



**Rapid Fruit Value Chain
Assessment**
of longan, mango, dragon fruit, banana,
coconut

27 May 2020, Cambodia

In partnership with



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List of Abbreviation

ASEAN	Association of Southeast Asia Nations
CIRD	Cambodian Institute for Research and Rural Development
CPSA	Cambodia Partnership for Sustainable Agriculture
CSO	Civil Society Organization
C/O	Certificate of Origin
DPPSPS	Department of Plant Protection Sanitary and Phytosanitary (MAFF)
EAC	Eco-Agri Center Co. Ltd
F&V WG	Fruit and Vegetable Working Group
FG	Fruit Group
GAP	Good Agricultural Practices
GDA	General Directorate of Agriculture (MAFF)
GDP	Gross Domestic Product
GI	Geographical Indication
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis and Critical Control Points
IDRC	International Development Research Centre
ISC	Institute of Standards of Cambodia
ISO	International Standardization Organization
MAFF	Ministry of Agriculture Forestry and Fisheries
MFI	Microfinance Finance Institutions
MoISTI	Ministry of Industry, Science, Technology & Innovation
MoC	Ministry of Commerce
NGO	Non-Governmental Organization
PGS	Participatory Guarantee System
RUA	Royal University of Agriculture
SRP	Sustainable Rice Platform (Standard)
SME	Small and Medium-Size Enterprises
VG	Vegetable Group
VAT	Value Added Tax
ASDP	Agricultural Sector Strategic Development Plan
CB	Certification Body

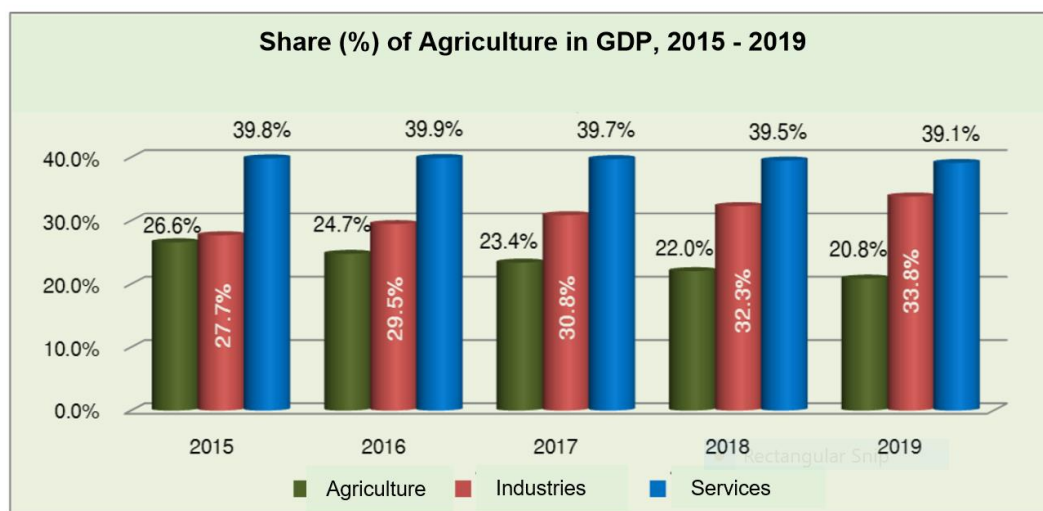
1. Introduction

The fruits and vegetables sub-sectors are crucial for food security, nutrition and agri-economy diversification and development. In Cambodia these sub-sectors are highly fragmented and dominated by smallholders. Moreover, currently more than 50% of fresh fruits and vegetables consumed in Cambodia are imported from Thailand, Vietnam and China. Cambodia's dependence on imported fruits and vegetables is due mainly to product seasonality and the lack of a consistent supply. Nevertheless, smallholder farmers and local processors have a great opportunity to increase their productions and more incomes, especially due to recent increase in demand for safer and locally produced fruits and vegetables.

In January 2019, the Cambodia Partnership for Sustainable Agriculture (CPSA) started its engagement in the fruits and vegetables sub-sectors, aiming to establishing a functional Working Group ("Fruits & Vegetables WG") that could gather relevant actors and address the existing challenges along the value chains. After individual consultations with nearly 40 stakeholders (from private sector, government, research institutions and NGOs/CSOs) and a multi-stakeholder roundtable meeting, due to the emerging complexities characterizing the two sub-sectors, it was deemed necessary to split the Fruits & Vegetables WG into two sub-groups. Since mid-2019, CPSA dedicated its resources to forming the Vegetables Group, which was formalized later in the year and now has a clear mandate, and proceeds with its activities. In order to start a similar process that would result in the formation of a Fruit Group (if deemed necessary), CPSA decided to commission this Rapid Assessment of selected fruit value chains, which was made possible thanks to funds from the International Development Research Centre (IDRC).

1.1 Sector Overviews

In Cambodia the agricultural sector is important for the country's development, contributing to the national economy with approximately 20.8% (current price) of the gross domestic product (GDP) in 2019. The contribution share of the agriculture sector to the whole economy has decreased in the last years, and this figure is correlated to the growth of other two key sectors in the economy (industry, and service sectors, contributing 33.8% and 39.1% to the GDP respectively). From previous observation, contribution of agriculture altered between 26.6% - 20.8% in between 2015 - 2019 due to increase in industry and construction sector¹, as shown below:



Source: MAFF Annual Report 2019-2020.

¹ Ministry of Agriculture, Forestry and Fisheries (MAFF) Annual Report 2019-2020

In 2019, Cambodia’s total cultivated land of horticulture crops amounted 336,957 hectares , total quality per year is 3,323,821 tons. The below table is just only highlighted on five selected commodities of rapid assessment in fruit sub-sectors²:

Name of horticulture crops	Total cultivated land	Total quantity per yield
Mango	31,398 hectares	1,448,677 tons
Longan	7,757 hectares	99,326 tons
Banana	32,982 hectares	613,070 tons
Dragon fruit	1,105 hectares	18,588 tons
Coconut	15,026 hectares	368,282 tons

1.2 Objectives of rapid assessment

With funds from the International Development Research Centre (IDRC), Grow Asia has supported the Cambodia Partnership for Sustainable Agriculture (CPSA) in conducting this rapid assessment on the fruit sector value chains in Cambodia, with the following objectives:

- Identify relevant Cambodian actors, SMEs, associations, or cooperatives involved in the production, trade and retail of selected fruits (banana, mango, longan, dragon fruit, coconut³);
- Get a detailed overview of the value chain of the fruits actors identified above, including assessing and analyzing their needs, barriers, and challenges along the value chain and supply chain;
- Develop recommendations for improvement of the sub-sector, especially with respect to the creation of the Fruits Group under CPSA’s Fruits & Vegetables Working Group.

1.3 Schedule of rapid assessment

The table below illustrates the schedule of the rapid assessment, which took place between 4 – 27 May 2020:

Activity	Responsible	May, 2020																											
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26-29					
1. Inception, Research Design & Planning																													
Methodology (interview guide,...)	Consultant																												
Field work planning	CPSA																												
1st Inception Meeting	CPSA + Cons.																												
2nd Inception meeting	ALL																												
Desk research	CPSA + Cons.																												
2. Data Collection Phase																													
Battambang	Royal Uni																												
Pailin	Royal Uni																												
Kampong Speu	CPSA																												
Kampot	CPSA																												
Kampong Cham	CIRD+Consultant																												
Koh Kong	CPSA																												
Phnom Penh	CPSA																												
3. Synthesis Phase & Presentation of Findings																													
Data analysis and Draft writing	Consultant																												
Draft report	Consultant																												
Submission of draft report	Consultant																												
Feedback of draft report	CPSA																												
Submission of final report	Consultant																												

*Note: Group divided in to colors

	Group 1
	Group 2
	Group 3

² Ibid.

