for living. They were guided to use chemical substances to boost up the productivity.

Chouichom (2001) revealed that in order to buy agrochemical substances, many of conventional farmers use loans. When they failed to harvest, they have no money to repay loans. When they need more money to repay loans, they often use more chemical fertilizers and the wheel keeps repeat the loop, making farmers vulnerable to the market realities. Some of them work off-farm to gain more money to survive on day to day basis.

Results from many studies showed there are five factors drive farmers to organic agriculture. First, the lower production cost comparing with modern farming together with organic goods can be sold at higher price are the major factors in financial aspect.

Second, production, as farmers agreed on contract farming, the contractor will provide support and introduce organic farming know-how.

Moreover, nutrients in soils can be regenerated using organic manures. Third, using natural fertilizers is good for farmers' health since it has no use of agrochemicals and this will benefit the entire food chain. Fourth, society, it is true that the success of neighboring farmers, the support from organic farming community and government support make it easier for farmers to switch to organic farming. Last, environment, not only decreasing soil pollution but organic practice can treat water pollution and air pollution as well.

In most developed countries in North America and Europe, environmental concerns drove farmers to organic farming (Svensson, 1991). The effects from agrochemical to environmental can be seen in well-publicised media especially the information of positive effects from organic farming and the harmful side from using agrochemical. The shift from modern farming to organic farming in developed countries is often leaded by ethical concerns or peer pressure. However, farmers in developing countries, economic considerations are the strongest factors when making decision (Isin et al., 2007).

Any efforts toward change must be based on economic returns otherwise be prepare for a greater resistance. It is not only when expecting farmers to shift from modern farming to organic farming but also when expecting farmers to adopt new technologies. The success of any adoptions requires a vigorous effort from all stakeholders.

Marketing aspects

According to the retail price, organic farm products has higher retail price comparing with conventional farm goods (Pimentel et al., 2005). It is because organic farmers and conventional farmers access different marketing channels. Organic farm products can be sold directly to the retailers whereas conventional farm goods often be sold in wholesale markets through middleman.

Magnusson et al. (2003) explained that organic farm products in Thailand were marketed to target only upper classes and foreigners. Currently the organic farm goods are sold in health-conscious retailers and in organic goods markets. By improving the

targeting consumers to middle and lower social classes, can broaden the local market base.

Supports from the agencies

In Chiang Mai province of Northern Thailand, non-government agencies (NGOs) played big role in promoting organic farming to small-scale farmers (Pattanapant & Shivakoti, 2009). Training sessions were conducted to give farmers knowledge of organic farming techniques, organic certification along with creating markets for organic products. Organic certification costs were subsidized by these NGOs.

During the transition period, supports from NGOs tends to be the most important partners for farmers in developing countries (Setboonsarng, Leung and Cai, 2006). Certified organic product are sold to health-conscious stores, supermarkets and export through supports from cooperatives and NGOs whereas non-certified organic products are sold at local market at the higher price compare to conventional grown product but not as high as certified organic products.

Although organic farming is labor-intensive that they have to work on-farm fulltime, unlike conventional farmers who can take off-farm jobs after the harvesting season. Even, so, organic farmers are happy to work fulltime on-farm as they can spend more time with their families (Pattanapant & Shivakoti, 2009).

In conclusion, with support from the NGOs, government agencies and communities, farmers shifted to organic farming. Land changed from dry and hard to soft and nourished with nutrients. Farmers become healthier and they are no longer in debt due to lower production cost.

CHAPTER 3
RESEARCH METHODOLOGY

Main sources of data for analysis in this research came from secondary data through literature review and primary data using qualitative research through in-depth interview. The steps are shown as follows:

3.1 Secondary Research

Figure 3.1 Research Methodology

Literature review was done as secondary research to capture the overview of organic and conventional farming. Moreover, the study helped to understand motivations for farmers making transition to organic farming as well as to have a better understanding of the topic under study. The data was obtained from Thai and International credible published sources and websites. Secondary research sources are as follows:

1) Published online report related to organic and conventional farming
2) Statistic data related to Thai agricultural industry
3) Articles and studies under the area of study

3.2 Primary Research

3.2.1 In-depth Interview

The in-depth interview was conducted using snowball sampling method. The interview took approximately 40 to 60 minutes per farmer. Each respondent provided insights why they shifted to organic and what made them hesitated or decided not to do so. The respondents were divided into four groups which were 1) existing organic farmers, 2) traditional farmers that are making the transition to organic, 3) traditional farmers who do not wish to become organic farmer and 4) government agencies.

The in-depth interview session for six conventional farmers who do not wish to

do organic farming was conducted on October 8 – 16, 2016 in Saraburi province and Chiang Rai province. The insights from this session were used to draft the questions for interviewing existing organic farmers and traditional farmers that are making the transition to organic. The in-depth interview for these two groups were held during December 19, 2016 to January 6, 2017.

The key questions for an in-depth interview focused on the attitudes of Thai farmers towards organic farming, the understanding of organic farming process and the effects from using agrochemical in farm.

Furthermore, all respondents were required to provide socio-demographic information which were age, educational, number of family member and income. The information was used to characterize respondents.

