



Export Readiness Report

Assessment of Cambodian SMEs within the Agricultural Trade Sector



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Support of Regional Economic Cooperation in Asia (SRECA)

Tayuan Diplomatic Office Building 1-14-1

Liangmahe Nanlu No 14

Beijing 100600, Chaoyang District

PR China

T + 86 10 8532 1857

F + 86 10 8532 5774

sreca@giz.de

www.connecting-asia.org

www.giz.de/en/worldwide/34101.html

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Editor(s)

GIZ SRECA

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Executive Summary

Commissioned by GIZ under the Support of Regional Economic Cooperation in Asia (SRECA) project, this study seeks to identify relevant stakeholders engaged in the export of fresh agriculture produce and to assess export readiness of the Cambodian small and medium enterprises (SMEs), farmer associations, and cooperatives. The study is intended to inform the project about challenges/barriers and specific needs of the Cambodian SMEs in exporting agriculture produce to international markets, in particular China, in order to provide recommendations for project interventions. The study interviewed 104 private enterprises and farms and 42 key informants from relevant government agencies at national and sub-national levels, development partners, NGOs, associations, agriculture cooperatives (ACs) and other supporting actors. Seven commodities including yellow banana, mango, longan, pepper, dragon fruit, fragrant coconut, and bird's nest are designated for this study.

In Cambodia, the agricultural sector is one of the key economic drivers with crop sub-sector accounting for nearly two-thirds of the total agriculture value in 2019. Of the export of agriculture crops, the most significant fresh crops targeted under this study include banana, mango and pepper with an export share of 3.24%, 1.19% and 0.08%, respectively. The official export of these fresh crops is still low in comparison with their production. Only yellow banana and mango currently have official market access to China, while the other designated commodities are awaiting market access negotiation. In addition to a number of existing policies and regulations, the Royal Government of Cambodia (RGC) has recently been drafting an Agricultural Sector Master Plan 2030 with a long-term vision in promoting agriculture sector by focusing on enhancing productivity and profitability in crop value chains. Likewise, a Horticulture Policy is also being drafted to realize full potentials in serving both local consumers and meeting export quality requirements. Most importantly, the RGC is going to sign a bilateral Free Trade Agreement (FTA) with China by end of 2020, aiming to ease tariff of the Cambodia's exported products (including agricultural produce) imposed by China.

Key government agencies having direct involvement in and supporting the export of fresh agricultural produce include the Department of Plant Protection, Sanitary and Phytosanitary (SPS) and Horticulture Department of General Directorate of Agriculture (GDA) of Ministry of Agriculture, Forestry and Fisheries (MAFF); Trade Training and Research Institute (TTTRI), Department of Exhibition Affairs, Department of Trade Policies, and Department of Import-Export of Ministry of Commerce (MoC); Institute of Standards of Cambodia (ISC) of Ministry of Industry, Science, Technology, and Innovation (MISTI); Royal University of Agriculture (RUA); and Ministry of Economy and Finance (MEF). In addition, there are also emerging platforms like Cambodia Partnership for Sustainable Agriculture (CPSA) and Cambodia Horticulture Investment Platform (CHIP) which are highly relevant to fruit sub-sector.

The fast growing of yellow banana production and exports is backed by large farms and companies with investment from Chinese and Vietnamese investors. Currently there are 15 registered banana plantations and packaging facilities approved by China, covering approximately 10,000 hectares of land. In addition, there is another large plantation of yellow banana targeting Japan's market on a pilot basis. While there is no any cooperative or association specifically focusing on banana, local producers and traders have not had much engagement in production and trading of yellow banana, but other banana varieties. The local farmers and traders are not yet ready for exporting given the current variety of banana they mainly focus on, scale of production, and capacity in producing the outputs in accordance to the required standards in terms of appearance and texture.

Mango production is dominant by small and medium farms, while the exports of fresh mango are carried out by medium and large foreign and local companies. Some companies have exported fresh mango abroad for many years, and a few emerging companies have recently started their mango exports in a smaller scale to various countries. There are companies, which have had experiences in exporting other fresh produce, are planning to export also fresh mango. Cambodia had its first shipment of mango to Korea in January 2020 and signed an SPS agreement with China in mid-2020. There have been 48 companies, farms/plantations and agriculture cooperatives (ACs), covering 28,345 hectares of mango plantations, applying for official exports to China. Traders, both large border traders and small local traders, as well as local producers, are operated unregistered and did not express explicit plan to do direct export, but would rather prefer supplying to the exporting companies due to limited knowledge and capacity in managing exporting business and lack of trading working capital. Agriculture Cooperatives (ACs) are an important actor and mechanism for producers to supply collectively to international markets. Some ACs have had access to the current partnership with exporting companies, while some are still exploring the market access.

Most of Pailin longan are supplied to Thailand where the fruit is processed and packaged for re-export to China. While there are a few large companies growing Pailin longan, local producers and traders in Pailin, Battambang and Banteay Meanchey belong to ACs and supply collectively to large traders who link with Chinese traders at Thailand border point. While awaiting official market access to China, a longan processing and packaging factory was established by one prominent longan trader in Pailin and a Chinese trading company in Thailand. The producers in Rattanakiri market their longan through local traders for domestic consumption and Vietnamese traders. These producers did not express desire in directly exporting longan abroad and would rather depend on larger traders with existing market connection and especially the ACs to link to international markets.

The Cambodian pepper producers do not usually have direct exporting capacities and experiences, and therefore the pepper reaches international markets through intermediary Khmer, Vietnamese and Thai traders and exporting companies who target mainly European markets. Due to decreasing global demand and prices, a number of pepper farms were observed to have been left uncared and/or converted to other high-value crops. Producer networks play a significant role in market access via exporting companies. The pepper certified with Geographical Indication (GI) is backed by Kampot Pepper Promotion Association (KPPA) and Kampot Pepper Agriculture Cooperative (KPAC), while the producers in Tboung Khmum are supported by 9 pepper ACs and a Union of Cambodia Spice and Agriculture Cooperative, covering also the ACs in Preah Vihear and Mondulakiri. At the national level, there is Cambodia Pepper and Spice Federation (CPSF), consisting of over 20 pepper associations, ACs, and exporting companies across Cambodia. In addition, certification agencies provide services in standard certification of the Cambodia's pepper as per requirements from the international markets.

Dragon fruit production is dominant by smallholder farms for domestic market supply, although there are a few large companies – certified dragon fruit plantation owned by a prominent Vietnamese company and a Korean company planning to grow dragon fruits in addition to their current crops. There is no dragon fruit producer group or cooperative, except a large-scale dragon fruit community project with an aim to produce 1 million dragon fruit trees over 1,000 hectares of land in Preah Vihear, announced to be launched in September 2020, aiming Vietnam and China as the main markets for exporting its organic dragon fruits. The current dragon fruit producers are not yet ready to go for international markets as their production remains unstable and small scale in meeting the local consumption and the varieties and standards of dragon fruits have not yet been examined against any necessary exporting requirements.

Most fragrant coconuts are produced by smallholder farmers as a secondary crop. Cambodia has not yet exported any coconut abroad. However, there is interest from Chinese investors in setting up coconut plantations and processing factory in Cambodia. There are also locally invested and operated large company (350-hectare plantations) and farm (unregistered, 180-hectare plantations) as well as a number of small farms (up to 20 hectares of land) producing fragrant coconut for domestic supply. Local traders are normally the key agents in linking with wholesale and retail markets. There are also large traders who are supplying both locally grown and imported coconuts. The scale of the supply of imported Thai coconut is rather large to meet local demand for fragrant coconut. In terms export readiness among different actors, there is a high level of uncertainty given the current early stage of production and scalability intended to fill the local demand despite the growing trend of production, prior to the focus on export markets. However, exporting remains of their interest in the medium and long-term.

Most of edible bird's nest businesses are family-based and small scale, while only a few are operated with a business license. Most producers are also collecting uncleaned bird's nest from other suppliers for cleaning and processing for local consumption and supply to China through Chinese clients and traders residing in Cambodia. The Cambodia Swiftlet Federation (CSF) is a platform for its 70-80 members in pursuance of gaining an official market access to China with an estimated annual demand of 800 tonnes and current import of only 300 tonnes of bird's nest. Although the current production remains small, the volume is scalable as many producers expressed their readiness to increase production and collection capacity to meet market demand. However, producers have had limited international experiences and some issues regarding financial stability and access to finance.

In general, SMEs are usually facing a number of major constraints in accessing to international markets, and those challenges also apply in the agriculture sector, which is dominant by small to medium-scaled farmers. First and most importantly, most local farms and trading businesses are usually less motivated and committed towards exporting given their registration status and preference to stay “informal” as well as their current production practices, capacities and market. The fragrant coconut producers and traders are more motivated and committed to supplying domestic markets despite their interest in China's markets. Second, producers are facing a lot of issues in production and get their products ready for international supply. These include the critical climate risks, lack of national standard, limited adoption and compliance to certain standards, and lack of capacity to supply off-season yields. Third, there is generally limited branding of Cambodia's agriculture produces in international markets, be it the “Cambodia” as the country of origin, crop varieties and GI pepper. Fourth, exporting companies (especially those non-Chinese and non-Vietnamese backed companies) have limited information on foreign markets and buyers in China, while the SMEs

in general lack knowledge on export procedures and also access to qualified human resources to support their internationalization processes. Fifth, exporting companies normally encounter high logistic costs and production costs, as well as limited access to finance for investment and trade financing. Last but not least, the major challenge is related to market access itself – lack of official market access to China for specific crops, ineffective implementation of contract farming, more favorable trade agreement negotiation, and high cost and complication in certification and exporting processes.

In order to respond to the current context and key challenges, this study outlines the needs of a number of actions and implications to be contributed by various stakeholders in supporting the export of agriculture produce to international markets. These recommendations target not only improving coordination among key government agencies and stakeholders in data and information sharing, technical service delivery and multi-stakeholder dialogues, but also the engagement of private sector in the market access negotiation with Chinese counterparts. Standard awareness, adaption and certification remain the core for farms to prepare for international markets in addition to strengthening the international branding of the Cambodia's produce. The export-oriented SMEs should build their own capacities, apply for appropriate licenses, and strengthen their business and financial management practices. At the same time, producer networks and co-operatives should be strengthened and supported. The RGC should put more efforts and offer more incentives specifically to invite more investments in the exporting businesses and supporting facilities. Last but not least, digital finance and technology adoption should be promoted among export-oriented SMEs.

1. Introduction

1.1 Project Background

The Support of Regional Economic Cooperation in Asia (SRECA) is a 3-year project (2019-2022) implemented by GIZ under the fund support from the German Federal Ministry for Economic Cooperation (BMZ). The project aims at improving regional and global trade in Cambodia, Lao P.D.R, Vietnam, and Mongolia in partnership with China, and trade facilitation and private sector development are the main mechanisms for the economic cooperation among these countries. The project focuses on 3 components: (1) enhancing the access of small and medium enterprises (SMEs) to trade-related services for agriculture export, (2) strengthening the structures for regional cross-border cooperation, and (3) increasing regional and/or trilateral measures for knowledge exchange and experience among the target countries. Across the 3 components, cross-cutting topics on inclusion of female entrepreneurs and utilization of digital applications and tools in regional economic integration processes are given emphasis in the project implementation.

In Cambodia, the SRECA project adopts the approach of working with relevant government agencies, chambers of commerce, business associations as multipliers in order to reach out to wider business communities. Main activities include providing capacity building, organizing training and dialogue events within the areas of agricultural trade facilitation, cross-border cooperation and private sector promotion. One of the most important achievements thus far is the cooperation with the General Directorate of Agriculture (GDA) of the Ministry of Agriculture Forestry and Fishery (MAFF) in developing step-by-step guidelines on how to export fresh banana, longan and mango to China. Based on these guidelines, the target government agencies and SMEs in Cambodia have been supported through capacity building measures. Furthermore, the project plans to develop and pilot a trilateral cooperation through which China and Germany will cooperate to support the Cambodian actors to improve regional economic cooperation. Upon the confirmation of its potentials, the pilot will be scaled up through Sino-German Centre for Sustainable Development (SG-CSD), a joint project between BMZ and the Chinese Ministry of Commerce, for other trilateral cooperation projects with Germany, China and third countries.

