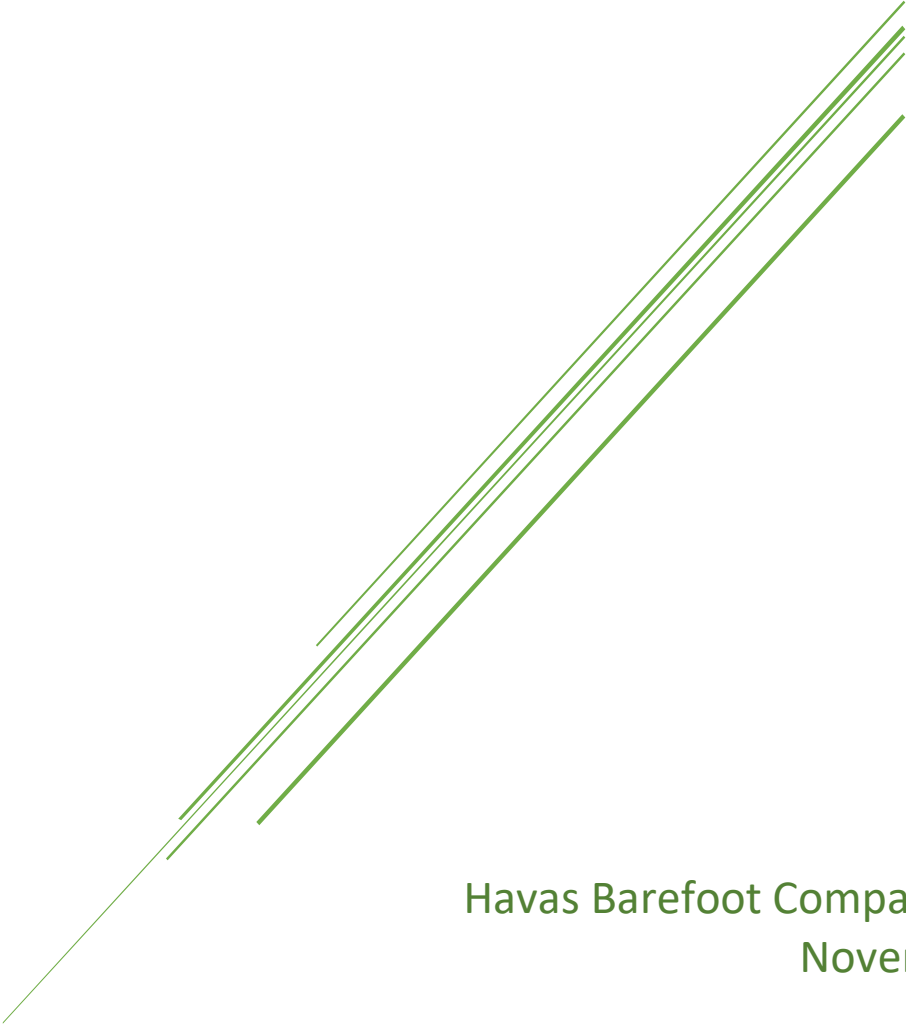


SURVEY ON SUSTAINABLE AGRICULTURAL PRODUCTIONS IN MONDULKIRI

Report



Havas Barefoot Company Limited
November 2023

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EXECUTIVE SUMMARY

WWF Cambodia has implemented a four-year project (2022-2026) titled the “IKI SCP Phase II Project on Establishing Sustainable Consumption and Production (SCP)” with financial support from the International Climate Initiative (IKI), and the Federal Ministry for the Environment, Nature, Conservation, Nuclear Safety and Consumer Protection (BMUV). The main goal of this project is to reduce emissions and increase adaptation and resilience to climate change through the implementation of complementary interventions that focus on connecting sustainable production to consumption, transforming elements and behaviors in the food system, the agri-food sector. To complement the study on Sustainable Agricultural Consumption, WWF Cambodia conducted another study on Sustainable Agricultural Productions. The study aimed to gather information on agricultural techniques and sustainable agricultural practices being performed by community members as well as members of all producer groups in the target areas of Mondulakiri province.

