

Baseline Survey on the Current Status of National GAP in the 10 ASEAN Member States

*Part of Output 1 (Marketing and Promotion of National
and ASEAN GAPs) of ASEAN-JICA Food Value Chain
Development Project*



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Acronyms

AADCP	ASEAN-Australia Development Cooperation Program
ACFS	National Bureau of Agricultural Commodity and Food Standards (Thailand)
ACIAR	Australian Centre for International Agricultural Research
AEC	ASEAN Economic Community
ASEAN	Association of Southeast Asian Nations
ASEAN-CRN	ASEAN Climate Resilience Network
ASOA	ASEAN Standards for Organic Agriculture
AMS	ASEAN Member States
ANGA	ASEAN Negotiating Group for Agriculture
ATWGARD	ASEAN Technical Working Group on Agricultural Research and Development
CADF	Cambodia Agribusiness Development Facility
CCF	Consumer Protection, Competition and Fraud Repression Directorate-General
CLMV	Cambodia, Lao PDR, Myanmar and Viet Nam
CSA	Climate Smart Agriculture
DAA	Department of Agriculture and Agrifood (Brunei)
DAFO	District Agriculture and Forestry Office (Lao PDR)
DOA	Department of Agriculture
DoAE	Department of Extension Agriculture (Thailand)
DCA	Department of Consumer Affairs
DFID	UK Department for International Development
DOA	Department of Agriculture
EUREP	Euro-Retailer Produce Working Group
EUREPGAP	Euro-Retailer Produce Good Agricultural Practices
FAF	Food, Agriculture, and Forestry (Division of the ASEAN Secretariat)
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
FVC	Food Value Chain
GAP	Good Agricultural Practices
GDA	General Directorate of Agriculture
GFSI	Global Food Safety Initiative
HACCP	Hazard Analysis Critical Control Point
ICCO	Interchurch Organization for Development Cooperation
IDE	International Development Enterprises
Lao PDR	Lao People's Democratic Republic
LBVD	Livestock Breeding Veterinary Department
MAFF	Ministry of Agriculture, Forestry, and Fisheries (Cambodia)
MARD	Ministry of Agriculture and Rural Development (Vietnam)

MFAT	Ministry of Foreign Affairs & Trade (New Zealand)
MPRT	Ministry of Primary Resources and Tourism (Brunei)
MRA	Mutual Recognition Agreements
MRL	Maximum Residue Limit
OA	Organic Agriculture
PDAFF-BMC	Banteay Meanchey Provincial Department of Agriculture, Forestry, and Fisheries
SAFT	Standards in the Southeast Asian Food Trade
SFA	Singapore Food Agency
SPA-Crops	Strategic Plan of Actions for the ASEAN Cooperation on Crops
UNFCCC	United Nations Framework Convention on Climate Change

1. Introduction

1.1. Background of the Study

The Good Agricultural Practices (GAP) standard is a comprehensive set of guidelines and practices designed to ensure food safety, environmental sustainability, and social responsibility in agricultural production. Its origins can be traced back to the late 1990s when the Food and Agriculture Organization (FAO) of the United Nations first introduced the concept. However, it was in 2001 that the standard began to take a more concrete form when a group of European retailers, under the Euro-Retailer Produce Working Group (EUREP), developed a set of standards for agricultural production called EUREPGAP (Euro-Retailer Produce Good Agricultural Practices).

As the standard gained recognition and adoption internationally, EUREPGAP was renamed GlobalGAP in 2007 to reflect its growing global relevance. The GAP standard addresses various aspects of agricultural production, including soil management, pest control, water management, harvesting and post-harvest handling, worker health and safety, waste and pollution management, and record-keeping. Its key objectives are to ensure food safety and traceability, minimize the environmental impact of farming operations, reduce the use of chemical inputs, ensure a responsible approach to worker welfare, and promote animal welfare.

In the context of ASEAN, the development of a regional GAP standard reflects the growing importance of harmonized agricultural practices in promoting intra-regional trade and ensuring food safety for consumers across Southeast Asia. The ASEAN GAP, like its global counterpart, aims to address the unique agricultural challenges and opportunities within the region. As ASEAN member states work towards aligning their national GAP standards with the regional framework, they face the task of balancing local agricultural traditions and practices with the need for standardization and compliance with international norms. This alignment process is crucial for enhancing the competitiveness of ASEAN agricultural products in the global market while ensuring the sustainability and safety of the region's agricultural sector.

One common limitation across these countries is the lack of awareness of GAP among farms and the higher production costs required to follow GAP practices. Limited comprehension of the standard benefits, which are often long-term, coupled with the lack of premium prices could discourage farmers from their decision to follow the guidelines, especially without adequate financial support or technical assistance provided externally. This is evident in countries with GAP certification processes that are already structured but experience low GAP adoption rates. Therefore, smallholders who make up the majority of farmers in ASEAN may require the most support to transition into GAP-based farming due to limited budget and labor. Provisions of capacity development training for farms and food processors and GAP

dissemination strategies need to be enhanced and enforced by the responsible government agency.

1.2. Scope and Objectives of the Study

The Baseline Survey on the Current Status of National GAP in the 10 ASEAN Member States is part of the Output 1 of the ASEAN-JICA Food Value Chain Development Project: “Marketing and Promotion of National and ASEAN GAPS”.

The three main objectives of the Study are as follows:

- 1) To collect the information and data to serve as the basis for drafting reports on GAP market in AMS.
- 2) To explore measures for promoting the adoption of GAP in each country and advancing ASEAN GAP, through identifying good practice.
- 3) To collect relevant information and data, including inhibiting factors affecting the dissemination of Good Agricultural Practices (GAP) as well as dissemination status in the ASEAN Member States (AMS).

1.3. Methodology

The data collection process began with an internet search to gather initial information. Following this, a questionnaire survey was conducted by sending questions to government agencies and other relevant entities. Next, Focus Group Discussions (FGD) were implemented to analyze barriers identified by stakeholders related to the Food Value Chain (FVC). Based on the results of the FGDs, detailed interviews were conducted as necessary to gather more specific information. Finally, the survey results were compiled, and this comprehensive report was written.

The following groups were surveyed:

- (A) Producers/producer organizations
- (B) Certification bodies
- (C) Government agencies
- (D) Retailers/food industry associations
- (E) Research Institutions / Universities
- (F) Consumers

The initial phase of data collection was executed through online research and email questionnaires distributed to all participant groups, with the exception of Group F (Consumers). For Group F, an online survey was disseminated via Google Forms, with a target response goal of 20 participants. Anticipating a 50% response rate, 40 survey forms were distributed.

The second phase of data collection employed Focus Group Discussions (FGDs), conducted both in person and through online meetings facilitated by Google Meet.

Finally, the third phase involved in-depth interviews, utilizing tailored questions refined based on the insights gleaned from the preceding data collection phases.

Some inquiries related broadly to GAP standards and didn't require details tied to particular crops. However, other queries demanded more focused information on specific agricultural products. It was also essential to choose farmers who specialized in certain crops. The priority lay with mango, banana, and cabbage producers. Field trips to meet producers in person were organized in Thailand, Indonesia, and Myanmar.

2. Comparison between ASEAN GAP and Other GAP Standards

2.1. Definition and Objectives of GAP

Good Agricultural Practices (GAP) refer to the application of available knowledge to address environmental, economic, and social sustainability for on-farm production and post-production processes, resulting in safe and quality food and non-food agricultural products. GAP encompasses a range of principles and practices that ensure agricultural production is conducted in a manner that is environmentally sustainable, economically viable, and socially responsible. The main objectives of implementing GAP are explained below.

First and foremost, GAP aims to enhance food safety by minimizing food safety hazards and controlling potential sources of contamination throughout the farming process. This includes the careful use of fertilizers and pesticides, maintaining proper water quality, and implementing hygiene practices to prevent the spread of pathogens. Promoting sustainable agriculture is another key objective. GAP encourages practices that conserve natural resources such as soil, water, and biodiversity. Techniques like crop rotation, efficient irrigation, integrated pest management, and the use of organic fertilizers contribute not only to long-term agricultural productivity but also to overall environmental health.

Improving farm management is also a critical goal of GAP. By adopting these practices, farmers can enhance the efficiency and efficacy of their operations. This involves keeping proper records, providing regular training for farm workers, utilizing precision agriculture technologies, and making efficient use of inputs. Such improved management practices lead to better yields, reduced costs, and increased profitability. GAP also places a strong emphasis on protecting the health and safety of agricultural workers by implementing practices that ensure they work in safe conditions. This includes providing protective equipment, ensuring access to

clean water and sanitation facilities, and adhering to labor laws and regulations. Protecting worker health and safety is essential for maintaining a productive and sustainable workforce.

Another significant objective of GAP is to enhance market access. By obtaining GAP certification, farmers can tap into new market opportunities as consumers and buyers increasingly demand food products that are produced sustainably and safely. Certification to recognized GAP standards enhances the competitiveness of agricultural products in both domestic and international markets. Another important point is that GAP facilitates traceability by requiring the maintenance of detailed records of all farm activities. This traceability is essential for managing food recalls, ensuring accountability, and maintaining consumer trust in agricultural products.

Lastly, GAP supports policy and regulatory compliance, helping farmers adhere to national and international agricultural policies and regulations related to environmental protection, food safety, and labor rights. It also backs government efforts to promote sustainable agricultural practices and protect public health.

2.2. Overview of ASEAN GAP, GLOBAL G.A.P, and National GAPs

The landscape of Good Agricultural Practices (GAP) has evolved to include several key standards that drive agricultural sustainability, enhance food safety, and facilitate international trade. Among the prominent frameworks are ASEAN GAP, GLOBAL G.A.P., and the various National GAPs specific to individual countries. While these standards share a common goal of promoting safe and sustainable farming practices, they are tailored to fit different regional contexts, priorities, and regulatory environments.

2.2.1. ASEAN GAP

Established by the Association of Southeast Asian Nations (ASEAN), ASEAN GAP is a regional standard to prevent the risks associated with production, harvesting and post-harvest handling of fresh fruit and vegetables and to facilitate their trade within and beyond the region. The development of ASEAN GAP was based primarily on the criteria and experiences of national GAP implementation in Malaysia, Philippines, Singapore and Thailand. It also drew on certified GAP systems and guidelines from other countries and regions. ASEAN GAP sets the standard practice of on-farm production activities as well as that of local industries where the produce are processed and packed for sale. It aims to harmonize agricultural practices across its ten member states, enhancing regional cooperation and facilitating smoother trade in agricultural products. The ASEAN GAP framework is structured around four core modules: food safety, environmental management, worker health, safety and welfare, and produce quality.

These modules provide comprehensive guidelines to ensure that agricultural practices within ASEAN countries meet high standards of safety and sustainability. By promoting these practices, ASEAN GAP seeks to improve the quality and marketability of agricultural products within the region and beyond¹.

2.2.2. GLOBAL G.A.P

Originally known as EUREPGAP, GLOBAL G.A.P. is a globally recognized standard for farm production, designed to ensure that food products reach the consumer with a guarantee of safety and quality. GLOBAL G.A.P. covers a broad spectrum of agricultural activities, including crop production, livestock farming, and aquaculture. The standard emphasizes traceability, worker safety, environmental sustainability, and animal welfare. Farmers seeking GLOBAL G.A.P. certification must adhere to strict criteria, undergo regular audits, and maintain comprehensive records of their farming practices. Due to its global recognition, GLOBAL G.A.P. certification can significantly enhance market access and competitiveness for farmers on the international stage.

GLOBAL G.A.P. utilizes a stringent assurance scheme, beginning with a rigorous approval process for certification bodies. GLOBAL G.A.P. reviews and monitors the performance of these certified bodies, even implementing a star-rating system to differentiate performance levels. Adding to its strength, GLOBAL G.A.P. provides a comprehensive database, making it easy for consumers and buyers to validate the status of certificates. This database includes detailed information about the crop, farmer names, and farm addresses, ensuring complete transparency. The strength of GLOBAL G.A.P. is further bolstered by the influence of EU retailers, who, as both buyers and owners, wield significant power in the market.

One of the main challenges with GLOBAL G.A.P. certification is the cost barrier. Audit and certification fees are often prohibitively high for many farmers, especially those serving the local market. This effectively restricts the benefits of certification to export-oriented producers.

While farmers are not permitted to display the GLOBAL G.A.P. "G" logo on product packaging, there's a clear market demand for such visible assurances, as evidenced by the success of labels like Rainforest Alliance and Fairtrade. GLOBAL G.A.P. introduced the yellow GGN label two years ago to address this need (<https://www.globalgap.org/ggn/>).

However, there are concerns that allowing widespread use of the "G" logo could pose a reputational risk to GLOBAL G.A.P. Any contamination incident linked to a certified product could negatively impact the credibility of the entire system.

¹ ASEAN GAP Good Agricultural Practices for Production of Fresh Fruit and Vegetables in the ASEAN Region -Quality Assurance Systems for ASEAN Fruit and Vegetables Project ASEAN Australia Development Cooperation Program.

The current process to obtain the GGN label is quite rigorous. Farmers must first obtain GLOBAL G.A.P. certification, then undergo a Global Risk Assessment on Social Practices (GRASP). They are also required to participate in the Maximum Residue Level (MRL) monitoring program and have product samples analyzed by an accredited third party. Only after completing these steps can they register on the GLOBAL G.A.P. platform and use the GGN label. Farmers are obligated to report their GGN label usage annually. GLOBAL G.A.P. then invoices them based on the declared volume of products bearing the label.

2.2.3. National GAPs

Beyond regional initiatives like ASEAN GAP and international standards such as GLOBAL G.A.P., many countries have developed their own GAP frameworks tailored to their specific agricultural sectors and regulatory needs. These National GAPs address local environmental conditions, agricultural practices, and policy requirements. National GAPs are often more accessible to local farmers and help them to improve their practices incrementally. These National GAPs may align with broader international standards to facilitate exports.

2.3. Comparison of the National GAPs and alignment with ASEAN GAP

Table 1. Comparison of the National GAPs and alignment with ASEAN GAP

	Thailand	Malaysia	Cambodia	Philippines	Indonesia	Vietnam	Myanmar	Lao PDR	Singapore	Brunei
Name, year of establishment	QGAP, 2021 ThaiGAP, 2007	MyGAP, 2016	CamGAP, 2010	PhilGAP, 2017	Prima, 2005 IndoGAP, 2021	VietGAP, 2017 (TCVN 11892-1:2017)	Myanmar GAP, 2020	LaoGAP, 2022	SSGAP, 2022	Brunei GAP, 2017
Scheme Owner	QGAP: ACFS(government) ThaiGAP: (Private)	Ministry of agriculture and food industries (MAFI)	Government	Bureau of Agriculture and Fisheries Standards (BAFS)	Government	Government	Government	Government	Government	Government
Accreditation Body (AB)	None	None	None	None	None	Vietnam Institute of Accreditation (VACI)	None	None	Singapore Accreditation Council (SAC)	None
Certification Body (CB)	DOA, CBNIB, 8 Private	DOA, DOF, DVS	DPPSPS, GDA, MAFF	Bureau of Plant Industry (BPI) under the DA	For Prima: Food Safety Competent Authority under National Food Agency For IndoGAP: DG of Horticulture under the Ministry of Agriculture	Many private	DOA, MOALI	DOA	Control Union SOCOTEC	DOAA
ISO accredited lab	Yes	Yes		Yes	Yes	Yes	Yes		Yes	
Application to ASEAN GAP	Aligned	Aligned	Aligned	Aligned	Partial	Partial	Aligned	Partial	Partial	Partial
1. Food safety	100% (official)	100% (official)	100% (official)	100% (official assessment)	100% (official)		100% (official assessment)	89% (FAA assessment)	100% (self assessment)	100% (official assessment)

2. Environmental management	100% (self assessment)	100% (self assessment)	100% (self assessment)	94.9% (official assessment)	100% (self assessment)		90.74% (official assessment)	40% (FAA assessment)	To be assessed, estimated 90%	No
3. Worker health, safety and welfare	100% (self assessment)	100% (self assessment)	100% (self assessment)	96.3% (official assessment)	100% (self assessment)		82.76% (official assessment)	42% (FAA assessment)	To be assessed, estimated 90%	No
4. Produce quality	100% (self assessment)	100% (self assessment)	100% (self assessment)	96.6% (official assessment)	100% (self assessment)		96.61% (official assessment)	52% (FAA assessment)	To be assessed, estimated 90%	100% (self assessment)
Target crops	Fruits, vegetables, herbs, and spices	Fruits, vegetables, herbs, and spices	Vegetables, fruits	Vegetables, fruits, grains	Fruits, Vegetables, medicinal plants, ornamental plants	All crops	All crops except industrial crops	Vegetables, fruits, grains	Vegetables	Vegetables, fruits
Number of judges	Government: 500	315	5 auditors, 10 inspectors	298	136 auditors	Many	25	35	2	30 +
Number of instructors	618	400	Provincial and district departments have extension services	4 DOA agencies	7,288 farmer extension officers	Many	1,165		Many (Private instructors)	4 to units
Acquisition cost	Government: free, Private: charged	Free	Farmers must pay for tests and pay DSA for inspection	Free	Free	First time free (government support)	Pay for analysis of water, soil and MRL	Certificate 50,000 Kip (USD 2.4) and service charge minimum 750,000 Kip (USD 30)	3,000 to 5,000 SDG depending on auditor	Free
Validity	2 years for annual crops and 3 years for perennial crops	2 years	2 years	2 years	3 years	2 years	1 year	1 year	2 years	3 years
Number of certified farms	316,346	14,712*	946	455	7,748	2,600	4,337	432	5	8

Auditor Qualification	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Training no test
Instructor qualification	Yes	Yes	Guidelines provided	4 years Agriculture Degree required	Only Agricultural Product Quality Supervisor officers	Bachelor in Agriculture required	Yes	Yes	Yes	Training provided
GAP dissemination status	High	High	Medium	Medium	Medium	Medium	Medium	Low	Low	Very Low
Classification by dissemination status	High		Medium				Low			

* 14,712 is the total number of farms that have been MyGAP certified. As some farms haven't renewed their certification, the number of valid certified farms in 2024 is 7,182.