To promote trade facilitation services for SMEs in Cambodia in accessing to China's market, GIZ seeks to obtain more detailed overview of relevant actors working in agriculture export sector in order to inform the project about specific needs of the Cambodian SMEs and to provide more efficient technical support.

1.2 Objective of the Study

The main objectives of the study are to:

- Identify relevant stakeholders including SMEs, associations, and cooperatives (by specifying those led or owned by women) involved in trade/export of fresh agriculture produce;
- Assess export readiness of the Cambodian SMEs, farmer associations, and/or cooperatives;
- Assess and analyze needs and barriers/challenges in exporting the agriculture produce to international markets, in particular China; and
- Provide recommendations to improve agriculture trade-related services for the project interventions.

1.3 Main Focuses of the Study

In response to the above-mentioned objectives, the study focuses on three interlinked components – stakeholder mapping, SMEs' export readiness assessment, and SMEs' need assessment – in order to offer insights for project interventions to improve agriculture trade-related services.

(1) Mapping relevant stakeholders

Relevant stakeholders refer to SMEs and large enterprises/farms, as well as relevant business associations and agriculture cooperatives, who used to export, is exporting or planning to export the designated commodities including fresh agriculture produce including yellow banana, mango, longan, pepper, dragon fruit, fragrant coconut, and bird's nest. The mapping focuses on:

- Firm ownership (including gender of owner/management) and operation
- Production and/or trading capacities
- Current markets and distribution channels
- Business plan and growth strategies

In addition to private sector actors, the study also includes key relevant government agencies and coordination platforms pertinent to supporting crop sub-sector, SMEs and most particularly agriculture exports.

(2) Assessing export readiness of the identified SMEs

The export readiness of SMEs that have not yet exported their agriculture produce was assessed based on the criteria adopted from the tools developed by the International Business Center (IBC) of Michigan State University (non-product specific) and AUSVEG (vegetable exports) with some modification to remain simple and reflect the exports of agricultural produce in the context of Cambodia's SMEs by considering the common criteria and avoiding redundant or unpractical criteria (see table below).

Table 1: Criteria for SMEs' export readiness assessment

IBC (non-product specific)	AUSVEG (vegetable)	This study (fresh produce)
<ul style="list-style-type: none"> - Competitive capabilities: profitable domestic markets, competitive advantages, financial management and stability - Motivation: long-term strategy, market research - Commitment of owners/top management: willingness to dedicated staff and resources, exporting experience - Product readiness: production capacity, compliance to standards - Skill, knowledge and resource: shipping, payment, competitors and online presence 	<ul style="list-style-type: none"> - Motivation: long-term strategy, current capacity, market research - Company: commitment, plan - Target market: research, trade agreement, tariff and quota - Products: suitability and proposition - Logistics: agent/distributor, freight forwarder, pricing, payment, etc. - Production: scale, seasonality, timing, methods - Marketing: promotional materials, market visits - Financing: strength, sources - Connection to stakeholder / knowledge of procedures 	<ul style="list-style-type: none"> - Motivation and commitment: long-term expansion strategy - Production and product readiness: production capacities and compliance with trade and safety regulations - Skills and resources: experiences/knowledge in exporting and/or international marketing/transactions - Financial: profitability and financial stability, and access to finance for medium and long-term investment

(3) Assessing barriers/challengers and needs of SMEs in exporting agriculture produce

- General issues in business operation; rules and regulations; production, harvest and post-harvest handling; access to finance; access to market and market information; and other risks; and
- Specific issues related to exporting fresh agriculture produce regarding safety and quality standards, exporting processes and procedures, potential international market information, logistics, etc.

1.4 Methodology

The study obtained data from both primary and secondary data sources.

- Primary data
 - Survey with enterprises including commercial farms (mainly SMEs and some proportion of large enterprises) who used to export, have exported or plan to export the designated commodities and traders (i.e. local traders, border traders and exporters)
 - Key informant interviews (KIIs) with relevant government agencies, development partners (DPs), NGOs, associations, agriculture cooperatives and other supporting actors
- Secondary data
 - Project related documents and beneficiary lists
 - Directories of business associations, chambers of commerce and consultant's network
 - Other relevant statistics and documents

Given no specific data on the number of SMEs in agriculture sub-sectors, the study uses the number of SMEs from the Cambodia's 2011 Economic Census. Based on a confidence level of 95% and margin error of 10%, a statistical sample size to participate in the survey is at least 100. Although local SMEs (who are commercial producers and traders) are the main targets for this study, this sample also includes a small proportion of large and/or foreign-owned enterprises and farms (employing more than 100 workers) as a control group in order to elicit lessons learned from their export-readiness experiences of the designated commodities.

In total, the sample size for the study is 146, including a survey with 104 SMEs and large enterprises/farms, and 42 KIIs with relevant government agencies at national and sub-national levels, DPs/NGOs, associations/cooperatives, and other supporting actors.

Table 2: Sample size

Methods	Tools	Participants	Sample size
Survey	Semi-structured questionnaire	SMEs (98) and larger enterprises/farms (6)	104
KIIs	Guiding questions	Relevant departments and units of key ministries at national level	8
		Relevant departments and units at sub-national level in target provinces	9
		DPs and/or NGOs	5
		Associations and/or cooperatives	14
		Other supporting actors	6
Total			146

The target areas of the study include Phnom Penh where most of the KIIs took place and some SMEs are based and could be approached for interviews, and other seven provinces – Kampong Speu, Kampong Cham, Tboung Khmum, Pailin, Steung Treng, Rattanakiri, and Kampot/Kep – where the corresponding commodities are most commonly grown and located. In addition, few other provinces were also included when potential large enterprises and SMEs were found and interviewed by phone calls.

As a result, a sample of 104 interviewed private enterprises is outlined in the table below by provinces and designated commodities. Since some of the respondents have engaged in multiple commodities, they are counted for all the sample of relevant commodities. In case of the respondents being located in multiple locations, their locations are captured in the selected 8 targeted areas regardless of their main operating areas located outside the targeted areas.

Table 3: Sample of private enterprises (n=104) by provinces and commodities

Locations	Yellow Banana	Mango	Pailin Longan	Pepper	Dragon Fruit	Fragrant Coconut	Birds' Nest
Phnom Penh ⁽¹⁾	0	4	0	3	0	0	4
Tboung Khmum	0	3	0	7	4	0	1
Kampong Cham	0	4	0	1	6	0	0
Kampong Speu	0	17	0	0	0	7	0
Pailin ⁽²⁾	0	4	7	0	0	0	0
Kampot/Kep ⁽³⁾	1	6	0	10	0	3	1
Rattanakiri	0	1	3	5	0	1	0
Steung Treng	1	5	0	0	1	0	0
Others ⁽⁴⁾	1	5	2	3	2	2	2
Total	3	49	12	29	13	13	8

Note:

⁽¹⁾ Including one bird's nest business having an additional location in Preah Sihanouk.

⁽²⁾ Including those having multiple farms located also in Battambang.

⁽³⁾ Including those having multiple farms located also in Kep, Koh Kong and Takeo.

⁽⁴⁾ Including Battambang, Banteay Meanchey, Koh Kong, Monduliri, Siem Reap and Preah Sihanouk.

2. Overview of Designated Commodities and Supporting Policies and Regulations

2.1. Production

The Cambodia's gross agriculture added value is 22,786,000 million riels (or approximately US\$5,696 million), contributing around 20.8% to the Cambodia's gross domestic product (GDP) in 2019, according to the MAFF's 2019 annual report. Crop production accounts for 57.67% of the total agriculture GDP. The table below outlines the production of the designated commodities under the management of General Directorate of Agriculture (GDA), except birds' nest which was reported to be licensed under the management of Forestry Administration.

- Majority of banana production is dominated by smallholder farmers on a household scale (94% of the total yield). There is no data about different banana varieties.
- More than 99% of mango production is dominant by family-run farms.
- Majority of Pailin longan production is at household level (91%).
- All of the pepper production was reported to be carried out by household farms; however, it should be noted that a number of pepper exporting companies have been active in pepper production.
- The total production of dragon fruit is 18,588 tonnes, 58% of which is household production.
- The coconut production stood at 368,069 tonnes (100% reported as household production despite the existence of a few large-scale

coconut farms), but there is no specific data on the coconut varieties to distinguish between fragrant and non-fragrant coconut production.

- The data on edible bird's nest production is limited to the number of bird's houses constructed, reported at a figure of as low as 30 houses in MAFF's annual report. However, the media reported around 2,000 - 3,000 bird's nest producers in 2018¹ and approximately 3,000 - 5,000 bird's houses in 2019.² The total production is estimated to be between 800 kilograms and 1,500 kilograms (per month) according to the President of Cambodia's Swiftlet Federation (CSF).³

Table 4: Production of Designated Crops in 2019

	Cultivated land (ha)	Harvested land (ha)	Harvested quantity (t)	Yield (t/ha)
(1) Household Production				
Mango	112,660	91,188	1,438,020	15.77
Banana	36,934	31,789	578,321	18.19
Coconut	17,099	15,026	368,282	24.51
Pailin Longan	6,613	5,753	81,791	14.22
Pepper	7,734	6,411	21,281	3.32
Dragon fruit	773	713	10,748	15.07
(2) Commercial Production (Companies)				
Mango	11,659	210	10,657	50.75
Banana	5,876	1,193	34,748	29.13
Coconut	407	-	-	-
Pailin Longan	712	588	7,725	13.14
Pepper	112	-	-	-
Dragon fruit	417	392	7,840	20.00
Total Production (1+ 2)				
Mango	124,319	91,398	1,448,677	15.85
Banana	42,810	32,982	613,069	18.59
Coconut	17,506	15,026	368,282	24.51
Pailin Longan	7,325	6,341	89,516	14.12
Pepper	7,846	6,411	21,281	3.32
Dragon fruit	1,190	1,105	18,588	16.82

Source: MAFF's 2019 Annual Report.

Note: no data related to birds' nest production.

1 Asia News Network, Cambodian bird's nest producer aiming more big exports, dated 19 Dec 2018.

2 Phnom Penh Post, Kingdom is set to export edible bird's nest to China, dated 5 Jun 2019.

3 Ibid.

2.2. Exports

In 2019, Cambodia exported a total of 4,876,953 tons of agriculture crops, of which 12.7% is rice, 3.24% fresh banana, 1.19% fresh mango and 0.08% pepper (MAFF's 2019 annual report). The statistics detailing export quantity, value and destinations of the designated commodities in 2016-2018 obtained from the Trade Map of the International Trade Center (ITC) and in 2019 from the General Directorate of Customs and Excise (GDCE) of Ministry of Economy and Finance (MEF) is outlined in Table 5. It should be noted that there is inconsistency in recording/reporting export data of these commodities between MAFF (focusing on the export figures subject to SPS certification) and GDCE (documenting official export figures).

