

THAI Good Agricultural Practice

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ABSTRACT

In Thailand, GAP; Good Agricultural Practice for fresh fruit and vegetable (FFV) had been actively strengthened during 2004-2012. During that period, GAP provided by Ministry of Agriculture and Cooperatives was developed to support government policy: kitchen of the world. Global organization such as FAO/WHO approached DOA to implement knowledge structure of risk assessment, HACCP, GMP and GAP into the production flow from farm to table. At the same time GLOBALGAP (EUREPGAP), a private standard for retailer and supplier in European market had been established to prevent unsafe fresh products from farm to shelf. Thai exporters of FFV to EU market linked to supply chain and must comply with these farm gate standards. Components of the standard ensure farm production concerns food safety, environmental conservation, welfare of working condition and traceability. In 2007, cluster initiatives of western GAP were developed in compliance to GLOBALGAP standard under the collaboration of various organizations of which administrative offices are located in Kasetsart University, Kamphaengsaen Campus. Western GAP guideline has renamed to THAIGAP. Principles and content of private and public standard are compared in this study. The challenging strategy is to keep smallholder farmers attached to a supply chain. Thus, THAIGAP standard was used as a key tool for SME (Small Medium Entrepreneur) to access global market. Thai Q GAP (Q is for quality), government standard, belongs to Ministry of Agriculture and Cooperatives, had been actively implemented during 2004-2012 as well. Current number of Thai Q GAP certificate issued is reported. Nevertheless, being sustained in high end market, linking in value chain is one key element as well as supporting system i.e., service of inputs, farm advisor and third party certifier for GLOBALGAP/THAIGAP. Development process for extending the best practice of smallholder farmer was analyzed for key success factors and the gap along the value chain. It was found that smallholder farmer groups gained knowledge of good practice are willing to get certification under conditions of market pricing and sustainability. Up to now, THAIGAP standard is strongly involved and linked to domestic market. Thai Q GAP standard is mandatory for FFV export to some countries. The current status of THAIGAP standard for domestic hypermarket and implementation will be stated. This study aimed to identify the key success factor of using private standard to build capacity of smallholder farmer group. Pyramid of GAP development, strategy of public- private standard for sustainability of Thai GAP are also reported in this paper.

Keyword: THAIGAP Standard, Small Holder Farmer, Building Capacity, Pyramid for Development

INTRODUCTION

Thailand's agricultural sector plays an important role in the country's economy in terms of its GDP distribution and export earnings. In 2003, Thai government announced the national food safety policy under two

authorizations i.e., Ministry of Agriculture and Cooperatives and the Ministry of Public Health. In 2005, the “Framework on Monitoring and Control of the Quality of Agricultural Commodity and Food” was formulated. Meanwhile, the concept of food safety from farm to table has been included in the plan of both ministries. Ministry of Public health controls food for domestic consumption while Ministry of Agriculture takes responsibility for trade and export of agricultural products. Thai agricultural commodity standards were announced continually to facilitate trade. Good Agricultural Practice (GAP) was announced as a standard for producers and be promoted ever since .In 2010, Thailand’s exported agricultural products were valued at THB 1,099,035 million (USD 28,044 million), accounting for 18% of the total exports and making Thailand one of the biggest agricultural exporters in the world. Among the agricultural products, fresh fruits and vegetable (FFV) play an important role as basic raw materials in agribusiness sectors for primary processed products or fruit in can. There are approximately 1 million small farms farming in FFV sector for the Thailand agribusiness. To keep FFV sectors sustainable in the world market, one of the more viable strategies is to differentiate FFV as a safe and reliable agricultural product with high quality. This action enables Thailand to increase and maintain its market share; especially in EU countries where require higher food safety, environment and working conditions ‘standards. GLOBALGAP is considered to be an effective and internationally recognized standard to access the European market. GLOBALGAP is an independent business to business certification system founded and managed by the European retail industry as a way of assuring themselves and their customers’ basic food safety standards. Globally recognized GAP system certification was proposed as shown in Fig. 1. At farm level, the basic requirement of food safety must be announced across the country. To access hypermarket, quality and add-ons are included in the requirements. Then, the international markets require product certification by independent body complying international standard.