3. Alignment Status of National GAPs with ASEAN GAP

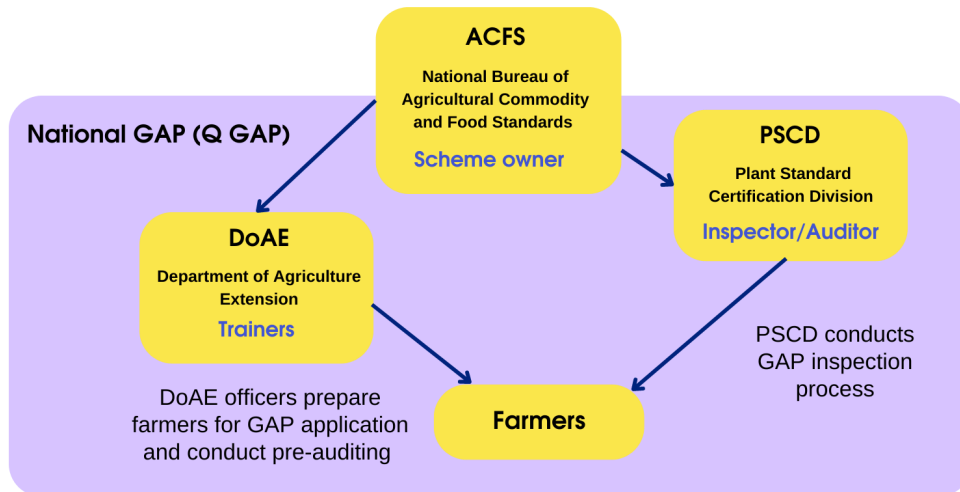
3.1. Thailand

3.1.1. Application Status of ASEAN GAP

Thailand is a leader in ASEAN GAP adoption, with its own well-developed QGAP standard that aligns with ASEAN GAP principles. The Thai government has established comprehensive support systems, including training, certification, and market incentives, to encourage farmers' compliance. High levels of awareness and institutional support have resulted in widespread adoption.



ACFS harmonizes National GAP to international GAP standards



3.1.2. Alignment Status of National GAPs with ASEAN GAP

There are two GAP standard programs in Thailand, which are Thai Q GAP and ThaiGAP. Both programs are voluntary but are operated by different entities: Thai Q GAP is facilitated by the Ministry of Agriculture and Cooperatives and ThaiGAP - privately owned - is

run by three parties under the ThaiGAP Institute, Thai Chamber of Commerce, National Food Institute, and Kasetsart University². However, the agricultural guidelines mentioned in each program are based on different GAP references. Whereas the ThaiGAP standard is adopted towards the GlobalGAP, the national Thai Q GAP requirements are developed to align with the ASEAN GAP guidelines.

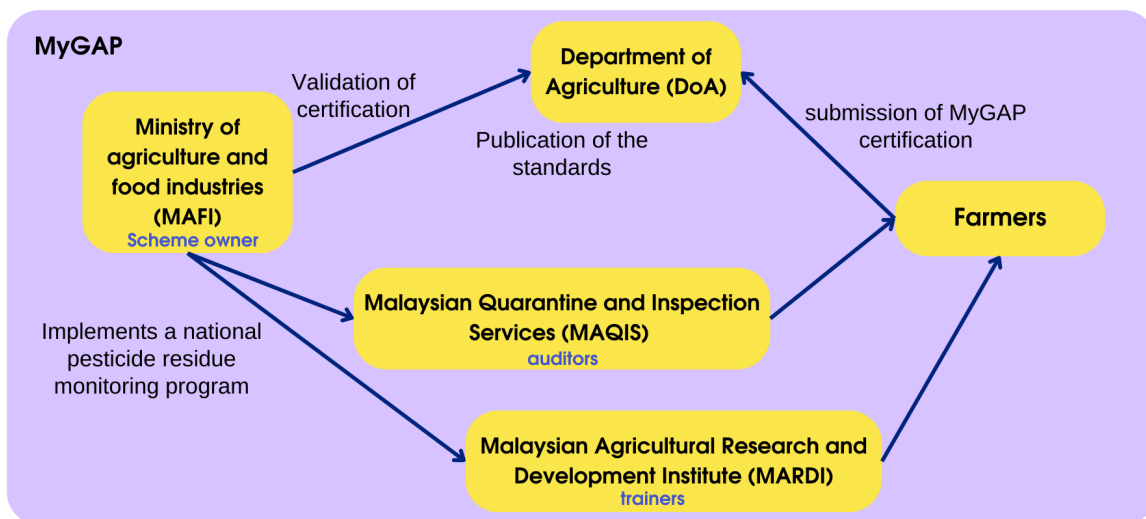
There are 8 modules to obtain Thai Q GAP certification in Thailand 1) water source 2) site history 3) pesticide usage 4) quality management 5) harvesting and produce handling 6) storage, transporting in the farm 7) personnel hygiene 8) record keeping and traceability. The standard is valid for 3 years for perennial crops and 2 years for annual crops.

3.2. Malaysia

3.2.1. Application Status of ASEAN GAP

Malaysia has made significant progress in incorporating ASEAN GAP into its national framework through the Malaysian Good Agricultural Practices (MyGAP) certification scheme, which aligns closely with ASEAN GAP principles. Strong government support, effective training programs, and financial incentives have bolstered adoption rates.

MALAYSIA



² The Thai Chamber of Commerce and Board of Trade of Thailand, 'ThaiGAP - หอการค้าไทยและสภาหอการค้าแห่งประเทศไทย', 2023 <<https://www.thaichamber.org/view/123/thaigap-en>> [accessed 15 May 2024].

3.2.2. Alignment Status of National GAPs with ASEAN GAP

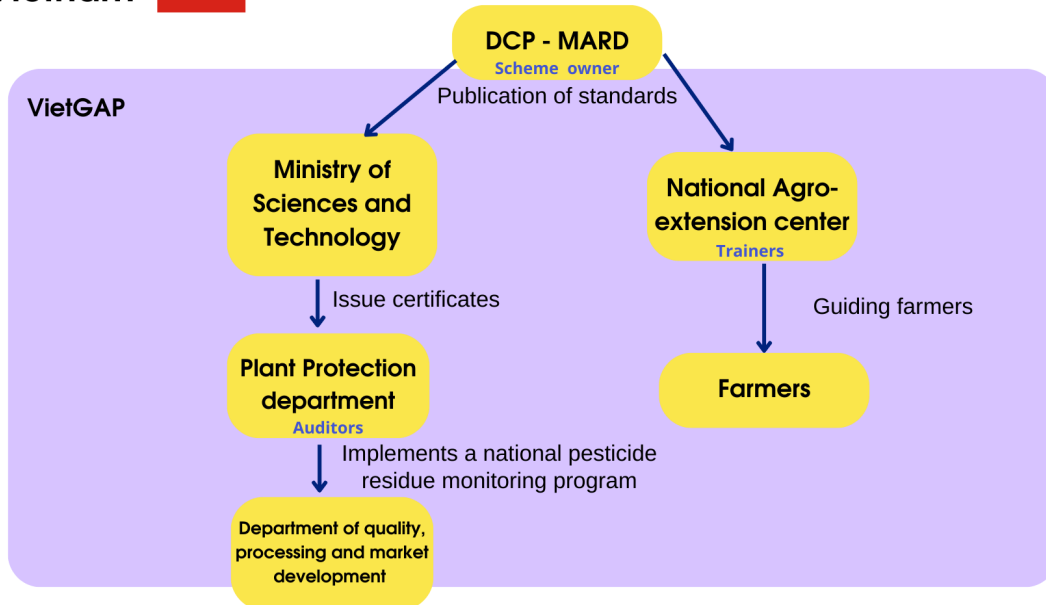
Agricultural practice guidelines in Malaysia were known as the Malaysian Good Farm Practices Scheme (SALM). Later, the standard was rebranded into MyGAP and was based on Malaysian Standard MS 1784: 2005 Crop Commodities - Good Agricultural Practice (GAP). The certification is facilitated by the Department of Agriculture (DOA). In 2018, efforts were made to harmonize MyGAP with ASEAN GAP, and they are now considered fully aligned.

MyGAP is a government certification, provided free of charge to farmers. It is valid in both domestic and international markets and is active for up to 2 years. Applicants are required to undergo an assessment covering three criteria 1) Site inspection 2) Results analysis for pesticide residues, heavy metals, and microbes 3) Farm practice audit. Within the DoA, the audit and extension services operate as distinct divisions. There are four types of MyGAP: Foodcrop, Beekeeping Activity, Ornamental Flower, and MyGAP Pesticide-Free. While all are rooted in GAP, the Pesticide-Free certification places a larger emphasis on eliminating pesticide use. To complete the application, applicants are required to undergo Pre-auditing in which crop and water quality tests are carried out three times by district-level DOA officers; all must not exceed the Maximum Residue Limit (MRL) set. Follow-up auditing is conducted to ensure that certified applicants conform to myGAP practices.

3.3. Vietnam

3.3.1. Application Status of ASEAN GAP

Vietnam has integrated ASEAN GAP into its national Vietnam Good Agricultural Practices (VietGAP) framework. The government has been proactive in promoting GAP through extensive training programs, financial incentives, and partnerships with the private sector. However, challenges such as small-scale farming and inconsistent enforcement still pose obstacles to full-scale adoption.



3.3.2. Alignment Status of National GAPs with ASEAN GAP

VietGAP, short for Vietnamese Good Agricultural Practices, focuses on implementing production methods to ensure the production of clean and safe agricultural products, particularly fresh fruits and vegetables. Before the inception of VietGAP, various agricultural production safety programs existed for vegetables, fruits, and beverages, but lacked a unified certification process and incentives for producers, hindering widespread adoption.

In 2004, the Vietnam Fruit Association engaged in a project to enhance competitiveness, leading to exposure to Thailand's EUREPGAP program. Subsequently, in 2005, GAP initiatives were introduced in six provinces along the Tien River, yielding positive outcomes. Recognizing the significance of GAP, the Vietnam Gardening Association surveyed GAP implementation in Malaysia in 2007, advocating for the establishment of VietGAP.

Coinciding with Vietnam's accession to the World Trade Organization in 2007, there was a growing need to meet the increasing standards for food quality. As a result, VietGAP was officially established on January 28, 2008, drawing on the experiences of established GAP standards like EUREGAP and GlobalGAP, enabling its effective and rapid implementation³.

After a period of implementation, MARD has issued decisions to amend and replace the VietGAP in cultivation, livestock and fisheries. Namely:

³ QUACERT, 'GOOD AGRICULTURE PRACTICE - VietGAP Standard', 2013 <<https://quacert.gov.vn/en/good-agriculture-practice.nd185/vietgap-standard.i88.html>> [accessed 15 June 2024].

Guidance on VietGAP in aquaculture (Decision No. 3824/QD-BNNTCTS dated September 6th, 2014).

Good Animal Husbandry Practices (VietGAHP) for dairy cows, beef cattle, dairy goats, meat goats, pigs, chickens, ducks and bees (Decision No. 4653/QD-BNN-CN dated November 10th, 2015).

Good Animal Husbandry Practices in households for pig and chicken breeding in households (Decision No. 2509 / QD- BNN-CN on June 22nd, 2016).

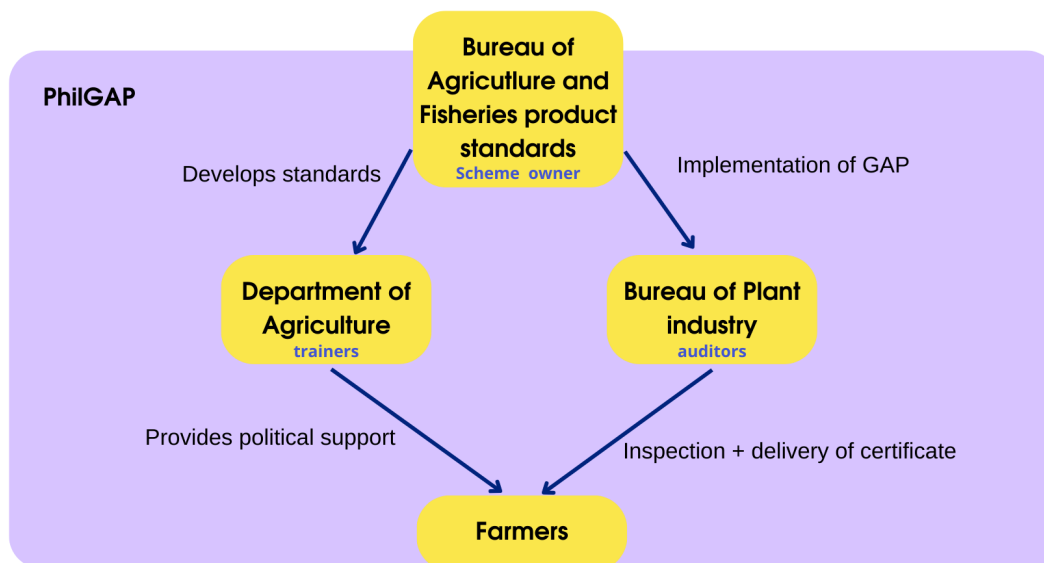
TCVN 11892-1: 2017 - Good Agricultural Practices (VietGAP) for cultivation (Decision 2802/QD-BKHCH dated October 17th, 2017).

The current VietGAP standard, TCVN 11892-1:2017, is currently undergoing revisions. The publication of the new version is anticipated sometime in 2025. The expectation is that this revised standard will then be fully aligned with the ASEAN GAP food safety module.

3.4. Philippines

3.4.1. Application Status of ASEAN GAP

The Philippines has actively integrated ASEAN GAP into its agricultural policies through the Philippine Good Agricultural Practices (PhilGAP) program. The government provides extensive training and certification support to farmers, with notable success in the fruit and vegetable sectors. Continuous efforts are being made to expand coverage and improve compliance across all agricultural sectors.



3.4.2. Alignment Status of National GAPs with ASEAN GAP

In 2005, the GAP standard in the Philippines (PhilGAP) was administered by the Bureau of Agriculture and Fisheries Standards (BAFS) under the Department of Agriculture to enable market facilitation between agricultural products from the Philippines and other ASEAN countries. Hence, GAP elements in PhilGAP are directly based on the ASEAN GAP modules, which consist of 1) Food safety 2) Produce quality 3) Environmental management, and 4) Work health, safety, and welfare. The advancement of PhilGAP is currently transferred under the Bureau of Plant Industry (BPI)⁴.

Agricultural commodities eligible for PhilGAP certification are based on the Philippine National Standards (PNS) guide (PNS/BAFS 203:2017 for non-agricultural food agricultural commodities and PNS/BAFS 49:2021, ICS 67.080 for fruits and vegetables farming) and are available for individual certification holders and group certification. There is no certification fee and the processing period is one month from the application submission date. The certification is valid two years.

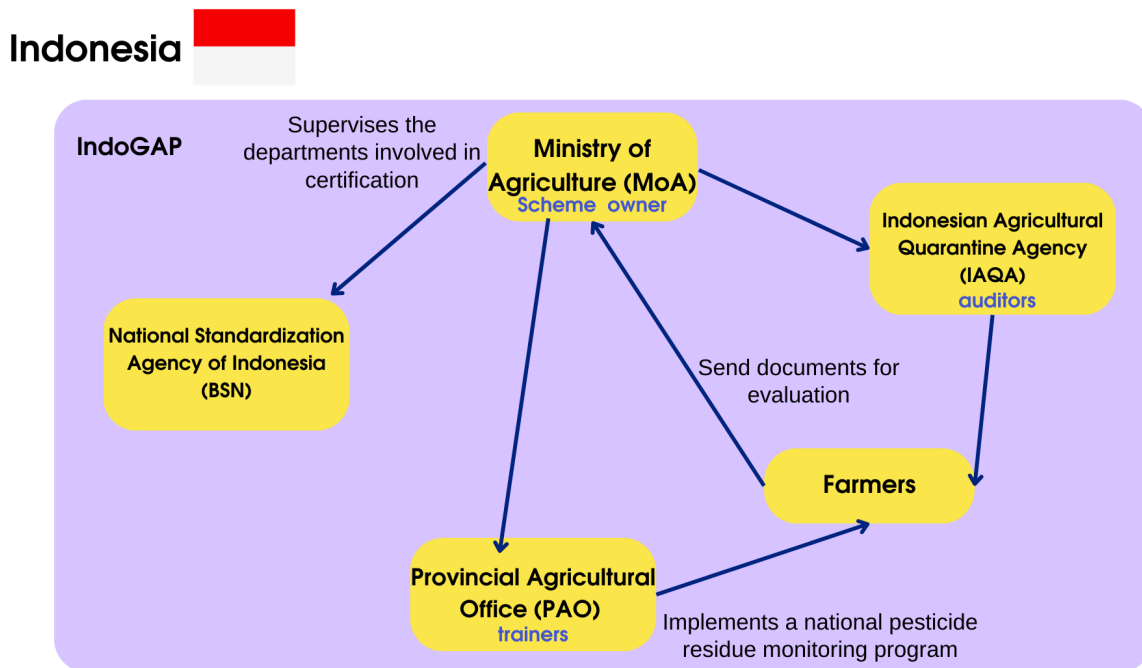
The results from the official alignment assessment between ASEAN GAP and PhilGAP resulted in 100% alignment of the food safety module. The other three modules have a high alignment score, ranging from 94.9% to 96.6% (See [Table 1](#)).

⁴ Santiago A. Palizada, 'Overview of the Philippine Good Agricultural Practices (PhilGAP) Certification Program' (2016) <<https://itfnet.org/istf2016/PresentationSlide/ITFS%20-%20Davao%20GAP%20Presentation.pdf>> [accessed 11 June 2024].