- The export volume of yellow banana accounts for approximately 18% of the total of production. GDCE's off-system record also shows more than 31,000 tonnes or nearly US\$4,000 value being exported to Vietnam in 2019. From last year, the official figures increased by 4 times in terms of volume and nearly 3 times in terms of value because of the capture of China's market under the officially approved market access despite the fact that Vietnam remains the major destination and Japan as the minor importer. Since its first shipment in mid-2019, Cambodia's yellow banana exports to China have increased rapidly. The media reported a MAFF's figure of a total 157,812 tonnes of yellow bananas exported in 2019 and 147,760 tonnes in the first six months of 2020,⁴ and the figure reached 167,754 tonnes by July 2020.⁵
- Only 0.4% of mango was exported in 2019 and the major destinations include Vietnam (76%), followed by Thailand (16%) and minimally to Singapore (less than 5%), France and Hong Kong (around 1%). However, the off-system data of GDCE indicates an extremely large volume of mango (172,726 tonnes or around 28 folds of the official figure) being exported to Vietnam (76%) and Thailand (33%) in 2019. The MAFF's data as quoted by media indicates 58,162 tonnes of fresh mango export to foreign markets.⁶ During January-May 2020, Cambodia already exported 44,099 tonnes of fresh mango,⁷ and this figure reached 46,340 tonnes by July 2020.⁸
- The official figure shows a very minimal export of Pailin longan, yet the export via out-of-system record of GDCE indicates 3,691 tonnes to Thailand, accounting for around 4% of its total production. However, the farmers quoted in the media stated a doubled figure of about 8,000 tonnes being exported to China via Thailand each year.⁹
- Nearly 90% of the exported pepper is neither crushed nor ground, half of which going to Vietnam, 37% to Germany, nearly 8% to Saudi Arabia, and 1% to Singapore. Of the crushed pepper (10% of the total pepper export), European countries are the main markets (Germany, Netherlands, Italy and France), and Japan captures nearly 2%. MAFF was quoted with a much higher export data of 3,693 tonnes in 2019.¹⁰ The recent data released by the Minister of MAFF showed that Cambodia exported 3,430 tonnes of pepper during the first 7 months in 2020.¹¹
- The official data showed 891 tonnes of dragon fruit exported to Vietnam (over 99%) and Singapore (less than 1%, as sample). Information about dragon fruit production and exports is not consistently collected and therefore not widely available.
- Cambodia has not yet exported any coconut abroad despite a sample was sent to Korea.
- Majority of the harvested bird's nest (approximately 70%) is unofficially sold abroad including mainly China (currently through informal channels), Thailand, Vietnam and other countries, according to the CFS.

Table 5: Exports of designated crops by quantity, values and destinations

HS Code	Commodities	2016	2017	2018	2019
		Quantity (tons)			
08039090	Bananas (fresh or dried, excl. plantains)	-	12,324	27,490	112,313
08045020	Mango (fresh or dried)	332	3,005	7,661	6,138

4 Phnom Penh Post, Banana exports booming despite pandemic, dated 31 Mar 2020.

5 MAFF Minister's official Facebook page, dated 31 Jul 2020.

6 Phnom Penh Post, Mangoes officially cleared for export to China, dated 9 Jun 2020.

7 Ibid.

8 MAFF Minister's official Facebook page, dated 31 Jul 2020.

9 Phnom Penh Post, Longan demand and price plummeting, dated 18 Mar 2020.

10 Phnom Penh Post, Pepper exports hot, soaring 53% on-year, dated 6 Jan 2020.

11 MAFF Minister's official Facebook page, dated 31 Jul 2020.

08109010	Longan (fresh)	-	116	589	39
08109092	Dragon fruit (fresh)	-	54	1,245	891
090411	Pepper (neither crushed nor ground)	437	2,334	2,104	3,072
090412	Pepper (crushed or ground)	-	149	257	87
080112	Coconuts (fresh in endocarp)	-	-	-	-
04100010	Bird's nests	-	-	0.01	-
		Value (thousand US\$)			
08039090	Bananas (fresh or dried, excl. plantains)	-	6,403	17,716	49,347
08045020	Mango (fresh or dried)	827	1,543	3,002	3,038
08109010	Longan (fresh)	-	24	103	12
08109092	Dragon fruit (fresh)	-	80	1,127	923
090411	Pepper (neither crushed nor ground)	3,542	10,412	7,191	9,018
090412	Pepper (crushed or ground)	12	491	646	313
080112	Coconuts (fresh in endocarp)	-	-	-	-
04100010	Bird's nests	-	-	3	-
HS Code	Commodities	Destinations (by share of exporting quantity in 2019)			
08039090	Bananas (fresh or dried, excl. plantains)	VN=82.91%, CN=17.05%, JP=0.04%			
08045020	Mango (fresh or dried)	VN=75.77%, TH=15.71%, SG=4.59%, FR=1.57%, HK=1.05%, others=1.31%			
08109010	Longan (fresh)	CH=97.60%, FR=2.40%			
08109092	Dragon fruit (fresh)	VN=99.84%, SG=0.16%			
090411	Pepper (neither crushed nor ground)	VN=50.48%, DE=37.03%, SG=7.90%, SA=1.18%, others=3.41%			
090412	Pepper (crushed or ground)	DE=55.69%, NL=20.00%, IT=16.71%, FR=3.49%, JP=1.68%, others=2.43%			

Source: ITC's Trade Map for 2016-2018 and GDCE for 2019 data.

Note: CH=Switzerland, CN=China, DE=Germany, FR=France, HK=Hong Kong, IT=Italy, JP=Japan, NL=Netherlands, SA=Saudi Arabia, SG=Singapore, TH=Thailand, VN=Vietnam.

In addition to the official data obtained from GDCE, banana, mango and longan are also exported to Thailand and Vietnam via border check points with off-system records (see table below).

Table 6: Export Data Recorded Out of System in 2019

HS Code	Commodities	Thailand		Viet Nam		Total	
		Quantity (tons)	Value ('000 US\$)	Quantity (tons)	Value ('000 US\$)	Quantity (tons)	Value ('000 US\$)
08039090	Banana	-	-	31,554	3,934	31,554	3,934
08045020	Mango	57,731	13,913	114,995	16,614	172,726	30,526
08109010	Longan	3,691	3,045	-	-	3,691	3,045

Source: GDCE, 2019.

2.3. Supporting Policies and Regulations

The Royal Government of Cambodia (RGC) has laid out a number of policies and regulations for the development of agriculture sector in general and export of agriculture produce in particular. The Rectangular Strategy (RS) Phase IV and National Strategic Development Plan (NSDP) 2019-2023 are the two overarching national policies outlining the aim to enhance the development of all agriculture sub-sectors through productivity improvement, modernization and commercialization. **Agriculture Sector Strategic Development Plan (2019-2023)** is the key policy document governing and guiding the development of agriculture sector in Cambodia. One of the priority policy objectives is to “*increase agricultural productivity, diversification, competitiveness and commercialization*” with one of the key strategies focusing on enhancing productivity and diversification of agricultural crops and expanding agri-businesses.

In 2016, a study on **Master Plan for Crop Production 2016-2030** was drafted by MAFF, aiming to turn Cambodia to be “*a reliable source of high quality, safe, and competitive crops in the global economy while ensuring sufficient volumes of safe food to meet food and nutrition security of its own citizens in a sustainable and climate resilient way.*” Under the Master Plan, eight priority crops and its value chains were identified for further specification on policy interventions. Mango and pepper are among the chosen crops, with 2030 visions: “*Cambodia is one of the five major exporters of quality fresh mango in the world*” and “*Cambodia is a leading exporter of pepper including the globally recognized Kampot pepper*” (Goletti and Sin, 2016, p.2).

The **Strategic Plan for Agriculture Crop Sub-sector Development (2019-2023)** sets out an important blueprint to drive the growth of crop sub-sector focusing on rice, horticulture (vegetable, fruits and ornamental plants), and industrial crops (maize, cassava, cashew nuts, banana, pepper, sugar cane, etc.). The main objectives are to promote (1) productivity and crop diversification, (2) competitiveness in the local and international markets, (3) technology and technical extension services, (4) coordination effectiveness and efficiency, (5) institutional capacity development, and (6) private sector engagement and partnership. More specifically relevant to this study, domestic market remains the main focus of fruit sub-sector development, and export promotion is the focus of rice and industrial crop sub-sectors under this Strategic Plan.

In addition, a recent draft of **Agricultural Sector Master Plan 2030** envisions a long-term goal of the RGC in promoting competitiveness, inclusive growth, resilient and sustainable modern agriculture sector. Under its first strategic objective to enhance productivity and profitability in crop value chain, main strategies will focus on seed development, technologies, inputs, post-harvest handling, community development, contract farming and marketing, etc. The draft plan indicates an aim to increase gross value added for crops by 3.1% per annum and a crop value from US\$6,218 million in 2019 to US\$8,634 million in 2030.

Recognizing the importance of and the commitment in promoting horticulture sub-sector, the government is in the process of developing a **Horticulture Policy**, covering vegetable, fruit and floriculture (including ornament plants). The policy preliminarily sets out its vision for Cambodia to produce “*quality horticultural products in an economically competitive, climate resilient, and environmentally sustainable manner*” with a goal to realize the full potential of horticulture sub-sector to serve the needs of local consumers and to meet export quality requirements (Chan, 2019). At the same time, MAFF is also in the process of developing a draft Law on Sanitary and Phytosanitary (SPS).

At the production level, **Law on Agriculture Cooperatives (2013)** and **Sub-Decree on Contract Farming (2011)** are intended to strengthen responsibilities and build trust between farmers and buyers. The modality of contract farming is to ensure prices, quality and quantity of the supply of agriculture products, and to improve purchasing, processing, and exporting of agriculture products. Under the Sub-Decree, farmers work directly with buyers under MAFF's facilitation and coordination. Furthermore, **Prakas on Good Agriculture Practices (GAP) (2010)** was enacted based on the ASEAN's GAP standards, instructing GAP certification to be provided to certified vegetables, fruits, and other agriculture farms. So far, there have been around 50 certified farms in Cambodia, mainly growing fruits (according to the Department of Plant Protection, Sanitary and Phytosanitary). What's more, **Agricultural Extension Policy (2015)** aims to support farmers to have greater access to knowledge, skill, information, and technology in order to enhance agricultural productivity, diversification, and commercialization.

Most importantly, **bilateral trade agreements** have played a significant role in supporting the export of agriculture commodities. *"Since the establishment of the ASEAN-China Free Trade Area (ACFTA) in 2002, trade between China and ASEAN-member countries has grown rapidly. From 2002 to 2018, China's imports from ASEAN-members under the 08 HS code category (edible fruit and nuts; peel of citrus fruit or melons) increased more than 16 folds from just over US\$216 million to nearly US\$3.8 billion"* (MZMB, 2020, p. 29). The most recent 3rd round discussion on Cambodia-China Free Trade Agreement (FTA) shows a promising reach to a bilateral FTA between Cambodia and China to be signed by end of 2020, expecting to increase Cambodia's agriculture exports.¹² The FTA will ease the tariff of around 95% of 340 items to zero imposed by China importing those products.

There are 15 enterprises producing, processing and packaging fresh yellow banana registered with MAFF and approved by China for exporting to China.¹³ The protocol on sanitary and phytosanitary (SPS) requirements for exporting fresh mango to China has been recently signed off in June 2020, when announcing approximately 20 companies already submitting their application to MAFF. Pailin longan will be the next commodity for the bilateral negotiation for exporting to China's market.¹⁴

Box 1: Access to China's Markets

China has posted a list of official market access for fresh fruits to be exported to China (www.producereport.com/market-access-list).¹⁵ For Cambodia, Banana and mango are on the list (last updated on 31 July 2020). For products not enlisted, "market access negotiations with General Administration of Customs of the People's Republic of China (GACC) must be initiated by the government of the product's country of origin, usually through the agricultural section of its embassy in China. For GACC, assessing phytosanitary risks associated with the product is the primary focus in processing market access applications" (MZMB, 2020, p. 39). A number of principles and criteria are applied to all countries. "National and regional fruit industry associations can often play an important role in market access talks by providing accurate information and demonstrating coordination among industry members. Political factors can also affect market access, as has been demonstrated with several bans by China on imported foods in the past during times of political tension. Reasons to restricting access to the Chinese market often fall into the category of phytosanitary risk. Maintaining positive bilateral relations and responding quickly to GACC with accurate information are essential for achieving market access" (MZMB, 2020, pp. 39-40).

The Chinese importers are required to submit a number of documents to GACC for each shipment they received from their suppliers. These documents include, but not limited to shipping list, insurance policy, country of origin certificate, invoice, custom declaration, phytosanitary certificate, billing of landing and purchase and sale contract. Therefore, "exporters must make sure they are able to provide these documents to their import partners in order to prevent delays, fines, or other penalties at Chinese ports of entry. Exporters also need to make sure their orchards and packinghouses are registered with GACC, which is becoming increasingly strict with regards to product traceability" (MZMB, 2020, p. 39-40).