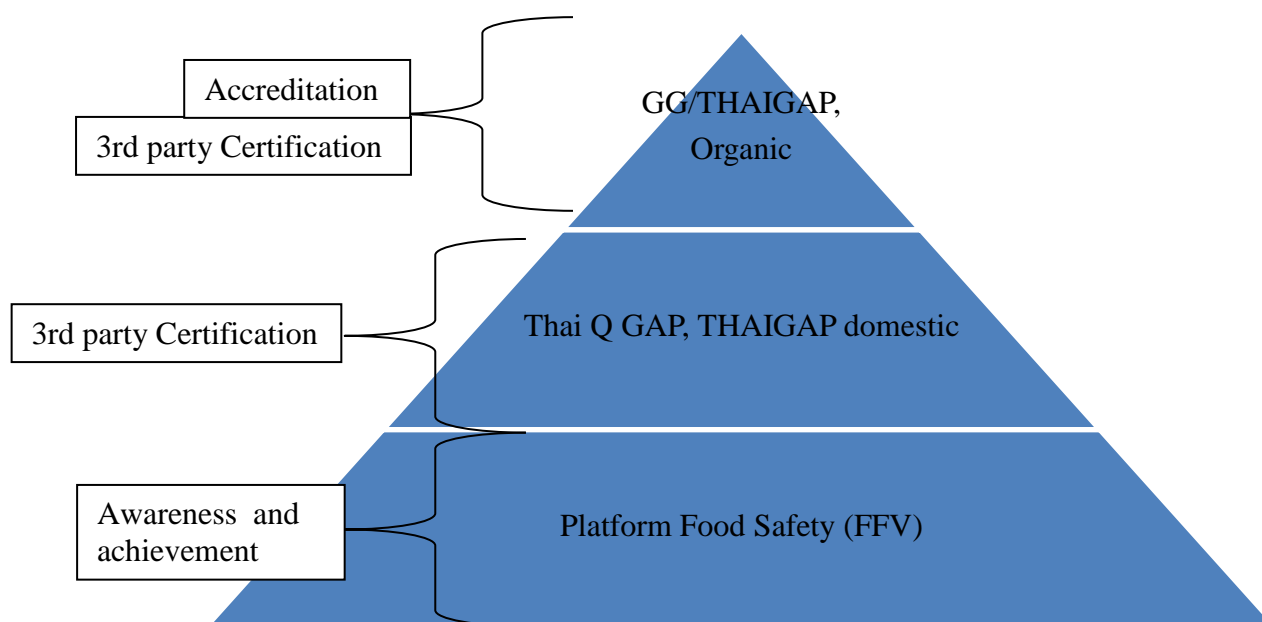


Fig. 1. Pyramid for GAP development of smallholder farmers and step up to achieve high end market

The high cost of getting certification is a major drawback to achieve better market access, especially for small scale farmers. In 2008, the activities of increasing service capability to support larger scale farmer groups’ linked the groups to exporters and GLOBALGAP certification needed. Key players in this value chain are the farmers, exporters, buyers, and the quality infrastructure service providers like those who train farmers and the certification bodies. These interventions are to support and increase effective capacity of the service sector

-serving the certification needs of the FFV sector. In 2013, THAIGAP standard announced the domestic concern rather than international market. Currently, THAIGAP standard is implemented locally to elevate SME groups. This study aimed to identify the key success factor of using private standard to build capacity of smallholder farmer group.

METHODOLOGY

Public-private GAP standard: rationale and development of private standard setting were collected from the starting point of cluster development (Cluster of Western GAP). The technical content and relevant stakeholder of THAIGAP standard has been described as well as the difference between of GLOBALGAP and THAIGAP standards. The content and comparison were summarized in Table.

Process of developing farmer group to comply private standard requirements: Six groups of producers linked with exporter were interviewed to understand the cost of GLOBALGAP certification, and reasons for GLOBALGAP Standard adoption and neglected adoption. Also they were interviewed on smallholder farmer group capacity building process, knowledge management, experience sharing, and lessons learned from the cluster competitiveness and collaboration.