3.5. Indonesia

3.5.1. Application Status of ASEAN GAP

Indonesia has integrated ASEAN GAP into its national agricultural policies, promoting it through the Ministry of Agriculture. The country has seen considerable progress in aligning its National GAP standards with ASEAN GAP, particularly in horticulture and aquaculture. However, widespread adoption is hindered by the vast geographical diversity and the prevalence of smallholder farms.



3.5.2. Alignment Status of National GAPs with ASEAN GAP

GAP standard in Indonesia (IndoGAP) was launched by the Indonesian government in 2004 and is continuously facilitated by the Indonesian Vegetable Research Institute (IVEGRI) and the Indonesian Ministry of Agriculture. Guidelines and list of qualifications for IndoGAP are based on SNI 8969:2021 and Per BSN No.4/2023 Lamp XXXVI. There are three certification levels (SiSakti) operated under IndoGAP, comprising Prima III, Prima II, and Prima I as a pyramid scheme. Agricultural products under Prima III are compliant with proper usage of pesticide practices and good record-keeping. Prima III is the entry certification level and is the only level that can be certified by private certification institutes. Hence, agricultural products applying for Prima II and III certification must undergo governmental inspection, and they are required to satisfy all the requirements in the lower certification levels, which consist of compliance to GAP for Prima II and compliance with GLOBAL G.A.P practices and the listed

principles in Hazard Analysis and Critical Control Point system (HACCP) in Prima I respectively⁵.

The newest version of the IndoGAP standard, released in 2021, has seen its Food Safety module formally assessed. This assessment confirmed a 100% alignment with the ASEAN GAP. The remaining three modules, while not yet formally reviewed, have undergone a self-assessment by the Indonesian government. This internal review determined the modules to be fully aligned with the ASEAN GAP standard. Today, both the Prima system and the 2021 IndoGAP are active in Indonesia.

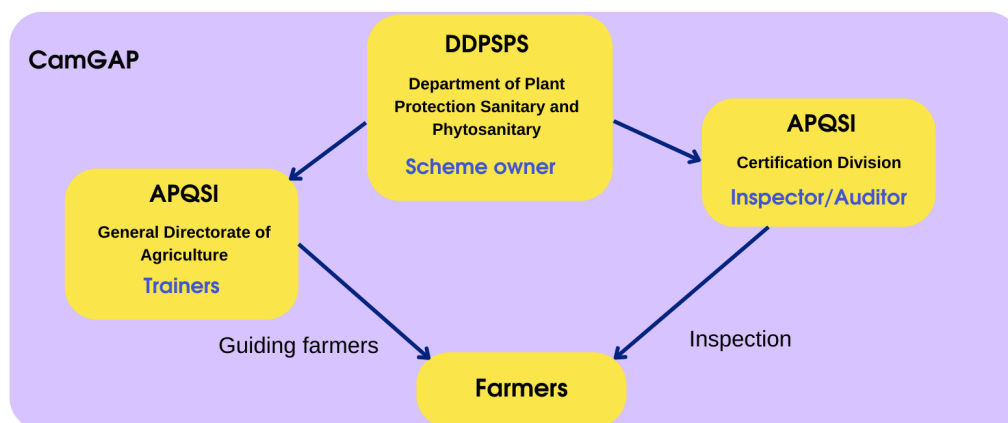
3.6. Cambodia

3.6.1. Application Status of ASEAN GAP

Cambodia's application of ASEAN GAP is still in its nascent stages. The country faces significant challenges, including limited awareness among farmers, insufficient infrastructure, and financial constraints. Nevertheless, pilot projects and collaborations with international agencies aim to enhance GAP adoption through capacity-building initiatives and demonstration farms.



CamGAP: National GAP standard was approved by MAFF through Ministerial Proclamation No 099 MAFF dated 10 March 2010.



⁵ Tikno Budimuljono Widyatmadja and Suhaimi A Kasman, 'DEVELOPMENT OF GOOD AGRICULTURE PRACTICES (INDO G.A.P) IN INDONESIA' (presented at the Training of Trainers in the GLOBALGAP Standard for the Greater Market Access, 2016).

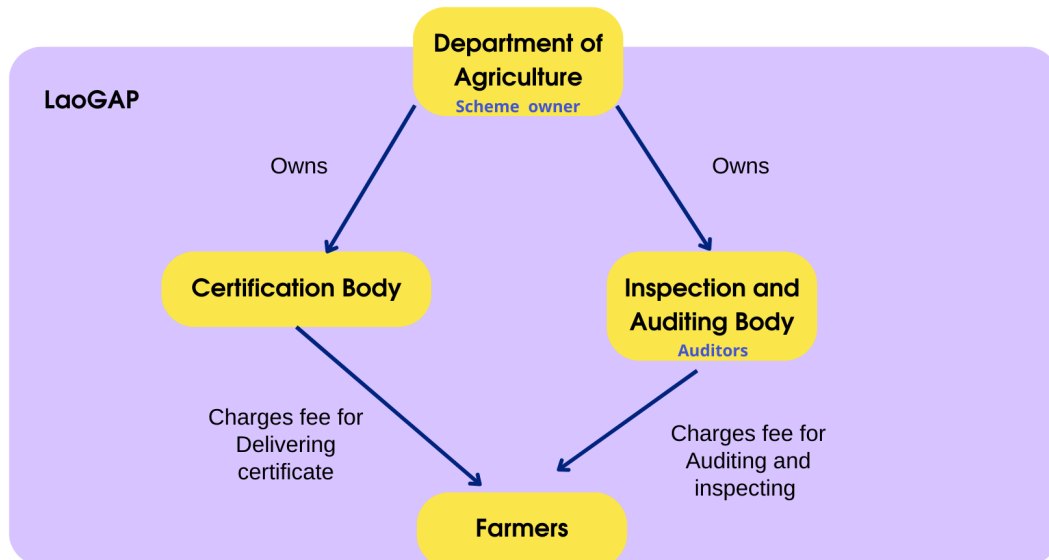
3.6.2. Alignment Status of National GAPs with ASEAN GAP

The Food Safety module of CamGAP has been formally assessed, resulting in a 100% alignment with the ASEAN GAP. The remaining three modules, while not yet formally reviewed, have undergone a self-assessment by the Cambodian government. This internal review determined the modules to be fully aligned with the ASEAN GAP standard.

3.7. Lao PDR

3.7.1. Application Status of ASEAN GAP

The adoption of ASEAN GAP in Laos is progressively evolving. Government efforts, supported by international partners, focus on training and capacity building for farmers. Yet, challenges such as limited infrastructure, financial constraints, and the need for more robust regulatory enforcement persist, slowing the pace of adoption.



3.7.2. Alignment Status of National GAPs with ASEAN GAP

The Lao PDR GAP (Good Agricultural Practices) is part of the Lao PDR Pilot Program (LPP) for Narrowing the Development Gap towards ASEAN Integration, which aims to build a sustainable ASEAN community by balancing development growth with environmental conservation. The LPP includes an "Agriculture" component that focuses on introducing Good Agricultural Practices (GAP) to promote safe and quality agricultural production in Lao PDR. This initiative is part of a broader effort to harmonize development in Lao PDR, emphasizing environmentally sustainable practices in agriculture to ensure the production of safer and eco-friendly agricultural products. The GAP component of the LPP is designed to enhance agricultural practices in Lao PDR, contributing to the country's agricultural sector's sustainability and competitiveness within the ASEAN region.

In 2014, the ASEAN GAP was adopted as the national GAP standard in Lao PDR. The Standards Division of the Department of Agriculture is responsible for promoting and institutionalizing the GAP system throughout the country. The challenge now lies in aligning the existing agricultural practices in Lao PDR with the requirements of the GAP standard⁶.

In the country's Agriculture Development Strategy to 2025 and Vision to the year 2030, policymakers recognize the importance of meeting the regional GAP requirements for a maximum of farms. This objective is a crucial component of broader efforts to promote clean agricultural production and ensure that farming practices and agricultural products meet a quality suited for export to competitive markets including within the region and beyond like the Chinese market, that is targeted by Lao's commercial development policy⁷.

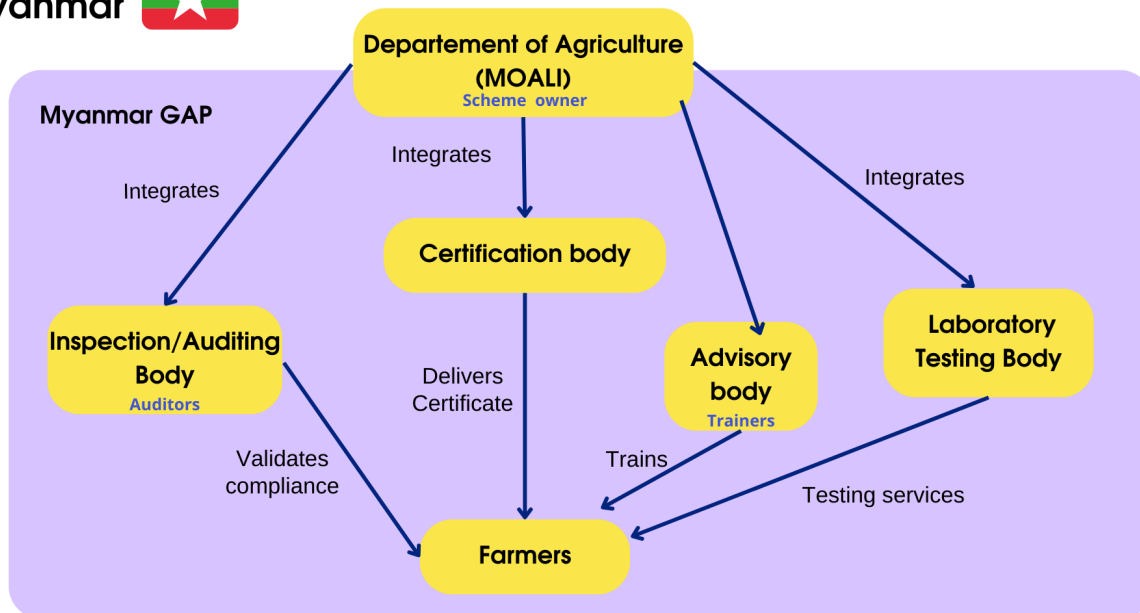
3.8. Myanmar

3.8.1. Application Status of ASEAN GAP

Myanmar is in the early stages of ASEAN GAP adoption, hampered by political and economic instability. Despite these challenges, government and non-governmental organizations are working to raise awareness and build capacity among farmers. Pilot projects and partnership initiatives aim to demonstrate the benefits of GAP and encourage wider adoption.

⁶ FAO, *A Scheme and Training Manual on Good Agricultural Practices (GAP) for Fruits and Vegetables*, Training Manual (2016), p. 191.

⁷ Bart Verweij, 'Developing Agribusiness Potential in the Laos-China Railway Corridor', *World Bank Group*, 2022
<<https://www.worldbank.org/en/country/lao/brief/developing-agribusiness-potential-in-the-laos-china-railway-corridor>> [accessed 21 May 2024].



3.8.2. Alignment Status of National GAPs with ASEAN GAP

Myanmar GAP for fruits & vegetables was issued in 2014 and was augmented by another GAP, specific to 15 field crops that was issued and launched in November, 2017. The standard focuses particularly on products with a high risk of safety, specifically addressing the production, harvesting, and post-harvest handling of fruits and vegetables at both the farm and market levels. Similar to the ASEAN standard, the Myanmar GAP standard is structured around four key modules: food safety, product quality, environmental safety, and worker health, safety, and welfare. These modules serve as the guiding principles for ensuring compliance with the standard and achieving the desired outcomes.

Of the 226 criteria from the ASEAN GAP, 214 are aligned with Myanmar GAP, representing a 94.69% alignment rate. The DOA has lead the implementation of Myanmar GAP, consistently referencing ASEAN GAP as the foundation. Acting as the national focal point, the DOA has worked closely with the Expert Working Group (EWG) composed of ASEAN members. Stakeholder training provided by the DOA encompasses not only Myanmar GAP but also ASEAN GAP.

The primary objectives of the Myanmar GAP guidelines are to promote sustainable farming practices, maximize food safety, enhance labor protections, and increase farmers' profits. These guidelines aim to achieve these objectives by reducing input costs, increasing productivity, improving product quality, and facilitating access to better markets.

The Myanmar GAP standard places a strong emphasis on safety and sustainability. It advocates for safer farming practices by minimizing the use of chemical fertilizers and pesticides, thereby reducing the potential harm to farmers. The standard also focuses on environmental safety by ensuring the prevention of soil and water contamination. Moreover, it

emphasizes consumer safety by promoting the production of cleaner and more nutritious agricultural products.

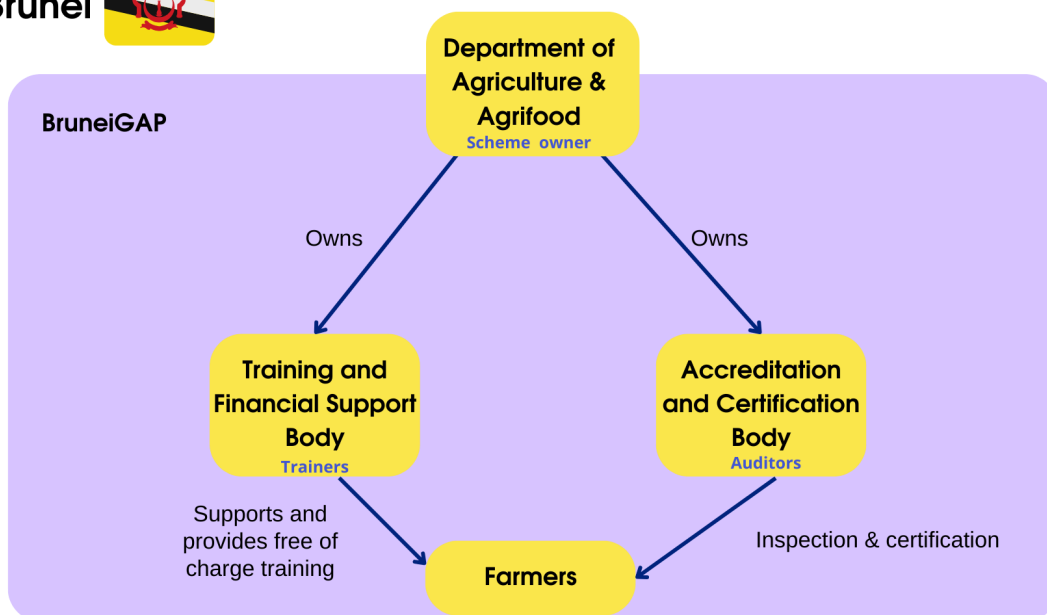
Certification of compliance with the Myanmar GAP standard is overseen by the Department of Agriculture. As of February 2022, the department has issued 3,616 Myanmar GAP certificates. These GAP standards have also been approved by the National Standard Council as the official state standards. Similarly to Laos, it will serve as a foundational standard to promote organic agriculture.

3.9. Brunei

3.9.1. Application Status of ASEAN GAP

The Department of Agriculture and Agrifood (DAA) under the Ministry of Primary Resources and Tourism (MPRT) introduced the Brunei GAP standard in 2014 to improve food safety and quality⁸. In 2017, a new version of the standard was published by the National Standards Centre, using the ASEAN GAP as guidelines. The Department of Agriculture and Agrifood serves as the certifying body and competent authority. Its role focuses on three key areas: farm certifications, pre-audit activities, and raising awareness about the Brunei Good Agricultural Practices (GAP) standard.

⁸ Aaron Wong, 'DARe to Help Businesses Get Brunei Good Agricultural Practice Certification', *BIZ | BRUNEI*, 2020 <<https://www.bizbrunei.com/2020/09/dare-to-help-agriculture-businesses-get-brunei-good-agricultural-practice-certification-gap/>> [accessed 1 June 2024].



3.9.2. Alignment Status of National GAPs with ASEAN GAP

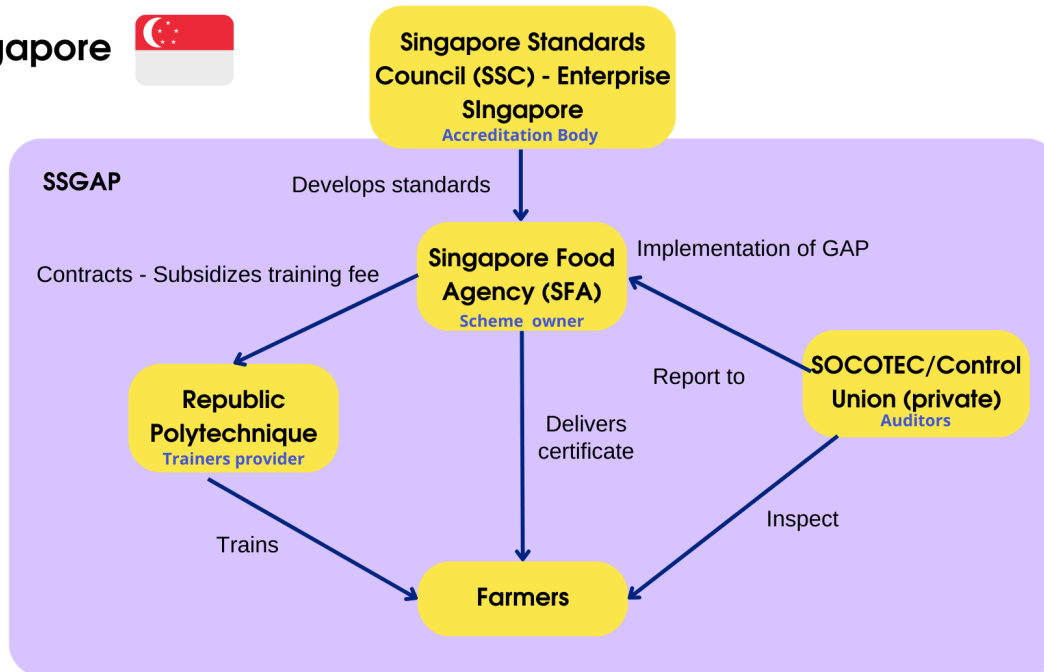
Brunei GAP is fully aligned with the food safety and the product quality modules of the ASEAN GAP. This alignment was confirmed during the 14th EWG ASEAN GAP meeting. This synergy facilitates smoother trade processes within the Southeast Asian region.

