


**KEY FACTORS AFFECTING THE SUCCESS OF ORGANIC
AGRICULTURE POLICY IMPLEMENTATION
IN THAI LOCAL COMMUNITIES**

Pasupha Chinvarasopak


**A Dissertation Submitted in Partial
Fulfillment of the Requirements for the Degree of
Doctor of Philosophy (Development Administration)
School of Public Administration
National Institute of Development Administration
2015**


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September 2015

ABSTRACT

Title of Dissertation	Key Factors Affecting the Success of Organic Agriculture Policy Implementation in Thai Local Communities
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Degree	Doctor of Philosophy (Development Administration)
Year	2015

Organic agriculture in Thailand officially became a public policy in 2005 and its current provisions are described in the Second National Strategic Plan for Organic Agriculture Development (2013-2016). While organic agriculture has been implemented for a decade and while the global growth rate of organic agriculture has increased; the amount of land dedicated to organic agriculture in Thailand has increased at a rate of only 0.1% annually and comprises only 0.2% of the total land in the nation under cultivation. This is in sharp contrast with the increase in the use of imported agrochemicals in agriculture, from 3.9 million tons in 2008 to 5.7 million tons in 2012. Organic agriculture policy challenges the policy implementation approach as to whether it requires more and different factors than general policy in the implementation context.

This research attempts to study the organic agriculture policy and factors affecting the success of organic agriculture policy implementation in local communities where the majority of farmers are members of organic agriculture and organic agriculture transition groups. This research used qualitative methods to study three levels of organic agriculture, the policy level, implementation level at the community level, and target group level in three case studies.

The study reveals that organic agriculture policy has been an output of the political system, which has been derived from the global trend with suitable land for agriculture demands, support from NGO and competition and international standards

to export agricultural products. Compare to chemical agriculture, organic agriculture plays as an alternative agriculture in sharing one percentage of total agricultural budget. Organic agriculture implementation is not included in the routine action plan at provincial level. However, the success of organic farms is from the social capital in a group. The power of the group gives farmers to share and learn knowledge and experience of organic farming, negotiate for higher prices of organic products and obtain supports from both public and private sectors.

To implement organic agriculture policy at the local level, it needs social capital to be a force for growth and maintenance of organic farms. Organic agriculture policy needs to match the characteristics and necessities of groups to support their existing and future endeavors. In order to help organic farming continue at the local level, it should be tailored to each target group by front-line implementers with appropriate knowledge, technology, and innovation, supported by professionals for the different levels of each group's potential.

ACKNOWLEDGEMENTS

Without a conductor, musicians would not be able to compose and convey information as a song to the orchestra beautifully. Without a helmsman, a ship could not sail directly, safely or smoothly into the wind to reach the port. Without guidance and support from the advisor, Professor Dr. Ponlapat Burakom, this dissertation as the last piece of a jigsaw puzzle to fulfill the Ph.D. work would not have been completed. I would like to express my great gratitude to him from the start to the end stage of my Ph.D. study. My high appreciation also goes to Professor Dr. Voradej Chandarasorn and Assistant Professor Dr. Ploy Suebvises for their advice in making this piece of work more complete.

A dissertation is a great mixture of knowledge from the classroom and outside. I would like to express my big gratitude to Khun Piyatus Tussaniyom, Khun Boonmee Suratkot, and all of informants and helpers to name but a few for sharing their data, information, experiences, and personal stories in this study with high respect.

My study would not have smoothly flowed without the uncountable help from Khun Orapin, and Khun Aom; thank you so much for all the things you did for me.

This long journey was more joyful because of having friends on the same way. Thank you my classmates who become good friends in real life.

My last great gratitude is expressed to my family and to the Ministry of Science and Technology for supporting me in all my graduate studies.

Pasupha Chinvarasopak

September 2015

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CHAPTER 1

INTRODUCTION

1.1 Significance of the Study

Organic agriculture, a practice of growing crops without the use of chemical pesticides, herbicides or fertilizers, has become more popular in recent years in every country of the world. In developing countries, it has been argued that organic agriculture provides advantages to small-scale farmers in terms of contributing to poverty alleviation and food security. This farming practice increases yields in low-input areas over time, increases net income by reducing the costs of purchasing external farm inputs, produces safe and varied food, and conserves the biodiversity and the natural resources on the farm and in the surrounding areas that will help enhance sustainability in the long run.

Besides the advantage of increasing yields, increasing income by reducing the costs of growing plants, and improving environment, the impacts of excessive use of agro-chemicals on health are apparently decreasing. According to United Nation Conference on Trade and Development: UNCTAD (2006), organic agriculture can also help prevent the recurrence of an estimated 3 million cases of acute severe pesticide poisoning and 300,000 deaths that result from agrochemical use in conventional agriculture every year.

The United Nations Environmental Program (2008) has suggested reasons that a government should support the development of a domestic organic sector as follows:

- 1) to improve health and reduce health risks for farmers, farm-workers, and consumers
- 2) to protect natural resources and biodiversity
- 3) to improve the quality of soil and long-term high productivity
- 4) to improve market access
- 5) to improve profitability in farming

While organic agriculture has been developed rapidly and practiced in more than 120 countries, the adoption of organic farming in developing countries is still low. The organic agriculture adoption in Asia is slow and has been obstructed by many socio-economic and cultural factors (Willer and Yussefi, 2007; Willer and Kilcher, 2011). Figure 1.1 shows the organic agriculture areas in six regions in the world. Asia is in the fifth range, having less than 5 million hectares of organic agriculture land.

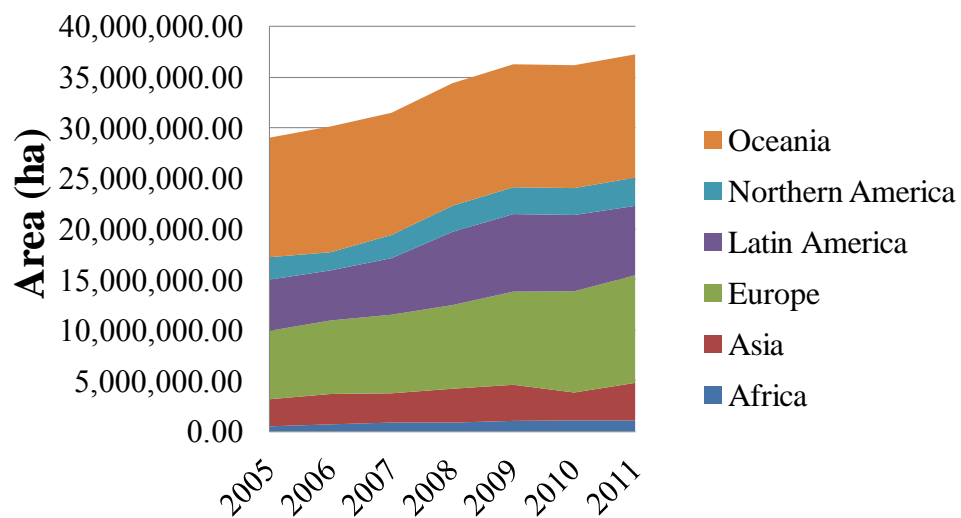


Figure 1.1 Organic Agriculture Areas by Region

Source: Research Institute of Organic Agriculture and International Federation of Organic Agriculture Movements, 2013.

Recent data from Research Institute of Organic Agriculture and International Federation of Organic Agriculture Movements (2013) indicates that the growth rate of organic land in Asia has been 2.4% since 2006 with a total of 3.71 million hectares compared to 10.64 in Europe and 12.19 in the Oceanic countries.

Thailand was originally an agriculture country; Thai farmers once grew local rice crops with natural fertilizer, with various farming models that varied according to geographic area and weather, and without using pesticides. Officially, organic agriculture

is one of five types of alternative agricultures or sustainable agricultures¹ used in Thailand since the early 1980s. It initially was launched by the Alternative Agriculture Network (AAN), which was formed by farmers and non-government organizations (NGOs) to foster sustainable agriculture in order to respond to the overuse of chemical fertilizers and pesticides. Further impetus came from economic pressure beginning with the green revolution in the 1970s (Green Net, 2013a).

In addition, most chemical fertilizers, herbicides, insecticides, fungicides and other agrochemicals in Thailand are imported inputs. Chemical fertilizer is the biggest input in agriculture, but this industry in Thailand has depended on imported raw materials. More importantly, the price of these inputs increases each year and affects the farmers' income.

Organic agriculture, then, was included in the government's plan as an alternate type of agriculture to support the sustainable development of the country at the end of the seventh National Economic and Social Development Plan (1997-2001) and it has been included in every plan since then.

Organic agriculture became a public policy in Thailand in 2005, influenced by the trend of producing food in natural ways, consuming chemical-free agriculture produce, competitiveness in the international markets, and international trading agreements that did not allow chemical contamination of food in their countries and decreasing dependency on imported fertilizers. These factors pushed organic agriculture into the national agenda in Thailand (Chedsada Mingchai, 2008; Viriya Klaidang, 2006). The organic agriculture policy was first approved by the cabinet as part of the national agenda and later was promulgated as the First National Strategic Plan for Organic Agriculture Development (2008-2012). The Second National Strategic Plan for Organic Agriculture Development (2013-2016) is pending approval by the government (Office of Agricultural Economics, 2013a).

Even with this history of support by the government, including the allocation of significant funds to implement this policy (1,262.2 million baht in 2006, 4,826.8 million baht during 2008-2012, and 4,779 million baht during 2013-2016), organic

¹In Thailand, there are five different formal sustainable farming systems, which are integrated farming, organic farming, natural farming, agro-forestry, and New Theory Farming.

agriculture in Thailand cannot yet be considered a success on a national scale. Even though organic agriculture in Thailand has been getting support from both the government and NGOs, the adoption of organic agriculture in Thailand continues to be progressing slowly.

The farmland dedicated to organic agricultural has increased 0.1% annually since 2006 and in 2011 was 0.2% of the total agriculture area under cultivation or 219,391.7 rai of 131.3 million rai² (Department of Agriculture, 2013a). Imported agrochemicals for agriculture, chemical fertilizers, herbicides, insecticides, fungicides and other chemicals have increased from 3.9 million tons in 2008 to 5.7 million tons in 2012 with the value increasing from 94,792 to 103,304 million baht or 3,000 to 3,300 million US dollars within four years (Department of Agriculture, 2013c,d).

A great deal of the literature focuses on understanding the factors that motivate farmers to adopt organic farming practices. Lampkin and Padel (1994) reviewed the evidence on the motivations of organic farmers and identified the most common factors among organic producers as concerns about their family's health, concerns about farming, lifestyle choice, and financial considerations. Rampaiprapa Mahamud (2005) mentioned that the important factors influencing the adoption of organic rice production were organic agriculture knowledge and extension received from involved agencies. Panchit Pornpratansombat, Bauer and Boland (2011) suggested that the early organic adopter may have had better access to water, the ability to seek and find higher prices, and had stronger attitudes toward conventional farming problems in rice agriculture in the northeastern part of Thailand.

With regard to organic fertilizer in agriculture specifically, there have been several quantitative studies about technology adoption that similarly reveal that younger-age farmers with a higher education level and availability and accessibility to information about organic fertilizers are influencing factors to adopt organic fertilizers (Wanchai Wongsu, 2007; Wiruch Chuapung, 2011; Chouichom and Yamao, 2011).

Beyond the previous research as a guideline, this study makes an attempt to understand other aspects of the adoption of organic agriculture in local farmers. As organic agriculture policy has been a national agenda in Thailand since 2005, whether

² 1 Rai = 0.4 acres or 0.16 hectares

or not and more or less this policy has affected the growth of organic agriculture especially at local farms.

Moreover, organic agriculture is not a totally new practice; in fact, it is a revival of a style of farming that was once the standard for local farming in Thailand. While chemical agriculture is now the mainstream, the challenges are to determine how organic agriculture can emerge as an alternative, how to promote its adoption, and how it can be sustainable. This research attempts to understand and analyze the factors that affect a group of farmer in adopting and continuing organic agriculture. The result of this study will add to the knowledge of the policy development of organic farming at the local community level in Thailand for sustainable agriculture and development in Thailand.

1.2 Objectives of the Study

The study has the following objectives:

- 1) To study organic agriculture policy and its effectiveness
- 2) To study the factors that contribute to the effectiveness of policy implementation and the adoption of organic agriculture in the local community
- 3) To provide policy consideration regarding organic agriculture policy formulation and implementation at the local community level

1.3 Research Questions

- 1) How effectiveness is organic agriculture policy in Thailand?
- 2) What are key factors affecting the success of organic agriculture policy implementation in the local community?
- 3) Which context or circumstances in local community affect or influence farmers to change from chemical to organic farming and how?
- 4) As an alternative to conventional and mainstream chemical agriculture, how does organic agriculture exist, expand and continue in local farms?
- 5) What are public policy implications regarding organic agriculture policy implementation for local farmers?

1.4 Scope and Limitations of the Study

There are two main streams of organic farming in Thailand: rural development and business oriented. For rural development, small-scale farmers adopt organic farming practices in order to improve their living standard and the environment. For the business oriented, the large scale private sectors focus on export. The first group is local or grassroots' famers that sell organic products in domestic markets. This target group needs support from the government or other agencies in order to change from conventional agriculture to organic practices at every step-from starting organic practice to marketing. The second group is business groups that are ready for organic practices and need support at a higher level and need to be more professional regarding organic agriculture in terms of technology, laws, and regulations in order to export organic products (Green Net, 2013a).

This research focuses on the small-scale farmers converting to organic practice, as they are the target group that will impact organic agriculture in order to serve the ultimate goal of sustainable development. This research attempts to study the factors affecting the success of policy implementation regarding the phenomenons of organic farming in the local community in Thailand.

Therefore, this study will not be able to comprehensively analyze all of the aspects of organic agriculture in Thailand, but has drawn the scope of the study as follows:

- 1) The organic farming being studied will be limited only to organic plants, both single crops and a variety of organic plants, and focuses on the local farmer groups who sell products in domestic markets.
- 2) An in-depth study has been conducted on three purposively selected cases of community-based organic farming.
- 3) Regarding implementation, this is focused on the front-line implementers at the local community level that are officers working in the Provincial Agriculture Office under the Ministry of Agriculture and Cooperation (MOAC).

1.5 Expected Benefits of the Study

1.5.1 Academic Benefit

This study aims to proceed beyond identifying the factors that contribute to the success of organic agriculture policy implementation and organic agriculture adoption by farmer groups at the local community. It also aims to provide a comparison among cases and bring to understanding the factors that are involved in organic agriculture adoption and continuing. It is hoped that this study will add to our knowledge of the factors affecting the success of organic agriculture policy implementation at the local community level.

1.5.2 Contributions to Public Policy

The result of this study will help improve organic agriculture policy at formulation and implementation stages when local farmers are targeted. With these specific factors affecting the success of organic agriculture policy implementation, this knowledge is expected to be considered when a government starts formulate and implement others policy aimed at local community.

1.6 The Organization of the Study

This dissertation is composed of seven chapters as follows:

The first chapter provides an overview of the study, including a statement of the significance of the problems and objectives of the study.

Chapter two is comprised of a literature review on policy implementation, social capital, research on organic agriculture in Thailand, and organic agriculture in sustainable agriculture. The framework of this study is also presented in this chapter.

Chapter three describes the methodology used in this study, including the research design, data collection, and data collection procedure.

Chapter four to six comprise the study of organic agriculture policy at three levels: the policy level, implementation level, and target group level.

Chapter four explains organic agriculture policy formulation in Thailand and its effectiveness. It also includes the development of organic agriculture policy in

Thailand, how organic agriculture related to the national social and economic development plan and the present situation of organic agriculture in Thailand.

After the study of organic agriculture policy implementation, the implementation level is discussed. Chapter five discusses the policy implementation of organic agriculture at the provincial level. This chapter includes organic agriculture action plans for the local farmers regarding organic plants, implementing agencies, and implementers' viewpoints of organic agriculture policy and implementation.

Policy implementation is tightly linked to its target group in the implementing area. Chapter six is a study of the target group of organic agriculture policy in the local community and discusses organic agriculture farmer groups in Ubon Ratchathani and Srisaket regarding their organic agriculture adoption and practices. The three case studies are a mixture of similar and different characteristics of farmer groups in organic agriculture.

Chapter seven contains the conclusion, discusses the contributions of the present study to theory and policy, and makes recommendations.

CHAPTER 2

LITERATURE REVIEW

With reference to the research questions, this study aims at public policy implementation and organic agriculture policy at the local community level. Therefore, this chapter reviews policy implementation study in order to create a preliminary framework for the variables included. As the area of organic agriculture in this study is in the local community, therefore there should be another key factor besides the factors affecting the success or failure of policy found in implementation study. This study proposes social capital, which may affect the success of implementation. Moreover, research on organic agriculture problems is also reviewed. The preliminary framework will be a guideline for studying the key factors affecting the success of organic agriculture in the local community. Thus, this chapter comprises a literature review on policy implementation, social capital, research on organic agriculture, a preliminary conceptual framework, and the relationship between the dependent variable and independent variables.

2.1 Policy Implementation

In the public policy process, policy implementation is the stage that comes after agenda setting, policy formulation, and policy adoption, and followed by policy evaluation. According to Anderson (2006), when an institutional agenda is enacted to be a law by passing an agenda setting, policy formulation, and policy adoption, the implementation stage then puts the law into effect in order to apply it to the target population and to achieve the policy goal.

According to Pressman and Wildavsky (1973) and Van Meter and Van Horn (1975), policy implementation is an action focusing on the accomplishment of policy goals. Policy implementers can be either public or private, individuals or organizations, to carry out a policy to fulfill its goals and objectives. In the case of

public policy, policy implementation reflects the relation of a government's intension to do something or not to do something and its actual result (O'Toole, 1995).

As policy implementation is focusing on actions, there are relating components such as individuals, organizations, procedures, tools, target groups, support environments, opposition implementers to carry out policy to achieve its goals in implementation stage that will affect the success or failure of policy implementation.

The study of policy implementation has been divided into two main approaches: top-down and bottom-up. The top-down approach focuses on the action of top-level officials and the factors that affect their behavior and whether policy goals are attained on the basis of experience. On the other hand, the bottom-up approach pays attention to lower-level officials and how they interact with their clients. In the second approach, economic conditions, the attitude of local officials, and the actions of clients are among the factors affecting implementation. There have also been efforts to combine these two approaches. However, there is still no agreement concerning which approach is the best way to study policy implementation (Anderson, 2006).

2.1.1 Top-Down Approach

The top-down implementation approach focuses on the action of the top-level officials and the factors that affect their behavior and whether policy goals are attained on the basis of experience. There are four key scholars that discuss this approach: Pressman and Wildavsky (1973); Van Meter and Van Horn (1975); Bardach (1977), and Mazmanian and Sabatier (1983).

A classic case study of policy implementation is a case study of a project in Oakland City in the United States in the early 1970s (Voradej Chandarasorn, 2005 and Anderson, 2006). The U.S. Economic Development Administration formulated a policy aiming to provide at least 3,000 jobs to the minority group by offering public work grants and loans of around \$23.3 million for various projects in the city of Oakland. Oakland at that time had a high unemployment rate of 8.4% compared to 4.1% for the whole country; the unemployed were twice in the minority group. Three years after the project began, approximately \$3 million had been spent on 50 new

jobs. Most of the projects were delayed. Pressman and Wildavsky (1973) found that several factors affected policy failure. A major constraint to successful implementation was the complexity of joint action, as there were several agencies related to the projects that led to problems in coordination, complexity in decision making, delays in solving problems, and conflict regarding the project goal and political agreement.

Van Meter and Van Horn (1975) suggested a model linking six-variables to outcome performance in implementation studies. These six variables are 1) policy standards and objectives, 2) resources and incentives, 3) inter-organizational relationships, 4) implementing agencies, 5) the economic, social, and political environment, and 6) the disposition and response of implementers.

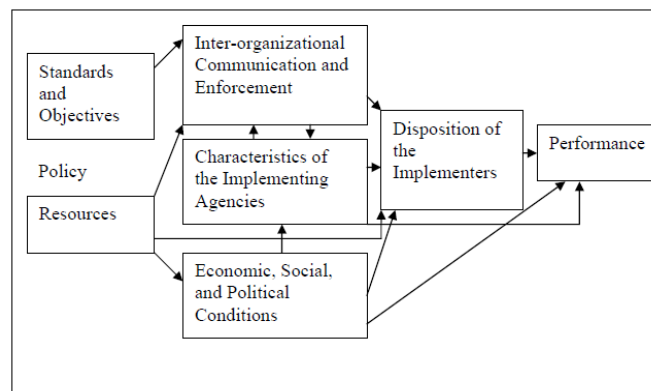


Figure 2.1 Policy Implementation Model of Van Meter and Van Horn

Both Van Meter and Van Horn (1975) also proposed that the successful implementation requires minimal change and high goal consensus. In reality, this appears to be true as most people usually oppose change in initial stages.

Unlike other scholars that have investigated the top-down approach, Bardach (1977) views policy implementation as a system of games where parties interact with one another in an effort to "win the game." Playing the game can have adverse effects on policy implementation, such as diversion of resources, deflection of policy goals, resistance to administrative control, and dissipation of energies in game-playing rather than constructive action.

Mazmanian and Sabatier (1989) proposed a simple and straight-forward model for policy implementation for success. They identified three conditions: tractability of the problems being addressed, ability of statute to structure implementation, and non-statutory variables affecting implementation.

The first condition refers to the problem definition, valid theory and technology to solve problems, target groups, and the status quo. The second condition mostly refers to administrative capacity in implementation. The last condition is other variables. These three groups are the independent variables that lead to the dependent variables in the success or failure of implementation. On the other hand, the five dependent variables are policy outputs, target group compliance, actual impacts, perceived impacts, and major revision in a statute or policy.

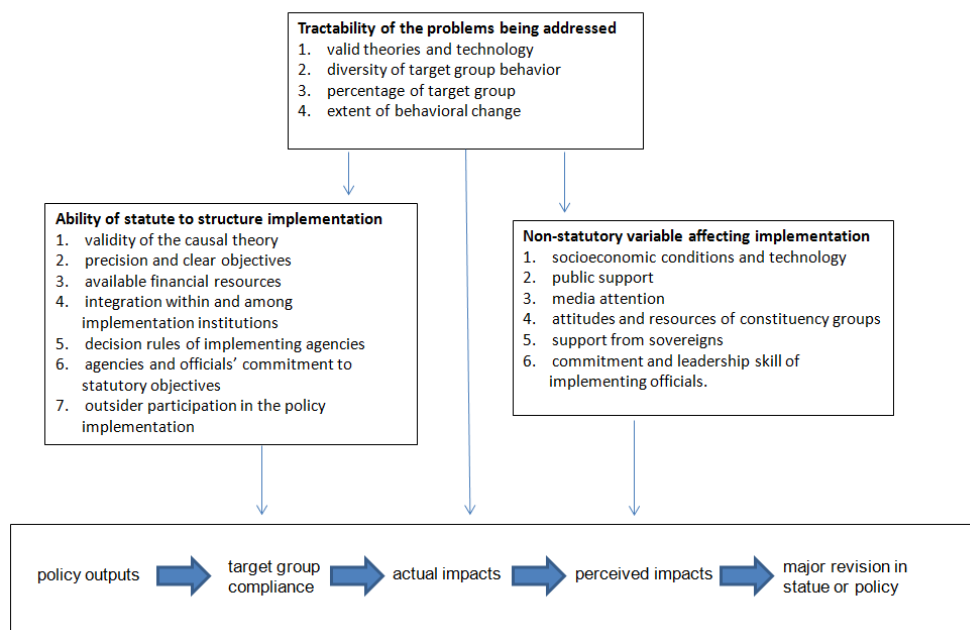


Figure 2.2 Policy Implementation Model of Mazmanian and Sabatier

2.1.2 Bottom-Up Approach

According to Anderson (2006), the bottom-up approach pays attention to lower-level officials or street-level officials and how they interact with their clients. Economic conditions, the attitude of local officials, and the actions of clients are

among the factors affecting implementation. The street-level bureaucrats as front line implementers are considered to have a better understanding of what clients need as they have direct contact with the public.

Lipsky (1980) proposed a theory of street-level bureaucracy focusing on the discretionary decisions that local implementers make in relation to the target group or local citizens when they are delivering policies to them. This discretionary role in delivering services or enforcing regulations makes street-level bureaucrats important actors in implementing policies. According to Lipsky (1980), street-level bureaucrats use special coping mechanisms because they experience difficulties between the many demands, which are made for their services, and their own limited resources.

The bottom-up approach emphasizes the target groups and service deliverers and states that policy is made at this level (Hjern and Porter, 1981). Hull and Hjern (1987) focus on the role of local networks in affecting a given problem in the implementation process. The network of actors involved in local communities aims to find out the goals, objectives, strategies, activities to deliver the policy in the implementation process. The network will also ameliorate conflicts from different coalitions in implementation.

Sorg (1983) classified the important behaviors of implementers that have effects on the success or failure of policy. Two dimensions of compliance and intention factors create four types of implementers: intentional compliance, unintentional non-compliance, unintentional compliance, and intentional noncompliance.

In addition, when considering the policy implementation process, it occurs at two levels. At the macro level, the national government must act to secure effective action by local officials; at the micro level, local government must gain compliance from the target population (Anderson, 2006). Berman (1980) assumed that a problem in implementation was the interaction of a policy with its institutional setting. In macro implementation, the federal policy takes place in setting the many actors that interact to determine a policy and then it passes through a local government for implementation. The outcome of policy will depend upon local deliverers, not the federal administrators. In the local system, the micro implementation consists of the mutual adaptation of the local policy which has been adopted in response to national policy and local organizational characteristics. The complexity of the adaptive process will create uncertainty in how policy will be implemented.

The approach to identifying appropriate conditions for use of either of the approaches has been based upon the parameters describing the policy context. A top-down or bottom-up approach can be used to prepare the implementation plan as indicated below (Berman 1980).

Table 2.1 Factors in Top-Down and Bottom-Up Policy Implementation Approach

Factors / Approach	Top Down	Bottom Up
Scope of change	Incremental	Radical, large
Validity of technology	Certain	Uncertain
Goal conflict	Low	High
Institutional setting	Tightly coupled	Loosely coupled
Environment stability	Stable	Unstable, dynamic

2.1.3 Models of Policy Implementation

Besides the two models of Van Meter and Van Horn (1975) and Mazmanian and Sabatier (1983), some models from the work of Voradej Chandarasorn (2005), which are the management model, the organization development model, and the bureaucratic processes model will be focused on, as well as the decentralization program implementation process model of Cheema and Rondinelli (1983).

2.1.3.1 Management Model

The management model focuses on organizational performance. The assumption is that successful implementation depends on the implementing agency's capability to perform according to the expected target. There are in connection with five variables: structure, personnel, budget, place and location, and tools and equipment.

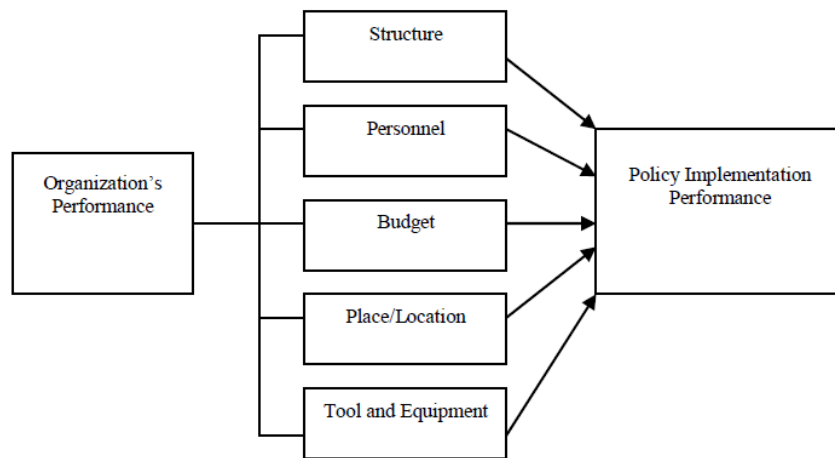


Figure 2.3 Management Model of Policy Implementation

Source: Voradej Chandarasorn, 2005.

2.1.3.2 Organizational Development Model

The organizational development model focuses on the participation of implementing agencies including motivation, proper leadership, relationships and acceptance among members, and participation and teamwork within the implementing agencies that will lead the performance of policy implementation.

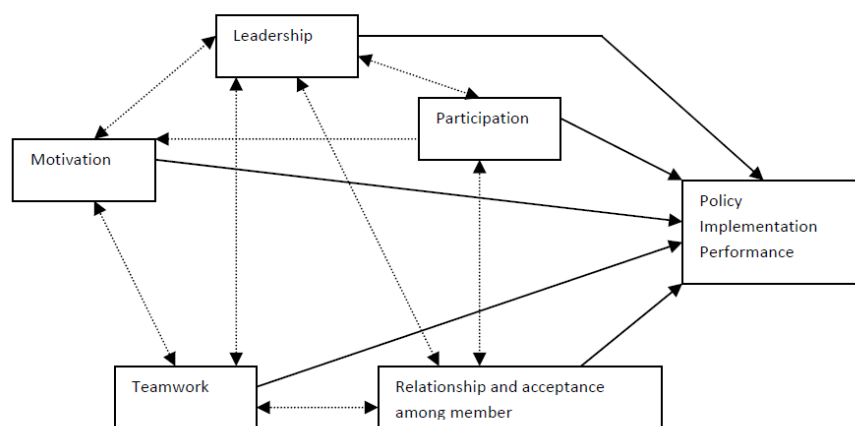


Figure 2.4 Organizational Development Model

Source: Voradej Chandarasorn, 2005.

2.1.3.3 Bureaucratic Process Model

This model supports the idea that successful implementation depends on the attitude of policy makers as well as the ability of implementers to provide proper services, combined with an adequate level of policy acceptance by those persons actually responsible for carrying out policy.