³ The selection of these fruits was made on the basis of current studies and the annual Strategic Plan 2019-2023 from MAFF, which lists them as priority commodities for export.

1.4 Key actors mapping and analysis based on commodities

The key actors of Cambodia fruits sector value chain are categorized as follows:

- Farm owner/fruit producers
- Agriculture Cooperative
- Business associations
- Fruits collector/Trader
- Processor/Company
- Retailers
- Exporters
- Logistics company/ freight forwarders
- Relevant government agencies such as General Directorate of Agriculture (Department of Plant Protection Sanitary and Phytosanitary (DPPSPS)), Department of Horticulture and Subsidiary Crops, Ministry of Commerce (Export-Import Dept.) and SMEs Department of Ministry of Industry, Science, Technology & Innovation.
- Quality standards Certification Bodies

A detail contact list of interviewees of each sector are shown in Annex1 and Annex 4.

1.5 Key experts carrying out the project

The Cambodia Partnership for Sustainable Agriculture (CPSA) undertook this research in collaboration with the Cambodian Institute for Research and Development (CIRD), Royal University of Agriculture (RUA), and E-Co Agri Center. There were 10 experts in total (details below):

No	Full Name	Organization	Responsible
1	Mr. Ra Ten	Lead Expert	Lead Expert
2	Mr. Ratha Chan	CPSA	Project Manager
3	Ms. Francesca Puricelli	CPSA	Project Lead
4	Mr. Leanghy Yim	CPSA	Team Member
5	Mr. Borarin Buntong	RUA	Team Leader
6	Mr. Pok Samkol	RUA	Team Member
7	Ms. Yim Sophorkun	RUA	Team Member
8	Mr. Noun Tum	EAC	Team Leader
9	Mr. Chhay Songleang	EAC	Team Member
10	Mr. Rat Rotana	CIRD	Team Leader

2. Research Methodology and Geographical Studied Areas

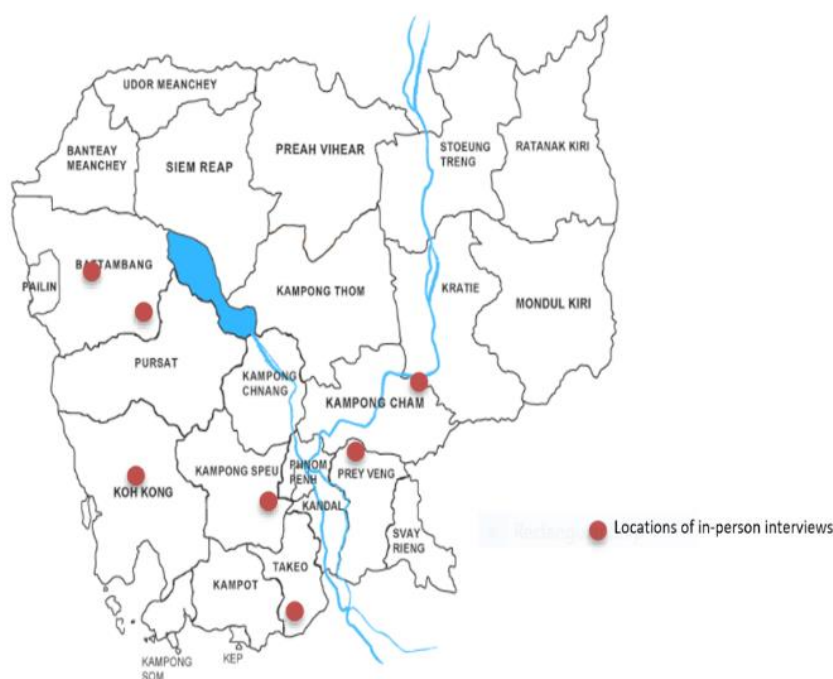
2.1 Scope and limitation

The rapid assessment was carried out in the area of Kampong Speu, Kampot, Koh Kong, Battambang, Pailin, Kampong Cham provinces and Phnom Penh and there were a lot of key potential fruit actors identified but the team hasn't done all of them because of the limitation of time constrain.

Therefore, the scenario of this assessment was beyond the questionnaire for interviewing with all actors without doing any workshop and the question is more focused on four level of value chains including production level, postharvest level, collector level and retailer level to get deeply in those level in finding the challenges and needs of each actor. The actors are from difference level and places in the area mentioned above; totally 48 people have been interviewed. But however, the number is quite small amount; therefore, this report was not represented to overall fruits value chains in Cambodia; to fulfil the fruits value chains, the team may need more time.

The selection of commodities for study is based on Agricultural Sector Strategic Development Plan (ASDP) 2019-2023 of MAFF, which lists them as priority commodities for export, based on the official signed the Protocol of Phytosanitary requirements for the agricultural products export; and under achieved and commitment of GDA in MAFF's annual report 2019-2020. Please note that there were 3 among 5 commodities selected have been signed an official Phytosanitary Protocol (i.e. banana, mango, dragon fruit).

2.2 Geographical studied areas:



3. Fruit Sub-sector

3.1 Mango sector

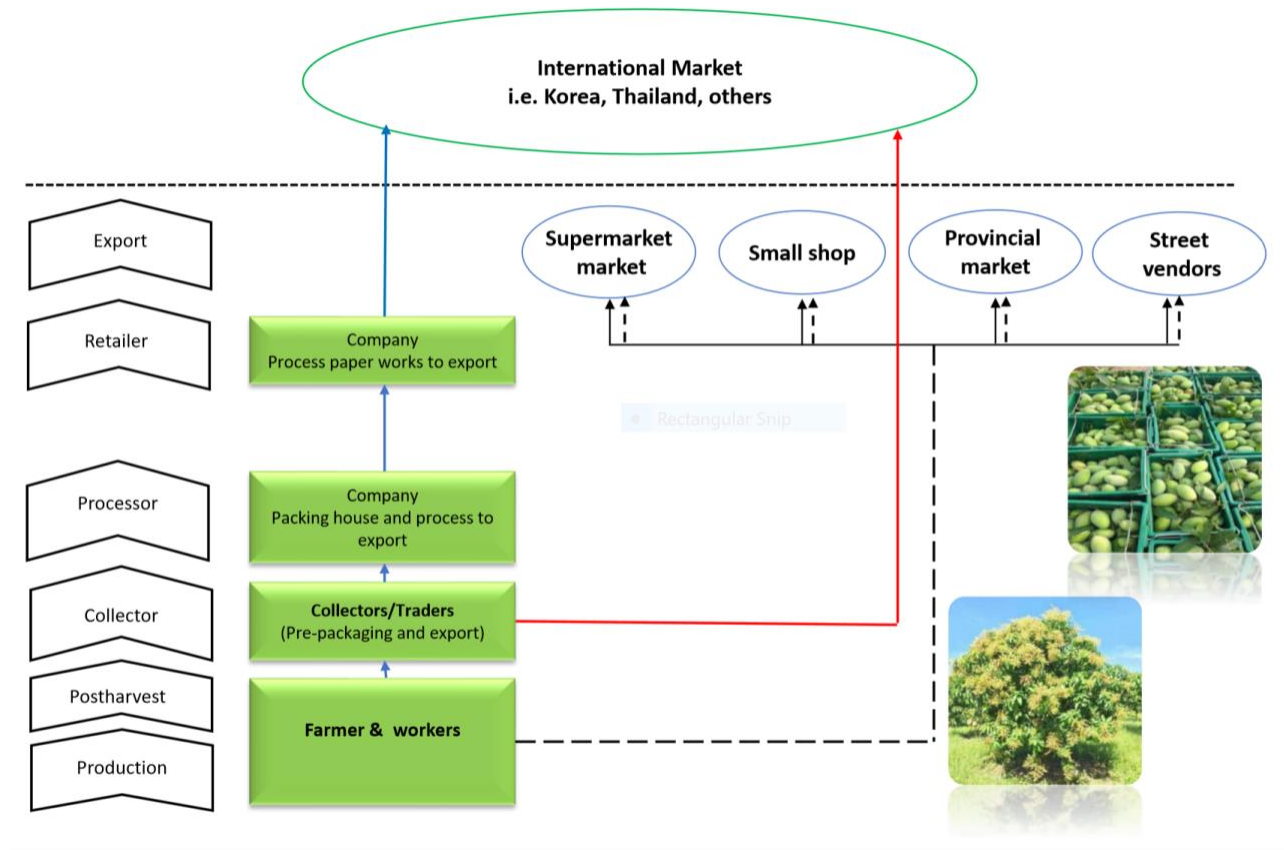
The update status of an official document agreement signed between the Royal Government of Cambodia which reprehensive by Ministry of Agriculture Forestry and Fisheries (MAFF) and the imported countries; by today there are two countries have an official signed on the Protocol of

Phytosanitary requirements for export such as (i) Thailand and (ii) Korea. Therefore, this is a good opportunity for mangos actors can expand their market.

