Emergence of Asian GAPs and its relationship to global G.A.P.

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Global G.A.P. is a one of the most influential private standards in the area of food safety and sustainability. With increasing impacts of Global G.A.P., many Asian countries have introduced the country versions of GAPs; China GAP, Japan GAP, Viet GAP, Thai GAP and ASEAN GAP. Each has been influenced by Global G.A.P. but ways of implementation, implementation bodies as well as focus differ from each other. This paper examines the development and motivation behind how the Asian GAPs have been introduced both from current situation and from historical perspectives. Then we compare current situation of different Asian GAPs.

Keywords: good agriculture practice, Vietnam, Japan, quality standards
JEL classification: Q17, Q18, L15

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Emergence of Asian GAPs and its relationship to Global G.A.P.

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Abstract

Global G.A.P. is a one of the most influential private standards in the area of food safety and sustainability. With increasing impacts of Global G.A.P., many Asian countries have introduced the country versions of GAPs; China GAP, Japan GAP, VietGAP, Thai GAP and ASEAN GAP. Each has been influenced by Global G.A.P. but ways of implementation, implementation bodies as well as focus differ from each other. This paper examines the development and motivation behind how the Asian GAPs have been introduced both from current situation and from historical perspectives. Then we compare current situation of different Asian GAPs.

I. Introduction

Private standards can have a trade enhancing effect. Developing countries can utilize the emergence of private standards as a way to establish themselves as "high-end" producers with certification and try to differentiate them from the others (low-end, uncertified products). Kenya was able to do so to capture high-end vegetable sectors in UK (Jaffee and Masakure 2005). Henson, Masakure and Cranfield (2011) find that firms from 10 sub-Saharan countries that adopted GLOBALG.A.P. increased their exports by as much as 2.6 million euro. The impact was larger for earlier adopters, reaping the benefit of 8.6 million euro.[1] They also find that a developing countries with

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[1] Their analysis was based on farm surveys in 10 African countries. The estimation was done using propensity score matching. In their setup, they assume that farmers can readily respond with the increase in demand. That is farmers do not face any fixed constraint in expanding their outputs.

more established horticulture (exporting) sector tend to be certified to GLOBALG.A.P. more frequently.[2,3]

However, at the same time, diffusion of private standards can lead to tighter supply chain (either by vertical integration or by dealing with certified larger farms)[4] as well as higher costs of operation by farms since they need to incur the costs of certification.[5]

Global G.A.P. is a one of the most influential private standards in the area of food safety and sustainability.[6] With increasing impacts of Global G.A.P., many Asian countries have introduced the country versions of GAPs; China GAP,[7] Japan GAP, VietGAP, Thai GAP and ASEAN GAP. Each has been influenced by Global G.A.P. but ways of implementation, implementation bodies as well as focus differ from each other. This paper examines the development and motivation behind how the Asian GAPs have been introduced both from current situation and from historical perspectives with focus on GAPs in Japan and Vietnam. Then we delineate the factors associated with different trajectories seen in the development and diffusion of GAPs in these two countries, especially with reference to GLOBALG.A.P.

Global GAP

Global G.A.P is an independent verification system for good agricultural practice as a base for supplier compliance. Global G.A.P. began as EurepGAP in 1997 as a

[2] Even though GLOBALG.A.P. certification may lead to increase in the export sales, organic certification may provide more return. At least in the case of pineapple producers in Ghana, organic certification created more values to farmers (Kleemann, Abdulai and Buss 2014).

[3] For the case of GLOBALG.A.P. certified lychee exports from Madagascar, see Subervie and Vagneron (2013).

[4] For instance, a study by Schuster and Maertens (2013) looking at the Peruvian asparagus industry finds that certification to private standards by exporting firms leads to vertical integration of the supply chain and reduces procurement from the external sources. This is especially so for high-level production standards (such as GLOBALG.A.P.). That is, they tend to source less from external sources, which are mainly small-scale farms.

[5] For instance, Thai farms consider that the initial cost and recurring costs of GLOBALG.A.P. certification to be a significant hurdle (Kersting and Wollni 2012).

[6] For instance, in a sample of firms studied by Schuster and Maertens 2015, GLOBALG.A.P. certification was the most prevalent private standards adopted by the Peruvian asparagus industry, accounting for 34%. HACCP and BRC are the top two most popular processing standards adopted by the Peruvian asparagus industry. Their study also show marked differences between certified and non-certified farms/firms. Certified ones have larger farmlands, and they also tend to possess processing plants also (Schuster and Maertens 2015).

[7] For details on China GAP, please see Lei (2015).

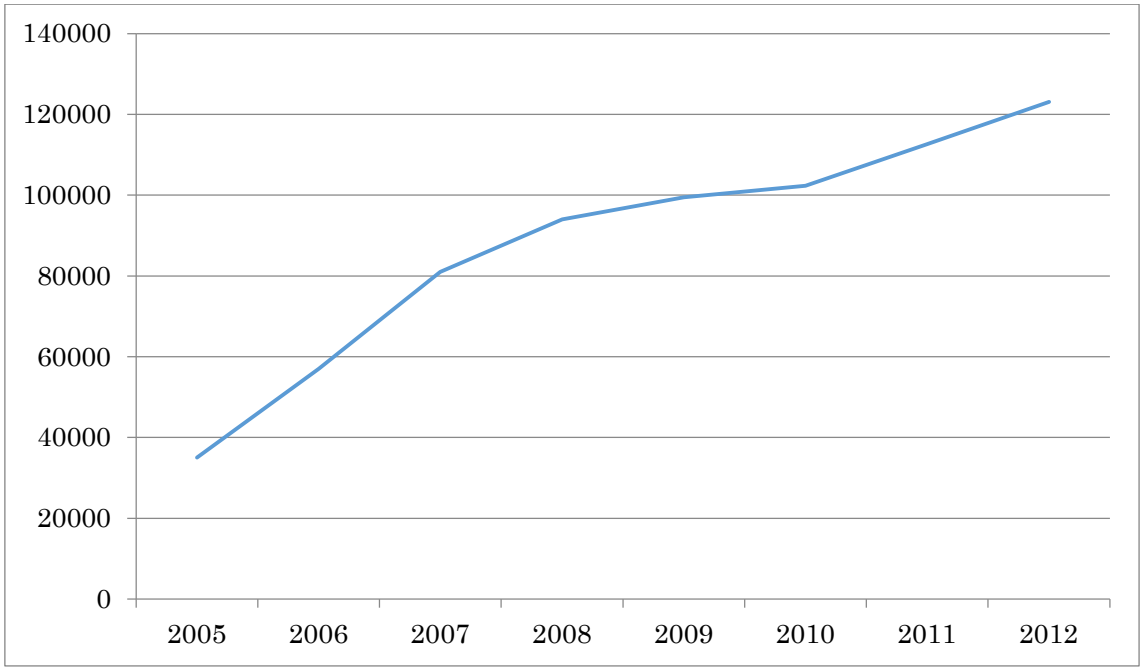
non-profit organization with an initiative by several European supermarket chains. The effort to initiate GLOBALG.A.P. (then EurepGAP) came from the UK retailers. There were two different factors that were behind this. First was the general trend of globalization, which UK retailers wished apply similar kind of quality assurance scheme that they were employing to domestic producers. Second, the introduction of the Food Safety Act (1990) in UK imposed more liabilities on retailers in terms of food safety through "due diligence" program (van der Grijp, Marsden and Cavalcanti 2005).[8] Retailers are responsible for the inputs used for the branded goods and unbranded fresh vegetables and fruits are regarded as a brand of the retailer (Jaffee and Masakure 2005). This coincided with the effort by the EU to move towards single market. This effort included the harmonization of the EU regulations, in particular maximum residue levels (MRLs) for pesticides in fresh produce (Humphrey 2008).Before EurepGAP was established, European and British Retailers had used different private standards to attend the consumers' growing concerns on product safety, environmental impact and the health, safety and welfare of workers and animals. However adapting to multiple standards required by different retailers had been creating problems and an increase of auditing cost for farmers (Henson and Northen 1998). Also compliance to regulations in the United Kingdom offered motivation for retailors to manage their suppliers (Henson, Masakure and Cranfield 2011). EurepGAP aimed at conforming various private standards by introducing an independent verification system.