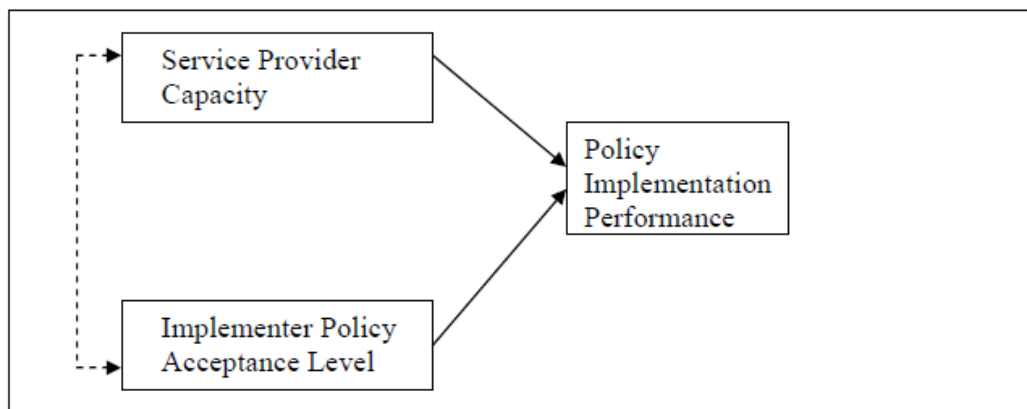


Figure 2.5 Bureaucratic Model

Source: Voradej Chandarasorn, 2005.

2.1.3.4 Model of the Decentralization Program Implementation Process

Cheema and Rondinelli (1983) developed a model to study the decentralization of the power of policy implementation in Asia by emphasizing local capacity for rural development. The main assumption was that the performance and impact of policy implementation in the local area were influenced by four variables: environmental conditions, inter-organizational relationships, organizational resources for program implementation, and the characteristics and capacities of implementing agencies.

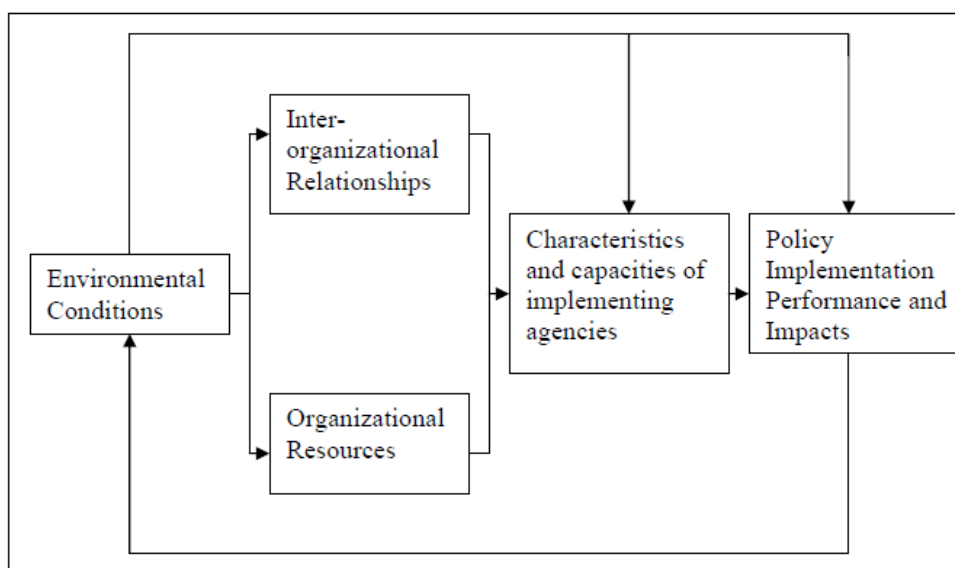


Figure 2.6 Cheema and Rondinelli's Model

The variables of the six policy implementation models can be divided into nine categories as a guideline to study policy implementation, as presented in Table 2.2.

Table 2.2 Variables Affecting Policy Implementation in Six Models

Variables	Models
1. Policy goals, standards and objectives	
1) Policy standards and objectives	1) Van Meyer and Van Horn
2) Precision and clear ranking of legal objectives	2) Mazmanian and Sabatier
3) Validity of the causal theory	3) Mazmanian and Sabatier
4) Agencies' and officials' commitment to statutory objectives	4) Mazmanian and Sabatier
5) Implementer policy acceptance level	5) Voradej Chandarasorn's Bureacratic Model

Table 2.2 (Continued)

Variables	Models
2. Resources	
1) Resources and incentives	1) Van Meter and Van Horn
2) Valid theories and technology	2) Mazmanian and Sabatier
3) Available financial resources	3) Mazmanian and Sabatier
4) Attitudes and resources of constituency groups	4) Mazmanian and Sabatier
5) Personnel, budget, place and location, and tools and equipment	5) Voradej Chandarasorn's Management Model
6) Service provider capacity	6) Voradej Chandarasorn's Bureacratic Model
7) Organizational resources for program implementation	7) Cheema and Rondinelli
3. Relationship/Coordination	
1) Inter-organizational relationship	1) Van Meter and Van Horn
2) Hierarchical integration within and among implementation institutions	2) Mazmanian and Sabatier
3) Relationship and acceptance among members	3) Voradej Chandarasorn's Organizational Development Model
4) Inter-organizational relationships	4) Cheema and Rondinelli
4. Implementers	
1) Implementing agencies	1) Van Meter and Van Horn
2) Commitment and leadership skill of implementing officials	2) Mazmanian and Sabatier
3) Disposition and response of implementers	3) Van Meter and Van Horn
4) Motivation/leadership/participation/teamwork	4) Voradej Chandarasorn's Organizational Development Model

Table 2.2 (Continued)

Variables	Models
5) Service provider capacity	5) Voradej Chandarasorn's Bureacratic Model
6) Characteristics and capacities of implementing agencies	6) Cheema and Rondinelli
5) Environment factors	
1) Economic, social and political environment	1) Van Meter and Van Horn
2) Socioeconomic conditions and technology	2) Mazmanian and Sabatier
3) Environmental conditions	3) Cheema and Rondinelli
6) Target group	
1) Diversity of target group behavior	1) Mazmanian and Sabatier
2) Percentage of target group as a percentage of the population	2) Mazmanian and Sabatier
3) Extent of behavioral change	3) Mazmanian and Sabatier
7) Management	
1) Decision rules of implementing agency	1) Mazmanian and Sabatier
2) Structure	2) Voradej Chandarasorn's Management Model
8) Stakeholders	
Outsider participation in the policy implementation	Mazmanian and Sabatier
9) Support	
1) Public support	1) Mazmanian and Sabatier
2) Support from sovereigns	2) Mazmanian and Sabatier
3) Media attention	3) Mazmanian and Sabatier

According to a study of the top-down approach, the bottom-up approach, and the models of implementation in general (Van Meter and Van Horn, 1975; Mazmanian and Sabatier, 1989; Voradej Chandarasorn, 2005; Cheema and Rondinelli, 1983), it challenges the theory of both the top-down and bottom-up approaches, whether the factors in one theory or one model will affect the success of organic agriculture policy implementation. It is necessary that the study of organic agriculture policy implementation in rural areas consider other variables that will affect the success of policy implementation.

The organic agriculture policy is not general; it is a specific policy type with different technology, including modern technology such as film technology and local wisdom, put into the process of organic farming. It raises the question how this specific policy implementation is different from general policy, and whether the implementation context of this kind of policy requires more support than general policy.

As this study focuses on organic agriculture policy implementation at the local community level, the local community characteristic that affects the movement and activity in the community should also be studied and added to the framework in order to better understand the policy implementation in Thailand that aims at the local community target.

Regarding the rural setting, Roger (1995) revealed that there are three characteristics of social structure that promote the new technology among farmer groups, which are group homogeneity, participatory norms, and leadership homogeneity. The Policy Research Initiative (2005) has also revealed that there is a benefit to be gained for public policy by incorporating a social capital component into relevant government programs and initiatives. Andrews (2011) also found that the social capital present within local communities is increasingly viewed as an important source of co-productive capacity for delivering better public services.

The concept of social capital is increasingly added to public policy and administration (Halpern, 2004). Several empirical studies in health, education, and government have assessed the relationship between social capital and individual level outcomes (Veentra, 2000; Coleman, 1988; Brehm and Rahn, 1997). In order to relate social capital with public policy, especially policy implementation, an understanding of aspect of social capital is also needed.

2.2 Social Capital

Social capital has been accepted as an important tool in community development. The idea of social capital in the literature originally came from the west from three key scholars, namely Pierre Bourdieu, James Coleman, and Robert Putnam, focusing on three bases: trust, norms, and networks. In Thailand, however, the concept of social capital has been claimed to be in the form of local wisdom, social fund, natural resources, human resources, and local value (Anek Nakabutara, 2002). Therefore, social capital in this literature review will be divided into two main approaches, the foreign concept and the Thai concept.

2.2.1 Social Capital in the Foreign Context

According to Bourdieu (1986), social capital has two meanings; both of them link to networks. First, the individual's social capital refers to the institutionalized networks that one has such as family, groups, and the class in society or one's political party. Second, networks are held together by material or cultural exchanges between members in a society. The amount of social capital depends on how large the network relations are that one can effectively mobilize and on the amount of capital (economic, cultural and symbolic) that each member of the network possesses. Social capital in Bourdieu's view is comprised of existing resources and networks. Networks are different according to the levels in a society. A network can be formed by people at the same level rather than at other levels. Therefore, networks will give interest to a particular group rather than public goods that everyone can access.

In the work, *Social Capital in the Creation of Human Capital*, Coleman (1988) focused on the mechanisms and the role of social capital in the family structure. This theory considered social capital in two aspects, the social and economic perspective, as a relationship between individual and social actions. Coleman (1988) suggested that the connection between a child, family, friends, community, and school could lead to higher academic achievement. This connection develops social capital as an outcome of social relationships and involvement. In addition, he pointed out that a group within which there is strong trust leads to accomplishment of much more than a group with weak trust attribution. According to Coleman, besides the relationship

between the individual and the group, the structures of the relations are also key factor for the existence of social capital.

Putnam (1993) defines social capital as the features of social organization, in which there are trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions. In *Making Democracy Work: Civic Tradition in Modern Italy*, Putnam (1993) explored the effects of decentralization reforms in Italy in the 1970s and the consequences of the reform in different regions that have shown different types of success. He found that the higher the levels of civic engagement, particularly in local organizations and networks, the better that democracy worked in civil society.

Another work of social capital of Putnam is *Bowling Alone*-the collapse and revival of American community. According to Putnam (2000), there are two kinds of social capital: bridging and bonding. Bonding social capital refers to the relations within homogenous groups such as family, or social or ethnic groups. Bridging social capital refers to the relations between different groups and networks and is regarded as the most needed for collective problems. Putnam (2000) also stated that physical objects and human capital are individuals' properties; social capital is the connection between individuals, which refers to the network, norms, and trustworthiness built from those individuals.

Social capital has been discussed by other scholars, such as Fukuyama (1995), who argued that social capital is a necessary precondition for successful development and that a strong rule of law and political institutions are based on social capital building. He stated that social capital arises when people work together to reach a common purpose, and in this situation informal value exists and results in the cooperation among them. The World Bank (2011) also concluded that social capital is a link to hold people together in society together. Social interaction is shaped by institutions, relationships, and norms that result in the quality of a society.

According to these definitions in the foreign context, social capital, in general, refers to three main elements, the trust, norms, and networks that enable collective action.

2.2.2 Social Capital in the Thai Context

Thai scholars have long realized that Thailand has had rich social capital as a characteristic of Thai rural villages; however, this has decreased as a result of modern development. Thai social capital was reintroduced as one of the strategies to cope with the impact of the financial crisis in 1997 when families and networks played a vital role in supporting the individuals and systems affected by the crisis (Nidhi Eoseewong, 1998; Anek Nakabutara, 2002; Amara Pongsapich, 2003).

In Thailand, the network within the family and community plays a crucial in a community. Paiboon Wattanasiritum (1999) defines social capital in the Thai context as “the strength of community, local, togetherness, and synergy with culture, moral and social spirit that a management agent will manage system in a community.” Ammar Siamwalla (2001) looks at social capital as a relation in a society that creates trust and mechanisms to live together. Seri Phongphit (2003) states that the social fund in a village will support and strengthen social capital as it will lead people to help each other, build trust and respect in one another, and develop equality in public good more than the money itself in a fund. Pornrawee Seeluangsawat (2002) states that social capital is cultural capital and spirit capital built from members in a community and religion that create local wisdom, activities, and ways of living. The development of social capital in this sense is a village fund.

Moreover, the National Economic and Social Development Board (NESDB) defined social capital as a collection of every good thing in a society from the collective and expansion of social capital. It also includes a group of quality people working for the public based on trust, relations, and culture.

Anek Nakabutara (2002) divided Thai social capital into five forms: spirit capital, knowledge capital, human capital, natural resource capital, and social fund. First, spirit capital is related to the appreciation of the value of the local community, the nation and the country accumulated from ancestors. Second, knowledge capital refers to everything in the local community that can be reused. Knowledge capital covers sufficiency economy touching the individual and society regarding people’s lives, career, natural resources, and relationships between people and people, people and nature, and community and community. Third, human resource capital is another asset in the Thai community that creates local leaders to form networks and develop

coordination and cooperation which are intangible assets in a community. Forth, natural resource capital performs as another capital to support social capital. The last capital is the social fund, in which every single local community has a social fund as a public good for people, such as a saving fund, rice bank, and buffalo bank—a management system of buffalos for farmers to borrow money for use on their farm instead of using machines, which causes a higher input cost.

According to the context of Thai social capital, the strength of the local community lies in its strong spiritual, knowledge, and social capital forming a network as value resources of the community. Social capital both in the foreign and Thai context shares the similarity of trust, norms and networks in the local community in Thailand compared to a loose network in the big city which seems to have become a capitalist culture.

Regarding knowledge capital, Seri Phongphit and Vichit Nantasuwana (2002a,b) have described local wisdom as a form of social capital as knowledge based on the experiences of people that are handed down over the generations, and those that may be village philosophers. This knowledge is used as a guideline for people's daily activities in their relations with their families, their neighbors, and other people in the village and with their surroundings.

The central idea is argued that villagers must respect their ancestors, spiritual practices, and nature. They conclude that the characteristics of local wisdom can be explained as follows:

- 1) Local wisdom must incorporate knowledge of virtue that teaches people about ethics and moral values.
- 2) Local wisdom must teach people to love nature, not to destroy it.
- 3) Local wisdom must come from the older members of the community.

They also explain that local wisdom is presented in many forms, through people's thoughts, occupations, ways of living, and social values.

2.3 Review of the Studies and Research on Organic Agriculture in Thailand

Research related to organic agriculture has been studied extensively in Thailand. However, most of it has focused on specific organic plants, organic fertilizers, soil development, and organic markets. There are few studies that have focused on the implementation of organic agriculture policy.

Sompop Khotwong (2011) stated that agricultural officer's lack organic agriculture knowledge and that they cannot promote organic agriculture to farmers. There is no action plan for organic agriculture policy and the routine work of the officers in agriculture promotion conflict for organic farming.

Most of the expansion of organic agriculture areas is from the business sector; however, there is no linkage among related sectors for organic agriculture, such as NGOs, companies, organic shops, foundations in organic farming, or organic farmer groups. Green Line (2008) reported that "the growth of organic agriculture in Thailand has been limited due to unaccommodating state policies. Most farmers are not ready to give up chemicals and shifts to organic farming, which remains a niche market with high prices and few outlets. Our knowledge of organic farming is relatively scant."

Several people related to organic agriculture farming in Thailand shared their opinion about organic agriculture in the article "Save the World with organic farming", Green Line (2008). In this article, Wallop Pitchyapongsa, the president of the Thai Organic Trade Association, said that most of the budget for organic agriculture policy was spent on organic agriculture production. This reflects the reality that the policy focuses on fertilizer-making instead of the whole picture of organic agriculture management and production system.

Vitoon Panyakul (2008) also stated that organic practice worldwide was jump-started by the private sector, including the business sector, NGOs, and local organizations. However, the policy makers have never sought input from these three players. He added that each ministry involved in organic agriculture policy came up with its own plan and implemented it.

According to a review of the problems in organic agriculture related to policy, they can be categorized in terms of policy implementation as follows:

1) Policy Goals, Standards, and Objectives

One of the most important of the successful implementation is the policy goals, standards, and objectives. A good policy should have a direct and structured implementation process. Effective policy implementation needs the standards and objectives that are understood by related implementers (Van Meter and Van Horn, 1975). A policy with high expectations to meet the objectives that are related to minor change will be more successful than a policy with a major change (Mazmanian and Sabatier, 1983). Wildavsky (1992) and Lindblom (1993) suggested that incremental changes indicate a positive response from target groups. A policy is more likely to be a success if implementers have a positive attitude toward it. It also depends on the experience, values, and the need of those that are affected by the policy. The goals of organic agriculture agenda are a dramatic change from conventional to organic agriculture, with huge budgets for organic fertilizers, which is a part of the whole system of organic agriculture.

2) Coordinate Among Agencies

Coordination among agencies is another important problem regarding policy implementation. Public sectors have played a leading role in organic agriculture in its area without coordinating to one another and exclude private sector including business sector, NGOs and local organization in the policy implementation.

3) Capability of Implementers or Implementing Agencies

Successful implementation depends on the capacity of an organization to implement policy. According to Voradej Chandarasorn (2005), the capability of an organization can be categorized according to appropriate structure, personnel, budget, place and location, and tools and equipment within the organization. Moreover, the organization must have a suitable implementation plan and resources in order to achieve its goals. The lack of organic knowledge officers is one of the major problems.

2.4 Sustainable Agriculture

Sustainable agriculture can be described as a farming system that maintains agricultural productivity for the long term while minimizing adverse impacts in its production. The goals of sustainable farming are resource optimization, social well-being, competitiveness in commerce, and environmental protection and conservation (Ikerd, 1993). Moreover, sustainable development looks at the whole of the farming system rather than specific inputs or crop yields (Lynam and Herdt, 1989), which includes the relationship among inputs, technologies, and management used in farming based on given socio-economic factors. In addition, sustainable agriculture can also be defined as the adoption of production practices and the adoption decisions that have been investigated with the tools used to explain the diffusion of mechanization and hybrid seeds or the agrochemical complex (Robert and Hollander, 1997).

In Thailand, there are five different formal sustainable farming systems: integrated farming, organic farming, natural farming, agro-forestry, and “New Theory Farming” (Thanwa Jitsanguan, 2001).

- 1) Integrated farming is an agricultural system that integrates plant and animal production in the same area that can support the benefit of each other in a limited area. It is a rotation of abundant farm materials among crops, animals, and environment.

- 2) Organic farming is an agricultural method which is based on natural techniques without using chemicals or the contamination of chemical residue. Its objective is to support and enhance soil conditions by using naturally green manure or organic fertilizer to support food safety for consumers.

- 3) Natural farming is a concept of agriculture that relies on four main thoughts, which are no plowing and tilling the soil, no use of organic fertilizers, no removal of weeds, and no chemical use. This agriculture tries to go back and imitate the natural way of agriculture using homemade raw material.

- 4) Agro-forestry is an intensive land management system that benefits from biodiversity combining trees, crops, and animals. It is the integration of trees on farmland and sustains production for increased social, economic, and environmental benefits for land users such as farmers.

5) New Theory farming is an agriculture approach focusing on water resources and land management at a proportion of 30:30:30:10 according to the theory. The first 30 percent of the area is for ponds to store seasonal rain water. The second 30 percent is for rice growing. The third 30 percent is used to grow other crops for family food and as a source of income. The remaining 10 percent is for the home and other buildings. It aims to create food security at the family level.

In Thailand, the concept of organic agriculture has been mixed with others types of sustainable farming systems. The most popular concept is new theory farming which is rooted in the sufficiency economy philosophy of His Majesty King Bhumibol Adulyadej that has been communicated to the public for years.

As both organic farming and new theory farming are sustainable types of agriculture, in this study, the new theory farming will be added as a support factor in organic agriculture policy implementation.

2.5 Conceptual Framework of This Study

Following the analysis of the literature and information about organic agriculture from people in this area, a preliminary conceptual framework was developed as the basic tool to be used for the study and to discover which factors affect organic agriculture policy implementation at the local community level. This conceptual framework of the study of organic agriculture policy implementation argues that the synthesis of the influential factors of the implementation of general models combined with social capital and the sufficiency economy philosophy will expand the effectiveness of organic agriculture policy implementation in a more powerful way.

2.5.1 Policy Implementation

The variables influencing the success or failure of policy implementation in general from several implementation models and scholars in the first part of the literature review consist of nine angles.

2.5.1.1 Policy Goals, Standards, and Objectives

The goals, standards, and objectives of organic agriculture policy will be studied in order to look at the precision and clear ranking of legal objectives, the

validity of the causal theory, agencies' and officials' commitment to statutory objectives and the implementer's policy acceptance level, which will lead to the effectiveness of policy implementation.

2.5.1.2 Resources

Resources and incentives, valid theories and technology, available financial resources, the attitudes and resources of constituency groups, personnel, the budget, place and location, and tools and equipment, and service provider capacity will be studied in order to look at the influence of resources on policy implementation.

2.5.1.3 Implementers

The characteristics of implementing agencies, commitment and leadership the skill of implementing officials, the disposition and response of implementers, motivation, leadership, participation, teamwork, service provider capacity, and the characteristics and capacities of implementing agencies of frontline implementers will be studied as the attribute factors of policy implementation.

2.5.1.4 Support

In this study, the effect of the new theory and sufficiency economy philosophy will be included as related, supporting concepts that play a positive, supporting role in organic agriculture implementation. Organic farming also supports and enhances soil conditions by using naturally-green manure or organic fertilizer to support food safety for consumers. The new theory, which aims to create food security at the family level, also supports self-reliance where farmers do not depend on resources in agriculture from outside. Both the concepts of organic and new theory share the ideas of moderation, reasonableness, and requirements for a self-immunity system using the sufficiency economy philosophy. It may be said that organic agriculture policy gets indirect support from the heavy promotion of these two concepts.

2.5.1.5 Target Group

The diversity of target group behavior, the percentage of the target group as a percentage of the population, and the extent of the behavioral change of the target group will be studied as factors in the effectiveness of policy implementation.

2.5.2 Social Capital

Social capital has been accepted as an important tool in community development. Social capital can improve activities, projects, policy effectiveness, and sustainability by building the community's capacity to work together to address its common needs and problems, fostering greater inclusion and cohesion that can be used to strengthen the community and development.

In this study, social capital will be studied through the positive characteristics of community assets and services, formal and informal community institutes, and examples of community collection activities that will affect the implementation of organic agriculture policy. Regarding local wisdom, the traditional knowledge of organic agriculture farms will be included as a factor in the effectiveness of policy implementation and sustainability of organic agriculture.

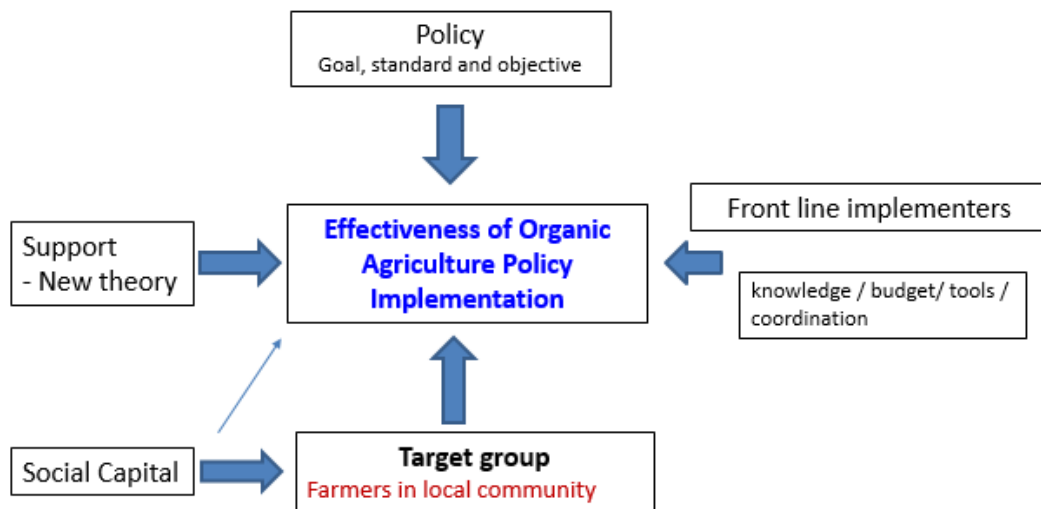


Figure 2.7 Conceptual Framework of the Factors Affecting Organic Agriculture in the Local Community

2.6 Policy Implementation Effectiveness

Policy implementation refers to the extent to which policy achieves its goals with the benefit of any given policy. Effective implementations are those that achieve the desired results with budget and time provided to that policy. This can often be the

key to success or the failure of a policy. In order to analyze policy effectiveness, it is necessary to identify the performance criteria and the requirements for performance assessment. The target group and indicators should be set at the beginning to measure policy effectiveness. The measure of the effectiveness of organic agriculture policy implementation is divided in two dimensions. The first dimension is to measure the decrease in chemical fertilizer. For the second dimension, the increase in organic agriculture areas will be measured.

CHAPTER 3

METHODOLOGY

3.1 Research Method

This study utilizes the qualitative method. The strength of qualitative research is the ability to describe how people experience a given research topic. The qualitative research method not only provides information about human nature, including attitudes, beliefs, opinions, emotions, behavior, and the relationships of individuals to specific issues, but also identifies intangible factors, such as culture, social norms, socioeconomic status, ethnicity, and religion that may not be obvious. Qualitative research can also help to interpret and better understand the complex reality of a given situation and the implications of quantitative data. In this study, the qualitative research method was selected to serve the objective, aiming at gaining a better understanding of farmer groups in accepting organic agriculture practice in the transition from conventional agriculture to organic farming and the maintenance of organic agriculture, and the influence of organic agriculture policy in their farming.

3.2 Data Collection

There are two sets of data in this study. The first is from the agricultural officers in implementing organic agriculture policy; the other is from organic farmer groups. The empirical data and information has been obtained using four methods: in-depth interviews, focus groups, non-participant observation, and documentation.

3.2.1 In-Depth Interview

The primary data collection method was comprised of in-depth interviews with prepared research questions as an interview guide. Researchers use this type of

interview to elicit information in order to achieve a holistic understanding of the interviewee's point of view or situation. The in-depth interview asking informants open-ended questions, and probes wherever necessary to obtain data deemed useful by the researcher. During the interview, an interviewer can observe an interviewee and this process may convey deeper meanings from what the interviewees say, for instance, message from faces, gestures or speaking tones.

In-depth interviews, also known as unstructured interviewing, involve conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program, or situation (Boyce and Neale, 2006). On the other hand, the use of the interview guide indicates that there is some structure to the interviews, even though they are treated as conversations during which the interviewer draws out detailed information and comments from the respondents. More structure eases the researcher's task of organizing and analyzing the interview data. It also helps the readers of the research report judge the quality of the interviewing methods and instruments used.

The learning experience from field research found that the quality of information obtained from interviewing using the person's local dialect was significantly richer. All of the informants in this study are northeastern farmers. Even though they understood central dialect and tried to answer the questions and told stories in the central dialect, they were more comfortable speaking in their dialect. The first field visit with the Sam Rong group involved the pre-test of the questions in the interview and the present author went by herself. She speaks the central dialect and cannot speak the northeastern dialect, but understand it a little bit. The farmers in this group tried to give information in the central dialect and the author found that she could not catch all of their conversation. After adjusting the questionnaire, the author went back with two assistants that were local people with a background in agriculture in their family. The two assistants not only helped in the interviews but also provided valuable insight into local farming interpretations.

3.2.2 Non-Participation Observation

The third technique was non-participant observation. This is a good technique to study people's behavior. The information from observation can be trusted as it is

from a real situation. The researcher can also observe the feeling of the informant. On the other hand, observation requires interpretive skills. It takes time, as subjects need to be studied in their natural environment; researchers have to be in the environment long enough to observe all of the behavior of the subjects.

During data collection, the author stayed overnight in the Sam Rong leader's house, while with the two other, she spent all day on their farms with two assistants, including when agriculture officers trained the farmers. The author also participated in some organic agriculture processes such as harvesting, and preparing and selling organic produces at the market.

3.2.3 Documentation

Gathering data from documents was important and useful in this study because it is the original source of information for policies, strategies, plans, programs, projects, activities, and budgets. The related documents in this study such as articles, reports, proposals, and drafts of the National Strategy Plan of Organic Agriculture Development in both hardcopy and online were collected.

3.3 Case Study

Case study is a research method based on the study of a limited number of naturally-occurring settings to look at individuals, a small group of participants, or a group as a whole. Yin (2003) suggested that a case study design should be used to answer "how" and "why" research questions and to cover contextual conditions that are relevant to the phenomenon under study. A multiple case study was used to explore the differences within and between cases in order to replicate findings across cases.

3.3.1 Selection of Cases

There are two major groups of organic agriculture in Thailand. The first is local organic agriculture in the community and which aims at the domestic market; the second is business organic agriculture, which reaches international markets (Green Net, 2013a).

This study focused on the first group-local farmers at the grass roots level and that will impact organic agriculture in order to serve the ultimate goal of sustainable development under the philosophy of the sufficiency economy to be self-reliant and have an impact on sustainable agriculture development. The organic produce in this group includes in-house certified produce for sale in domestic markets. The second group was not included in this study because they have the capability of developing organic farms and need support at a higher level and more professional technical assistance in terms of laws and regulations in order to export organic produce (Green Net, 2013a and Ministry of Commerce, 2012).

There were three purposively-selected case studies in this research and the criteria for the selection of the case studies were as follows.

- 1) Focusing on only one region in Thailand in order to control for regional culture and environmental differences. The analysis of the information was compared among three cases in a similar setting to find out the conclusion of factors affecting organic agriculture policy implementation and the development process of organic agriculture practice as well.

- 2) Duration of organic agriculture farming. Non-organic farming requires at least 1-3 years to develop to be organic farming, depending on different organic standards. The selected case studies had to be in organic farming operation for at least 3 years. The longer time of organic farming operation also included the process of development of organic farming.

- 3) Type of organic agriculture groups. All three case studies shared the common factors of focusing on local farming, the domestic market, and self-operating organic agriculture before forming a group in the lower northeastern region of Thailand. The diversity of the form and size of the groups was purposively selected to look at the effect of policy implementation after controlling for culture and environment factors.

The characteristics of the three organic groups are shown in Table 3.1.