RESULTS AND DISCUSSIONS

Public-private standard development: The crisis of mad cow disease or bovine spongiform encephalopathy (BSE) incidence in England and Ireland reported in 1980s, and peaking in 1993. These incidences had great impact on European community to launch Food Safety Law, which strictly required traceability system to prevent and protect consumers from unsafe food. On December 2003, BSE has been also found in a dairy cow in state of Washington, USA, which forced the European communities to set their own standard to ensure that all food are safe, from farm to table. GLOBALGAP is one of the most influential private standards in the area of food safety, traceability and sustainability. GLOBALGAP is an independent verification system for GAP as a base for supplier compliance. GLOBALGAP began as Europa in 1997 as a non-profit organization with an initiative by several European market chains. One important reason for the effort to set up the GLOBALGAP is the Food Safety Act imposing more liabilities on retailers in terms of food safety called due diligence. As a consequence, retailers are responsible for the inputs used for the branded commodities and unbranded FFV is regarded as a brand of the retailer. GLOBALGAP was developed by retailers for procuring foods that meet the requirements based primarily on the European agricultural policy. This EU policy is to promote agriculture in responsible to sustainable development with giving attention for natural resource utilization most effectively. The policy was also used to give subsidies to producers who implement measures to protect the environment. If farmers want to receive subsidy under the policy, farmers need to fulfill a mandatory criteria such as to keep land in good agricultural condition and care for environment. In Thailand, initiative program of western cluster for GAP was started in 2004 with the collaborations of FFV exporters, Kasetsart University, and provincial technical officers. In 2007, Western GAP requirement changed its name to THAIGAP. THAIGAP activities were performed by 3 partners: Thai Chamber of Commerce, National Food Institute, and Kasetsart University. During 2009-2010, the benchmarking process of THAIGAP with GLOBALGAP was carried out emphasizing on approved modified checklist and the process has been completed in 2010.

Food safety control system in Thailand involved with different departments and different ministries. Government sectors under Ministry of Agriculture and Cooperatives promote GAP certificate which called Thai QGAP. Thai Q GAP for food crops was categorized in the scope of herbal/medicinal plants, field crops, cutting flowers, fruit, and horticulture crops. Thai Agricultural Standard (TAS) of food crops or GAP food crops newly issued and announced for completely alignment with ASEAN GAP, the content consist of a pillar of food safety, quality, welfare and environmental concerns (TAS, 2013).

GAP mentioned in TAS 2013 was grouped in 8 sections: 1. Water source, 2. Site History, 3. Pesticide usage, 4. Quality Management, 5. Harvesting and Produce Handling, 6. Storage, transporting in farm, 7. Personnel hygiene, and 8. Record keeping and traceability.

THAIGAP, a private standard for domestics, maintained a similar structure of GLOBALGAP/THAIGAP checklist. There are 3 modules: 1) All Farm Base Module (AB), the foundation of all sub-scopes defining all the requirements that all producers must first comply with to gain certification; 2) Crop Base (CB) scope, the clear criteria based on the food production; 3) FFV Sub-scope Module, the control points and compliance criteria (CPCC) covering all the requirements of FFV in the supply chain. The number of GLOBALGAP certified farms in the scope of FFV decreased from 900 farms in 2009 to 300 farms in 2012 (Annual report by GLOBALGAP). Re-benchmarking of THAIGAP to GLOBALGAP was suspended according to the constraint of decreasing numbers of GLOBALGAP certified farms, especially smallholder farmer as a group certification. It is also noted that, although the number of GLOBALGAP certified farms has decreased, the export value of FFV has not decreased.

After completion of benchmarking for export to global market, THAIGAP standard was rearranged to be more practical for domestic market. In 2014, THAIGAP standard for domestic was prepared in collaboration with a group of suppliers and Certification bodies. In order to promote local producer to use the standard as a tool to access retailer and hypermarket, Thai Chamber of Commerce (standard owner), plays an active role to expand the implementation and adoption of THAIGAP standard for domestic market.

According to Thai Q GAP, the numbers of certified farms in the whole country are more than 140,000. Report of certified farm in 2015 (DOA, 2015) showed that number of certified farms produced longan, mangosteen and oil palm are 35,125, 8,259 and 6,387 farms, respectively. The numbers of Thai Q GAP certified farms are required for exporters. Recently, the movement of food safety for FFV in Thailand is active under the collaboration of public and private stakeholders. THAIGAP domestic standard for retailers in Thailand has launched for implementation. Initiative project of domestic THAIGAP has adopted in 18 suppliers. All producers /suppliers supply products to Retailers such as Makro, Tesco Lotus, Tops supermarket etc. It is noted that the verification system is carried by certification body and certificate will be issued by THAIGAP Institute. Requirements of THAIGAP standard for domestic and international markets were shown in Table 1.

