



Case Studies of Good Agricultural Practices (GAPs) of Farmers in Thailand

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ABSTRACT

There have been growing environmental and health concerns associated with modern agriculture. The farmers' agricultural management practices have been required to ensure food safety for their consumers. Several countries around the world has adopted the standard of Good Agricultural Practices (GAP) to ensure safe and qualified food supply. In Thailand, the year 2004 was declared as the food safety year and it has become the strategy for food production. The GAP standard was adopted by the growers to access higher value markets domestically and internationally. The exporters of agricultural products have been required to meet the food safety standard of the export origin to be able to grab high market value. Thailand has developed Thai GAP standard to improve farmers' competitiveness in the global market. The development of the ASEAN Free Trade Agreement (FTA) has also forced the need to establish a standard for safety and quality of imported products within the ASEAN region. However there are major challenges to effective implementation of the national GAP standard at different levels of stakeholders. There are certain case studies which were done to assess the constraints of successful implementation of GAP standard in Thailand.

This paper discusses the objectives of Thai GAPs standard, the constraints for its successful implementation at the growers' level, the government level and some of the issues. The practices of GAPs in fresh vegetables and shrimp aquaculture have been generalized. The two case studies done in Chumphon provinces and Central Plain of Thailand were taken out as an ideal example to show the constraints for adoption and continuity of GAPs standard in Thailand.

INTRODUCTION

The Year 2004 was declared as the year of food safety in Thailand as part of the country's strategy for food production, namely "Kitchen of the World" Strategy. It included the Food

Safety Road Map, which provides the safety standard of agricultural inputs, farm level production, crop protection products and crop production quality control.

The Certification of Good Agricultural Practices (GAPs) was developed to ensure the major safety elements. The farmers who meet the requirements of the national GAPs standard were enabled to label their crops and products with GAPs logo. Plus, the Western GAPs cluster, which is a regional GAPs program in the western part of Thailand, has launched Thai GAPs standards based on Global GAPs Standards.

For agricultural products, the Department of Agriculture is mainly responsible for its inspection and control to develop a national GAP system. Not only the agricultural products, but also livestock and fisheries products are allowed to be inspected under national GAPs standards. The Farmers who are willing to apply to get certified for their products are assessed on their processes of production. The standard consists of eight key elements as follows;

- Safety of water used
- Site safety and sanitation
- Use of agrochemicals
- Product storage
- Data records
- Pest-free products
- Quality management
- Harvesting and post harvesting handling

These standards cover all stages of production, processing and marketing and these stages are subject to inspection and all records are available. The sole objective of GAPs in Thailand is that the food crops which are produced in this country meet the safety standards while minimizing the negative impacts on the environment. By May 2008, nearly half of Thailand's 363,946 registered farms were certified for GAPs standards, specially for fruit vegetables, swine, poultry, cattle and aquaculture. (3)

ThaiGAPs standard

The exporters of fresh fruits and vegetables of Thailand have faced numerous issues to access higher value markets that the standards require. The Key criterion to enter these markets is food safety and quality. To achieve and ensure this is to implement and manage transparent food safety and quality standards, which are internationally recognized. In Asia, Europe, Latin America and Africa, the GLOBALGAP standard has become the main private standard for the global market.

In Thailand a few farms have achieved this standard, but for Thailand to improve GAPs for the domestic market as well as to remain competitive in the fresh food market more and more producers will need to be certified.

Principles and reason for Thai GAP Standard are from the world market concept has changed considerably during the past decade, including the development of Free Trade Agreement (FTA) between many countries, which had significant impact on Thai fruit and vegetables exporters. Once the traders are managed under FTA, the trade partners have to establish a quality standard to control the quality of imported products, such as food law that exporters have to adhere to. In order to export goods

without facing any problem, exporters have to prepare and improve themselves to comply in today's world market requirements. (5)

The modern retail sector may increasingly start to demand higher level third-party certification for the domestic market. The recently launched project of Thai Fruit and Vegetables Producers' Association, the Thai Chamber of Commerce and Cluster of Western GAPs: Kasetsart University to set up a ThaiGAP Project with the aim of having it benchmarked to GLOBALGAP is an attempt to counter a multiple of retailer GAPs, and thus avoid multiple certification requirements. ThaiGAPs project has been supported in terms of budget through the Office of Small and Medium Enterprises Promotion, Ministry of Industry. Thai GAPs project is for Thailand's safe and sustainable food and agriculture and its objectives are as follows

