

# CHAPTER 1

## Introduction

### 1.1 Economy and Agricultural Industry

In the era of globalization, the world becomes smaller and smaller using communication technology. The mobility of people and goods is more improved. The fast growth of human beings results in the rapidly increasing demand of food and energy. Every country tries to explore the sources of food and energy to serve its own demand. The surplus of the domestic demand will be exported to other countries that do not have enough supply. The importing countries will focus on the developed countries in which the food and agricultural products are desired.

Thailand is an agricultural country. The agriculture is focused on the business sector which is important to the country economy. The agriculture is 11.64% of the country GDP (NESDB, 2009). However, every country has its own agricultural economy. Governments try to support the agricultural economy so that the economy is sustainable. In the past, the governments employed tax measures as a trade protectionism which creates edges for the domestic goods (NESDB, 2002). Nevertheless, under the present agreements of World Trade Organization (WTO), every country that joins the WTO has its commitment in reducing trade protectionism among the membership countries. The developed countries issue laws, regulations, and standards in order to protect and create advantages as well as to foster competitiveness for their domestic goods. This can be viewed as the trade protection measures that are not tax measures. Together with the laws, regulations, and standards, the agricultural sectors in the developed countries are stronger than the developing countries. Yet, the farmers in the developed countries are knowledgeable and ready to implement the established standards. The agricultural areas in Thailand are prone to reduced and there is more use of agricultural chemicals for the purpose of boosting the productivity (Greenpeace, 2008). Such the use of chemicals contaminates the environment and has an undesirable effect on the health of farmers. In addition, the cost in doing agricultural business is increased and hinders the sustainable agricultural economy such that the poverty remains (Von Braun and Diaz-Bonilla, 2008).

There are ideas to improve the life quality of Thai farmers. Organic agriculture receives interest and is expected to result in a sustainable agricultural business. However, Thai farmers still lack of knowledge and learning sources. The farmers have superficial knowledge. When the farmers lack of thorough knowledge and implement what they have learnt, there are undesirable consequences. The emerging problems cannot be correctly solved. There is no data source or consultants that will help solve the problems. Finally, the farmers decide that the organic agriculture is not effective and turn back to the disoriented use of chemicals as before. Presently, there is a notion of safety agriculture which combines the notions of organic agriculture and appropriate use of chemicals. The safety agriculture alleviates the farmer lives and promotes the export of Thai agricultural goods.

### **1.2 Incentive, Standards, Government Support to Farmers**

Thai agricultural goods are still in high demand of world market. However, the safety protection and hygiene issue increase the difficulty in exporting Thai goods. Consequently, the agricultural exporting sector tries to try to select quality goods with safety in accordance with the standards of the business partners. Accordingly, the exporters of Thai agricultural goods need to help farming of the farmers. They transfer the knowledge of laws, regulations, standards, and demand to Thai farmers. The notion of Contract Farming is then employed for the confidence of both Thai farmers and buyers that they will have goods and standard prices including the timely delivery as agreed in the contract (Masakure and Henson, 2005).

In the contract farming, the buyers may impose the conditions in the production of agricultural goods under the Good Agricultural Product (GAP) or Global GAP. GAP is the standard requested by the buyers that the products to be delivered must be from the farms which have been assessed and obtain the certificate in accordance with the above-mentioned standards.

However, the promotions of signing contract with farmers and the request for appropriate farming still have a lot of problems and obstacles. The farmers consider that the trade contract confines themselves too much and are worried about its difficulties and inability in producing the desired goods. Furthermore, it is viewed that the contract will provide advantages for buyers. Consequently, promoting farmers in doing contract

farming is not easy. The counterpart traders need to find measures or motivations for the farmers so that the farmers understand and want to join the contract farming project. In general, the contract companies will use the price measure as an activator. That is in the contract system there will be clear pricing and schedule. The offered price needs to be higher than the general market price. At the present, the sole price measure may not receive interest in several plants because farming nowadays under fluctuating weather, frequently changing seasons, spreading plant pathology and insect disease leads to high risk of not having goods or products as expected. Costs also increase. Therefore, the counterpart or promoting companies have to look for new measures that will help farmers and reduce the risk and costs for the farmers. Such measures can be the initial loan and/or the support in terms of providing seeds to the farmer. The seed provision can be free but in general will be paid once the products can be harvested for the companies. In addition to the initial investment and seeds, there are fertilizers, chemicals for eradicating weeds, plant pathology and insect disease, as well as fuel. Those are supports that are provided by most companies for the classified groups of farmers. Under the present situation, several promoting companies provide technical, academic and technological supports to farmer too. The companies need to have personnel that take care of farms, give suggestions to and solve problems for farmers. This is perhaps another factor that will stimulate the farmers to select the contract companies which will help the farmers in solving problems so that the companies are trusted and their creditability is spread via words of mouth.