Table 3.1 Characteristics of the Three Organic Groups

Characteristics	Sam Rong Group	Kadestip Group	Baan Tad Group
Province	Ubon Ratchathani	Srisaket	Srisaket
Size of group	Small (18 members)	Big (350 members)	Medium (47 members)
Organic produce	Rice, vegetables, garlic and onion	Rice and soy beans	Rice, chili peppers, garlic, onion
Number of years in organic	16	9	3

3.4 Improving Reliability and Validity

3.4.1 Trustworthiness

Denzin and Lincoln (2003) suggested that four factors in establishing the trustworthiness of findings from qualitative research are credibility, transferability, dependability, and confirmability. Credibility refers to the confidence one can have in the truth of the findings that can be established by various methods. Transferability means that other researchers can apply the findings of their study. Dependability refers to the stability of the findings over time and conformability to the internal coherence of the data in relation to the findings, interpretations, and recommendations.

3.4.2 Validity and Reliability

In order to obtain quality data for a study and analysis, validity and reliability have to be of concern. According to Patton (2002), validity and reliability are two factors which every qualitative researcher should be concerned about while designing a study, analyzing results, and judging the quality of the study. Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure. Reliability, on the other hand, is concerned with

the accuracy of the actual measuring instrument or procedure, and validity is concerned with the study's success at measuring what the researchers set out to measure. Therefore, triangulation is necessary in order to strengthen a study by combining techniques by improving the validity and reliability.

3.4.3 Triangulation

Triangulation is a strategy for improving the validity and reliability of research or evaluation of findings. According to Rothbauer (2008), triangulation is a technique to assure results from different methods leading to the same results. The triangulation methods in this study involved data triangulation (space triangulation with different sites), and method triangulation using three methods: in-depth interview, non-participant observation, and a document review.

Following the improvement of the validity and reliability of the data, this study was designed to collect data using three methods: in-depth interview, case study, and documentation. Moreover, two assistants that were local persons helped to verify the data and provided valuable insight into local farming interpretations.

3.5 Data Analysis

The analysis of the interview transcripts and field notes was based on an inductive approach, leading to the formation of patterns, themes, and categories in the data. Miles and Huberman (1994) described three steps in qualitative data analysis, which are data reduction, data display, and conclusion drawing or verification.

3.5.1 Data Reduction

The first step of data analysis is data reduction. All of the data collected from all of the data collection methods will be managed and sorted into a summary, a finding topic, or a group of data. This step will reduce the variety of data to be meaningful information.

3.5.2 Data Display

Following the data reduction step, the data display is the creation of organized and compressed forms of arranging the data. The display will help identify in the

form of structures, patterns, connections, or diagrams that will provide meaningful data to answer questions or draw conclusions.

3.5.3 Drawing Conclusions

The data from the data display step were used to draw conclusions. Verification of data can be performed by revisiting the data, testing, or confirming the themes and patterns to provide quality conclusions. The triangulation technique is one type of verification of data as well.

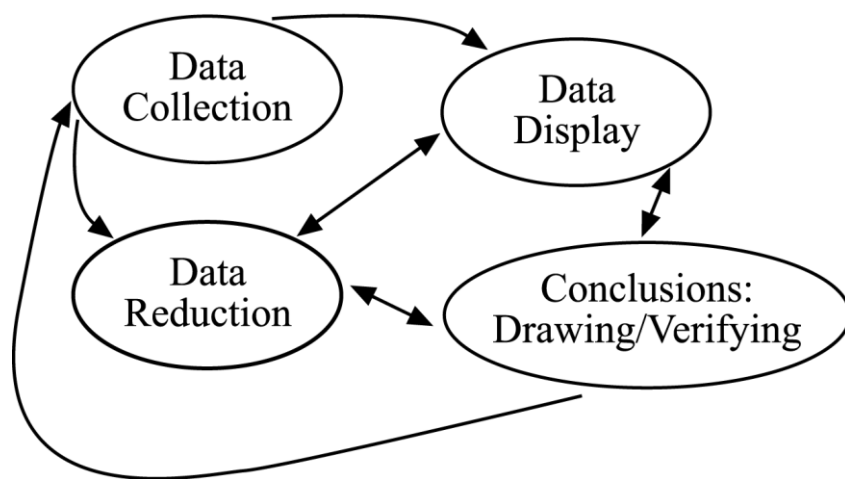


Figure 3.1 Components of Data Analysis

Source: Miles and Huberman, 1994.

Qualitative analysis is a cyclical process where researchers need to repeat several rounds when there are new questions and when connections emerge and researchers need to understand more about the information in the study.

CHAPTER 4

POLICY LEVEL: ORGANIC AGRICULTURE POLICY FORMULATION

Relating to the conceptual framework of the factors affecting organic agriculture in chapter 2, this chapter mainly discusses organic agriculture policy in terms of agenda setting and policy formulation, as shown in Figure 4.1. There are five parts in this chapter. The first part discusses the beginning of the organic agriculture policy in Thailand. The second is organic agriculture policy and its development, including the goals, standards, objectives of the organic agriculture policy, and budget. The third is organic agriculture in the National Economic and Social Development Plan. The fourth part is the analysis of organic agriculture policy. The last part is the conclusion.

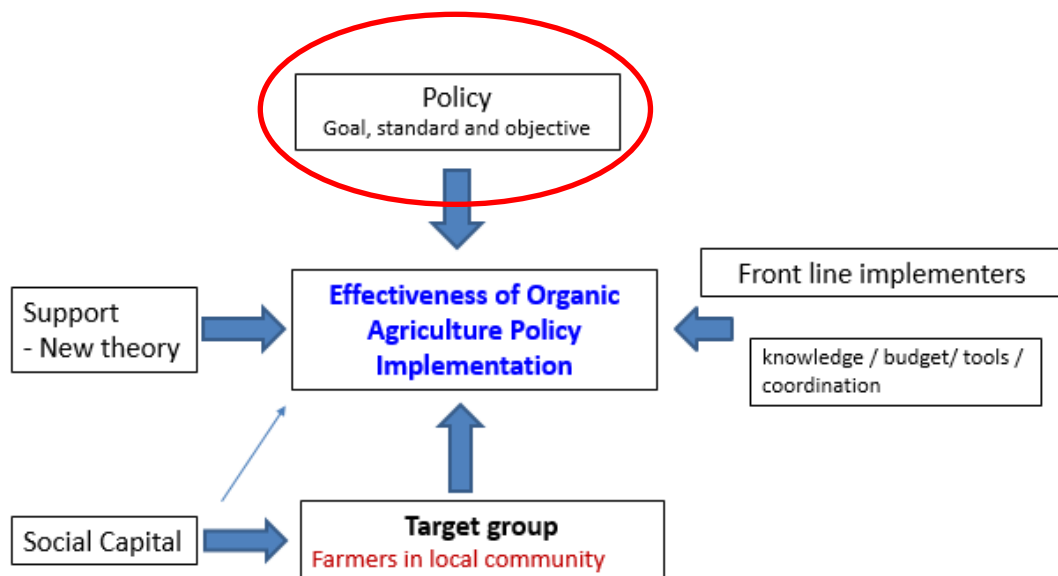


Figure 4.1 Factors Affecting Organic Agriculture Policy Implementation in the Local Community: Policy

In term of state policy, the government in 2004 declared organic farming as a national agenda over four years from 2006 to 2009 with the aims to cut the use of chemical fertilizers and other agricultural chemicals by half. It planned to replace chemicals with natural substances on 85 million rai (13.6 million hectares) of farmland with one million rai (160,000 hectares) to be totally chemical-free, aiming for 200,000 rai (32,000 hectares) in the first year. The plan covered 4.25 million farmers who were projected to see their income increased by 20% while exports of organic products were hoped to double. The plan received cabinet approval on January 14, 2005. (Green Line, 2008a)

4.1 Policy Formulation: Before Being a Policy

Prapat Panyachartrak, a former deputy Minister of Agriculture and Cooperatives in 2002, was a key person in the agriculture policy of the Thai Rak Thai party, which was the government at that time. At present, he works as the chair of National Farmer Council. In the interview in 2013, Prapat Panyachartrak mentioned the beginning of organic agriculture policy: (Prapat Panyachartrak, 2013)

First, because of the global trend of organic according to severe environmental problems, pollution and global warming that made people thinks about their strength in the past once environment was rich and pure.

Second, the government would like to create a good image with organic agriculture policy; they did not mind the result.

Third, Thailand is suitable for agriculture with its soil, climate, and local plant, and that best serve organic agriculture farming.

Prapat Panyachartrak was one of the informants in Chedsada Mingchai's work (2008), *Thai Organic Farming: Policy Context and Content Analysis*. Mr. Mingchai interviewed relevant persons that shared the duties and responsibilities in organic agriculture policy in 2007, which was close to the time of the beginning of the organic policy as the national agenda in 2005. The six persons (Chedsada Mingchai, 2007a-2007f) are:

- 1) Mr. Prapat Panyachartrak, Former Minister of National Resources and Environment, and Former deputy Minister of Agriculture and Cooperatives.
- 2) Mr. Songsak Wongphumwat, Director-General, Department of Agriculture Extension
- 3) Mr. Adisak Srisappakit, Director-General, Department of Agriculture
- 4) Mr. Anant Poositikul, Secretary-General, Agriculture land Reform Office
- 5) Ms. Benjarat Anantapongsook, secretary of the national organic agriculture agenda advocacy committee and Director, Division of Soil Biotechnology, Land Develop Department
- 6) Mr. Sunai Setboonsang, Assistant to the Agriculture and Cooperatives Minister

According to the interview transcripts, all six interviewees agreed on the causes of organic policy in four areas.

First, it was considered as an urgent need to alleviate and solve environmental problems because of the overuse of chemicals in agriculture. Both farmers and consumers have been sick because of the non-natural substances in the agricultural process, and the soil has fewer nutrients and the water is polluted. These problems have made the awareness of the environment and have made the global environmentally friendly trend.

Second, the global trend of organic agriculture directly influenced food safety and the “Kitchen of the World” policy in Thailand. Organic agriculture was a better alternative agriculture not only for domestic people, but also for the better competitiveness of the global food markets.

Third, as an agriculture country, Thailand was able to put organic agriculture into the highlight of agriculture policy. In addition, the development of biotechnology has served organic agriculture, such as organic fertilizers, to improve the soil with in-house research and development and production.

Fourth, organic agriculture has a good “image” for obtaining the attention and support from political parties and the government. Moreover, local NGOs in Thailand have worked for many years to push and launch organic agriculture to the Thai people and have received acceptance in a wide range in society.

Mingchai concluded in his work that organic agriculture policy was formulated because of the necessary condition for food safety, international standards, the Free Trade Agreement, and the roles of the international organizations.

Another work in organic agriculture policy was that of Supachai Lorlowhakarn, Kunawut Boonyanopakun, Ellis, Vitoon Panyakul, Vildoza and Kasterine (2008). He cited three major trends that have caused the emergence of organic agriculture in Thailand:

- 1) an increase in public awareness of healthy living leading the demand for organic produce as safe foods because of the use of no chemicals

- 2) the low price of farm products and the high price of farm input initiated the establishment of many grassroots community development organizations and NGOs, such as the Alternative Agricultural Network (AAN), to promote a sustainable agriculture system including organic farming in Thailand

- 3) the trend of environmental awareness of the impacts of conventional agriculture on the environment, ecology, and biodiversity, including land use, landscape, biodiversity, and pollution caused by chemicals in agriculture

According to Viriya Klaidang (2006), organic agriculture was made of public interest before the national agenda announcement. In 2001, the Ministry of Agriculture and Cooperatives by Department of Agriculture Extension hosted the organic agriculture policy with the concept “Organic agriculture leads to a good life of humankind”.

Viriya Klaidang (2006) cited that organic agriculture has become the national agenda in 2004 because the Thai government realized the effect of chemicals in agriculture in terms of the health and quality of life of both farmers and consumers, a damaged ecology system, less biological diversity, and trade deficits in chemicals in agriculture and medicines.

In addition, Thailand is a leading producer and export country of agriculture products and food; Thailand needs to serve the global trend and fit the needs of international markets. Therefore, the government raised organic agriculture as part of its national agenda in 2005, the same year in which they launched the food safety year.

From the four sources of information on organic agriculture policy, the factors influencing organic agriculture agenda setting are shown in Table 4.1

Table 4.1 Factors Influencing Organic Agriculture Agenda Setting

Factors	Prapat Panyachartrak (2013)	Chedsada Mingchai (2008)	Lorlowhakarn and et al (2008)	Viriya Klaidang (2006)
1. Global trend of environmentally-friendly and organic farming	x	x	x	x
2. Suitable land for agriculture	x	x	x	-
3. Making a good image of the government	x	x	-	-
4. International standards and free trade	-	x	x	-
5. Competition	-	x	-	-

A common factor that all of the informants agreed on was that the global trend of environmentally-friendly and organic farming caused the start of organic agriculture policy.

In sum, organic agriculture policy was created from the problems and conditions both with humans and the environment caused by the overuse of chemical fertilizers and pesticides in agriculture for a long time since the green revolution in the 1970s. The impact of agriculture chemicals since the green revolution has affected all people. Consumers have had a risk of chemical contamination in agriculture produce; farmers have had a risk of agrochemicals absorption into the body. Environment problems are of the most concern. At the same time, the global trend of sustainable development has tried to bring farming back to a natural way with turning to organic patterns around the world, including Thailand. In Thailand, organic agriculture has been supported by the sufficiency economy philosophy. All of these factors together make the trend of producing food in a natural way, consuming chemical-free agriculture produce, and competitiveness in international markets and international

trade agreements that not allow chemical contaminate in food export to their countries. Organic agriculture policy, then, was presented as the national agenda in 2005.

A diagram of the emergence of organic agriculture policy in Thailand is shown in Figure 4.2.

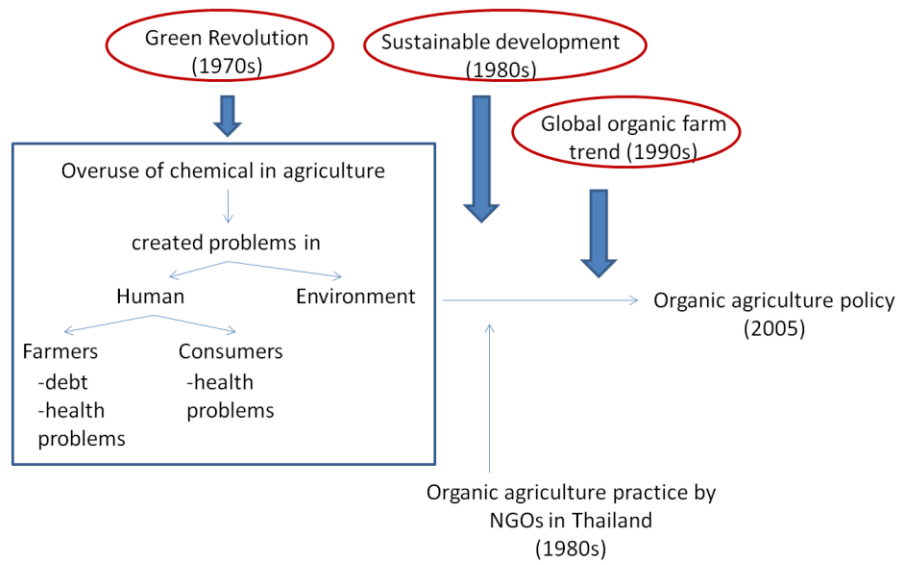


Figure 4.2 Emergence of Organic Agriculture Policy

Compared to foreign countries, organic farming worldwide is rooted in a social movement that emerged out of the opposition to mainstream farming. In foreign countries, organic practices began in the private sector, including the business sector, local governments, and non-governmental organizations in order to oppose the predominant way of farming by demonstrating an alternative rather than engaging in public protest against an established policy (Dabbert, Haring and Zanolli, 2004; Moschitz and Stolze, 2007). In almost all cases in this study, the early development of organic agriculture emerged from either NGOs or in the private sector.

In many developing countries, including Thailand, organic agriculture has been promoted by NGOs as an appropriate technology for small-scale farmers, focusing on the low use of inputs, its independence from agro-business, and its care for natural resources rather than market potential. In Thailand, besides the global trend of organic farming, the NGOs have also played an important role in pushing organic farming to be a policy.

Therefore, the beginning of organic agriculture in Thailand is similar to the emergence of organic agriculture in other countries, where organic agriculture farming can be seen as a concern of a social movement representing an alternative to mainstream agriculture (Michelsen, 2001).

Moreover, the United Nations Environmental Program (2008) also indicated that one support for organic agriculture in Thailand was that the Royal family has promoted self-sufficient sustainable agriculture and the Royal Project has recently begun organic production.

4.2 Organic Agriculture Policy and Its Development in Thailand

Organic agriculture in Thailand has been a public policy since 2005, first as the national agenda approved by the cabinet and later was developed to be a national strategic plan. At present, the second National Strategic Plan for Organic Agriculture Development (2013-2016) has been under the approval of the government.

Table 4.2 Organic Agriculture Policy and Its Development

Year	Name	Host Agency
2005-2007	National Agenda announcing in a cabinet resolution on January 4, 2005	Land Development Department, Ministry of Agriculture and Cooperatives
2008-2011 extend to 2012	The first National Strategic Plan for Organic Agriculture Development B.E. 2551-2554 and 2555 (2008- 2011, 2012)	Office of the National Economic and Social Development Board
2013-2016	The second National Strategic Plan for Organic Agriculture Development B.E. 2556-2559 (2013- 2016)	Office of Agricultural Economics, Ministry of Agriculture and Cooperatives

4.2.1 National Agenda (2005-2007): The First Goal

The cabinet resolution on January 4, 2005 approved the organic agriculture strategy as the national agenda and set the national organic agriculture promotion committee, having the deputy prime Minister as a chairperson to develop organic agriculture policy. The goals of the plan are to reduce chemical fertilizers and to make domestic organic fertilizers for self-reliance following the sufficiency economy philosophy.

The organic agriculture development budget plan 2006-2009 (Bureau of Budget, 2005) was approved on May 31, 2005 as one of the integration plans to drive organic agriculture as the national agenda with the integration of several agencies. There were 16 agencies from five ministries (Ministry of Agriculture and Cooperatives, Ministry of Natural Resources and Environment, Ministry of Commerce, Ministry of Industry, Office of the Prime Minister) involved in this plan with 1,262.2 million baht in the 2006 fiscal year; the Land Development Department, Ministry of Agriculture and Cooperatives was host agency.

There are four goals with indicators for a 4-year plan (2006-2009).

- 1) to transform farms from conventional farms to organic farms for 4.25 million farmers in the organic converting system (850,000 in 2006)
- 2) to decrease agriculture chemicals by 50% within four years (5% in 2006 or 2,200 million baht)
- 3) to increase organic farming areas to be 85 million rai (17 million rai in 2006)
- 4) to increase the growth of the organic market. The first indicator is the export organic product increase of 100% annually; the second indicator is that organic farmers have seen a 20% increase in income.

4.2.2 The First National Strategic Plan for Organic Agriculture

Development B.E. 2551-2554 (2008-2011): Standards

The cabinet approved the first national strategic plan for organic agriculture development 2008-2011 on January 22, 2008 in order to be a framework for relevant agencies to run organic agriculture policy to achieve their goals. This strategic plan cooperated with public, private, NGOs and farmer networks to work together as an

integrated group. Later on May 6, 2008, the cabinet approved the organic agriculture action plan and budget. It was the first integrated organic agriculture plan having the Office of the National Economic and Social Development Board as a host together with the Ministry of Agriculture and Cooperatives, the Ministry of Science and Technology, the Ministry of Commerce, and the Ministry of Industry.

The objectives of the first National Strategic Plan for Organic Agriculture Development were to enhance the quality of life of the people, both producers or farmers and consumers, by changing to environmentally-friendly farming in order to achieve food safety and food security, and to increase the numbers of organic farmers and organic areas with full supply chain management (National Economic and Social Development Board, 2008).

There were four strategies in this plan:

Strategy 1: enhancing and managing knowledge and innovation

Strategy 2: local organic agriculture development

Strategy 3: enhancing capability of commercial organic agriculture to meet standards

Strategy 4: driving Thai organic agriculture strategy management

The first National Strategic Plan for Organic Agriculture Development consisted of 12 plans and 104 projects with a budget of 4,679.96 million baht allocated.

In addition, there were two other projects later added to the strategy plan, which were the integration of Organic Hom Mali Reice in Kularonghai field for export and organic agriculture development in the northern region (National Economic and Social Development Board, 2008).

Table 4.3 Ministry and Budget in the First National Strategic Plan for Organic Agriculture Development B.E. 2551-2554 (2008-2011)

	MOAC	MOST	NESDB	MOC	MOI	Total	%
Strategy 1	1,458.44	148.30	-	-	-	1,606.74	34.3
Strategy 2	2,226.82	195.32	-	9.00	-	2,431.14	51.9
Strategy 3	464.80	-	-	107.44	18.80	591.04	12.6
Strategy 4	7.99	-	43.05	-	-	51.04	1.1
Total	4,158.05	343.62	43.05	116.44	18.80	4,679.96	
%	87.2	7.2	0.9	2.4	0.4		

4.2.3 The Second National Strategic Plan for Organic Agriculture Development B.E. 2556-2559 (2013-2016)

The draft of the second National Strategic Plan for Organic Agriculture Development 2013-2016 presented the idea that organic agriculture development is still under the sufficiency economy philosophy basis. The vision of the new plan was to set Thailand as a hub of Asian's organic agriculture. Agencies related to this second national strategic plan included the Ministry of Agriculture and Cooperatives, the Ministry of Science and Technology, the Ministry of Commerce, the Ministry of Industry, the Ministry of Education, and the Ministry of Public Health.

The objectives of the second National Strategic Plan for Organic Agriculture Development were as follows:

- 1) to increase organic farm areas by 10% per year
- 2) to increase organic production and consumption by 10% per year
- 3) to make value added to organic products at 10% per year
- 4) to develop at least eight organic products to meet the standards
- 5) to reduce chemicals in agriculture by 5% per year.

There were four strategies:

Strategy 1: knowledge and innovation management

Strategy 2: organic agriculture supply chain development

Strategy 3: enhancing the capability of commercial organic agriculture and organic standards

Strategy 4: integration to drive organic agriculture

The second National Strategic Plan for Organic Agriculture Development consisted of 100 programs with an allocated budget of 4,767.01 million baht.

Table 4.4 Ministry and Budget in the Second National Strategic Plan for Organic Agriculture Development B.E. 2556-2559 (2013- 2016)

	MOAC	MOST	MOE	MOPH	MOC	MOI	Total	%
Strategy 1	346.49	118.56	45	98	0	0	608.05	12.8
Strategy 2	3482.9	22.2	0	212	12	68.72	3,797.82	79.7
Strategy 3	159.47	7.4	0	0	75.9	19.22	261.99	5.5
Strategy 4	64.65	0	0	30	4.5	0	99.15	2.1
Total	4,053.51	148.16	45	340	92.4	87.94	4,767.01	
%	85.0	3.1	0.9	7.1	1.9	1.8		

Table 4.5 shows the goals, objectives, and budget of the organic agriculture agenda for the first and the second National Strategic Plan for Organic Agriculture Development.

Table 4.5 Goals, Objectives, and Budget of Organic Agriculture Policy

	National Agenda (2005–2007)	The 1st National Strategic Plan (2008-2012)	The draft of 2nd National Strategic Plan (2013-2016)
Goals and Objectives	<ul style="list-style-type: none"> 1) To transform from conventional to organic farming for 4.25 million farmers 2) To decrease agriculture chemicals by 50% within four years. 3) To increase organic farming area to be 85 million rai. 4) To increase the growing organic market: 100% increase in exported organic products, and organic farmers have a 20% increasing in income. 	<ul style="list-style-type: none"> 1) To enhance the quality of life of people, both farmers and consumers, by changing to environmentally-friendly farming to achieve food safety and food security 2) To increase the numbers of organic farmers and organic areas with full supply chain management 	<ul style="list-style-type: none"> 1) To increase organic farm areas by 10% per year 2) To increase organic production and consumption by 10% per year 3) To make value added to organic products by 10% per year 4) To develop at least eight organic products to meet the standards 5) To reduce chemicals in agriculture by 5% per year
Budget	1,262.2 million baht in the 2006 fiscal year	4,679.96 million baht	4,767.01 million baht

4.3 Organic Agriculture in the National Economic and Social Development Plan

Besides being a national agenda and the national strategy, organic agriculture has also been an important issue in the national plan, which has been called the National Economic and Social Development Plan since 1997.

The National Economic and Social Development Plan has provided broad guidelines for economic and social policies, which have had impacts on development. Government agencies use the National Economic and Social Development Plan as a guideline to formulate and implement their annual plans. The Bureau of the Budget allocated government funds for development projects undertaken by all ministries based on their consistency with each current National Economic and Social Development Plan.

Organic agriculture is one type of alternative agriculture listed in the National Economic and Social Development Plan from the eighth plan (1997-2001) until the present, the eleventh plan (2012-2016).

4.3.1 The Eighth National Economic and Social Development Plan (1997-2001)

Sustainable development was a core concept in the eighth National Economic and Social Development Plan. Sustainable agriculture development was also the major structure in the plan. There were five different types of sustainable agriculture development included: organic agriculture, agro-forestry, natural agriculture, integrated agriculture, and new theory agriculture for at least 20% of all agriculture areas.

4.3.2 The Ninth National Economic and Social Development Plan (2002-2006)

The ninth plan was based on the philosophy of sufficiency economy. This plan emphasizes the balanced development of human, social, economic and environmental resources, with the priority goal to achieve real sustainable development including sustainable agriculture development.

4.3.3 The Tenth National Economic and Social Development Plan (2007-2011)

The tenth plan continues sustainable development based on the philosophy of sufficiency economy in order to serve food security and variety in the household, which will reduce price risks and increase product value. Alternative agricultures are still listed as important with an integration of the local agriculture knowledge available in each community to adjust their production system and expand cultivated lands for more sustainable agriculture.

4.3.4 The Eleventh National Economic and Social Development Plan (2012-2016)

In this plan, agriculture still plays as an important sector where the sufficiency economy philosophy has been incorporated by farmers, the community, and the country. It focuses on “Green and Cool Agriculture Economy.” In order to improve the agriculture production, Good Agriculture Practices (GAP) will be promoted to meet the safety and quality standards.

According to the national agenda, strategic plan, and the national social and economic development plan, organic agriculture has been an important issue included in all plans. However, there are a number of organizations but not one uniting body. Collaboration between public and private sector is still weak.

Table 4.6 Summary of Organic Agriculture in the National Economic and Social Development Plan

Plan	Detail
The eighth plan (1997-2001)	- indicated five different types of sustainable agriculture development (organic agriculture, agro-forestry, natural agriculture, integrated agriculture, and new theory agriculture) for at least 20% of all agriculture areas
The ninth plan (2002-2006)	- priority goal to achieve real sustainable development including sustainable agriculture development

Table 4.6 (Continued)

Plan	Detail
The tenth plan (2007-2011)	<ul style="list-style-type: none"> - promote of organic farming and sustainable agriculture by reducing the amount of chemical use in the agricultural sector by boosting the utilization of local wisdom and adapting clean technology for use in the agricultural sector
The eleventh plan (2012-2016)	<ul style="list-style-type: none"> - reduce expenditures and the use of chemicals, and also encouraged them to produce crops on a foundation of reasonableness and knowledge - be able to save money, avoid excessive debt, secure their income, and lend a hand to neighbors and the community - the ultimate outcome of this practice is to establish food security and maintain biodiversity by support the role of the community to manage infrastructure - Green and Cool Agriculture Economy - Good Agriculture Practices (GAP) will be promoted to meet safety and quality standards

4.4 Policy Effectiveness: Success or Failure

Voradej Chandarasorn (2009) indicated that there are three dimensions in terms of measuring policy performance. The first dimension is the result of policy implementation in terms of output, outcome, and ultimate outcome. The second is that the success of policy implementation will not create unintended outcomes to harm other policies or increase other problems. The third dimension is outcome, in which a policy may succeed in the short-time measurement, but in the long run, it may fail.

The focus of this study will be on the first dimension, in which output and outcome are the results to be measured to identify the success or failure of a policy. These focusing outputs and outcomes are also related to the political system model where policy is the output from the demand and support to be a policy as well.

Output should only be produced and usually be seen, felt, or counted. Outcome is the next step from the output to measure the target group. Ultimate outcome is the result of the output and the outcome that affects the development.

Regarding the indicators for measuring policy performance, Voradej Chandarasorn (2009) mentioned five indicators for measuring the output of implementation; time, quantity, quality, budget, and satisfaction. In addition, the target group, equality, equity, transparency, accountability, and sustainability were considered six other indicators for measuring the outcome of implementation. Ultimate outcome is the final outcome, which is the most desired outcome from policy implementation.

From the goals and objectives of organic agriculture policy since the being of the national agenda and becoming the national strategic plan for organic agriculture development along with the dimension to measure policy performance, output and outcome can be used as the dependent variables to study the effectiveness of organic agriculture policy.

Table 4.7 Output and Outcome of Organic Agriculture Policy

Output	Expecting Outcome
1. Decrease import of chemical fertilizers and pesticides	1. Better physical and mental health
2. Increase organic farm areas	2. Better quality of life
3. Reduce cost of farming	3. Apply self-sufficient economy to the farm
4. Increase income	

The policy implementation effectiveness can be described as the decrease in the volume of imported chemical fertilizer and pesticides, and the increase in organic farming areas. The effectiveness of the policy implementation can also reflect the cost of farming and the increasing of income. The outcome of organic agriculture is that organic farmers have better health and a better quality of life with the self-sufficient practices on their farms. This ultimate outcome then is sustainable development.

This part of the present study focuses on the first and the second output, which are the decreased import of chemical fertilizers and pesticides and increased organic farm areas. Data were obtained from the output reported at the end of the first national strategic plan for organic agriculture development B.E. 2551-2554 and 2555 (2008-2011, 2012) with two key indicators: the reeducation of agrochemical imports, and the increased area of organic farming. Two other outputs-the reduced cost of farming and increased income-will be discussed in the three case studies in the next chapters, which that will also touch on the three expected outcomes.

4.4.1 Output 1: Decreased Import of Chemical Fertilizers and Pesticides

4.4.1.1 Import of Chemicals in Agriculture

Related to the output 1, the first indicator can be indicated by the reducing agrochemical imports. As Thailand cannot produce chemical fertilizer with in-house raw material, it needs to import fertilizer to be mixed in the domestic chemical industry. Since organic agriculture became a national policy in 2005, however, agrochemicals, both fertilizer and pesticides and herbicides, have not declined, but rather increased, as shown in Table 4.8 and 4.9.