Two government agencies were interviewed on March 5, 2017. They were staff from the Bank for Agriculture and Agricultural Cooperatives (BAAC) that provides financial services for farmers and staff from the Department of Agricultural Extension (DOAE) that educate farmers about organic farming practice.

Government agencies were interviewed regardless of their demographic informations. The objectives from interview government agencies were to gain insights about government supports and opinions in promoting organic culture among Thai farmers.

3.3 Sampling Plan

The respondents were 18 farmers aging from 28 to 74, living in Saraburi, Chiangrai, Chiangmai, Phetchabun and Bangkok. Conventional farmers were divided into two groups which are conventional farmers in transition to organic practice and conventional farmers who do not wish to do organic farming.

3.4 Data Collection

Snowball sampling and personal connection were used to recruit the target respondents due to time constraint. The in-depth interviews were face-to-face interview which took approximately 40 to 60 minutes each respondent. The in-depth interviews were standardized as much as possible to ensure that all key topics are covered. Each interview was recorded and later transcribed.

In October 2016, six farmers participated in the in-depth interview sessions. The first six people who were interviewed were categorized as conventional farmers who do not wish to do organic farming. Another 10 farmers were interviewed during December 19, 2016 to January 6, 2017. The second group were divided into five organic farmers and five conventional farmers in transition to organic farming. Two government agencies were interviewed on March 5, 2017.

3.5 Data Analysis

This study fully obtained the data through the in-depth interview. Therefore, the unstructured and subjective data which resulted from in-depth interview were transcribed. The responses were categorized into groups which are organic farmer's viewpoint, transition farmer's viewpoint and conventional farmers' viewpoint. Key variables in this study were defined by using the theoretical framework to see factors that influence Thai conventional farmers' decision making process to shift from conventional farming to organic farming.

Moreover, findings were grouped into six categories under the Macroenvironmental Frameworks (Figure 3.2) which are; competition, socio-cultural, natural forces, economic, and political/legal (technology aspect was not mentioned during the in-depth interview); to analyze the organic farming operating environment. Later, use SWOT Analysis (Figure 3.3) to help identify threats and weaknesses in order to make recommendation of ways to tackle obstructions for Thai farmers from organic farming.

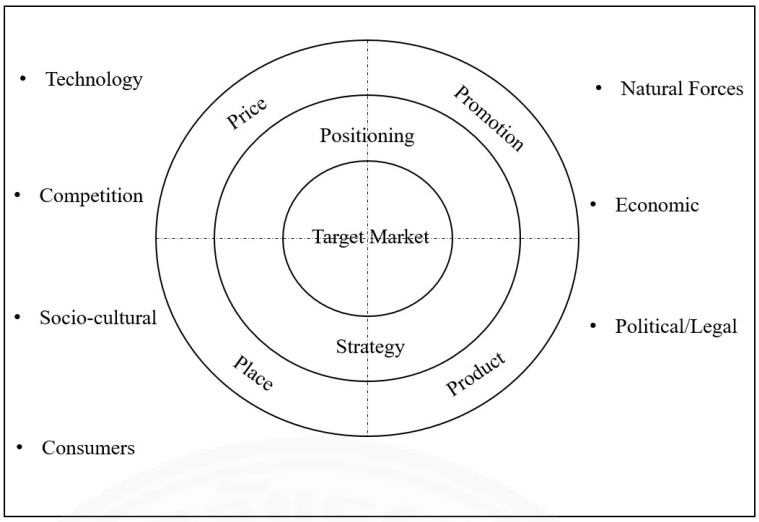

Figure 3.2 Macroenvironmental Frameworks

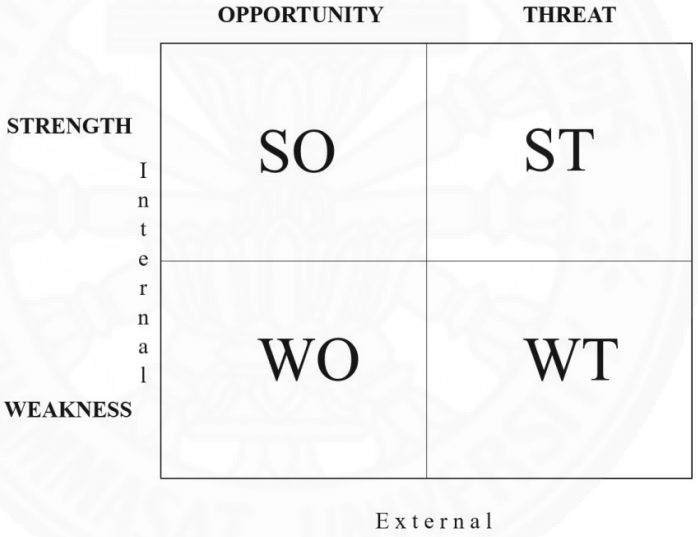

Figure 3.3 SWOT Analysis Matrix

3.6 Theoretical Framework

3.6.1 Independent Variables:

1) Farmers' characteristic such as gender, age, educational level, number of family household, annual income, and land size

2) Perception towards organic farming (e.g. What is organic farming?, What are the benefits and disadvantages from organic farming?, What are the benefits and disadvantages from conventional farming?, From your perspective, between organic

farm products and traditional farm products, which one has the highest cost and why?, Have you ever thought of doing organic farming? If so, why didn't you shift to organic farming. If not, why don't you interested in organic farming.)