Global G.A.P. was developed by retailers for procuring foods that meet their requirements and was based on the European agricultural policy. The EU Common Agricultural Policy (CAP) is to help agriculture respond to the requirements of sustainable development and scarce resources such as water can be managed more effectively. The CAP was also used to give subsidies to producers who implement measures to protect the environment. In order to receive subsidy under the CAP, farmers need to fulfill a number of mandatory criteria such as to keep land in good agricultural conditions and to care for the environment. This change is in line with reducing export subsidies addressed in the agricultural negotiation in WTO and it helps decouple subsidies from export subsidies.

[8] On more history of GLOBALG.A.P., please see van der Grijp, Marsden and Cavalcanti 2005

Global G.A.P. certified farms are more than 134,000 over 116 countries. By looking at the Global G.A.P. members by type, retailers are 49, associates are 132 and suppliers[9] are 198. Among supplier members, 70% are in the area of crops, 22% in aquaculture and 8% in livestock. Membership was 280 in 2008 and 306 in 2009, 323 in 2010, 341 in 2011, 276 in 2012. By geographical areas, producers from Europe consist of 74%, those from Americas are 12% followed by 8% from Asia, 5% from Africa and 1% from Oceania. Certified producers are 123,115 in 2012 increased from 35,000 in 2005.

Figure 1: A number of GLOBALG.A.P. certified producers



Source: GLOBALG.A.P. annual reports

II. Adaptation of GAP in Japan

In this section, we discuss the current state of diffusion of good agricultural practice (GAP) in Japan and identify factors associated with wider diffusion of GLOBALG.A.P. in Japan.

[9] There are the two categories among suppliers; individual supplier and group supplier.

Brief history of GAP diffusion in Japan

There are proliferation of different GAPs in Japan. These GAPs are promoted by several different entities such as prefectures, production units of Japan Agriculture cooperatives (JA), independent producers, and retailers. Many of these efforts to adopt GAP was motivated by concerns on food safety. Only recently there has been a trend to adopt GAP that are more universally accepted (such as JGAP and GLOBALG.A.P.).

It seems that initially when the Ministry of Agriculture, Fishery and Forestry (MAFF) promoted adoption of GAP in Japan in 2007, the MAFF regarded GAP as a "best practice" rather than a way to standardize procedures required to ensure consistent management practices across producers. Because the MAFF regarded GAP as a "best practice", GAP diffused in Japan with the following four characteristics.

- Proliferation of *x*-GAP, that are not compatible with each other
- Different types of entities are promoting GAP
- Adoption of GAP is voluntary
- Verification of GAP is often based on self-assessment only

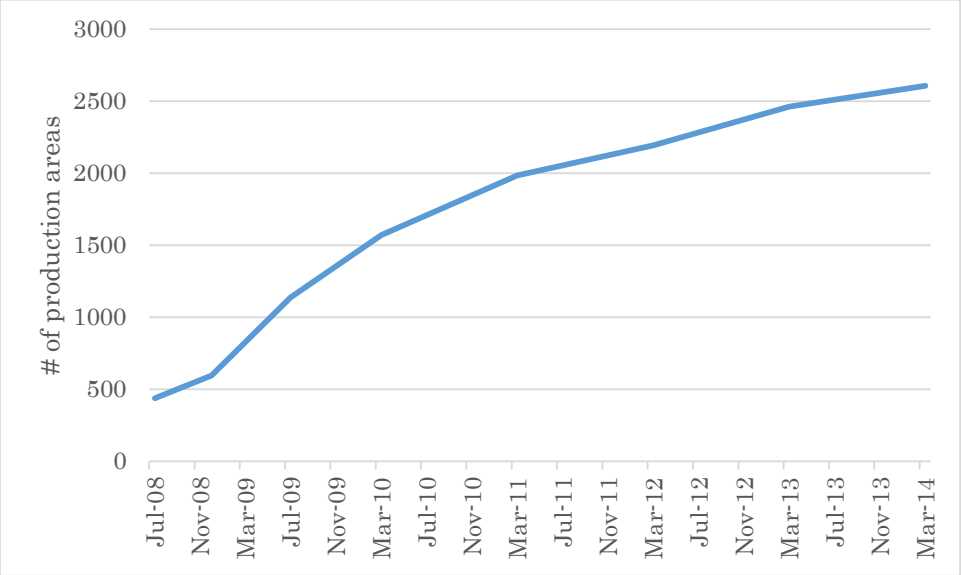
Proliferation of x-GAP

Simple importation and adoption of "best practices" from abroad or from different sectors rarely succeed. In order for these "best practices" to bear fruits, they need to be modified to fit the local conditions. In the case of agriculture production, that means that such best practices should be modified for each crop, taking into account of differences in climate, water and other natural resource availability, geographical features, size of the fields, and traditional cultivation methods and so on. With these in mind, the MAFF introduced the "Basic GAP" in 2007. The "Basic GAP" was to be used a template for each production unit for customization. From the view point of the diffusion of best practices and their effective utilization and adaptation, what the MAFF intended was effective. There are now 2,607 production areas[10] where some form of GAP is implemented out of 4,381 production areas identified by MAFF (see Figure 1). The goal it to make the number of production areas adopting GAP to be 3,000 by 2015. However, it was too effective to the point

[10] This is based on the production areas that have submitted their strategic plans to the prefectures.

that it led to proliferation of GAPs in Japan promoted by many different entities. To provide a way to streamline various GAPs that existed, in 2010 MAFF introduced the "Guidelines to GAP" by specifying what needs to be included and applicable laws and regulations and upgrade the existing GAPs to conform to "Guidelines". However, even among GAPs created by the prefectures, only half of them conform to the Guidelines (see Table 1). Out of 47 prefectures in Japan, only 23 prefectures have established GAPs that conform to the Guideline with 6 more prefectures planning to do so. However, there are 6 prefectures that have no intension yet of making their GAPs conforming to the Guideline.

Figure 2: Number of production areas that has implemented GAP



Source: Survey on GAP implementation by MAFF
http://www.maff.go.jp/j/seisan/gizyutu/gap/g_zyokyo/pdf/gap_tyousa.pdf

Table 1: # of Prefecture GAP Conforming to the Guideline, 2013

Prefectures with GAP based on the Guidelines	23
Prefectures planning to establish GAP based on the Guidelines	6
No plans for basing Prefecture GAP on the Guidelines	18
of which, already have Prefecture GAP	6
of which, no Prefecture GAP	12
Total	47

Source: Source: Survey on GAP implementation by MAFF
http://www.maff.go.jp/j/seisan/gizyutu/gap/g_zyokyo/pdf/gap_tyousa.pdf

Different entities promoting GAP in Japan

Since the MAFF promoted the adoption and adaptation of GAP fitting to local conditions as best practices, many different entities promoted their own interpretation of GAP. These include prefectural governments (for instance, there is K-GAP in Kumamoto prefecture, T-GAP in Shizuoka Prefecture for green tea), often led by the department responsible for promoting agriculture sector in the prefectural government. In addition to the promotion by the prefectural government, various producer groups of local JA have promoted their own GAPs. In Japan, the development of agriculture sector is tightly linked with JA. Each prefecture has their satellite JA organizations. Within these, members (farmers) are grouped based on the types of crops that they cultivate. Agriculture productions are centered on these satellite JA offices.[11] They have been the main supplier of inputs such as fertilizers and other agricultural chemicals, and they are the main buyers of the outputs of the member farmers.[12] In a sense, member farmers are contract farmers for the local division of JA. JA is responsible for aggregating outputs from the member farmers and distribute these through the fresh markets or to processing firms if these JA local offices act as subcontractor to them.