Table 4.8 Chemical Fertilizer Import

Year	Volume (Ton)	Value (million Baht)
2008	3,797,749	75,610
2009	3,833,072	42,666
2010	5,172,708	61,211
2011	5,579,181	78,899
2012	5,583,276	83,947

Source: Department of Agriculture, 2013d and Office of Agriculture Economics. 2013b.

After implementing organic agriculture policy with the allocated budget in the 2006 fiscal year, the main goal to reduce chemical fertilizer has not been met, but the

demand of chemical fertilizer increased every year sharply between 2009 and 2010, as shown in Figure 4.3.

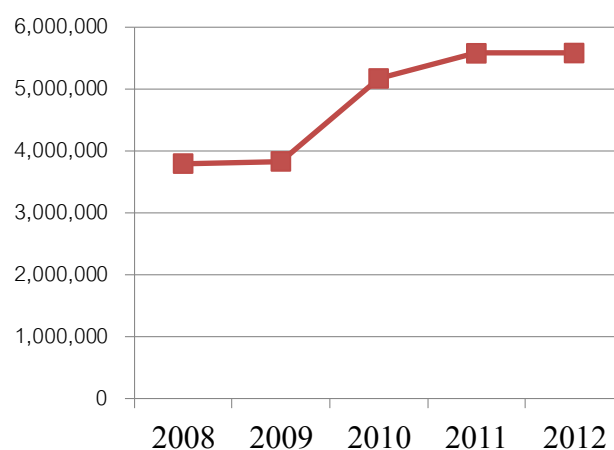


Figure 4.3 Volume of Import Chemical Fertilizer

Besides chemical fertilizer, other chemical substances in agriculture such as herbicides, insecticides, and fungicides have not significantly decreased either.

Table 4.9 Herbicides, Insecticides, Fungicides, and Other Chemical Imports

Year	Volume (Ton)	Value (million Baht)
2008	109,908	19,182
2009	137,594	16,816
2010	117,698	17,924
2011	164,383	22,044
2012	134,377	19,357

Source: Department of Agriculture, 2013c.

The volume of imported herbicides, insecticides, fungicides, and other chemicals has fluctuated, but has shown a tendency to increase, as shown in Figure 4.4

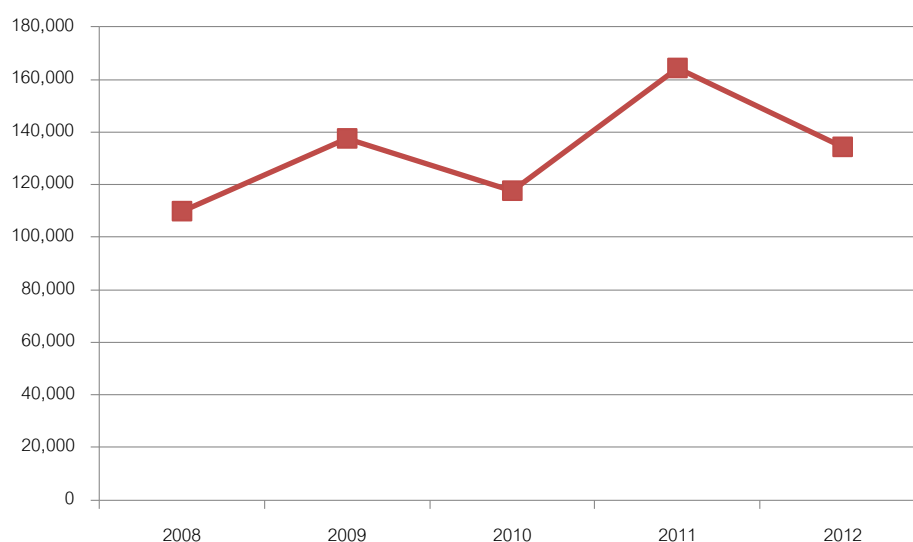


Figure 4.4 Volume of Import Herbicides, Insecticides, Fungicides, and Other Chemicals

While the demand for chemical fertilizer and herbicides, insecticides, fungicides and other chemical imports has increased, the agriculture areas have slightly decreased.

Table 4.10 Agriculture Areas in Thailand

						in million rai
Year	Rice	Crops	Fruit	Vegetable and flowers	Others	Total Area
2006	71.1	32.2	32.8	1.5	13.3	150.9
2007	71.0	32.0	33.2	1.5	12.9	150.6
2008	70.8	31.8	33.8	1.3	11.9	149.6
2009	70.6	31.5	34.4	1.3	11.8	149.6
2010	70.3	31.3	34.7	1.4	11.8	149.5
2011	70.0	31.1	34.9	1.4	11.8	149.2

Source: Department of Agriculture, 2013a, Green Net, 2013b and Green Net, 2013c.

Based on the imported chemical fertilizers in Table 4.9 and the agriculture areas in Table 4.10, the proportion of chemicals used and total agriculture areas is increasing according to the data in Table 4.11, which means that more chemicals are being used in agriculture areas even there has been a policy to support and promote organic fertilizer.

Table 4.11 Chemical Fertilizers Used

Year	Volume (million tons)	Total Agriculture Area (million rai)	Proportion of Chemical Fertilizer Used in Area (tons: rai)
2008	3,797,749	149.6	25,401.1
2009	3,833,072	149.6	25,401.1
2010	5,172,708	149.5	34,782.6
2011	5,579,181	149.2	37,533.5

Source: Department of Agriculture, 2013b.

4.4.2 Output 2: Increased Organic Farm Areas

4.4.2.1 The Increasing Areas of Organic Farming

The second indicator is the increasing areas for organic agriculture. A slightly positive increase is shown for organic agriculture areas in Table 4.12.

Table 4.12 Land Used for Organic Farming in Thailand

Year	Area (rai)	% of Total Agriculture Area*
2006	140,940.0	0.11
2007	119,722.8	0.09
2008	105,967.1	0.08
2009	192,220.0	0.15
2010	212,995.1	0.16
2011	219,391.7	0.17

Source: Green Net, 2013c.

Note: * total agriculture area is 131.3 million rai

* 2006-2010 data from Green Net, data in 2011 from Vitoon Panyakul presented at the Organic Symposium 2013, Bangkok, Thailand

The majority of organic farm types is organic rice. The types of organic products grown on organic farms are shown in Table 4.13 and Figure 4.7.

Table 4.13 Land Used for Organic Farming in Thailand Separated by Types

Year	Rice	Crops	Vegetable	Fruit	Others	Total Area (rai)
2006	113,213.0	6,546.6	15,121.2	4,981.8	1,077.2	140,940.0
2007	77,005.0	10,103.6	16,503.2	15,907.2	203.8	119,722.8
2008	70,485.67	11,791.1	13,820.4	8,369.9	1,500.0	105,967.1
2009	112,152.3	45,920.6	18,066.5	7,342.2	8,738.4	192,220.0
2010	138,328.0	46,682.1	7,047.7	6,751.3	14,186.0	212,995.1

Source: Green Net, 2013b

Remark: The total agriculture area in Table 4.9 and 4.10 is from Green Net, 2013b, which is different from the data in Table 4.7, where the data are from Department of Agriculture and Office of Agricultural Economics, Ministry of Agriculture and Cooperatives (MOAC). However, MOAC does not have an organic agriculture area.

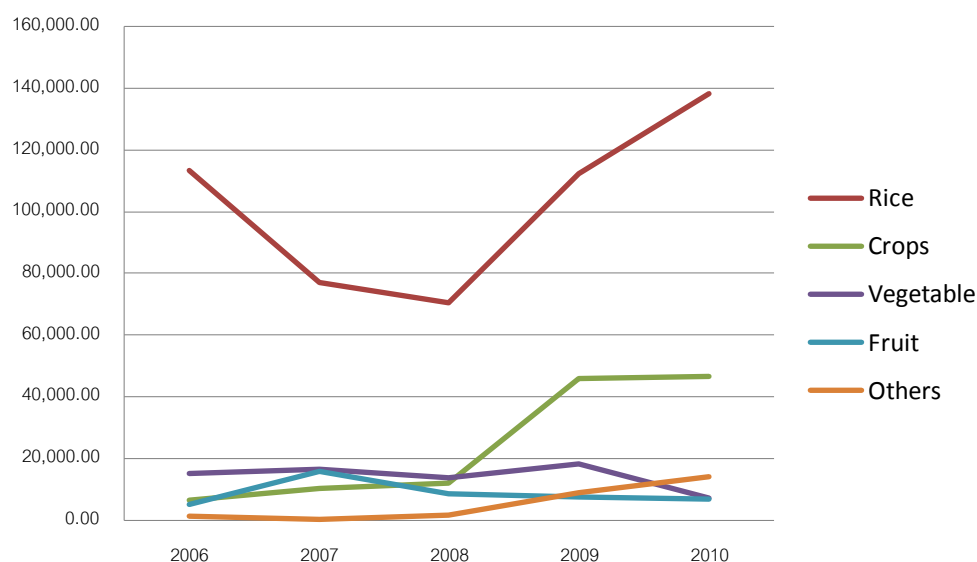


Figure 4.5 Organic Products

Figure 4.5 shows that rice is the major organic farming product, followed by crops, vegetables, and fruit. In 2010, rice and crops still shared the large organic farm area, while the vegetable area was decreasing. The big share of others types of crops in the organic area is coffee.

From these two indicators, imported chemical fertilizer and chemical substances, and organic farm area, it shows that even though the area under organic agriculture has increased, it is a very small proportion compared to the import of chemical fertilizer and pesticides and herbicides, which slightly increased both in volume and value every year. Organic agriculture farming shares only 0.2% of the total agriculture area, while conventional agriculture is still a major part of agriculture. Table 10 shows the set goals of decreasing organic fertilizer and increasing organic agriculture area with the situation of organic agriculture in the present.

Table 4.14 Goals and Indicators of Organic Agriculture Policy

	Reduced chemical fertilizer	Increased organic farm land	Present situation
National Agenda (2005 –2007)	5% in 2006	85 million rai (17 million rai in 2006)	1) Imported chemical fertilizer never decreased but increased every year, as shown in Table 4.5 and Figure 4.1
The 1 st national strategic plan (2008- 2012)	n/a	n/a	
The 2 nd national strategic plan (2013-2016)	5% per year	10% per year	2) 219,391.7 rai of organic farm area in 2010

4.5 Analysis of Organic Agriculture Policy

Policy formulation is a part of policy making. According to Cochran and Malone (1996), policy formulation is to deal with the problems, goals and priorities, solution options for the achievement of policy objectives, cost benefit analysis, and negative and positive externalities associated with each alternative. The analysis of organic agriculture policy in this part of the study used the Eightfold Path of Eugene Bardach.

4.5.1 The Eightfold Path

The Eightfold path, which is a method of policy analysis proposed by Bardach (2012), consists of eight steps as follows:

4.5.1.1 Define the Problem

The first step of policy analysis is to identify the problem and circumstance with its deficits or excesses. The definition of the problem should be evaluative and quantified, if possible. The conditions that cause problems are also

problems and missing an opportunity is a problem as well. A problem definition should be limited to the description, but not include the causes or solution of the problem.

4.5.1.2 Assemble Some Evidence

The key point of this step is to collect only data that can be analyzed as information regarding the problem. Evidence from relevant data and information shows the significance of the problem that needs to be addressed. Evidence plays three important roles in policy analysis: to assess the nature and magnitude of the problem, to assess the specific dimension of the policy situation in the study, and to assess present policies.

4.5.1.3 Construct an Alternative

In this step, all of the policy options need to be listed and later will be analyzed to reduce and simplify the list to only related alternatives. As there is no policy that can work by itself, policy options or alternatives can be either a direct intervention strategy such as laws, regulations, subsidies, etc., or variants which are other methods of implementation or financing.

4.5.1.4 Select the Criteria

Criteria are evaluative standards to measure the policy outcomes, both positive and negative, associated with each of the policy alternatives. In this step, the criteria will be built on the problem definition and set to judge the projected outcome of the policy. Common criteria are efficiency, equality, equity, fairness, justice, freedom, community, and other ideas; practical criteria are legality, political acceptability, robustness and improvability. Not all criteria will be included in the evaluation of the policy outcome and all selected criteria need to be weighted to oppose the conflict value of each criterion.

4.5.1.5 Project the Outcomes

Before reaching this step, there are alternatives and criteria to measure the outcomes of each policy option existing. This step is about the project outcome. There are three challenges in this step: an alternative will be implemented in the future where uncertainty can exist, the projection of the future outcome is based on the psychological difficulties of the projectors in which realism is uncomfortable, and the projection is biased or sensitive depending on self-defense of the projectors and

the results will then be misleading. In addition, the undesirable side effects and the ethical costs of optimism need to be dealt with in the projection as well.

4.5.1.6 Confront the Trade-offs

If a policy alternative is considered a better outcome than others under the same criteria, there are no trade-offs. When trade-offs happen, they need to be clarified between outcomes related to different policy options in order to choose the best and most practical one in terms of economics.

4.5.1.7 Decide

In this step, a policy alternative will be obtained as an intervention to solve or mitigate the problem.

4.5.1.8 Tell the story

This is the final step after doing the first seven steps one or several times. It is the time to arrange everything together and tell the story of that policy that serves to address the problem in the first step.

4.5.2 Organic Agriculture Policy in the Eightfold Path

The story after applying the organic agriculture policy to the framework of the Eightfold Path policy analysis is as follows.

4.5.2.1 Problem Definition

According to the first part in this chapter, the starting point of organic agriculture policy in Thailand in 2005 can be divided into two causes: domestic problems and international conditions. First is the awareness of both the consumers' and farmers' health regarding agrochemical contamination. Second, at the same time, the global trend of sustainable development has tried to bring farming back to a natural way, turning to organic patterns around the world, including Thailand, producing food in a natural way, consuming chemical-free agriculture produce, and international trading agreements that do not allow chemical contaminants in food in those countries.

4.5.2.2 Evidence

The data in Table 4.8 show that imported chemical fertilizer increased from 3.83 million tons in 2009 to 5.17 million tons in 2010 and 6.15 in 2011, and the value reached more than 70,000 million baht (2,000 million US dollars) in 2011. The

data in table 4.9 show in the same way that pesticides were used increasingly every year as well and the value was 17,000 million baht (500 million dollars) in 2011 (Office of Agriculture Economics, 2013b). The number of farmers that have had debt since 2000 was 6.3 million people with a total debt of 800,000 million baht, and 39% of the farmers have been diagnosed as having chemical from fertilizer and pesticides in their bodies at the risk level (Khana Kammakan Samatcha Patirup, 2012). Nevertheless, the farmers used organic fertilizer as well but in a small proportion compared to chemical fertilizer.

At the international level, the 7.4 % increase in organic farming area in the EU from 2007 to 2008 shows the positive growth of organic farms (Eurostat Statistics Explained, 2010). In Thailand, in 2004, the domestic market for certified organic products was estimated to be US\$13.7 million, while exports were estimated to be around US\$11.8 million. The non-certified and health food market was estimated to be US\$83.33 million (Green Net, 2013a).

These two problems and the evidence brought about organic agriculture policy. However, at present, even though the organic farming policy has been formulated and implemented since 2005 to reduce the chemicals in agriculture that led to safe food for consumers and better health conditions for farmers and also reduced the cost of input, the importation of chemical fertilizer and pesticides has still increased, as shown in the previous tables. This can be counted as problem if one looks at the problem of organic agriculture policy at this point.

Starting from the national agenda, organic agriculture policy was developed to be the first national strategic plan (2008-2011), collaborating with several agencies and a deputy PM as the chair. However, the strategic and action plan seems to not have worked. The main action plan was to educate organic farmers-around 34% of all farmers in Thailand-and provide supplies for organic farming. It has been stated by NGOs that the action plan has not affected the change in farmers from a chemical to an organic farming system (Green Net, 2013a). According to a survey of Green Net, the organic farming area in Thailand increased from 0.106 million rai in 2009 to 0.212 million rai in 2010 with a total agriculture area of 122.22 million rai (Green Net, 2013a). While the chemical fertilizer industry in Thailand has depended on imported raw materials, the imported chemical fertilizer increased from

3.83 million tons in 2009 to 5.17 million tons in 2010 and 6.15 in 2011 and the value reached more than 70,000 million baht (2,000 million US dollars) in 2011; pesticides were used increasingly every year and the value was 17,000 million baht (500 million dollars) in 2011 (Office of Agriculture Economics, 2013b).

International Federation of Organic Agriculture Movements (IFOAM) (2010) added that general agricultural policies still favor conventional farming with subsidized chemical farm inputs. The import taxes on these products are set lower than other farm inputs. There also is an indirect subsidy of pesticides, for example a distribution of free pesticides upon a perceived outbreak of crop pests and diseases, or for farmers participating in special extension projects. Moreover, a genetically-modified organism (GMO), an organism whose genetic material has been altered using genetic engineering techniques, which is not included in organic farming, has become another challenge for organic practice in Thailand. There has been strong lobbying by some Thai research institutions and private companies engaged in GM technologies to allow GMO crop production in Thailand. Some illegal field trials of GMO crops by research institutions also exist, already resulting in GMO contamination at the seed level for at least two crops, papaya and cotton. This will inevitably lead to further GMO contamination, endangering Thailand's organic development.

4.5.2.3 Construct an Alternative

In this step, there is no alternative for addressing the problem but announcing the organic agriculture policy that aims at reducing the agrochemicals on farms and supporting organic produce. The organic agriculture was announced as a national agenda in 2005 and later become the first National Strategic Plan for Organic Agriculture Development B.E. 2551-2554 (2008-2011) and the draft of second National Strategic Plan for Organic Agriculture Development B.E. 2555-2559 (2012-2016). In addition, there are other existing policies that support organic agriculture policy indirectly.

- 1) The Control of Hazardous Substances Act BE 2535
- 2) The safety control producer and retailers of pesticides
- 3) Tax on agrochemicals
- 4) The promotion of growing safe vegetables and fruit
- 5) Public relations for safe food

However, the situation of using imported chemical fertilizer and pesticides has still increased.

4.5.2.4 Select Criteria

The practical criteria listed in Bardach (2012) are legality, political acceptability, and robustness and improvability. The organic agriculture policy that at present has been developed to be the national strategic plan implies the robustness and improvability of the work in organic agriculture.

4.5.2.5 Project the Outcome

The outcome of the organic agriculture policy has been aimed to reduce the chemical input on agriculture farming. As a consequence, it will help to address problems from the effect of chemical fertilizer and will support the food safety trend.

4.5.2.6 Confront the Trade-offs and Make a Decision

Organic agriculture policy was only one policy proposed to reduce the use of agrochemicals in farmland. As there is no alternative, there is no need to consider the trade-offs in order to decide which alternative should be a policy in the end. One of the big challenges in the implementation of organic agriculture policy is that some large agrochemical companies have a connection with politicians and can guide the direction of the agriculture policy in Thailand.

In the big picture of the agriculture system in Thailand, organic agriculture is an alternative agriculture in the mainstream of conventional farming. The policy to support organic agriculture, perhaps, can be counted as an alternative policy for alternative organic farming.

According to the analysis of organic agriculture policy, the formulation of organic agriculture policy followed the step of policy formulation but skipped some steps, as shown in Table 4.15. The steps in organic agriculture policy are more completed in the framework of system theory than the Eightfold Path of Eugene Bardach. However, the Bardach steps reflect the idea that organic agriculture policy in Thailand is missing some steps that affect the success of policy.

Table 4.15 Organic Agriculture Policy Analysis

Policy Analysis	Organic Agriculture Policy Analysis
1. Define the problem	1. Define the problem
2. Assemble some evidence	2. Assemble some evidence
3. Construct alternatives	3. Construct alternatives
4. Select the criteria	4. Select the criteria
5. Project the outcome	5. Project the outcome
6. Construct the trade-offs	6. Construct the trade-offs
7. Make a decision	7. Make a decision
8. Tell the story	8. Tell the story

4.6 Conclusion

This chapter discusses organic agriculture policy in terms of emergence of the policy and formulation. The beginning of organic agriculture in Thailand was similar to that of other countries; that is, organic farming was an alternative agriculture launched by non-governmental organizations. Along with the environmentally-friendly trend and the severe problems in using chemical in agriculture that not only affect the environment but also human health, organic agriculture has been seen as a type of healthy alternative farming. In Thailand, organic agriculture policy was set to serve the global trend and domestic needs to push food safety campaigns and to help with the competition in export agriculture produce to foreign countries. Indirectly, organic agriculture policy was a good image for the government not only in terms of following the global trend but also in terms of caring for the farmers, who are grass roots people.

Organic agriculture policy is an output of the political system, pushed by the global trend, a good image, suitable land for agriculture demands and support from NGOs competition and international standards to export agriculture produce. According to this model, the decision to have organic agriculture policy is from the demand and support surrounding the environment.

Organic agriculture policy was first a national agenda, with the simple goals to transform farming from conventional farms to organic farms for 4.25 million farmers who transformed to organic farming, to decrease agriculture chemicals by 50% within four years, to increase organic farming areas to be 85 million rai, and to increase the growing organic market. The first indicator was the export organic product increase of 100% annually; the second indicator was that organic farmers experienced a 20% increase in income. According to the national agenda, organic agriculture has become the first national strategic plan for organic agriculture development and at present, it is the second national strategic plan for organic agriculture development. The national plan was for three years (2005-2007); the first National Strategic Plan for Organic Agriculture Development was expected to be four years (2008-2011) but it was extended another year to be a five-year plan; the second National Strategic Plan for Organic Agriculture Development (2013-2016) is expected to last four years pending on the approval of the government.

While organic agriculture policy has been implemented with more than six thousand million baht for a decade, from the development of the organic agriculture policy as the national agenda to be a national strategic plan and organic agriculture as one of the alternative types of agriculture indicated in the national Economic and Social Development Plan, the situation of organic agriculture in Thailand should have positively reached its goals. However, after the organic agriculture became an issue in the national level, the imported chemical fertilizer did not decrease but tended to increase in terms of the use of imported agrochemicals in agriculture—from 3.9 million tons in 2008 to 5.7 million tons in 2012, the same as pesticides. The organic farming area has been slightly increased at a rate of only 0.1% annually and comprises only 0.2% of the total land in the nation under cultivation. The increase of imported chemical fertilizer in volume and value reflects that the cost of farming has not been reduced and the income of the farmers has definitely not increased. According to the three stages of organic agriculture policy, there are different hosts of policy implementation and this may lead to a discontinuous implementation process that has not reached the goal yet.

The analysis of organic agriculture policy with the Eightfold Path of Eugene Bardach indicates that organic agriculture policy missed some steps, which are

constructing an alternative, selecting the criteria, and constructing a tradeoff. Organic agriculture policy emerged to serve the global trend and the good image of the government at that time, and there was no alternative policy. Moreover, in reality, organic agriculture is an alternative agriculture and the mainstream is conventional agriculture.

CHAPTER 5

IMPLEMENTATION LEVEL: ORGANIC AGRICULTURE ACTION PLAN AND IMPLEMENTATION AT THE PROVINCIAL LEVEL

Related to the conceptual framework of the factors affecting organic agriculture in chapter 2, this chapter mainly discusses policy implementation in the area of frontline implementers and the environment regarding organic agriculture policy, as shown in Figure 5.1. As this research focuses on farmers in the local community, the study of the implementation of organic agriculture policy took place at the provincial level in Ubon Ratchathani and Srisaket Provinces. The three case studies of organic agriculture farmer groups in the next chapter are also located in these two provinces to study the effect of policy implementation.

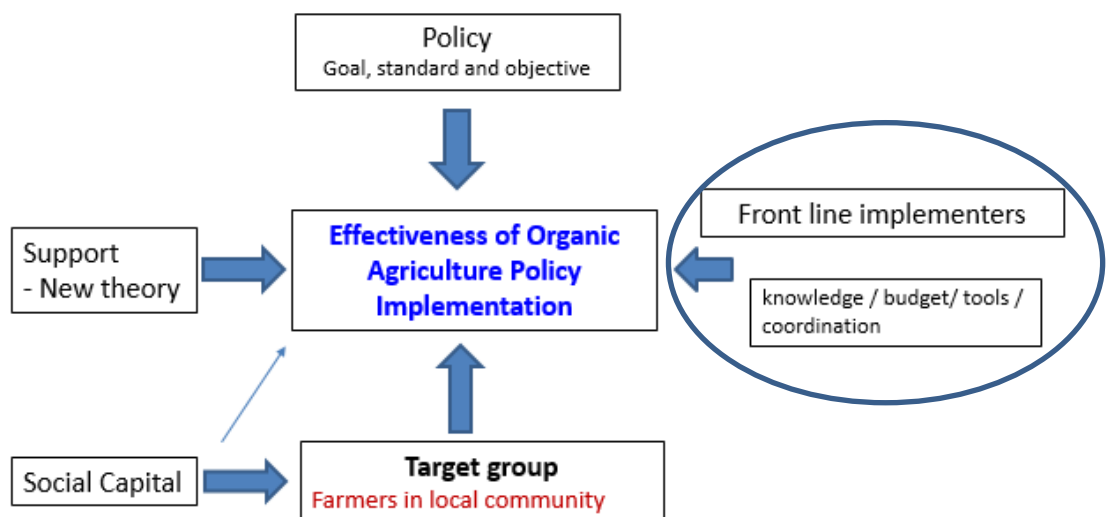


Figure 5.1 Factors Affecting Organic Agriculture Policy in the Local Communities:
Frontline Implementers

The content in this study starts with organic agriculture action plan for the local farmers. From the study of organic agriculture action plan and the data from the interviews with the top officers of Ministry of Agriculture and Cooperatives, it was found that organic fertilizers are the major program of organic agriculture policy that focus on local farmers. Another activity for local farmers is training in organic agriculture practice. Therefore, the focus here is on organic agriculture training (only organic plants) and organic fertilizer. The second part identifies the major implementing agencies at the community level; that is, the Department of Agriculture Extension (DOAE) and the Land Development Department (LDD) under the Ministry of Agriculture and Cooperatives (MOAC) and the budget allocated for organic agriculture by the MOAC. The third part discusses the factors in policy implementation following the framework of policy implementation in this study in order to point out the success or failure of this policy. The last part is a discussion on organic agriculture policy, and action plans and implementation.

5.1 Organic Agriculture Action Plans for Local Farmers in the Domestic Market

As mentioned, organic agriculture development in Thailand can be divided into two streams. The first stream focuses on sustainable farming practices in order to improve farmers' livelihood and agro-ecological conditions in the rural areas with organic agriculture. The first stream focuses on farmers in general and the domestic market, with the support from the government concerning knowledge, production input, and in-house market. The main target in the first groups is farmer groups that are ready to be a role model for organic agriculture. The second stream focuses on business organic agriculture for export; the government will facilitate export activities such as fair trade contracts with foreign partners, organic market information, and channels (MOAC, 2013). Both the organic national agenda and national strategic plan for organic agriculture development include these two groups, but the focus of this study is on local farmer groups, as mentioned at the beginning.

5.1.1 The Organic National Agenda

In the organic national agenda, there are basic strategies for promoting organic agriculture in Thailand from four sides. The first objective is to change from chemical agriculture to organic agriculture; the second is to reduce chemical use in the agriculture area; the third is to improve the soil and environment by using organic substances; and the last is to develop organic produce and organic markets.

Each strategy has its plan and program. In the first strategy the means to the end was to create an organic farmer's network; an indicator was 3.4 million farmers that have changed from conventional farming to organic farming. The second strategy was to reduce agro-chemicals in the agriculture area; the plan was to develop technology in relation to organic agriculture fertilizer instead of using imported fertilizer. An indicator in this plan was to reduce 10% of the import value in 2006. The third strategy was to improve the soil and environment by increasing the area using organic fertilizer of 85 million rai. The plan in the last strategy was to increase the volume and value of exported organic produce by 100% per year and to increase the income of organic farmers by 20%. According to the strategy and plan, the target groups were both local farmers and business farmers as show in Table 5.1.

Table 5.1 Strategies of Organic National Agenda in Fiscal Year 2006

Strategy	Budget (million baht)	Direct target groups
1. Change from chemical farmers to organic farmers	283.67 (22.47%)	Local farmer groups Business groups
1) create an organic farmer's network		
2. Reduce agro-chemicals in farming	227.39 (18.01%)	Local farmer groups Business groups
1) develop technology in organic agriculture instead of using chemicals		

Table 5.1 (Continued)

Strategy	Budget (million baht)	Direct target groups
3. Improve soil and environment	606.16	Local farmer groups
1) develop input in farming such as organic fertilizer	(48.03%)	Business groups
4. Develop organic produce and market	144.97 (11.49%)	Local farmer groups Business groups
1) add higher value of organic produce		
2) develop organic market		

5.1.2 The First National Strategic Plan for Organic Agriculture

Development

In the first National Strategic Plan for Organic Agriculture Development, these two streams are also indicated in the strategy. There are four strategies in the first national strategic plan. The first strategy is to enhance and manage knowledge and innovation; the second is to develop local organic agriculture; the third is to enhance the capability of commercial organic agriculture to meet standards; and the last is to drive Thai organic agriculture strategy management. The details in budget and direct groups of each strategy are shown in Table 5.2.

Table 5.2 Strategies of the First National Strategic Plan for Organic Agriculture Development

Strategy	Budget (million baht)	Direct target groups
1. Enhancing and managing knowledge and innovation	1,753.59 (36.33%)	Local farmer groups Business groups
2. Local organic agriculture development	2,431.14 (50.37%)	Local farmer groups
3. Enhancing capability of commercial organic agriculture to meet standards	591.03 (12.24%)	Business groups
4. Driving Thai organic agriculture strategy management	51.04 (10.6%)	-

Local farmer groups are targeted in Strategy 1 and 2. Half of the budget in the first national strategic plan was allocated to strategy 2 where the target group was local farmers. Details of the plan and program for organic fertilizer and training in those two strategies which focused on local farmers are shown in Table 5.3 and 5.4.

5.1.2.1 Organic Fertilizer Program in the First National Strategic Plan for Organic Agriculture Development

The action plan and program of the first National Strategic Plan for Organic Agriculture Development related to organic fertilizer are shown in Table 5.3.