3.1.1 Key actors interviewed of mangos

Please refer to Annex 1.

3.1.2 Value Chains Mapping of Mango in Kampong Speu, Battambang and Pailin Provinces



3.1.3 Challenges matrix of mango actors

Level of Actors	Challenges
Production level:	<ul style="list-style-type: none"> • High cost of imported agricultural inputs (e.g. chemical fertilizers) • Farmers do not know how to practice standards in production areas, and lack knowledge on chemical fertilizers usage. • Fungus disease damages farm products • Shortage of water resource for irrigation mentioned in some areas • Low yield

Collection level:	<ul style="list-style-type: none"> • Mangos received from farmers are broken, damaged, or too small • Lack of capital for investment and high investment cost • Breach of trust between contracting parties (<i>i.e. farmer agrees for a set price to sell to one trader, but after harvesting they sell to someone else for a higher price</i>) • Market price fluctuations • If mangoes do not meet grading/quality expected by buyers, collectors have to lower their price • Less demand but more products • Sometime selling price ends up being lower than initially contracted price
Factory level:	<ul style="list-style-type: none"> • Factory has no control over desired quality of mangoes collected (as it does not work directly with farmers) • Unskilled labour (<i>e.g. one factory only employs villagers from neighboring communities, and it takes a lot of time to train them</i>) • Electricity is expensive (compared to neighboring countries) and sometimes difficult to access (<i>e.g. one factory would like to expand but could not do so because they would have a problem with receiving electricity in their area</i>) • Cost of imported raw materials (for processing mango, or packaging it) is high • Cold storage is expensive (in terms of electricity consumption and required infrastructure-related investments)
Export level:	<ul style="list-style-type: none"> • Export of processed mango is very competitive, and it seems that processing mango in Cambodia is more expensive than in neighboring countries and this forces local companies to lower their margin (<i>e.g. while competitors make up to 35-40% margin, a Cambodian factory could typically make 30% or lower</i>)

3.1.4 Suggestions and recommendation for intervention

- Relevance actors/government agencies could provide farmers on how to responsibly grow mango trees which related to pesticide usage, fungus disease, chemical fertilizer using and fungus disease management etc.;
- A mango production cluster concept could be introduced to neighboring production areas, such as Kampong Speu and Takeo. The cluster concept would benefit farmers by increasing their bargaining power, have an effective aggregate demand on inputs/economies of scale, and improve mango quality management;
- Any Agricultural standards (*i.e. Good Agriculture Practices (GAP), Organic, PGS, GI etc.*) or Safe Production Technique should be introduced to the cultivated areas;
- Capacity building, technical support and financing are needed along mango value chain (for example on cold chain such as cold truck, cold storage and cold containers);
- There should be greater focus on bridging the gap between famers/local producers and. As current practices show, some local retailers are not keen to promote local products; if some kind of incentives were in place (especially on public infrastructure investment and tax-related), perhaps local retailers would be more willing to promote local products both fresh and dried;

- Strengthen and promote a contract farming/some kind of formality to build a trust in all levels from farmer, collector, and retailer;
- Provide orientation/training on export guideline, especially Protocol of Phytosanitary requirements for export, which is already signed (this measure would minimize cost on compliances).

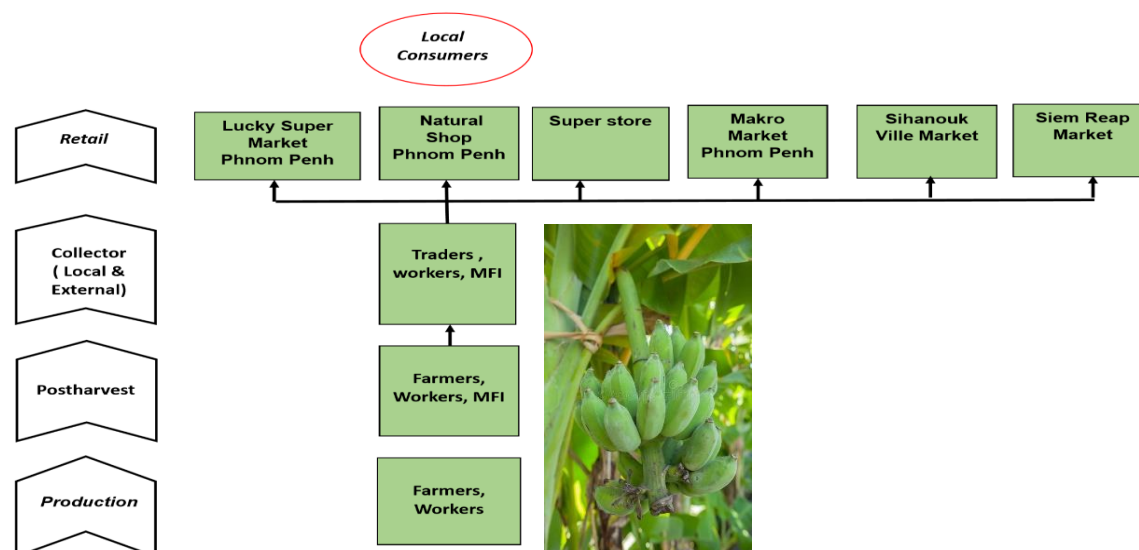
3.2 Banana sector

Currently an official signed between Ministry of Agriculture Forestry and Fisheries (MAFF) of the Kingdom of Cambodia and General Administration of Customs of the People’s Republic of China on the Protocol of Phytosanitary requirements for the export of banana from Cambodia to China. For more detail please refer to Department of Plant Protection Sanitary and Phytosanitary (DPPSPS) under General Directorate of Agriculture (GDA) of Ministry of Agriculture Forestry and Fisheries (MAFF).

3.2.1 Key Actors Interviewed of Banana

Please refer to Annex 1.