Because the production is organized through the local division of JA, they were instrumental in diffusion new knowledge and technologies or policies concerning agriculture sector. Since GAP was regarded as a best practice, JA offices throughout Japan interpreted them to fit their local conditions for each crop. With the notion that this was a "best practice" and based on PDCA (Plan-Do-Check-Action) cycle aimed at Kaizen, the achievement of GAP was assessed by farmers themselves.

In addition to these efforts by the prefecture governments and local divisions of JA (these are also separated by prefectures), other entities also adopted GAP. These are mainly promoted through particular retailers. One example is the Japanese Consumers' Co-operative Union (co-op), which introduced their own GAP based on EurepGAP in 2004 to ensure that fraudulent behaviors along the supply chain can be

[11] 50% of agriculture products produced in Japan are through JA. The rest is done by "independent" farmers who do not belong to JA.

[12] Not only that JA local offices are responsible for sales of necessary inputs and purchase of the outputs, they also provide banking services and other services that would be provided by private entities to assist living in rural areas.

checked. Even though the GAP created by co-op was based on EurepGAP, the main differences lie in the fact that co-op GAP is assessed by co-op (not through third-party certification as in the case of GLOBALG.A.P.) and it also includes distribution and retail.[13]

Adoption of GAP remains voluntary and lack of incentives

When the MAFF initially promoted adoption and adaptation of GAP in Japan, it did so with the notion that GAP is a useful way to manage and think about agriculture production for farmers. Thus, they treated GAP as any other new "technology" to be diffused, and let individual farmers decide whether they would want to adopt it or not. The MAFF allocated fiscal resources for dissemination and training activities that are associated with GAP, but did not provide other fiscal incentives nor punishment regarding GAP. For individual farmers, there was not much incentive to adopt GAP.

Of course, this is different for the suppliers that are supplying to GAP specified by the retailers. In this case, while it is voluntary (that is, it is not legally mandated by official laws and regulations), it is a requirement to fulfil the contract obligations and to maintain buyer-supplier relationship. Therefore, for some producers, GAP is requisite for conducting business, but it is still "voluntary" and adoption of GAP is independent of incentives provided to individual farmers. Other retailers such as Aeon introduced their own GAP based on EurepGAP. Aeon introduced Aeon Produce Suppliers Quality Management Systems in 2002.[14] Around this time, Japan was experiencing several incidents related to the use of unregistered agriculture chemicals and excessive amounts of agricultural chemical residues found imported frozen spinach from China.[15] These incidents led to the heightened need to develop better system for ensuring food safety.

Verification through self-assessment

Because the intension of the MAFF was a diffusion of a best practice, verification of GAP relied on the self-assessment. Adoption of GAP was not required

[13] AgriBusiness 2008 (http://agri-biz.jp/item/detail/3027).
[14] AgriBusiness 2009 (http://agri-biz.jp/item/content/pdf/3157).
[15] The excessive amounts of agricultural chemicals in frozen spinach exported to Japan from China and other food safety related incidents forced China to reform their agriculture export sector. For more detail, see Yamada and Sui (2013) on frozen vegetables and Mori, Nabeshima and Yamada (2013) on eels.

nor any incentives was given to farmers to adopt GAP. Therefore, there was no procedure given to farmers to certify their actions in any ways other than self-assessment. Of course, if a farmer was required to meet certain GAP from the retailers, then he/she would have gone through some kind of audit, mainly conducted by the retailers themselves.

Emergence of JGAP

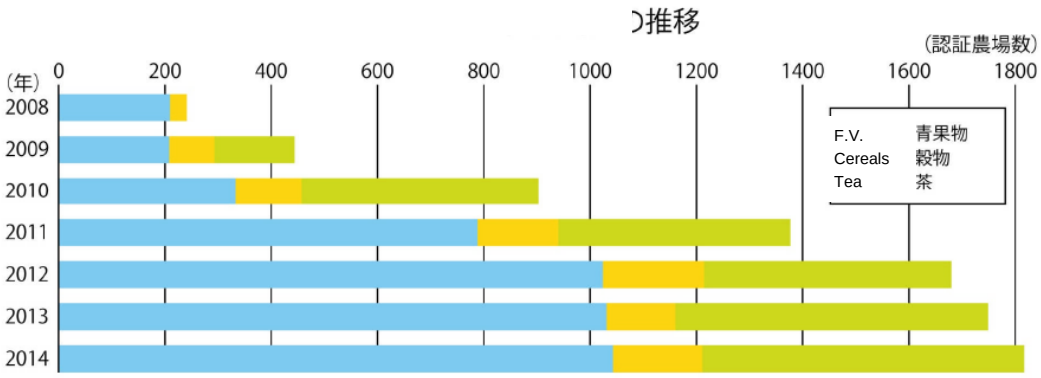
Initially the effort to create JGAP as a local mirrored version of GLOBALG.A.P. was started in 2004 by translating the GLOBALG.A.P. documents into Japanese by a group of enthusiastic farmers. The goal was to make GLOBALG.A.P. more accessible to Japanese farmers and interpreting some of the requirements to fit the Japanese conditions. This is what the National Technical Working Group of GLOBALG.A.P. is tasked to do. But at this time, they did not exist. In 2006, the Japan GAP Association was formally established with two main goals. The first is to make JGAP the standard GAP for Japan. The second goal was to make JGAP internationally recognized standard. This essentially meant that JGAP be benchmarked to GLOBALG.A.P. so as to facilitate the exports of agricultural products to the EU market. Because of this aim, JGAP was created as a third-party certified standard, rather than self-assessment (the prevalent form of GAP at that time) and audit by the lead firm.

In 2008, there were a little more than 200 farms that are certified as JGAP. However, since then, the number of farms increased rapidly, and by 2014, there are more than 1,800 farms were certified (see Figure 2) including three farms in Korea and one in Thailand. JGAP covers fruits and vegetables, cereals (mainly aimed at rice), and tea (especially Japanese green tea). Similar to GLOBALG.A.P., JGAP also offers two different modes of certification: as an individual or as a group.[16] Japan GAP

[16] GLOBALG.A.P. offers two different kinds of certification. For an individual farm and for a group of farms. The advantage of the group certification is that some of the fixed cost associated with certification (such as record keeping, facilities) can be shared among the group. In addition, the number of the farms to be audited will be only the square-root of the group, greatly reducing the number. However, to ensure that all members are in compliance, internal audit is required. And this internal audit can be a source of headache. GLOBALG.A.P. has specific requirement for internal auditor. Such person needs to possess post-secondary school degree in horticulture, to be trained in HACCP, food hygiene, GAP, and to have

Association also offers the documents in English and Chinese to facilitate the diffusion. They have establishing an offices in Taiwan and planning to do so in Hong Kong to diffuse JGAP in East Asia.

Figure 3: # of JGAP certified farms



Source: Japan GAP Association

The Japan GAP Association was reorganized in January 2015.[17] The Japan GAP Association is changing its legal registered status from being a specified nonprofit corporation to an incorporated foundation. In addition to the status change, it is establishing Asia GAP Research Institute (AGRI) as a specified nonprofit corporation. With this reorganization, the Japan GAP Association will continue to develop and maintain JGAP and seek benchmarking with GFSI, management of the certification process, and closer cooperation with the government. The main purposes of AGRI will be training and diffusion of GAPs (JGAP and other GAPs) to farmers and providing assistance to farmers to exports to East Asia and for them to operate farms abroad.

Even though the initial effort to create JGAP was motivated by GLOBALG.A.P., in 2008, the management team of the JGAP changed and they have shifted their focus from being tied to GLOBALG.A.P. (although it is based on it), but to establish JGAP as a stand-alone unified GAP standard for Japan. After the GLOBALG.A.P. terminated benchmarking activities with JGAP in 2013, the current plan is not to be benchmarked against GLOBALG.A.P. but against GFSI by 2017.

participated in a 2-day internal QMS auditor training course (Kersting and Wollni 2012). Even in Japan, this is a rather high hurdle.