Table 5.3 Organic Fertilizer Plan in the First National Strategic Plan for Organic Agriculture Development

Strategy	Plan and Program
1. Enhancing and managing knowledge and innovation Budget: 1,753.59 million baht or 36.33%	1. Promote knowledge creation and proper understanding of organic agriculture 1) Training farmer groups leaders and managers of organic fertilizer plants (1) Budget: 227.48 million bath (2) Host Agency: Land Development Department, MOAC
2. Local organic agriculture development Budget: 2,431.14 million baht or 50.37%	2. Promote and support organic agriculture input 1) Promote using organic fertilizer instead of chemical in agriculture (1) 1,863.34 million baht (2) Host Agency: Land Development Department, MOAC 2) One District One Organic Fertilizer Plant (1) 180.65 million bath (2) Host Agency: TISTR, MOST

The largest budget is paid to activities to promote the use of organic fertilizer instead of chemicals in agriculture in Strategy 2: local organic agriculture development, which shares 1,863.34 million baht out of 2,431.14 million baht or 76% of total budget in this strategy. If the budget includes another activity in Strategy 2, which is developing an organic fertilizer plant which shares 180.65 million baht, the total share is 86% of the overall budget in this strategy.

5.1.2.2 Organic Agriculture Training Program in the First National Strategic Plan for Organic Agriculture Development

The action plan and program of the first National Strategic Plan for Organic Agriculture Development related to organic agriculture training are shown in Table 5.4.

Table 5.4 Organic Plants Training Plan in the First National Strategic Plan for Organic Agriculture Development

Strategy	Plan and Program
1. Enhancing and managing knowledge and innovation Budget: 1,753.59 million baht or 36.33%	1. Promote knowledge creation and proper understanding of organic agriculture 1) Training targeted rice farmers for organic rice production (1) Budget: 7.2 million baht (2) Host Agency: Thai Rice Department, MOAC

5.1.3 The Second National Strategic Plan for Organic Agriculture Development

There are also four strategies in the second national strategic plan. The first strategy is to manage knowledge and innovation in organic agriculture; the second is to develop organic agriculture supply; the third is to enhance the capability of commercial organic agriculture to meet standards; and the last is to integrate all of the sectors and work in driving Thai organic agriculture strategy management. Details on the budget and direct groups of each strategy are shown in Table 5.5.

Table 5.5 Strategies of the Second National Strategic Plan for Organic Agriculture Development

Strategy	Budget (million baht)	Direct target groups
1. Knowledge and innovation management	608.05 (12.73%)	Local farmer groups Business groups
2. Organic agriculture supply chain development	3,797.82 (79.52%)	Local farmer groups Business groups

Table 5.5 (Continued)

Strategy	Budget (million baht)	Direct target groups
3. Enhancing the capability of commercial organic agriculture and organic standards	270.99 (5.67%)	Local farmer groups Business groups
4. Integration to drive organic agriculture	99.15 (2.08%)	-

In the second National Strategic Plan for Organic Agriculture Development, these two groups are both target groups in almost every strategy, as shown in Table 5.4. The largest budget at nearly 80% is allocated to strategy 2, organic supply chain management. Local farmer groups are targeted in Strategy 1, 2 and 3. Details of the plans and programs for organic fertilizer and training in those three strategies are shown in Table 5.6 and 5.7.

5.1.3.1 Organic Fertilizer Program in the Second National Strategic Plan for Organic Agriculture Development

The action plan and program of the second National Strategic Plan for Organic Agriculture Development related to organic fertilizer are shown in Table 5.6.

Table 5.6 Organic Fertilizer Plan in the Second National Strategic Plan for Organic Agriculture Development

Strategy	Plan and Program
1. Organic agriculture supply chain development Budget: 3,797.82 or 79.52%	1. Infrastructure development for local and commercial organic agriculture 1) Support input for organic agriculture (1) Budget 1,821.0 million baht (2) Host Agency: Land Development Department, MOAC

Table 5.6 (Continued)

Strategy	Plan and Program
	2. Support and promote organic agriculture production, transformation and market plan 1) support organic fertilizers to reduce chemical (1) budget 1,299.00 million baht (2) Host Agency: Land Development Department, MOAC

In the second National Strategic Plan for Organic Agriculture Development (2013-2016), the projects to support organic agriculture by giving organic fertilizer which shares 1,821.0 million baht out of 1921.0 million baht in the organic infrastructure development for both local organic and commercial organic area. Another similar project was to support organic fertilizers to reduce chemical costs by 1,299.0 million baht out of 1,816.8 million baht in the support organic network in production and transformation to organic farms. These two organic fertilizer programs cost 3120.0 million baht of the overall budget of 4,779.0 million baht. Organic fertilizers shared 83.5% of the organic budget in strategy 2, and 65.3% out of the total of organic budget in the second plan.

5.1.3.2 Organic Agriculture Training Program in the Second National Strategic Plan for Organic Agriculture Development

The action plan and program of the first National Strategic Plan for Organic Agriculture Development related to organic agriculture training are shown in Table 5.7.

Table 5.7 Organic Plant Training Plan in the Second National Strategic Plan for Organic Agriculture Development

Strategy	Plan/ Program
Strategy 1: knowledge and innovation management	1. Research and development promotion to create knowledge and innovation in organic agriculture 1) Growing organic vegetable technology transfer and learning program (1) Budget: 8.2 million baht (2) Host agency: MOST
Strategy 2: organic agriculture supply chain development	2. Create and promote farmers and relevant persons to realize the organic agriculture production 1) Preparation for farmers transforming to organic agriculture project (1) Budget: 30.30 million baht (2) Host Agency: Department of Agriculture Extension, MOAC
Strategy 3: enhancing capability of commercial organic agriculture and organic standard	3. Create and manage the standard for Thai organic products and goods 1) The development farmers to organic standard system (continue for the farmer in the previous program) (1) Budget 0.60 million baht (2) Host Agency: Department of Agriculture Extension, MOAC

In the second National Strategic Plan for Organic Agriculture Development, the training or education organic agriculture practices for farmers to transform their type of farming to organic agriculture were three relevant programs in organic agriculture. Organic agriculture training programs are of small size compared to the organic fertilizers, even though the beginning of organic agriculture should be

first to educate farmers about organic practice and then provide input or train them to make organic fertilizer. However, compared to the training programs in the first national strategic plan, the budget allocated for training in the second strategic plan was higher than in the first national strategic plan, with more training programs.

5.1.4 Summary of Organic Agriculture Action Plan for Organic Fertilizer and Training

The action plan and budget in the organic national agenda, the first and the second National Strategic Plan for Organic Agriculture Development, assured what one of the top officers in MOAC (2013) said:

huge budget of organic agriculture development pays to reduce chemicals in agriculture; the little pays to direct organic agriculture activities.

Table 5.8 shows that more than 65% of the total budget in the organic national agenda and the second National Strategic Plan for Organic Agriculture Development, and nearly half of the budget in the first National Strategic Plan for Organic Agriculture Development were allocated to organic fertilizer. The training in organic agriculture practices shared little in the action plan budget.

Table 5.8 Summary of Organic Fertilizer and Organic Plant Training Budget

in million baht

Budget	National Agenda (only FY 2006)	1st Strategic Plan (2009-2012)	2nd Strategic Plan (2013-2016)
Total Budget	1,262.19	4,826.80	4,776.01
Budget for organic fertilizer	833.55* (66.04%)	2,271.47 (47.06%)	3,120 (65.33%)
Budget for training (only plants)	n/a	7.2 (0.15%)	39.1 (0.82%)

Note: * This budget was calculated from the budget in the strategy 2 (reduce agro-chemicals in farming by developing technology in organic agriculture instead of using chemicals) and the strategy 3 (improve soil and environment by developing input in farming such as organic fertilizer).

5.2 Implementing Agencies

Almost all of the departments under Ministry of Agriculture and Cooperatives (MOAC) support organic agriculture with other relevant agencies to support the supply chain management of organic agriculture. The organization of the MOAC is shown in Figure 5.2.

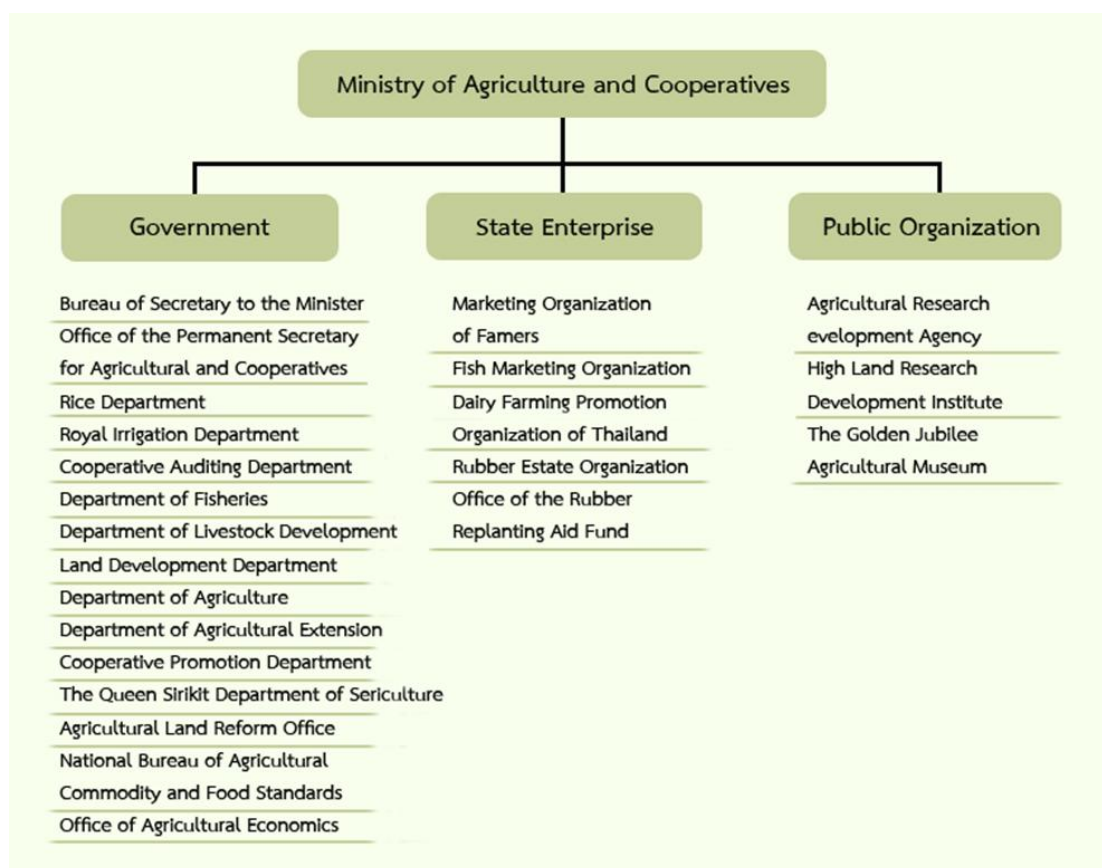


Figure 5.2 Organization Chart of MOAC

Source: MOAC, 2013.

5.2.1 MOAC Budget

Fiscal budget allocated to each department related to organic agriculture program and activities is shown in Table 5.9.

Table 5.9 Organic Agriculture Budget 2005-2013

In million baht

Departments	Fiscal Year								
	2005	2006	2007	2008	2009	2010	2011	2012	2013
1. Office of the Permanent Secretary									
2. Rice Department						6.1	10.4	14.4	29.2
3. Royal Irrigation Department									
4. Cooperative Auditing Department									
5. Department of Fisheries		6.0	9.8	4.9	1.5	1.4	4.3	4.4	4.7
6. Department of Livestock Development		9.7	15.3	14.3	5.0	10.1	10.0	8.4	8.4
7. Land Development Department		526.9	526.9	524.4	560.9	460.3	576.3	580.3	580.3
8. Department of Agriculture					25.6	9.1	13.9	13.9	15.0
9. Department of Agriculture Extension	8.7	433.9		4.8			1.8	7.6	7.9
10. Cooperative Promotion Department		42.2	49.5	47.1	57.6				
11. The Queen Sirikit Department of Sericulture									
12. Bureau of Royal Rainmaking & Agricultural Aviation									
13. Agricultural Land Reform Office									
14. National Bureau of Agricultural Commodity and Food Standards	1.8	15.9	17.0	4.3	45.5	4.7	3.0	2.0	0.6
15. Office of Agricultural Economic		1.3	4.4	4.4	2.5	0.6	0.3	1.0	0.3
16. Highland Research and Development Institute			0.4	0.5	3.0	2.7	2.7	5.0	2.7
17. The Golden Jubilee Agricultural Museum									
Total	10.5	1,035.9	623.4	604.7	701.4	495.1	622.7	637.0	649.0

Source: Bureau of Budget, 2013.

When comparing the organic agriculture budget to the total budget in the MOAC, the organic agriculture budget shared little budget, representing around 1% of the total budget, as shown in Figure 5.2.

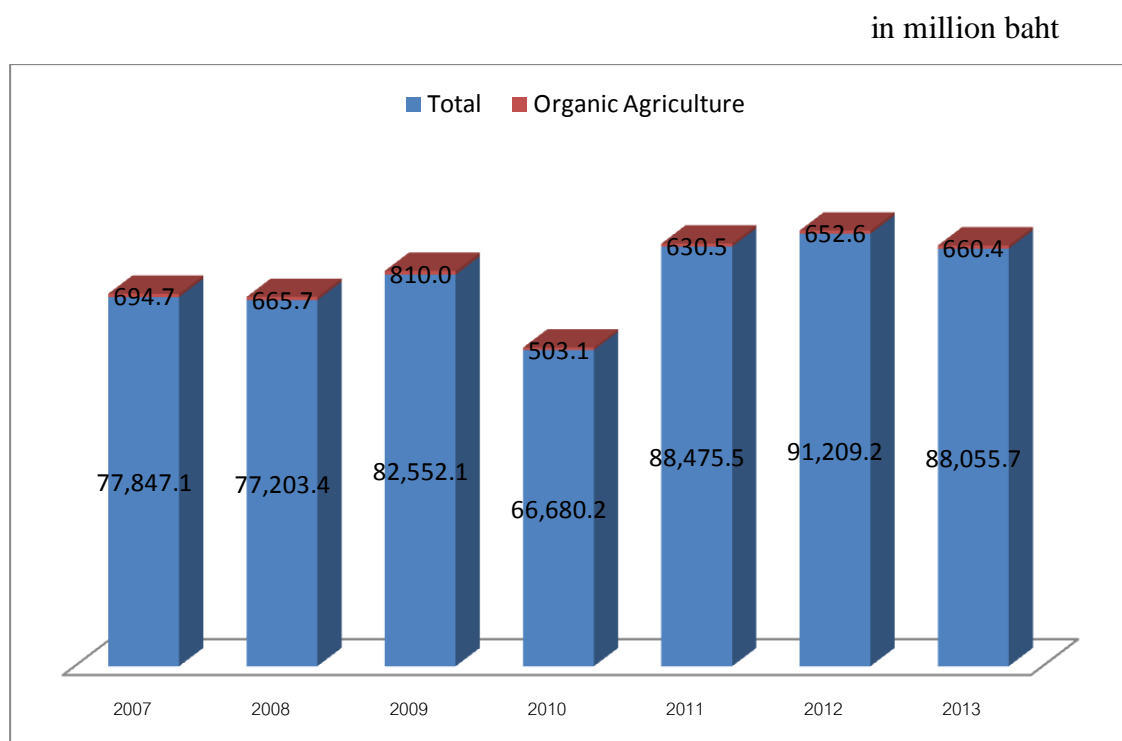


Figure 5.3 Organic Agriculture Budget and Total Budget of MOAC (2007-2013)

However, organic agriculture policy in the local community has been mainly implemented by the Provincial Agricultural Extension Office functioning under the Department of Agricultural Extension (DOAE), MOAC in promoting organic agriculture. Another department related to organic agriculture using organic fertilizer is the Land Development Department (LDD), while the Office of Agricultural Economics (OAE) performs as the host of the second National Strategic Plan for Organic Agriculture Development (2013-2016).

5.2.2 Department of Agriculture Extension

The Department of Agricultural Extension (DOAE) is one of the core agencies in the Ministry of Agriculture and Cooperatives (MOAC), which is directly

responsible for the undertakings of agricultural extension and which works closely with farmers. At present, with the Bureaucratic Restructuring Act (3 October 2002) and Ministerial Regulation (9 October 2002), the DOAE has been responsible for increasing farmers' potential in agricultural production by research, development, and the transfer of agricultural technology to farmers. It aims to help farmers be self-reliant, to produce agricultural products with good quality, and to engage in their farm occupation in a sustainable manner (DOAE, 2013).

To work closely with farmers, the DOAE has Provincial Administration in each province of the country, consisting of 77 Provincial Agricultural Extension Offices and 882 District Agricultural Extension Offices. For the sub-district agriculture extension level, officers work with the Sub-district Administrative Organization.

5.2.2.1 Provincial Agricultural Extension Office

The work of the Provincial Agricultural Extension Office is to promote and encourage the development of farmers, farmers' organization and community farm enterprises; support and coordinate the transfer of technology for crops, fisheries and livestock production and management; and supervise and render support to the District Agricultural Extension Offices.

The existing agricultural extension system attaches importance to participatory development, which emphasizes farmers and the community's participation in the learning process and formulation of their own development guidelines through the assistance of extension personnel. As a result, the role of extension personnel has been adjusted to become the facilitator and coordinator among state officials, and relevant organizations and farmers (DOAE, 2013). The structure of Provincial Agricultural Extension Office is presented in Figure 5.4.

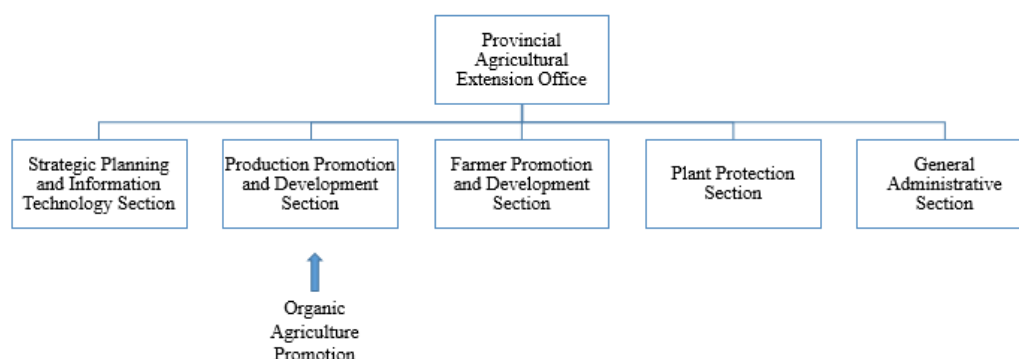


Figure 5.4 Organization Structure of Provincial Agricultural Extension Office

From the interview with provincial agriculture officers, it was seen that organic agriculture promotion is embedded in the production promotion and development section in which the main work is training and evaluating organic rice fields so that they can be certified by the Rice Department of Thailand, MOAC.

5.2.3 Land Development Department

The Land Development Department (LDD) is responsible for soil surveys and classification, soil analysis, land use planning, conducting experiments and carrying out various aspects of land development, assisting farmers in soil and water conservation practices and soil improvement, seed production for cover crops and soil improvement materials, and transferring technology from its research on soil development and soil science for multiple-purpose use (LDD, 2013).

The Department of Land Development has 12 regional offices, which have an equivalent status to that of the divisions. The main duty of the regional office related to farmers is to improve the soil to fit agricultural production. Under the regional offices, there are soil development stations in every province. The promotion of organic agriculture is one of their responsibilities by providing materials to make organic fertilizer and training in biotechnology to develop the soil, along with the training “soil master” or “Dr. Soil” to help farmers in soil development.

5.3 Organic Agriculture Policy Implementation in Ubon Ratchathani and Srisaket Province

As a public policy, policy implementers play a major role in implementation. The direct frontline implementers of organic agriculture policy are the officers in the Provincial Agricultural Extension Office. In this study, there were ten provincial agricultural officers that participated in the interviews; five from Ubon Ratchathani Province and five others from Srisaket Province. The interview questions asked about organic agriculture in three areas: organic agriculture policy, the role of the implementers, and resources for implementing organic agriculture policy.

5.3.1 Organic Agriculture Policy

All of the interviewees that were provincial agricultural officers agreed that organic agriculture is a good policy. It will help farmers to have better physical health by not using chemical fertilizer, which is more expensive than organic fertilizer, and will help them have better mental health by not having a large debt for their agriculture production. However, they mentioned that the organic agriculture policy in reality has not been completely implemented in the local community yet. Some farmers have organic farms; some do not. Those that do have organic farms, based on their own initiative, not because of organic agriculture policy. All of the interviewees agreed that even though the organic agriculture policy is a good policy, it is just a good policy in ideal if there is no implementation. Implementation, therefore, is a means to an end to achieve the policy goal.

According to the interviewees' opinions, organic agriculture policy and the action plans do not go in the same direction. Moreover, the organic agriculture policy is not clear. One provincial agriculture officer mentioned. The policy is not clear whether the Ministry of Agriculture and Cooperatives would like to promote, Good Agriculture Practices (GAP) or organic agriculture.

While the organic agriculture policy has been approved as the National Strategic Plan and included in the NESDB plan, but the direct implementing agencies which is MOAC has not to only promote organic farming, but there are several bigger programs to implement at the same time such as a GAP program which is also

transfer the knowledge to farmers to make their rice to get GAP but not organic practice.

All ten informants, who are frontline implementers, agreed that organic agriculture policy is a good policy but it is not clear whether the government has the intention to implement this policy or not, as there is no exact organic program at the provincial level. The frontline implementers stated that their work was mainly assigned by the MOAC (2013). The action plan of each fiscal year has been set with the allocated budget. Even though organic agriculture promotion is a national agenda, organic agriculture is not included in the action plan. There are several programs that are the main functions of the provincial agriculture office to be implemented in local areas, such as the Good Agriculture Practices (GAP).

5.3.1.1 Good Agriculture Practices (GAP)

In provincial level, the Good Agriculture Practices (GAP) which is a program to ensure that the food crops produced in Thailand are safe, wholesome and meet the standards and requirements of the country. GAP is the main function of the provincial agriculture office for farmers to get safety products. The target groups of GAP are all rice farmers in a province, while the organic rice program is only for specific groups.

GAP aims at a safety agriculture process in order to obtain safe produce. GAP can use chemicals in farming but it has to have documentation and traceability to minimize the risk of hazardous contamination. This standard concerns water reservoirs, farming areas, chemicals used in farms, and postharvest and transportation. Compared to organic agriculture, GAP is a flexible practice for farmers that are accustomed to using agrochemicals on their farms as they can still use chemical pesticides and fertilizer in safe way. Organic agriculture practice totally changes their farming practice by not using any agrochemicals.

5.3.1.2 Sufficiency Economy in Agriculture

Besides GAP, the sufficiency economy in agriculture is another project implemented by the Provincial Agriculture Offices. This concept aims to decrease expenses and increase income. It focuses on making a home expense account and provides seeds for farmers to grow around their home. This project is a big project; the target groups are 54,000 people for one-day training. The Provincial Agriculture

Office has set a demonstration site for sufficiency economy in agriculture for farmers. Moreover, local government agencies such as the Office of the Non-Formal and Informal Education in the community have also supported the sufficiency economy in agriculture by providing areas for the demonstration of agriculture farms using the sufficiency economy concept in their location and the sufficiency economy promoted in agriculture leaflets.

5.3.1.3 Rice Buying Policy

Another policy that ruins both organic rice and the GAP rice is the rice-pledging program or rice-buying policy. The policy is to buy every kind of rice without separating the organic, GAP, or chemical rice. The government set the buying price at 15,000 baht. This policy met the farmers' needs—they want to sell their rice and obtain money as quickly as possible. This policy will destroy organic rice practice or the GAP standard as farmers will grow rice as fast as possible without caring about the quality of the rice, as one interviewee said with this (rice buying) policy, organic rice practice which is just at the beginning step cannot happen.

The rice-pledging program has not supported organic rice farming, as farmers would like to sell all kinds of rice (organic rice, chemical rice, wet-season rice (in-season rice field) or dry-season rice (double-crop field)) to the government at the set price, a maximum of 15,000 baht per metric ton depending on the relative humidity of the rice. Normally, organic rice could be sold in organic markets at a higher price and the higher price of organic rice is an incentive for farmers to grow it. When there is a rice-pledging program, farmers want to sell their rice to the government as much as possible without caring about the quality of the rice. Organic rice farming needs more time and “care” and cannot survive when this policy has been implemented.

5.3.2 Implementers

5.3.2.1 Attitudes toward Organic Agriculture

Attitude is one of important factors influence policy implementation. Implementers can exercise considerable discretion in the implementation of policies because of either their independence from their nominal superiors who formulate the policies or as a result of the complexity of the policy itself. In case of organic

agriculture policy, the belief in the possible of organic agriculture practice challenge implementers. If the implementers do not believe that organic agriculture can work, it is impossible to implement this policy.

The interviewees think that it is impossible to change farmers to organic practice because of the strict standards of organic farming, with no chemicals on the farms. The interviewees mentioned that:

It takes time to transform from chemical to organic agriculture. During the converting, farmers need to be patient with not beautiful plants and not going back to use chemical. Some area cannot do organic farm as their neighbor farm still use chemical. (Arkorn, 2013)

Farmers have been addicted to chemicals for a long time. It gives the results within 24 hours to kill insects and grass, while organic takes more time to kill insects naturally and sometimes it does not work. Then, who will do organic farming? (Wanchan, 2013)

They (farmers) get used to use chemical, it is impossible to change the farmers to be organic. There is no incentive for them. Organic agriculture needs more caring and time to do, while the price is not different to conventional agriculture produce. (Kamon, 2013)

The interviewees demonstrated a negative attitude toward the organic agriculture policy implementation. The interviews reflected the idea that the strong chemical agriculture practice is still in the local community. This implies that there is no organic market-in which organic farmers can sell organic produce at a higher price-as there is no incentive for farmers to transform their farming to organic agriculture. It also reflected that the organic practice-using herbicide instead of pesticide-does not work, and the environment does not support doing organic farming. The interviewees did not mention the successful cases of organic farming. There is not sufficient support along the organic farming supply chain. At the upstream level, the surrounding area of organic farms needs to employ organic

agriculture practice. In the midstream, there should be effective herbicides instead of pesticides provided to organic farmers. Downstream, there should be organic markets for farmers to sell their organic produce at a reasonable price. Support at every level of the organic agriculture supply chain is necessary for farmers to transform to organic farming; at present, it is not ready to do so.

5.3.3 Resources

5.3.3.1 No Specific Sector for Organic Agriculture at the Provincial Agriculture Level

According to the interviews with the provincial agriculture officers, organic agriculture work is embedded in the promotion and development section in which the main work is training and evaluating organic rice fields in order to become certified by the Rice Department of Thailand, MOAC.

There are no exact personnel assigned or taking responsibility for the organic agriculture work. Provincial Agriculture officers and Soil Development Station officers have their routine work, which is related to organic agriculture only if there is a project in organic in that fiscal year.

For provincial agriculture officers, their work is,

to promote and encourage the development of farmers, farmer's organization and community farm enterprises; supports and coordinates in transferring technology on crop, fisheries and livestock production and management; supervises and renders support to District Agricultural Extension Offices. (Singhanat, 2013)

While the work of Soil Development Station Officers is,

soil survey and classification, soil analysis, land use planning, conduct experiments and carry various aspects of land development, assist farmers in soil and water conservation practices and soil improvement, seed production for cover crops and soil improvement materials, transfer technology from its research of soil development and soil science for multiple purpose use. (Preeya, 2013)

Most of the organic agriculture projects focus on organic rice. Organic agriculture work is embedded in the promotion and development production area in which the main work is training, demonstrations on organic agriculture practice farms, and evaluating organic rice fields in order to become certified by the Rice Department of Thailand, the MOAC.

5.3.3.2 Lack of Organic Agriculture Knowledge

Regarding the provincial agriculture officers' capability in organic agriculture, the information from the interviews showed a lack of enough knowledge and experience regarding organic agriculture. The interviewees said the following:

Actually, we rarely help farmers with the organic agriculture practice. They (Organic farmers) do it by themselves. We just transfer basic organic agriculture knowledge to them.

Our office does not have potential in organic agriculture promotion. Organic network in a province just come to us to take organic farmer database. (Vichai, 2013)

Farmers did not want to join the organic training; they wanted to work in their farm. Training did not give them anything. They came to the training because we asked them to come. We work closely with them in another project before, so they have a high respect to officers or "Kaeng Jai" in Thai language and had to come to the training without intention". (Wilailuk, 2013)

What the interviewees said showed that the provincial agriculture officers did not have sufficient knowledge to "teach" or to inspire farmers to transform to organic agriculture practice. Regarding organic knowledge, which is one obstacle listed in the report of the first national strategic plan for organic agriculture development, it was seen that there is a lack of knowledge on the part of professionals about organic agriculture in terms of training both relevant officers and farmers. Provincial agriculture officers do not obtain sufficient training in organic agriculture so they cannot offer advice regarding practical organic agriculture knowledge and practices to organic farmers.

One officer stated the following:

I have to find out organic knowledge by myself to train farmers in the organic project. I search data and information from the internet.
(Arkorn, 2013)

Having been working as a district agriculture officer for several years, one interviewee attended organic training only one time many years ago.

The training in the national strategic plan is mostly training for farmers. There is little budget for training officers about organic farming. After working for many years, a provincial agriculture officer that has experience in organic agriculture may get promoted to a higher position which is not related to organic work; he or she has to leave the work in organic agriculture. After working for many years, he or she gets promoted to a higher position which is not related to organic work. It requires time to find or educate another officer that can work in the organic agriculture area. One officer said the following:

How can we just work in this position (related organic) all the time?
We need to go to the higher position. When the chance comes, we have to go to the new position, and there will be another person that comes in and takes this job. (Singhanat, 2013)

5.3.3.3 Small Budget and Support

In the routine work of the Provincial Agriculture Office, the organic agriculture program has received smaller budgets at around 50,000-60,000 baht for organic rice production training for 2 days. Mostly, it is a continuing project to follow up with farmers in this project from the previous two years as this project is a 3 year project to transform from conventional to organic rice production.