¹² MoC's press release on the result of the 3rd round discussion of Cambodia-China FTA on 9 Jun 2020.

¹³ Phnom Penh Post, Yellow bananas blossoming with Chinese investment, dated 26 Jul 2020.

¹⁴ The speech of the Director General of GDA/MAFF in a press conference at the Council of Ministers – featured on Fresh News on 17 Jun 2020, <https://youtu.be/besLbi3pxv0> (access 18 Jun 2020)

¹⁵ www.producereport.com/market-access-list (accessed 31 Jul 2020).

Besides China's market, MAFF completed the protocol on SPS requirements and registered a Korean enterprise exporting fresh mango to Korea and the first shipment took place in mid-January 2020 (MAFF's 2019 annual report). MAFF is still in the process of commencing the negotiation for exporting Pailin longan to Thailand.

In addition to these existing sector policies and regulations, the RGC, like other countries, is committed to revitalizing the country's economic growth in response to the crisis caused by COVID-19 pandemic. Agriculture sector remains a crucial component of the Cambodia's economy, yet the sector has faced chronic challenges even in the non-pandemic years. In multiple public statements made by the Prime Minister and the Minister of MAFF, farmers are encouraged to increase production in order to boost supply for the local market and to stimulate economic growth. The Prime Minister announced in June 2020 that the government would invest US\$100 million in rural irrigation projects to support agriculture sector and provide short-term work in the provinces.¹⁶ Supporting SME's access to finance is another important initiative through the "SME Co-financing Scheme" of the Ministry of Economy and Finance (MEF) being launched in the right time of emergency by lending to SMEs in the pandemic period (see more details in MEF part below).

3. Stakeholder Mapping and Export Readiness Assessment

3.1. Key Government Agencies and Relevant Coordinating Platforms

General Directorate of Agriculture (GDA) of MAFF plays an important role in promoting export of the designated crops¹⁷ in Cambodia. Under GDA, **Horticulture Department** has been developing horticulture policy aiming at supporting and further promoting horticulture sub-sector. The Department has supported the sub-sector through technical skill trainings on safe product standards (GAP and organic), and linking producers to markets. **Department of Plant Protection, Sanitary and Phytosanitary (SPS)** is another unit highly relevant to agriculture exports through its role in pest monitoring system management and farm inspection in order to issue SPS certificates to qualified exporting companies. Most importantly, this Department is the lead technical team to negotiate with China on SPS protocol requirements for exporting fresh agriculture produce like banana, mango and other enlisted crops.

Under **Ministry of Commerce (MoC)**, relevant departments and units include:

- **Trade Training and Research Institute (TTRI)**, under the management structure of General Directorate of Domestic Trade, provides capacity building to relevant government staff and private sector on trade agreements, trade negotiation for both agriculture and non-agriculture products, and other on-demand courses upon SMEs' request (including export procedure, market research, customs, entrepreneurship, exhibition, production, and business registration, etc.); conducts various researches (including mango value chain study in 2016); and plans to develop (1) a trade information center, which includes an information desk for registration services, Qualified Investment Projects (QIPs), business prototype, tax and custom services, trainings, product development and technology), (2) database for SMEs, and (3) an e-library consisting of all trade information (open for access by both students and SMEs).
- **Department of Exhibition Affairs**, under General Directorate of Trade Promotion, is responsible for organizing and facilitating trade exhibitions in both local and international markets, covering (1) an annual forum and exhibition of safe vegetables and fruits in Siem Reap, targeting tourists and hotels (MoC provides free booths to SMEs upon registration); (2) an annual China and ASEAN exhibition in Nang Ning in September, targeting 150 free booths for all kinds of products and SMEs bearing own costs on other expenditures with MoC facilitating the process of getting the sample to the exhibition; (3) an annual exhibition in Shainghai in November; (4) an annual exhibition in Khun Ming in June; and (5) other exhibitions in other provinces in China.

¹⁶ VOD, Covid-19 to Help Boost Cambodia's Agricultural Sector, Hun Sen Says, dated 15 Jul 2020.

¹⁷ Except for the bird's nest production which is under direct supervision of Forestry Administration of MAFF.

- **Department of Trade Policies**, under General Directorate of Trade Promotion, has engaged with MAFF in the crop-specific MoU discussion/negotiation with China's authorities on official market access of Cambodia's fresh agriculture produce to China; is part of the mango working group at MoC, supporting mango MoU negotiation; and works with development partners on various value chain studies and developing trade policies for specific crops (e.g. National Cassava Policy, value chain studies on pepper and cashew nuts, etc.)
- **Department of Import-Export**, under General Directorate of Trade Services, is responsible for issuing Country of Origin (CO) certificates (automated since 2015 with online application and payment, but still issuing hard copy certificate as per clients' requirement); cooperates with TTRI in providing trainings on CO application to approximately 600-700 logistic professionals; and ensures code of conducts (via a Prakas) of logistic service providers (being certified with an ID and certification valid for 2-year with possible renewal) serving the SMEs in getting COs.

Under Ministry of Industry, Science, Technology, and Innovation (MISTI), **Institute of Standards of Cambodia (ISC)** is the key agency responsible for standard development, product certification and product testing. Recently ISC, in cooperation with MAFF, has conducted a study on Keo Romeat mango standard (referring to variances in sizes and grades, adapted from Philippines and USA plus Codex) with farmers in 11 provinces, especially those nearby the Vietnam and Thai borders. The standard should be in compliance to the ASEAN standard for mango.

The Department of Research and Extension of **Royal University of Agriculture (RUA)** received fund support from USAID through USDA to conduct a mango (and cashew nut) value chain study to map out key stakeholders. In addition, RUA is running five Technology Parks (drip irrigation and cover crops), under full financial support from USAID to support horticulture and livestock development. One of the Technology Parks, which is located in Siem Reap focuses mainly on fruit sub-sector. RUA has also contributed to a study under the Japan-ASEAN framework to promote technology especially related to cold chain, storage facilities and packing houses.

Ministry of Economy and Finance (MEF) supports the agriculture sector through tax and custom incentives provided to SMEs in general and also those engaged in agriculture sector. According to two Sub-Decrees on tax and custom incentives for SMEs issued in late 2018 and early 2019,¹⁸ SMEs in agriculture and agro-industry sector among the SMEs who are qualified to entitle a range of benefits including:

- Exemption of income tax for newly registered enterprises for 3 to 5 years
- Exemption of monthly 1% pre-payment of income tax and annual minimum tax during the income tax exemption period
- Incentives for deductible expenditure include a 200% weighted tax deductible expense for IT-based accounting software and training and staff technical training, and a 150% weighted tax deductible expense for equipment or new technology that increases productivity
- Exemption of import tax on production equipment, construction equipment, and production inputs

In February 2020, the government developed "SME Sector Rejuvenation Initiative 2020" to launch an **SME Co-financing Scheme**. Under this scheme, an SME Bank was established under the management of MEF with US\$100 million fund to be provided to SMEs as loans with low interest rates and better terms and conditions.¹⁹ While half of the fund is for non-agriculture SMEs via partnered commercial banks and MFIs, the remaining half is channeled to support SMEs in agriculture and agro-processing sectors through Agriculture and Rural Development Bank (ARDB). The loan amount is up to US\$300,000 with an interest rate of 5 percent for working capital (revised downward from 6 percent) and 5.5 percent for investment (revised downward from 6.5 percent), without service charges. Thus far, ARDB has received 430 loan applications for US\$42 million in July 2020 and approved more than US\$11.37 million.²⁰ It should be noted that this scheme addresses the emergency SME facing in the midst of the economic crisis caused by Covid-19 pandemic. The government has allocated US\$500 million in loans for SMEs in "a second phase" with US\$300 million for financing support and US\$200 million for credit guarantee projects.²¹

18 Sub-Decree No. 124 on tax incentives to SMEs in priority sectors, dated 2 Oct 2018; and Sub-Decree No. 50 on custom incentives to SMEs, dated 25 Mar 2019.

19 Phnom Penh Post, SME Bank officially launched, dated 5 Apr 2020.

20 Phnom Penh Post, SME Bank and ARDB disburse \$63 million in loan, dated 30 Jul 2020.

21 Ibid.

In addition to the above-mentioned government agencies, there are a number of relevant projects, programs and initiatives supporting the trading and exporting of the designated commodities. Besides those of development partners, there are two platforms recently initiated with direct relevance to this study.

- **Grow Asia's Cambodia Partnership for Sustainable Agriculture (CPSA)** is a multi-stakeholder partnership platform aiming at enhancing agriculture inclusiveness and sustainability in Cambodia. Targeting fruits, pepper and other horticulture sub-sector, CPSA conducts researches and offers a platform for networking opportunities, information exchange, and training on technical skill, and stakeholder coordination (e.g. vegetable working group established in 2019). Recently CPSA conducted a rapid value chain study of 5 fruits (banana, mango, longan, dragon fruit, and fragrant) to support the development of a fruit working group.
- **Cambodia Horticulture Investment Platform (CHIP)** recently initiated by a group of policy makers and private sector with an aim to gather involvement from all relevant stakeholders in vegetables and fruits sub-sectors. To date, CHIP consists of around 10 members who are private sector and investors, as well as policy makers (MAFF, MEF and MoC). CHIP is directed by four pillars: supporting the RGC in trade negotiation with trading partners (like Japan, Korea and other countries), tackling non-tariff barriers through investment in machinery supporting fresh agriculture produce, advocating for government incentives in agro-processing, and linking producers with long-term market access commitment and investment in irrigation. The interest of CHIP in fruits includes mango, pineapple, avocado and passion fruits.

3.2. Private Sector Stakeholders

3.2.1. Yellow Banana

The fast growing of banana production and exports is backed by large farms and companies with investment from Chinese and Vietnamese investors. According to MAFF, 15 banana plantations and packaging facilities approved by China include Longmate Agriculture Co., Ltd, Long Sreng Hua Jian Agriculture Development Co Ltd, Green Island Agricultural Development (Cambodia) Ltd, Sovann Reachsey Co., Ltd, Agricultural Development (Cambodia) Co., Ltd, Hoang Anh Andong Meas, Hoang Anh Lumphat, Daun Penh Agrico, Binhphuoc Kratie Rubber 2, YQL (Cambodia) Investment Co., Ltd, Sing He Yi Agriculture Co Ltd, and other four companies. It should be noted that Hoang Anh Andong Meas, Hoang Anh Lumphat, Daun Penh Agrico and Binhphuoc Kratie Rubber 2 are owned by the same parent firm, the Vietnam-based Hoang Anh Gia Lai Agricultural JSC (HAGL Agrico).²² The major yellow banana producing areas include Kampot, Kampong Cham, Kratie, Steung Treng and Rattanakiri.

All of the registered companies, covering more than 10,000 hectares of land and 21 packaging plants, are joint ventures between Khmer and Chinese or Vietnamese investors. Only 11 companies have been currently exporting banana to China, and two plantations have received GAP certification. With the growing number of registered companies, the export of banana to China is expected to double in 2020.²³ In general, China demands around 2 million tonnes of banana per year from various countries, and therefore there are great potentials for investors to increase investment and production in Cambodia. These banana plantations and exporting companies are backed by not only strong investment capacities, but also technical production expertise and most importantly access to international markets (mainly China and other countries).

²² Phnom Penh Post, Banana exports booming despite pandemic, dated 31 Mar 2020.

²³ Phnom Penh Post, Yellow bananas blossoming with Chinese investment, dated 26 Jul 2020.