For the standards of agricultural goods, they are given higher importance than in the past. Presently, the standards are involved in every industry and goods with no exception on the agricultural goods. Every country tries to establish standards of agricultural goods for its own goods and product in order to raise the goods and product level and also to be able to protect its agricultural business from non-standard or lower-standard countries. In Europe, there is an establishment of agricultural goods standards by groups of supermarkets. The goods that are sold to the supermarkets have to be certified from the organization then called EURER GAP and now Global GAP. Later on, the Global GAP plays more roles due to the desire of the buyers that call or request for the standards from the producers. Such standards are the standards of good and appropriated agricultural management which is defined in Europe and improved for

their suitability with several goods and comply with agriculture of the producing countries. Many producing countries have established the standards in the same manner and tried to benchmark theirs with the Global GAP standards. The standards from numerous countries are compatible with the Global GAP ones. The Thai standards are also compared and accepted by the Global GAP. There is an attempt to push domestic producers to follow the Thai standards. However, there are still problems in view of the acceptance from abroad and even in the country because the importers always ask for the Global GAP certificate. It is thus the seller difficulty to explain and present the buyer about the standard calibration. The sellers may hesitate to tell that their goods have passed the Thai standards which are compatible to the Global GAP ones and make the Thai standards less popular. However, if there is more continuous public relation and gaining support from the government sectors in the future, the sellers may make the Thai standards become popular because the examining price is lower.

The agriculture and its continuous business cannot lack of continuous support from the government sector. The government is still the main mechanism in promoting either direct or indirect means. The government is expected to be the supporting organization of academics, investment fund, technology, and new market negotiation as well as conflict solving among importing countries. Present promotion and problem solving from the government is considered to create obstacles to agricultural business because the problem solving from the government sector mostly are the issuance of measures, laws, and regulations instead of participating the farmers and sellers in solving the problems. It is seen that the measures are the intra-protectionism. Nevertheless, the problem solving from the government sector has a better tendency when all stakeholders are involved in the process with serious actions.

### **1.3 Behavior, Learning and Practices of Thai Farmers**

Thai farmers are the inherited farmers from their ancestors. They are farmers following their ancestor or father-mother occupation. The knowledge body in agriculture comes from the accumulation of experiences in assisting them in farms. The farmers are highly self-confident because they believe that their agricultural approaches are the best and correct due to their past success. The selection of plants to be grown depends largely on the information around that what kinds of plant have a

high profit, are easy in taking care or on the observation from their neighbor success. They do not thoroughly study the factors of success from their neighbor. When farming but not able to harvest as expected is a cause of deficit and repetitive poverty.

For learning, Thai farmers learn from information that is generally disseminated and from knowledge exchanging in their groups. However, their learning may not be complete because the incorrect agriculture behavior can still be found. The farmers mostly consult the plant pathology and insect disease from chemical sellers. The problem solving is the use of chemicals instead of solving the problem root causes or of preventive taking care. The guidance from academics is sometimes not accepted by them because the farmers see the academics as not the real practitioners like them. The suggestions from the academics may not be effective or slowly effective. The farmers thus rarely recognize the academics if they cannot concretely show the farmers.

Thai farmers have their practice guidance following the past practices that the practices become their agricultural culture. There is the use of the transferred wisdom until the present that some practices yield good results but some may not appropriate to the time. The guidance will consider low investment and highest gain as criteria. Many times the farmers overlook their own safety as well as that of consumers. They even overlook the effects against environment and ecology. The agriculture scarcely analyze fundamentals of production factors because it is understood that the farmer own practice is the correct one. The lack of the analysis in the fundamentals of production factors may be the cause of unreasonable and inappropriate resource consumption, which in turn affects the farmer income.