The study employed both qualitative and quantitative methods to gather information from 130 farmers/producers, 16 AC members, 32 food retailers, 20 CPA members, 1 GDA official and 4 PDAFF officials. The interviews with farmers/producers, AC members, CPA members and retailers were conducted in three different districts in Mondulakiri province namely Koh Nhek, Picheada and Senmonorom districts. The interviews were conducted face to face. For the interview with PDAFF officials were held at the PDAFF in Mondulakiri province and the interview with the GDA official took place at GDA office in Phnom Penh.

Amidst all vegetable, rice, avocado and cacao products, vegetable farming is the most focused product by relevant stakeholders in Mondulakiri province. Vegetable farmers could benefit from more support from different stakeholders to produce safe vegetables and find markets for their vegetables. Avocado and Cacao farmers, on the other hand, have not received much support yet in terms of finding markets for their products and technical production support. Farmers could produce more avocados, but there is no farming contract between avocado farmers and investors yet. Besides, Cacao plantation is new to farmers in the area which requires more technical support.

To ensure safe agricultural products, the Agricultural standard/CamGAP has been promoted for farmers/producers to use. Most farmers do not have CamGAP certificates, but their agricultural production is similar to the two farmers who have CamGAP certificates because they follow the CamGAP during their production. It is claimed like that because farmers sold their products as a group, regardless of whether they were CamGAP certified or not and a vegetable committee in the community evaluated the quality of their products in the laboratory before being brought to market. So far, only two farmers/farms in Mondulakiri have CamGAP certificates. The main reasons why most farmers do not have the certificate are they perceive that it is costly and time consuming to obtain, and that there is no difference between having the certificate and not having one. While farmers/producers have put more efforts in producing safe products, more and more food retailers consider safe products for their supplying to direct consumers.

Regarding honey collection, collectors have more knowledge in collecting honey in a sustainable way. Yet, gaining trust from buyers and direct sales from the community remains a challenge for collectors which may discourage them.

Some recommendations should be considered by WWF Cambodia are 1) Promotion of women participation in the ACs and CPAs, 2) Establishing contract farming for avocado farmers, 3) Introduction to one specific avocado crop, 4) Support for farmers on Cacao Plantation, 5) Promotion of benefits of CamGAP certificate, 6) Promotion of direct purchase from farmers, 7) Liaison with relevant stakeholders including government officials, private companies, UN agencies or development agencies to promote sustainable production and consumption, 8) Irrigation system development, and 9) Support on the purchase collection of wild honey by CPAs.

BACKGROUND

WWF Cambodia has initiated a four-year project (2022-2026) titled the “IKI SCP Phase II Project on Establishing Sustainable Consumption and Production (SCP)” with financial support from the International Climate Initiative (IKI) and the Federal Ministry for the Environment, Nature, Conservation, Nuclear Safety and Consumer Protection (BMUV). The project aims to reduce emissions and increase adaption and resilience to climate change by implementing complementary interventions that focus on connecting sustainable production to consumption, transforming elements and behaviors in the food system, the agri-food sector. The project goal aligns with the National Strategic Plan 2019-2023 to promote productivity, diversification and commercialization (Royal Government of Cambodia, 2019), the Pentagon 4 of the Pentagon Strategy-Phase I to promote resilient, sustainable and inclusive development (Royal Government of Cambodia, 2023), and the Goal 12 and Goal 13 of the Cambodia Sustainable Development Goals 2016-2020 to promote responsible consumption and production, and climate action (Royal Government of Cambodia, 2018).

To achieve the project goal, WWF Cambodia collaborates with the Provincial Department of Environment, the Ministry of Environment to implement various project activities to reach the project goal.

The project's outputs and deliverables include:

1. Increased urban consumers' knowledge and awareness on the linkages between consumption choices and environmental impacts, which triggers action towards sustainable consumption patterns that are less damaging to the environment.
2. Adoption of sustainable practices by key business actors within the sector, which leads to SCP implementations across the food, agricultural, and forestry value chains. This output must be delivered through at least three methodological tools – such as innovative business models; measures and guidelines of practices; and initiatives for low-carbon SCP – which are developed with participation from the target companies and relevant stakeholders. The developed tools must also be made publicly available and made possible for interested parties to adopt into their operations.
3. Adoption of SCP practices by governments and key value chain actors through collaborative mechanisms, prioritizing SCP, and systems-based approaches – such as nature-positive production and policy framework for SCP – which are necessary to transform harmful production practices.