Table 1. Comparison of THAIGAP for domestic market and THAIGAP for international market

THAIGAP domestic		THAIGAP/GLOBALGAP	
General Regulation ruled by Thai Chamber of Commerce		General Regulation ruled by Food Plus	
All Farm Base	27		51
Crop Base	83		113
Fruit and Vegetable	57		70
Traceability (QR code)		Traceability (QR code)	
Certification Body of ISO 17065		Certification of ISO 17065 GLOBALGAP approval	

Process of developing farmer group to comply private standard requirements: Development process of smallholder farmer group was learned from smallholder farmer group implementing GLOBALGAP. At the beginning, linkage between farmer and exporter must be clarified for responsibility to participate and support the activities through the project. In the first phase, 3 farmer groups were able to be certified with GLOBALGAP option 2. The scaling up phase was continued to outreach all activities to increase FFV sector to access higher value markets in EU. It is clearly noted that service providers such as farm advisors, internal auditors and farm inspectors were required (Fig. 2). For farmer group, investment of infra-structure, and training

and certification cost were major burden to smallholder farmer. In most cases, exporters paid for certification cost and provided farm advisors to implement and train farmers. GLOBALGAP option 2 is a tool for quality management across the whole groups. In general, farmers or producers of vegetables and fruits owned small land (less than 1 ha.), especially baby corn, chilli pepper, and etc. Suppliers can play many roles such as being a farmer (run their own farm) as well as collecting various types of products from various locations of different farms. It is also found that collectors and suppliers along the supply chain should play participatory role as the quality assurance to farm practice, when they buy produce directly from farm. For smallholder farmers, there should be someone or coordinator to manage production plan and provide understanding of practice on farm (Korpraditskul, *et al.*, 2010).

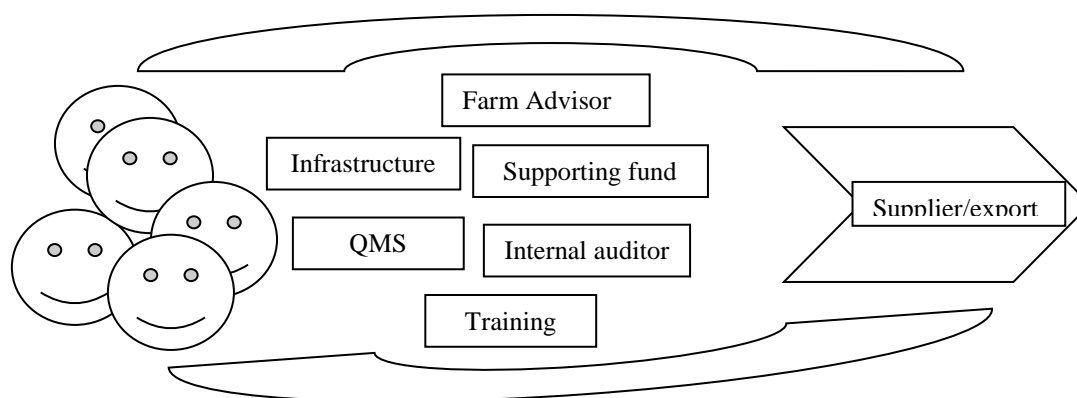


Fig. 2. Farmer group must be linked with exporters for GLOBALGAP standard certification

Investment cost for GLOBALGAP adoption for 64 farmer members was shown in Table 2. The crop types are Pomelo, Durian, Roseapple, Leafy vegetable, and Mangoesteen. To comply with GLOBALGAP standard, farm must keep pesticides in a safe and secure place. Those incur expense, such as toilets and hand washing facilities, living quarters for workers, pesticide disposal pit, resting area, cloth and storage for protective clothing etc. There are big variations of investment cost according to the baseline of conceptual consideration of each member (data not shown here). For example, one producer of Durian farm was willing to build the pesticide storage and fertilizer storage whereas another one may just modify the existing building.

Wattanawekin (2011) presented reason of adoption of GLOBALGAP standard in target farmer group. The motivation of farmers to adopt GLOBALGAP showed that they pay most attention to the quality of the produce. Fifty percent of farmers agreed that GLOBALGAP standard enhances family and farm workers' health. However, farmers do not agree that the produce under GLOBALGAP certificate will be able to bargain price or buyer will offer a price premium (Tables 2 and 3). Several reasons of non-adoption of GLOBALGAP standard by the farmers were also interviewed. It was found that once they already get experience in practice to comply standard, the top rank of the reasons for non-adoption is the absence or discontinuation of support. However, only one replies that the reason is the difficulties with record keeping.

