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Clean Agriculture Development in Lao PDR: Opportunities and Challenges for Food Safety and Market Access

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Abstract

This paper aims to analyze the situation of clean agriculture in Lao PDR, to identify the problem, potential, and opportunities for its development. Key informant interviews of 15 experts and 35 farmers are conducted together with field observations in 4 villages of 3 districts in Xiengkhuang province, to gather production information and opinions on clean agriculture. Government plan of action for clean agriculture development, production, and distribution channel of Organic Agriculture (OA) are reviewed. It is concluded that the crop production in Laos is clean agriculture by default, with the advantages of clean water, less and non-chemical farming in practice. In order to expand the domestic and international market of clean agriculture, especially the OA products in Lao PDR, standards of OA, GAP, SNA, and PEP should be promoted.

Keywords: Lao PDR, Agriculture, Sustainable, Clean Agriculture

Introduction

The Lao PDR is located in Southeast Asia, sharing its borders with Cambodia, Myanmar, the People's Republic of China, Thailand, and Vietnam. Overall, the country extends about 650 miles (1,050 km) from northwest to southeast and has a 236,800 sq km land area. The population of about 7.169 million in 2019. Agriculture expansion and land use are limited by mountainous topography, only 10% of the country's land area is used for agricultural production (Government of the Lao PDR, 2015). Moreover, agricultural land is dispersed, especially in the northern mountains. About 50% of the agricultural area cultivated the annual crops, the balance being used for perennial crops (such as coffee trees) or grasslands. Very rare areas along the Mekong River and its tributaries have large contiguous cropped land, notably in the Vientiane plain, and in central and southern riverine plains in Sayabouri, Khammouane, Savannakhet, and Champasak provinces. There are around 11 million hectares [ha] of the forest in Lao PDR. The biodiversity and wildlife in Lao PDR are quite abundant in, although there is continuous encroachment on its forest and wildlife resources from poaching, mining, hydropower development, shifting cultivation, and commercial plantations. It is estimated that

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21% of the land area is concessioned and leased, with the majority designated for mining-related activities. An estimated 446,249 hectares are used for plantations. Rice is the main crop in the Lao People's Republic, accounting for 50% of the country's agricultural output. About 960,000 hectares of rice are cultivated during the rainy season, most of it for subsistence purposes. Due to the limited irrigated area, only 4% of the wet season area is cultivated in the dry season. The lowland rice area accounts for 75% of the rice area, mainly concentrated in the four provinces of Xayaburi, Khammuang, Savannakhet, and Champasak. Upland rice is mainly distributed in mountainous areas, especially in the northern part of Lao PDR. Other important crops are maize, cassava, bananas, and coffee, which are cultivated both for subsistence and commercial. The livestock sector accounts for 18% of agricultural gross domestic product (GDP) and is an important contributor to household and national income, with most farming households owning some of their livestock either as household savings or for commercial sale.

Research Objectives

To provide an overall picture of clean agriculture development in Laos, this research sets three specific objectives as follows: 1) analyze the clean agriculture situation in Lao PDR; 2) identify the problem and potential for clean agriculture development in Lao PDR; and 3) identify opportunities to make investment and possibilities to advance.

Literature Review

Similar to all Southeast Asian countries, the agricultural sector in the Lao PDR needs to adapt to rapid environmental, social, and economic changes on multiple fronts. There is pressure to reduce the sector's environmental impact on land, water, and biodiversity and its impact on human health.

Agricultural products must also be competitive with those of other producers of the countries in the region, and the sector must adapt to ensure food sovereignty and sustainable production, taking into account the skills, preferences, and cultural needs of the population. However, since the 1975 revolution, agricultural strategies and policies developed by the Ministry of Agriculture and Forestry (MAF) have been largely based on increasing agricultural productivity to meet unrealistic targets, relying heavily on the increased use of chemical applications and mechanization (Stockholm Environment Institute), (SEI), (Annual Report, 2023).