3) Past experiences and motivations (e.g. What are the problems you are facing in farm?, How do you deal with those problems?, What is your current production rate?, What are the influences drove you to do organic farming?, What made you use agrochemicals?)

3.6.2 Dependent Variable is the likelihood to engage in organic farming practices.

3.7 Limitations of the Study

Regarding time constraint, the limitations of this study are as follows:

1) Sampling method: recruiting respondents through snowball sampling and personal connection
2) Small sample size (n = 18)
3) Findings cannot represent the entire populations
4) Farmers were unwilling to admit the use of pesticide in their farms
5) Limited participation from government agencies.

In conclusion, the small sample size recruited through snowball sampling can cause inappropriate use of the findings from this study as a case study. Further quantitative research is required in order to gain the findings that represent the populations.

CHAPTER 4
RESULTS AND DISCUSSION

4.1 Secondary Research Key Findings

Organic Farming Industry Overview

In 2016, Green Net Foundation (2016) reported the market of Thai organic farm products is growing from year 2015 at 21 percent in accordance with the growing of world organic farm product market. The report also mentioned that in year 2018 there will be more Thai farmers convert to organic farming due to price fluctuation in non-organic rice.

Farmer perceptions towards organic farming

Organic farming is based on utilizing farm-based resources and decrease the use of agrochemical (Ramesh et al, 2015). According to Svensson (1991), farmers in developed countries adopted organic farming system due to ethical concern and peer pressure. In contrast, farmers in developing countries economic considerations play a big role when making decision (Isin et al, 2007). This results in resistance to conversion from conventional farming to sustainable farming.

Non-organic farmers concerned about the productivity rate that will decrease in the first few years after the transition. The lower productivity rate during transition period keeps conventional farmers away from shifting to organic farming. However, Halberg et al. (2006) explained that production rate during transition period also depends on the amount of chemical substances used in farm before farmers shifted to organic farming. Meaning that the larger amount of agrochemical farmers used in farm, the lessen productivity farmers can expect when converted to organic farming.

Advantages from organic farming system

The concept of organic farming is aimed to help farmers who have limited farm size and farmers who lacked of access to irrigation facilities by using crop rotation to lessen dependence on single crops and can reduce insects and pests. The chemical free

farming was promoted as a sustainable farming as it uses all natural ingredients; animal and plant manures were used as fertilizers to give nutrients back to the soil. Once the soil is cured, water resources will be cleansed and safe for consumption (Pimentel et al, 2005). However, as mentioned that non-organic farmers often care about the income. They do not take accountability on environmental problems.

Another advantage from doing organic farming is the lower production cost as farmers continue the organic farming for years. Organic farm system utilized farm-based resources while ordinary rice product produced using large amount of external inputs. By employing their family laborers to do farm works, organic farmers could decrease operation costs (Chouichom & Yamao, 2010). In addition, organic farm goods get price premium, and the selling price is even higher when farmers have organic certificate. One way to gain high price is to have organic farmers grouped together and sell product directly to the retail stores avoiding the middleman.

Collaborations from stakeholders

Undeniable that organic farmers cooperative and NGOs play big role in promoting organic farming to Thai farmers. These two players organized the knowledge sharing workshop for those who interest in doing organic farming as well as for organic farmers to share their experiences and know-how to each other.

Even though farmers have traditional farming knowledge passed from generation to generations, when they first converted to organic farming after using chemical substances for a long period of time, they also need update organic practice in the modern world. The forum is the shortcut to learn from others' experiences and to prepare for upcoming change.

4.2 In-depth Interview Result

There were 18 in-depth interview respondents in total (Male: n = 13, Female: n = 5). Respondents were divided into four different groups; 1) six respondents who are conventional farmers and do not wish to do organic farming, 2) five farmers who are in transition to organic farming, 3) five organic farmers and 4) two government agencies.

Table 4.1 Demographic characteristic of respondents

	Conventional farmers who do not wish to do organic farming	Farmers in transition to organic farming	Organic farmers	Government agencies
Number of respondents	n = 6	n = 5	n = 5	n = 2
Gender	Male: n = 4, Female; n = 2	Male: n = 3, Female; n = 2	Male: n = 4, Female; n = 1	Male: n = 2, Female; n = 0
Age (Years)	37 – 62	35 – 58	28 – 74	n/a
Educational Level	None – Grade 4	None – Bachelor's degree	Grade 4 – Master's degree	n/a
Number of family household (persons)	3 – 4	4 – 7	3 – 6	n/a
Annual income (THB)	350,000 – 380,000	360,000 – 400,000	420,000 – 510,000	n/a
Land size (rai)	5 – 80	5 – 65	3 – 75	n/a

The highest educational level for conventional farmers who do not wish to do organic was Grade 4 while the highest educational level for conventional farmers in transition period to organic farming was Bachelor's degree. Organic farmer interviewees had higher educational level as three of them hold the Master's degree.