Ratanakreetakul et al. (2008) showed the difference of sale price between GLOBALGAP certified and Thai QGAP certified asparagus farms; GLOBALGAP certified asparagus has 13.2% higher sale price than Thai Q-GAP certified one. Price incentive was a significant factor to set effective quality management system (QMS) within the farmer group. This investment cost for implementing quality management system includes activities on a) traceability and understanding, b) Manage all training cost, c) Sample analysis, d) Administration, and e)

Organization of third party audit. The payback period for these investments is 1.07 year. This report also mentioned that GLOBALGAP certified farmers were able to access broader market levels and worldwide than Thai QGAP certified farmer.

Table 2. Investment costs for GLOBALGAP adoption

Investment items	N	Mean (USD)	Standard deviation	Min
Pesticide storage/ Fertilizer storage	56	22,577	62307	0
Toilets and hand washing facilities	38	6,610	10074	300
Living quarter for workers	27	14,022	38066	45
Pesticide disposal pit, grading shed, resting area	22	10,524	25476	150
Protective clothing and storage for protective clothing	22	3,125	4314	250
Signs, registration fee, trainings, other	4	5750	5560	0

Wattanavaekin, 2011

Table 3. Farmers' motivations to adopt GLOBALGAP

Motivations	N = 59	%
Increase the quality of the produce	55	93.22
Enhance family's and farm workers' health	50	84.75
Make finding buyers easier	49	83.05
Enhance management practices	49	83.05
Decrease costs for chemicals	48	81.36
Increase access to high-value markets	44	74.58
Buyer offered a purchase guarantee	40	67.80
Buyer required GlobalGAP	32	54.24
Enhance reputation	31	52.54
Buyer offered a price premium	28	47.46
Enhance bargaining power	28	47.46

Wattanavaekin, 2011

Comparison study of GAP standard proposed 5 key issues as a platform for producers, and one of 5 key issues is management system, which consists of record keeping, internal assessment and corrective action, complaint and recall procedures (Korpraditskul *et al.*, 2010). It is necessary to implement quality management system in farmer group. There is still a need to study the relationship and roles of collectors and suppliers in the market chain. It is suggested that best practice for farmer and collector should be simply clarified with understanding. Farmers or producers are willing to follow good practice for the sustained price guaranteed and market. When buyer demands for GAP certificate for export, farmers are also obliged to have Thai Q GAP (in a significant numbers), this certificate is issued by Ministry of Agriculture and Cooperatives. Compared with

GAP case in Japan, Ministry of Agriculture, Fishery and Forestry (MAFF) promoted adoption of GAP in Japan in 2007. MAFF considers GAP as the best practice, which means that farmers and producers are allowed to apply on their own justification and no need to be certified by the nation (but must comply with Food Safety Law). The verification of GAP is based on self-assessment. Adoption of GAP in Japan, JA (Japanese agriculture cooperation) has promoted their own GAPs. JA organizations have group members. About 50% of agricultural products produced in Japan are through local JA. It is said that members of JA are all contract farmers. Local divisions of JA are responsible for collecting produce from farm and distributing them to fresh market or processed factory (as a supplier or subcontractor) (Nabeshima *et al.*, 2015). Therefore, it is noted that market categories are involved directly with promoting quality of produce and its safety in both domestic and international market. Again, pyramid for development of GAP will offer the role of provincial responsibility to implement understanding of food safety and work for risk assessment of food safety situation on their area. Sufficient but simple knowledge of best practice for food safety at farm production must be available. Beyond farm or ex-farm gate, buyers or collectors always have significant influence on farmers' practice. Generally, Thai exporters provide technical advisors who are responsible for quality management and required document preparation for traceability and food safety i.e., control of pesticide use, withholding period, and maximum residue limits. THAIGAP private standard owned by Thai Chamber of Commerce showed clear strategy to promote this domestic standard together with traceability system (QR code) along the retailer supply chain. Technical advisors are available to provide general documents and work instruction or training materials. For a group of smallholder farmers, quality management and control within the group must be installed as well.

CONCLUSIONS AND SUGGESTIONS

There are 2 GAP standards in Thailand; one belongs to Ministry of Agriculture and Cooperatives (Thai Q GAP), and the other belongs to Thai Chamber of Commerce (THAIGAP). Platforms of the two standards are mainly similar under food safety, quality, worker health and welfare, and environment. However, traceability is strongly concerned for THAIGAP private standard with QR code. The development of group certification and quality management system must include service providers, technical knowledge and training. The most significant factor for 2 GAP standards' adoption is actually the sustainability of market or buyers (who require standard). Certification cost is a burden for smallholder farmer, therefore, it is recommended to evaluate risk and seek professional assistance for quality and food safety control.

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