Research undertaken by the National Agriculture and Forestry Research Institute (NAFRI) at the request of the MAF has clearly shown that the country's production objectives are unattainable which is supported by Korea Rural Economic Institute (KREI). First, because of its bio-geophysical conditions; second because farmers don't have access to vital infrastructure, including irrigation, road networks, and fair markets; and third because agricultural production in Lao PDR has not been able to compete with Thailand, China, or Vietnam in terms of bulk production, meaning that the price of goods produced in Lao would continue to be undercut by its larger neighbors.

The KREI, NAFRI, in partnership with the Food and Agriculture Organization of the United Nations (FAO), has helped the government turn towards more sustainable goals and priorities. The ensuing consultations led the government to commission NAFRI to develop a policy framework for Clean Agriculture, Green and Sustainable Agriculture (GSA) – a plan

which reflects a shift in outlook within Lao's Ministry of Agriculture and Finance and the government as a whole.

The work was successful in large part because of the long-term engagement with government agencies, which supported a relationship, based on trust and enabled NAFRI personnel to credibly present a body of research in a way that matched the priorities of government stakeholders. Additionally, it meant that NAFRI could use its extensive understanding of the organizational framework and institutional culture. partnership with international organizations, particularly the FAO, as well as funding from KREI core support designated for quick reaction and strategic partnership helped to achieve agreement. The policy framework for clean, green, and sustainable agriculture has now been formally adopted by the Lao PDR government, and it is currently being utilized to guide the creation of national and provincial policies. The MAF will use it as the basis for developing particular policy actions. It is a guiding document owned by the Department of Policy and Legal Affairs. As a result of the new framework, government planning organizations will be able to operate independently from foreign agriculture policy, opening the door for change that is appropriate for the nation's particular situation. This may enable Lao PDR to take the lead in Southeast Asian agriculture in the future and influence regional agricultural policy for more sustainable outcomes.

Methodology

Desk Reviews

Official reports such as the development strategy of the crop sector 2025 and vision 2030, from the central, provincial, districts, and related projects, were collected and reviewed to investigate the situation of clean agriculture in Lao PDR. Previous related research papers were also reviewed to understand the history of the clean agriculture movement, especially on the product distribution channels and access to the market.

Key Informant Interviews

Key informant interviews focus on gathering knowledge, experiences, and opinions from key persons in clean agriculture sectors such as senior officers from the Department of Agriculture (DOA), Provincial Agriculture and Forestry Office (PAFO), District Agriculture and Forestry Office (DAFO), and leaders of farmers groups, agri-business manager, and consumers. Totally, 15 key people were interviewed. In addition, 35 farmers were interviewed using semi-structured interviews for production information including the constraints and opinions to develop clean agriculture.

Fieldworks

Fieldwork and field observations were carried out mainly in Xiengkhuang province. Based on the consultation with the Head of PAFO, clean agriculture farms and villages were identified. The Authors visited four villages in three districts to observe production fields and interview farmers.

Data Analysis

This research used a qualitative approach as the main methodology to collect primary data and information from stakeholders including farmers engaging with clean agricultures. Descriptive statistics were applied and results were illustrated by tables, figures, and charts.

Results and Discussion

Clean Agriculture Development Movement in Lao PDR

The Official Announcement of Clean Agriculture Development in Lao PDR

In 2006, the 8th Party Congress of Lao People's Revolution Party, Resolution 9th, endorsed clean agriculture as a strategic policy direction for the agriculture and forestry section. Towards implementing the policy Directions, the Department of Agriculture (DOA) has developed legal and regulations, in particular, DOA Strategy 2025 and Vision 2030 with slogan modernization, clean, safety, quality, stability, sustainability, and commercialization.

Plan of Action for Clean Agriculture Development in Lao PDR

The goal of clean agriculture development is to change farming techniques into clean agriculture principles like OA and GAP, improve clean agriculture, create standards for various forms of clean agriculture, and push for alignment with global standards. The government of Laos (GoL) set nine supporting projects for this action plan 1) Clean agriculture standard development project, registration for prohibited plants in Lao PDR, registration for site-based crops and GI products; 2) Clean agriculture demonstration project; 3) Internationally and regionally accepted clean agriculture certification project; 4) Cash crop standards development project; 5) Crop production standard development project; 6) Clean agriculture product regulation project; 7) Clean agriculture infrastructure development project; 8) Clean agriculture capacity and system control development project; and 9) Market-oriented vegetables and fruit crop promotion project.