Box 2: Case of Longmate

Established in 2017, Longmate Agriculture Co., Ltd. is a US\$32 million Cambodian-Chinese joint venture employing approximately 900 workers on 1,000 hectares of banana plantations in Kampot province. The plantation has been using the seedlings originated from Australia and developed and researched in China. Longmate is harvesting more than 400 hectare and exported more than 10,000 tonnes of bananas to China by three 40-foot containers every two days or some days about seven containers.²⁴ Recently in May 2020, Longmate has started to supply banana to the local supermarkets. Longmate also sets out a plan to target other foreign markets like Middle East, Japan, Korea and EU with an aim to reach 30,000 tonnes in two years. Longmate also plans for processing low-grade bananas and similar fruits into dried and puree forms for export in the near future. Key lessons learned from Longmate include their compliance to market requirements by selecting the right seedling needed by the market, having a stable supply and ensuring they are safe to eat and ensure high standards in accordance to various sanitary and phytosanitary requirements of each designated country.²⁵

Box 3: Case of Hoang Anh Gia Lai (HAGL)

Another large yellow banana plantation in Steung Treng is one of Hoang Anh Gia Lai (HAGL) subsidiaries. This 3,000-hectare plantation is employing 2,000 workers, starting to grow Keo Romeat and Irwin mango in 2016 and yellow banana in 2018. The banana is planted over 1,000 hectares of land and the company is harvesting 800 hectares with an annual yield of around 45 to 50 tonnes per hectare, according to the interview with the company representative. The company owns packing stations and cold storage facilities by having grade A and B banana exported to China, Japan and Korea.

In addition to the Chinese or Vietnamese invested exporting companies, there is another large plantation is piloting 30 hectares of yellow banana plantation for exporting to Japan. According to this plantation, the main challenge in exporting yellow banana for the first time is attributed to limited technical knowledge in production (seedling imported from Australia), packaging and transportation to meet the buyer's and destination country's requirements despite the fact that the owner has had experiences in exporting sector.

While there is no any cooperative or association specifically focusing on banana, local producers and traders have not had much engagement in production and trading of yellow banana. It is worth noted that there is no data on specific banana varieties in the MAFF and PDAFF reports. The consultations with PDAFF representatives in the target provinces showed that most of the banana production by local farmers (other than those registered companies) is mostly in a small scale and of local varieties (other than yellow banana).

Box 4: Case of a local banana producer/trader

According to an interview with a local farmer-cum-trader located in Thma Bang district in Koh Kong which is a known location for banana production, almost all of the production in the area is concentrating on golden egg or chicken egg banana variety (Chek Pong Moan in Khmer). In his area, there are around 20 local traders of banana. For his own farm (unregistered with any government entities) growing around 16 hectares of banana since 2011, around one third of the total production is yellow banana. In addition to the production from his own farm, he also collects banana (mainly Chek Pong Moan variety) in Koh Kong and supplies approximately 365 tonnes annually to retailing stores and marts in Phnom Penh. The yellow banana he supplied is claimed to be at a cheaper price (US\$1 per bunch which normally weights more than 1 kilogram) than those of the companies (US\$1.20 per kilogram) despite the fact that the appearance of his banana is less appealing.

²⁴ Khmer Times, Q&A: Peeling back the success of a national fruit, dated 25 May 2020.

²⁵ Ibid.

In 5 years' time, the local farmers have been observed that they tend to give up on banana production due to low prices of local banana and change to other higher value crops like durian. As a result, the interviewed trader saw the potential of yellow banana and indicated his plan in expanding his farm with irrigation system to gradually move to more production of yellow banana. However, he requires access to more investment fund and also working capital for collecting banana from farmers to address the decreasing supplies and to meet the growing demand.

Given the current context, the local farmers and traders are not yet ready for exporting given the current variety of banana they mainly focus on, scale of production, and capacity in producing the outputs in accordance to the required standards in terms of appearance and texture.

3.2.2. Mango

The most predominant variety of mango grown in Cambodia is Keo Romeat among the other imported varieties. Approximately 40% of mango production is in Kampong Speu, followed by Battambang, Kampot and Banteay Meanchey (MI, 2019). With an aim for an annual export of 600,000 tonnes of mango by 2023, Cambodia is much dependent on the China's market upon the two countries' agreement of SPS protocol as Cambodia plans to export 500,000 tonnes of fresh mangoes per year to China, whose total annual demand for mango stands at about eight million tonnes.²⁶ There is a great potential for the growth of the Cambodia's mango exports. Three categories of key players in fresh mango exporting sector were identified, including (1) current/potential exporting companies, (2) border traders, and (3) local traders, producers and producer groups or cooperatives.

(1) Current and Potential Mango Exporting Companies

These include medium to large companies (either foreign joint ventures or local firms) currently exporting or planning to export fresh mango. Cambodia has reached an official SPS requirement protocols for exporting mango to Korea and China. Major requirements focus on strict control measures over farm management, packing and quarantine treatments like vapor heat treatment (VHT) or hot water treatment (HWT). Such a treatment can effectively prepare mango in accordance to the China's standards, and that is a key to the success of the Cambodian mango exports to China. Building the infrastructure needed to meet those requirements takes time and capital.

Box 5: Case of a South Korean Company

Earlier in January 2020, Cambodia began its first shipment of Keo Romeat mango to Korea through Hyundai Agro, a South Korea based company, with a daily export of 5 to 20 tonnes, to be competing with other 7 countries in Korea's domestic markets.²⁷ In addition to the supplies from its farm (2,400 hectares under the partnership with a local producer Mao Legacy), Hyundai also contracted with 23 producers in Kampong Speu and Kampot to collect 3,800 tonnes of fresh mango.²⁸ Since December 2019, the company possesses a three-hectare fruit processing facility equipped with a vapor heat treatment in Kampong Speu province to sterilise crops and exterminate pests for about 15 tonnes of export-ready mango per day.²⁹

According to recent media reporting from MAFF, many other Chinese companies expressed intention to invest in building sterilisation factories in Cambodia with a capacity of about 1,000 tonnes to 2,000 tonnes per day to support the export of mango to China.³⁰

In addition, it should be noted that by the time when Cambodia reached an official agreement with China on SPS protocol for exporting fresh mango to China on 9 June 2020, there have been 20 companies (including both farms and packaging stations) submitting their applications to MAFF with a total mango production area of 21,286 hectares or an average 1,064 hectares per applicant. By early October, the number has reached 48 companies, plantations and ACs (including two ACs in Kampong Speu and one AC in Battambang), covering 28,345 hectares of land. Among them, 5 plantations and 1 packaging house have already been approved by GDA while awaiting for the

²⁶ Phnom Penh Post, Mangoes officially cleared for export to China, dated 9 Jun 2020.

²⁷ Khmer Times, First Cambodian mango exports to South Korea officially launch, dated 10 Jan 2020.

²⁸ Ibid.

²⁹ Phnom Penh Post, Mangoes officially cleared for export to China, dated 9 Jun 2020.

³⁰ Khmer Times, First Cambodian mango exports to South Korea officially launch, dated 10 Jan 2020.

verification and approval from the China's GACC. There have been 10 companies in the process of installing treatment facilities – Long Sreng, Green Sea and another company going to be done by October 2020. A local farm expressed its plan to contract with Hyundai company in order to use its treatment facilities.

Below provides some information about the interviewed companies under this category of actors. Some of the companies like **Kingdom Fruit International**, **Green Sea**, and **Alliances of Cambodian Agricultural Product Exporters** have exported fresh mango abroad for many years, while a few emerging companies including **Angkor Harvest**, **Angkor Green**, **Confirel**, and **UCDL Development** have recently started their mango exports in a smaller scale to various countries. On the other hand, there are a few companies, which have had rich experiences in the exporting other fresh agricultural produce, are planning to export fresh mango with an eye on the China's market potentials, and these include **Hoang Anh Gia Lai**, **Cambodian Agriculture Cooperative Corporation (CACC)**, **Signatures of Asia** and **Rich Farm Asia**.

Women ownership remains limited in these exporting companies. However, a number of them claimed to be engaged by female top management like at Angkor Harvest, Confirel, CACC, and Signatures of Asia.

(2) Border Traders

Another important player is the border traders who normally collect fresh mango from producers, producer groups and small traders in the local areas, nearby provinces and other provinces. The mango trading businesses mostly co-owned and/or co-managed by couples (men and women). Unlike the exporting companies discussed above, most of these traders are operated unregistered and are located in Pailin and Battambang provinces with easy access to Thailand, supplying directly to Thai traders at Thai border points. Among the five border traders interviewed, three are located in Battambang and the other two are based in Pailin. These traders purchase mango in two forms: (1) bagged mango to be re-exported to third countries and (2) un-bagged mango (normally without proper grading) for processing purposes.

Box 6: Case of a mango trader at Thai border

Based in Pailin, one of the interviewed traders has been collecting mango from almost all provinces since 2009. He is trading around 60,000 tonnes of Keo Romeat mango per year. He stated the importance of mango grading as one of the key profitability drivers. Normally he needs to purchase most (if not all) of the yield from the supplier farms at one price, and from the collection, he categorizes the produce into different grades and then prices them differently. In addition to the supplies at Thai borders, there are also some being supplied to other Khmer and Vietnamese traders. During the low season of Keo Romeat in Cambodia, he imports Thai variety mango from Thailand.

These border traders did not express explicit plan to do direct export to international markets, nor indicated any readiness for such intention. The main reason is directed to the current market access limits (not many options of buyers), and depending on traders from neighboring countries. In addition, their supply capacities are still limited in terms of quality standard, which is currently none about GAP adoption, let alone the access to treatment and packaging facilities. They also expressed the concern over the access to working capital if they wish to expand trading capacities in the future. Nonetheless, these traders would like to supply to the exporting companies who have had secured access to and experiences in international markets.

(3) Local Traders, Producers and Producer Groups or Cooperatives

Linking with the border traders, the local traders act as an intermediary by collecting mango from producers in various scales from different locations. The common practices of the 3 interviewed local traders located in Kampong Speu show that they are operating fixed trading stations and also collection at farm-gate, and their average trading volume is around 6,400 tons of fresh mango per year. They supply to the intermediary traders who then sell to the traders in Thailand and Vietnam, as well as the mango processing factories located in Kampong Speu. However, they did not want to do direct export due to lack of knowledge and capacities in managing exporting business and lack of working capital to source mango in a large quantity. Like the local traders, most of the mango producers are not export ready as per findings from the 29 interviewed producers, some of whom are also small-scale traders, possessing an average of approximately 20 hectares per mango producer producing an average of around 20 tonnes per year (with some of the trees have not yet fully yielded). This is due mainly to the self-claimed lack of interest and capacities.

Agriculture Cooperatives (ACs) are an important and more structured actor and mechanism for producers to supply collectively to international markets. **Kampong Speu Mango Association (KMA)** is one of the key collective bodies in the mango sub-sector; however, the representative of association could not be reached for an interview nor additional information about KMA could be found. On the other hand, **Ponleu Thmey Pec Chenda Cooperative (PTPCC)** was established in 2009 initially as a saving group in Battambang and now consists of 161 producers of mango, poultry and vegetables. Among all of the members, 50 are mango producers, and 16 of them who are located in Phnom Proek, Sampov Loun and Kamreang have been selected to supply under the partnership with an exporting company. These contracted farmers could supply a total of 4,000 tonnes of mango per year for export to China, Singapore and processing factories. Along with the boost on poultry and vegetables for local market, PTPCC plans to expand coverage of the remaining mango producers into the contract farming scheme and partnership with exporting companies. Nonetheless, PTPCC did not intend to directly export fresh mango as the team members do not know exporting procedures clearly and therefore would like to focus on the current partnership with the exporting company to export mangos in the coming years.

Located in Tboung Khmum, **Samaki Dambae Agriculture Cooperative** is a cooperative newly established in 2020, consisting of around 10 mango and poultry producers. The mango producers normally supply to local, Vietnamese and Chinese traders coming along with own dressing and harvesting laborers. This AC shows great interest in collective market access for their mangos to be exported and processed through contract farming with large companies. They expressed an initial capacity in supplying approximately 100 tonnes of good quality mangos per year.