[17] http://jgap.jp/JGAP_News/NewsRelease20141024_asia_tenkai.pdf

However, questions remain as to whether JGAP has enough appeal to unify various GAP standards across Japan and also being able to extend its influence overseas. Unless specifically supported by the government, the adoption of private standards will be based on the incentives faced in the private sector. In this regards, similar to the case of GLOBALG.A.P., a significant uptake by retailers would be necessary for wider diffusion of JGAP. Without such uptake by retailers, farmers have little incentives to adopt JGAP, unless they find this to be a good stepping stone to obtaining other standards mainly for exports (such as GLOBALG.A.P. and proposed FDA-GAP).

III. Diffusion of GLOBALG.A.P. in Japan

As of the end of 2014, there are a little more than 196 farms that are certified as GLOBALG.A.P. farms. Compare to other countries, the number of farms that are certified as GLOBALG.A.P. in Japan is relatively few. In 2012, there were only 122 farms in Japan were certified. Compared to China, Thailand, Korea, and Vietnam, the number of certified farms in Japan is small (see Table 1). These farms tend to be either independent exporters, JA group farms with their own brand, or producers for a retailer's private brand. Five factors can explain this trend. These are: small amount of exports (especially to EU); lack of retailers that are globally oriented in Japan; less concentrated retail sector in Japan; generally held belief that Japanese foods are safe; and lack of marketing power by the famers in Japan.

Table 2: A number of GLOBALG.A.P. certified farms in selected East Asian countries, 2009-2012

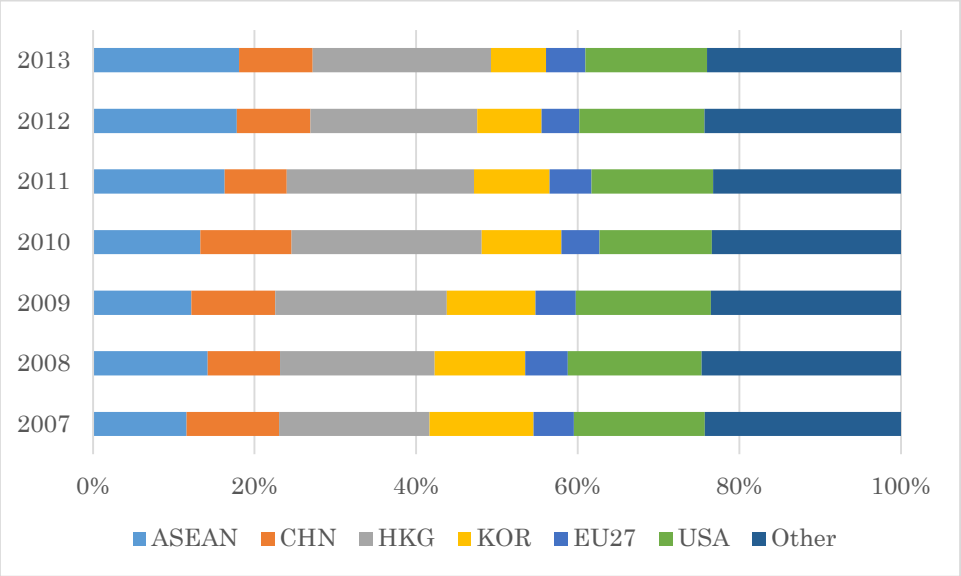
	2009	2010	2011	2012
China	272	254	280	292
Indonesia	3	6	4	3
Japan	66	88	20	122
Korea	1	46	7	259
Malaysia	18	21	7	9
Philippines	1	5	5	5
Taiwan	54	65	3	0
Thailand	923	595	263	277
Vietnam	66	305	258	204

Source: GLOBALG.A.P. annual reports

Small amount of exports

As mentioned earlier, GLOBALG.A.P. began as an effort by the major retailers located in EU to ensure minimum standards to ensure food safety and sustainable agricultural practices. GLOBALG.A.P. is spreading to other countries mainly through their trade linkages. That is, if a famer from a country wants to export their products to EU, in many instances, they are required to be certified as GLOBALG.A.P. farm from the importing firms. In case of Japan, her exports of agricultural and food products to EU is quite small, accounting for only 5% (see Figure 2). In fact, the first effort to receive GLOBALG.A.P. certification was by Katayama Ringo, who were requested by their importing counterpart in UK to obtain GLOBALG.A.P. certification by 2005. Thus, at this point, only exporting farms in Japan, especially to EU have incentive to obtain GLOBALG.A.P. certification, but other do not. This is one of the reason why the number of farms with GLOBALG.A.P. certification is low in Japan.

Figure 4: Destinations of Japanese agriculture and food exports, 2007-2013



Note: Agriculture and food commodities are identified as 01-23 in Harmonized System 1988/92. EU is defined as EU27.
Source: UNComtrade

Some other farms in Japan are obtaining GLOBALG.A.P. certification precisely because they want to export. In recent years, the (apparent) requirement for GLOBALG.A.P. certification is spreading to other countries such as Indonesia. A

melon farm in Shizuoka prefecture obtained GLOBALG.A.P. certification in order to export their flagship product, Crown Melon, to Indonesia. Since 2013, Indonesia is requiring their importers to source from producers obtaining GLOBALG.A.P. certification to receive import quota for certain agricultural products.[18] An apple farmer also received GLOBALG.A.P. certification mainly because of the intention to export to Indonesia. Gradually, the incentives to obtain GLOBALG.A.P. certification includes motivation to export to areas other than EU. Of particular interest is what other countries in East Asia will adopt. ASEAN for instance is putting in a goal to have ASEAN GAP by 2015 as a part of the formation of ASEAN Economic Community (AEC) by 2015. ASEAN launched ASEAN GAP in 2006 and has instructed member countries to establish their own national GAPs based on the ASEAN GAP guideline published in 2008 which covered only fruits and vegetables (Ong 2014). There are four modules under ASEAN GAP: food safety, product quality, environmental safety and workers' health, safety and welfare. Each country is required to meet at least the food safety module by 2015 and almost all countries have introduced GAP (see Table 3). Each national GAP of ASEAN countries is to be benchmarked with each other, thus making 10 GAPs in ASEAN compatible with each other. Furthermore, since the motivation of ASEAN GAP seems to be to promote exports of agricultural and food products, ASEAN GAP is likely to seek benchmark with GLOBALG.A.P. In fact, VietGAP (the GAP of Vietnam) is aiming to be benchmarked with GLOBALG.A.P. (see later section on the detail of VietGAP). ThaiGAP is already benchmarked successfully with GLOBALG.A.P. If ASEAN GAP materialize and they are considered to be equivalent to GLOBALG.A.P., this could pose challenges to producers in Japan. Even though they may not implement regulations similar to that of Indonesia mentioned above, the possibility still remains. Given the fact that exports to ASEAN countries account for 18% of Japanese agricultural and food

[18] Regulation of the Minister of Agriculture Number 47/Permentan/OT.140/4/2013, Article 7(2)a specifies that to become a Registered Import of Horticulture Products (RIHP) for products requiring import recommendation (i.e. subject to quota), a producer must show that the products are GAP certified among other requirements. There are 37 products in HS 10 digit level, to which this regulation applies. Melons and apples are subject to this regulation. Although the regulation itself only requires GAP certification, the application can be only done on-line and the on-line form seems to accept only GLOGALG.A.P. certification number as a valid input.

products, and many producers regard exports to ASEAN as a growing market, this could pose a significant problem.