On average, the respondents have at least three rai of land. The biggest land size is 80 rai owned by non-organic farmers. All respondents grow rice as main crop. Most of the respondents have more than three family members. (Table 4.1)

Regarding "organic farming", all respondents mentioned "chemical free" (n=18) as the most essential elements for organic farming while "agrochemicals" was mentioned by all respondents (n=18) when they think of "conventional farming".

Moreover, during the discussion of advantages from doing organic farming, many of the respondents also mentioned "all natural" (n=15) as advantage of the organic farming. Even organic farmers also agreed that organic farming needs "Labor intensive" and it is the disadvantage from doing this sustainable farming (n=10).

On the other hand, the benefit from doing conventional farming was "high yield" (n=11) and "prevent diseases" (n=10). However, not only organic farmers but conventional farmers also agreed that the effect from using agrochemical in farm caused them "health problems" (n=18).

In transition period from conventional farming to organic farming, the

respondents mentioned a lot about “low yield” (n=16) and “high investment” (n=13) as difficulties.

Table 4.2 Frequently used terms

Organic farming	n	Conventional Farming	n	Transmission from conventional farming to organic farming	n
Chemical Free	18	Agrochemical	18	Low Yield	16
All Natural	15	Health Problem	18	High Investment	13
Fertilizers	14	Insecticide	16	Weeds	13
Herbicides	13	Loan	15	Insects	12
Animal Manures	13	Fertilizers	14	Diseases	12
Disease	12	Pesticide	14	Drought	11
Price Premium	11	Weather	14	Animal Manures	10
Labor Intensive	10	Debt	13	Knowledge	10
Sustainable	10	Insurance Rate	12	Lack of Labor	8
Crop Rotation	9	High Yield	11	Contract Farming	7
Take Time	9	Prevent Diseases	10	Better Health	6
Hydroponic	9	Environment Effect	10	Fertilizer Shortage	5
Weeds	9	Drought	10	Production Forecast	4
Drought	9	Diseases	9	Weather	4
Perception	9	Insects	9	Price Premium	4
Peer Pressure	8	Rain	8		
High Investment	8	Nutrients	7		
Weed Problem	8	Droughtness	7		
Weather	8	Second Job	7		
Financial Freedom	8	Middle Man	7		
High Profit	7	Weeds	6		
Happiness	7	Water	5		
High Profit	7	Soil Erosion	3		
Good Health	7				
Environmental Friendly	7				
Food Chain	6				
Complicated Rules and Regulations	6				
Certification	6				
Soil Erosion	6				
Food Security	6				
Middle Man	5				
Community Support	5				
Sufficiency Economy	3				
Family	3				

4.3 In-Depth Interview Key Finding

The key finding of a study of obstructions for Thai farmers from organic farming through the in-depth interview was divided into three sections which were summarized as follows:

4.3.1 General Knowledge Key Finding

Surprisingly, many of the conventional farmer respondents misunderstood that

organic farming is as same as hydroponic farming practice. They also thought that organic farmers can use chemical fertilizers. Meaning that if they stopped using pesticides and insecticides, they could be considered as organic farmer too. (Table 4.3)

However, all respondents agreed that organic farming benefits the health of both farmers and consumers, organic farmers saw financial benefits from high selling price and financial freedom (no debt) on top of that. There were so many things that non-organic farmers answered when they were asked about disadvantages of organic farming. Interestingly, many of them mentioned 'having no market to sell organic goods' whereas no market was not a problem for sustainable farmers.

Other disadvantages seen by conventional farmers were lower yields and high production cost. Moreover, in comparison to conventionally grown product, organic farm goods have smaller size. It was widely agreed that organic farming system required more caring and attention. Farmers needed to hire more labors. As they were new to organic farming, transition farmers mentioned they were unable to estimate the production rate as it swings every year.

During the discussion about the benefits of conventional farming, all respondents were agreed that agrochemical used in farm helped boost up the productivity and it immediately killed insects and weeds as well as immediately cured diseases. Conventional farmers said they could do off farm jobs to gain more income.

The first two things came into mind of organic farming when talked about disadvantages from doing conventional farming were the negative effects to health followed by effects to the environment. The high production cost was also mentioned as it leads to debt. Conventional farmers seem to be biased as they mentioned only health problems.