Development of Organic Agriculture in Lao PDR

In the 1990s, NGOs introduced the concept of "sustainable agriculture and organic farming" into Lao PDR3. The word "organic" is well known since the collaborative project between HELVETAS and DOA launched the PROFIL4 project in 2014. It is claimed that 80% of farming in Laos is organic by default5. With support from external donors such as HELVETAS, Switzerland, JICA, SDC/ADB, and OXFAM in the Mid 2000s, the Lao organic standard was approved in 2005, Lao certification Body (LCB) was established in 2008, and LCB started organic inspection/ certification service in 2009. According to the Organic Agriculture Standards issued by MAF/Decision No. 1666/MAF. DOA, dated 30 December 2005, OA is defined as "a farming system (and product) that does not use chemical inputs all along the production process".

In 2015, GoL sets four action plans to develop OA in Lao PDR as shown in Table 1: Action plan and project toward 2025 for OA development in Lao PDR.

Table 1 Action Plan and Project toward 2025 for OA Development in Lao PDR

Improving legislation and human resource on OA production	1) Improving OA standard in accordance with ASEAN Standard of Organic Agriculture (ASOA) (2016-2017)
	2) Development of certification system in line with the ISO/IEC 17065(2016-2020)
	3) Integration of services of OA certification (2016-2020)
Technical extension and production development	1) Developing OA model farms in central, northern, middle and southern parts (2016-2020)
	2) Promoting OA production in Lao PDR (2016-2020)
	3) Developing technical manuals and training course on OA (2016-2020)
	4) Training farm advisor for OA in Lao PDR (2016-2020)
	5) Developing training center for OA (2016-2020)
	6) OA disseminating and advertising (2016-2020)
	7) Promoting OA business (2016-2020)
Domestic market development and export	1) Developing OA value chain in Lao PDR (2016-2020)
Quality management of OA produces and products in domestic market and export	2) Developing OA value chain for export (2016-2020)

Source: Strategic Plan for national organic agriculture development 2025, vision forwards 2030, DOA, MAF, 2016