3.2.2 Domestic Value Chain Mapping of Banana, Koh Kong



3.2.3 Challenges matrix of banana actors

Level of Actors	Challenges
Production level:	<ul style="list-style-type: none"> ▪ Lack of labor with specific skill on banana production ▪ Daily wage of worker is lower than other sector like garment and construction ▪ Other standard issues (ex.GAP...)
Postharvest level:	<ul style="list-style-type: none"> ▪ Quality and quantity of banana are not meet an order (demand) from retailers in Phnom Penh ▪ Lack of labor, transportation, market information & working capital ▪ Wages of workers are lower than in other sectors

	<ul style="list-style-type: none"> ▪ Loan from Bank/MFIs is high interest rate for Agri-sector ▪ Perceived Agri-sector as high-risk loan portfolio
Collection level:	<ul style="list-style-type: none"> ▪ Lacking working capital, storage/cold storage, cold truck ▪ inconsistent demand from retailers in Phnom Penh ▪ Limited capacity of supplier (quality and quantity) ▪ Inconsistent quality of supplier (shape, length, peel/skin...) ▪ Other standard issues such as packaging, or GMP etc.
Retailers level:	<ul style="list-style-type: none"> ▪ Limited capacity of supplier (quality and quantity) ▪ Inconsistent quality of supplier (shape, length, peel/skin.) ▪ inconsistent demand ▪ hard to predict inventory amount

3.2.4 Suggestions and recommendations for improvement

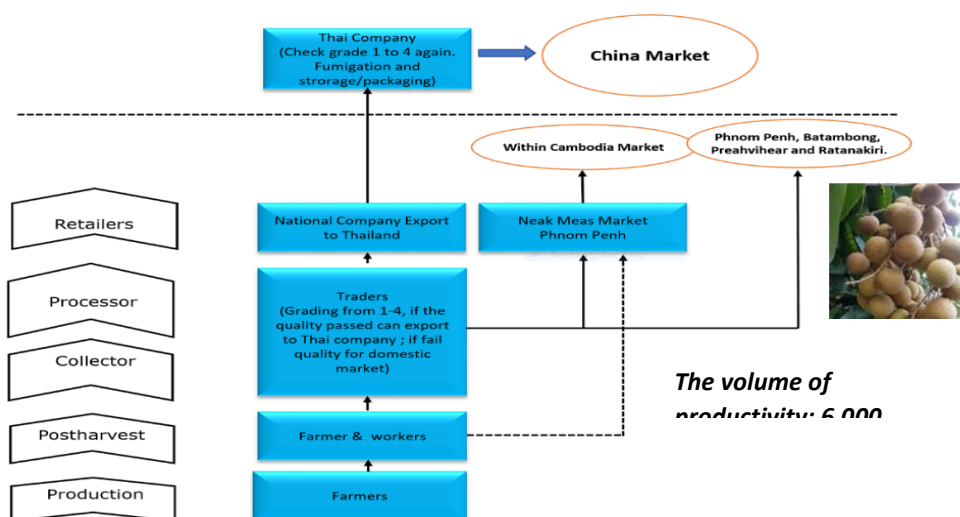
- Capacity building, technical support and financing are needed along banana value chain, for example on cold chain such as cold truck, cold storage in order to respond to international demands;
- Safe and new production techniques could be introduced to the cultivated areas in order to increase production and be able to meet the occasional high demand locally;
- Minimum standards GMP should be introduced at the processing level;
- Financial institutions should be encouraged to provide an affordable interest rate of loan to farmers and traders;
- The market linkage between banana farmers and banana export factories/companies should be encouraged and incentivized;
- Provide orientation/training on export guideline, especially Protocol of Phytosanitary requirements for export, which is already signed; to minimize cost on compliances.

3.3 Longan Sector

3.3.1 Key actors interviewed of Longan

Please refer to Annex 1.

3.3.2 Value Chain Mapping of Longan, Pailin and Battambang Cluster



3.3.3 Challenges Matrix of Longan

Level of Actors	Challenges
Production level:	<ul style="list-style-type: none"> ▪ Most of the farmers lack of capital for input cost. To make longan tree produces fruit, farmers need to use many types fertilizers which are import from Thailand (<i>e.g. the farmers that do not know how to mix the pesticides spend more expensive 3 times compare to the farmers that know how to mix</i>). Beside this, farmers need to spend high cost for hiring high skill workers for spraying the plant regulator, if not there will no fruits or low yield ▪ Farmers find it difficult to hire skilled labor in spraying longan ▪ <i>Crop regulator⁴</i> is not so effective especially on old trees (10-year-old up) ▪ Do not know how to grow and take care longan tree following by the buyer requirements ▪ All farmers face challenges with water shortage. Using ground water may affect fruit quality (small size, and less quantity) ▪ Weather and climate change may also affect the product as well, (<i>i.e. burning in dry season, storm or strong wind cause of fruit falling and broken branch, rain can cause fruit cracking and difficult to harvest and low yield</i>).
Postharvest level:	<ul style="list-style-type: none"> ▪ Late harvesting to make the fruit breaking, falling and overripen difficult to sell because of no market available and not meet the requirements from buyers ▪ Lack of skilled labor for harvesting ▪ The cost of making fumigation facility is expensive (<i>e.g. 30,000\$ up</i>) as the same of making cold storage facility ▪ No standard of quality grading system. The grading longan from number 1 to number 4 is flexible
Collection level:	<ul style="list-style-type: none"> ▪ Market is not stable – price fluctuate, quality demand change in market especially during the harvest season, the collector collects only high quality ▪ Breach of trust between contracting parties (<i>e.g. even when some advance payment to the farmers, some farmers still sell the longan to other collectors for a higher price</i>) ▪ Collectors sometimes lack capital to deposit to farm owners and sometimes they lack capital to buy longan ▪ High interest rate from MFI (<i>e.g. 1.2%/month</i>) and need collateral to get loan ▪ Because there is not specific grading system in the area studied and the supply is flooded, sometimes Thai companies/processors have greater bargaining power over Cambodian traders ▪ Even though the quality of fruit is lower than grading set by Thai buyers, some farm owners still request collectors a high price

⁴ Crop regulator refers to the set of knowledge and techniques of longan farmers and is utilized to produce fruit on demand (for example crop regulator includes instructions on how to use fertilizers, when the best time is to harvest...)

- | | |
|--|--|
| | <ul style="list-style-type: none"> ▪ Collector tough to sell to Thailand during of Thai longan harvesting at the same period ▪ Lack of market linkage with Chinese buyers ▪ Lack of MOU with China for export, pushes Cambodian collectors to do unofficial trade with Thailand companies (who then officially export Cambodian longan to China) ▪ High cost of trading (mostly unofficial payments at border gate) with Thailand and neighboring countries ▪ Most local retailers sometimes delay payments to the longan collectors (<i>sometimes up to 10 days</i>) |
|--|--|

3.3.4 Suggestions and recommendation for improvement

- A production cluster concept could be introduced to nearby production areas, especially in the case of Pailin, Battambang and Banteay Meanchey should be considered and established. The cluster concept would benefit farmers by increasing their bargaining power, have an effective aggregate demand on inputs/economies of scale, and improve quality management;
- Capacity building, technical support and financing are needed among key longan value chain actors. Those technical assistance and financial support could be on cold storage facility, fumigation facility⁵, etc.;
- Good Agriculture Practices (GAP) or Safe Production Technique should be introduced to the cultivated areas, especially on postharvest practices;
- Strengthen and promote a contract farming/some kind of formality (selling/buying contract or purchase order) to build a trust in all levels from farmer, collector, and retailer;
- MAFF should speed up signing the protocol of Phytosanitary requirements for the export of longan fruit from Cambodia to Thailand as well as to China to expand more formal export and creating more value to the economy;
- The production techniques should be provided by relevance actors and government agencies;
- Financial institutions should be encouraged to provide an affordable interest rate of loan to farmers and traders;
- Provide orientation/training on export guideline, especially Protocol of Phytosanitary requirements for export, which is already signed; to minimize cost on compliances.

3.4 Dragon fruit Sector

The Protocol of Phytosanitary requirements for the export of dragon fruit from Cambodia to Vietnam has been signed an official between both countries. Therefore, this is a good opportunity for dragon fruit actors can expand their market.

3.4.1 Key Actors Interviewed of Dragon Fruit

Please refer to Annex 1.

⁵ Fumigation is the action or process of disinfecting or purifying an area with the fumes of certain chemicals. The processors/traders use SO₂ to disinfect/purify the longan. The longan that did not get fumigation will be lost the quality within 1 day long when the fumigated longan could last up to 14 days.