OBJECTIVES OF THE STUDY

WWF Cambodia conducted two studies on Sustainable Agricultural Production and Consumption. The first study focused on Sustainable Agricultural Consumption while the second study about the Sustainable Agricultural Production was conducted to complement the first study and aimed to gather information on agricultural techniques and sustainable agricultural practices being performed by community members as well as members of all producer groups. The findings from the second study will be used to inform project activities moving forward and set strategies to provide effective technical support to the producer groups for sustainable production.

In addition to the main research objectives, the study looked to contribute to:

- Direct engaging all producer groups aligned to their alternative livelihood based on agricultural activities.
- Highlighting the importance and value of non-chemical fertilizers, pesticides, and herbicide usages for agricultural productions.
- Promoting sustainable consumption and production (SCP).
- Generating income from agricultural activities.
- Gaining the knowledge of waste management, food waste management and sustainable productions.

METHODOLOGY

To address the study objectives, the Havas Barefoot team employed secondary data review supplemented by primary data collection.

The literature review included various documents namely relevant research publications, CamGAP, relevant organic standards, policies, and other project documents. This literature review allowed the Havas Barefoot team to have a foundation of knowledge on sustainable production and consumption to develop different research tools prior to the primary data collection.

For primary data collection, quantitative method, survey was employed to collect information from 198 target audiences including Community Protected Area (CPA) members, Agricultural Cooperative (AC) members, Farmers/Producers, Food Retailers and Restaurants in the region of EPL, Mondulkiri province. In addition to the quantitative method, key informant interviews with officials from General Directorate of Agriculture (GDA) and Provincial Department of Agriculture, Forestry and Fisheries (PD AFF), were used to get their perception on sustainable agricultural production and CamGAP practices.

All interviews were conducted face to face with all research participants while the consent was asked for their agreement to the interviews.

Survey Sample Size and Sampling

The survey was conducted with 198 respondents. Of them, there were 130 farmers/producers, 16 AC members, 32 food retailers and 20 CPA members (Figure 1). Besides, the interviews with those participants were conducted in three different districts in Mondulkiri province namely Koh Nhek, Picheada and Senmonorom districts.

Figure 1: Sample distribution

	Vegetable	Rice	Cacao	Avocado	Wild Honey	Wild Bamboo	Total
Farmers/Producers	107	74	27	45			130
AC members	11	6	3	0			16
Food retailers	25	15	0	5	5	13	32
CPA members					20		20
Total	143	95	30	50	25	13	198

In addition to the survey, the key informant interviews with 1 official from Department of Plant Protection Sanitary and Phytosanitary of General Directorate of Agriculture (GDA) and 4 officials from the Provincial Department of Agriculture, Forestry and Fisheries (PDAFF) were conducted to gather the information from them about the good agricultural practices.

The selection of CPA members, AC members, farmers/producers, food retailers/restaurants and officials from GDA and PDAFF was done using purposive sampling. The lists of CPA members (wild honey-collecting groups), AC members, farmers/producers and food retailers/restaurants and contact of GDA and PDAFF officials were provided by the WWF Cambodia team.

FIELDWORK TIMELINE

The interviews with farmers/producers, AC members, CPA members and food retailers/restaurant owners were conducted between 04 and 17 September 2023 at their houses/workplaces in Mondulakiri province. The interview with PDAFF officials was held on 11 September 2023 at the PDAFF office in Mondulakiri. Another interview with the GDA official took place on 25 October 2023 at GDA office in Phnom Penh.

LIMITATIONS

The study's findings are primarily based on the perception and knowledge of 130 farmers/producers, 16 AC members, 32 food retailers and 20 CPA members. Therefore, some information may be biased in terms of the respondents' understanding of some technical terms used in the questionnaire.

The presence of WWF Cambodia staff during interviews may have influenced respondents' answers. This is because respondents may feel compelled to answer in a way that pleases the WWF staff if they have a good relationship with them. This could lead to a conflict of interest and may compromise the integrity of the research.