Table 3: List of GAPs by ASEAN member countries

Country	GAP	Responsible party	year
Brunei	Brunei GAP	Ministry of Industry and Primary Resources	2013
Indonesia	IndoGAP	Ministry of Agriculture	2004
Malaysia	MyGAP	Department of Agriculture	2013
Philippines	PhilGAP	Department of Agriculture	2005
Singapore	GAP-VF	Agri-Food & Veterinary Authority	2005
Thailand	QGAP	Ministry of Agriculture and cooperatives	2004
	ThaiGAP	Thai Chamber of Commerce	2007
Vietnam	VietGAP	Ministry of Agriculture and Rural Development	2008
Cambodia	Cam-GAP	Ministry of Agriculture, Fishery and Forestry	2010
Laos	LAO GAP	Ministry of Agriculture and Forestry	2011
Myanmar			

Lack of globally oriented retailers

Even though farms may not directly export to EU (or other countries that require GLOBALG.A.P. certification), if there are significant number of retailers with global operations, they may adopt GLOBALG.A.P. certification as their private standard so as to lower their costs for supplier audit. In Japan, there is a limited presence of foreign retailers in food sectors. For instance, some of the major retailers such as Tesco, Carrefour, Metro, and other retailers are not present in Japan. Aeon (a major Japanese retailer) is a domestic retailer that is putting a lot of emphasis on the expansion of global establishment. In Japan, they are now strongly suggesting that domestic producers obtain GLOBALG.A.P. certification. It seems that their intension is to streamline their audit procedure globally. Seiyu, which was acquired by Wal-Mart in 2002 is also requiring suppliers for its private brand to obtain GLOBALG.A.P. certification and other certificates listed in the GFSI since 2009 (Hashimoto 2013).[19] While not retailers, two entities - Coca-Cola Japan, and McDonald's Japan - are influential players in the food sector. Coca-Cola Japan is following the global trend by requiring their suppliers to obtain FSSC22000. This also requires that primary products producers to

[19] Wal-Mart itself is requiring their suppliers to obtain one of the food safety certification specified in Global Food Safety Initiatives by 2009 (http://news.walmart.com/news-archive/2008/02/04/wal-mart-becomes-first-nationwide-us-grocer-to-adopt-global-food-safety-initiative-standards).

obtain GLOBALG.A.P. certification. McDonald's Japan is also starting to require GLOBALG.A.P. certification. Because of this, McDonald's Japan switched producers of lettuce from producers in Saitama prefecture to those in Hokkaido after these producers in Hokkaido obtained GLOBALG.A.P. certification.

Thus, slowly there are some retailers and food industries that are requiring GLOBALG.A.P. certification as a part of the requirement for the suppliers, the number of these establishments are still limited.

Lack of concentration in retailers in Japan

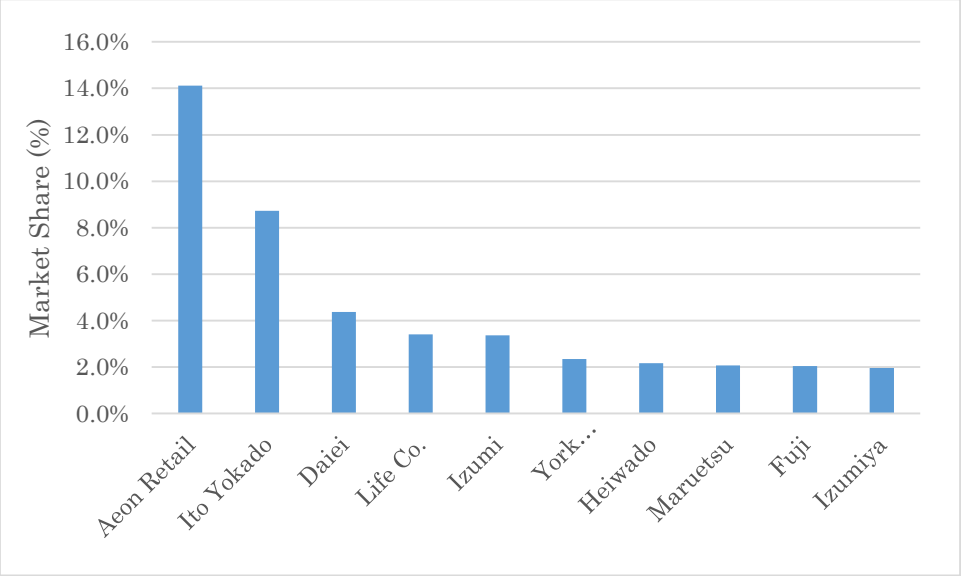
As mentioned earlier, there is a proliferation of GAPs in Japan. A part of the reason is that the GAP was treated as a best practice, rather than a way to assess farms. In addition, a lack of concentration in Japanese retail sector in food products is also a factor. In 2013, the leading supermarket was Aeon Retail which accounted for about 14% of the market, followed by Ito Yokado with the market share of 8.7% (see Table 4).[20] Other retailers have shares of 4% or less. And these two top retailers seem to adopt different strategies regarding GAP. Aeon is leaning towards adoption of globally recognized standards including GLOBALG.A.P.[21] One of their subsidiary, Aeon Agri Create, is a commercial farming firm aiming at producing raw materials for Aeon's private brand. Farms operated by Aeon Agri Create are certified as GLOBALG.A.P. farms. In contrast, Ito Yokado seems to be leaning towards JGAP. Some of their private brand fresh produce come from JGAP farms such as "Fresh Produce with Traceability".[22] In addition, similar to the case of Aeon, some of the farms operated by the Seven Farm, the subsidiary of Ito Yokado, are certified as JGAP farms and they plan to obtain JGAP certification for all of their farms.[23]

One of the motivation for the emergence of GLOBALG.A.P. in Europe was to reduce the audit costs of retailers (and shift certification costs to producers). Even though they are competing in the market place, major players agree that having different

[20] The data is gathered at the retail brand base. If we consider the brands within a group (for instance, Daiei is now a part of Aeon group), then the share of top retailers is much higher.
[21] Aeon is also active in promoting other globally recognized standards such as Forrest Stewardship Council, Marine Stewardship Council, and Aquaculture Stewardship Council.
[22] Currently 15 farms are certified as JGAP.
[23] From the Seven & i Holdings, CSR Report 2014 (http://www.7andi.com/dbps_data/_template_/_user_/_SITE_/localhost/_res/csr/pdf/2014_all.pdf).

supplier codes of conducts were wasteful and that moving towards a common standard backed by third-party certification scheme would be more cost-effective. Major retailers in EU was able to do so partly because their retail sector in food was more concentrated, facilitating mutually agreeable standards among different players. Relative to the case of EU, the concentration in Japan is low and this is making it more difficult to come up with a standardized procedures among different retailers. Also the fact that two of the top retailers are investing in actual farming activities (despite great administrative hurdles) suggest that they find it difficult to procure produce with required standards and these retailers themselves seem to take the initiatives to obtain these certifications. Because of this, supplier audit is still conducted by the retailers (if at all, see below) and the conditions for adopting a more universal standard is not non-existent.

Table 4: Market shares of supermarkets, 2013



Source: Whitepaper on Supermarkets, 2014 (New Supermarket Association of Japan)

Lack of need for external verification for food safety

Traditionally Japanese consumers have regarded food circulated within Japan to be safe. In addition, generally Japanese food were considered to be safe in foreign countries, especially in East Asia where the bulk of Japanese agriculture and food products are exported. Therefore there was little need to rely on third-party

certification scheme such as GLOBALG.A.P. This is not to say that there were no incidents in food safety in Japan. Like in other countries, periodically food safety incidents in Japan occur and various measures are taken to re-establish consumer confidence in food safety in Japan. For instance, traceability system was introduced in Japan after the BSE incidents. Now all domestically produced beef is supposed to be able trace it back to where it was raised. In some other instance, retailers have introduced GAP as a way to prevent fraud along the supply chain. When faced with fraudulent claims for certain products, co-op introduced co-op GAP to prevent such incidents to occur again.