Table 4.3 General Knowledge Key Finding

Discussion Point	Organic farmers' viewpoint	Transition farmers' viewpoint	Conventional farmers' viewpoint
1. Organic farming knowledge	- No use of agrochemical even chemical fertilizers in farm for at least a year to get certificate used only in Thailand but 3 years to get organic certificate for export to European countries	- Chemical free for a certain period of time to receive organic certificate	- No pesticide or insecticide but can use hormones or chemical fertilizers - Same as hydroponic
2. Benefits of organic farming	- Good health - Environmental Friendly - Financial freedom	- Good health - High selling price	- Good health
3. Disadvantages of organic farming	- Requires a lot of attention	- Labor intensive - Takes longer time to deal with weeds, insects and disease - Unable to estimate production rate	- Lower yields - High production cost - Products have small size compare to conventionally grown - No market to sell - Unable to do off farm work - Labor intensive - Requires a lot of attention - Difficult to deal with insects, pests and disease
4. Benefits of conventional farming	- Boost up productivity - Immediately deal with weeds, insects and disease issues	- Need no storage to ferment fertilizers - Easily to prepare soils - Able to protect crops from diseases - Able to estimate production rate	- High production rate - Able to gain more income through off farm jobs - Spend less time on farm
5. Disadvantages of conventional farming	- Health problems - Harm environment - High production cost	- Health problems - Debt	- Health problems
6. Organic production issues - Production cost - Production rate - Selling price	 - Low - No difference (sometimes can be higher than conventionally grown) - High (Large gap)	 - Low production cost - Low (in transition period – First 3 to 4 years) - High	 - High - Much lower - High (Small gap)
7. Selling point(s)	- Sell directly to retails and supermarkets using connections from cooperative	- Sell in wholesale market (defected products) - Sell to cooperative	- Sell to wholesale market through middleman

Regarding organic farming production issues, modern farmers perceived that the production cost was high whereas the cost derived greater benefits overtime agreed by organic farmers and farmers in transition period. Transition farmers understood that they would get low yield for the first few years after the transition but non-organic farmers believed that it was impossible for organically grown produce to get the same production rate as them.

Government agency educates farmers how to produce organic fertilizers using on farm resources but transition farmers and conventional farmers felt that the officers who was the instructor often promote the use of chemical fertilizers when farmers asked about decreasing in yields if shifted to organic farming.

Currently, organic farmers sold their products directly to retail stores and supermarkets using connection from cooperative. Farmers in transition sold farm goods to cooperative but defected farm goods would be sole to wholesale market. Conventional farmers sold goods to wholesale markets through middleman.

4.3.2 Key findings from organic farmers and transition farmers

Transition farmers shifted to organic farming as they witnessed success of relatives, friends or neighboring farms (Table 4.4). They said they wanted to have a better living like those people who success in applying organic practice in farm. Respondents who were organic farmers have been doing organic practice for more than 5 years, the reason they started or shifted was the health problem caused by agrochemicals. Some of their family members had severe health problems. One of the respondent used to have severe lung problem but after he shifted to do organic farming, his lung started to get better.

Financial issue was another factor drove them into organic farming. Many of the respondents used to have debt when they do modern farming but now that they are organic farmers, they are no longer in debt. They said it was normal practice for non-organic farmers to use large amount of chemical substances hoping that they would get high production rate as well as larger product size. The more money spent on agrochemical is the more likely to be in debt when farmers fail to harvest.

During the transition period farmers did not have enough ingredients to use for fermenting fertilizers. They faced with lower production rate. They were lacked of

know-how but with supports from relatives, friends, neighboring farmers, organic farmers cooperative and NGOs helped educate them through the knowledge sharing session and meeting forums that connected organic farmers together. Respondents said the support from government was not critical for them.

Table 4.4 Key finding from organic farmers and transition farmers

Discussion Point	Organic farmers' viewpoint	Transition farmers' viewpoint
1. Motivations to do organic farming	- Health problem - Financial problem	- Success of relatives, friends or neighbors
2. Problems face during the transition period	- Lower yields - Lack of know-how - Do not know where to sell	- Lower yields - Lacked of know-how - Having not enough ingredients to ferment fertilizers
3. Where did you learned about organic farming?	- Organic farming cooperative - NGOs	- Relatives - Friends - Neighbors - Organic farming cooperative - NGOs
4. Have you ever thought of using agrochemical?	- Never because have high production rate already - Agrochemical affects health and environment	- Sometimes due to low production rate but decided not to use - Never thought about it
5. Are you a member of cooperative?	- Yes: n = 5	- Yes: n = 4; No: n = 1
6. How to deal with conventional farmers' bad perception towards organic farming?	- Show them the truth - Let them visit the farm - Educate them	- Let them see the success of organic farmers - Invite them to join knowledge sharing session
7. Do you have organic certificates?	- Yes	- In process

Transition farmers did think about using chemical substances as they had lower production rate when they first shifted but they decided not to use as they would have to start the whole organic process over again. During the interview, organic farmers seemed to be satisfied with their current production rate and they realized the health effects so they never thought of using chemical things since they started to do everything organically.

The organic farmer and transition farmer respondents joined local organic farming cooperative. They said the co-op was very important for them during the transition process. Organic farmer respondents currently hold organic certificates while transition farmers are in process of acquiring one.

Both organic farmers and transition farmers said ways to deal with bad perceptions towards organic farming among conventional farmers were to show them the success and achievement of organic farmers.

4.3.3 Key finding from conventional farmers

There were many reasons why they use agrochemical in farm. Part of it was to secure the production rate. Pesticides help dealing with weeds problems while insecticides kill insects. Using agrochemical made the plants grown a bigger size and farmers can sell at higher price (Table 4.5).