3.10. Singapore

3.10.1. Application Status of ASEAN GAP

While Singapore has limited agricultural activity, it promotes ASEAN GAP principles, especially in the context of urban farming and high-tech agriculture. The country focuses on research and development, leveraging technology to advance GAP practices and ensure food safety standards are met in its limited production areas.

Singapore



3.10.2. Alignment Status of National GAPs with ASEAN GAP

In 2021, the Singapore Food Agency took over governance of agricultural standards. A new Singapore Standard “SS675:2021 Specification for Good Agriculture Practice” was introduced to replace the 2004 GAP-VF. The SS675 has a broader scope, applying to all indoor and outdoor agriculture systems in Singapore for vegetables, fruits and herbs. It specifies best practices across the entire production chain from pre-production to postharvest handling.

The Singapore Food Agency (SFA) manages the national Good Agricultural Practices (GAP) certification program and holds the rights to the GAP logo and certification mark. SFA works with accredited certification bodies to carry out on-farm audits and issue certificates. Following these audits, the certification bodies submit their reports to SFA for evaluation. SFA then issues a letter of award to farms that successfully achieve certification.

The food safety module of the national GAP standard aligns fully with ASEAN GAP. Other modules, such as those covering the environment and worker health & safety, are approximately 90% aligned. SFA refers to and drafts standards based on the guidelines provided by the ASEAN expert working group.

4. Promotion status of national GAPs of AMS

4.1. Consumers survey

The customer survey conducted by the Fairagora Asia team encompassed 37 participants across six countries (Fig.1.). It's important to acknowledge the limitations of this small sample size – the results don't necessarily reflect the broader population.

That said, the survey indicated that 45.9% of respondents were familiar with the GAP standard. When it came to purchasing fresh produce, the local market emerged as the preferred choice, followed by supermarkets (Fig.2.). This preference was primarily driven by two key factors: quality and proximity to home. Price, while a consideration, ranked lower (Fig.3.).

When asked to rate the importance of various factors influencing their fresh produce choices, participants placed the highest emphasis on “safe and healthy production methods”. “Certification/accreditation”, on the other hand, received the lowest average rating (Fig.4.). This suggests that consumers may not automatically connect certifications with the guarantee of safe and healthy production methods for fresh produce.

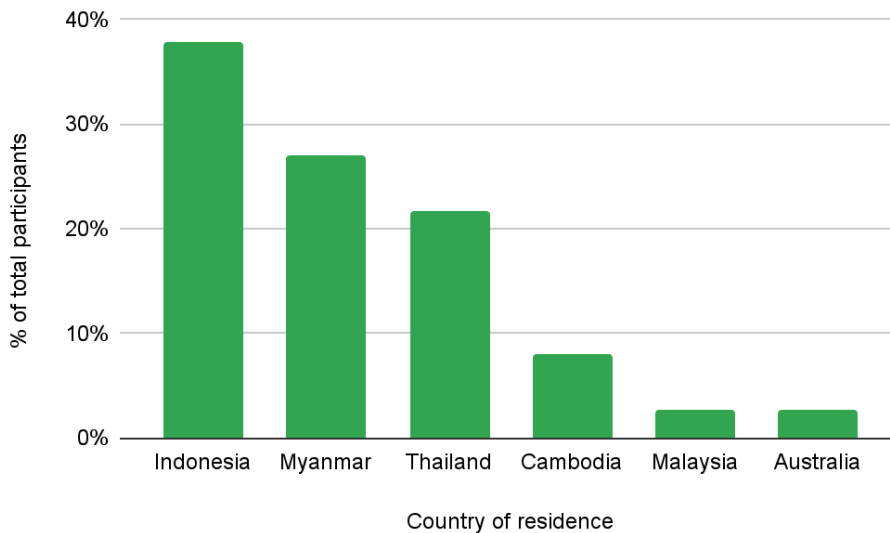


Fig.1. Percentage of participants per country of residence.

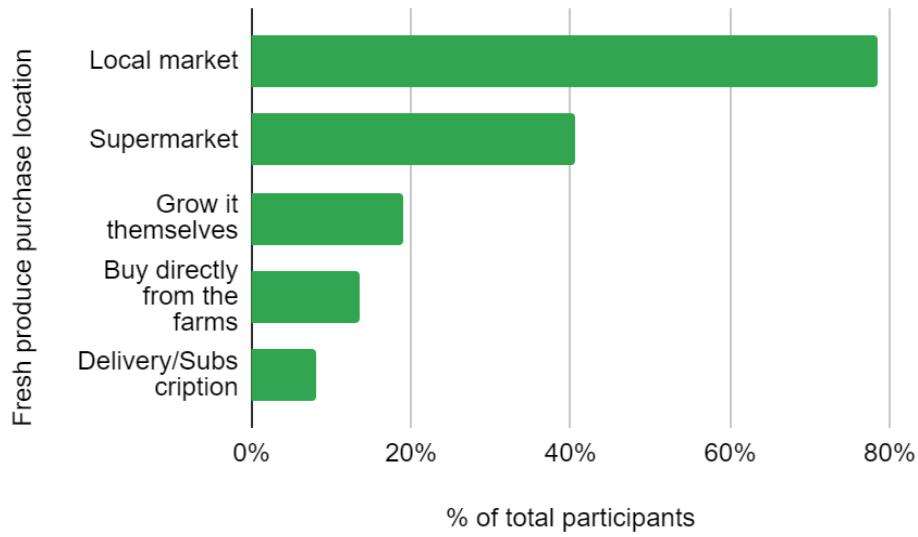


Fig.2. Fresh produce purchase location.

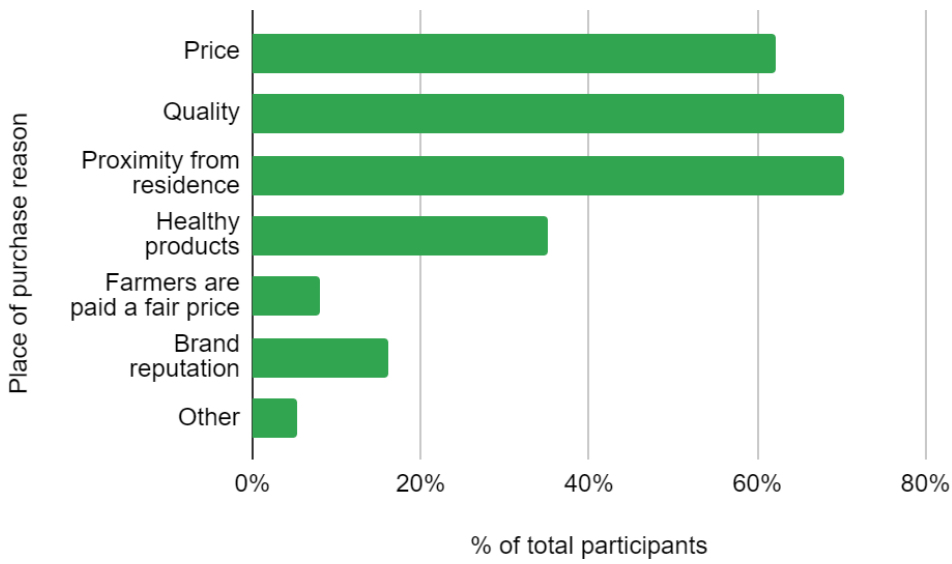


Fig.3. Reason for the choice of purchase place.

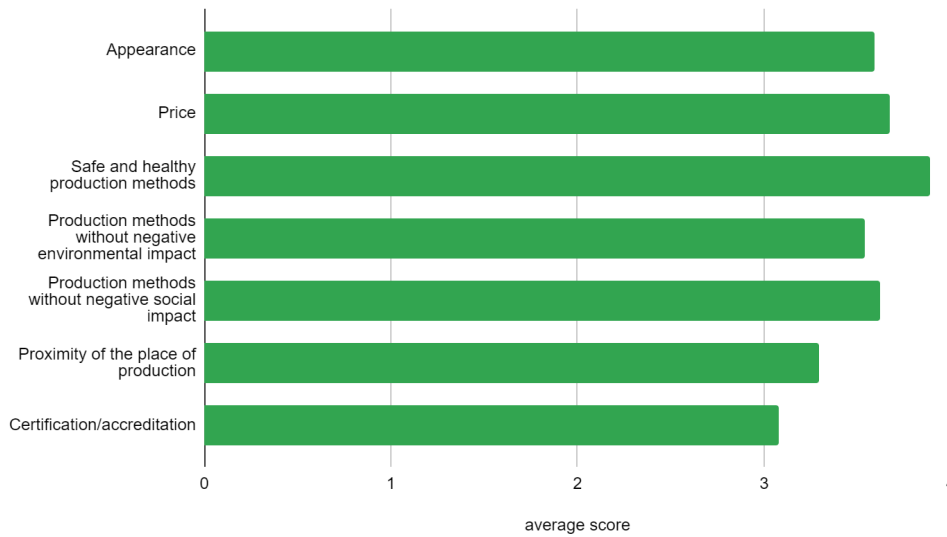
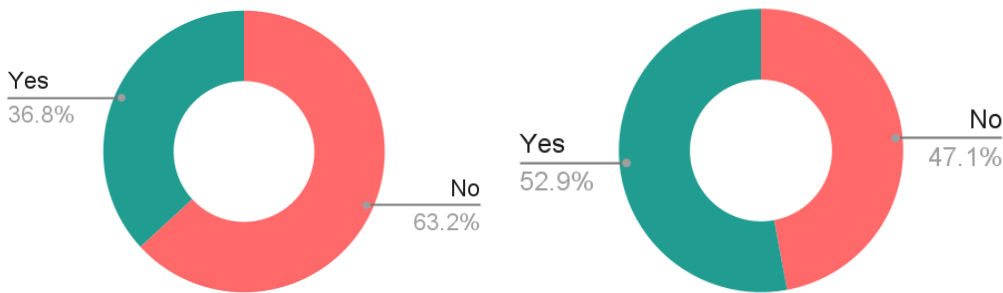


Fig.4. Average importance score per criteria explaining the choice of fresh produce purchase (Not important = 1 to Very important = 5).

It's interesting to see a correlation between education level and familiarity with GAP certification (Fig.5). Those with higher education degrees seemed more aware of GAP and felt confident in the certification information provided on their fresh produce. When we look at where people prefer to buy their produce (Fig.6), there's a clear distinction based on income level. Participants with low and middle incomes tend to favor local markets, while those with higher incomes primarily purchase their fresh produce from supermarkets.



Bachelor's degree

Master's/PhD degree

Fig.5. Percentage of participants familiar with the GAP standard, depending on the education level.

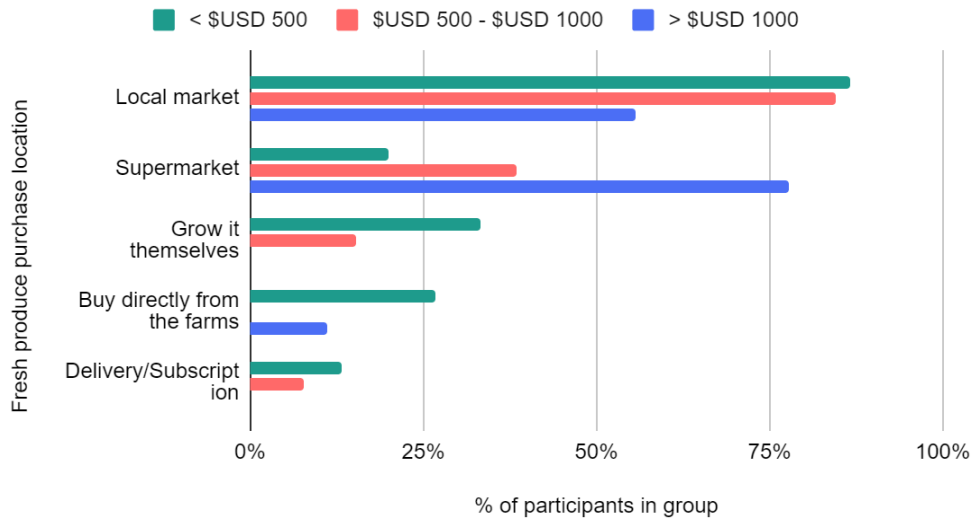


Fig.6. Purchase location of fresh produce for different income levels.

In addition to surveying consumers online, Fairagora Asia facilitated focus group discussions. These discussions provided valuable insights into the awareness and perception of sustainable agriculture practices.

Challenges Facing Farmers and the Need for Change

Participants highlighted the struggles farmers face due to climate change, emphasizing the degradation of fruit quality and increasing production challenges. They pointed out that the rising costs of fertilizers, coupled with inconsistent harvests, put immense pressure on farmers. The role of middlemen was also scrutinized, with concerns raised about unfair pricing practices that exploit farmers. Participants expressed a strong sentiment that current agricultural practices prioritize profit and quantity at the expense of the environment, soil health, and consumer well-being. The impact of climate change resonated deeply, with participants expressing concern for farmers grappling with extreme weather events affecting yields and product quality. A lack of awareness about the GAP standard was also identified as a significant barrier, with word-of-mouth being the primary source of information for many farmers.

Perceived Benefits of the GAP Standard

Participants familiar with the GAP standard learned about it through friends and family, as well as product labeling. They highlighted that GAP certification fosters consumer trust and confidence, increasing the likelihood of purchasing certified products.

They recognized the standard's role in improving the overall quality of agricultural products. Importantly, the health benefits associated with GAP certification resonated strongly, with participants emphasizing the desire for safer and healthier food choices. The environmental

benefits, particularly the reduction of chemical use and environmental damage, were also seen as significant advantages. While recognizing these benefits, respondents also noted the higher prices of GAP-certified products, indicating a potential barrier that requires further communication efforts to justify the costs through the associated quality and safety benefits.

Challenges Specific to Myanmar

The discussions revealed unique challenges within Myanmar. The affordability of GAP-certified products emerged as a major concern, limiting access for a significant portion of the population, especially those outside major cities. Finding reliable information about GAP certification was also identified as a challenge. While the Department of Agriculture is the designated focal point, its low public reputation hinders its effectiveness in promoting and disseminating information. Interestingly, there seems to be a preference for certifications from foreign bodies, such as USDA Organic, over the Myanmar GAP certification. This highlights the need to strengthen the credibility and trust in the local certification process. Participants suggested that government subsidies for GAP-certified products could be a viable solution to bridge the affordability gap and encourage wider adoption.

Recommendations

To increase GAP awareness, respondents suggested a mix of modern and traditional approaches. Utilizing social media and collaborating with supermarkets were highlighted as effective strategies for reaching a broad audience and sharing information about GAP. Educating consumers on the benefits of transitioning to GAP-certified products can aid in making informed choices. Public service advertisements were also recommended as a traditional yet effective method to reach a wide audience, including those not active on social media. Additionally, organizing events in collaboration with local farmers, setting up booths in various markets, and working with SMEs involved in fresh food were suggested to provide direct consumer engagement and support for local agriculture. Implementing these combined strategies could significantly enhance consumer awareness and understanding of GAP, promoting better agricultural practices and safer, higher-quality products.

4.2. Promotion Status of ASEAN GAP by Country

4.2.1. Thailand

In Thailand, ASEAN GAP has not been disseminated to the public but only discussed between Department of Agriculture (DOA) and National Bureau of Agricultural Commodity and Food Standards (ACFS) who are responsible for the establishment of Quality and Good Agricultural Practices (Q GAP) standard. Hence, awareness of ASEAN GAP and its objectives were limited among regional and municipal agricultural officers. This was demonstrated through an interview with Alongkot Uthaitanakit, Director of Technology Transfer from the Office of

Agriculture and Research Development Region 6, who showed limited knowledge about the stages of ASEAN GAP implementation in Thailand. Local agricultural extensionists only knew ThaiGAP certification by its name.

The ACFS actively conducts consumer awareness campaigns and maintains strong relationships with local Thai retailers. Major players in the retail sector, such as Big C, Tops Market, and Lotus's, feature dedicated QGAP shop corners within their stores. Annually, the Thai government allocates a budget specifically for consumer awareness initiatives related to sustainable agriculture. This funding supports various programs, including the promotion of QGAP-certified restaurants. Furthermore, collaborations with universities are fostered to conduct research and promote sustainable agricultural practices.

Farmers' awareness of Q GAP depends on their commodity(s) and their farm location. Farmers whose commodities are cash crops are more likely to register for agricultural certification as a requirement from the destination market. According to Alongkot, out of 600,000 Rai⁹ of durian plantation in Region 6, 300,000 Rai are GAP-certified since primary durian buyers are in China. This is due to the Memorandum of Understanding (MoU) between Thailand and China, an exclusive agreement that focuses on the trade of 22 different commodities; this includes durians, bananas, and mangos. Under this MoU, all products sent to China must be certified under Q GAP standard - this qualification was proposed by the Thai government as a method of assurance on the safety of crops produced in Thailand. Upon on-site separate interviews with Noi, Jeab, and Janpen, banana farmers from Pong Nam Ron district in Chanthaburi province, they mentioned it as a necessity.

Similar governmental-initiatives such as the "control measure" program, mentioned during an interview with Khanabhot Ghosinvigrome, Agricultural Research Officer (Professional Level) from DOA, have pushed banana farmers in the program to apply for Q GAP certification in order to export bananas to Japan successfully. Local farmers' engagements facilitated by responsible agricultural extensionists also increased farmers' awareness about Q GAP standards, especially on their understanding of the standard's objectives and regardless of market reasons. Mango farmers such as Bu-nga, Nikorn, and Sao from Samet Ngam district, although found farm-activity recording (Q GAP requirement) challenging, found being certified rewarding since it has helped reassure their regular domestic customers about the safety of their mangos are safe to consume.