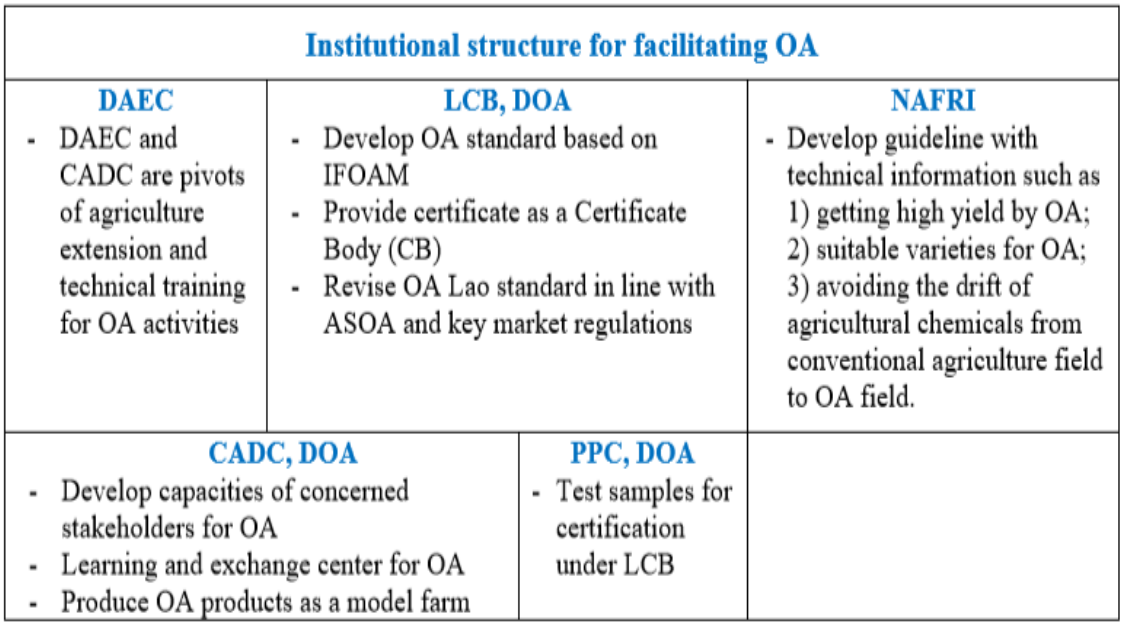

Figure 1 Government Stakeholders with Key Roles in OA

Source: Illustrated by authors, Strategic plan for national organic agriculture development 2025, vision towards 2030, DOA, 2016

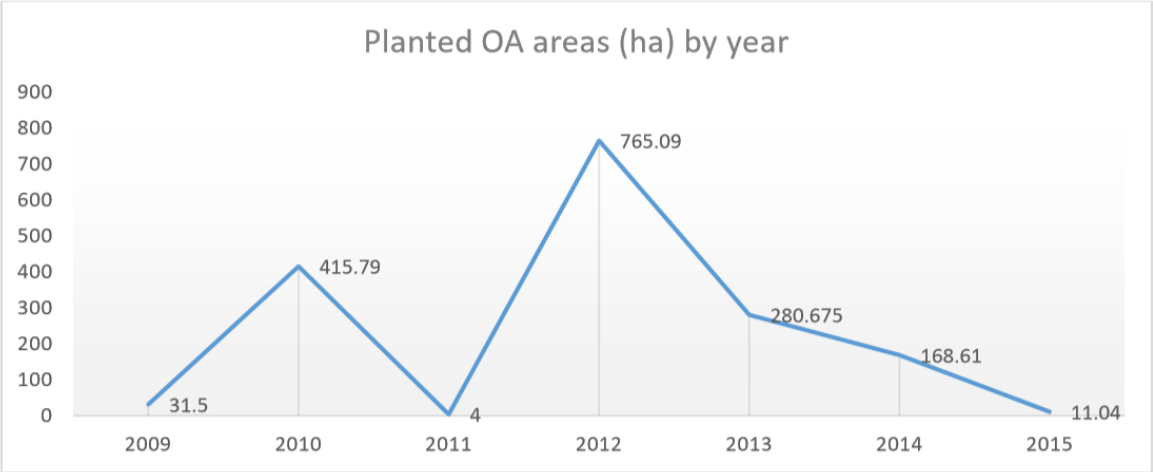

Figure 2 OA Planted Areas

Source: Illustrated by authors, Strategic plan for national organic agriculture development 2025, vision towards 2030, DOA, 2016

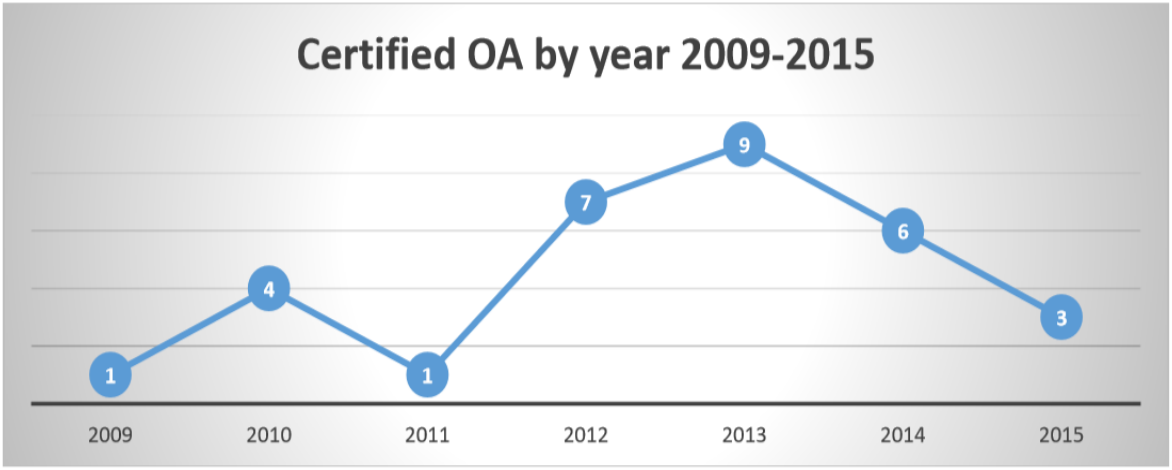

Figure 3 Certified OA Producers/Entrepreneurs by the Year

Source: Illustrated by authors, Strategic plan for national organic agriculture development 2025, vision towards 2030, DOA, 2016