3.4.2 Value Chain Mapping of Dragon Fruit, Kampong Cham

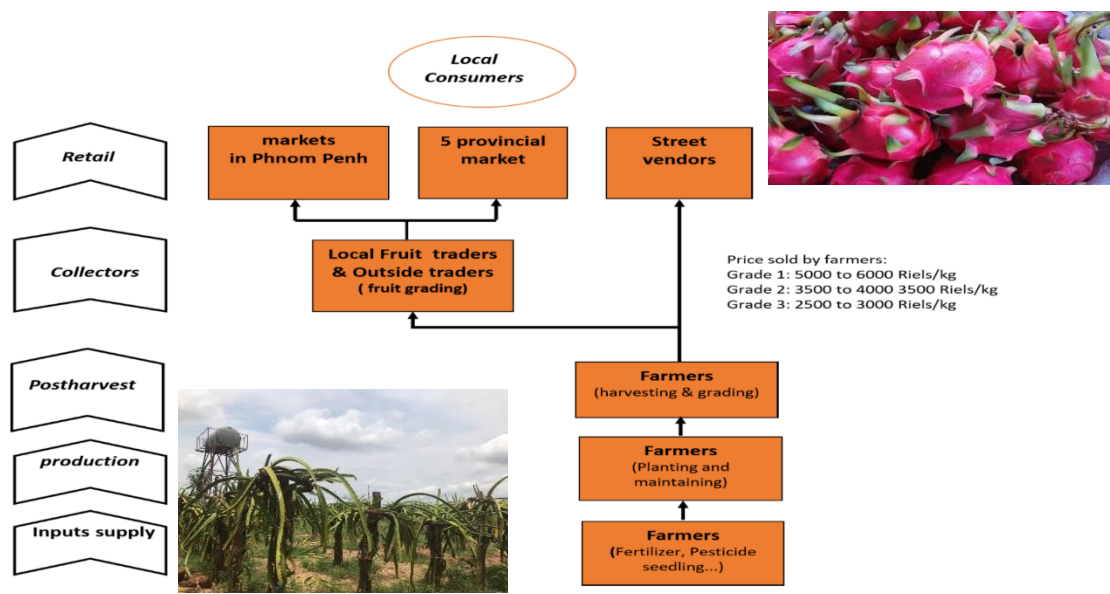
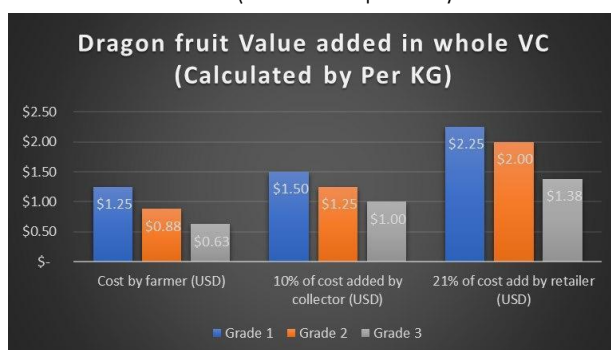


Chart 1. Example of Dragon Fruit Value Added (based on primary data collected)



3.4.3 Challenges Matrix of Dragon fruit actor

Level of Actors	Challenges
At production level:	<ul style="list-style-type: none"> Stem Rot, Stem Canker, Anthracnose on fruits
Postharvest level:	<ul style="list-style-type: none"> No
Collection level:	<ul style="list-style-type: none"> Loss quality and quantity (for example up to 30% after harvested 4 days)
Retailers level:	<ul style="list-style-type: none"> Inconsistent supply/seasonal supply Limitation of Quality (both size and standard) Small volume and production and Price of this fruit is high if comparing with import

3.4.4 Suggestions and recommendations for improvement

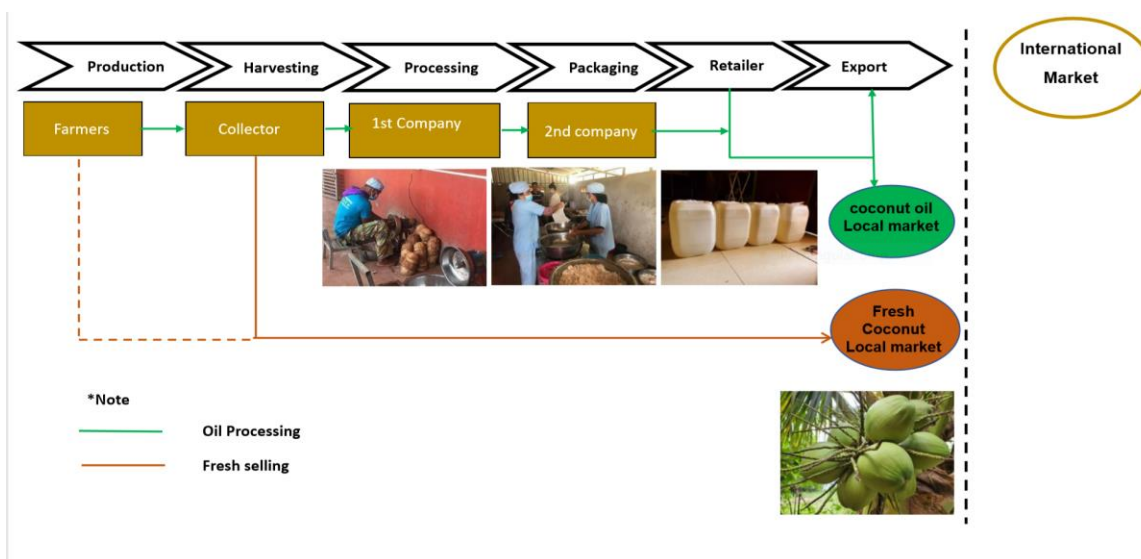
- The agricultural standards (GAP or Organic) should be introduced and implemented at the farm level, for the purpose of saving cost, soil treatment and quality of product to make consumer satisfaction;
- Cold storage techniques should be oriented to relevant traders;
- Promote contract farming and market engagement should be implemented at the dragon fruit cultivation areas country wide;
- A production cluster concept could be introduced to nearby production areas within the provinces of Kampong Cham and Siem Reap, should be considered and established. The cluster concept would benefit farmers by increasing their bargaining power, have an effective aggregate demand on inputs/economies of scale, and improve quality management.

3.5 Coconut Sector

3.5.1 Key Actors Interviewed of Coconut

Please refer to Annex 1.

3.5.2 Value Chain Mapping of Coconut, Kampot



3.5.3 Challenges Matrix of Coconut

Level of Actors	Challenges
Production level:	<ul style="list-style-type: none"> ▪ There are no regulations in Cambodia on what (local) coconut oil is/should be (and some companies are now profiting by importing coconut oil from abroad and packaging it here and sell it as a Cambodian product)

	<ul style="list-style-type: none"> ▪ Insect damages trees (e.g. dung beetle) ▪ Traditional maintenance of trees is not much efficient
Processing level:	<ul style="list-style-type: none"> ▪ Processed coconut is a very fragmented market, lacking disposable income ▪ Lack of government support ▪ Traders controlling supply at village/commune level (there have been cases in which traders appointed by a Sangkat chief would have the monopoly over the supply)
Retailers level:	<ul style="list-style-type: none"> ▪ Complicated exporting procedures for processed coconut goods (<i>for example one has to seek testing and certifications from more than one department within the Ministry of Health</i>) ▪ Export market for processed coconut products is hard to manage, because in this industry <i>“one cannot scale up overnight”</i>

3.5.4 Suggestions and recommendation for Improvement

- The company should improve on the production or processing level, and especially the company could apply food safety standards at least minimum standards GMP;
- There could be incentives for processing factories so that they can access more modern (therefore more efficient) technology;
- From the findings it seems that this production is quite new, hence there could be a study visit to neighboring countries to learn more about a whole production chain;
- Farmer associations could be established or strengthened in order to increase incomes and sustain the production;
- Seems this production is quite new; they should have a study visit to other countries in the region to learn more about a whole production process;
- More high value added to the coconut oil processing – final product like lipstick, shampoo other cosmetic products or energy products for athletes;
- New plantations are subsidized/ or farmers are keener to sell mature coconuts and earn more (rather than young coconut);
- A production cluster concept could be introduced to nearby production areas within the provinces of Kampot and Takeo should be considered and established. The cluster concept would benefit farmers by increasing their bargaining power, have an effective aggregate demand on inputs/economies of scale, and improve quality management.