Private sector initiatives to establish GAP requirements for retailing, although few, have also enroll farmers who sell domestically to employ the principles. Kan, banana farmer from Baan Pai district in Chachoengsao province, stated during an interview that she currently distributes GAP-certified bananas to 8 Big C branches through the contract she previously established with the second-largest hypermarket operator in Thailand.

For less popular commodities such as cabbage, which receives less demand from foreign markets and rely more on domestic sales, farmers showed little to no interest on Q GAP

⁹ 1 Rai = 0.16 Hectare

certification. According to Samorn, large-size cabbage farm owner and a former retailer from Hod district, Chiang Mai province, the price difference between GAP-certified cabbage and non-GAP certified is “close to non-existent.” Instead, she emphasized that farmers have already become burdened with their investment and effort to battle pests, “to reduce usage of pesticides, it is not possible for me financially.” Inkum, another cabbage farmer who has GAP certification also mentioned that limiting pesticides has given him a “difficult time to take care of the cabbage.” He also highlighted that selling GAP-certified cabbages to the Royal Project Foundation has been less profitable in terms of price and production cost than selling to municipal fresh markets, which do not require GAP certification. In addition, a number of cabbage farms are near designated “environmental conservation zones.” This has made farmers ineligible to apply for GAP certification due to risks of land-use violations. According to an extension officer in Khao Kho district, Petchabun province, DoAE officers have successfully convinced cabbage farmers follow GAP guidelines but could not register for the certification due to their farm locations.

In summary, farmers who are aware of the vast financial opportunities they could gain if GAP-certified, especially from abroad, are more likely to apply for the certification by themselves without initiation from local engagement officers from the Department of Extension Agriculture (DoAE). Their opinions towards completing the 8 GAP principles were also optimistic. Banana farmers both in districts Pong Nam Ron and Baan Pai viewed Q GAP’s 8 principles as “not complicated.” Foreign trade contracts conducted by the Thai government have played a powerful role in enabling the acceleration of Q GAP implementation.

In contrast, the presence of ThaiGAP certification, which has relied solely on establishing retailing contracts with private food retailers in Thailand has drastically been diminished due to unfavorable trading opportunities. During an interview, Weerawat Jeerawong was asked to compare his experiences attempting both Q GAP and ThaiGAP standards. From the farmer’s point of view, he noted that there is not a big difference between them, yet it was a lot more expensive to obtain ThaiGAP certification. Weerawat briefly estimated that the cost of obtaining ThaiGAP certification was “almost 100,000 THB, yet with not any financial support from the scheme owners.” Given the consequence of high production costs, ThaiGAP products’ selling price becomes more expensive than Q GAP products. This has opted buyers for Q GAP produces that cost less yet follow the food safety regulations. In addition to certification cost and as a non-governmental certification standard, ThaiGAP certification does not consist of a farmers’ engagement system, nor any formed partnerships with public agricultural offices - none of provincial and district agricultural extensionists knew about the certification process of ThaiGAP nor its objectives.

4.2.2. Malaysia

Currently, an estimated 6,000 farms hold GAP certification in Malaysia. However, the average farm size is less than one hectare. While farmers are often receptive to obtaining GAP certification initially, they are less inclined to renew it independently. This is particularly true for those operating in local markets with no export opportunities, where motivating farmers to

engage with GAP proves most challenging. A lack of public awareness and marketing around the certification has resulted in insufficient demand for GAP-certified products. Consequently, farmers have minimal incentive to obtain certification, as they do not receive direct benefits, such as price premiums, unlike organic producers.

In recent years, the Secretary General has initiated dialogues with supermarket chains to explore the feasibility of making GAP certification mandatory for produce sold in hypermarkets. While some retailers support this initiative, others have expressed concerns about potential price increases and consumer affordability. There is also a general lack of awareness about GAP among some retailers. However, some countries, such as China and Korea, mandate GAP certification for imports, which could incentivize export-oriented farmers.

Currently, regulations in the country do not adequately prioritize GAP certification. It is not a requirement at this time, and supermarkets do not offer price premiums for GAP-certified products. The Malaysian government is actively developing a comprehensive food safety system, particularly for processed foods. Discussions are ongoing regarding regulations and jurisdiction over food safety matters. The government recognizes the negative health impacts of pesticide residues, but consumer understanding of the benefits of pesticide-free produce remains limited. A recent consumer survey revealed that only 35% of respondents were familiar with the GAP logo, indicating a significant need for increased awareness campaigns. The Ministry of Agriculture implemented a five-year strategic plan last year to enhance the marketing and promotion of GAP.

The government's role involves training extension officers and auditors. Subsequently, these extension officers are tasked with farmer training. Certified farmers are required to maintain detailed farm records, which are thoroughly reviewed during the certification audit process. New applicants must present at least six months of records prior to their application. Government monitoring activities involve on-site inspections and sample analysis from certified farms. The focus is primarily on ensuring compliance with pesticide residue limits in produce. While not mandatory, soil analysis may be conducted if an auditor identifies a risk.

There is reluctance among farmers to utilize private laboratories for pesticide residue analysis due to the cost. Instead, they opt for government facilities. Unfortunately, government labs face funding constraints and struggle to manage the workload. Record-keeping presents difficulties, particularly with an aging farming population and labor shortages. Malaysia's reliance on migrant workers further complicates the situation.

A recent study focusing on farmers in the Kuala Terengganu district aimed to assess their understanding and adherence to MyGAP. Findings reveal that over 80% of farmers possess satisfactory knowledge of MyGAP and can implement its principles effectively.

However, the study also identified areas requiring improvement. It was observed that the actual practices surrounding fertilizer storage require attention. Data indicates that 83% of participants store fertilizers alongside fresh produce, and 80% store them with pesticides. This is likely due to financial constraints and limited land availability preventing the construction of dedicated storage facilities.

Regarding farm record-keeping, while respondents demonstrated a 97% average knowledge level, only 77% correctly updated their farm records. This discrepancy might be

attributed to the complexity of documenting every transaction and activity, particularly for the majority of farmers who are over 50 years of age. This finding aligns with a previous study that identified a lack of understanding regarding proper pesticide disposal as a reason for incorrect practices, with farmers primarily aiming to meet inspection requirements during one-time visits. This can lead to a reversion to conventional disposal methods once the inspection concludes.

These findings underscore the need for more frequent and accessible training sessions for all Malaysian farmers, especially in rural areas. Increased awareness will allow farmers to fully realize the positive impact of MyGAP on the quality and safety of their produce. Additionally, a collaborative effort between authorities and farmers to develop user-friendly, digital record-keeping systems could significantly improve timely data entry and ensure compliance with MyGAP requirements¹⁰.

4.2.3. Vietnam

Small-scale farmers in Vietnam, who mainly participate in agricultural production, lack vision, confidence, capital, technology, and markets, leading to their reluctance to voluntarily and actively apply VietGAP. The guidance of VietGAP focuses on producer training but lacks synchronization with HACCP, resulting in uncertain food safety for final products. VietGAP certification is unfeasible for small-scale farmers due to high certification costs, and there is a lack of risk assessment and cooperation with food safety experts, technology, and epidemiology. The force of specialized staff in quality management is thin, and training and retraining of professional skills on food safety are not methodical and focused. Investments in communication, raising social awareness, and publicity and transparency of food safety information are lacking, and the traceability method for small farmers has not been implemented, limiting the effectiveness of the food safety monitoring system. Communication on food safety management approaches and monitoring systems has not been implemented, thus limiting the ability to participate in monitoring through bad information transparency of social actors¹¹.

In Vietnam, the awareness of GAP among consumers is growing, particularly in urban areas. Health-conscious consumers are increasingly looking for safe and high-quality food products, and GAP certification provides a level of assurance. However, in rural areas, the awareness and demand for GAP-certified products remain relatively low.

A significant number of farmers in Vietnam are becoming GAP certified, driven by the government's efforts and the increasing demand from export markets. However, the percentage of GAP-certified farmers is still not overwhelming compared to the total number of farmers. The

¹⁰ Iffah Hazirah Mohd Nawi and others, 'Knowledge and Implementation of Good Agricultural Practices among Farmers in Kuala Terengganu, Malaysia', *Universal Journal of Agricultural Research*, 11.4 (2023), pp. 731–37, doi:10.13189/ujar.2023.110407.

¹¹ Dao The Anh, Hoang Xuan Truong, and Pham Cong Nghiep, 'Policies on Promoting Good Agricultural Practices (GAP) in Order to Increase Quality and Food Safety in Vietnam', *FFTC Agricultural Policy Platform (FFTC-AP)*, 2019 <<https://ap.ffc.org.tw/article/1420>> [accessed 18 June 2024].

certification process can be complex and costly, deterring small-scale farmers. For those who achieve GAP certification, the benefits include access to premium markets, higher prices for their products, and improved agricultural practices. However, the initial investment and ongoing compliance costs can be a burden.

Retailers, particularly large supermarkets and export companies, recognize the benefits of GAP certification. They use it as a marketing tool to attract health-conscious consumers and meet international market standards.

The Vietnamese government actively promotes GAP through training programs, subsidies, and policy support. Initiatives by the Ministry of Agriculture and Rural Development (MARD) and other agencies play a crucial role in disseminating GAP.

4.2.4. Philippines

Consumer awareness of GAP in the Philippines is still nascent. Urban consumers are beginning to grasp the importance of GAP in relation to food safety and quality. However, a significant portion of rural consumers remains unfamiliar with the standard. The number of GAP-certified farmers in the Philippines remains limited. The certification process is often perceived as burdensome and expensive, deterring many farmers from pursuing it. Farmers who successfully obtain GAP certification benefit from enhanced farming practices, improved market access, and the potential for increased income. However, the initial costs and the adjustments required in farming practices can present significant obstacles.

Major retailers and exporters recognize the value of GAP certification. They frequently prioritize GAP-certified products to ensure compliance with international standards and meet discerning consumer demands. While the Philippine government has implemented initiatives to encourage GAP adoption, these efforts require strengthening and broader implementation. Training programs and subsidies are available, but more consistent and comprehensive support is crucial. Initiatives to increase visibility include displaying the GAP logo on supermarket products and airing seven episodes on the PhilGAP Program as part of a television segment.

Lack of domestic requirements for products to obtain GAP certification and the high costs of adopting PhilGAP principles have resulted in limited adoption of GAP among individual certification holders. On the other hand, PhilGAP adoption is higher among group certification holders due to the predominance of corporate farms and exporters who have better access to foreign agricultural markets and the financial resources to support such adoption. Although PhilGAP application and processing are free of charge, governmental support on adoption infrastructures and financial back-up is insufficient. Non-government associations, banks and friends have become main financial providers as shown in a study on PhilGAP adoption among cabbage growers. Results demonstrated that among 145 cabbage-farmer respondents, 72.62% of GAP-trained farmers relied on their finances and resources to conduct their plantation. Among the same pool of respondents, results highlighted that none of the farmers who

practiced conventional agriculture (Non-GAP farmers) received technical training and assistance by the Department of Agriculture while only 16.66% of GAP-farmers received the training and technical supervision and compliance monitoring from government agencies. Profitability was measured using gross margin analysis per hectare and results showed that GAP trained farmers are more profitable (PHP 52,107.09 or USD 999.56 per hectare) than the non-GAP trained (PHP 23,684.02 or USD 455.11 per hectare) during dry season¹².

An interesting PhilGAP training initiative was coordinated by Dr. Zenaida Gonzaga at Visayas State University and supported by the Australian Centre for International Agricultural Research (ACIAR). The program focuses on helping vegetable growers achieve full certification by providing hands-on training encompassing food safety, environmental sustainability, high-quality produce cultivation, and worker health and safety. Despite financial challenges faced by smallholders, 19 individuals have obtained full certification since the program's inception in 2019, with an expected additional 30 or more participants to be fully certified by June 2024. Research efforts under Dr. Gonzaga address critical issues such as *Escherichia coli* contamination, pesticide residues on vegetables, and the implementation of interventions to improve crop safety¹³.

4.2.5. Indonesia

Farmers' acknowledgment of IndoGAP has been low despite continuous standard introduction by the Indonesian government. There are several reasons for limited GAP adoption. First, the domestic crop market does not require products to obtain IndoGAP certification. Second, adoption of practices according to IndoGAP qualifications requires cost. However, GAP certified agricultural products do not get price premiums or any rewards. Third, there are fees to undergo the certification process and obtain the standard. Additionally, IndoGAP guideline specifications and safety standards do not apply to micro-to-small food processors, which comprise two-thirds of the total food-processing population in Indonesia.

Indonesian farmers have been aware of the basic safety principles and equipment handling in agricultural practices despite the limited adoption of GAP practices among farms. A study on testing farmers' knowledge of PPE and pesticide usage in 5 provinces in Indonesia observed that high level of knowledge among farmers does not mean that they intend to apply this knowledge in practice. Cases of pesticide exposure, leading to health issues like dizziness, nausea, and vomiting, clearly demonstrate that Good Agricultural Practices (GAP) for pesticide use are not being consistently implemented by some farmers. To address this, it is

¹² Edmond V. Limbaga and others, 'PROFITABILITY ASSESSMENT ON THE ADOPTION OF GOOD AGRICULTURAL PRACTICES (GAP) AMONG CABBAGE FARMERS IN DALAGUETE, CEBU', *Review of Socio-Economic Research and Development Studies*, 6.3 (2022), pp. 84–103.

¹³ ACIAR, 'PhilGAP Training Gives Vegetable Growers in the Philippines a Market Edge', *Australian Government*, 2023
<<https://www.aciar.gov.au/media-search/blogs/philgap-training-gives-vegetable-growers-philippines-a-market-edge>> [accessed 21 June 2024].

recommended that farmer knowledge be strengthened through a series of technical training programs. These programs should utilize participatory approaches to effectively build knowledge and motivate farmers to adopt GAP for safe pesticide application¹⁴.

Interviews with farmers revealed a lack of support in connecting with retailers. A recurring theme was the desire to secure buyers before committing to the full GAP certification process, citing difficulties in market penetration. Several farmers indicated insufficient support in accessing knowledge about GAP, forcing them to rely on personal research. The increase in production costs associated with certification was also a concern. Streamlined access to agricultural business credit facilities was identified as a need by some farmers.

4.2.6. Cambodia

While GAP adoption among Cambodian farmers remained limited in 2019, with a mere 51 farms achieving certification, the landscape has shifted dramatically. By 2024, this figure surged to 946 certified farms, illustrating the effectiveness of government promotional campaigns and the positive impact of initiatives implemented by international organizations.

From June to July 2022, GIZ conducted a series of outreach campaigns at local markets to raise public awareness about food safety. Through various promotional materials, consumers were informed about the “farm to fork” process, relevant laws, as well as the two food safety technical standards GAP and Cambodian Organic Agriculture (CAM ORGANIC). They also received practical tips on food roots and were able to participate in interactive activities, such as the “Wheel of Food Safety Game” and a cooking demonstration.

The campaigns were supported by the ASEAN-German cooperation projects “Consumer Protection in ASEAN” (PROTECT) and “Promotion of Sustainable Agricultural Value Chains in ASEAN” (ASEAN-AgriTrade), in cooperation with the Consumer Protection, Competition and Fraud Repression Directorate-General (CCF), Ministry of Commerce, and the General Directorate of Agriculture (GDA), Ministry of Agriculture, Forestry and Fisheries.

The remaining challenges for wider adoption of CamGAP are mainly the limited capacity of testing laboratories, including a shortage of qualified staff and funds. The lack of financial rewards and in-depth knowledge has also negatively impacted CamGAP diffusion and adoption. Farmers face difficulties in obtaining higher prices for GAP-certified produce, as not all adopters can establish business connections with GAP vegetable collectors. Additionally, the need to adopt advanced cultivation techniques, such as drip irrigation and net houses, to meet CamGAP requirements presents financial challenges for farmers. These technologies, while beneficial for compliance and cost-saving, require initial investments that some farmers find prohibitive.

¹⁴ Istriningsih and others, ‘Farmers’ Knowledge and Practice Regarding Good Agricultural Practices (GAP) on Safe Pesticide Usage in Indonesia’, *Heliyon*, 8.1 (2022), doi:10.1016/j.heliyon.2021.e08708.

Consumer awareness on GAP is limited in Cambodia. The concept of GAP is not widely understood, resulting in minimal demand for GAP-certified products. Retailers and exporters are beginning to recognize the value of GAP certification, but this recognition has not yet translated into a significant price premium for GAP-certified products in the local market.

In Cambodia, farmers are particularly receptive to the health benefits of CamGAP, not just for consumers, but for themselves and their families. There have been instances of farmers and their families experiencing health issues due to pesticide misuse. Extension officers leveraged these cases to promote CamGAP as a solution for improving farmer health and well-being.

A sense of self-esteem was observed in several CamGAP adopters. Their decision to adopt CamGAP set them apart from other producers, and they gained recognition through television and social media appearances. Some were invited to share their experiences with fellow farmers across the country, while others were interviewed and featured in media segments broadcast on platforms like TV and YouTube.

They expressed pride in being recognized as CamGAP adopters, and their produce was readily accepted as safe by shops and markets. They took pride in being pioneers in the country, producing and supplying safe vegetables ahead of thousands of others¹⁵.

4.2.7. Lao PDR

The government and the development partners have made sustainable efforts to match the standards. Starting in 2014, the District Agriculture and Forestry Office (DAFO), a local government body responsible for agricultural and forestry management at the district level introduced GAP practices as a pilot project to 28 farmers in 2014 through farmer trainings in the Nasala village located near the country's capital city, Vientiane. The results were very encouraging as the farmers could produce higher quality output and bargain for higher prices. Fund providers such as GIZ also worked to promote the upgrading of production.

The GAP standard is serving as a foundational standard for promoting environmentally sustainable and socially responsible agricultural practices under Lao PDR more recent Green and Sustainable Agriculture framework from 2021. This strategy focuses on promoting environmentally sustainable and socially responsible agricultural practices in the country.