#### **1.4 Research Problems and Prospect Solution Methodology**

The agricultural business in the globalization, where there is an indirect protectionism using standardization and regulations, as described above, makes the business units in the supply chain self-adaptive to prepare for changes. The adaptability is rapid or slow depends on one important factor which is knowledge. The organizations that are equipped with knowledge are of course be more prepared than those without it. Such unprepared organizations take longer time and consume more resources on learning and developing before they can develop and adapt themselves.

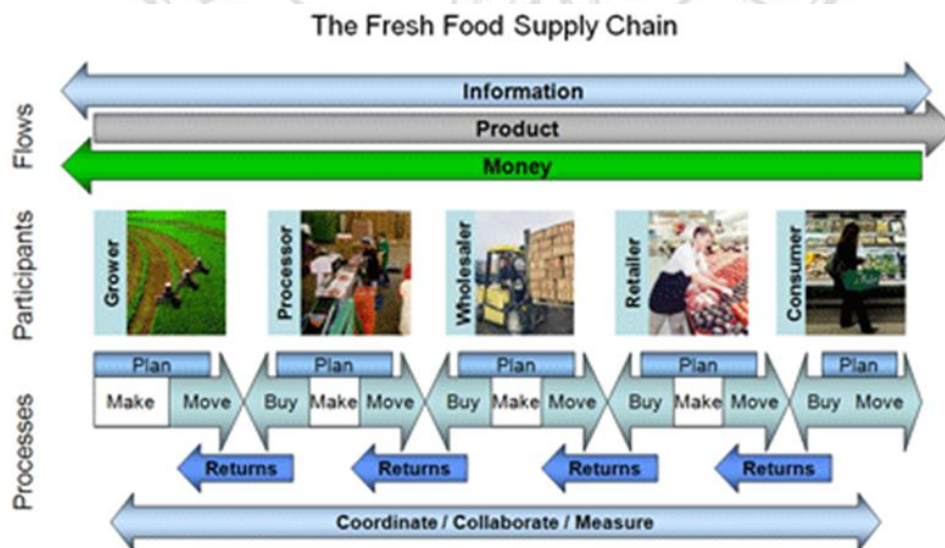
When the regulations and standards are requested by buyers, producers have to follow in order to respond to the needs from the buyers and to maintain their market shares. The sellers try to promote the producers to set up the standards as requested by the downstream buyers. However, it is not easy for the producers who are growers to set up standards because the growers have different ideas and levels of knowledge as well as viewpoints and recognitions. In general the buyers have to motivate the growers for the standardization, e.g. the payoff from standard certification or higher prices of certified goods. However, there are still problems related to loyalty. The growers who pass the standard certification may sell their products to other buyers who offer them higher prices of goods. This leads to the shortage of goods for the buyers or standardization promoters. Accordingly, the buyers need to find new standards or methods to create loyalty and force the growers to sell goods or products to the firms solely. This is the so-called contract farming. The buyers will foster and promote the growers in terms of finance, academic matters, or other resources as requested by the growers.

Contract farming creates the promoting companies a confidence level that they will occupy their own goods and products with reasonable prices and desired standards. There are still a lot of problems and obstacles in terms of standards because the growers are lack of knowledge and understanding in building and implementing the system. The system is frequently set up by the companies who promote the standardization process. It is not from the knowledge, understanding, and recognition of the standardization by the growers. The Global GAP directly involves the standardization of the growers. The Global GAP is the standard that is requested by the buyers as mentioned above. The Global GAP is the standard for good and appropriate farming. It should be done and can be done if the growers have knowledge and environments facilitating the implementation. It is not difficult for developed countries to implement the Global GAP. The growers in the developed countries have knowledge and technology to alleviate the working loads of growers and to control risk factors better than the growers in the developing countries. The growers in developing countries like Thailand often lack of knowledge and understanding in standard system. The growers rely mainly on labor forces and there is no facility. The environment is mostly of the open type that cannot be controlled or cannot reduce the risk easily. Thailand is in a

tropical are where there is more contagion of plant pathology and insects more than cold countries.