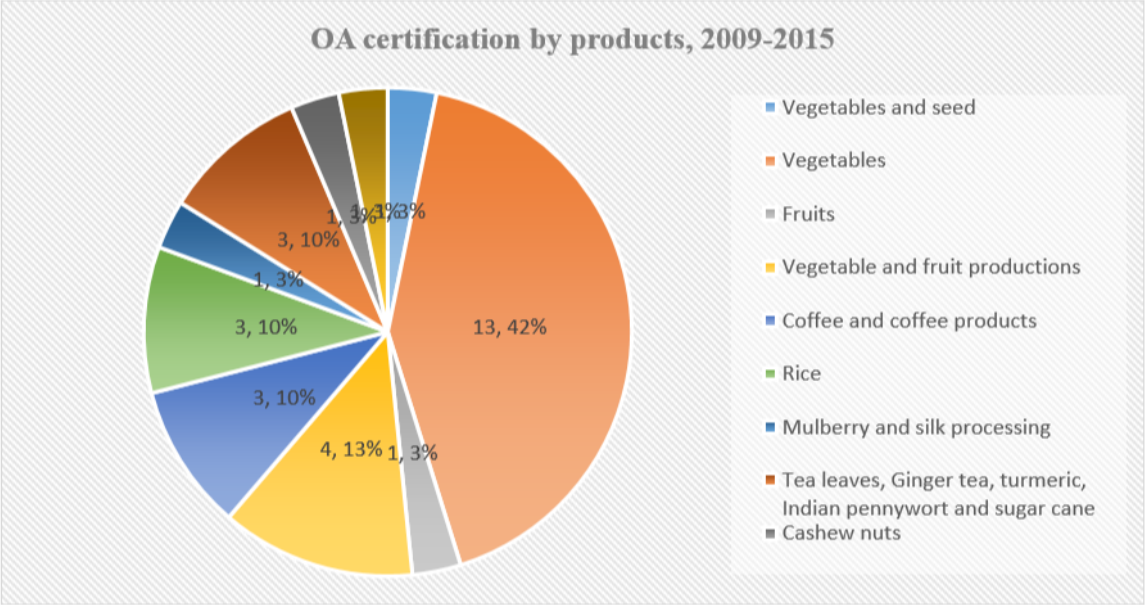

Figure 4 Organic Certifications by-Products, 2009-2015

Source: Illustrated by authors, Strategic plan for national organic agriculture development 2025, vision towards 2030, DOA, 2016