However, barriers remain. Xiong et al. (2020)¹⁶ highlighted the lack of comprehensive government policies and programs specifically supporting GAP implementation. Stronger policy incentives and institutional backing were needed to truly motivate farmers. The certification process was still deemed complex, and the compliance cost is high given the predominantly smallholder-based agriculture sector of the country.

¹⁵ Soveasna OI, 'The Adoption of Good Agricultural Practices by Cambodian Vegetable Growers' (Lincoln University, 2021).

¹⁶ Maiyer Xiong, Gomathy Palaniappan, and Laurie Bonney, 'Do GAP Practices Improve Market Access for Vegetable Farmers? A Case Study from Vientiane Capital, Laos', *Proceedings*, 36 (2020), p. 78, doi:10.3390/proceedings2019036078.

The Lao PDR GAP faces several limitations and challenges that affect its effective implementation and adoption. One significant challenge is the limited understanding and awareness among senior officials regarding the importance and intricacies of GAP standards. This lack of comprehensive knowledge can hinder the development of robust policies and enforcement mechanisms necessary for promoting safe and quality agricultural production in Lao PDR. Additionally, there is a notable lack of competency in human resource capacity building, which poses obstacles to effectively training and building the necessary skills among farmers and agricultural stakeholders to adhere to GAP standards. For instance, many farmers do not understand the importance of farm recording.

Moreover, the large number of subsistence and small-holding farmers in Lao PDR, coupled with their limited resources, presents a significant challenge in implementing and complying with GAP standards. These farmers may face financial constraints and limited access to resources, making it difficult for them to meet the requirements set by the GAP system.

In addition, some local Governments have implemented specific, but very limited, actions such as the ban on the sale, distribution and use of any pesticides in Thathom District, Xaisomboun Province, or the Conservation Agriculture Development Fund set in 2009 in Sayaboury Province. Policies have had some successes such as the creation of agroecological farmers' markets that have spread to several other provinces. Nevertheless, the agroecological transition is progressing slowly. The majority of results have been achieved through development projects. The Implementation of the main policy orientation slacks concrete instruments such as policy push and market pull incentives, to encourage agro ecological transition. Consumer awareness of agroecology is still limited. Therefore, results obtained to date in terms of organic and GAP certification are far from reaching the objectives set by the Lao Government.

4.2.8. Myanmar

GAP dissemination in Myanmar faces significant disparities linked to factors like crop type, location, and access to agricultural support. Educated farmers, often newcomers to agriculture with a business-oriented approach, demonstrate successful GAP adoption, leading to high dissemination rates within this group.

Conversely, farmers with limited education and resources, usually from multi-generational farming families, face barriers to GAP adoption. This is largely due to a lack of awareness and understanding of the standard, resulting in minimal dissemination among these communities.

Domestic demand for GAP crops is low with an unpredictable price environment, while export markets don't always require certification, leaving farmers with little incentive to implement changes. Extension services are limited to resource constraints, leaving farmers with inadequate GAP knowledge. The costs of soil testing and perceived compliance expenses deter some, adding financial uncertainty without proof of rewards. Record-keeping and documentation present difficulties, especially for less educated groups, and fully following methods can be hard

without experience. This skepticism is compounded by a view of standards as extra work rather than benefits¹⁷.

Crop selection also plays a role. Exportable crops, such as mangoes, see relatively high GAP dissemination rates. However, vegetables and other perishable goods intended for local markets lag behind, with significantly lower adoption. The lack of a stable and reliable market for GAP-certified produce poses a significant challenge. Merchants and intermediaries often do not offer price premiums for certified products.

Consumers generally source their food from local markets, regardless of purchasing frequency. These markets, unlike supermarkets, typically don't offer certified products. While consumer awareness of GAP exists, and factors like food safety and proximity remain priorities during shopping, certification itself is a low priority.

Despite valuing food safety, consumer confidence in the GAP certification scheme is low. This stems from concerns regarding the reputation of stakeholders involved in the certification process, most notably the Department of Agriculture (DOA). Consumers who have the financial capacity to purchase certified products often place greater trust in external certification schemes, such as USDA Organic or HACCP, over local certifications.

Currently, 4,337 farmers in Myanmar are GAP certified, representing less than 1% of the total farmer population. To truly realize the advantages of GAP, the existing supply chain requires significant improvement. Ideally, the supply chain should ensure that freshly harvested fruits and vegetables reach potential markets within a 24-hour timeframe. This would allow consumers to enjoy the full benefits of these high-quality products. However, without an efficient logistics system in place, product quality inevitably deteriorates. Consequently, consumers end up paying a premium price for subpar products, a situation that benefits no one. Retailers are also negatively impacted as they have little flexibility to effectively balance the needs of both producers and consumers, ultimately limiting their profit margins.

The Department of Agriculture (DOA) plays a crucial role in promoting the widespread adoption of GAP among stakeholders. To make certification more accessible, Myanmar offers two GAP certification schemes: individual and group certification. Group certification allows farmers to share the costs and benefits, making it a more viable option for those who cannot afford individual certification. Extension services are provided to farmers, including assistance with soil sampling, sample delivery to laboratories, and overall coordination.

However, the DOA's effectiveness is hampered by its conflicting roles as the GAP standard-setting organization, inspection service, and certification body. This overlap undermines its credibility among stakeholders. The DOA also faces resource constraints, with limited human resources and infrastructure relative to the large number of producers it needs to reach. This limits its capacity to effectively disseminate GAP principles and ensure compliance. Additionally, assessing the real impact of GAP implementation is hindered by the lack of a comprehensive database and the challenge of accessing existing information. The DOA is

¹⁷ DaNa Facility and UKaid, *Implementing Good Agricultural Practices in Myanmar* (June 2019), p. 10 <https://asperconsulting.com/wp-content/uploads/2021/11/FINAL-GAP-case-study_compressed.pdf>.

currently undertaking research to assess the awareness levels of cabbage farmers regarding GAP. This research initiative is ongoing.

To support the adoption of GAP practices across various regions of Myanmar, several initiatives and projects have been implemented. For example, the 'Pulses, People, Planet and Profit' (P4) initiative was funded by the UK Department for International Development (DFID) and carried out by the Interchurch Organization for Development Cooperation (ICCO), the DaNa facility, East West Seed, and Network Activities Group. The project was focusing on increasing the incomes of 10,000 smallholder mung bean farmers, including 20% female farm laborers, by enhancing market access, applying GAP, and Climate Smart Agriculture (CSA). The project also aimed to suggest policy and regulatory reforms to improve the mung bean value chain, and to support farmers to learn and apply GAP practices.

In line with the national GAP protocol, the Department of Agriculture (DOA) – in cooperation with the Department of Consumer Affairs (DCA) and the Livestock Breeding Veterinary Department (LBVD) – conducted awareness raising sessions on food safety and farmer safety. During the sessions, the concept of GAP was introduced and application forms were provided to farmers who were interested in participating in the GAP training programme.

The project also conducted surveys and assessments in Myanmar, particularly in Yangon and Magway Regions to understand cropping systems, production challenges, and farmers' needs for disaster risk reduction, environmental protection, and CSA practices. Major constraints were identified, such as biotic stresses (including pests and diseases), limited access to quality seeds, and high input costs, particularly affecting farmers' productivity. It was also found that farmers frequently face yield reductions due to weather conditions, such as late monsoon departures affecting sowing times and irregular rains impacting yield during flowering and harvesting periods. These findings are shaping strategies to improve farming practices and policies for better mung bean production and farmer livelihoods¹⁸.

A case study exploring GAP implementation among muskmelon farmers in Myanmar found that farmer willingness to adopt GAP practices hinged on buyer demand for certification. While the Department of Agriculture conducted training on GAP principles, the recommended transition methods were often ill-suited to the farmers' socioeconomic realities. Factors found to positively influence the adoption of GAP guidelines in muskmelon production included the respondents' education level, farm size, market conditions, and access to GAP extension services. However, the complexity of some GAP guidelines and the lack of market incentives for GAP-compliant products negatively impacted farmers' perceptions and understanding of GAP adoption. Significantly, the study revealed a correlation between the level of GAP adoption and farm income. Farmers who adopted GAP practices more extensively, categorized as highly adopting and moderately adopting groups, received higher prices for their produce compared to those with minimal adoption¹⁹.

¹⁸ Khin Lay Swe, *The 'Pulses, People, Planet and Profit' (P4) Project. Report: Assessment on DRR/Environment (Protection)/CSA of Mung Bean Production in Myanmar*, 2020, p. 42.

¹⁹ Theingi Maw, Jin Leshan, and Han Phyo Aung, 'Assessing the Adoption of Good Agricultural Practices in Muskmelon Production in Chaung Oo Township, Myanmar', *Asian Journal of Agricultural Extension, Economics & Sociology*, 41.3 (2023), pp. 124–33, doi:10.9734/ajaees/2023/v41i31867.

The DOA has confirmed their commitment to GAP implementation: "To implement GAP, we provide training to farmers. While direct cash incentives are not provided, we offered free laboratory services from 2016 to 2019. These services include testing water samples, analyzing soil samples for heavy metal concentration, and detecting crop residues in produce, specifically for GAP farmers." The DOA also has inspection teams that visit applicant farms to assess and validate their compliance with GAP standards. In the 2023-2024 fiscal year (running from April 1st to March 31st), 692 individuals, including farmers, producers, and private business personnel, received training. Currently, there are 24,150 applicants seeking GAP certification. This includes 2,144 individual applicants and 2,193 collective applicants. Certificates have been issued to 4,337 applicants, covering a total of 75,032 hectares.

Engagement from the private sector is evident, with several organizations supporting the national GAP standard and program. Key players include:

- Myanmar Mango Producer and Exporter Association
- Myanmar Avocado Producer and Exporter Association
- The Union of Myanmar Federation of Chamber of Commerce and Industry, particularly for sesame crops.

An increase in interest for GAP certification has been observed by the government, both domestically and internationally. International buyers are increasingly requiring it, and domestic groups, like producer associations and unions, are seeking certification to meet these new market demands. Since 2016, there's been a steady year-on-year growth in demand for Myanmar GAP-certified produce, reflecting this overall trend.

Table 2. Export countries for GAP certified products from Myanmar, for various crops.

Crop	Country
Sesame	Japan
Mung bean	Europe, China
Mango	China, Thailand, Singapore, Malaysia, Russia, Japan, Korea, Hong Kong, Germany, Ukraine, UAE
Muskmelon	China
Water melon	China
Dragon fruit	China, Singapore
Tomato	China, Thailand, Singapore
Avocado	UK, Europe
Coffee	China, Singapore
Tea	American
Garlic	American

4.2.9. Brunei

Brunei has made strides in adopting ASEAN GAP, primarily focusing on small-scale, high-value agricultural sectors such as vegetables and poultry. The government supports farmers through training programs and incentives to comply with GAP standards, although the adoption rate remains low due to limited agricultural land and resources.

Brunei GAP adoption faces certain challenges. A significant hurdle is the lack of price incentives for certified produce, as farmers see no immediate financial benefit in undergoing certification. Additionally, the government sector faces manpower shortages, hindering the efficient execution of Brunei GAP activities.

To overcome these obstacles, strategic government intervention is crucial. Collaborative efforts involving the Ministry of Health and Ministry of Education can play a pivotal role in raising public awareness about the health and environmental benefits of GAP-certified products. The provision of free training programs for farmers interested in Brunei GAP certification is commendable, and furthermore, the absence of certification fees encourages wider participation.

The government's commitment to conducting annual inspections of certified farms is vital to ensure continued adherence to Brunei GAP standards. While specific figures weren't provided, the training of 4 companies last year signifies positive progress. The current estimate of 8 companies implementing GAP, all of whom are certified, indicates a promising start. However, scaling up these numbers will be key to maximizing the impact of Brunei GAP.

4.2.10. Singapore

In Singapore, the promotion of Good Agricultural Practices (GAP) is overseen by the Singapore Food Agency (SFA), which manages the national GAP certification program and aligns well with ASEAN standards, particularly in food safety measures. Despite the alignment challenges in areas like environmental practices and worker health, efforts are made to draft standards based on ASEAN guidelines. However, the implementation faces hurdles due to the prevalence of small "micro farms" high operational costs, and limited farmer knowledge about GAP requirements. The demand for certification to the national GAP standard/program from buyers, whether domestic or abroad, is not consistently growing. As Singapore imports over 90% of their products, buyers tend to be price-sensitive and opt for competitively priced imported goods. While consumer awareness is increasing, the demand for local products remains steady and is not experiencing significant growth. To enhance GAP adoption, stakeholders should prioritize funding for training and consultancy services, especially to assist with ongoing system maintenance post-certification. These measures can facilitate a more robust promotion of harmonized national and regional GAP standards in Singapore, fostering better agricultural practices within the region.

The program focuses on certifying specific crops, primarily leafy vegetables like spinach, lettuce, and pak choi, to the national GAP standard. Fruit certification is also provided. The program's objectives include setting certification targets. In Singapore, the goal is to have at least 15 certified farms. Currently, 9 to 10 farms hold certification. Specifically for vegetables, including those grown using aquaculture, the target remains at 15 farms.

To achieve certification under the national GAP standard, farms must meet specific criteria, including internal criteria related to the SFA logo. This means the farm must be local, have no violations within the past two years, and demonstrate compliance with all standard requirements. To support farmers throughout the certification process, training is provided through the Republic Polytechnic Institute of Higher Learning. This three-day online program covers the standard requirements and guides farmers through the certification process. There is a fee associated with this training. Since 2021, five GAP training sessions have been conducted, with each session accommodating between 50 and 80 participants.

During inspections, typical non-compliance issues that arise include incomplete farm documentation, such as missing written approvals for government discharge permits and lack of updated management structure documentation. Other issues relate to food safety, such as improper segregation and labeling of chemicals near crops, as well as unlocked and open chemical storage. The biggest challenges observed for farmers in meeting certification requirements of the national GAP standard/program include the high costs associated with maintenance, difficulties in securing sufficient manpower, and a lack of knowledge about the certification process and requirements.

Limited staff and the high costs associated with maintaining the GAP system pose significant obstacles. Government funding is available to partially cover the costs of training and consultancy services that assist farms in aligning with GAP standards. However, a critical issue remains: while funding might be available for initial certification, the ongoing costs of system maintenance are not covered. This presents a significant barrier to long-term GAP implementation.

There are currently three farms implementing Good Agricultural Practice (GAP) standards in Singapore. In addition, there are two farms certified under the Singapore Clean and Green Urban Farms (SG C&G) programme. The GAP certification offers farmers a higher tier of certification that incorporates more comprehensive sustainability practices compared to the SG C&G standard. Farms that hold GAP certification will have already met the criteria for SG C&G certification as well, due to the higher standards required by GAP. The training programs are conducted by Republic Polytechnic. Although the training is based on the requirements of the GAP standard, it is not specifically aligned with any international standards.

The demand from buyers for certification to the national GAP standard or program, both domestically and internationally, is not experiencing consistent growth. As over 90% of agricultural products are imported, buyers tend to prioritize price and often opt for competitively

priced imported goods. Although consumer awareness regarding sustainable agriculture is increasing, the demand for locally produced GAP-certified products remains steady without significant expansion.

5. Barriers and Challenges to the Adoption of GAP

5.1. Economic Factors

The financial implications of adopting GAP standards can either facilitate or hinder the efforts of farmers and agricultural businesses in aligning with these practices. One of the primary economic barriers to GAP adoption is the initial investment required. Transitioning to GAP-compliant methods often necessitates significant capital outlays for new equipment, infrastructure improvements, and inputs such as high-quality seeds and biofertilizers. For many smallholder farmers, who form the majority of agriculture production in much of ASEAN, these costs can be prohibitive. For instance, in Cambodia, farmers often face difficulty accessing capital, and limited financial resources make it challenging to invest in necessary GAP-related infrastructure or technologies. Additionally, limited access to credit and financing options exacerbates this challenge, as farmers may lack the necessary funds to invest in the required changes without external support.

Operational costs associated with maintaining GAP compliance add to the economic burden. Implementing GAP standards involves ongoing expenses such as regular audits, certification fees, and the cost of maintaining detailed records and documentation. In some cases, farmers might need to hire additional labor or consultants to ensure compliance, further increasing their operational costs. In Indonesia, the significant costs associated with the certification process and periodic audits present a considerable hurdle, particularly for small-scale farmers.

Myanmar farmers interviewed during the field trip conducted for the present survey expressed mixed feelings about adopting GAP. While they acknowledge benefits like increased market demand and reputation, particularly for exports, they cite increased production costs (20-25%) due to practices like fruit bagging and certification requirements as major deterrents. Limited access to extension services, lack of consumer awareness, and price volatility further hinder widespread GAP adoption.

Farmers emphasize the need for tangible incentives, such as guaranteed premium prices for certified products and stable market access. They highlight the challenges of individual adoption, fearing pest spillover from neighboring farms and skepticism about profitability without clear market differentiation for GAP produce. The complicated certification

process, perceived bureaucracy, and limited interaction with government agricultural departments also contribute to their reluctance.

Past experiences with GAP certification reveal inconsistencies in market demand and profitability. While some farmers reported initial success with certified products, the benefits were short-lived due to certification expiration, seasonal variations, and the inability to consistently meet quality standards, particularly during pest-prone rainy seasons. Farmers stress the need for accessible and persistent agricultural extension services to educate and encourage GAP adoption, coupled with a reliable market that offers price premiums for certified products to incentivize sustainable farming practices.

Market access and profitability are significant economic factors influencing GAP adoption. While GAP certification can potentially open up new market opportunities and higher prices, the reality is often more complex. Farmers may face difficulties in accessing premium markets or may not receive price premiums that justify the increased costs of compliance. Additionally, the competitive landscape—both domestically and internationally—can pressure farmers to cut costs, making the higher expenses associated with GAP compliance less attractive. In Malaysia, despite achieving MyGAP certification, some farmers report that the price differential for GAP-certified products in local markets is minimal, offering little economic incentive for GAP compliance. The same feedback is given by Thai farmers who mentioned no change of price for GAP certified products. They did however mention that GAP was necessary for export, which was the main incentive for them to achieve the certification.