All conventional farmer respondents know organic farmers. They see failures from friends and it strengthen conventional farmers' thoughts that they could not survive if they adopt organic farming practice. However, many respondents witnessed the successful organic farmers having no debt and be more healthier. As they witnessed the sufferings during the transition period, the tough time made them hesitated to adopt organic farm practice.

Table 4.5 Key finding from conventional farmers

Discussion Point	Conventional farmers' viewpoint
1. Motivations to use chemical substances in farm	- To secure production rate - To deal with pests, insects and diseases issues - To make a plant looks beautiful
2. Do you know any organic farmers? How are they?	- Yes: n = 6 - See failure as friends switched back to conventional farming - Those who success were suffered tough time during the transition period - They have no debt. - They look healthy.
3. Do you know organic products gets price premium? 3.1 Aren't you interesting in doing organic farming? Why or why not?	- Yes: n = 3; No: n = 3 - No: n = 6 - No money to hire full time labor as organic farming is labor intensive - The price gap is very small. It is not worth. - Not enough know-how - Too old to start - No market to sell - No because I cannot afford the rising cost
4. Have you ever heard of any organic cooperative or NGOs that support organic farming? If yes, have you ever joined the event conducted by those groups? How was it?	- I did and it was a waste of time - Yes, it was very interesting but I do not think I can do organic farm - Yes, but it is not practical in reality - No, I never thought of attending
5. Many studies showed that organic farming has higher cost but it derives greater benefits in the end according to the higher production rate. Do you agree or disagree? Why or why not?	- It takes time. - I cannot wait that long - It might worth the wait but I prefer to use chemical fertilizers
6. What are the limitations for you to adopt organic farming?	- No resources; know-how, labors, investment - Afraid of low production rate - No where to sell - Cannot afford high production cost

Many respondents who participated in the organic farmers' knowledge sharing sessions understood that the aim of doing organic farming to create sustainability among organic farmers. However, they thought it was too good to be true. They thought it was too risky to adopt organic farming and there is no guarantee if they failed to do so.

Half of the respondents knew that organic produce get price premium but still they were not interested in adopting organic farm practice. The reasons were quite similar when asked about limitations to adopt organic farming. They thought a price gap between conventionally grown produce and organic farm goods was too small that it would not cover the rising production cost from using labor intensive.

Moreover, they did not have know-how to do organic farming and they were too old to start doing. Respondents also informed that they did not know where to sell the products.

4.3.4 Key finding from government agencies

Table 4.6 Key finding from government agencies

Discussion Point	BAAC' viewpoint	DOAE's viewpoint
1. What are the objectives of your organization?	- To provide financial support by offering loans with low interest rate as well as to educate farmers about financial planning	- To educate and provide agriculture infrastructure for farmers
2. What are the support you provide for farmers?	- Provide low interest loan with long pay back period - Financial Planning - Financial Consultant	- Promote organic farming practice by doing farm visit - Educate farmers to use agrochemicals the right way - Provide technical support (e.g. find ways to cure diseases or insects, create organic fertilizers and vaccine)
3. Between organic farmers and non-organic farmers, who are your targeted customers?	- Conventional farmers (They often apply for loan when the season start) - Organic farmers tend to use loan when they expand farm or grow another type of plant	- Both of them
4. From your view, what are the limitations for farmers to adopt organic faming.	- Financial concerns: no money to pay debt is they fail to harvest or if they get lower production rate than they used to get - Many farmers said they were too old to start	- Bad perceptions toward organic farming - Lack of know-how - Financial concern

There was one respondent from the Bank for Agriculture and Agricultural Cooperatives (BAAC) and one from the Department of Agricultural Extension (DOAE) to share viewpoints from government sector (Table 4.6).

BAAC was established to provide financial support to farmers by offering low interest rate loan with long pay-back period. The bank also provides suggestions and educate farmers about financial planning to help farmers creates financial security. On the other side, the Department of Agricultural Extension (DOAE) was founded to educate and provide agriculture infrastructure for farmers.

Conventional farmers are targeted customers for BAAC as they need loans to buy agrochemical whereas organic farmers tend to use loans only when they expand the farm. DOAE visited farms to educate farmers the right amount of agrochemical to be used as well as to promote organic practice so both modern farmers and organic farmers were targeted. However, there are some limitations for DOAE in promoting organic farming practice. Budget allocated to work in farm level were not enough and farmers were not interesting in adopting organic farm practice as they have bad perception about organic farming.

During the discussion about obstructions for Thai farmers in organic farming, DOAE representative raised the negative perception as the most important factor followed by financial concerns and lack of know-how.

4.4 Macroenvironmental Analysis

In order to see a clearer picture, key findings from in-depth interview were used in macroenvironmental analysis as follows:

Political/Legal

Government supports are essential for Thai farmers in many ways. The Bank for Agriculture and Agricultural Cooperatives (BAAC) was established in 1966 as a government-owned bank to provide financial services at low interest rate. BAAC aimed to prevent farmers from using shark loans. The bank also provides suggestions and educate farmers about financial planning to help farmers creates financial security.