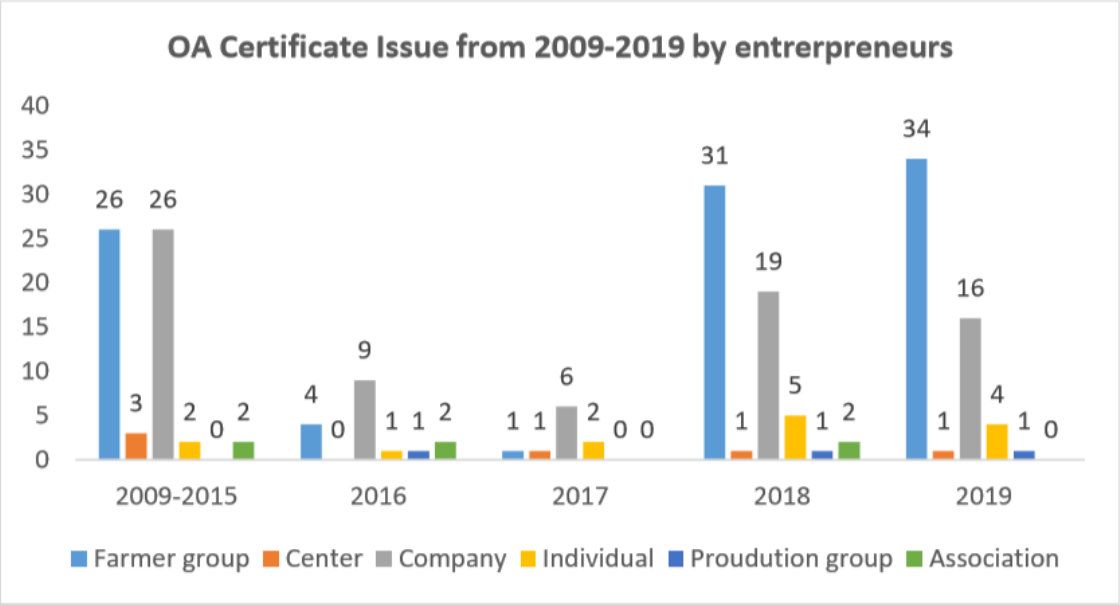

Figure 5 OA Certificate Issue from 2009-2019 by Entrepreneurs

Source: Illustrated by authors, DOA, Five-year plan (2015-2020) implementation report, 2019
Note: There are 201 Certified OA entrepreneurs in 2019; Average production: 132,002 tons/ year.

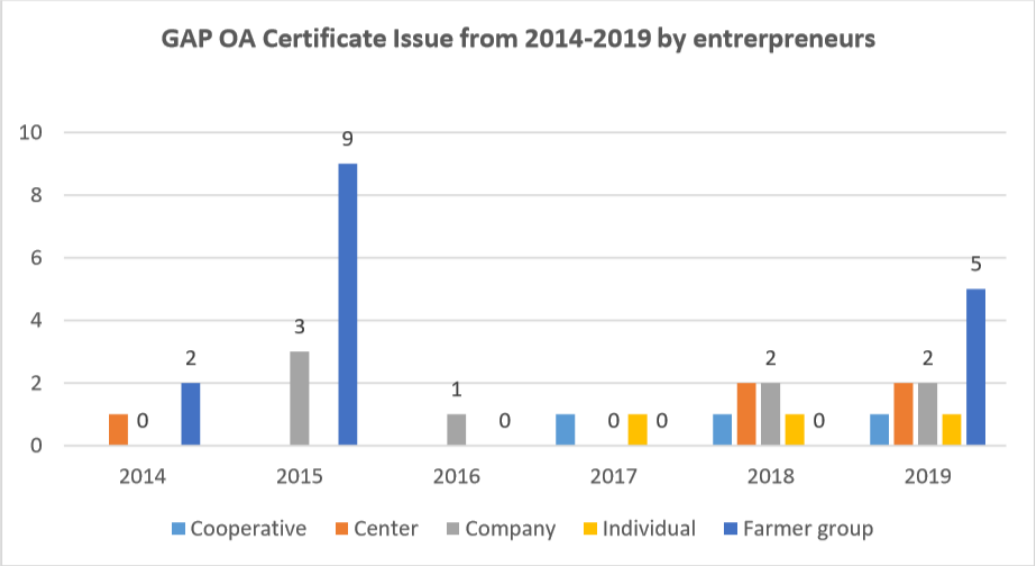

Figure 6 GAP Certificate Issue from 2014-2020

Source: Illustrated by authors, DOA, Five-year plan (2015-2020) implementation report, 2019
Note: There are 35 Certified GAP entrepreneurs in 2019

Clean Agriculture Product Distribution Channel in Vientiane's Capital

Vientiane Capital of Laos consists of nine districts: Chanthabouly, Hadxayfong, Naxaithong, Pak Ngeum, Sikhottabong, Sisattanak, Xaythany, Sangthong, and Xaysettha. The main cultivation of organic vegetables is in seven districts, Hadxayfong, Naxaithong, Pakngum, Sikhottabong, Sisattanak, Xaythany, and Xaysettha. According to 2020 statistics, the urban population in Vientiane's capital is 863,000 people