- To set up the safety/quality systems and standard for Thai agricultural production at the same level of world quality system and standards, in order to ensure that agricultural products comply with consumers requirements;
- To educate the small growers to be able to comply with trade partner's regulations and requirements;
- To develop the level and ability of Small and Medium Enterprises (SMEs) producers of competing in the same region;
- To create the systems for production, according to quality, safety and legality requirements and reach the world's standards;
- To increase grower s' income and ensure long-term sustainability in Thai Agriculture.;
- To support the government's Kitchen to the world; and
- To ensure effective traceability from producer sto consumers

Even though GAPs in Thailand is in its early stage but its potential for practices are successful because of strong food safety government policy in the agriculture sector and upstream food production. However there are major challenges to effective implementation of the national GAPs program at the growers and government level as follows;

At the growers' level

- Insufficient awareness about safety, environmental and social
- impacts of agricultural practices
- Lack of knowledge and low education
- Poor understanding of GAP requirements.
- Poor record keeping.
- Low motivation and incentives to implement GAP.
- Unhygienic practices in production and food processing.
- No direct links with markets.
- Small number of large export companies.
- Insufficient organization of small growers in producers associations.
- Inappropriate use of pesticides
- Shortage of skill labor

At government agencies

- Poor understanding of the role of national GAPs.
- Insufficient dialogue with stakeholders.
- Insufficient outreach.
- Lack of coordination in training.

Therefore developing and implementing a national GAPs need to consider the following key issues

1. Formulating and implementing policies, such as those relating to improving food quality and safety in order to meet customers' requirements and increase the competitiveness of agricultural products exported from Thailand;
2. Designing the national GAP system in a way that meets domestic and international buyers' requirements;
3. Providing a framework and guidelines for the further development of national GAP scheme ;
4. Clarifying the role and responsibilities of each government agency and private sector;
5. Fostering dialogue with all stakeholders;
6. Setting up a monitoring system and formulating a follow-up plan; and
7. Providing GAP training and advisory services for both individual growers and grower groups.

(a) Good Aquaculture Practices (GAPs) in the case of shrimp culture

Aquaculture products are one of the major export products of Thailand. Thailand is a major exporter of marine shrimp despite the existing issues regarding its production and marketing. The aquaculture firms caused threats to the environment and the disease and pollution reduced the production amount in the low-lying coastal area. The Department of Fishery (DOF) supported shrimp raising farmers to overcome such critical issues and to increase the production by establishing the guidelines from the stages of hatchers to farm rearing to processing and shipment all the way to the consumers. The DOF auditors has assessed all processes of shrimp farming if they comply with the code of conduct for Responsible Fishery, with guidelines on aquaculture from the UN Food and Agriculture Organization and the ISO14001 standard for Environmental Management System (EMS).

Shrimp transporters and processors must comply with international health and safety standards and must provide traceability of products. DOF also certifies marine shrimp feed and issues licenses to certified producers and importers of aquatic feed. Random checking is carried out to ensure feed quality, and antibiotic inspection is employed to detect the presence of prohibited antibiotics. Government inspectors also inform shrimp farmers, feed producers, processors and manufacturers, and exporters about control and prevention of antibiotic residues in shrimp products.

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(b) GAPs in Fresh Vegetables

Fresh vegetables are another major export of Thailand. The country has been contributing 85% of baby corn for export to the world market and asparagus as the 7th largest exporter.

However, the exports of these fresh vegetables face the need to meet the requirement of food safety and quality. A major challenge that the exporters has faced is the problem of toxic residues.

With the fund from USAID and the support of TICA and Kenan Institute of Asia, a development program named a Cluster Development has initiated the project for using the GAPs standard to eliminate the toxic residues with the minimal expense and prolonged inspection of government for export.