4. Role and Key Intervention Actors in Fruit Value Chains

4.1 Key Intervention actors interviewed

Please refer to Annex 1.

4.2 SMEs Department of Ministry of Industry, Science, Technology & Innovation (MoISTI⁶)

This is a central of technical cooperation between public sectors and private sectors on SMEs consultation and support such as SMEs regulation, technical assistance including packaging, and SME registration.

⁶ Previously “Ministry of Industry and Handicraft (MIH)”.

4.3 General Directorate of Agriculture (GDA) of Ministry of Agriculture Forestry and Fisheries (MAFF)

In ASEAN, GDA is a member of technical working group on crops, Cambodia has not yet established national working group on fruit sector, but however the Department of Horticulture and Subsidiary Crops under GDA is a focal point on crops sector working group with focusing on agricultural production, pre-packaging and organic agriculture. Beside that GDA has another department named as Department of Plant Protection Sanitary and Phytosanitary (DPPSPS) is supporting on quality assistance including Good Agriculture Practices (GAP) and Phytosanitary certification for export (link: <https://gda.maff.gov.kh/documentcategory/387LgUr3R6>).

4.4 The Export-Import Department of Ministry of Commerce (MoC)

The Export-Import Department under Ministry of Commerce (MoC) is played role as Certificate of Origin (C/O) management. The Certificate of Origin (C/O) is an official document shown in or der to certify the products of origin from which country produced, that actually need from the imported countries. Currently, E-C/O is available online, it has been synchronized with all ASEAN Member State, and also connected with the National Single Window through ASYCUDY Portal System of General Department of Customs and Excise of Cambodia please refer to link via <https://co.moc.gov.kh/> for detail. Regarding to agricultural goods export, the ministry has delegated to provincial department of commerce where nearby neighboring countries, this is for C/O form D only. The exporters can also be direct requested to Import & Export department as well.

4.5 Certification Bodies:

The certification bodies are currently available in Cambodia for both national and international standards in situations such as

- Institute of Standards of Cambodia (ISC) (link: <http://www.isc.gov.kh/en/>),
- ISO Certification Body Cambodia and K2A Management (ISB-K2A) (link: <https://www.iso-certifications.com/>),
- ECOCERT (link: www.ecocert.com/),
- Control Union (Cambodia) (link: <http://kh57007.yo.com.kh/www.controlunion.com/>), CERES (link: <http://www.ceres-cert.com/>),
- SGS (Cambodia) Limited (link: <http://kh62407.yo.com.kh/>),
- Intertek (link: <https://www.intertek.com/contact/asiapacific/cambodia/>),
- TUVRheinland (link: <https://www.tuv.com/world/en/>),
- ECIC (link: <https://www.ecic.co.za/>) and
- COrAA (link: <https://coraa-cambodia.org/coraa-organic-certification/>).

All certification bodies are provided the services such as Global GAP or National GAP, International Organic Agriculture Standards or National Organic Agricultural Standard, PGS, GI, Food Safety (GMP, HACCP, ISO22000:20018), BRC issue 8., Halal and other ISO certifications as per required from any clients.

4.6 Logistics company/Freight Forwarding

The role of services logistics providers is to support the facilities services to SMEs such as door to door services, agricultural goods clearance, facilitate the formalities for exporting the products, transportation and connecting between sellers and buyers through their agents.

5. General findings and Recommendations

5.1 General findings

Through desk research and primary data collected and their analysis, the first general finding of this study indicates that there is a lack of involvement of certain segments of stakeholders of the fruit value chains (such as public sectors, private sector, finance institutions and development partners). Three actors appeared to be the most actively involved in the studied fruit value chains: farmers, collectors and retailers. The linkage between producers, collectors, retailers, government relevant ministries and buyers seemed not well connected; especially between local producers/traders and export company. The absence of a technical working group of the fruit sub-sector could be one of the reasons why interventions at each level of the value chains are not well connected not much effective.

At the production level, the study highlights that most of farmers express the need for agricultural techniques training in term of pesticide using, pest and disease management, since pests and diseases were among the most cited challenges by interviewees for almost all fruits (such as Stem Rot, Stem Canker, Anthracnose). According to our sample, farmers normally use traditional techniques learnt from previous generations or neighboring countries. Moreover, a significant share of interviewed actors in certain value chains stated that some of quality of fresh fruit products is not yet met the standards required by buyers, and could be due to the fact that agricultural standards are not in place/applied at the farm level. This issue with product quality seems to be the cause of market loss for producers and loss of confidence of retailers. On top of these issues, data shows that farmers invest large amounts of money at the production level but have low profits due to other logistics issues (e.g. high transportation cost, high prices for imported agricultural inputs, additional unofficial payments).

In addition to the above, other general findings reveal that (i) actors along different value chains seem not trust each other, in terms of technical issues and quality of products; (ii) local products are generally more expensive to produce compared to imported products; (iii) there are inconsistencies between supply side and demand side; (iv) with the exception of one actor, there were no contract farming practices in place between farmers and collectors/retailers; and (v) supply chain management along value chains seems limited.

On a positive note, desk research informs that MAFF has signed official Protocol of Phytosanitary requirements for fruits export such as banana to China, Mango to Korea, Mango to Thailand, Dragon fruit, Guava and Jack fruit to Vietnam. This represents a particularly good

opportunity for local small and medium enterprises (SMEs) to increase their exports and do so legally.

5.2 Recommendations and possible ways forward

5.2.1 Fruit Sub-Sector Level

Based on the general findings in 5.1 and the observation, to improve the sub-sector it is necessary to build network and linkage between local producers, collectors, wholesalers and retailers and intervention actors such as public sectors, private sectors and financial institutions and at least twice a year; the public-private dialogues event should be organized, the purpose of event is to discuss about issues or challenges and find out some interventions or solutions.

This study also encourages the setup of a national working group for the fruit sub-sector, gathering relevant fruit actors who would share information, join interventions, and address challenges together. It is recommended that such platform includes relevant government agencies, CSOs and (I)NGOs, financial institutions, and private sector (retailers, buyers, logistics companies, certification

bodies, collectors and producers' representative). The working group would be responsible for developing integrated value chains for fruits covering all stages and fields of intervention. To achieve this, at least one pilot value chain model should be implemented to inform best practices.

5.2.1.1 Intervention level:

- Market linkage between farmers/local producers or traders and retailers/export companies i.e. In case of mango export company/plantation has been working /connecting with farmers/local producer in order to create more job locally and sustainable development a long value chain should be considered and practiced.
- Financial institutions should be encouraged to provide an affordable interest rate of loan to farmers, traders, agri-businesses and exporters.
- A production cluster concept could be introduced, considered and established, especially nearby production areas with the same commodity (i.e. mango in Takeo and Kampong Speu), The cluster concept could give more benefits to farmers such as bargaining power, effective aggregate demand on inputs, easier to manage on quality,
- Capacity building, technical support and financing are needed among key value chain actors. Those technical assistance and financial support could be on cold chain and cold storage facility, fumigation facility....
- Provide technical training to farmers on the production level, Postharvest level and processing level
- Provide or share market information to all actors via text (phone) or digital solutions
- Provide an opportunity to retailers/traders/associations/producers to present their products at local and international trade fair, agri-expo ..
- PPP (Public Private Partnership) that the government could consider and make any agreement/arrangement (production/ market or export quota) between government, export companies/retailers/buyers, farmers and other development NGOs for long term and sustainable development of value chain.
- An official signed on the Protocol of Phytosanitary requirements for the export between Royal Government of Cambodia (RGC) and imported countries should be oriented to the public, especially to fruit key relevance actors;
- All fruit actors should get an orientation on the Formality of Phytosanitary Certificate Provision for Export, Re-export, Import, and Transit of Goods Subject to Phytosanitary Inspection (<https://gda.maff.gov.kh/document/R4Q5wdzyAn>)