Another AC in Banteay Meanchey, **Malay Longan Agriculture Cooperative**, founded in 2019, also focus on mango in addition to its main crop which is longan. However, their supply of mango is still small. The AC has recently set up a fruit processing factory to process longan and mango by targeting the local market in the short-run and exporting markets in the long-run without the plan for exporting fresh mango abroad. The main challenge for any AC to access to finance is the lack of valuable assets for collateral as per requirement from financial institutions.

3.2.3. Pailin Longan

Of the total production areas, Battambang and Pailin accounting for nearly 80 percent.³¹ Aside from some local consumption, Pailin longan (collected from Pailin, Battambang and other provinces) is supplied to Thailand, where the fruit is treated and packaged for re-export to China. In the recent fieldwork, there are a number of large farms also growing Pailin longan. In longan trading and exporting business, agricultural cooperatives (ACs) have played a very important role. Among all the 10 interviewed producers (5 in Pailin, 3 in Rattanakiri, 1 in Battambang and 1 in Banteay Meanchey), 7 (except those in Rattanakiri) belong to the agricultural cooperative in the provinces. An average longan cultivation land size per respondent is nearly 20 hectares (including 110 hectares of a longan farm in Rattanakiri), and the average annual yield is around 78 tonnes per farm as some farms have not yet in full yield.

Established in 2011, **Pailin Longan Farmer Cooperative** is one of the most noticeable players in longan export. The AC consists of 230 members who are longan producers and traders. Majority of the members are located in Pailin, while there are some members also located in Battambang, Banteay Meanchey and Pursat. The AC is currently covering around one-third of the producers in Pailin. The AC supports its members by sharing knowledge on technical production and most importantly market information related to prices and buyers. The AC cooperates with large traders to connect to the Chinese company in Thailand for their longan to be further exported to China.

In Banteay Meanchey, **Malay Longan Agricultural Cooperative** was established in 2019 and consists of 45 longan (and mango) farmer members, who also supply their produce to Thailand via the Pailin Longan Farmer Cooperative. The AC provides technical support to its members and plans to facilitate contract farming process between the buyers and its members (collective voices and bargaining power to protect the benefits of its members). With technical support from GIZ, this AC set up and is currently operating a factory to process longan and mango, aiming for domestic supply in the short and medium term and for export in the long-run. Unlike the producers in Pailin, Battambang and Banteay Meanchey, producers in Rattanakiri market their longan through local traders supplying within the province and to Phnom Penh, as well as the Vietnamese traders. These producers did not express desire in directly exporting longan abroad and would rather depend on larger traders with existing market connection and especially the AC to link to international markets.

³¹ Phnom Penh Post, Longan demand and price plummeting, dated 18 Mar 2020.

3.2.4. Pepper

The Cambodian pepper producers do not usually have direct exporting capacities and experiences. In addition to the locally supplied pepper (estimated around 30% of the production) through retailing at tourist sites/shops, supermarkets, hotels and personal networks, the pepper reaches international markets through intermediary traders and exporting companies. According to the 21 interviewed pepper producers/traders in 7 provinces (Battambang, Kampot, Kep, Tboung Khmum, Kampong Cham, Rattanakiri and Monduliri), the most common channel is through Vietnamese and/or Thai traders and also Khmer local traders who then sell the pepper to Vietnam. The supplies to exporting companies who target mainly the European markets have become less over the years due to loss of global market demand. Observations during the field visits confirmed that a number of pepper farms have been left uncared and/or converted to other high-value crops.

In Cambodia, pepper grown in 4 districts of Kampong Trach, Toek Chhou, Chhouk, and Dang Tong) and 2 districts in Kep (Kep and Damnak Chang-Er) has been certified with Geographical Indication (GI) since 2010, covering 250 hectares of land. The farmers harvested 125 tonnes of the GI pepper in 2019 but were only able to export less than half of that due to “the lack of new export markets”.³² This GI certification and inspection is done through the **Kampot Pepper Promotion Association (KPPA)**, which consists of 457 pepper farmers and 37 exporting companies, according to the President of KPPA. KPPA is tasked to protect and share information on pepper production and products in the defined locations of GI, as well as to ensure strict GI compliance (both internal and external inspections). The management of KPPA is also running the **Kampot Pepper Agriculture Cooperative (KPAC)**, which helps link its smallholder producer members to exporting companies. However, the KPAC is less functioning because the exporting companies have started producing pepper on their own farms and the overall international markets for pepper have been decreasing over the past few years.

Besides the prominent GI pepper, Tboung Khmum is another location known for pepper production. There are 9 pepper agriculture cooperatives in Tboung Khmum, according to the PDAFF. These include Dar Memot Pepper Cooperative, Treack Memot Natural Pepper Cooperative, Popel Meanchey Cooperative, Korki Memong Organic Pepper Cooperative, Tramong Memot Organic Pepper Cooperative, Ponhea Kraek Conservative Farmer Cooperative, Brasrae Kean Rong Thmey Cooperative, La Ngeing Meanchey Cooperative, and Dambae Farmer Cooperative. In addition to these, **Union of Cambodia Spice and Agriculture Cooperative** was founded in 2018, covering 525 farmers from three cooperatives including Dar Memot Pepper Cooperative, Srayong Koh Ker Preah Vihear Pepper Cooperative, and Monduliri Coffee and Pepper Cooperative. Majority of the farmer members are engaged in pepper production and some others in other crops (durian, coffee and longan), covering a total of 600 hectares of land. The Union acts as a facilitator linking its pepper farmer members to supply to a Germany company called Fuchs Cambodia, collecting 500 tonnes of pepper from farmers, outperforming its planned target of 450 tonnes of pepper in 2020.

At the national level, a **Cambodia Pepper and Spice Federation (CPSF)** was established in late 2018 under the initiative and support from CPSA, CIRD, HEKS and IFC, in collaboration from MoC and MAFF. CPSF consists of over 20 pepper associations/cooperatives and exporting companies across Cambodia.³³ Acting as a national coordination body, CPSF supports its members including local producers, processors and exporters in market promotion and policy advocacy.

The main target markets of the Cambodia's pepper are European countries and other high-end markets like Japan and Korea. However, these markets are on a decreasing trend and prices are decreasing over the past years as well, resulting in some companies pending their pepper exports since a few years ago. Therefore, access to China market has captured high interest from exporters who expressed the anticipation of an agreement to be reached by the two governments in the very near future.

In addition to producers, traders and exporters, certification bodies play a crucial role in pepper export. The agencies like KPPA, **ECO-CERT**³⁴, **COrAA**³⁵ and **ISO Certification Body**³⁶ provide services in standard certification (GI, GAP, organic, GMP, HACCP, ISO, etc.)

³² Phnom Penh Post, Pepper exports hot, soaring 53% on-year, dated 6 Jan 2020.

³³ A list of the CPSF members (9 exporting companies and 15 pepper associations/cooperatives) and their contacts could be found at www.cpsfnet.org/members (accessed 30 Jul 2020).

³⁴ ECOCERT provides certification on various standards like organic farming for Europe, USA, Japan, and a number of other standards and in other non-agriculture sectors; more information could be obtained from www.ecocert.com (accessed 30 Jul 2020).

³⁵ The Cambodian Organic Agriculture Association (COrAA) is local organization partnering with Certification Alliance (CertAll) in providing certification services for exporting organic agriculture produce; more information could be found at www.coraa-cambodia.org (accessed 30 Jul 2020).

³⁶ ISO Certification Body (IBS-A2K) provides auditing and training services for ISO certifications, with more details at www.iso-certifications.com (accessed 30 Jul 2020).

of the Cambodia's pepper as per requirements from the international markets. The pepper produced in and supplied from Cambodia has been globally recognized of its quality and standards. In exporting pepper to a new market like China, pepper production and product readiness is not an issue. However, the key challenge rests on the loss of market demand, price stability, and competitiveness with the Vietnamese pepper.

3.2.5. Dragon Fruit

Dragon fruits are observed to be produced in some areas in Siem Reap, Kampong Cham, Tboung Khmum, Monduliri and Preah Vihear. There are two large companies being reported to be engaged in dragon fruit production. The prominent **Hoang Anh Gia Lai (HAGL)** already had its 380-hectare dragon fruit plantation in Rattanakiri certified with SPS standards by MAFF in 2017. In November 2017, the company exported dragon fruit for the second time to Vietnam and then to China, following its first shipment of 100 tonnes.³⁷ On the other hand, **Hyundai Agro** announced in 2019 its plan to grow dragon fruits in addition to its current mango business.³⁸

Recently, a large-scale dragon fruit community project in Preah Vihear province was initiated by the founder of CEDAC and expected to be launched in September 2020 in response to local and export demand. The project aims to produce 1 million dragon fruit trees, covering 1,000 hectares of land in Sambor Neak community. The project is estimated to cost around US\$3 to US\$5 million, with budget to be expanded to cover the construction of a processing facility. The community eyes Vietnam and China as the main markets for exporting its organic dragon fruits.³⁹

There is no any existing producer group or cooperative, while dragon fruits are normally produced in a small scale. Among the 13 interviewed dragon producers in Kampong Cham, Tboung Khmum, Steung Treng, Monduliri and Siem Reap, majority cultivated less than 1 hectares of dragon fruits while there are only 5 of them possessing from 1 hectare up to 4 hectares of dragon fruit farms. The average annual yield is around 10-15 tonnes per hectare. In addition, three of the interviewed producers are also local traders of up to 10 tonnes of dragon fruit per year. There are some varieties of dragon fruits, and mostly the dark pink flesh is of the most popular variety and with different sizes and somewhat different levels of sweetness. All of the yields are for domestic sales through local traders, wholesalers and retailers in the provinces and Phnom Penh.

Given the current production practices, dragon fruit producers are not yet ready to go for international markets. The production remains unstable and small scale in meeting the local consumption which has been supplied by the less expensive imported dragon fruits from Vietnam. In addition, the varieties and standards of dragon fruits have not yet been examined to orient to necessary exporting requirements. There remain a lot of challenges to be addressed at production level domestically.

3.2.6. Fragrant Coconut

Most coconut production areas are in Kampot, Kep, Takeo, Preah Sihanouk, Koh Kong and Kampong Speu provinces. Most of the coconuts are produced by smallholder farmers as a secondary crop, by having around 10-15 coconut trees on their plot of land. Cambodia has not yet exported any coconut abroad. In late 2019, a group of Chinese investors (under **Hainan State Farms Investment Holding Group**) announced its plan to invest in coconut plantations in Cambodia for exports to China.⁴⁰ Another report (MI 2019) also pointed out the interest from a Chinese company, **Coconut Palm Group Co., Ltd.**, specializing in processing tropical fruits, like coconuts, into energy soft drink, in investing in coconut plantations and set up a processing factory in Cambodia to produce fruit juice. In addition to these potential Chinese investors, there are also locally invested and operated farms and traders engaged in fragrant coconut production and supply. **Soma Plantation** is probably the most prominent and largest fragrant coconut producing company (350-hectare plantations) in Cambodia. There is no coconut producer networks or association despite some informal groups established on social media for agriculture-related information and knowledge exchange.

37 Phnom Penh Post, Dragon fruit haul to take flight, dated 17 Nov 2017.

38 Khmer Times, First Cambodian mango exports to South Korea officially launch, dated 10 Jan 2020.

39 Khmer Times, Huge dragon fruit farm community to be grown, dated 7 May 2020.

40 Khmer Times, Chinese firms seek investments in coconut farming in Cambodia, dated 5 Dec 2019.

At the small farm level, the interviews were conducted with 10 producers of fragrant coconuts (including 3 farms with less than 2-year-old trees) in Kampong Speu, Kampot and Rattanakiri, with an average farm size of nearly 8 hectares (within a range from 1 hectare up to 20 hectares). Some of the farms also include some non-fragrant coconut trees. The yields are domestically supplied through traders in the local areas and from other provinces, who then wholesale and retail to Phnom Penh. Among these producers, only two farms showed the plan to expand their production as seeing the potential of meeting a huge domestic demand and supply gap. On the other hand, one of them cultivating 20 hectares of coconut indicated the plan to collaborate with other farmers (aiming for a total 100 hectares of production) to collectively negotiate with a Korean friend to target exporting fresh coconuts to Korea in the up-coming few years.