The way the companies promote the growers to build up the system is thus very difficult. The collection of growers with different levels of knowledge and capability is an obstacle and leads to an inefficient knowledge transfer. Moreover, Thai farmers always learn and follow the successful persons and they must not be so different from the growers. That is the growers consider that they can be also successful. However, there is no successful example in doing the Global GAP and the results from the standardization are not concretely revealed, e.g. in terms of cost and imminent risks.

Regarding market factor, apart from the need of the public relation to the consumers in the new market to know Thai vegetables and fruits, which is a direct responsibility of Thai exporters and the government sectors related to exporting, the farmers as the upstream element in this supply chain, should improve the uniformity and quality of the products and the post-harvesting care in order to preserve the quality of goods as long as possible. The supply chain of fresh produce is shown in bellow figure.



Source: Source from Council of Supply Chain Management Professionals

Figure 1.1 Supply Chain of Fresh Produce

Another important thing is that the problems of plant hygiene and food safety which are NTB imposed by several countries and having increasing trend in the future (Sumner, 2001). Each country tries to establish standard including methods of eliminating plant pests that may come with the imported fruits and vegetables. These standards and regulations will screen goods, and thus only the quality and safe goods according to the requirements can be exported.

In terms of exporters and packaging plants, the government sector plays its role in the parts of promotion, public relation, and counterpart negotiation in order to be able to open markets, and promotion of standards to fulfill the measures of counterpart countries. For the part of production source which is farmers, they should receive data and know the target of operation in the same direction. In reality, the farmers can just only follow what the exporting companies suggest to pass the evaluation and to be able to sell their products without knowing all objectives and importance of systematization, recording, examinations. These lead to mistakes both intentionally and unintentionally, e.g. use of chemicals or biological substances not specified by the buying companies. The lack of recording the use of chemicals leads to the confusions at the days of harvesting for the companies. Consequently, the residual chemicals are found in goods no matter in the country or destination countries. It creates unfavorable consequences to the farmers, exporting companies, and county image as a whole. Ignorance of examination of soil and water condition, site preparation before seeding, or use of chemicals without protection suits affect directly or indirectly farmers.

The operation for success thus needs cooperation, understanding, objectives, and same direction of work. The farmers at the present try to do their best so that they can sell the products. The exporters try to follow the standard systems and the conditions imposed by the trade counterpart countries so that they can sell the goods. At the same time the government authorities including the academic sectors have drafted standards, negotiated to obtain solutions, requested for the collaboration, and produced research outputs to solve problems of insect diseases, quality, and develop the value added for Thai vegetables and fruits. Such attempts and efforts are, nevertheless, carried out separately.

From the fact described above it is expected that when Thai farmers understand their own capability and have development guidelines, they can develop themselves to



accommodate changes that can affect their business, which leads to their sustainability. Consequently, the prospect solution methodology should focus on the management of knowledge that exists in Thai farmers and the systematic development of the knowledge-based and capability. The review of the existing methodologies that are relevant to the problems of interest and the focus of solution will be done next in order to provide a basis for the methodology that solves the problem.

Research problem: Non-tariff trade barriers have been issued all the times. Thai growers are lack of capability to follow the standards and requirements. The Global GAP is one of the standards that have been required buy buyer especially in developed countries. Therefore, Thai growers have to be applied and certified the standard as customer requests. Growers lack of knowledge and try to pass the standards some time the way to implement might be in wrong way and short term solutions. It may be created problems to Thai's agricultural economy.

Research Objective: The objective of the research is to develop tools to help Thai farmers to understanding their own capability and development guidelines, they can develop themselves to accommodate changes that can affect their business, which leads to their sustainability.

Research Framework: Thesis has applied the capability maturity model as a tool for evaluated and encourage the growers to have higher maturity level by shown the cost and risk involved at all level of maturity. The Global GAP has been used as process reference model, working framework, for the growers. Criteria and measurement of Global GAP are considered to be as part of level divided. Knowledge management and knowledge engineering are used to acquired and captured knowledge, which necessary for capability improvement.

### **1.5 Structure of Thesis**

The structure of this thesis is as follows. After this introduction chapter, the literature review with respect to the problem and relevant solution methodologies will be described. Then follows the proposed methodology and the demonstrated case studies. The discussion will be done and finally is the conclusion.