5.2.1.2 Market level (exporter/factory/retailer, collector/trader):

- The company should improve on the production or processing level, and especially the company could apply food safety standards at least minimum standards GMP.
- Study visit at the neighboring countries is the best approaches to bring relevant actors to learn about best practice of specific value chain in other countries for improve their business and production techniques.
- The bridge between famers/local producers and local retailers should be put more focuses. As current practices, some local retailers are not keen to promote local products – there should be some kind incentives for local retailers to promote local products both fresh and dried – especially on public infrastructure investment and tax incentives
- Minimum standards GMP should be introduced at the processing level
- Fruit supply chain management needs to be strengthened – especially on gro-processing ecosystem such as cold chain, packaging material, cold storage facility ...
- All fruit actors should get an orientation on export procedures of agriculture products as mentioned in 4.3 (link: <https://gda.maff.gov.kh/documentcategory/387LgUr3R6>). All key actors should get an orientation/training on export guideline, especially Protocol of Phytosanitary requirements for export, which is already signed; to minimize cost on compliances.

5.2.1.3 Production level

- Provide training to farmers on the topic of pesticide usage, pest and disease control, postharvest management and pre-packaging.
- Improve their quality of products to meet market requirement the agricultural standards i.e. GAP or Organic should support them to have it and the standards certifications itself could be subsidized by the government in order to promote national agriculture products and increase competitiveness of local products with the imported products.
- Strengthening and promoting a contract farming/some kind of formality (selling/buying contract or purchase order)
- The farmer association should be strengthening and transparent among members in order to increase incomes and sustain the production
- Provide or share market information to all actors via text (phone) or digital solutions
- Crop calendar and adjusting technique training should be encouraged to avoid over supply.

5.2.2 The following up action for CPSA level

- In terms of next steps, CPSA should firstly organize a consultation workshop to present the findings of this rapid assessment and bring all relevant actors together to discuss challenges and needs of each actor and how to jointly and effectively address them through interventions in different fruit value chains.
- CPSA could then support key actors in establishing a Working Group for the Fruit Sub-sector, involving various actors along fruits value chains.
- CPSA could further cooperate with MAFF to study the cultivated areas of fruit sub-sector and economic analysis country-wide and provide technical assistance for working group on fruit sub-sector for both policies and implementation.
- CPSA should cooperated with other relevant actors such as ASPAIRE program under MAFF, AIMS program under MoC, SMEs Program of GIZ, Climate friendly Agribusiness Value chains Sector Program under ADB, to get them involved in whole value chain of fruit sub-sector in the country wide.

Annexes

Annex 1 - List of Interviewees

Theme	Name of Actor	Role/Institution	Province
Mango	Mr. Somon Proeun	Kirirom Food Production (K.F.P) Co., Ltd (Processor)	Preah Sihanouk
	Mr. Lenon Lonh	Angkor Harvest	Phnom Penh
	Mr. Teak Polrath	Producer	Kampong Speu
	Ms. Mok Hour	Collector	Kampong Speu
	Ms. Sothea Mao	Kirirom Food Production (K.F.P) Co., Ltd (Retailer/Exporter)	Phnom Penh
	Mr. Din Den	Collector	attambang
	Ms. Puth Veacha	Collector	Battambang
	Mrs. Phorn Samphors	Farmers	Pailen
	Mr. Sem Rath	Collector	Pailen
Banana	Oknha Hun Lak Director	Longmate Agriculture Co., Ltd (Exporter)	Kampot
	Mr. Bou Khemaret	Trading Business Owner	Koh Kong,
	Mr. Toeng Bunchhay	Green Island Agricultural Development (Cambodia) Limited.	Kratie
	Mrs. Nav Chhy	Producer/Farm owner	Koh Kong
	Mr. Hour MengYan	REMIC (Veg & Fruit Wholesaler)	Phnom Peh
Dragon fruit	Mrs. Chea Sambath	Collector	Kampong Cham
	Mrs. Chea Sambo	Collector	Kampong Cham
	Mrs. Chuo Kim Srom	Producer	Kampong Cham
	Mrs. Sean Thearin	Producer	Kampong Cham
Coconut	Mr. Vuthy Chhay	Processor	Kampot
	Mr. Lim Krai	Producer	Kampot
	Mr. Yet Rim	Collector	Kampot
	Mr. Mao Ran	Collector	Kampot
	Mr. Bao Oun	Producer	Kampot
	Ms. Meng Saren	Producer	Kampot
	Mr. Sam Sambath	Producer	Kampot
	Ms. An Sim	Producer	Kampot
	Mr. Kong Ny	Producer	Kampot
	Mrs. Perng Saron	Producer	Kampot
	Mr. Rim	Collector	Kampot
	Mr. Robert Esposito	Coco Khmer	Phnom Penh

	Mr. Vann San	Farmers	Batambang
	Mr. Sem Rath	Collector	Pailin
Government Actor	H.E Ho Sivyong	Director Dept. Export - Export, , in charge of C.O, MoC	Phnom Penh
	Mr. Sy Batith	Deputy Director Dept Export, in charge of C.O, MoC	Phnom Penh
	Mr. Heng Chhun Hy	Deputy Director of SPS Dept., (Phytosanitary Certificate and GAP standards), GDA	Phnom Penh
	Dr. Kean Sophea	Director, Dep of Horticulture and Subsidiary Crops	Phnom Penh
	Mr. Layhy Chhea	Director of SMEs Department at the Ministry of Industry, Science, Technology & Innovation	Phnom Penh
Logistics Company	Ms. Mealea Sovann	Managing Director of CLN (Cambodia) Co., Ltd.	Phnom Penh
Certification Body	Dr.Madhu Aman Sharma	Founder Director & CEO of ISO Certification Body Cambodia and K2A Management (ISB-K2A)	Phnom Penh
	Mr. Sarang SOK	Country Repetitive of Ecocert	Phnom Penh
	Ms. Young Rathana	Auditor of Control Union Cambodia	Phnom Penh
Longan	Mr. Chem Cheun	Farmers	Battambang
	Mr. Vann San	Farmers	Battambang
	Mr. Din Den	Collector	Battambang
	Mr. Mao Mon	Farmers	Batambang
	Mrs. Sok Sambath	Collector	Battambang
	Mr. Sa Chamreun	Collector	Pailin
	Mr. Heun Dara	Farmer	Battambang

Annex 2 - Templates for Interview Guides & Draft Field Report

(i) Interview Guide for Farmers/Associations

Date.....Month:..... Year: 2020

Name of Company/Farm owner's name

Name of interviewee.....Sex..... Tel:

Female Head of Business

Address:.....
.....

Business/farm start date:.....

1. Farming/Producer:

- Name of Commodity: bananas, mangoes, longans, dragon fruit, fragrant coconuts
- Cultivated areas:.....
- Crops cycle: Starting from which month: Finish month:
- Total yield per season/cycle:
- Price sold per KG/tons:
- Please draw production diagram Value Chain below:

- Any Challenges in Value Chain? please list down in the below box:

Production/Farming level

Postharvest level

Trading level

- Any Actors involve in Value Chain? please list down in the below box: (MFI, NOGs...)

- Production/Farming level

- Postharvest level

- Trading level

- Any existing or potential buyer available? Yes, No, if "Yes" Please describe below box

- Name and contact address

- Any suggestion? please list down in the below box: (Specific interventions- Gap standard, market linkage, training, technical, policy, contract farming, networks,

- Have you applied any standards? Yes; No, if "Yes" Please describe below box

(ii) Interview Guide for traders/collectors

Date.....Month:..... Year: 2020

Name of trader/collector.....

Name of interviewee.....Sex....., Tel:,

Female Head of Business

Address:.....