One of the important factors is a support from the provincial governor. In order to run bigger organic agriculture programs, a budget from the province is needed. If organic farming serves the province administration's policy, the budget will be allocated to the organic agriculture programs. However, the target plant of

Ubon Ratchathani Province is not rice; it turns to be rubber and potatoes. Therefore, organic farming is not the target of the province to support. One interviewee said that,

a governor is not interested in organic agriculture because there is no significant result from organic program. The certification of organic rice does not help as it takes too long time and too late to get this paper. Rice is sold out with the same price as conventional rice. Moreover, there is no exact market for organic. (Arkorn, 2013)

It also depends on the interest of the provincial administration as well. As organic farming is not a simple practice, one provincial agriculture officer said that,

As organic is too difficult to implement, some province delete organic agriculture in the province's vision as it did not work. It is better to 'play' with other plants and practice that easier and get more products, and meet the demand of the market. (Wanchai, 2013)

Even though there is a continuing small budget from the government for organic rice production, the provincial agricultural officer is still not sure whether organic agriculture can run thoroughly:

Organic agriculture is for business not general farmers. And if you want to look at the effectiveness of organic agriculture in this province, it will not show you." (Kamon, 2013)

5.4 Discussion

In organic agriculture policy implementation, the first thing that should be noticed is that the host agencies of each organic agriculture policy are different agencies, beginning with the Land Development Department, MOAC, when it was a national agenda, and changed to be the NESDB in the first national strategic plan, and then became the Office of Agricultural Economics, MOAC, whereas the action plans

in three phases of policy are not quite different. The majority of the work, based on a budget of around 65%, has been on organic fertilizers both promoted with and provided to farmers under the Land Development Department and Department of Agriculture Extension, MOAC, neither of which is the host of organic agriculture policy. Both of the agencies have provincial offices, which are the frontline implementers of this policy, and their main jobs are not organic agriculture. For the Provincial Agriculture Department, provincial officers work closely with farmers to develop their agriculture productivity.

Organic agriculture is a small part of their routine work, depending on the plan and allocated budget of each year. Almost all of the action plans are separated; there is no coordination among implementing agencies, and there are no agencies that have direct responsibility. In terms of the implementers, the interviewees that are provincial agriculture officers do not have a positive attitude toward organic agriculture, which may result in the lack of success of organic agriculture implementation from the government side. The provincial agriculture officers as the frontline implementers are not professional in organic agriculture; they rarely get training in organic agriculture knowledge in order to be capable persons to train or consult farmers to transform to organic farming.

The transformation from conventional to organic agriculture takes time and is not easy, and farmers need to work hard on organic farms in all of the processes, nourishing the soil with organic fertilizers, using herbicides which are not strong enough to kill insects, and taking good care of each plant without using any chemicals for their growth. However, there are not many organic markets for organic farmers to sell their produce. The organic market is still a niche market and the price of organic rice is not much different from conventional produce. There are not many incentives for farmers to be organic farmers and this shows that organic agriculture policy is not integrated into the organic supply chain management.

In conclusion, organic agriculture policy is a good policy but it is an alternative agriculture for some farmers, as the main agriculture is still conventional. There are other policies and programs that conflict with organic agriculture such as GAP and the rice-buying policy. This circumstance does not strongly support organic policy implementation. However, there are some groups of farmers that run organic farms. The next chapter will analyze the factors that have encouraged organic farmers to run these farms from the beginning and in a continuing fashion.

CHAPTER 6

CASE STUDIES AND DISCUSSION

6.1 Introduction

6.1.1 The Objective of this Chapter

As related to the conceptual framework for the factors affecting organic agriculture in chapter 2, this chapter mainly discusses the target group regarding organic agriculture policy; that is, farmers in the local communities and the support for engaging in organic agriculture, as shown in Figure 6.1.

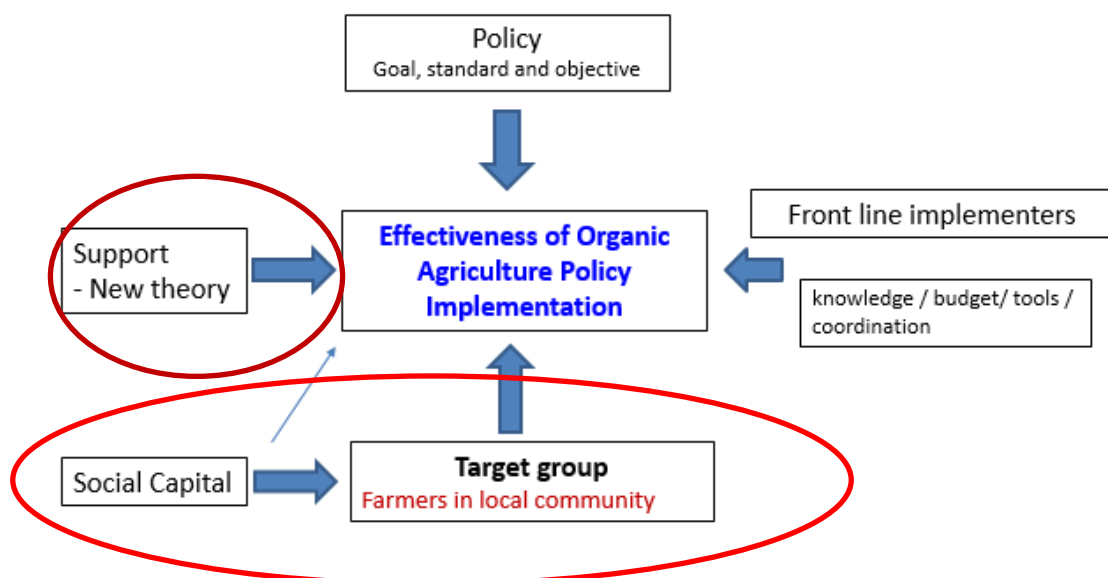


Figure 6.1 Factor Affecting Organic Agriculture Policy: Target Group

Policy implementation effectiveness refers to the extent to which a policy achieves its goals, including the benefit of any given policy.

In this study, organic agriculture policy effectiveness refers to the effectiveness of policy implementers in relation to organic agriculture in the local

community. Within this definition, the measure of the effectiveness or ineffectiveness of organic agriculture policy implementation was divided into two dimensions. The first dimension measures the decrease in chemical fertilizer. The second dimension measures the increase in the organic agriculture area.

The independent variables which had a direct effect on organic agriculture policy implementation effectiveness were as follows:

1) Policy Goals, Objectives, and Standards

Goals, standards, and objectives of the organic agriculture policy were studied in order to look at the precision and clear ranking of the legal objectives, and agencies' and officials' commitment to the statutory objectives and the implementer policy acceptance level that will lead to the effectiveness of policy implementation.

2) Frontline Implementers and Resource

The characteristics of the implementing agencies, the commitment and leadership skill of implementing officials, the disposition and response of implementers, motivation, leadership, participation, teamwork, service provider capacity were studied as the attribute factors of policy implementation.

3) Support

Public support, support from related policy for organic agriculture policy such as the New Theory, were studied in order to determine whether it helps to promote or support organic policy implementation. Data from the UNEP report stated that the self-sufficient sustainable agriculture of the royal family is one type of support that promotes organic agriculture.

4) Social Capital

Social capital was studied through the positive characteristic of community assets in the organic farmers' group in the local community, which can affect the implementation of organic agriculture policy.

6.1.2 Selection of Cases

This study focused on local organic agriculture groups at the community level and in the domestic market. This represents the grass roots farmers of the country, who will impact organic agriculture in order to serve the ultimate goal of sustainable development.

The three purposively-selected case studies were based on three criteria.

1) The location of the case studies is in only one region in the lower northeastern region of Thailand aiming to control the regional culture and environmental differences. The information was analyzed in similar settings to find out the sharing factors that affect organic agriculture policy implementation and the development process of organic agricultural practice as well.

2) The three cases have been growing organic agriculture for at least 1-3 years, which included the beginning and continuing of organic practice.

3) The diversity of the form and size of the groups was purposively selected to look at the effect of policy implementation on different sizes of farmer groups.

Therefore, this chapter presents three case studies of organic agriculture groups in two Provinces. The Sam Rong group is located in Ubon Ratchathani Province; the Kasedtip group and Baan Tad group are located in Srisaket Province.

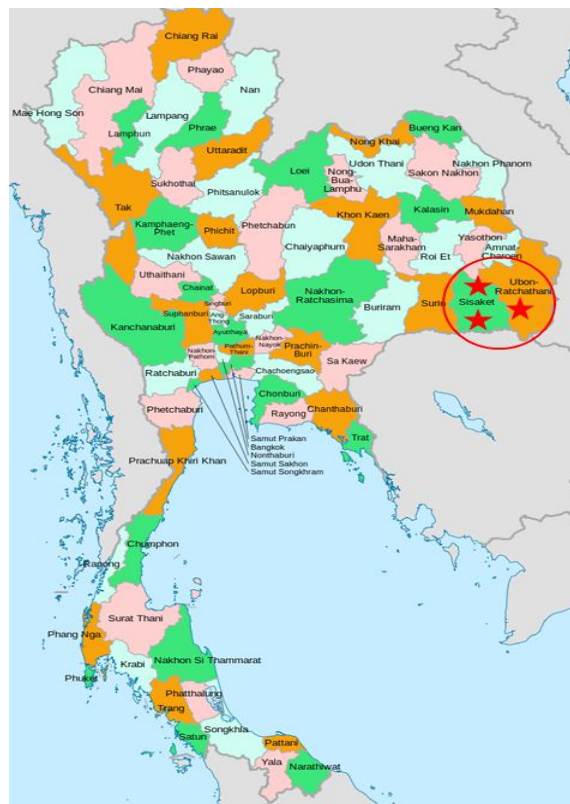


Figure 6.2 Location of the Three Case Studies

The three case studies share similarities but there are differences in characteristics such as the size of the group, organic produce, and number of years in organic farming and types of organic farms, pure or in the transformation period. These three case studies included both pure organic practice and the in-transition period from chemical to organic that covered all stages of organic practice, from the beginning to the development steps. The characteristics of the three case studies are shown in Table 6.1.

Table 6.1 Characteristic of the Three Organic Groups

Characteristics	Sam Rong Group	Kasedtip Group	Baan Tad Group
Province	Ubonratchathanee	Srisaket	Srisaket
Size of group	Small (18 members)	Big (350 members)	Medium (47 members)
Organic produces	Rice, vegetables, garlic and onion	Rice and soy beans	Rice, chili peppers, garlic, onion
Number of years in organic farming	16	9	3
Type of group	Pure Organic	Pure organic and in the transformation period	Pure organic and in the transformation period

This study aims to understand the factors that local farmer groups have adopted at different stages of growing organic produce, the maintenance of these organic agriculture practices, and the continuation of these practices over time. There were four areas in the scope of the case study, which are:

- 1) Output of organic agriculture - the changes of the cost of growing organic produce, the quantity and quality of produce, income, debt, and other returns from organic agriculture.
- 2) Who supports their organic farm practices and in what ways?

3) What is the motivation to grow or transform practices to organic agriculture?

4) How do groups influence their organic agriculture?

6.1.3 Data Collection

The data collection period for this study took three months, from March to May 2013 for the three case studies. There were two steps in the data collection. The first step was the survey and making an appointment to go to the three sites, and the second was to collect the data.

The first field visit with the Sam Rong group was to pre-test the questions in the interview and the author went by herself for three days in March 2013 without staying in the area. The pre-test questionnaires were answered by the leader of the Sam Rong group (Mr. Piyatus Tussaniyom) and some members that spoke the northeastern dialect. It was also found that an interpreter able to translate from the central dialect to the northeastern dialect was needed.

After adjusting the questionnaire, I went back to the Sam Rong group in the same months, which was the same time that the staff from the National Science and Technology Agency went to work there and helped to interpret the northeastern dialect for me. I stayed overnight in the Sam Rong leader's house for one week to interviews all members (18) of the group. That time gave me an opportunity to participate in some organic agriculture processes, such as harvesting, and preparing and selling organic produce at the market.

After finishing the data collection, I was invited to go to an organic agriculture meeting for two days at Ubon Ratchathani University, talking about the support of organic groups and the Sam Rong group was at the meeting too.

For the Kasedtip group, the first survey was a one-day talk with Mr. Boonmee Surakote, the leader of the group, and his son in March 2013. Thirty organic farmers were interviewed by the author and two assistants for five days in April 2013, without staying in the area. After finishing the data collection, I had a chance to meet and interview Mr. Surakote's son at an organic fair in Bangkok in May.

For the Baan Tad group, the first survey was one day in May 2013 to visit the area and to meet Ms. Sumarin Thongsan, the founder of the group. The data collection was later appointed for the three-day interviews in the same month with

twenty-five members with the assistance of those two local assistants, without staying in the area. I also got a chance to meet and interview General Pichet, who supported this group for a half day.

All of the informants in this study were northeastern farmers. Even though they understood the central dialect and tried to answer the questions and told stories in the central dialect, they were more comfortable speaking in their dialect. The two assistants, who were local people with a background in agriculture in their family, helped to interpret and did the interview. Moreover, speaking with non-group members such as the agricultural officers, the staff from the National Science and Technology Agency, Ms. Thongsan, and General Pichet Visajorn also helped to verify the data. Regarding the limitation of time and the larger members in the group, of the three cases, there was only group (Sam Rong Group) that could collect the data from all members, while the other two groups could get only 30 and 25 interviewees respectively.

6.2 Sam Rong Group

6.2.1 Background

The Sam Rong group is one of the strongest organic groups in Ubon Ratchathani Province. It is a small group with 18 members that have been growing organic rice and vegetables for 20 years. Their organic products are sold in local markets and organic garlic and onions are also placed in the Lemon Farm shops, a chain of organic shops at the Bang Chak Gas stations. This group was formed in 1997 with Mr. Tussaniyom as founder and leader. He left his job in Bangkok to be a farmer in his wife's hometown. He took two years to transform the agriculture from chemical to organic beginning with organic rice and now has added organic vegetables to his organic line. Mr. Tussaniyom received training in natural agriculture at Santi Asoke³ in Ubon Ratchathani Province, and he claimed learning and his experiences were the starting point of his organic farming.

³Santi Asoke is a Buddhist place where people there live their lives in a self-sufficient way. The form of agriculture in Santi Asoke is similar to organic farming with no industrial inputs and protecting the natural ecosystem. They are vegetarian and cook food with organic produce from their farms. The organic produce from Santi Asoke is also sold to local markets. Santi Asoke in Ubon Ratchathani Province is one of the five branches of Santi Asoke in Thailand.

All of the members in this group had some kind of relationship with him. Some were his sisters and brothers-in-law; some were his former coworkers; some were familiar neighbors and people in the same community. The number of members in this group was not the same all the time; some had to quit the group because it was found out that they did not follow organic practices. There were several people on the waiting list to join the group but needed to demonstrate their sincerity before being allowed to join.



Figure 6.3 Location of Organic Farming of Sam Rong Group



Figure 6.4 Green House Technology for Organic Vegetable Farming



Figure 6.5 Organic Vegetable Farming



Figure 6.6 Members in Sam Rong Group (Mr. Tussaniyom on the Top Left)



Figure 6.7 Sam Rong Group Selling Organic Products at Local Market

6.2.2 Cost and Income

Organic farming can reduce the cost of growing rice because of the cheaper price of organic fertilizer compared to chemical fertilizer. Some farmers make organic fertilizer by themselves. Some buy organic fertilizer from the group that buys from other producers for the group members at a lower price. If a member does not have money to buy organic fertilizer, he/she can borrow organic fertilizer from the group and return organic rice in the same amount of money they had to pay for the organic fertilizer. On average organic fertilizer costs 250-300 baht compared to chemical fertilizer, which costs 1,000 baht per 100 kilograms. However, if they do not grow rice by themselves, hiring labor will increase the cost. The benefit of organic fertilizer, besides the lower cost, is the enrichment of the soil and the ability to use less organic fertilizer in the next crop yet still get the same amount of rice or more. The income from growing organic rice can increase definitely.

In the case of vegetables, the amount of organic produce is less than the amount of vegetables from conventional farms because herbicides are less effective than insecticide. However, the price of organic produce is stable and higher than conventional vegetables, which depend highly on market prices, and their organic produce supply never exceeds the demand.

The farmers still have debt but not from organic farming. Some have outstanding loans for other living expenses such as their children's school tuition. Two members invested in a new greenhouse with filter film technology to grow organic vegetables.

6.2.3 Benefits from Organic Agriculture

Organic farming improves the environment and health of the consumers, and also provides a sustainable source of local food. Their peace of mind improves too. The emotional status of organic farmers has also changed from being a moody person to a calm person who cares more for others. Customers appreciate that they grow organic vegetables and this public support is very motivational for organic farmers to continue growing organic products.

Organic farming provides trial and error lessons. The farmers reflected that they had to go to organic farms every day, several times a day. Sometimes they were

at the farm for the whole day. The farmers learn new lessons every time they go to the farm, especially when they grow a new crop. They learn all the time since the farm is a classroom for analyzing problems and solving problems; they gain more knowledge to develop their farms. They learn that organic farming gives them a sufficient life without the need to depend on the outside.

6.2.4 Group

Being in an organic group accrues more benefits such as sharing knowledge and practices, and receiving better prices for organic produce, receiving support from related agencies that will profit the group rather than the individual, and creation of a friendly working environment. A group also assures that they will not lose their way as they have friends to help guide them. As a leader of a group, Mr. Tussaniyom has to be a model and consultant to his group's members. Mr. Tussaniyom randomly checks members' farms to maintain the organic standards of their produce and to obtain domestic organic certification.

6.2.5 Support

All of the members say that Mr. Tussaniyom is a person that helps them in gaining knowledge and solving problems regarding organic practices. As a leader, he has to help the group find a market, negotiate prices, and share his home as a meeting place, sometimes providing food for members. This group does not have a policy to let members borrow money, as it is not easy to ask for the money back when a farmer does not have money or does not want to return it. If they want to borrow money to invest in organic farming, Mr. Tussaniyom will accompany them to the bank to apply for a loan with each member's financial ability to obtain a loan.

This group has received support from the Department of Thailand Rice, MOAC, Ubon Ratchathani University, including technical consultation, and the National Science and Technology Development Agency has assisted with the technology regarding organic agriculture, such as greenhouse film technology. According to Mr. Tussaniyom, the Provincial Agriculture Office does not support any part of their organic farms but asks them to use their organic farm as a model for related projects to learn from.

6.3 Kasedtip Group

6.3.1 Background

The Kasedtip Group is located in Rasisalai District, Srisaket Province. This rice organic group was formed in 2004 by Mr. Boonmee Surakote, who began growing organic rice two years before becoming the leader of the group. This group began by making organic fertilizers, and after running an organic fertilizer factory, they focused on organic rice and also grow soy beans to develop the soil for growing rice. Kasedtip is a large group, with 350 members that are both organic rice farmers and those in transition to becoming organic farmers. The group has received support in kind and in cash, including training, an organic fertilizer factory, a rice mill, a rice germinated processing line, and rice packing tools from the District Agriculture Office and Sub-district Administrative Organization.

Rasisalai is one of the Khao Hom Mali Thung Kula Rong Hai areas in five provinces in the northeastern part of Thailand; namely, Roi-Et, Mahasarakam, Surin, Srisaket and Yasothorn Provinces. A special brand of Khao Hom Mali Thung Kula Rong Hai has been registered with the European Union's Protected Geographical Indication (PGI). As a special rice, the Office of the National Economic and Social Development Board has a specific project to promote growing rice in this area.



Figure 6.8 Office of Kasedtip Group



Figure 6.9 Mr. Surakote, the leader of the Kasedtip Group



Figure 6.10 Members in the Kasedtip Group Packing Organic Rice in the Office



Figure 6.11 Inventory of Kasedtip Group



Figure 6.12 Boon-me Organic Rice of the Kasedtip Group



Figure 6.13 Different Types of “Boon-me” Organic Rice

ราคาผลิตภัณฑ์หน้าโรงงาน		กลุ่มเกษตรกรที่ขาย	
ราคาขายปลีกหน้าโรงงาน (บาท/กก.)		ราคาขายปลีกหน้าโรงงาน (บาท/กก.)	
ข้าวกล้องหอมมะลิแดงอินทรีย์	80 บาท	ข้าวกล้องหอมมะลิแดงอินทรีย์	90 บาท
ข้าวกล้องหอมมะลิอินทรีย์	60 บาท	ข้าวกล้องหอมมะลิอินทรีย์	70 บาท
ข้าวกล้องหอมมะลินอกอินทรีย์	90 บาท	ข้าวกล้องหอมมะลินอกอินทรีย์	100 บาท
ข้าวกล้องหอมมะลิสีน้ำตาลอินทรีย์	90 บาท	ข้าวกล้องหอมมะลิสีน้ำตาลอินทรีย์	100 บาท
ข้าวกล้องไรซ์เบอร์รี่อินทรีย์	100 บาท	ข้าวกล้องไรซ์เบอร์รี่อินทรีย์	110 บาท
ข้าวหอมมะลิขาวอินทรีย์	60 บาท	ข้าวหอมมะลิขาวอินทรีย์	70 บาท
ข้าวกล้องอก 5 สายพันธุ์	110 บาท	ข้าวกล้องอก 5 สายพันธุ์	120 บาท
ข้าวกล้องอกหอมมะลิอินทรีย์	110 บาท	ข้าวกล้องอกหอมมะลิอินทรีย์	120 บาท

Figure 6.14 Prices of “Boon-me” Organic Rice

6.3.2 Cost and Income

Farmers in the Kasedtip group have stated that growing organic rice has reduced the cost of fertilizer. On average, they spend 300-350 baht on organic fertilizer bought from a group to yield 400-600 kilograms of rice per rai. The amount of rice is different in different farms and different crops because of weather, water, and the amount of organic fertilizer they use. Some farms get more organic rice compared to the amount of rice they obtained from using chemical fertilizer; others do not. However, they all agreed that the rice grown with organic fertilizer is of better quality than conventional rice, such as having perfect seeds and more weight. All of the farmers in this study were satisfied with the better quality of organic rice.

Farmers have to sell organic rice to the group in order to obtain a favorable price, which is 20 baht per kilogram; conventional rice is sold at 15-16 baht. If they sell organic rice to rice-mills or middlemen, they will get the same price as conventional rice. The better price comes with a time delay until the rice can be put on the market. This means that they have to wait 30-45 days to get paid for their crop. Unfortunately, the rice policy of 2012 set a fixed price of 20,000 baht per one ton of rice, both organic and conventional rice. The farmers sold organic rice to the government and got money without even waiting to see if the money they received was less than the guaranteed price. Mr. Surakote said that this policy undermined organic rice farming. He had to inform the organic farmers that if farmers sell organic rice to the government, it will be mixed up with conventional rice and result in lower-quality rice. He felt discouraged that the farmers spent so much time to grow organic rice, but the price and policy did not serve organic rice agriculture.

Organic farmers in this group still have debt, but this debt is not caused by growing organic rice since organic fertilizer is cheaper than chemical fertilizer. Their debt is from other necessities. Some farmers mentioned that growing organic rice helped them repay their loans faster.

Besides the advantage of reducing the cost of growing better-quality rice, the farmers felt that they experienced a better quality of life. They feel safer since their type of agriculture does not use dangerous chemicals. They have better health and rarely get sick. Some farmers grow organic rice for family consumption only; they feel happier by eating their own rice. One farmer said that her husband is a diabetic

and could not walk to or from their conventional rice farm. When they changed to growing organic her husband could walk to and from the rice farm.

The farmers in this study felt that organic agriculture improved the ecology. The farmers found animals such as crabs, fish, and frogs on the rice farm that were never seen when using chemical fertilizer. This not only indicates that the environment is good enough for animals to live in, but it provides free protein food for farmers too.

6.3.3 Innovation

The number of farmers joining Mr. Surakote's group increased when they saw that the organic rice from the demonstration farm could reduce costs and yield more and a better quality of rice. Some said that they were born in a rice farming family, and their parents never used chemicals in growing rice. Thus, they wanted to follow their parents' way after learning that chemical fertilizer is expensive and harmful.

The Kasedtip group works closely with the District Agriculture Officer, who is influential and can persuade farmers to transform from conventional to organic rice farming with several trainings and with the seeds to support organic rice.

6.3.4 The Power of the Group

The group provides organic fertilizers and rice seeds, making a value-added rice product and helping to find markets. The members said that without the group, organic rice would not be different from conventional rice in terms of price. Being in a group makes it is easier to get support from provincial agriculture offices and the sub-district administrative organization. The group will cover the cost for an international agency to certify the organic rice for the organic members in order to expand the organic market to the international level.

6.3.5 Networks

One of the important jobs of the group is finding both domestic and international organic rice markets. Kasedtip has received orders from a company in China to export organic rice, but with the company brand, not the Boon-me brand. For the domestic market, this group needs to find new markets in order to increase the

demand for organic rice. Mr. Surakote's son is taking on this responsibility. He has joined road shows with the commercial office and has attended organic events throughout the country. Kasedtip has an alliance with Baan Ma Yang, another organic group located in the same district. They share organic rice when there is more demand than the amount of organic rice they have in stock.

6.4 Baan Tad Ggoup

6.4.1 Background

The Baan Tad Group was initially formed as part of a household accounting project, teaching villagers to conduct household accounting so that they could measure more accurately their income and expenses. The accounts revealed that the major cost was chemical fertilizer. If they could reduce the cost of chemical fertilizer, the cost of growing crops would be reduced and they would get more income from their farms. The organic agriculture group was begun in 2010 with 47 members. It is located in Wang Hin District, Srisaket Province.

This group is dominated by women (42 out of 47 members are female). Ms. Liam Thongdonpum is the leader, with the help of Ms. Sumarin Thongsan. Ms. Thongsan has worked with General Pichet Visaijorn, who is known as General Effective Microorganisms or General EM, to promote organic agriculture to farmers in the northeastern region. According to Ms. Thongsan, the majority of members are women because some men died from using chemicals when growing chili peppers. Ms. Thongsan came to the group and changed their farming practice from conventional to organic farming. The produce of this group is rice, chili peppers, onions, and garlic. This group has not yet received any organic certification.

In fact, this group did not directly begin growing organic. The group was originally formed to serve the government's ABC project, which is a project to teach villagers to conduct household accounting so that they can better measure their incomes and expenses. Thus, organic fertilizer was introduced as a new project of the group with the help of Ms. Thongsan who was working in this field.



Figure 6.15 The Gathering Place of Baan Tad Group



Figure 6.16 Organic Fertilizer Making in Baan Tad Group

6.4.2 Cost and Income

Two years' experiences in organic farming have proved that organic agriculture reduces the cost of growing and generates more produce and increased income. On average this group spends 1,000 baht to grow rice in an area of 1 rai and gets 600 kilograms rice, which is more than the yield from chemical fertilizer. This

group also grows chili peppers, onions, and garlic, and organic fertilizer helps increase the yield for these too. Some farmers grow organic rice for home consumption, while chili peppers, onions and garlic are cash crops.

Reducing the cost of fertilizers and increasing income do not mean that they have no debts. However, the farmers in this study still have debts for non-agricultural loans. Even though they still have debts, the quality of life is better, including both physical and mental health when compared to when they were chemical farmers. Therefore, another savings is the reduced cost of medication. After changing to growing organic, farmers never need to go to the hospital because of poisoning from chemical fertilizer and pesticides.

6.4.3 Group

The Baan Tad group was initially formed as part of a household accounting project, and then was developed to be an organic group with the help of Ms. Thongsan, a teacher at the local agricultural college. Ms. Thongsan inspired this group to grow organic, and educated them on organic fertilizer and EM in their farming. The leader of the group does not always get involved in the organic agriculture area; in the case of Ms. Thongsan her contribution was to motivate members and to help manage group activities.

Being in a group helps them to share knowledge, practices, and to work together in group activities such as making organic fertilizer and taking care of their sufficiency economy farm model. A unique challenge for this group, which is woman-dominated, is that the production of organic fertilizer is labor intensive unless there is labor-saving equipment and tools available. The group leader said that if they had a complete set of equipment for making organic fertilizer it would make them more self-reliant.

6.4.4 Support

After finding that the major expense of farming was chemical fertilizer, they started making their group's own organic fertilizer with the knowledge and technical support from Ms. Thongsan. Ms. Thongsan organized an organic site visit for this group to learn how to grow organic crops. At the beginning, she helped the group by

providing raw material to make organic fertilizer and the sub-district administrative organization supported a smooth, flat cement surface area on which to mix the components to make organic fertilizer. The organic fertilizer plant is located next to the office of the non-formal and informal education office. The group has received support from this office in training in organic fertilizer, organic rice agriculture, and at the sufficiency economy demonstration site as a farm model. Having a leader that has a role in several government projects has helped the group to obtain related support, but not yet for their own organic fertilizer plant.

6.5 Discussion

6.5.1 Reduced Costs and Increased Income, but Debts Remain

The three case studies have demonstrated that organic farming can reduce the cost of growing rice because of the cheaper price of organic fertilizer at 350 Baht for 50 Kilograms rather than chemical fertilizer at 1,000 Baht for 50 Kilograms. In addition there are savings by not using hormones, pesticides, or herbicides. The yield of paddy varies from area to area beginning at 500-1,500 kilograms per rai. The differences in yield can be attributed to the characteristics of different farms, the different crops (first or second), and the variables of weather, water, and the amount of organic fertilizer they use. Almost all organic rice farms get more organic paddy compared to the amount from conventional farms. Moreover, they all agreed that rice grown with organic fertilizer was of better quality than conventional rice, produced better seeds, and had more weight. All of the farmers in this study were satisfied with the better quality of organic paddy.

Organic paddy will get the same price as conventional rice if the farmers sell it to the rice mills or middleman, which is usually sold at 12 baht per kilogram. To get a favorable price, which is 18 baht per kilogram, farmers have to sell organic paddy to the group to get a favorable price. However, they have to wait for the money until the group can sell organic rice to markets. This means that they have to wait 30-45 days to get paid for their crop. The average cost and income per crop in the same yield are compared in Table 6.2.

Table 6.2 Cost of Growing Rice Between Organic And Conventional Rice

Items	per 1 rai per 1 crop			
	Chemical		Organic	
	Kg	Baht	Kg	Baht
Fertilizer	50	1,000	100	700
Hormones		100	x	X
Pesticides		500	x	X
Herbicide		100	x	X
Rice seeds		300	x	300
Cost without labor, gas or rent (a)		<u>2,000</u>		<u>1,000</u>
Yield (paddy)	1,000		1,000	
Price of paddy per one kilogram		12		18
Income (b)		<u>12,000</u>		<u>18,000</u>
Differences (b)-(a)		10,000		17,000

The cost per crop is less if farmers make organic fertilizer by themselves or buy it from the group that buys it from other producers for the group members at a lower price. If a member does not have money to buy organic fertilizer, he or she can borrow organic fertilizer from the group and return the organic rice at the same value as the money he or she had to pay for organic fertilizer.

In the case of vegetables in the Sam Rong Group, the amount of organic produce is less than the amount of vegetables from conventional farms because herbicides are less effective than herbal herbicides. However, the price of organic produce is stable and higher than conventional vegetables, depending highly on market prices, and their organic produce supply never exceeds the demand.