Economic instability and fluctuations in agricultural commodity prices can impact farmers' willingness and ability to invest in GAP. During periods of low commodity prices or economic downturns, farmers may prioritize short-term survival over long-term investments in sustainability and quality improvements. The inherent risks and uncertainties in the agricultural sector, including those related to climate change, pests, and diseases, further complicate decisions about investing in GAP compliance. For example, in the Philippines, fluctuating market prices for key crops like rice and vegetables often lead farmers to focus on immediate financial returns rather than long-term GAP investments.

Consumers in Myanmar face a difficult choice: prioritize affordability or support sustainable and safer farming practices by purchasing GAP-certified produce. The current economic climate pushes consumers towards cheaper options, making it challenging for shop owners to prioritize GAP certification despite recognizing its value. These owners prioritize size, color, and pest-free appearances in their produce, linking price directly to these visual quality indicators. While they acknowledge the long-term benefits of GAP, sourcing certified produce remains difficult due to the lack of an established market and readily available supply.

Shop owners express a willingness to support farmers transitioning to GAP practices, particularly by highlighting the economic benefits of reducing agrochemical use. They suggest that governments should actively engage with stakeholders at the grassroots level to understand market demands and reflect those needs in their policies. Harmonizing GAP

standards across the ASEAN region is seen as crucial for streamlining sourcing and increasing trade flow. Currently, inconsistent standards pose a potential challenge, though the shop owner primarily sources locally.

To further promote GAP practices, the shop owner recommends creating a dedicated marketplace for certified products. This would not only provide consumers with a designated space to find GAP produce but also raise awareness by clearly distinguishing it from conventional produce. This distinction would also address consumer concerns about the appearance of GAP-certified products, as they would understand that the focus is on sustainable practices and safety rather than solely on visual appeal.

An important challenge mentioned by the government in Myanmar for GAP promotion is the limited visibility of the GAP logo on certified products. This makes it difficult to truly leverage the consumer trust that comes with certification.

5.2. Technical Factors

One important common challenge experienced by farmers from most AMS is the difficulty for smallholder farmers to adopt better practices for farm data record. A second challenge is accessing reliable laboratory analysis for soil, water, and chemical residues remains a challenge due to a shortage of facilities. This is compounded by the limited availability of skilled technicians and experts familiar with the necessary analytical procedures.

In Myanmar, effective communication channels to convey GAP-related information to relevant stakeholders are currently lacking. While the Ministry of Agriculture, specifically the Department of Agriculture, is addressing this issue, it operates without market incentives, and genuine communication among stakeholders remains absent. To improve the situation, the certification process for producers should be made more user-friendly. This can be achieved by providing clear steps, accessible guidelines, a defined timeframe for completion, and convenient customer service to facilitate applications.

Farmers from the different AMS have expressed that adopting GAP practices can be challenging for several reasons. The increased focus on cleanliness, packaging, and other practices often requires additional labor and time. Record keeping, while essential for transparency and certification, presents a hurdle as it is not always a common practice amongst the farmers.

5.3. Institutional and Policy Factors

For many AMS, government oversight is the standard for certification. However, there's often a lack of adequate staffing to effectively manage this responsibility. Disseminating knowledge about Good Agricultural Practices (GAP) and educating stakeholders often falls on the shoulders of government agencies. This, understandably, puts a strain on their resources. Therefore, additional support is crucial to bridge this gap and ensure successful implementation of the GAP standard.

In Myanmar, some of the interviewed farmers mentioned that their aim is to export their products and they believe certifications would strongly support their marketing efforts. However, they are currently facing challenges accessing inspection and certification services due to the unstable security situation. The farmers have been in contact with the Department of Agriculture, but unfortunately, the Department has been unable to conduct the necessary ground visits and field inspections. Furthermore, the volatile market conditions, particularly the intermittent accessibility of the trade route to China, add to the financial difficulties.

Interviews conducted with cabbage farmers in Thailand revealed a concerning barrier for ethnic land tenants seeking GAP certification. According to the farmers, local officers, whose approval is required for these tenants to conduct farming activities on rented land, might refuse to deliver the approval. This effectively prevents ethnic land tenants from pursuing and achieving GAP certification for their cabbage crops.

5.4. Socio-cultural Factors

A correlation between a farmer's education level and their likelihood of obtaining GAP certification has been observed in some of the AMS. It seems that more educated farmers find it easier to navigate the process.

It appears that more educated consumers are more likely to be frequent supermarket shoppers. They also seem more interested in learning about certifications like GAP, particularly for fresh produce, and generally demonstrate a better familiarity with the GAP standard.

Based on interviews with government officials, there seems to be a perception of "farmer's reluctance to transition away from traditional practices". It can be a challenge to convince farmers to transition from conventional farming practices, especially those whose families have been farming for generations. They often have deep-rooted traditions and are reluctant to change their methods.

5.5. Environmental Factors

One primary concern is the region's vulnerability to climate change. Unpredictable rainfall patterns, prolonged droughts, and increased pest and disease outbreaks due to changing climate conditions make it challenging for farmers to consistently meet GAP requirements for water management, crop protection, and soil conservation. Moreover, the increasing frequency of extreme weather events like typhoons and floods can severely disrupt agricultural production, damage infrastructure, and make it difficult for farmers to maintain GAP-compliant practices.

Limited access to resources and technology exacerbates the situation. Water scarcity, a pressing issue in many ASEAN regions, poses a significant obstacle to implementing water-efficient irrigation techniques promoted by GAP. Similarly, widespread land degradation, including soil erosion and nutrient depletion, hinders the adoption of sustainable soil management practices. The limited availability and affordability of high-quality inputs like seeds and fertilizers that meet GAP standards further compound these challenges.

The push for agricultural intensification also raises concerns about biodiversity and ecosystem services. The expansion of agricultural land often comes at the expense of forests, threatening biodiversity and impacting crucial ecosystem services like pollination. Balancing agricultural productivity with environmental conservation is crucial, and GAP implementation needs to explicitly address this delicate balance. Furthermore, the use of non-compliant pesticides can lead to water pollution, impacting aquatic ecosystems and potentially human health, highlighting the need for stricter adherence to GAP's stipulations on pesticide use.

Bridging the knowledge gap is crucial. Many farmers, particularly smallholders, lack awareness and understanding of GAP standards and their environmental benefits. Building capacity through accessible training programs, strengthening agricultural extension services, and raising awareness about the environmental benefits of GAP are essential steps towards wider adoption.

Addressing these interconnected environmental barriers requires a multi-faceted approach that combines climate-smart agriculture, sustainable resource management, and targeted knowledge transfer initiatives. Only by acknowledging and addressing these challenges can ASEAN nations effectively promote the widespread adoption of GAP standards and move towards a more sustainable and resilient agricultural sector.

6. GAP promotion initiatives

6.1. CSmart

6.1.1. Outline of the Initiative

Country: Cambodia

Title: CSmart (Climate Smart Commercial Horticulture Cambodia)

Duration: October 2019-September 2024

Target Area: Northwestern Cambodia, including Siem Reap, Banteay Meanchey, and Odtar Meanchey provinces

Objectives: The CSmart project was designed to enhance agricultural productivity, sustainability, and market access among Cambodian smallholder farmers through the promotion and adoption of GAP.

- Output 1 aims to address climate change vulnerability. The project will enable small-scale producers to adopt climate-resilient, multi-seasonal horticultural technologies and practices. CSmart will introduce, test, validate and disseminate a wide variety of climate-smart horticultural inputs and practices.
- Output 2 aims to address the unsafe use of agrochemicals and aid farmers in pest and disease identification and control. Under this Output, CSmart will promote food safety through holistic “3S” horticulture (Safe for Farmers; Safe for Consumers; Safe for the Environment) including alignment with CamGAP production and post-harvest safety.
- Output 3 aims to address weak farmer and market system organization. Output 3 will strengthen the market system that supports climate-smart technologies and ‘3S’ practices promoted in Outputs 1 and 2.

CSmart is part of a broader program, the Cambodia Agribusiness Development Facility (CADF), being implemented by iDE, which has been running for 17 years and is also funded by New Zealand.

GAP Scheme: The project implemented the CamGAP framework.

Crops: The primary crops targeted by the CSmart project are sweet melons, yellow-flesh watermelons, and vegetables.

Component:

- Farmer training and capacity building on GAP principles and practices.
- Establishment and strengthening of farmer cooperatives to facilitate GAP adoption and market access.
- Development of infrastructure such as proper storage facilities and irrigation systems.
- Certification support to help farmers obtain GAP certification.
- Continuous monitoring and evaluation to ensure compliance and effectiveness.

GAP Intervention:

- Conducting extensive training sessions and workshops on GAP compliance.
- Teaching to farmers proper agrochemical handling techniques alongside implementing significant biological control measures to combat pests and diseases.
- Providing financial incentives and subsidies for infrastructure improvements and certification costs.
- Creating demonstration farms to showcase the benefits and practical applications of GAP.
- Utilizing mobile technology and online platforms to deliver training and advisory services.

Implementing Agency: The project was implemented by iDE and funded by New Zealand Aid Programme.

External Partner: CSmart project had strong support and collaboration with the New Zealand Ministry of Foreign Affairs & Trade (MFAT), the Ministry of Agriculture, Forestry, and Fisheries (MAFF) of Cambodia, and the Banteay Meanchey Provincial Department of Agriculture, Forestry, and Fisheries (PDAFF-BMC).

6.1.2. Promotion Result & Status

The CSmart project supported the increased adoption of GAP standards among Cambodian farmers. GAP-certified produce saw a premium in both local and regional markets, enhancing farmers' income and market competitiveness. 5,569 farmsteads (40% female-led) increased their annual farm profit by an average of \$1,870 (baseline=US\$830)²⁰.

6.1.3. Promoting Factors & Challenges

Promoting Factors:

- The Cambodian government, particularly MAFF, provided strong policy backing for the CSmart project, integrating GAP promotion into broader agricultural development strategies.
- Financial incentives, including subsidies for certification costs and infrastructure investments, were crucial in motivating farmers to adopt GAP.
- The use of farmer field schools, demonstration plots, and peer learning networks proved effective in disseminating GAP knowledge.
- The project employed robust PR campaigns, including radio broadcasts, community meetings, and social media, to raise awareness about the benefits of GAP.
- The project built entrepreneurial mindsets among farmers and market actors, and used a strong evidence-based approach to measure impact.

²⁰ iDE, 'Agricultural Value Chain Bears Fruit', *iDE* (iDE, 2024), <https://www.ideglobal.org/<https://www.ideglobal.org/key-project/agricultural-value-chain-bears-fruit>> [accessed 15 June 2024].

- iDE uses a business-oriented approach. Farmers learn to respond to market demands and establish connections with buyers. This trust-building is crucial as they don't rely on giveaways. Instead, iDE provides technical know-how and market connections. Their farmers are commercial producers, not subsistence farmers, and they benefit from the pilot projects, often achieving significant profits²¹.

Limiting Factors & Challenges:

- Despite the incentives, some smallholder farmers still faced challenges in meeting the financial requirements for initial investments in GAP infrastructure and compliance.
- Farmers often lacked access to reliable market information, affecting their ability to leverage GAP certification for better market prices.
- Inadequate rural infrastructure, such as poor road networks and storage facilities, posed challenges to efficient agricultural production and distribution.
- Ensuring farmers' continuous engagement in training programs required substantial resources and consistent follow-up, which was sometimes difficult to maintain.
- The main challenge for smallholders selling domestically is the cost of certification. Larger producers can afford the fees and annual tests for water and soil quality. However, the government's support and extension services for smallholders are limited. While middle-class consumers might be willing to pay a premium for GAP-certified products, many Cambodians cannot afford the higher prices. There's a need for solutions that make these products more accessible.

6.3. ASEAN AgriTrade

6.3.1. Outline of the Initiative

Country: ASEAN

Title: Promotion of Sustainable Agricultural Value Chains in ASEAN (ASEAN AgriTrade)

Duration: Phase 1: January 2020 to December 2023. Phase 2: 2024 to 2027.

Target Area: ASEAN Member States (AMS), with pilot activities in Cambodia, Lao PDR, Myanmar and Viet Nam .

Objectives: The framework conditions in the ASEAN region for the implementation of sustainability standards in agricultural value chains are improved – with a focus on climate-relevant aspects.

²¹ iDE, 'Press Release: New Zealand-Funded Climate-Smart Farming Pays off for Cambodians', *iDE* (iDE, 2022), <https://www.ideglobal.org/press-release-new-zealand-funded-climate-smart-farming-pays-off-for-cambodians> [accessed 24 May 2024].

- Cooperation between ASEAN bodies and private sector actors is improved;
- Awareness of the importance of gender in agriculture is strengthened;
- Institutional and technical capacities of ASEAN actors to prioritise and implement effective measures on climate aspects are improved;
- Knowledge exchange between public and private actors on best practices, including climate-smart practices in the CLMV countries (Cambodia, Lao PDR, Myanmar and Vietnam), is strengthened.

GAP Scheme: ASEAN GAP

Implementing Agency: Association of Southeast Asian Nations (ASEAN), commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ).

6.3.2. Promotion Result & Status

Recommendations were made to integrate gender aspects in the Strategic Plan of Actions for the ASEAN Cooperation on Crops (SPA-Crops) and project activities.

The Agrinnovation Fund in ASEAN (AIF) was initiated to foster innovation in the agricultural value chains in CLMV. AIF has onboarded 29 development partnerships with private sector to enhance production and improve safety, quality and sustainability.

The implementation status of ASEAN GAP and ASEAN Standards for Organic Agriculture (ASOA) in 10 AMS was assessed and recommendations to improve the implementation of these standards were made.

Lao GAP and standards for Organic Agriculture (OA) was updated with the Lao Department of Agriculture. 30 farm advisors participated in pilot training measures on improved/updated GAP/OA standards.

Development of VietGAP Guidelines for 10 key fruits and online training courses and TOTs held to build capacity for stakeholders to implement the Guidelines.

Promotion of organic standards in Viet Nam through a series of events, review the three-year implementation of Decree No. 09/2018/ND-CP on Organic Agriculture, and develop organic certification bodies.

Ongoing and planned consumer awareness campaigns on food safety in CLMV countries. In Viet Nam, an awareness raising campaign was conducted through various communication channels and reached 503,890 people.

The project supported a regional exchange platform on climate-related topic. The project facilitated support for the ASEAN Climate Resilience Network (ASEAN-CRN), and the ASEAN Negotiating Group for Agriculture (ANGA) so that it can continue to represent ASEAN positions on agriculture in the context of the United Nations Framework Convention on Climate Change (UNFCCC).

An E-learning course on climate change negotiation was created.

Support for ASEAN through the Food, Agriculture, and Forestry (FAF) Division of the ASEAN Secretariat. Guidelines and knowledge products on the issue of adaptation and

mitigation of the FAF sector have been endorsed by the ASEAN Technical Working Group on Agricultural Research and Development (ATWGARD) in 2022.

Pilot measure on rice straw collection and processing. There is an ongoing development partnership with the private sector in Thailand to pilot the innovative use of rice straw to reduce open field burning in the northern province of Chiang Rai.

6.3.3. Promoting Factors & Challenges

Promoting Factors:

- Long term project with continuous funding and implementation support. The first iteration of the project was named “Standards in the Southeast Asian Food Trade” (SAFT) and was implemented from 2015 to 2018.
- High level of cooperation between all the involved stakeholders.

Limiting Factors & Challenges:

- Limited implementation of quality standards in ASEAN.
- Complexity of the tasks in identifying innovative solutions and developing strategies for sustainability.
- Addressing interlinked challenges such as climate change, biodiversity loss, resource scarcity, and food loss in the agri-food systems is essential.
- Level of trade within ASEAN is low, only 30% of trade taking place among the member states.
- Gaps in the regulations on food safety and phytosanitary measures are not aligned among ASEAN countries. This slows down the movement of goods across borders.
- The EU is not ready to accept the ASEAN GAP standard. Currently, there is no existing plan for ASEAN countries to benchmark their standard against global benchmarks such as GLOBALG.A.P. or GFSI. However, for ASEAN GAP to gain recognition in the international market, benchmarking against established standards like GFSI is crucial.

6.4. Australian AADCP II

6.4.1. Outline of the Initiative

Country: The ASEAN Secretariat and the Australian Government

Title: ASEAN-Australia Development Cooperation Program Phase II (AADCP II)

Duration: June 2009 - December 2021

Target Area: ASEAN

Objectives: The Australia-ASEAN Development Cooperation Program Phase II (AADCP II) is a partnership program designed to support the Association of Southeast Asian Nations (ASEAN) in achieving its economic integration goals outlined in the ASEAN Economic Community (AEC) Blueprint. AADCP II provides funding and operational support for projects identified and prioritized by ASEAN, focusing on areas like infrastructure, agriculture, and tourism, while also working to narrow the development gap within ASEAN. The program emphasizes joint management and ownership of projects, with ASEAN leading the implementation and Australia providing financial and administrative assistance. AADCP II's success is measured through four key result areas: improved knowledge base for policy making, establishment of norms and standards, increased stakeholder awareness of economic integration, and enhanced capacity of the ASEAN Secretariat to support the integration process.

The overall project had a component on agriculture with the objective of enhancing the competitiveness of ASEAN agricultural products. This was achieved through the promotion of on-farm produce quality and safety, along with improvements to associated production processes. Building on the development of the ASEAN GAP standard and its adoption within AMS, this project aimed to establish and promote supporting mechanisms. Specifically, the focus was on common certification and accreditation systems within AMS.

GAP Scheme: ASEAN GAP

Component: ADCP II had supported implementation of two ASEAN-initiated projects focused on this area, namely “Establishing Initial Rolling Priority Pipeline of Potential ASEAN Infrastructure Projects” and “Development of Framework for Improving ASEAN Infrastructure Productivity.”