In the wet market, most of the retailers in the organic market were the same farmers who produced organic vegetables. The percentage in the arrow showed the proportion of supply from one actor to another. There were two main channels for farmers to sell their organic vegetables to customers. The first channel was from farmers to the organic market which covered approximately 90% of the total output. The second channel was via the collectors who sell vegetables to the wet market and convenience stores, which accounted for less than 10% of the total production of farmers. The organic vegetable sold in the wet market was not recognized as an organic vegetable because they were mixed with chemical-used vegetable. Retailers in the wet market bought organic vegetables in case not enough supply during the rainy season. Farmers also sold their organic vegetables to Export Companies according to the request.

In Vientiane's capital city, the convenience store is another distribution channel for organic vegetable farmers. The convenience stores buy products from three sources collectors, imports from Thailand, and farmers. Export Company occasionally buys when they do have not sufficient output as the order. Farmers can sell a small volume of vegetables from smallholders. Export Company sells 100% of their output to Importers/Distributors.

Approximately, 50-60% of imported organic vegetables were supplied to the supermarket and the rest is supplied to restaurants.

Since 2020, with the impacts of COVID-19, clean agriculture production flows in three main channels, especially channel 2 had been dramatically changing due to locking down, social distancing, self-guaranine, and so on bringing new normal in people's consumption behaviors.

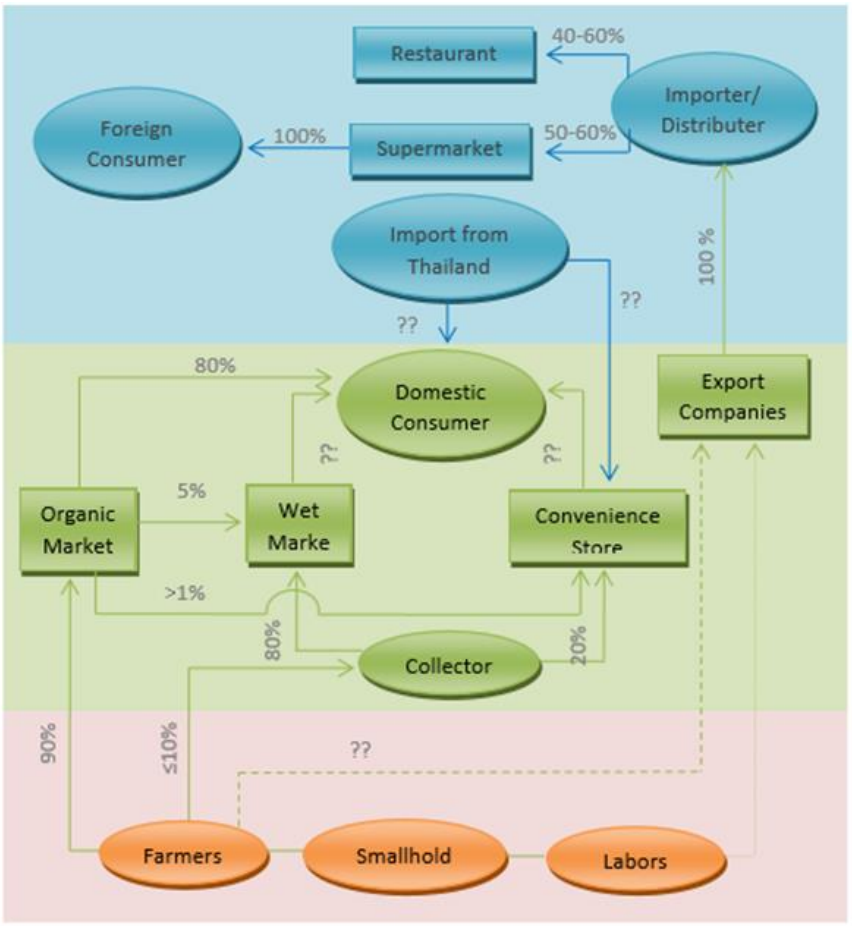

Figure 7 Value Chain of Organic Vegetables in Vientiane Capital (2016)

Source: Piya and Thongkhoun (2016)

Clean agriculture products especially in Vientiane capita, it mainly distributed via three channels: 1) farmers bring their products to sell in the organic market which is rotated to fixed six places every day based on schedule (e.g. ITEC: Wednesday and Saturday); 2) Farmers supply their organic vegetable products to agri-business agents such as home delivery and online middle man; and 3) farmers support their clean vegetables to the supermarket. Due to farmers' supply capacity with curtain volume ensuring standard and variety of vegetables, Lao clean vegetable products in a modern supermarket is a smaller amount than the imported from a neighboring country.