Even though organic farmers in the Sam Rong Group have been able to reduce the cost of growing organic produce can sell it at higher prices, their revenue has not increased. The farmers in this study still have debts from non-agricultural loans. Their debt is from other necessities such as their children's school tuition. The debt is also created in the development of their production. Two members of the Sam Rong

Group have invested in a new greenhouse with filter film technology to grow organic vegetables.

However, both the Sam Rong Group and Kasedthip shared data that indicated that during the transition to organic farming, the yield of produce for both rice and vegetables farms was less than when turning organic. Even though the price of organic fertilizer was less than chemical fertilizer, they lost income from the less yield during the transition time.

6.5.2 Other Benefits from Organic Agriculture

Besides the advantage of reducing the cost of growing better-quality rice, organic farming improves the environment, the health of the farmers, and also provides a sustainable source of local food. Another benefit of organic fertilizer is the enrichment of the soil and the ability to use less organic fertilizer in the next crop and still get the same amount of rice or more. As a result, there is the potential for increasing income indefinitely. The farmers in this study felt that organic agriculture improved the ecology. From their experience being both chemical and organic farmers, they found out that when they did not use chemicals, the animals came back to live on their farms. This natural ecology proved that organic is safe for both farmers and animals. These animals such as frogs, fishes, and crabs become food for farmers without paying money for safe-nutrient food.

The organic farmers' quality of life, including both physical and mental health, is also better when compared to when they were managing chemical farms. They have better health and rarely get sick-another savings from the reduced cost of medication. Compare to conventional farm families that take less care of the farm, Mr. Tussaniyom also said that the children in organic farming families have better behavior as they help their parents with the farm and do not touch drugs or are violent. Some farmers that grow organic rice for family consumption feel happier about eating their rice. Their peace of mind improves too. The emotional status of organic farmers has also changed from being moody to being calm persons who care more for others. Customers appreciate that they grow organic rice and vegetables and this public support increases the motivation of organic farmers to continue growing organic. In addition they have received awards such as the National Outstanding

Farmer (Mr. Surakote of Kasedtip Group) in 2011 and organic agriculture resource person (Mr. Tussaniyom of the Sam Rong group).

Organic farming also provides trial and error lessons. The farmers reflected that they had to go to the organic farms every day and sometimes several times a day. Occasionally they were at the farm for the whole day. As they spend more time on the organic farm, they spend less doing unnecessary things. The farmers have to learn new lessons every time they go to the farm, especially when they grow a new crop. They learn all the time since the farm is a classroom for analyzing problems and to solve the problems that occurred differently with different crops. In this way they gain more knowledge to develop their farms. In order to improve their organic farm, they also need to learn and practice local knowledge such as finding herbal herbicides from local plants, improving the soil by adding some minerals such as dolomite to balance the acid condition of the soil and new technology for improving their farm, such as film technology for growing organic vegetables and packing technology to add value to their rice, such as germinated rice. They learn that organic gives them a sufficient life without the need to depend on the outside for inputs such as chemical fertilizers, and can obtain food from their own farms.

6.5.3 A Group: The Power to Grow Organic

The case studies showed that being in an organic group accrues many benefits such as sharing knowledge and practices, receiving better prices for organic produce, getting support from related agencies that will profit the group rather than the individual, and creating a friendly work environment. Working in a group also assures that they will not lose their way as they have friends to help guide them.

All of the members in the Sam Rong Group have a close and some kind of relationship with Mr. Tussaniyom. Some are his sisters and brothers-in-law, some are his former coworkers, and some are familiar neighbors and people in the same community. The number of members in this group is not the same all the time. One of the most important ways to retain the organic farmers group is for all members to follow organic standards in order to obtain domestic organic certification. It is a rule of the group. When a member is found to not be following any practice of organic farming, he or she has to be fired from the group. Mr. Tussaniyom mentioned that the

strict rule will keep the group's brand of organic produce strong in the market. Even though the Sam Rong has this strict rule to keep to its organic standards, there are several people on the waiting list to join the group. However, a newcomer has to prove that he or she is a qualified member for this group.

The Kasedtip Group has a loose relation as many members and members are anyone that can buy shares. The group provides organic fertilizers and rice seeds, making a value-added rice product, and help find markets. The members have said that without the group, organic rice would not be different from conventional rice in price. Being in a group not only has the benefits of getting help from the government, which go to the group not the individual, the Kasedtip group also prepares organic farmers to get organic certification via international agencies. Mr. Surakote and his son set up a team to help organic farmers write an organic system plan and to collect data on the practices and substances to be used on their farms. In addition, the group will cover the cost of organic certification as well.

Members in the Baan Tad Group have strong relations; some are close by blood ties and some are close just from working together. They began organic agriculture by making organic fertilizer and continued with an organic transition farm. Beginning organic practice in a group-from making organic fertilizer as an important input to using it on their organic farm-is a good start for organic transition farmers to save the cost of organic fertilizer. At the beginning of organic farming, this group had a unique challenge for this women-dominated group; however, it does not matter what the gender of the leader is that runs the organic group.

6.5.4 Network

A big group like the Kasedtip Group needs to have a network in the organic market in order to satisfy the organic produce demand and to keep its customers. The Baan Ma Yang-a network of the Kasedtip Group-does not always work with the Kasedtip group. In normal times, they have their organic farming activities and their own markets. The benefit of the network occurs if the Kasedtip group has a large order of organic rice and it does not have enough supply, it will order organic rice from the Baan Ma Yang group to complete the order, and vice versa. When the Kasedtip has not have enough organic rice to meet the orders, it asked for surplus

from Baan Ma Yang. In this case, they had to trust each other to get real organic rice. A network of the Kasedtip Group and Baan Ma Yang Group was developed as they shared the same organic rice practices with the support from the same district agriculture officers. The two groups knew each other as they had the same family members and connections in business in the same local community. The two groups also learned from each other in developing their rice production.

6.5.5 Support

The Sam Rong and Kasedtip Groups agreed that a leader of the group is a person that helps them gain knowledge and solve problems in organic practices. As a leader, he or she has to help the group find a market, negotiate a price, and share his home as a meeting place, sometimes providing food for members in the meeting too. The Sam Rong group does have a personal loan policy. If a member wants to borrow money to invest in organic farming, Mr. Tussaniyom will accompany them to the Bank for Agriculture and Agricultural Co-operatives to apply for a loan according to each member's financial ability to obtain a loan. The Kasedtip Group runs as a cooperative group whose members can buy a share in the group depending on how much they can afford and still obtain a return. The Baan Tad Group just started a co-operative group.

The Sam Rong Group has received support as in-kind knowledge, technical consultation, and organic farm site visits from the Department of Thailand Rice, MOAC (2013), Ubon Ratchathani University and the National Science and Technology Development Agency (NSTDA). They have received support from local organizations such as hospitals to set up for example an organic market, a local supermarket, and a local community (Ratchathani Asoke group) in which to place their produce. According to Mr. Tussaniyom, the Provincial Agriculture Office does not support any part of their organic farm practices except organic rice and vegetable-certified farming, but asks them to use their organic farm as a model for related projects to learn from.

A number of farmers joined the Kasedtip Group because they saw that Mr. Surakote's organic rice farm could reduce costs and provide more and better-quality rice. Some of the chemical farmers in this group did change their farming practice to

be organic farmers like their ancestor once did. The Kasedtip Group works closely with the local government in growing organic rice in order to obtain several kinds of support, such as organic training sessions, organic rice seeds, value-added rice product-germinated rice, rice packaging, and an organic fertilizer factory.

In the case of the Baan Tad Group, after learning that chemical fertilizer was the major expense of farming, they got support for organic fertilizer-making from Ms. Thongsan, who works as a local government officer in Srisaket Province. Before Ms. Thongsan came to this group, the group received other related support from another local government agency-the office of Non-formal and Informal Education Office-which is a demonstrating farm for the sufficiency economy.

6.5.6 Limitations

Social capital in terms of trust, norms, and networks in a group can help form a strong group in which it can motivate members to grow organic, keep the standard of organic practice in the group, and negotiate with a market in the case of the Sam Rong Group; however it is difficult to expand a group because they need to keep their standards. In this sense, social capital does not refer to a positive aspect but reflects the negative in growing too. In the case of the Kasedtip Group, some organic farmers get benefit in cash from the group. Those are farmers that are qualified to become certified from an organic certification agency; the group will pay a fee to them and the money to pay the fee is from the money of all members in the group (the shares they bought), while some organic transition farmers receive organic training sessions or organic farming inputs provided by the local government, which is a benefit from the group in kind not in cash. The most of the members of the Kasedtip Group have to be divided into small groups unintentionally. The Kasedtip group has a lot of members. Some are organic farmers, some are conventional farmers, some are organic fertilizer makers, some are not farmers but work on a production line making germinated rice. Trust, norms, and networks in a big group with several small sub-groups may not be strong when compared to a small homogenous group in sharing resources. As a two-sided coin of social capital, the negative side in the study shows that the strong and close relations in the Sam Rong Group run the risk of getting “locked-in” the outsiders to share resources and benefits and even fire the “black sheep” members that cannot achieve the standard of the group.

6.6 Conclusion

The three case studies, with different stages of organic agriculture practice, show that the major factors influencing local farmers to change from conventional agriculture to organic farming are the support and power of the group. The power of the group can be categorized as leaders, working in groups, and the network within and among groups, which can be categorized as social capital. Another influencing factor is the support from outside, both at the beginning and during the organic practice.

Social capital in terms of leaders, the relations in the group, and the network within and among groups are important tools in organic agriculture practices both at the transition stage and continuing stages. These positive factors can build the community's capacity to work together to address their common needs and problems, fostering greater inclusion and cohesion that can be used to strengthen the community and support organic agriculture within the group.

Support from related agencies is also a key factor affecting organic agriculture. Organic farmers need support for organic farming from outside agencies for different needs—from basic needs such as raw materials to making organic fertilizer to technology and innovation. Marketing is one of the most important aspects of successful organic farming. Without a market for organic produce and reasonable prices, organic farmers will not have an incentive to continue.

As organic farming requires more care than conventional farming, farmers learn the middle way, which is a key aspect of the sufficiency economy, by growing organic crops only at a level which they can manage. Moreover, they have basic food for their everyday life from their farms, including rice and vegetables. This practice rather reflects the concept of the sufficiency economy than the new theory that focuses on water resources and land management.

Local agriculture groups, which include the majority of farmers in Thailand, need all the available support they can get from the government and local relating agencies so that they can start changing from conventional agriculture to organic practices and continue all of the necessary steps, especially at the beginning. The three case studies with different levels of organic practice—beginning, transition, and

organic-indicate that a group is an important factor in running an organic farm. It requires the power of the group to be a force for the growth and maintenance of the organic farm, where they can share knowledge, learn from experience, and help solve problems within a group setting such as negotiate for higher prices of organic produce and to get support from both the public and private sectors. Organic groups need trust from all of the members in order to retain the organic standards of the group in the market related to the network and the norms of the group, which reflects the social capital concept. On the other hand, the values of social capital will negatively affect the group when farmers need to expand the group to get more produce and networks. Trust is a challenge in terms of accepting a new person to the group and in terms of meeting organic standards in the case of the Sam Rong Group. Moreover, another negative part of social capital is exclusivity-some organic farmers receive fees for the certification of their organic produce while other members do not share this benefit. Interestingly, social capital is the key success factor that has both a positive and negative effect on organic agriculture implementation at different stages and that should be of concern.

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

This dissertation was developed from the situation of organic agriculture in Thailand, which has been progressing slowly even though it has been getting support from both the government in terms of organic agriculture policy and NGOs for decades. Against this problem, the dissertation specifically aimed to contribute to the understanding of organic agriculture policy, its implementation at the provincial level, and the factors affecting the success of organic agriculture in the local community.

The study of policy implementation has too many variables to create a general theory because it has to concern real, different and uncontrolled circumstances to explain policy outputs and outcomes (Smith and Larimer, 2009). If a policy aims to be implemented in a local community, such as the organic agriculture policy in this study, social capital that has been accepted as an important tool in community development should be of concern. The idea of social capital from the West is based on trust, norms, and networks. In Thailand, however, the concept of social capital is in the form of local wisdom, social funds, natural resources, human resources, and local values. In the context of Thai social capital, the strength of local communities lies in their strong spiritual orientation, their knowledge of the local realities, and the local networks as community resources of value. In addition, organic agriculture is one of the five types of sustainable agriculture that has been promoted in the National Economic and Development Plan of Thailand for several years; one type is the new theory that can be linked to the philosophy of sufficiency economy, which is another critical concept for the development in Thailand. The new theory may be another factor related directly or indirectly to support organic agriculture. The conceptual framework of this study is shown in Figure 7.1.

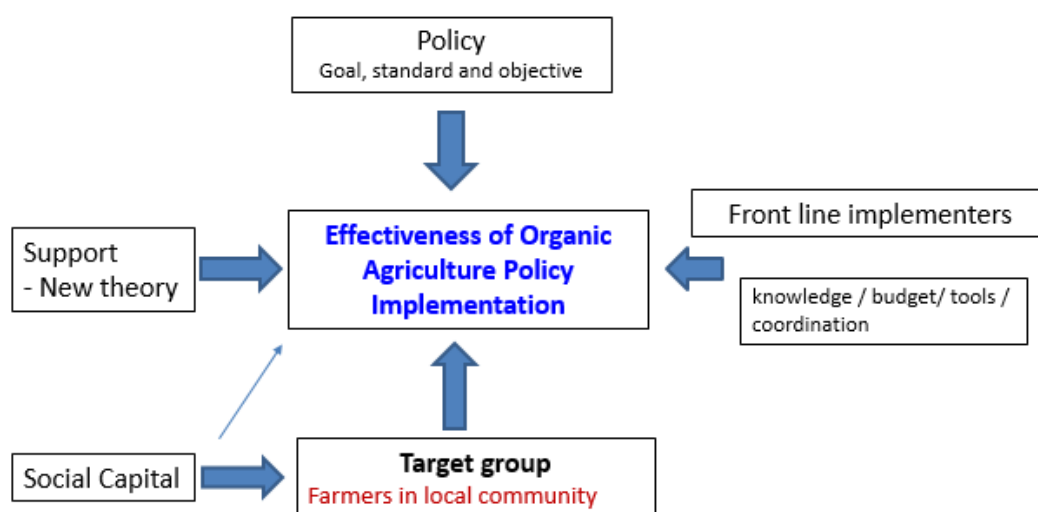


Figure 7.1 Conceptual Framework of Factors Affecting Organic Agriculture

This research utilizes a qualitative approach, and the data collection and analysis in this study relied on in-depth interview, case study, and documents. There were three parts of the study according to the objective. First, the study of the national organic agriculture policy was based on in-depth interviews with key informants, documentaries, attending brainstorming for the second National Strategic Plan for Organic Agriculture Development and seminars in annual organic agriculture. Second, organic agriculture policy implementation and action plans targeting local farmers relied on the in-depth interview with frontline implementers at the provincial, district, and sub-district agriculture level in Ubon Ratchathani and Srisaket Provinces. Third, the key factors affecting the success of organic agriculture in the local community were studied in the three case studies of organic farmer groups in the same Ubon Ratchathani and Srisaket Provinces as well. The results of the findings are presented in chapter 4, 5 and 6 respectively.

The concluding chapter draws from the analysis of 1) organic agriculture policy and its effectiveness, 2) organic agriculture policy implementation by the agriculture provincial officers in the local community, and 3) the factors affecting the adoption of organic agriculture by local farmer groups in answering three objectives:

- 1) to study organic agriculture policy and its effectiveness
- 2) to study the factors that contribute to the effectiveness of policy implementation and the adoption of organic agriculture in the local community
- 3) to provide policy consideration regarding organic agriculture policy formulation and implementation at the local community level

The four research questions were:

- 1) How effectiveness is organic agriculture policy in Thailand?
- 2) What are key factors affecting the success of organic agriculture policy implementation in the local community?
- 3) Which context or circumstances in local community affect or influence farmers to change from chemical to organic farming and how?
- 4) As an alternative to conventional and mainstream chemical agriculture, how does organic agriculture exist, expand and continue in local farms?
- 5) What are the public policy implications regarding organic agriculture policy implementation for local farmers?

7.1.1 Organic Agriculture Policy Formulation, Implementation, and Its Effectiveness

The beginning of organic agriculture in Thailand was from alternative agriculture launched by non-governmental organizations. Along with the global trend of being environmental friendly and because of the severe problems of using chemicals in agriculture both for humans and the environment, organic agriculture has been a potential alternative farming. Organic agriculture policy in Thailand was set to serve the global trend and the domestic needs to push for food safety campaigns and to help competition in the export of agriculture produce to foreign countries. Moreover, organic agriculture policy provided a good image for the government not only in terms of following the global trend but also caring for the farmers that are the grassroots people.

Even though organic agriculture was included in the National Economic and Social Development Plan from the Eighth plan (1997-2001) as one of the five types of sustainable agriculture indicated in the national plan to encourage farmers to engage in agriculture in these ways. Organic agriculture was developed to be a national

agenda in 2005 and, later, the Nation Strategic plan for Organic Agriculture Development from 2008, organic agriculture in Thailand could not yet be considered a success on a national scale. The farm land dedicated to organic agricultural has increased from 0.1 to 0.2% annually since 2006 and imported agrochemicals in agriculture have gradually increased.

The strategies of organic agriculture policy in the first and second National Strategic Plan for Organic Agriculture Development cover the organic agriculture development line, starting from developing local organic agriculture, knowledge and innovation, strengthening of organic agriculture produce to market standards, and managing the driving of organic agriculture strategy. However, the focus of the plan according to the budget was organic fertilizer, which was to promote the use of organic fertilizer instead of chemicals in agriculture by training in the production of organic fertilizer and soil improvement material for farmers. Other works that supported organic agriculture had less priority and were separated from rather than integrated with other agencies, (see details in Appendix A). According to the plan and program in the national strategic plan, it can be said that there are no private agencies or NGOs included in the activities as mentioned in the objective to integrate organic agriculture work even though the private sector and NGOs have been driving the sectors in organic agriculture in Thailand since it first started.

According to the organic agriculture budget, the majority of work has been allocated to the Ministry of Agriculture and Cooperatives (MOAC) with a budget of more than 85% of the total organic agriculture budget. Even though it is nearly 1,000 million baht each year, when comparing the organic budget to the total budget in the MOAC, the budget related to organic produce shares little, representing around 1% of the total MOAC budget. The largest the program that gets the largest budget is related to organic fertilizer, which shares more than half of the total budget in both first and second national strategic plan. This is also supported by the organic agriculture budget of the Land Development Department, which has been responsible for organic fertilizer and which shares the largest allocated organic budget, 80-90%, in the MOAC, while the training and support programs for farmers to change from chemical to organic agriculture are considered less important.

Organic agriculture policy that gives more importance to organic fertilizer does not positively affect the imported chemical fertilizer or other agrochemicals that are still increasing every year. Regarding the increase of imported chemical fertilizer and other agrochemical, there are several reasons why chemical agriculture still exists in Thailand; the main reasons are support policies, advertising, and farmers' knowledge of chemical fertilizer. The support policies in chemical fertilizer include no tax for chemical fertilizers (Kasikorn Research Center, 1998), low-interest rate loans and farmer credit cards from the Bank for Agriculture and Agricultural Cooperatives (BAAC) for buying chemical fertilizers, pesticides, seeds, and oil, widely-broadcasted chemical fertilizer advertisements, and the influence of large domestic and international agriculture companies to control the national agriculture policy and Free Trade Area (FTA) agreement. In terms of organic rice, moreover, the mainstream chemical agriculture still get support from the government through the rice-buying policy whereby conventional rice can be grown more easily and quickly than organic rice.

Regarding organic agriculture policy implementation at the provincial level, it is clear that there are no resources to support organic agriculture work. Organic agriculture work is not included in any routine work of the Provincial Agricultural Extension Office; there is no direct training in organic agriculture for the officers that work in the organic agriculture area. Moreover, all of the budgets have to be combined, the CEO provincial budget, or the subdistrict administration budget to expand organic agriculture activities to local farmers. Therefore, organic agriculture activities need the support from the province as well as allocated and approved budgets to run organic agriculture activities in the public sectors. If a province has a strategy in organic agriculture, organic activities will get support. However, organic agriculture is not an easy practice, and it takes long time to demonstrate success; organic agriculture then becomes a small project compared to the use of economic plants such as rubber.

Considering the work of organic agriculture distributed in several agencies in the organic agriculture plan, it can imply that organic agriculture policy is an alternative policy in both the MOAC and other agencies, in which the organic agriculture has been a minor work, while the mainstream is still chemical agriculture.

Revisiting the conceptual framework of the nine variables in policy implementation, the data from the in-depth interview with the frontline implementers showed that it is not clear that the goals of organic agriculture policy lead to plans, programs, or activities in organic agriculture. As organic agriculture counts as an alternative policy, it receives less support at the provincial level in terms of the number of activities, budget, and the knowledge of frontline implementers or professionals in organic agriculture to train farmers. There is no section in organic agriculture at the provincial level, but it is work in the promotion and development section. On the other hand, it was found that there was a good relationship between frontline implementers and farmers in the local area.

The implementation of organic agriculture in Ubon Ratchthani and Srisaket Provinces has not yet been successful because of the unclear goals, standards, and objectives of policy, insufficient and inadequate resources to promote and support organic agriculture, and less support in the transition from chemical to organic agriculture. In addition, some farmers still believe in chemical agriculture, which yields more beautiful produce compared to the organic farm. The pro-chemical farming attitude not only challenges farmers themselves, but also obstructs neighboring farmers from transforming to organic farming. However, the positive factors are good relationships and coordination between Provincial Agricultural Extension Officers and farmers and there is a support for organic markets from local agencies.

In conclusion, organic agriculture policy is an alternative policy while the mainstream is chemical agriculture. The government should perform an in-depth integrated assessment of general agriculture policies, programs, and plans, in order to understand how they affect organic policy. All stakeholders should be involved in policy development and development of plans and programs. A specific organic section and action plan for the organic sector should be developed; the action plan should indicate measurable targets, outputs, and outcomes for the organic sector to help agencies and stakeholders focus their efforts. It should be only one department in the Ministry of Agricultural and Cooperatives assigned to be a host for organic agriculture policy in order to continue the work. Government has to support organic groups in what is the priority of that group. If a group is at the beginning stage of

organic farming, the government should support input in organic farming or subsidize the decreasing of the farmers' income in transition to organic farming period. If the group is strong in organic practice, the government should support the higher technology such as green-house film or adding higher value techniques in organic produce. In addition, as organic agriculture policy is still not mainstream policy in Thailand, the government has to carefully consider the conflicts in organic agriculture policy and that the policy should not affect or involve organic farming.

7.1.2 Factors Affecting the Adoption of Organic Agriculture Policy Implementation by Local Farmer Groups

It is clear that organic agriculture in the three case studies did not originate from organic agriculture policy, but began with the farmers themselves (Sam Rong and Kasedtip Group) and other related local agencies (Ms. Thongsan of the Baan Tad group). They also receive support from local agencies in marketing. The MOAC (2013) rarely helps them (Sam Rong and Baan Tad Group). The Kasedtip group has received a support because it is located in a special area of Rasisalai, one of the Khao Hom Mali Thung Kula Rong Hai areas.

From these three case studies, it was found that there are certain key factors motivating farmers to transform from conventional to organic agriculture and to continue growing organic. These factors are social capital and support from local organizations. Moreover, organic farming is a learning process that conforms well with the sufficiency economy philosophy.

7.1.2.1 Social Capital

Social capital has been accepted as an important tool in community development. In Thailand, the concept of social capital is embodied in the form of local traditional wisdom, social funds, natural resources, human resources, and local values (Anek Nakabutara, 2002). Social capital in terms of links, networks, and shared values within farmer groups creates the drive to "organic farming practice."

Relationships of members in organic farming based on living in the same village and growing rice as their ancestors provides a link that helps create a group and the adoption of organic farming. All of the group members stated that without being a group, they could not do organic farming and could not negotiate for a favorable market price. Forming a group and having a strong leader are the most

important factors for successful organic agriculture. A new person coming to organic practice can also see the example of group members and the sharing the ideas of organic farming practices during the challenging time of the transformation period.

The leader of a group is the most important person to link the group together. In the case of the Sam Rong group, Mr. Tussaniyom is a leader and the first person in the group that engaged in organic farming and serves as a role model for others to follow. Presently, he has invested in a film technology greenhouse to grow organic vegetables and a packing storage facility to be a model for the next step for other members to follow. Mr. Tussaniyom recruits members to the group by himself and all members say that they know him well and have some kind of relationship with him. In the case of the big Kasedtip group with a full of organic fertilizer factory, tools, and equipment for rice processing, they need to mobilize the power of the group to make all activities happen. For the newer Baan Tad group, they are in the organic transition process and need on-going support from related agencies.

The two small groups of Sam Rong and Baan Tad have a meeting once a month and all members are expected to join the meeting. Besides the meeting, members often meet up to do activities together, such as helping other farms, fishing, or entertaining. The Kasedtip group has a big meeting once a year. During the year there are several trainings in organic rice and group activities such as making organic fertilizer or making germinated organic rice and packaging. Spending time together in rice activities will create shared values that become a norm in the group. The trust in an organic group is also important for guaranteeing the quality of organic produce.

7.1.2.2 Support from Local Organizations

Support from related agencies is also a key factor affecting organic agriculture. Because organic was once a traditional farm practice, local knowledge can still be applied to grow organic agriculture today. However, new technology and innovation such as film filter technology and germinated rice provide value-added to the existing knowledge organic farmers have. Technology to improve the soil is important to support organic farmers, depending on the soil condition. Financial support is also vital for investing in a higher level of organic farming, for example the introduction of greenhouses and packaging in the case of organic vegetables.

Local farmers should receive basic support for organic farming from local organizations which can tailor the support to the different needs of the group. Support from other agencies, especially for technology or innovation, should be provided directly to the group without intermediary agencies that might delay or change what organic farmers want.

Marketing is one of the most important aspects of successful organic farming. Without a market for organic produce and reasonable prices, organic farmers will not have an incentive to continue. Both Sam Rong and Kasedtip groups have found their markets by themselves. For the Sam Rong Group, the markets came to them as they became established in organic farming. They also received support in marketing from both local public and private agencies in placing their products in a province. As a large group, Kasedtip needs to stimulate demand to balance their supply. The Baan Tad group has not faced a marketing problem yet as their products can be sold to the middlemen that buy from their farms.

7.1.2.3 Sufficiency Economy as Life Guidance

Organic farming is a trial and error learning process for a lifetime. Organic farmers have to learn the cause of problems and how to solve the problems on their organic farm, which may be similar or different from other farms. When they grow a new crop, it is a new lesson for them to learn how to take care of it in a different environment each year or each time of the year, even they are growing the same crop. These are vaccinations that help them manage the risk on their farm and in their lives. Organic fertilizer and herbicide according to local knowledge make farmers understand the reasonable necessities in relation to their farm and realize self-reliance. They do not need to buy chemical fertilizers or pesticide as they can make their own organic fertilizer or buy it in Thailand at cheaper prices. Organic farming needs more care than conventional farming, and farmers have to learn about moderation, which is a key aspect of the sufficiency economy, by growing organic crops only at a level which they can manage. Moreover, they have basic food for their everyday life from their farms, including rice and vegetables. The sufficiency economy philosophy reflects a “middle path” applied to a principle of living for all levels—from the individual to the family, society, and the nation. Organic agriculture is also concerned with numerous aspects of life based on moderation, prudence, and

social immunity, and uses knowledge and virtue as guidelines for living (Chaipattana Foundation, 2013).

Organic farming begins with growing organic by oneself or joining a group of organic farmers. Once they are settled after the transition to pure organic and have a market, they expand to a higher level to add value to their products. Mr. Tussaniyom of the Sam Rong group said that organic vegetables are another higher development of organic farming as organic vegetables have a short life and need more care than organic rice. Presently, the Sam Rong group has more markets and needs more technology to develop their organic farm. The Kasedtip group has a new product of organic germinated rice and is looking for new markets. Organic farm practice has produced group capability, and is helping organic farmers to reach a higher step in organic practices.

7.2 Contributions

7.2.1 Contribution to Theory

Figure 7.2 presents the reality in implementing organic agriculture at the provincial level. The positive factors in implementation are a good relationship between frontline implementers and target groups, who are farmers, and support from stakeholders and NGOs. However, there are negative factors that affect the success of implementation, which are not having a clear policy itself, lack of resources and a positive attitude toward organic agriculture, less support from local agencies, and not having a supportive environment surrounding the organic farm land. All of these negative factors are important and are related to the implementation process in organic agriculture at the local community level.

The conceptual framework of this study was derived from several policy implementation models. The results from the case study indicated that the success of organic agriculture needs to run in group. The relationships within group members, networks and trust in organic agriculture groups are important factors for supporting organic agriculture. A leader of a group is an important person in terms of forming and managing an organic group. A leader is a role model in using local knowledge on the organic farm as well. These factors share social capital characteristics both in Thai and foreign concepts. Social capital, which is not seriously mentioned in policy

implementation models, additionally has an impact on organic agriculture policy implementation.

Therefore, the factors affecting organic agriculture policy implementation are shown in Figure 7.2.

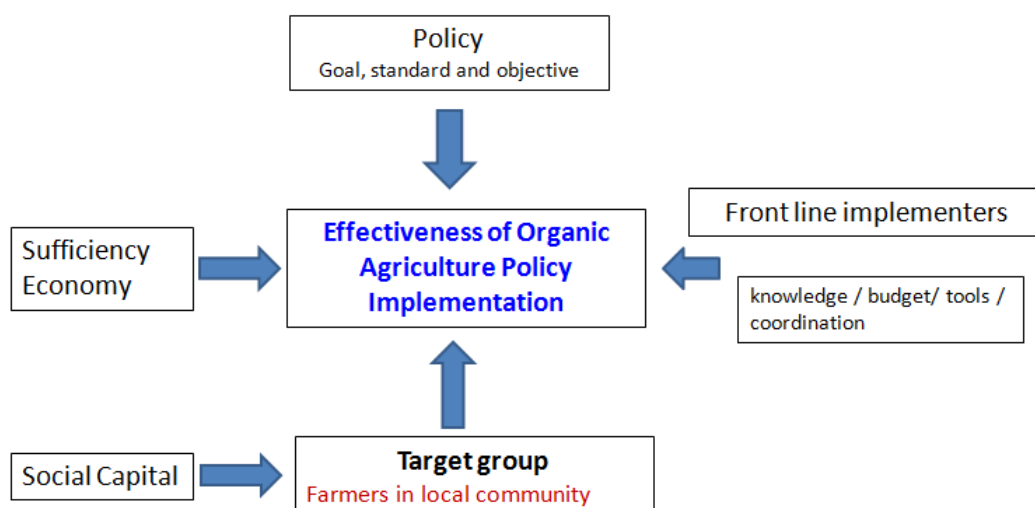


Figure 7.2 Factors Affecting Organic Agriculture Policy Implementation in Ubon Ratchathani and Srisaket Provinces

In terms of specific policy such as organic agriculture policy, neither the top-down approach nor the bottom-up approach will perfectly affect the success policy implementation; not with only one approach. There needs to be a synthesis of both approaches and adding relating factor, which are social capital and the philosophy of economic efficiency.