Business/farm start date:.....

2. Trader/Collector:

- Name of Commodity that you buy: bananas, mangoes, longans, dragon fruit, fragrant coconuts, others (Please specify.....)
- Capacity of buying in average per season:
- Prices paid per KG/tons:
- Please draw buying process diagram below:

Areas of commodity collection:.....

Which farmer/community/association that you buy from:.....

Buying conditions (contracting, cash on delivery or advance,,)

Where do you sell to? (Which province, market, country, ...)

Whom do you sell to?

Selling conditions (contracting, cash on delivery or advance,,)

- Any actor involves in trading process? (MFI, NGOs, Authorities,,)

- Actor involve in buying process

- Actor involve in selling process

- Any Challenges? please list down in the below box:

- Buying process

- Selling process

- Any suggestion? please list down in the below box: (Specific interventions- Gap standard, market linkage, training-topic? technical, policy, contract farming, networks,)

(iii) Interview Guide for Processor/factory

Date.....Month:..... Year: 2020

Name of Company/Factory.....

Name of interviewee.....Sex....., Tel:

Female Head of Business

Address:.....
.....

Business/farm start date:.....

- Name of Commodity that you buy from: bananas, mangoes, longans, dragon fruit, fragrant coconuts, others (Please specify.....)
- Have you made any contract farming: Yes; No,
- Capacity of production per day:
- Prices paid to supplier per KG/tons:
- Please draw production diagram flow? (from raw until output -fresh and/or process)

- Are you selling in local market, International market or both?

a. Local market (which province/city, or super market).....

- Term of selling: Selling conditions (contracting, cash on delivery or advance,

b. International market (Which country)

- Term of selling: Selling conditions (contracting, cash on delivery or advance,

- Any Challenges? please list down in the below box:

- Buying raw material:

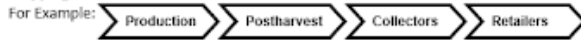
- Selling Conditions:

- Have you applied any standards? Yes; No, if "Yes" Please describe below box

- Any suggestion? please list down in the below box: (Specific interventions- Gap standard, market linkage, training-topic? technical, policy, contract farming, networks,)

Draft Field Report on Rapid Fruit Value Chain

1. Mapping Fruit Sector Value chain functions:



2. Mapping Actors in each sector of Value Chain:

Fruit Sectors	Actors	Challenges	Suggestions for Intervention	Recommendations
a) Mango				
- Production				
- Postharvest				
- Collectors				
- Retailers				
b) Banana				
- Production				
- Postharvest				
- Collectors				
- Retailers				
c) Longan				
- Production				
- Postharvest				
- Collectors				
- Retailers				
d) Coconut				
- Production				
- Postharvest				
- Collectors				
- Retailers				

3. Relevant data in each sector of Value Chain:

Fruit Sectors	Cultivated areas (ha)	Crops cycle (start/finish)	Total yield per season	Price paid per (KG)			Any existing buyer available	List name of location of production area
				Farmer	Collector	Company		
e) Mango								
- Production								
- Postharvest								
- Collectors								
- Retailers								
f) Banana								
- Production								
- Postharvest								
- Collectors								
- Retailers								
g) Longan								
- Production								
- Postharvest								
- Collectors								
- Retailers								

4. Others additional information (please put as many as you can)

For example:

- Number of interviewees: (male and female)
- Number of Female head of business

5. Annexes:

- Attendance list of Interviewees/Actors
- Questionnaire interviewed

Group name:

Date: / / 2020

Compile report by:

Annex 3 - Photos of Activities



Annex 4 - Contact List of Considered Key Potential Actors (not interviewed)

Theme	Name of Actor	Role/Institutions	Cell phone	Address
Mango	n/a	Boeung Ket Planting & Industrial Co., Ltd	012 486 666	Preah Sihanouk
	n/a	Fruitto Industrial Co., Ltd	086 695 117/ 016901662	Preah Sihanouk
	n/a	Long Wo Agriculture (Cambodia) Co., Ltd	085 454 111	Kampong Speu
	n/a	LBN Agiculture Co., Ltd	012 989 717	Tboung Khum
	n/a	Cam MJ Agricultural Co., Ltd	011 384 308	Takoe
	n/a	Confirel	012 300 024	Kampong Speu
	Mr. In Chhayvann	Kampong Speu Mango Association	(092/010/093) 749 147/	Kampong Speu
	Mr. Vathanak	Kavtelai	012555947	Phnom Penh
Banana		Sovann Reachsey	(855) 98951267 (855) 60616268	PP + Kratie
Dragon fruit	Ms. Srey Rady	Banteay Srei - Happy Dragon Farm	077 932 294	Siem Reap
Coconut	Not Available	Soma Farm	023722250	Kampot
	Not Available	FairTrade Cambodia	012994944	Phnom Penh
	Lim Phara	New Idea Enterprise	012400054/081 600065	Phnom Penh
	Not Available	Cambodia Harvest Dried Fruit	023 220 910	Phnom Penh
Longan	Mr. Soth Chhengeang	Collector	012 820 998	Batambong
	Mr. Un Theng	Pailen longan cooperative	016 386 495	Pailen
	Mr. Po Hour	Collector	012 242 430	Batambong
Mango	Orn Phalla	Assistant managing director of Kingdom Fruits International Co., Ltd.	023 211 065 mrtgroup@mongreththy.com	No. 152S, Preah Norodom Boulevard, Phnom Penh

Banana Plus other fruits	Mr. Saing Visal	CEO of CF Cambodian Fruit Co., Ltd.	012 817 489; 097 240 6666 visal.cfcambodianfruit@gmail.com	Phnom Penh
Mango Plus other	Ms. Mao Sothea	Manager of Kirrirom Rung Rueang Co., Ltd.	077 662 000 sales@kfp.com.kh	Phnom Penh
Mango	Mr. SOK Rada	Green Centric Farm Co.,Ltd. – Mango Trader for Korean Market	012 626 912	Phnom Penh
Private sector	Ms. Keo Mom	Ly Ly Food Production	keo_mom@online.com.kh	Phnom Penh
	Dr. Monivann Tan	Mong Retthy Group	monivann@mongretthy.com or monivanntan@yahoo.com	Phnom Penh
	Oknha Kouch Pheng	YEAC (The Young Entrepreneurs Association of Cambodia)	secretariat@yeacambodia.org cc: hokvichitra@gmail.com	Phnom Penh
	H.E. Dr. Eng Lykong	CWEA (Cambodia Women Entrepreneurs Association)	info@cweacambodia.org	Phnom Penh
	Mr. Ly Visal	Operational Manager of Federation Associations for SMEs of Cambodia	097 627 77 71	Phnom Penh
	H.E. Dr. Eng Lykong	CWEA (Cambodia Women Entrepreneurs Association)	info@cweacambodia.org	Phnom Penh
Certification Body	H.E Chan Sopha,	DG of ISC (Institute of Standards of Cambodia)	sopha007@gmail.com	Phnom Penh
Freight Forwarders	Mr. Sin Chanthy	CAMFFA (Cambodia Freight Forwarders Association)	president@camffa.org.kh	Phnom Penh
	Mr. Vann Bunnarith (Rey)	Managing Director of Mega Express Freight Co., Ltd.	+855 16 41 88 88/+855 12 72 98 72	Phnom Penh

			Bunnarith.vann @megaexpress freight.com	
	Miss. Oem Sreykhuoch	Sales Assistant for CLN Logistics, freight forwarder experiencing agri-product export	069 342 003/016 855 071 sales@clncam bodia.com	Phnom Penh
	Mr. Ung Puthrithy	Managing Director of HLL Logistics, freight forwarder experiencing banana export	0197 912 333 hllcambodia@ gmail.com	Phnom Penh
	Mr. Leang Sovanara	Managing Director of DNL Logistics, freight forwarder experiencing agri-product expor	077 666 632	Phnom Penh