This situation may be changing. After the accident at the Fukushima Dai-ichi nuclear plant, many countries have introduced import ban of Japanese products for the fear of radiation contamination. While the import bans are lifted in many countries, there are still some countries that maintain such ban. The accident in Fukushima has in a sense tarnished the brand image of Japanese food to be safe. It may be the case that reliance on "Japan brand" itself would not be sufficient to convince the buyers of the safety of the Japanese foods and increasingly third-party certification may be required.

Lack of marketing power

In Japanese agricultural sector, currently about half of their outputs are sold through local JA. JA then sold the products either through the fresh market or to buyers to which the local JA act as a contract supplier. Because of this, farmers traditionally did not have to think about how their products are sold and rarely the case that individual farmers are exploring their own channels through which to distribute their products. In recent years, this has changed slightly so that there are more independent famers that do not belong to JA and do not rely on JA for distribution of their products. In addition, some local JA offices are establishing their own brand, in an attempt to differentiate themselves from other producers. From the list of farms that are GLOBALG.A.P. certified, they tend to belong to three different types of farms. One camp is individual farmer group. They need to obtain GLOBALG.A.P. in order to export (or to deal with domestic buyers that require GLOBALG.A.P. certification).

The other is local JA group that act as a contract producer to major food processing firms or retailers. For these local JA groups that act as contract producers, they need to have a way to ensure consistent management system across farmers and they regard GLOBALG.A.P. as a viable way to do so. The third group is producers with some brand recognition. These could be domestic brand owner (such as Crown Melon) or foreign brand owner (Zespri Kiwi fruits) or local JA offices with some brand recognitions. Similar to the contract farming situation, farmers in this group needs to ensure consistent production process and management system among member farmers. GLOBALG.A.P. is a convenient way to do so. These producers tend to be export oriented and this further encourage these producers to obtain certificates that are useful in global market place.

Future outlook of diffusion of GLOBALG.A.P. in Japan

At this juncture, the diffusion of GLOBALG.A.P. in Japan will be limited to a small segment of agricultural producers. There are three reasons for this.

First, GAP is viewed as a way to ensure food safety and to improve efficiency in Japan, and little attention is paid to the social dimensions of agriculture - environment and worker welfare, which GLOBALG.A.P. also covers.[24] Because of this, even though from the pure technical capability and knowledge, Japanese farmers are well equipped to adopt GLOBALG.A.P., their lack of understanding on the sustainability issue is making GLOBALG.A.P. as a challenge. From the policy point of view, the emphasis is still on the food safety and efficiency and not on the sustainability issues.

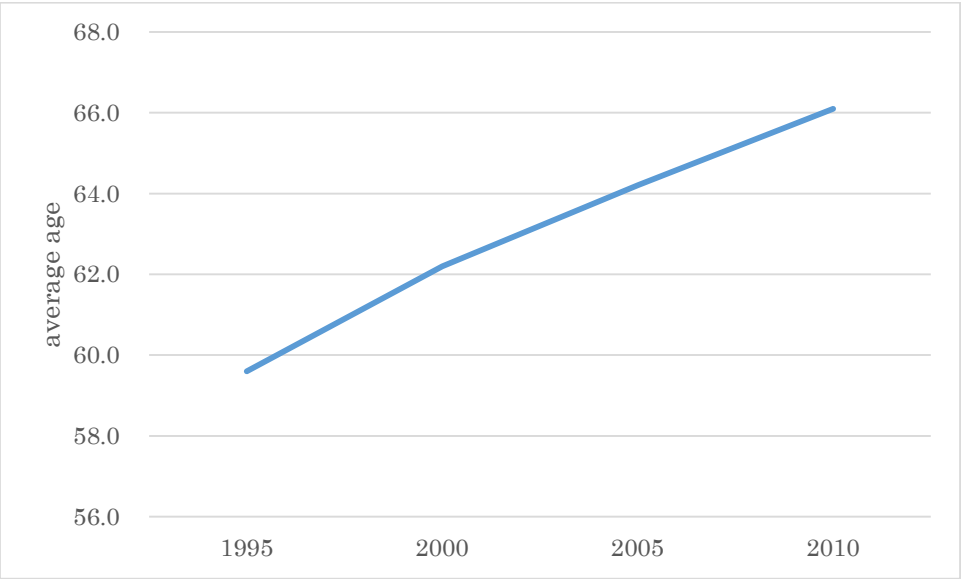
Second, agriculture sector is rather behind in terms of globalization compared to manufacturing sector in Japan. This is true for the primary products producers and also processed food sector as well as restaurants and retailers that uses these products as intermediate inputs. Because of this, their business practices are rooted in the tradition and they are hard to change without a clear message coming from the government on the importance of sustainability issue in agriculture sector and requirements imposed the

[24] GLOBALG.A.P. covers not only the food safety issues associated with agriculture, but also on the worker welfare and environmental issues (van der Grijp, Marsden and Cavalcanti 2005). A study in Kenya shows that in a farm certified with GLOBALG.A.P., worker welfares seems to be higher (Ehlert, Mithöfer and Waibel 2014).

retailers and/or processors. But at this point, there seems to be little impetus exerted by the retailers and/or processors in adopting globally recognized standards, although some retailers are starting to put more efforts into this. Diffusion of these globally recognized standards are needed only when one is involved in such activities. So far, very little entities are involved in such activities. This is a stark contrast to the situation in manufacturing sector where they are rather quick to respond to the regulations abroad and international standards.

Third, aging of the farming population is yet another hurdle. In 1995, the average age was about 60 years old. By 2010, the average age is now 66 (see Figure 4). Given that typical retirement age in Japan is 60 years old and one can receive social security after the age of 65 years, the average age of primary agriculture worker being 66 years old is rather high. The fact that the average age is continue to rise suggest that there is little new entry by younger farmers. Even though adoption of GLOBALG.A.P. or any other kind of GAP is technically feasible and these farmers are well-equipped to do so, there are still some investments that are needed. For the elderly farmers, they do not see such changes as a viable options given the fact that they may retire in the next few years, and there are no one that is going to inherit their farmlands.

Figure 5: Average age of the main agriculture worker



Source: Agriculture Census of Japan
http://www.e-stat.go.jp/SG1/estat/List.do?bid=000001047487&cycode=0

Discussion on the situation of GAP in Japan

Belatedly the MAFF is starting to provide subsidies to obtain GLOBALG.A.P. to assist farmers who wish to export. The (slowly) increasing desires by farmers to export comes from two different reasons. The first is a recognition that the Japanese market is shrinking because of ageing and declining population. Second reason is the possibility of Japan signing into TPP, which many expect imports of agriculture and food products to increase. To counter the increase in import competition, some producers are actively looking at the export potentials.

While providing subsidies to obtain certification is useful, this will most likely lead to bifurcation of the agriculture sector in Japan: one aiming at the export market and the other focusing purely on the domestic market. Given the small size of each farmer in Japan, only a handful of famers will be able to cater both export and domestic markets with different "quality" or standards simultaneously. This is rather similar to the concerns faced by SMEs in manufacturing sector.

The question is how the Japanese government should approach this issue.

IV. The Case of VietGAP

As in the case of Japan, Vietnam adapts GlobalG.A.P while also established her own certification system called the VietGAP. In this section, we describe the overview of VietGAP, the background on why VietGAP has been established apart from GlobalG.A.P, and difficulties in promoting VietGAP.

Overview of the VIETGAP

VietGAP was issued by the Ministry of Agriculture and Rural Development (MARD) of Vietnam based on the decree No. 379/QD‐BNN‐KHCN issued on 28 January 2008. MARD established VietGAP as the main standard and guidelines for production of safe fruit and vegetables. The aim of VietGAP is to prevent and minimize the risk of hazards which occur during production, harvesting and post‐harvest handling

of fruit and vegetables (VietGAP 2008). The VietGAP covers three specific sectors: fisheries, farming, and livestock. Similar to GlobalG.A.P, it provides producers a set of criteria, principles, procedures and guidance to follow in growing, harvesting, and post-harvesting, to improve the quality of products, health of people, and assure sustainable agriculture. The application of VietGAP will gradually replace the other criteria that many businesses and farmers are applying such as GlobalG.A.P, Marine Stewardship Council (MSC),[25] and Aquaculture Stewardship Council (ASC)[26] to be unified under the general regulations of Vietnam.