The Department of Agricultural Extension (DOAE) was founded to educate and provide agriculture infrastructure for farmers. DOAE plays a big role in promoting and educating organic farming concept to farmers. In some areas, DOAE partners with local NGOs in providing tools as well as to educate farmers about technology, organic farming and etc.

Economic

Organically grown produce market is growing due to the rising of healthy trend in Thailand and worldwide. This created high demand for organic farm products, people are willing to pay premium price for organic goods. Organic farmers tend to have healthy financial status comparing to conventional farmers who often be in debt from take up loans to continue farm business. Since BAAC was established, farmers had access to low interest loans whereas before that they used shark loans which have high interest rate and often could not be repaid when farmers cannot harvest.

Socio-cultural

According to respondents' demographic information, it seems that the higher educational level farmers have is the higher potential to shift to organic farming.

Organic farmer respondents were highly educated at Masters' degree level. They knew effects from using chemical substances in farming and they are interested to do sustainable farming.

On the other hand, conventional farmers had the lowest educational level and they had negative perceptions towards the use of organic substances. They believed that if they stopped using chemical substances, they would get lower production rate and organic substances were not as effective as the chemicals. Moreover, new generation people moved to work in the city. They did not want to be a farmer making it difficult to find workers in farm.

Competition

Local conventionally grown produce is the main competitor for organic farm products. Both crops look the same but organic farm products would have organic certificate at the packaging and organic crops also had higher selling price. The imported organic farm products is another competitor as Thai people perceived imported products were better than local produce.

Natural Forces

Organic farming business relies heavily on weather and natural cycle. Organic farming system required more attentions. When flooding, drought or natural disaster occurred, organic farmers faced loss as they could not shorten the growing time. Unlike conventional farming that chemical substances help to boost plant to grow faster.

Consumers

Organic farm products' consumers are people who aware of their health. They live in the city and are willing to pay more in order to consume toxic free product. However, there are limited numbers of channels that connect organic farmers to the consumers directly.

4.4.1 Marketing Mix Analysis

Non-organic farmers who do not wish to do organic farming concerned about production rate and market; where to sell the organic farm products and income. The middle man they currently sold farm products did not value "organic" making a small

difference in the price of organic and non-organic product at farm-gate. Farmers knew there was a market for organic farm products but they did not have access. Moreover, their bad perceptions are keeping them away from adopting organic farming.

By using marketing mix to analyze the organic farming can recommend ways to help farmers sell organic farm goods at a higher price as well as to create a better understanding about organic farming. The analysis will help influence non-organic farmers shifting to adopt organic farming system. There are four elements under marketing mix that are well recognized. The analysis is shown as follows:

The demand for organic farm goods in the market is high that organic farmers cannot supply enough goods to serve the demand. Consumers are willing to pay high price for chemical-free rice, fruits and vegetables. However, the types of rice, fruits and vegetables offered in the market were limited to few species. Even though there were new organic farmers in the production but they kept growing the same plants that are already been in the market.

You could not find organic farm goods in fresh markets due to the fact that most of large-scale organic farmers often sell goods to major food stores. Small-scale organic farmers sell its products near their farms or sell through their personal connections. New generations farmers also use social media and personal connections to promote their organic farm goods and to sell it directly to the consumers.

4.4.2 Target Market

The target market of organic farm products are people who concern about health, looking for chemical-free farm products as well as freshness of food. They carefully choose food for consumption. Most of them routinely exercise, do home cooking or do grocery shopping.

4.4.3 Positioning Strategy

For health-conscious people who aware of chemical substance used in agriculture process, organic farm products used no chemical substances throughout the production process. It is affordable, chemical-free and has organic certificate.

4.5 SWOT Analysis Matrix

The strengths and weaknesses as well as opportunities and threats from doing organic farming are summarized using SWOT Analysis Matrix (Table 4.7).

Table 4.7 SWOT Analysis Matrix

Strengths	Weaknesses
- Based on farmers' local and traditional knowledge	- Use labor intensive
- Make use of on-farm resources	- Decline in yield during transition period limits the adoption among farmers who are in debt
- Reduces health risk from using agrochemical	- Longer production cycle
- Reduce debt as use on-farm resources as inputs	- Lack of government support as the officer also promote the use of agrochemicals
- Reduce environment effects	
- Gain price premium especially with certified products	

Opportunities	Threats
- Enhance self-reliance among farmers	- Conventional farmers' perception toward organic farming
- Use natural resources sufficiently	- Labor shortage
- Supports from NGOs and organic farmers' cooperative	- Lack of collaboration between NGOs and government agency
- Rising of healthy trend	- Lack of government support as the officer also promote the use of agrochemicals
	- Insufficient budget for government agency to work in farm level

4.5.1 Recommendation Strategies

According to the result from SWOT Analysis Matrix, the recommendation strategies to overcome the perceived obstacles to engage in organic farming which are further discussed in the Summary and Conclusion Section of this report are as follows:

1) Implement education policy to promote organic farming practice
2) Providing more market channels
3) Collaboration between government agency and NGOs

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

Most of Thai farmers are conventional farmers. The effects from chemical substances they used do not only risk their health but also the consumers' health and cause environment effect. Even though, conventional farmers aware of harmful side from using external inputs, they could not stop using as they were afraid of declining production rate.