Local coconut traders are normally the key agent in linking with wholesale and retail markets. There are large traders who are trading both locally grown and imported coconuts. The scale of the supply of imported Thai coconut is rather large to meet with the local demand for fragrant coconut.

In terms export readiness among different actors, there is a high level of uncertainty given the current early stage of production and scalability intended to fill the local demand despite the growing trend of production, prior to the focus on export markets. Therefore, both companies and unregistered producers/traders see exporting markets as secondary to the currently underserved domestic market. However, exporting business remains of their interest in the medium and long-term when more production and proper standards are in place.

3.2.7. Bird's Nest

The most productive bird's nest producing areas include Preah Sihanouk, Kong Koh, Kampot, Kep, Phnom Penh, Kampong Thom, Kampong Cham, Siem Reap, Kampong Chhnang, and Battambang, referring to the Cambodia's Swiftlet Federation (CSF). The process of setting up a bird's nest business, i.e. bird's houses, is complicated and costly and engaged a number of authorities, including obtaining a construction license from the provincial department of land and construction, paying for environment impact fee (smell and noise) to Provincial Departments of Environment, and last but not least registering with MISTI for a license to process the bird's nest materials.

The Federation of Malaysian Bird's Nest Merchants Association shows that the global market value of the edible bird's nest in 2016 was estimated at US\$5 billion per year, and China was the largest market, with Indonesia and Malaysia the world's leading suppliers.⁴¹ The estimated demand in China is around 800 tonnes per year, while the official import data is only 300 tonnes (according to the interview with CSF). MAFF started to propose to China to prepare the protocol for official export of edible bird's nest to China in May 2019. Recently there is an interest from a Malaysian university and company to explore the investment opportunities in bird's nest business in Cambodia.

Established in 2014, **Cambodia Swiftlet Federation (CSF)** now consists of between 70 and 80 members who are bird's nest producers, traders, and processors, as well as those providing bird's house construction consultancy, services and materials. CSF has been a platform for its members to exchange experiences and information, seek supporting services from their peers, access to domestic and international market linkages, receive capacity building, conduct collective advocacy (rights protection), and support product quality assurance among members. CSF has been working closely with MAFF in order to advocate for the Cambodia's bird's nest products to gain an official market access to China soon.

Most of the bird's nest businesses are family-based and small scale, while only a few of them are operated with a business license. Most of the producers are also collecting uncleaned bird's nest from other suppliers for cleaning and processing. There are two companies: Best Life Product and Angkor Bird Nest producing and processing edible bird's nest products at a relatively large scale among the eight interviewed bird's nest producers and traders under the study.

Furthermore, six other producers/traders having at least one bird's house (including one having 4 bird's houses) in Koh Kong, Phnom Penh and Tboung Khmum were interviewed. Among these, only two were registered as limited companies and only two were solely producers (without collecting bird's nest from other producers). Their production is relatively small, about 20-30 kilograms per house per year on average; however, the volume is scalable as many of them claimed to be ready to increase production and collection capacity to meet the growing market demand. In addition to domestic high-end clients, the markets depend much on Chinese clients/traders to bring the prod-

⁴¹ Khmer Times, Chinese firms seek investments in coconut farming in Cambodia, dated 5 Dec 2019.

ucts back to China. The bird's nest business is promising as most of the respondents showed their plan and desire in expanding production and aiming for exporting to China. While one of them would rather supply through exporting companies, the rest would like to do direct exports by cooperating with other producers and CSF members. The international experiences of these producers are limited to their participation in international trade exhibitions, and they still face some issues regarding financial stability and access to finance, as the return on current investment is still not yet sufficiently tangible.

4. Challenges in Exporting Fresh Produce to International Markets

In a study conducted by Goletti and Sin (2016) for development of a crop master plan for MAFF, a number of general challenges and issues (most of which are consistent with challenges of agriculture sector stated in MAFF's 3-year rolling Budget Strategic Plan and other research study conducted by USAID and other development partners) identified for the crop sub-sector include the followings:

- Limited credible, timely and disaggregate statistical database in terms of production, farms, exports, land size distribution, etc.
- Limited research organizations working on crops other than rice
- Limited coordination in extension activities of public, private, and NGO sector at local level
- Limited public sector investment in agriculture and limited private sector investment in the crop sub-sector
- Weakly organized supply chains for most crops: limited coordination along value chains, weak farmer organizations, and limited success of contract farming and integration of smallholders into crop value chains
- Weakness of arbitrary enforcement of regulations related to SPS requirements and food safety, agrochemicals, seed, GAP adoption and organic certification, contract farming, land use and management, and economic land concessions
- Natural disasters in the presence of a weak preparedness, supporting infrastructures and climate resilience capacity

In general, SMEs are usually facing a number of major constraints in accessing to international markets, and those challenges also apply in the agriculture sector, which is dominant by small to medium-scaled farmers. From these general findings and also the results from the interviews with relevant public and private stakeholders, the study derived the following key challenges specifically facing the exporting of fresh agriculture produce.

4.1. Limited Motivation and Commitment of Producers/Traders towards Exporting

Most of the large farms and exporting companies have had rich exporting experiences and are normally backed by foreign investors (obviously so in the cases of yellow banana, mango and longan), which come along with investment funding, technical know-how and market access. As a result, motivation in exporting is a great barrier for most local farms and businesses. Unlike large farms and exporting companies, most local farms and trading businesses (regardless of sizes) are operating unlicensed and un-registered. The preference to stay "informal" is one of the most relevant factors limiting motivation of such producers and traders. Although there is a need for business and tax registration in order to officially export, SMEs do not see the benefits of registration over its costs, seeing the potential problems in dealing with compliance issues including complicated regulations, possible penalties as a result of non-compliance, and non-transparent public service practices. This is evident by a mango trader in Pailin, who claimed that he used to register his trading business some years ago but later on decided to close that registered company to run the current un-registered business. Almost all of the non-exporting businesses interviewed by the study were not motivated enough for business registration.

There are a lot of other issues in current production practices, capacities, and market access that do not motivate the non-exporting businesses to commit to international trading as part of their medium to long-term plans. For mango, longan and pepper sub-sectors, produc-

ers showed total dependence on traders and exporting companies to reach international markets. In the worst case, most of the pepper producers have given up on part (if not all) of their production (let alone the aim for direct export) due to declining market prices and global demand over the past years.

For fragrant coconut sub-sector, some key players like the interviewed large plantations and traders indicated that their priority is to focus on domestic market. They found less motivated in export orientation although they showed their interest and aspiration in the potentiality of China's market. Likewise, dragon fruit producers and traders are not motivated toward accessing to international markets either even though there is high demand especially from Chinese consumers.

4.2. Challenges in Production and Product Readiness

Climate risks remain the major issues for producers – longan and coconut farms facing shortage of water (**due to lack of in-farm irrigation system and reservoirs**) and mango and dragon fruit orchards facing the **attacks of plant diseases and pest infestation**. While large farms especially those yellow banana plantations do not have any challenges in production and products, the local producers of yellow banana showed that their banana is **less of perfect appearance** (with spotted peel), claiming to follow traditional way of farming without heavy use of chemical inputs and to supply at lower costs in the domestic markets than those produced by large commercial farms. Such a concern by the local producers is coupled by storage and transportation issues when handling such perishable produce like banana.

Specifically for mango exports aimed for China's market, GAP is the main basis for SPS certification, according to MAFF. However, the standards of current production of mango, as well as longan, dragon fruit and fragrant coconut have not yet been widely recognized or determined as per certain set of standard adoption (even GAP). Such a challenge does not affect much on pepper given the current production of certified organic and GI pepper being exported to a number of European countries (requiring GMP and/or HACCP). However, it is expected that the Chinese authorities will impose some similar requirements on pest control and treatment like in the case of SPS protocol for banana and mango.

The capacity in **producing and supplying off-season mango** is another issue. Majority of small to medium mango producers are still facing challenges in adopting off-season technology in order to supply mango to meet consistent year-round demand in international markets. Most farmers do not know how to apply plant hormones and therefore do not have off-season harvest (Goletti and Sin, 2016). In most cases, farmers tend to apply excessive doses of chemicals to mango trees, raising food safety and health concerns, affecting the required standards for exporting.

On the other hand, the main challenge in bird's nest sub-sector is the **absence of a national standard** (health safety, wildlife safeguard, international quality recognition, etc.) for production and promotion in international markets. Although there is recognition of the Cambodia's bird's nest products among the best producers in the region, the production and processing (referring to cleaning) is still not yet certified to the extent that could assure its quality and be brought to an official negotiation with China, according to CSF and the interviewed bird's nest producers.

4.3. Limited International Branding of Cambodia's Agriculture Produce

There is generally limited branding of Cambodia's agriculture produces in the international markets. Despite the fact that Keo Remeat is the most popular and pre-dominant mango variety of Cambodia, there has not been any research or effort in registering the variety under the Cambodia's branding. Pepper is better protected and promoted via GI and organic production practices. However, one issue is the control of counterfeit, particularly in the case of Kampot/Kep GI pepper.

4.4. Limited Skills and Resources

Aside from the exporting companies backed by Chinese and Vietnamese investors, **lack of information on foreign markets and buyers in China** is a major issue for some non-Chinese and non-Vietnamese exporters. Firms who has been successful in exporting fresh mango and/

or peppers to European Countries, Japan and Singapore, indicated the concern in approaching buyers in China and also the requirements imposed by those buyers. Such a challenge is intensified at the small and medium producer and trader level, and direct exports to China could only be done through the channel of exporting companies and border intermediary traders as per preference from the local producers and traders.

At the production level (as mentioned in the previous challenge), **limited knowledge and technology adoption** by local farmers remain a major constraint given their current production practices and lack of support in terms of expertise extension services. For instance, there is a lack of the knowledge and skills in off-season mango production, proper plant disease and pest control knowledge (mainly provided/recommendations by input suppliers), best practices in cultivation, and post-harvest handling (including storage, grading, processing, packaging, and transporting, etc.) in meeting the required quality requirements for exports. In the cases of other crops like pepper, there has been the concern that farmers still inappropriately use chemical inputs, resulting in high residue tested and therefore being disqualified as per the buyers' requirements. This has been due to their lack of knowledge about appropriate input types and doses and somehow ignorance to the instruction labels. The inappropriate use of agrochemical inputs is also caused by the lack of strict control of importation of low-quality inputs with substances not approved/allowed, for example, by the European standards. Another cause is the lack of laboratory for testing and effectively coping with pest infestation and plant diseases, resulting in ineffective and inefficient use of chemical inputs without proper knowledge.

SMEs in general lack of **knowledge on export processes and procedures** including requirements imposed by relevant domestic authorities and the designated countries like China. SMEs in general and agriculture trade in particular also face the challenge in accessing to pool of **qualified human resources** to support their engagement in agriculture export. Most of the interviewed producers and traders are mainly managed by family members with experiences limited to traditional ways of production and existing market access channels. Without specialized technical team and strategic people, their growth could not be achieved for expansion beyond domestic markets. SMEs also encounter language barrier when dealing with foreign clients, while some even mentioned about concern of lacking understanding and capacities in negotiating contract terms.

4.5. Less Cost Competitiveness and Limited Access to Finance

High logistics costs remain an issue for exporting companies in Cambodia, being claimed by almost all of the exporting companies during the interviews and in various media articles. An assessment conducted by USAID in 2019 also pointed out the uncompetitive transportation in Cambodia given higher in-land transport costs and shipping and FOB costs compared to neighboring countries like Thailand and Vietnam. Specially according to the interviewed exporters, when comparing to Thailand, for example, the Cambodia exporters claimed to encounter US\$1,000 more expensive per container of fresh produce. This is due mainly to poor road connectivity and limited private sector engagement in logistics as most logistics and trucking companies focus on non-perishable products. There is also a lack of supporting facilities like trucks with cold storage and with regular running schedules, according to the interviews with the private sector including exporting companies and freight forwarders.