As can be seen in Table 2.1 the approach toward identifying appropriate conditions for the use of either of the approaches was based upon the parameters describing the policy context. A top-down or bottom-up approach can be used to prepare an implementation plan for organic agriculture policy, as shown in Table 7.1.

Table 7.1 The Mixture of Factors in Organic Agriculture Policy Implementation

Factors / Approach	Top Down	Bottom Up
Scope of change	Incremental	Radical, large
Validity of technology	Certain	Uncertain
Goal conflict	Low	High
Institutional setting	Tightly coupled	Loosely coupled
Environment stability	Stable	Unstable, dynamic

The top-down approach will benefit the initiative of the support from the government, especially budget and rules and regulations to serve organic agriculture endeavors. The interview from related persons in the first stage of organic agriculture policy showed that this specific policy served a “positive image” for the government at that time and also followed the global trend of organic agriculture. However, the implementing agencies have not been ready to implement this policy. This policy needs technology and knowledge officials to educate and transform mainstream farmers to organic farming and this has not been widely found in implementing agencies, for example the MOAC officials, at the local level. More than half of the budget, even though it is huge, is only one percent of the total agriculture budget paid to organic fertilizers. Several agencies did the same work with the same groups. They have promoted and implemented organic agriculture practice for their target group without coordinating the work together; there are no specific agencies for organic agriculture work at the local level. Moreover, the attitude of organic farmers toward the agricultural officers is negative. Therefore, from this viewpoint the top-down approach does not positively affect organic agriculture policy implementation.

According to the bottom-up approach, organic agriculture is not easy for farmers, who have been used to chemical agriculture for a long time. Organic agriculture has several conditions so that it can be certified. It requires time, at least three years, to transform to an organic farm if it used to be chemical. For the certified organic farms, the other surrounding farms must also be organic farms. If neighboring farms are not organic, there must be an appropriate buffer zone to protect against the risk of contamination of chemicals from neighbor farms. Moreover, the

certified organic farms must not be located at a lower level than that of the neighbors, whose water with chemical may flow into the area. In addition, there should be a permanent organic market for organic farmers to sell their organic produce at a reasonable price.

Organic agriculture needs a synthesis of the top-down and bottom-up approach. Some of the factors related to the top-down approach and some related to the bottom-up approach are accepted to some degree depending on the stage of organic agriculture of the group. The model for technology and innovation policy such as organic agriculture policy implementation will be a mixture of management, organization development, and the bureaucratic model of Voradej Chandarasorn (2005) along with the idea of social capital and the sufficiency economy.

The study has synthesized the models of management and organization development and the bureaucratic model of Voradej Chandarasorn (2005) in order to arrive at the general factors affecting the success of organic agriculture policy implementation, such as implementer policy acceptance level, personnel, budget, place and location, tools and equipment, and service provider capacity. These factors (from the models) work for some policies. Other factors are needed (not in the models) to support or to work together in order to affect the success of implementation. Organic agriculture policy has expanded the progress of the policy implementation field. Organic agriculture policy is specific type of policy that is related to technical knowledge-technology and innovation-and it needs more than the factors derived from the existing implementation models to have success in policy implementation, especially when the target group is local farmers. The study revealed that the success factors from the bureaucratic model combined with social capital and the sufficiency economy concept were the factors affecting the success of organic agriculture policy implementation.

The organic agriculture policy implementation model is shown in figure 7.3.

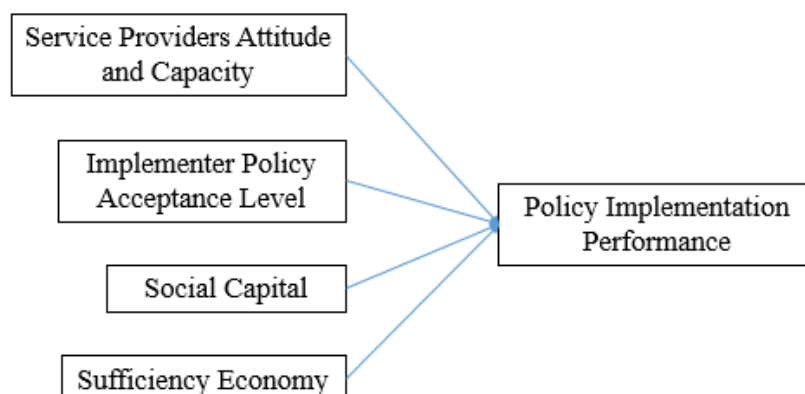


Figure 7.3 Organic Agriculture Policy Implementation Model

Figure 7.3 is the organic agriculture policy implementation model which has been adapted from the bureaucratic model of Voradej Chandarasorn (2005). The model shows that the successful implementation of organic agriculture policy depends on four important factors: the attitude of policy providers or policy makers at all levels as well as the ability of implementers to provide proper services; an adequate level of policy acceptance by those persons directly responsible for carrying out policy; social capital within a group composed of the power of the group and a leader; the sufficiency economic concept to support the continuation of organic agriculture farming.

7.2.2 Contribution to Policy and Practice

Local organic groups need all of the available support they can get from the government or other agencies so that they can begin changing from conventional agriculture to organic practices at every step, especially at the beginning. In order to implement organic agriculture policy at the local level, there needs to be the power of the group to be a force for the growth and maintenance of organic farming, where the farmers can share knowledge, learn from experience, and help solve problems within a group setting. However, different groups have different processes of formation, settings, and development. Organic agriculture policy needs to match the characteristics and necessities of groups to support their existing and future endeavors. A group is also a potential tool to expand markets, negotiate better prices, and seek support from

related agencies when the government is not able to provide a market for them. Organic agriculture policy, as an alternative policy, should be tailored to each target group by frontline implementers, such as local organizations, with appropriate knowledge, technology, and innovation, and should be supported by professionals in each field for the different levels of each group's potential.

According to the study of the policy formulation process, organic agriculture policy was formulated to serve the image of the government in following the global trend of organic agriculture and to serve international standards in terms of exporting agriculture products, to compete effectively among other agriculture-export countries, and domestically to serve food safety campaigns. Moreover, Thailand is suitable for agriculture because of the area, climate and its location, and organic agriculture is an alternative agriculture that is a better choice for farmers. Organic agriculture policy has been shown to be a top-down policy selected by the government. However, at the same time, organic agriculture has become an alternative type of agriculture on the part of the farmers because of problems and conditions, both regarding humans and the environment, caused by the overuse of chemical fertilizers and pesticides since the green revolution in the 1970s. From this viewpoint, it has been shown that the real root reason for transforming to organic agriculture practice is a need from some local farmers that wanted to transform their farming to organic farming. It is a bottom-up approach where the need is from implementation area not from the government or policy makers. According to the study, organic agriculture policy has been far from a success; this policy should be reformulated as following a top-down policy has not worked. Some of the reasons are that there are a lot of departments taking part in organic agriculture.

There are different hosts in different phases of organic agriculture policy. First as the national agenda-the host was the Land Development Department, Ministry of Agriculture and Cooperatives. For the first strategic plan-the host was the Office of the National Economic and Social Development Board. For the second strategic plan -the host is the Office of Agricultural Economics, Ministry of Agriculture and Cooperatives. With the different host agencies, there will not be continuing work in organic agriculture as the host has its own responsibility. Organic agriculture is just ad hoc work for four years in that host agency where the organic agriculture work has

to be linked to their main area. The budget investment in the organic agriculture policy, which shares more than half of the whole budget, has been paid for organic fertilizers and the department responsible for the organic fertilizer is not the host of the organic agriculture plan. The study also showed that there are other factors affecting organic agriculture transition and the continuance of this farming. Therefore, the process of organic agriculture policy formulation should be reformulated.

The three case studies showed that the important factors for farmers in terms of transforming their farming from conventional to organic are the group and the leader. Being in an organic group accrues many benefits, such as sharing knowledge and practices, receiving better prices for organic produce, getting support from related agencies that will profit the group rather than the individual, and the creation of a friendly working environment. A group also assures that they will not lose their way as they have friends to help guide them. The power of the group can be categorized as leaders, working in groups, and the network within and among groups, which can be categorized as social capital. Another influencing factor is the support from outside, both at the beginning and during the organic practice. In order to make organic agriculture policy implementation effective, the leaders of farmer groups should be invited to join the implementation process; and the implementation should also be changed to give important roles to the shared values among the farmer groups, establish organic agriculture work at the provincial and area-based level, educate the frontline implementers and group leaders at the beginning regarding the organic agriculture policy process.

7.3 Recommendations

Organic agriculture policy is rather technological and innovation than a general policy, and is neither a top-down approach nor a bottom up approach. Organic agriculture policy formulation should be reformulated to serve the nature of the problems that the organic agriculture policy is going to address. An agenda that interests policy makers and an agenda that is at the same time is a problem existing in the local area, like the organic farming issue, should be a mix of the two approaches

or the study of the policy process, especially regarding the formulation and implementation processes.

The contribution of the new factors-the power of the group and the potential leader of the group reflecting social capital-is an important factor affecting the success of implementation. In Thailand, the support from the government will pay for the group rather the individual. Moreover, attention should also pay to each and every level of the farmer groups at both the transition and continuing stages, as the problems and solution are not the same for every group at every stage.

Organic agriculture is a trade-off during the transition period. During the transition time from chemical to organic farming, farmers will have less produce because there are no strong chemicals to nourish the plants and no chemicals to kill insects. However, the cost of the organic fertilizers and herbicides used in organic transition farming still remains. The net income from selling organic produce will be decreased. Therefore, at this transition time, the government should subsidize organic farmers in order to support them to continue their organic farming. Incentives such as beginning organic loans with no interest for organic farmers with a guarantee market and prices for organic produce should be provided to organic groups. Besides technological and innovation support for the farmers, the government, both central and local, should be concerned about the economic factor in order to help organic farmer group continue to grow organic produce and create and promote the organic market at all levels-from the niche market to the super market.

7.4 Future Research

This dissertation provided a detailed explanation of the research objectives. However, there are still some limitations to this study.

First, this study was focused on local organic farmer groups, which are one of the two organic groups in Thailand.

Second, the three case studies are located in the northeastern region of Thailand.

Third, there are only two provinces (the same location as the case studies) where the in-depth interviews of the provincial agricultural officers were made. It did

not cover all of the northeastern region and may not represent all organic agriculture policy implementers.

Although all of the case studies were in the same region, their significant difference and how they shaped their organic agriculture groups and continued their farm in organic prompted the need to research into other regions in terms of the diversity aspect of their communities. Further research may look into organic agriculture groups in other regions and include frontline implementers in other provinces. Further study may also, in order to arrive at a big picture of organic agriculture policy, look into business groups in order to find the supporting links between the two groups that could support each other for the success of organic agriculture.

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APPENDICES

APPENDIX A
THE FIRST NATIONAL STRATEGIC PLAN FOR ORGANIC
AGRICULTURE DEVELOPMENT B.E. 2551-2554
(2008- 2011)

**THE FIRST NATIONAL STRATEGIC PLAN FOR ORGANIC
AGRICULTURE DEVELOPMENT B.E. 2551-2554
(2008- 2011)**

	Ministry	Budget
Strategy 1 Enhancing and Managing Knowledge and Innovation		
1.1 Research and Development Knowledge and Innovation		
1. The study of organic plant production technology following organic standard	MOAC	55.22
2. Research and development in knowledge and innovation in organic livestock	MOAC	26.70
3. Research and development in knowledge and innovation in aquaculture	MOAC	11.35
4. Research and development in liquid organic fertilizer production technology	MOAC	2.25
5. Research and development in mix organic fertilizer	MOAC	3.60
6. Research and development in organic livestock production in community	MOAC	3.12
7. Research and development in small organic livestock processing	MOAC	1.50
8. Research in innovation in biotechnology and organic agriculture	MOAC	55.00
9. Research and development in organic rice in irrigation area	MOAC	5.90
10. Research and development food for organic aquaculture	MOAC	5.91
11. Organic livestock learning center	MOAC	12.00
12. Organic aquaculture learning center	MOAC	1.20
13. Research and development in agriculture to support organic agriculture	MOST	70.00

14. Strengthen capacity of organic agriculture entrepreneur	MOST	78.30
15. Develop supply chain management in organic agriculture	MOI	13.65
16. Pilot project in development organic aquaculture and organic plant farm	MOAC	2.25
17. Research and development in monitoring chemical residue in organic produces	MOI	120.54
18. Research in organic agriculture market	MOAC	4.47
19. Research in economics of technology used in organic agriculture production	MOAC	2.40
Total		475.36

1.2 Knowledge and Technology Transfer

1. Knowledge creation in aquaculture production	MOAC	1.11
2. Promote organic agriculture in school	MOAC	78.00
3. Develop and promote organic agriculture	MOAC	15.15
4. Promote and transfer knowledge and technology in standard organic aquaculture production	MOAC	15.87
5. Develop new theory agriculture based on sufficiency economy philosophy	MOAC	674.00
6. Integrate complete organic agriculture farm	MOAC	15.00
7. Organic fertilizer plant training for farmer leaders	MOAC	277.48
8. Organic agriculture campaign and festival	MOAC	120.00
9. Educate organic agriculture campaign	MOAC	7.00
10. Training in organic rice production	MOAC	7.20
Total		1,210.81

1.3 Strengthen Capacity of Public Officers

1. Develop farmer consultant and researcher in organic aquaculture	MOAC	16.00
2. Develop public officers in organic aquaculture	MOAC	1.45

3. Seminar, conference , training ,and excursion in organic agriculture both in domestic and foreign countries	MOAC	12.00
4. Training land development department officers in organic agriculture promotion	MOAC	18.00
5. Training organic rice certify persons	MOAC	2.31
Total		49.76

1.4 Organic Agriculture Database Development

1. Develop organic agriculture production standard in both domestic and international level	MOAC	5.00
2. Develop a network of organic market data and information center	MOC	12.00
3. Develop organic agriculture export and producers database	MOC	0.66
Total		17.66

Strategy 2 Local Organic Agriculture Development

2.1 Promote and Support Organic Agriculture Input

1. Promote using organic fertilizer instead of chemical fertilizer	MOAC	1,863.34
2. Develop organic fertilizer for organic plants	MOAC	6.00
3. Worm production for organic agriculture pesticide	MOAC	2.40
4. Strengthen organic fertilizer production	MOST	13.47
5. One district one organic fertilizer plant	MOST	180.65
6. Develop and transfer technology in organic fertilizer production	MOST	1.20
Total		2,067.06

2.2 Develop and Link Organic Agriculture

Network

1. Organic livestock learning center in community	MOAC	7.00
2. Develop pilot farmers in organic aquaculture	MOAC	24.44
3. Promote organic agriculture in farmer institute with sufficiency economy philosophy	MOAC	138.30
4. Develop production system and standard of organic agriculture certification in community	MOAC	7.00
5. Farm changing based on sufficiency economy philosophy	MOAC	134.54
Total		311.28

2.3 Develop Network in Organic Market

1. Develop one organic livestock one shop	MOAC	19.00
2. Promote organic food processing for domestic and foreign markets	MOAC	9.00
3. Green market in community development	MOAC	7.50
4. Study organic agriculture production input in foreign countries	MOAC	8.00
5. Promote and advertise organic aquaculture domestic market	MOAC	0.30
6. Organic agriculture market to expand market channel camp	MOC	9.00
Total		52.80

Strategy 3 Enhancing Capability of Commercial Organic Agriculture to Meet Standard

3.1 Strengthen Organic Agriculture Capacity in Commercial Section

1. Develop and support organic agriculture production network and organic rice market	MOAC	8.00
2. Develop organic livestock network	MOAC	6.70
3. Promote organic agriculture production	MOAC	136.84

4. Develop GAP standard of organic agriculture production system to reach the domestic and foreign standards	MOAC	34.93
5. Develop SAL standard of organic agriculture production system to reach the domestic and foreign standards	MOAC	20.00
6. The study of organic agriculture logistic	MOC	15.00
Total		221.47

3.2 Develop Standard System, Certified System, and Traceability System

1. Online inspection and certification database and system	MOAC	9.00
2. Develop rice organic standard inspection and certification	MOAC	2.88
3. Rice organic inspection and certification	MOAC	60.00
4. Develop organic livestock standard system	MOAC	1.30
5. Develop organic livestock certified system	MOAC	6.20
6. Study, review and develop standard system and organic aquaculture certified standard	MOAC	0.53
7. Develop certified system of organic agriculture standard of EU, US and Japan	MOAC	1.50
8. Develop organic agriculture market, inspection, and certification	MOAC	8.00
9. Develop organic certified laboratory	MOI	5.00
10. Develop reference material for organic inspection and certification for organic produces	MOI	2.70
11. Develop organic traceability system	MOAC	3.00
12. Organic plants inspection and certification	MOAC	75.14
13. Develop organic agriculture inspection and certification center	MOAC	10.29
14. Organic inspection and certification seminar for organic entrepreneur	MOC	0.99

15. Develop organic agriculture food and produces to reach international standard	MOAC	17.50
16. Comparison study between Thai and foreign government in Thai organic aquaculture	MOAC	5.00
17. Cooperate ASEAN organic agriculture standard and certification	MOAC	9.00
18. Promote knowledge and capacity to develop organic Thai rice standard and market	MOC	4.30
19. Strengthen knowledge in standard production technology	MOI	11.10
Total		233.43

3.3 Organic Public Relation and Market Development

1. Organic public relation media for international markets	MOC	0.49
2. Thai organic rice public relation	MOC	4.97
3. Organic rice market public relation	MOAC	2.70
4. Develop organic agriculture produces to reach international standard	MOAC	0.90
5. Organic agriculture public relation	MOAC	25.00
6. Develop organic label and organic certification symbol	MOAC	1.50
7. Promote the understanding of EU organic rice regulation	MOC	1.00
8. Develop organic agriculture market channels	MOC	19.00
9. Develop organic rice production and market	MOC	22.14
10. Participate in international organic festival	MOC	27.46
11. Develop organic agriculture brand	MOC	3.97
12. Negotiate to expand organic agriculture market in foreign countries	MOC	6.62
13. The project for foreign organic agriculture entrepreneur visiting Thailand	MOC	1.50

14. Promote and develop organic aquaculture in international markets	MOAC	0.90
15. Develop knowledge in organic aquaculture production and market	MOAC	3.00
16. Develop organic agriculture foods and produces to reach domestic international standard	MOAC	5.00
17. Develop organic agriculture system to the EU list	MOAC	10.00
Total		136.15

Strategy 4 Driving Thai Organic Agriculture Strategy Management

4.1 Driving Organic Agriculture System

1. Driving the national strategic plan for organic agriculture development	NESDB*	5.05
2. Develop value added in organic product	NESDB*	19
3. Driving Khao Hom Mali Thung Kula Ronghai rice organic production	NESDB*	19
Total		43.05

4.2 Monitoring and Evaluating to Support the Driving Of Organic Agriculture Development

1. Monitor and evaluate integrated organic agriculture development	MOAC	4.99
2. Develop organic agriculture foods and produces to reach domestic international standard	MOAC	3
Total		7.99

* Host agency of the First National Strategic Plan for Organic Agriculture Development

There are 16 projects with more than a 50 million baht budget

1. Promote using organic fertilizer instead of chemical fertilizer	MOAC	1863.34
2. Develop new theory agriculture based on sufficiency economy philosophy	MOAC	674.00
3. Organic fertilizer plant training for farmer leaders	MOAC	277.48
4. One district one organic fertilizer plant	MOST	180.65
5. Promote organic agriculture in farmer institute with sufficiency economy philosophy	MOAC	138.30
6. Promote organic agriculture production	MOAC	136.84
7. Farm changing based on sufficiency economy philosophy	MOAC	134.54
8. Research and development in monitoring chemical residue in organic produces	MOI	120.54
9. Organic agriculture campaign and festival	MOAC	120.00
10. Strengthen capacity of organic agriculture entrepreneur	MOST	78.30
11. Promote organic agriculture in school	MOAC	78.00
12. Organic plants inspection and certification	MOAC	75.14
13. Research and development in agriculture to support organic agriculture	MOST	70.00
14. Rice organic inspection and certification	MOAC	60.00
15. The study of organic plant production technology following organic standard	MOAC	55.22
16. Research in innovation in biotechnology and organic agriculture	MOAC	55.00

APPENDIX B
THE SECOND NATIONAL STRATEGIC PLAN FOR ORGANIC
AGRICULTURE DEVELOPMENT B.E. 2556-2559
(2013- 2016)

**THE SECOND NATIONAL STRATEGIC PLAN FOR
ORGANIC AGRICULTURE DEVELOPMENT B.E. 2556-2559
(2013- 2016)**

	Ministry	Budget
Strategy 1 knowledge and innovation management		
1.1 Research and Development Knowledge and Innovation		
1. Research innovation technology in soil biological and organic agriculture	MOAC	70.48
2. Research and development in organic aquaculture	MOAC	13.98
3. Enhance capacity in organic agriculture certification	MOAC	0.60
4. Study the decomposition of residual in agriculture	MOAC	1.30
5. Building trust in organic agriculture inspection and certification	MOAC	1.00
6. The study of the environmental impact in organic agriculture	MOAC	1.36
7. Research and study growing mix plants in organic agriculture	MOAC	4.90
8. Research in appropriate technology in organic livestock in each region	MOAC	7.00
9. Develop high nitrogen in organic fertilizer	MOST	3.95
10. Research and develop organic agriculture in new economic plants	MOST	11.90
11. Science technology and innovation project to develop rural in Sakon Nakorn province with growing plants	MOST	1.30
12. Project in Beauveria bassiana fungi to control insect in farm	MOST	0.79
13. Testing project in protein to control worm	MOST	0.43
14. The study of various aphids to control insect in farm	MOST	2.00
15. The study of oil from plant affect insect in plant and flower	MOST	0.47

16. The study of worm in ecology in center part of Thailand	MOST	0.25
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Total		121.71
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1.2 Promote Knowledge and Transfer Technology in Local Organic Agriculture and Commercial Organic Agriculture

1. Promote organic agriculture in school and young doctor soil	MOAC	80
2. Organic festival to transfer organic agriculture practice knowledge based on sufficiency economy philosophy	MOAC	80
3. Develop aquaculture farmers	MOAC	6.39
4. Develop officer in organic aquaculture standard and inspection	MOAC	6.53
5. Complete organic rice production technology transfer	MOAC	24.39
6. Training in organic standard system and inspection for officers	MOAC	2.31
7. Training the organic livestock farm inspector	MOAC	0.61
8. Building leaders in organic livestock	MOAC	2.79
9. Develop organic livestock production learning center	MOAC	14.25
10. Distribute local organic agriculture practice knowledge	MOAC	1.2
11. Support knowledge and innovation in organic agriculture in a sufficiency way	MOAC	2.40
12. Develop, incubate and transfer technology in mushroom growing for community	MOST	1.00
13. Develop and transfer technology through science and technology village	MOST	0.65
14. Integrated technology transfer for rural development	MOST	15.30
15. Support technology transfer of growing organic vegetable	MOST	8.20
16. Network building for organic agriculture knowledge and innovation management	MOST	20.00

17. Technology transfer in fungi to control insect in Phra Nakhon Si Ayutthaya Province	MOST	0.32
18. Building community organic agriculture learning center	MOE	65.00
19. Building community college to transfer organic agriculture knowledge to students, farmers and interested people	MOE	33.00
20. Research and develop organic healthy market	MOPH	30.00
21. Research and development in organic restaurant standards	MOPH	15.00
Total		409.34

1.3 Enhance Innovation in Organic Agriculture, Develop Technology in Organic Agriculture Both Local and Commercial Level

1. Support organic agriculture innovation project	MOST	52.00
Total		52.00

1.4 Support the Study and Research in Food Nutrition for Consumer Quality of Life

1. Research and study nutrition in organic sericulture	MOAC	25.00
Total		25.00

Strategy 2 Local Organic Agriculture Development

2.1 Develop Organic Agriculture Infrastructure Both Local and Commercial Organic

1. Promote irrigation usage for organic farm in 4 regions	MOAC	2.76
2. Promote organic agriculture for farmer in irrigation area	MOAC	2.00
3. Support organic input in agriculture	MOAC	1,820.99
4. Drive organic fertilizer plant	MOAC	60.00
5. Pilot project in support complete organic fertilizer production	MOAC	30.00

6. Enhance efficiency in organic agriculture system to AEC	MOAC	1.20
7. Develop air adding in organic fertilizer production model	MOAC	4.00
Total		1,920.95

2.2 Promote and Support the Network of Organic Production, Processing and Market

1. Promote using organic input in organic agriculture	MOAC	1,299.00
2. Develop silk product to environmental friendly standard	MOAC	30.61
3. Develop Small and Micro Community Enterprise	MOAC	97.75
4. Promote local organic agriculture practice	MOAC	60.00
5. Commercial organic livestock production network and market seminar	MOAC	2.47
6. Community organic livestock production network and market seminar	MOAC	3.64
7. Green agriculture city project	MOAC	8.42
8. Business linkage to expand processed organic market	MOI	8.72
9. Activity to promote organic agriculture entrepreneur	MOST	18.00
10. Develop Chonlasit organic rice with science technology and innovation	MOST	1.00
11. Crude palm oil management for biodiesel production	MOST	3.20
12. Organic agriculture entrepreneur capacity building	MOC	12.00
13. Promote organic produces in restaurant model in 4 regions	MOPH	42.00
14. Promote organic agriculture produce in safe food, halal food and food in hospital	MOPH	37.00
15. Promote organic agriculture produces in school	MOPH	38.00
16. Promote organic agriculture produces in fresh market	MOPH	35.00
17. Promote organic produces in restaurant	MOPH	30.00

18. Promote organic agriculture in retail market	MOPH	30.00
19. Develop potential in organic supply chain	MOI	60.00
Total		1,816.81

2.3 Support Organic Agriculture Environment

1. Create and support complete rice organic production learning center	MOAC	9.40
2. Develop and support organic rice community as a role model in a pilot project	MOAC	13.50
Total		22.90

2.4 Create and Support Farmers to Organic Agriculture Practice

1. Prepare farmers to organic agriculture	MOAC	30.30
2. Seminar to develop organic livestock production and market in a community	MOAC	4.18
3. Develop green market	MOAC	2.68
Total		37.16

Strategy 3 Enhancing Capability of Commercial Organic Agriculture and Organic Standard

3.1 Organic Standard Management

1. Develop inspection and certification organic rice standard system	MOAC	3.10
2. Organic rice inspection and certification	MOAC	84.90
3. Develop farmers to reach organic agriculture standard	MOAC	0.60
4. Develop organic silk understand organic fiber standard	MOAC	0.40
5. Organic aquaculture farm standard certification	MOAC	2.75
6. Develop aquaculture to organic standard	MOAC	9.85
7. Develop coastal aquaculture to organic standard	MOAC	11.30
8. Develop organic bee standard	MOAC	0.30
9. Develop organic agriculture standard practice	MOAC	0.30
10. Develop an equal organic EU standard	MOAC	0.50

11. Develop local Thai organic standard	MOAC	1.00
12. Develop standard and inspection agency in organic livestock	MOAC	1.39
13. Inspect and certify organic livestock farm	MOAC	0.45
14. Enhance production capacity and standard in organic fertilizer production	MOST	7.40
15. Support the process to organic agriculture standard	MOI	10.50
Total		134.74

3.2 Public Relation in Organic, Expand Organic Market, and Support Organic Processing

1. Thai organic rice public relation	MOAC	18.09
2. Organic public relation	MOAC	20.83
3. Organic public relation, knowledge distribution, VDO media	MOAC	2.59
4. Seminar in organic agriculture for ASEAN countries	MOAC	0.80
5. Organic livestock public relation	MOAC	0.32
6. Expand organic agriculture market in domestic and foreign countries	MOC	69.40
7. Business linkage for processed organic products market	MOI	8.72
Total		120.75

3.3 Create Uniqueness and Trust in Consumer in Organic Products

1. Organic product value creation	MOC	6.50
Total		6.50

Strategy 4 Integration to Drive Organic Agriculture

4.1 Information System to Link Organic Agriculture Database

1. Organic agriculture database development	MOAC	8.00
2. Database network for control, inspection and certification organic agriculture	MOAC	1.00

3. Support trade facilitation	MOC	4.50
4. Develop research in nutrient in Thai organic agriculture database	MOPH	30.00
Total		43.50

4.2 Integrate Organic Agriculture Development

1. Develop integrated organic agriculture	MOAC*	11.14
2. Monitor and supervise organic livestock	MOAC	22.51
Total		33.65

4.3 support private sectors to be organic agriculture developer

1. support organic sericulture production	MOAC	22.00
Total		22.00

* Host agency of the First National Strategic Plan for Organic Agriculture Development

There are 16 projects with more than a 50 million baht budget

1. Support organic input in agriculture	MOAC	1,820.99
2. Promote using organic input in organic agriculture	MOAC	1,299.00
3. Develop Small and Micro Community Enterprise	MOAC	97.75
4. Organic rice inspection and certification	MOAC	84.90
5. Promote organic agriculture in school and young doctor soil	MOAC	80
6. Organic festival to transfer organic agriculture practice knowledge based on sufficiency economy philosophy	MOAC	80
7. Research innovation technology in soil biological and organic agriculture	MOAC	70.48
8. Expand organic agriculture market in domestic and foreign countries	MOC	69.40
9. Building community organic agriculture learning center	MOE	65.00
10. Strengthen organic fertilizer plants	MOAC	60.00

11. Promote local organic agriculture practice	MOAC	60.00
12. Develop potential in organic supply chain	MOI	60.00
13. Support organic agriculture innovation project	MOST	52.00

BIOGRAPHY

NAME

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