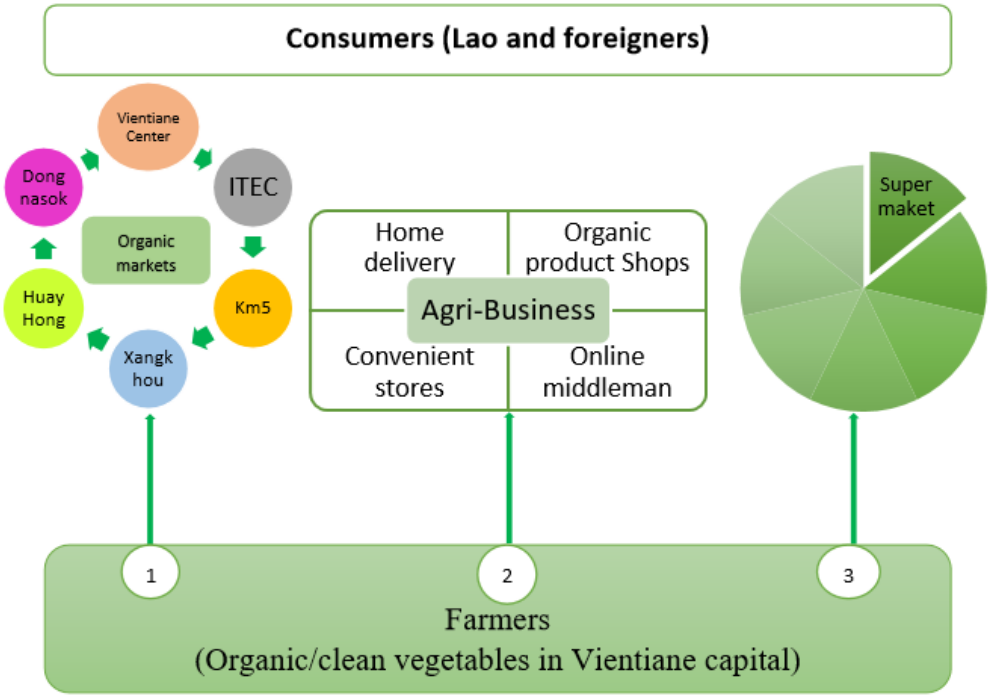

Figure 8 The Consumers of Clean Agriculture

Source: DOA. (2020)

Conclusion

Crop production in Laos especially in rural areas is clean agriculture by default. This becomes an opportunity for Lao PDR to develop its full potential. Lao PDR still has an abundance of natural resources such as large cultivatable land, clean water, and less and non-chemical farming is practicing. The use of chemical fertilizers in Lao PDR is 12 kg per hectare on average and most remote areas use no chemical fertilizers. A previous study suggested that a poor understanding of organic agriculture and limited access to organic products are barriers to organic consumption. In order to expand the market, information, trust, and availability should be improved. Currently, clearly, differentiated standards among OA, GAP, SNA, and PEP are not yet declared. Therefore, with clear product standards, trust between consumers and farmers can strengthen. In addition, product diversity and availability at all times are important to supply to demand.

Piya and Thongkhoun (2016) suggested that Lao PDR have many opportunities to export vegetable organic vegetable to the USA, European Union (EU), and Japan since there are a lot of demands from restaurant especially Thai and Indian restaurants. The export of organic vegetable has benefited from the General System Preference and Normal Trade Relation that the EU and Japan and the USA allows zero tariffs for the import of organic vegetable from Lao PDR. The export of organic vegetables to ASEAN countries also benefits from ASEAN Free Trade Agreement.

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