In contrast, organic farming was promoted as an environmental friendly farming practice that benefits the entire food chain. Organically grown produce also gain price premium and decrease farmers' debt.

5.1 Problem Statement

Conventional farmers' perception towards organic farming and insufficient government support are limitations for farmers to adopt organic farming practice.

5.2 Possible Alternatives

There are three possible alternatives to deal with conventional farmers' perception towards organic farming and insufficient government support for farmers to adopt organic farming practice.

5.2.1 Implement education policy to promote organic farming practice

In order to create a better understanding about organic farming among conventional farmers, it requires a huge government support. The government should include organic farming in the lessons of all educational levels by outlining the effects of conventional farming in line with benefits of organic farming. Practical experiences should also be promoted in school so that young generation can share organic farming knowledge to their parents.

However, by adding organic farming as part of the lessons takes long time to achieve but it is sustainable way and worth for investment as the children will grow up having organic farming awareness in mind.

Training programs, farm visit and on-farm trials arranged by government for conventional farmers are another way to educate farmers immediately. By doing so,

conventional farmers can try operating organic farm as well as to see the success of farmers who transit to do organic farming.

5.2.2 Providing more market channels

The government should establish direct organic market for organic farmers by collaborate with private sectors such as retail shops or supermarket chains to allocate space fixed for organic products as well as to buy organic farm product at higher price than conventional product.

In addition, by doing promotional campaigns to raise consumer awareness of the effects of chemically grown produce and the positive effects of organic products. This will create demand for organic farm goods and the local shops will be able to distribute organic farm goods.

5.2.3 Collaboration between government agency and NGOs

NGOs played a big role in promoting organic farming practice in Thailand. There are some areas that NGOs cannot cover such as providing financial support, creating direct organic market and implement policies. However, these NGOs have insightful information regarding the problems farmers are facing. If the government and NGOs collaborates, the adoption rate of organic farming will increase as many limitations will be solved making it easy for farmers to adopt organic farming.

5.3 Final Recommendation

A collaboration between the government and NGOs seems to be the most powerful tools to deal with conventional farmers' perception as the government holds the power that can implement rules and regulations using the insightful information that NGOs have to educate farmers. On the other side, non-government organizations can suggest the government of areas that lack of supports.

With helps from the government and NGOs, there will be more Thai farmers adopt organic farming practice.

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APPENDICES

APPENDIX A

IN-DEPTH INTERVIEW QUESTION GUIDE

Name: _____

Gender: ____ **Age:** ____ **Educational Level:** _____

Number of family household: ____ **person(s)** **Province:** _____

Annual Income: _____ **THB** **Land size:** ____ **Rai**

General questions:

1) What is organic farming?
2) What are the benefits of organic farming?
3) What are the disadvantages of organic farming?
4) What are the benefits of conventional farming?
5) What are the disadvantages of conventional farming?
6) From your perspective, by comparing organic farm products to traditional farm products, what are the production rate, production cost and selling price?
7) Normally, where and how do you sell your products?
8) What are supports from the government?

For organic farmers and transition farmers:

9) What influenced you to do organic farming?
10) What were the problems you faced when you first started doing organic farming?
11) Where did you learn about organic farming?
12) Have you ever thought of using agrochemical in farm? Why or why not?
13) Are you a member of organic cooperative or NGOs?
14) It seems conventional farmers have bad perception towards organic farming. What can you do to create a better understanding about organic farming among those farmers?
15) Is it true that organic certified goods get higher price compare to non-organic

certified goods?

16) Do you have organic certificates? If yes, what certificates do you have. If no, are you interesting in applying one. Why or why not?

For conventional farmers:

17) Why do you use chemical substances in farm?
18) Do you know anyone who is organic farmer? If yes, how is their lives?
19) Have you ever thought of conversion to organic farming? If so, why didn't you shift to organic farming. If not, why don't you interested in organic farming.
20) Do you know organic products gets price premium? Aren't you interesting in doing organic farming? Why or why not?
21) Have you ever heard of any organic cooperative or NGOs that support organic farming? If yes, have you ever joined the event conducted by those groups? How was it?
22) Many studies showed that organic farming has higher cost but it derives greater benefits in the end according to the higher production rate. Do you agree or disagree? Why or why not?

For government agencies:

23) What are the objectives of your organization?
24) What are the support you provide for farmers?
25) Between organic farmers and non-organic farmers, who are your targeted customers?
26) From your view, what are the limitations for farmers to adopt organic farming.

APPENDIX B

TIMELINE

Activity	2016												2017											
	October				November				December				January				February				March				April			
In-depth interview: conventional farmers																										
Literature Review																										
Meeting with Advisor																										
In-depth interview: organic farmers																										
In-depth interview: transition farmers																										
In-depth interview: government agencies																										
Data analysis																										
Progress Report I Submission																										
Progress Report II Submission																										
Initial Comprehensive Report Submission																										
Revised Comprehensive Report Submission																										

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