Most of the businesses and farms that applied for VietGAP have been in the farming sector. From 2012 to 2014, the number of businesses and farmers obtaining VietGAP in farming, livestock, and aquaculture is 1,199, 13, and 13, respectively (see Table 5)[27]. Regarding locations of VietGAP registered farms and businesses, most of them are in southern Vietnam. For example, out of 1,199 farms and businesses having VietGAP certificates in farming in 54 provinces and cities all over Vietnam, 299 are in Ho Chi Minh City and 304 are in Binh Thuan province, which are in southern Vietnam.

Table 5: Number of VietGAP registered farms and businesses

Farming		Livestock		Aquaculture	
Category	Number of registered	Category	Number of registered	Category	Number of registered
Rice	20	Chicken	5	Pangasius	3
Fruit	530	Cow	2	Shrimp	10
Coffee	5	Pig	6		
Tea	137				
Vegetable	517				

Source: VietGAP website

The cost to apply for and have VietGAP certificates is not small for most of farmers and businesses. According to the regulation by Ministry of Agriculture and Rural Development of Vietnam, the fee is based on negotiation between farmers/businesses and certifying organizations and there is no fixed fee to apply for and/or extend VietGAP. As a result, the fee varies at different provinces and for different farms and businesses. High

[25] MSC aims to promote sustainable wild catch of fishery products.
[26] ASC aims to promote sustainable aquaculture of fishery products.
[27] Some farms and businesses obtained VietGAP for more than one product.

fee does not only prevent new farmers and businesses applying for VietGAP but also discourage certified farmers and businesses from renewing their certificates.

As for aquaculture sector, the VietGAP includes 5 sections with 68 required criteria that have to meet the requirements of food safety, disease mitigation, ecological pollution, social accountability and traceability of products. VietGAP focuses on controlling the sustainable development of quantity in accordance with their effects to economics, society and environment. Some important document legislation of practice guidelines for aquaculture VietGAP are:

- Decision 01/2012 / QD-TTg of the Prime Minister for approval
- Decision No. 1503 / QD-BNN-TCTS on July 5 2011 issuing Regulation for Good Aquaculture Practices in Vietnam (VietGAP),
- Decision No. 1617 / QD-BNN-TCTS on July 18, 2011 issuing guidelines to apply VietGAP in catfish (P. hypophthalmus), black tiger shrimp (P. monodon) and white shrimp (P. vannamei)

On 5th July 2011, the Ministry of Agriculture and Rural Development has signed Decision No. 1503 / QD-BNN-TCTS on issuing practices for good aquaculture in Vietnam.[28] The introduction of VietGAP plays an important role in providing a framework to aquaculture practice in Vietnam in general and shrimp farming in particular. Moreover, the propagation of VietGAP standard would not only to ensure quality, hygiene and food safety for consumers, but also to ensure profitability for participants in the production process.

Lastly but not least, it is important to mention that on 9th January 2012, the Prime Minister signed a decision on policies to support the application for obtaining VietGAP in agricultural forestry and fisheries by issuing a support of 100% funding of baseline surveys, topographical surveys, soil analysis, water samples, air samples to determine the application areas of concentrated production VietGAP usage. Therefore, the cost of applying to VietGAP will be much lower than the previous standards.

[28] See VietGAP website: http://www.vietgap.com.

Reasons for Introducing the VIETGAP

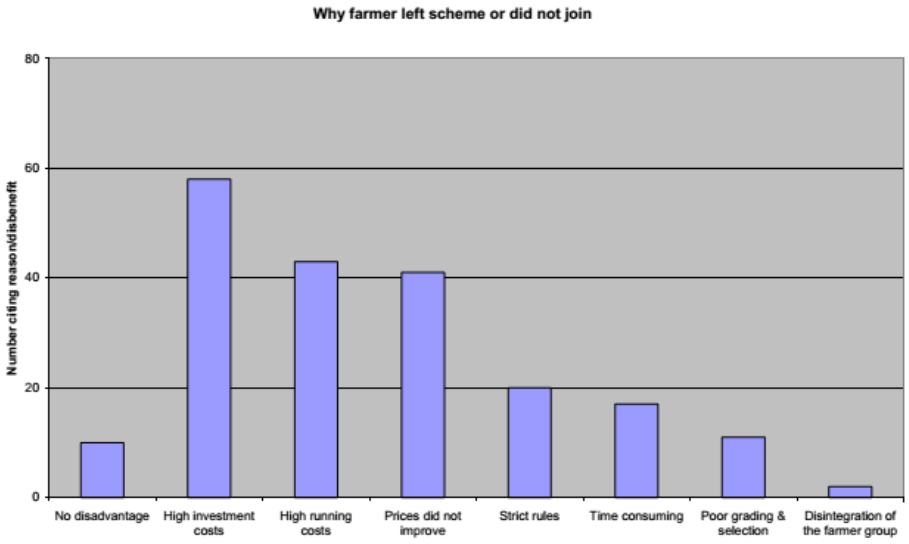
Some direct and indirect reasons exist for why Vietnam decided to apply VietGAP, while still adapting the GlobalG.A.P at the same time.

Firstly, VietGAP was issued in order to provide a minimal standardized qualified certification for both producers and retailers. Producers in developing countries today, either in fresh produce, aquaculture, or livestock products, are confronted with a wide diversity of standards required by international buyers that supply to different countries and markets. The number of standards and certifications has been growing steadily, raising the costs to comply for these producers. Although exporters that have their own farms are currently increasingly investing in the farm infrastructure to meet these international standards, for most exporters, it is impossible to comply with them all. There are a few solutions to this problem. One option is the current development of a national standard VietGAP that forces farmers to adopt a minimal standard in their farms. According to the pangasius sector, this reduces the size of the gap in standards between the Vietnamese average and international buyers' standards. For Dutch importers of pangasius that are interested in sustainable and certified pangasius, the VietGAP is seen as a step in the process towards ASC certification. For EU importers in South and Eastern Europe that are less interested in sustainability, the VietGAP standard might be considered sufficient.

Secondly, as Vietnam agriculture sector has traditionally been governmental-led rather than private-sector-led, the governmental certification would have more impacts than private initiatives. In Europe, GlobalG.A.P was processed by retailers and gradually embraced by producers and they were two main important keys to build up the success of GlobalG.A.P. It is different in Vietnam that the government is the main driver and government institutes are the main actors in the development and implementation of VietGAP due to a weak retail sector and a lack of large producers (Nicetic and others 2010). Another reason for the strongly supported policy is that food safety has been a major concern for Vietnamese central and local governments and has led to the "Safe vegetable program" launched by the Department of Agriculture and Rural Development (DARD) of Hanoi and Ho Chi Minh City in the early 1990s (Moustier and others 2010).

Thirdly, as with most of other developing countries, an obstacle to adapt GlobalG.A.P for many producers is the associated costs and requirements which are too difficult to follow (Lee 2009). From a survey in Kenya in 2007 to discover why small-scale farmers who withdraw from GlobalG.A.P, Graffham and others (2007) find that the three most important disadvantages were related to high costs without higher returns. High investment and running costs were the most frequently cited by 58 per cent and 43 per cent of respondents respectively (see Figure 6). Forty one per cent of growers said that failure to improve prices was a major disadvantage. As mentioned earlier farmers recognized that GAP improves profits but they were still expecting some additional return for the extra financial and time investments in the form of a premium.