GAP Intervention:

1. Assessment Report covering current systems of GAP certification of the ASEAN Member States including information pertaining to legislative framework, controls, procedures, facilities, equipment, laboratories, transportation, communications, personnel qualifications and training, and current system of accreditation of certification bodies of the ASEAN Member States showing relevant information such as but not limited to: regulations, accreditation checklist, protocol for inspection and evaluation, rules and procedures for approval and registration, and procedure for monitoring and review.
2. Manual on the Design, Operation and Assessment of ASEAN GAP Certification.
3. Manual on the Design, Operation and Assessment of ASEAN GAP Accreditation.

Implementing Agency: ASEAN Secretariat (ASEC)

6.4.2. Promotion Result & Status

AADCP II studies are proving instrumental in shaping the ongoing planning, evaluations, and future direction of ASEAN economic cooperation. The AADCP II has yielded an impressive library of new and higher quality studies and reports that are demonstrably influencing regional policy decisions.

The initiative has been invaluable in fostering a deeper understanding among ASEAN countries of the priorities for reducing development gaps. Support for policy research and outreach activities within consumer protection projects contributed to legislative and institutional reforms at the national level. Furthermore, support directed towards building regional frameworks for connectivity, such as the ASEAN power grid and other infrastructure projects, is expected to facilitate increased and more effective national-level investments in infrastructure.

6.4.3. Promoting Challenges

To move beyond simply establishing ASEAN standards, greater and more sustained support is needed to drive actual implementation. This includes supporting the development and implementation of more stringent national standards, enabling access to higher-value markets beyond the AEC. While the program design framework envisioned direct engagement with the business sector, this engagement has been limited. Increased collaboration with businesses is crucial for impactful progress²².

7. Learnings and recommendations to further promote the adoption of GAP

7.1. Learnings from the countries with higher adoption rates

Currently, governmental bodies are the primary drivers of both awareness and adoption of GAP. Extension officers are crucial in providing support to farmers throughout the process. The example of Thailand shows that farmers are more likely to pursue certification when the process is streamlined and accessible. Minimizing travel distances and simplifying registration procedures are key factors in encouraging participation. Ultimately, market access and the potential for premium prices are the most significant incentives for farmers. The ability to export

²² Raymond Mallon and Samiha Barkat, *ASEAN Australia Development Cooperation Program II (AADCP II) Independent Review Report (IRR)*, 5 February 2020, p. 51.

GAP-certified products at a higher price point represents a powerful motivator for adoption. Trade agreements between countries play a critical role in influencing GAP adoption. In countries like Thailand, where the government signed a trade agreement with China, farmers have greater incentives to adopt these practices.

Learning from the Cambodian experience, there are opportunities in leveraging social media platforms like YouTube to celebrate farmers who are implementing Good Agricultural Practices. This public recognition can serve as a powerful motivator for GAP adoption, boosting farmers' self-esteem and pride in their work. There is also great strength in encouraging a shift in mindset among farmers, empowering them to become entrepreneurs. A crucial element of this empowerment lies in forging direct connections between farmers and retailers. This direct link can reduce their dependence on subsidies or outside assistance, allowing them to become more self-reliant and empowered in shaping their own futures. By nurturing this entrepreneurial spirit and providing market access, the long-term resilience and sustainability of farming communities can be fostered.

7.2. Learnings from the GAP promotion initiatives

Internationally-driven GAP promotion programs are instrumental in coordinating collective efforts across borders, effectively facilitating knowledge transfer. The influx of additional funding is crucial, bolstering capacity building initiatives and ensuring the delivery of comprehensive training programs. These programs achieve peak efficiency when implemented over an extended period, leveraging the learnings and refinements from previous iterations. Furthermore, their impact is amplified when led by established local agencies that possess pre-existing, robust relationships with farmers, as exemplified by the success of the CSmart project implemented by iDE.

7.3. SWOT Analysis

Strengths

The ASEAN GAP serves as a valuable framework, guiding national GAP initiatives towards greater collaboration and uniformity in agricultural practices across the region. As one of the biggest agricultural producers in the world, ASEAN benefits from the technical expertise within its member states and the good collaboration fostered through initiatives like the ASEAN GAP. This collaborative spirit is further strengthened by good transportation connectivity between ASEAN countries, facilitating the exchange of knowledge, technology, and goods.

Knowledge sharing, such as Thailand's experience with GAP implementation, offers a strong model for other ASEAN countries. The region's conducive climate and abundant

resources allow for year-round crop production, bolstering food security. By adopting GAP, ASEAN countries can leverage these strengths to further enhance their agricultural sectors.

Governmental support is crucial in promoting the widespread adoption of GAP. This can take various forms, including providing training and resources to farmers, as well as creating incentives for embracing these sustainable practices. Ultimately, the adoption of GAP can lead to improved market access for producers. This stems from the recognized quality and safety associated with GAP-certified products. This, in turn, enhances food safety and fosters greater consumer confidence in the agricultural products they consume.

Weaknesses

Uneven adoption rates are a persistent challenge, often stemming from disparities in resources, infrastructure, and farmer education levels. Most of the ASEAN community is unaware of the existence of ASEAN GAP, further hindering its adoption.

The cost associated with certification and maintaining compliance also poses a significant barrier to broader adoption. This is compounded by the fact that ASEAN GAP is not internationally accepted in the global market, making the investment less appealing for some producers.

Inconsistent product quality and safety remain a concern due to variability in the enforcement and monitoring of GAP standards across different regions and producers. This inconsistency can be attributed to several factors. Some farmers hesitate to adopt GAP due to its perceived complexity and cost, coupled with a lack of immediate, tangible benefits. Additionally, a lack of awareness and comprehensive understanding of GAP in certain areas further hinders widespread implementation.

Opportunities

Consumer demand for safe, high-quality food products continues to rise, both within the ASEAN region and globally. This demand creates a significant opportunity for producers who can guarantee the integrity of their products and increase consumer trust. Innovations in agricultural technology are making it easier than ever for farmers to comply with GAP standards, assuring consumers of their commitment to quality and improved food safety.

Stronger alignment with ASEAN GAP can play a key role in facilitating international trade agreements and unlocking new export opportunities for producers within the region. This harmonization of standards can make it simpler for businesses to access new markets and demonstrate their commitment to sustainable production practices. This will ultimately lead to increased value added for products and generate job opportunities within the agricultural sector.

International aid and capacity-building programs have a significant role to play in supporting ASEAN countries as they work towards aligning with and adopting these standards. These initiatives can provide essential resources and expertise to empower local producers, facilitating the exchange of knowledge and experiences with ASEAN Member States and the introduction of new farming technologies.

By embracing GAP, farmers can increase their income through higher yields, premium prices for certified products, and access to new markets. This contributes to securing resources for the next generation by ensuring the long-term viability and profitability of the agricultural sector.

Promoting GAP effectively supports broader environmental sustainability objectives. For example, advocating for efficient water management practices like drip irrigation and rainwater harvesting helps mitigate the impacts of water scarcity and drought, issues increasingly exacerbated by climate change²³. This natural synergy can attract valuable support from global and regional environmental organizations.

Threats

A key concern is the potential for climate change to disrupt agricultural practices, making consistent compliance with GAP standards a challenge. This is compounded by the risk of environmental degradation and loss of biodiversity if intensive farming practices are not carefully managed within the GAP framework.

From an economic standpoint, market access remains a concern. Non-equivalence of national GAPs with CODEX standards could lead to trade restrictions, negating a key benefit of ASEAN GAP. The high cost of inspection and certification poses a barrier for smallholder farmers, potentially limiting widespread adoption. Additionally, competition from countries with established GAP programs, coupled with potential market saturation in certain sectors, could dampen economic incentives for ASEAN producers to invest in GAP.

The initiative's success hinges on strong political will and supportive policies. However, inconsistent prioritization and support for GAP within individual ASEAN Member States pose a challenge. Reputation risk is another major concern. Failure to comply with GAP standards, particularly regarding pesticide residues, could damage consumer trust and harm the reputation of ASEAN agricultural products. This is linked to the broader challenge of ensuring proper pesticide management and mitigating the health risks associated with improper use. Finally, economic or political instability within the region could divert resources and focus away from GAP implementation.

²³ Abdullahi Abdul and others, 'Combating Climate Change with Good Agricultural Practices (Gap)', in *RECENT TRENDS AND INNOVATIONS IN APPLIED SCIENCES* (SU Publications, 2024), pp. 118–34.

7.4. Final recommendations

This final section identifies key areas for improvement and proposes actionable recommendations to enhance awareness and adoption of the Good Agricultural Practices standard within ASEAN member states.

Climate change poses a significant threat to farmers worldwide, impacting crop yields and livelihoods. GAP can play a crucial role in supporting farmers to adapt and thrive amidst these challenges, ultimately benefiting the GAP system itself. Implementing sustainable practices like crop rotation can conserve soil and resources, while introducing new farming technologies can increase efficiency and productivity. Providing effective training programs tailored to diverse farmers ensures widespread adoption of these practices. Furthermore, robust monitoring systems with data analysis can identify areas for improvement in certification and mitigate reputational risks. To that end, strong accreditation and verification systems are essential for preserving GAP's reputation and ensuring its credibility. Introducing private inspection services and third-party certification could accelerate and simplify GAP adoption. Integrating information technology, such as farmer-friendly smartphone applications, can enhance GAP adoption, traceability, and record-keeping.

The presence of multiple GAP certifications within a single country, such as Thailand or Indonesia, can generate confusion for consumers. For instance, Thailand has both Q GAP and Thai GAP, while Indonesia uses Prima and IndoGAP. The existence of multiple national GAP standards, in addition to the internationally recognized Global G.A.P standard, can make it challenging for consumers to clearly understand the specific certifications and sustainability practices associated with their food products.

Aligning national GAP standards across ASEAN, while respecting individual contexts and capabilities, is crucial. This can be achieved through a tiered approach with intermediary compliance levels, allowing for gradual adoption and learning from countries with existing models. This harmonization, alongside streamlining multiple GAP certifications within individual countries, simplifies understanding and opens potential export opportunities. Formalizing collaboration through a Memorandum of Understanding (MOU) among the AMS on Mutual Recognition Agreements (MRA) will further contribute to a single market for GAP-certified products.

Capacity building and knowledge sharing are another important step. This involves facilitating ongoing platforms for exchanging knowledge, experiences, and new farming technologies among AMS through seminars, workshops, and training programs. Effective training programs tailored to diverse farmer demographics are essential, utilizing practical demonstrations, farmer-to-farmer learning, and local language materials. Ensuring all GAP-related information and resources are readily available in English and other relevant languages will further promote inclusivity and wider dissemination.

Building consumer trust and understanding of the GAP standard requires targeted marketing and awareness campaigns. Leveraging successful examples like QR code systems on products, potentially incorporating traceability information, can enhance consumer confidence. A comprehensive consumer survey can be extremely informative when it comes to shaping the marketing strategy for GAP. The small-scale survey conducted for the present report provided valuable insights, demonstrating the potential of this approach. For example, one intriguing finding was that certifications don't necessarily translate to an automatic assumption of safe and healthy production methods for fresh produce in the minds of consumers. The Fairagora Asia team recommends building on this foundation by conducting a similar survey with a larger sample size, and country-specific. This would generate more robust data on consumer perceptions, preferences, and behaviors related to GAP and food safety, informing more effective marketing strategies. Utilizing social media platforms to educate younger generations about food safety, GAP standards, and regional resources is also crucial.

Inclusive stakeholder engagement is fundamental, ensuring active participation of farmers, retailers, government agencies, and consumers in workshops, discussions, and working groups. Understanding and incorporating the perspectives of each stakeholder group is vital. Facilitating and encouraging public-private partnerships will further improve market access for GAP-certified products. Finally, governments should provide robust support through regulatory frameworks, financial incentives, and technical assistance programs to encourage widespread GAP adoption.

8. References

- Abdul, Abdullahi, abdullahi umar, kabiru abubakar, nasif abdullahi, and Abba Yusuf, 'Combating Climate Change with Good Agricultural Practices (Gap)', in *RECENT TRENDS AND INNOVATIONS IN APPLIED SCIENCES* (SU Publications, 2024), pp. 118–34
- ACIAR, 'PhilGAP Training Gives Vegetable Growers in the Philippines a Market Edge', *Australian Government*, 2023
<<https://www.aciar.gov.au/media-search/blogs/philgap-training-gives-vegetable-growers-philippines-a-market-edge>> [accessed 21 June 2024]
- ASEAN GAP Good Agricultural Practices for Production of Fresh Fruit and Vegetables in the ASEAN Region -Quality Assurance Systems for ASEAN Fruit and Vegetables Project ASEAN Australia Development Cooperation Program*
- Budimuljono Widyatmadja, Tikno, and Suhaimi A Kasman, 'DEVELOPMENT OF GOOD AGRICULTURE PRACTICES (INDO G.A.P) IN INDONESIA' (presented at the Training of Trainers in the GLOBALGAP Standard for the Greater Market Access, 2016)
- DaNa Facility, and UKaid, *Implementing Good Agricultural Practices in Myanmar* (June 2019), p. 10
<https://asperconsulting.com/wp-content/uploads/2021/11/FINAL-GAP-case-study_compressed.pdf>
- FAO, *A Scheme and Training Manual on Good Agricultural Practices (GAP) for Fruits and Vegetables*, Training Manual (2016), p. 191
- iDE, 'Agricultural Value Chain Bears Fruit', *iDE* (iDE, 2024), <https://www.ideglobal.org/>
<<https://www.ideglobal.org/key-project/agricultural-value-chain-bears-fruit>> [accessed 15 June 2024]
- , 'Press Release: New Zealand-Funded Climate-Smart Farming Pays off for Cambodians', *iDE* (iDE, 2022), <https://www.ideglobal.org/>
<<https://www.ideglobal.org/press/press-release-new-zealand-funded-climate-smart-farming-pays-off-for-cambodians>> [accessed 24 May 2024]
- Istriningsih, Yovita Anggita Dewi, Astrina Yulianti, Vyta W. Hanifah, Erizal Jamal, Dadang, and others, 'Farmers' Knowledge and Practice Regarding Good Agricultural Practices (GAP) on Safe Pesticide Usage in Indonesia', *Heliyon*, 8.1 (2022), doi:10.1016/j.heliyon.2021.e08708
- Khin Lay Swe, *The 'Pulses, People, Planet and Profit' (P4) Project. Report: Assessment on DRR/Environment (Protection)/CSA of Mung Bean Production in Myanmar*, 2020, p. 42
- Limbaga, Edmond V., Zyra May H. Centino, Brenda M. Ramoneda, Ernesto F. Bulayog, and Rhenia Jane M. Soria, 'PROFITABILITY ASSESSMENT ON THE ADOPTION OF GOOD AGRICULTURAL PRACTICES (GAP) AMONG CABBAGE FARMERS IN DALAGUETE, CEBU', *Review of Socio-Economic Research and Development Studies*, 6.3 (2022), pp. 84–103
- Mallon, Raymond, and Samiha Barkat, *ASEAN Australia Development Cooperation Program II (AADCP II) Independent Review Report (IRR)*, 5 February 2020, p. 51
- Maw, Theingi, Jin Leshan, and Han Phyo Aung, 'Assessing the Adoption of Good Agricultural Practices in Muskmelon Production in Chaung Oo Township, Myanmar', *Asian Journal of Agricultural Extension, Economics & Sociology*, 41.3 (2023), pp. 124–33, doi:10.9734/ajaees/2023/v41i31867
- Mohd Nawi, Iffah Hazirah, Nor Idzwana Mohd Idris, Aidilla Mubarak, Norhidayah Che Soh, Husni Hayati Mohd Rafdi, Wan Zawiah Wan Abdullah, and others, 'Knowledge and Implementation of Good Agricultural Practices among Farmers in Kuala Terengganu, Malaysia', *Universal Journal of Agricultural Research*, 11.4 (2023), pp. 731–37,

- doi:10.13189/ujar.2023.110407
- OI, Soveasna, 'The Adoption of Good Agricultural Practices by Cambodian Vegetable Growers' (Lincoln University, 2021)
- Palizada, Santiago A., 'Overview of the Philippine Good Agricultural Practices (PhilGAP) Certification Program' (2016)
<<https://itfnet.org/istf2016/PresentationSlide/ITFS%20-%20Davao%20GAP%20Presentation.pdf>> [accessed 11 June 2024]
- QUACERT, 'GOOD AGRICULTURE PRACTICE - VietGAP Standard', 2013
<<https://quacert.gov.vn/en/good-agriculture-practice.nd185/vietgap-standard.i88.html>> [accessed 15 June 2024]
- The Anh, Dao, Hoang Xuan Truong, and Pham Cong Nghiep, 'Policies on Promoting Good Agricultural Practices (GAP) in Order to Increase Quality and Food Safety in Vietnam', *FFTC Agricultural Policy Platform (FFTC-AP)*, 2019 <<https://ap.ffc.org.tw/article/1420>> [accessed 18 June 2024]
- The Thai Chamber of Commerce and Board of Trade of Thailand, 'ThaiGAP - หอการค้าไทยและสภาหอการค้าแห่งประเทศไทย', 2023 <<https://www.thaichamber.org/view/123/thaigap-en>> [accessed 15 May 2024]
- Verweij, Bart, 'Developing Agribusiness Potential in the Laos-China Railway Corridor', *World Bank Group*, 2022
<<https://www.worldbank.org/en/country/lao/brief/developing-agribusiness-potential-in-the-laos-china-railway-corridor>> [accessed 21 May 2024]
- Wong, Aaron, 'DARe to Help Businesses Get Brunei Good Agricultural Practice Certification', *BIZ | BRUNEI*, 2020
<<https://www.bizbrunei.com/2020/09/dare-to-help-agriculture-businesses-get-brunei-good-agricultural-practice-certification-gap/>> [accessed 1 June 2024]
- Xiong, Maiyer, Gomathy Palaniappan, and Laurie Bonney, 'Do GAP Practices Improve Market Access for Vegetable Farmers? A Case Study from Vientiane Capital, Laos', *Proceedings*, 36 (2020), p. 78, doi:10.3390/proceedings2019036078