The cluster, which included Kasetsart University, Thailand's leading agricultural university, helped establish the Thai GAPs based on GLOBALGAPs. University experts worked with the Ministry of Agriculture and Cooperatives and the Ministry of Commerce to develop training materials in Thai and establish a training program that reached tens of thousands of Thai farmers. The cluster cooperated with European supermarket chains who are the biggest purchasers of Thai fresh vegetables to review the standards.

From this beginning in one region of the country, the use of GAPs standards has expanded nationwide under the Ministries of Agriculture and Commerce, with the private sector remaining an influential partner in the certification. The Thai GAPs standard is now overseen by the Thai Chamber of Commerce and the Board of Trade of Thailand. Certification provides permission for products to have a Q (for quality) logo on their packaging. The Q mark is a legally registered certification mark that provides assurance that the produce is of high quality and safe for consumers. A 20 digit code appears below the Q mark to enable the produce to be traced back to a particular farm. (4)

1. A case study of GAPs among coffee farmers and Constraints for Adoption and Continuity of it in Chumphon Province of Thailand

According to the study of Pongyinyoo P., *et al.*, (2014), Thai coffee farmers have been trying to develop GAP-based Robusta coffee production since 2008. Yet, the knowledge and experience has been hampered since they have been using the conventional farming activities, which is contradicting with the GAPs system, thereby leading to the limitation of successful implementation of GAP in the Coffee production.

Pongyinyoo P., *et al.*, (2014) has conducted the survey of 56 coffee farmers who have applied for GAPs certification in Chumphon provinces in 2013. The Farmers' GAP self-confidence was positively affected since the farmers' GAP experiences had a negative effect on their understanding of GAPs. The current adopters will be less likely to continue the GAPs extension services.

Coffee is one of the sensitive agricultural products for the export market, GAPs is important to increase farmers' competitiveness and food safety for the sake of domestic consumption and the export markets. The GAP implementation has shown inefficiency due to the low level of farmers' understanding of GAPs. The conventional farming methods of Thailand have been a challenge for GAPs extension in promoting the standard procedure for the farmers and poor practical implementation in the past. (1)

The major Constraints of GAPs implementation for Thai Coffee farmers in Chumphon Province of Thailand includes (1) coffee farmer's GAP farming practices (2) Practical extension services for GAPs and (3) Market conditions of GAPs coffee which fetches low incentives.

2. The Case of Adoption of GAP program and Factors related to Continuous adoption of it by rice farmers in the Central Plains of Thailand

The central plain of Thailand is in the lower central part of the country and belongs to the broad alluvial plain of the Chao Phraya River. The study of Saengabha Srisopaporn *et al.* (2014) has chosen the province of Ayutthaya for the study of adoption of GAP program because it was one of the first provinces where the Q-GAP was initialized in the central plain of Thailand and the agricultural systems in this province were the representative of other provinces of this region. Among the 244 interviews, 71% of the farmers has registered for the Q-GAP program at least one rice field while the rest 29% did not participate in that program. It is not known that The Farmers who have adopted the Q-GAP in 2010 and later, will continue to participate or not. It was observed that only 38% of the initial adopters decided to continue to participate in that program, which means huge level of dis-adoption.

Education was one of the factors which contributed to first time adoption of Q-GAP system and experience level as well. There are certain others factors which leads to the first time adoption of the GAPs but at a lesser extent than the formers factors. They frequently are in contact with the government agencies, the source of information , the number of neighbors adopting the GAPs program.

Even the training has negative correlation with adoption but is considered non-significant. It was expressed that the farmers' positive expectation of GAPs program deteriorated by their disappointment from their training attendance which made them realize the cost and benefits associated with the adoption of Q-GAP program.

Labor constraints were found to be the most important factor related to non-adoption of GAPs. Labor requirements for adoption were represented as a bottleneck for adoption. Plus the land renters were not supposed to be long term adopters than the land owners because there is less motivation by land renters since they are concerned less about the impact of GAPs.

Thus, based on this case study, the adoption and dis-adoption of Thai GAPs standard by rice farmers in the Central Plains of Thailand are highly related to household labor constraints, land ownership, food safety and initial high expectations regarding the market opportunities of the GAPs produced rice. There are several encouraging differences between non-adopters and first-time adopters, indicating better pest and nutrient management.

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