Figure 6: Why farmers left scheme or did not join



Source: Graffham and others (2007)

Another survey conducted in 13 provinces in citrus industry of Vietnam indicates that individual farmers in provinces with most profitable production have an income of about 50,000,000 VND per family per year. The cost of certification for GLOBALG.A.P is about 30,000,000 VND per year and for VietGAP about 10,000,000 VND per year. There were no producers in any of 13 provinces that complied with GLOBALG.A.P. requirements and who could be awarded certification with minimum adjustments (Nicetic and others 2010).

In aquaculture industry, if farmers want to get MSC certification,[29] they must pay $100,000 in initial certification for a period of 1 year and another $12,000/year in the following certification; GlobalG.A.P certification takes $8,000 for the first year and $2,000 for the following year.

In addition, there are many complex criteria to adapt to these certifications, such as the GlobalG.A.P certification comprises more than 200 criteria. These requirements seem to be so difficult that only a few large enterprises in Vietnam can achieve. According to the report No 987/BC-BNN-TT on 6 April 2012 of the Ministry of Agriculture and Rural Development, some initial cooperatives was stopped manufacturing following GlobalG.A.P due to the fact that farmers still receive the same price as those without certifications. Moreover, they had to follow over 250 criteria and pay very high certification fees that they cannot continue to maintain this procedure.

Difficulties in Spreading VietGAP & Potential Solutions

Low popularity of VietGAP

Despite a range of practical benefits, the number of producers who are certified VietGAP has not yet been high. Several factors can be considered. The first barrier is the low demand on this standard by purchasing companies and consumers because it is not well known yet in the market. As other certifications such as GlobalG.A.P have already been establishing their prestige, producers hesitate to switch to VietGAP as the change may lower credibility of their products. They are also worried about the results when they only follow the VietGAP. In addition, because this standard has not been yet certified internationally, for the GlobalG.A.P certified producers, obtaining VietGAP certification is just an additional certification and not a replacement for other international certifications. Thus, they do not have incentives to invest more on the less credible certifications.

[29] The Marine Stewardship Council works with partners to transform the world's seafood markets and promote sustainable fishing practices by setting standards, working with fisheries, developing countries and retailers. MSC was adopted as a part of the sustainable food initiative for the London Olympic 2012 and it will be also adopted by the Rio Olympic 2016.

Small-scale production and high requirements for infrastructure

Most of Vietnamese agricultural households have very small land areas. On average, agricultural land per capita is 0.25 ha. As VietGAP is created to follow some of the important GlobalG.A.P requirements, the level of requirements for infrastructure is too high for these small-scale farmers. Thus, it is prohibitively expensive for farmers to apply for VietGAP certifications. Moreover, VietGAP is a standard certified for each level of the supply chain from supplying seeds, feeds, to processing. Thus, applying VietGAP only at one level does not guarantee VietGAP certification at the consumer level, where the price premium is realized.

Government's policy

Although the Decision 01/2012/QĐ-TTg guarantees some governmental support in paying for the certificates, in practice it is not easy for producers to receive these supports. According to the Decision, firms, individuals and producing households must satisfy the two conditions to be able to receive these supports. Firstly, VietGAP must be applied in goods production and processing, and secondly, they must already have sales contracts signed and prepare a sales plan. As noted above, as most of the farmers are small-scale and because the VietGAP is not well known yet, it is difficult for farmers to satisfy these two conditions before they receive supports. Thus, even that governmental support program is not encouraging the majority of farmers to apply VietGAP.

Some potential solutions to improve the situations are suggested as follows. Initially, we must build a trust in the domestic market on VietGAP certification. Farmers have to understand the goals, meanings, contents, and benefits of having their produce certified as VietGAP. To do so, it is essential to organize seminars and workshops to exchange experiences among famers and to obtain expert opinions as well as to listen to and answer questions from producers. Agricultural extension workers play a very important role in this information dissemination.

At the same time, it is also important to promote the VietGAP to the domestic consumers as the popularity of VietGAP is still low. Information promotion campaigns targeting the consumers at supermarkets or via TV commercials may be effective. For

the customers who are interested in learning the VietGAP in depth, websites will also be a good media to provide detailed information about the standards.

Another important component to build trust is by having a good certification and monitoring mechanism. Building trust takes a long time, but losing trust may be instantaneous. To win the confidence of consumers, it is critical that the VietGAP certified products in fact are safe, of good quality, and contribute to sustainable agriculture. A good and rigid certification process and effective monitoring mechanism which rewards compliers and punishes non-compliers must be implemented, and these should be public knowledge.

Lastly, to make the VietGAP certification more accessible for farmers, it is important that enough support is provided by the government. As the certified farmers may benefit from higher prices, the income gap between those who are certified and those who are not may increase. As the purpose of the VietGAP is not to increase the inequality, but to improve production practices of farmers for safer and more sustainable agriculture, providing financial and technical supports for the less endowed is important. As previously mentioned, the details on the decision 01/2012/QD-TTg should be improved to serve the purpose.

V. Conclusion

Both in Japan and Vietnam, their own versions of GAP were motivated by the popularity of Global GAP. They see that Global GAP is an effective tool to increase exports of agriculture products. However, both feel that obtaining Global GAP certification from the scratch would be too high a hurdle for most of the farmers. Because of this concern, local versions of GAP were introduced to lower the costs of certification and also the language barrier. Here, these two countries diverge in their approach. In Japan, the development of alternative GAP was left mainly to private sector. This led to emergence of three different types of GAPs. The first one is a GAP as a best practice, often evaluated by the farmers themselves. The second is a GAP as a supplier codes of conduct by a specific retailer. In this kind of “GAP”, the assessment is done by the buyer. The third one is a GAP as a standard scheme, JGAP, similar to the nature of GlobalGAP with third-party certification. At current stage, JGAP is a

Japanese domestic standard scheme, not benchmarked with any other standards available in foreign countries. These three different types of GAP serve different purposes but sometimes, these three types of GAP are not well distinguished and creating confusion among producers.

In contrast to the Japanese case, VietGAP was developed by the government in Vietnam, and avoiding the confusion seen in Japan. VietGAP was established as a standard scheme similar to that of Global GAP. In addition, VietGAP incorporates requirements from other standards (MSC and ASC, both concerns fishery products) which are an important industry for Vietnam. By doing so, the intension of the government is to lower the cost of certifications and to improve the safety of agricultural and fishery commodities.

These two countries approach the diffusion of GAP in different ways but they face three similar kind of problems. The first is the large number of small scale farmers. As a standard scheme often requires producers to obtain certifications, it is more costly to obtain certification for a smaller farm than for a larger farm. A large farm can spread the cost of certification to a larger quantity of output, so relatively speaking, the cost of certification is lower.

Second, there is not much domestic demand for these kinds of certifications by the retailers and/or by the consumers. Global GAP was established by the retailers in EU to ensure safety of agricultural products that they procure from many producers often located in another countries by streamlining various supplier codes of conduct that individual retailers had. Therefore, the demand for the Global GAP certification was there, because it was created by the retailers. So for producers selling to these retailers, they needed to obtain Global GAP certificate to maintain their business relationship. In contrast, in Japan or in Vietnam, retailers are not strongly requiring JGAP or VietGAP as a conditions of transaction. Without clear message coming from the retailers, the demand from producers would be low.

Third problem, which is closely related to the second is that JGAP nor VietGAP is benchmarked against other relevant standard scheme that are used widely in other

markets, although both of them aim to be benchmarked.[30] This again reduces the attractiveness of these standard schemes.

Existing research is not clear cut in terms of the effect of local standard adoption on export performance. It is generally held that obtaining relevant standards required in the importing countries can greatly enhance the competitiveness of exporters relative to other exporters without such certification. However, it is not clear whether modified (and often simplified) version of the relevant standard act as a useful stepping stone for initiating export especially by smaller farmers. It could well act as a barrier if the local standards are significantly different from the foreign standards. Further research is required to assess the usefulness of these local versions of the standards on the export performance.

[30] In case of JGAP, their aim is to be benchmarked as one of the approved standard for the Global Food Safety Initiative. In the case of VietGAP, to the Global GAP.

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