Another issue associated to **high production costs** is attributed to high input costs and over-application of agrochemical inputs, as well as the spending on informal facilitation services, further driving down the price competitiveness of the farms. At the same time, mango and pepper producers' profitability have been most hard hit in the midst of price drop (especially during harvesting season) and constantly decreasing global pepper prices.

Most SMEs in general and more particularly the SMEs in agriculture sector, which is viewed as high-risk type of business, normally face the challenge of **limited access to finance** due to high financing costs and collateralized lending requirement. "*Missing middle financing*" is constraining medium-sized enterprises who normally lack of valuable collaterals in accessing to low-cost investment fund and working capital from formal financial institutions. Similarly, the access to trade finance is almost unfeasible among SMEs although such products as trade finance provided by banks are available (Phurik-Callebaut, 2020). Majority of the local producers and traders are largely transacted in cash and having weak or none bookkeeping, making their access to finance from formal financial institutions even harder in order to grow their business. Raised by the president of an AC in Banteay Meanchey, Agriculture and Rural Development Bank has been providing low-interest finance; however, his AC does not possess any valuable assets as collateral in that loan application eligibility.

In Cambodia, **investment in treatment and packing facilities** remains limited to only a very few large companies with support from

foreign investors. Currently, majority of the Cambodia's fruits (especially mango, longan and pepper) is exported unwashed and unpacked to international markets at lower-than-market prices via intermediary Vietnamese, Thai and Chinese traders. Most of the value-added activities for further formal exporting are often done in Thailand and Vietnam, and perhaps these fruits are incorrectly labeled as fruits from these intermediary countries. Similarly, there is a lack of cold chain facilities for transporting fresh fruits for long distant and cross-border shipments. On the other hand, limited investment in product development through research and development (R&D) and more advanced technology in production and processing is especially one issue to grow the bird's nest business to the next level.

4.6. Limited Official Market Access, Trade Policies and Export Processes

Market access is the key element motivating producers, traders and investors. Unlike other countries, **access to the China's markets requires bilateral agreements** on the SPS protocols for specific crops/commodities. While yellow banana and mango are on the market access list of China, the other priority crops are awaiting discussion and negotiation, which may take some time (if not years). Therefore, lack of official access to the designated international markets remains a big challenge to the Cambodia's commodities, which are highly popular and demanded among Chinese consumers. In the meantime, there is the expectation that the Cambodia's commodities will face competition with local production in China and with other exporting countries (e.g. Thailand and Vietnam in the China's market and African countries in the European markets) in terms of quality and prices.

Pepper is probably one of the most exported commodities being officially traded to various countries over some years. However, only small volume of pepper is exported directly while most is going through Vietnam and Thailand. Over the past 3-4 years, Cambodia's pepper sub-sector has encountered dropping global demand and prices, while the Cambodia's exporting companies are less competitive to the Vietnamese traders and companies. The access to China's market is believed to pave a way for the re-growth of pepper sub-sector. Likewise, **longan** (currently depending on Thailand to reach China's market) and **bird's nest** (currently depending on local Chinese clients with relatively small scale of sales) are also hindered by the lack of official market access.

On the other hand, there has not been yet effective implementation of **contract farming** in ensuring consistent agreement on quality and quantity of agriculture produce to be demanded and supplied. This is echoed by some of the interviewed informants, exporting companies and producers/traders themselves. At the same time, there is a fast expansion of large enterprises (most obviously in pepper sub-sector) to invest in own plantations that might challenge the sustainability of smallholder producers and divert their sourcing away from local small and medium farms. This may further limit the integration of smallholders into the crop value chains and to supply their produce to foreign markets.

The bottleneck in direct export of the Cambodia's fresh agriculture produce is somehow triggered by the dependence of Cambodia on the Chinese, Vietnamese and Thai middlemen and mega ports in neighboring countries. One producer in Kampong Speu reported his first experience in exporting mango to Nang Ning in China, but he faced several difficulties although he knew the Chinese traders at the China's border with Vietnam because Chinese and Vietnamese traders do not want the Cambodians to supply mango directly to China. In some cases, there may be conspiracy among traders (especially Chinese traders in Vietnam and Thailand) in pressuring down the market prices. At the regional level, there is the challenge of impediment caused by especially Thailand on the Cambodia's goods designated to other destinations. According to the consultation with GDCE who has not yet succeeded in reaching agreement with Thailand on issues regarding goods-in-transit, which the Thai authorities (for example, health authority) usually ask for certain documentation (like SPS certificate) and fees even for the goods-in-transit.

Issues of **high costs and complication in certification and exporting documentation processes** were also reported by a number of the interviewed exporters and were also echoed by those non-exporting producers and traders as their prospective concerns. This could include the process in business registration, tax declaration and custom clearance, patent, CO application and issuance, etc. Time consuming is another issue of concern. Some of the exporters also indicated the lack of knowledge and/or information about SPS certificate application and procedure (including required documents, number of days, fees and means of inquiry). In the case of bird's nest production, there remain a lot of compliance procedures and documentation to be followed with various authorities, for example, construction license from provincial construction department, environment related fees for Provincial Department of Environment, fee for wildlife conservation, processing license from MISTI, etc.

5. Conclusion and Recommendations

In conclusion, the export of fresh agriculture produce abroad has engaged a number of key actors, including those already exporting fresh banana to China, those (previously, currently and expectedly) exporting fresh mango and peppers to countries other than China, those unofficially exporting through intermediary (border traders), and last but not least, the local producers and traders. While there are a few registered enterprises having female in the top management level, most of the local producers and traders are co-owned and co-managed by men and women.

While there are a number of policies and initiatives supporting SMEs in general and those specifically in agriculture, the current context and key challenges call for actions and contribution from various stakeholders in response to the needs of export-oriented SMEs and support them in further bringing the Cambodia's fresh agriculture produce to international markets. A number of recommendations are outlined below:

- MAFF, in cooperation with MoC and MEF-GDCE, should develop a more comprehensive and disaggregate statistic system for production and trading/exporting data collection (for example, enforcing reporting requirements for agriculture related businesses, networks and cooperatives, as well as improving the user-friendliness of existing data sources/platforms, etc.) and analysis of specific potential crops and agriculture commodities (including also bird's nest) to support and inform policy interventions of the government agencies and investment decisions of private sector.
- MAFF should establish/strengthen crop-specific GAP standards and certification system with an extension program on GAP dissemination to producers and exporters.
- To ensure consistent quantity and quality of supplies of the Cambodia's agriculture produce in the international markets, the producers should be supported by technical expertise from MAFF (with more budget allocation to R&D interventions) and development partners in terms of:
 - Identification of prevalent pests and plant diseases with effective methods in pest monitoring and control system;
 - Extension work on improved in-farm water management, soil management and technology application in productivity enhancement;
 - Techniques in off-season crop production;
 - Restriction of the supplies of agricultural inputs with substances prohibited under the SPS protocol and buyers' requirements; and
 - Techniques in post-harvest handling (storage, cleaning, grading, packaging, transporting, etc.).
- MAFF and other relevant research institutions (e.g. RUA) should establish relations and cooperation with crop research organizations in China and Southeast Asia to support constant research and development on seed, improved productivity, and technology application, especially new technical solutions to aid climate change mitigation and adaptation.
- MAFF should explore the opportunity and feasibility of registering Keo Romeat mango (one of the most popular varieties in the international markets) as the Cambodia's variety and promote the system of nursery certification in order to ensure the niche quality and branding of Cambodia's mango in the international markets.
- In addition to the crop-specific branding, there should be a government-led promotion of the national branding of the Cambodia's agriculture produce in order to differentiate products and achieve higher prices and greater sales. Such branding promotion could be done through prominent e-commerce platforms (Alibaba, JD, TMALL, Taobao, WeChat Shop, etc.) and major retail chains in China.
- MAFF and MoC with support from relevant development partner(s) should further improve current crop-specific guidelines and develop guidelines for other priority crops/commodities on key requirements in exporting agricultural goods to China and disseminate the guidelines widely via specific mechanisms like trainings and in an accessible manner to exporters and export-oriented SMEs.
- To facilitate SMEs in exporting fresh agriculture produce abroad, MoC, MAFF and potentially MISTI should collect and share trade-related information through existing and potential information sharing platforms like web portals, Facebook pages, business associations, producer groups/cooperatives, etc. Such information support could include, but not limited to:
 - Dedicated public services to support SMEs in the processes of exporting agriculture produce (including the information on SPS certification and fees) to China;
 - Outline of specific requirements and preferences of designated importing countries;
 - Business directory of exporters, traders, producers and producer groups, as well as supporting service providers (e.g. logistic services);
 - Information about business matching and linkage opportunities (international trade exhibitions, e-commerce platforms, etc.); and

- Information or directory of international buyers, distributors, intermediary agents, and supporting service providers (e.g. marketing agencies) in China.
- MAFF, MoC, MEF and relevant stakeholders should conduct regular multi-stakeholder dialogues with exporters, importers and public sector, possibly making use of the existing Government-Private Sector Forum, Custom-to-Business Platform supported by MEF-GDCE, and other mechanisms.
- Private sector engaged in fresh fruit businesses that have not yet had formal market access to China should work collectively through business or crop-specific associations to demonstrate industry potentials as well as their capacity and readiness to comply with China's requirements and to support the government's processes in market access negotiation with China.
- Export-oriented SMEs should
 - Collect market information and analyze demand and price trends in order to inform business decisions and strategies;
 - Attend relevant trade exhibitions, conferences, study tours, and business networking events in both Cambodia and China;
 - Consider applying for appropriate/relevant business and operation license(s); and
 - Adopt good practices of business and financial management and technology know-how.
- MAFF should further coordinate with MEF and MoC to:
 - Promote the awareness and capacity of export-oriented agriculture-related SMEs in order to apply for the current tax and custom incentive scheme more easily; and
 - Consider mainstreaming the export processes in order to make the application for different certificates more easily and simple, especially during this early stage of exporting agriculture produce to China.
- The RGC should consider incentivizing and attracting more investment by/in the local SMEs' exporting businesses and supporting facilities in areas of post-harvest management like fruit treatment plants, packing stations and cold storage services, etc., to meet the export requirements through grant, low-cost financing and tax incentives. Such supporting facilities could potentially provide fee-charging services to SMEs and cooperatives.
- MAFF should further support the development and functionalization of producer networks, groups and agriculture cooperatives by
 - Building leadership capacity and independence, as well as financial management and business skills;
 - Ensuring enforcement of contract farming by facilitating contracting processes and effective implementation between producers and buyers (agreed demand and supply terms and conditions, as well as technical support to meet the set standards); and
 - Developing a "role model" and disseminate best practices.
- Development partners in cooperation with their government counterparts should consider providing on-demand support to collective bodies of private sector, including:
 - Supporting the functionality and operation of the Cambodia Pepper and Spice Federation; and
 - Supporting the Cambodia Swiflet Federation in advocating for a regulatory framework and standard development.
- Last but not least, relevant government agencies with support from development partners should promote digital finance and technology adoption in business and financial management among export-oriented SMEs to build up their capacities as well as credit histories in order to lower lending risk assessment from financial institutions and also higher potential in using trade financing services.

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Registered offices

Bonn and Eschborn, Germany
T +49 228 44 60-0 (Bonn)
T +49 61 96 79-0 (Eschborn)

Dag-Hammarskjöld-Weg 1-5
65760 Eschborn, Germany
T +49 61 96 79-0
F +49 61 96 79-11 15

E info@giz.de
I www.giz.de

Support of Regional Economic Cooperation in Asia (SRECA)

Tayuan Diplomatic Office
14 Liangmahe South Street, Chaoyang District
100600 Beijing, PR China
T + 86 10 8532 1857
F + 86 10 8532 5774

E sreca@giz.de
I www.connecting-asia.org