It is important to note that the study did not include the voice of other relevant stakeholders including other non-governmental organizations, UN agencies, development agencies and private companies. This can be considered a limitation of the study in terms of the inclusiveness of diverse groups working to promote sustainable production and consumption.

FINDINGS

Demographic Information of Survey Respondents

Survey Participant Gender

Based on the survey results, 55.4% of the respondents were male while 44.6% were women. It is evident that most food retailers were women while the majority of AC members and CPA

members were men. However, there was not much difference between the number of female farmers and male farmers who participated in the survey interviews (Figure 2).

Figure 2: Participant Gender

Gender (%)	Farmers (N=130)	Food Retailers (N=32)	AC members (N=16)	CPA members (N=20)	Total (N=130)
Female	40.8	87.5	25.0	25.0	44.6
Male	59.2	12.5	75.0	75.0	55.4

Survey Participant Age

According to the survey results, 72% of all participants were between 19 and 49 years old. The remaining participants were 50 years old or older (Figure 3).

Figure 3: Participant Age

Age Group (%)	Farmers (N=130)	Food Retailers (N=32)	AC members (N=16)	CPA members (N=20)	Total (N=198)
19-29	9.2	25.0	6.3	40.0	20.1
30-39	28.5	18.8	37.3	25.0	27.4
40-49	20.0	34.3	18.8	25.0	24.5
50-59	23.8	18.8	18.8	10.0	17.9
More than 59	18.5	3.1	18.8	0.0	10.1

Farmer Income

From the survey, the majority of farmers' main family members have a monthly income between 101 USD and 300 USD, accounting for 49.9%. However, only 11.5% have a monthly income greater than 700 USD (Figure 4).

Figure 4: Farmer Income

Main family member's monthly income (%)	Vegetable (N=107)	Rice (N=74)	Cacao (N=27)	Avocado (N=45)	Total (N=130)
Below USD100	2.8	6.8	11.1	6.7	5.4
USD101 – USD200	24.3	25.7	25.9	22.2	23.8
USD201 – USD300	25.2	35.1	33.3	22.2	26.1
USD301 – USD400	15.9	10.8	11.1	15.6	13.8
USD401 – USD500	11.2	9.5	7.4	6.7	10.8
USD501 – USD600	10.3	5.4	0.0	8.9	8.6
Above USD700	10.3	6.8	11.1	17.8	11.5

Survey Participant Ethnicity

Most survey participants were Khmer and Bunong. Other ethnicities that participated in the survey were Cham, Tampuan, Prov, Laos and Kraol. For farmers/producers, the main ethnicity appeared to be Khmer, followed by Bunong (Figure 5). For food retailers and AC members, most of them were Khmer and the minority of them were Bunong, Cham and Khmer Krom (Figure 6 and Figure 7). Interestingly, the CPA members were all Bunong (Figure 8).

Figure 5: Farmers' Ethnicity

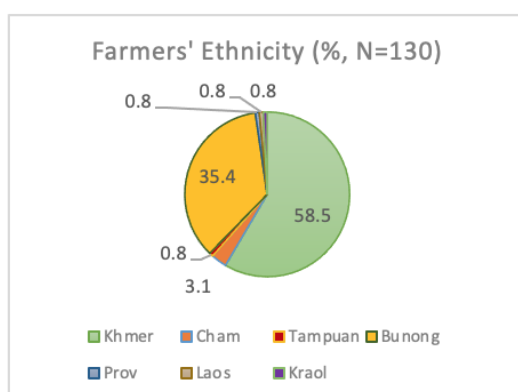


Figure 6: Retailers' Ethnicity

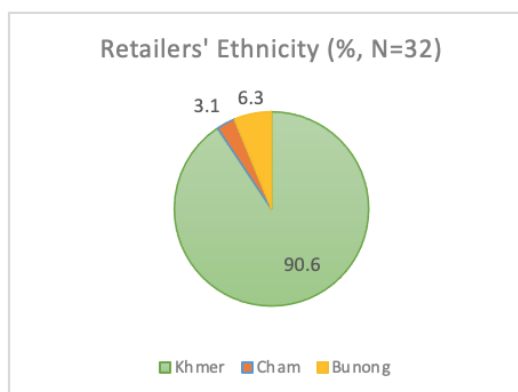


Figure 7: AC members' Ethnicity

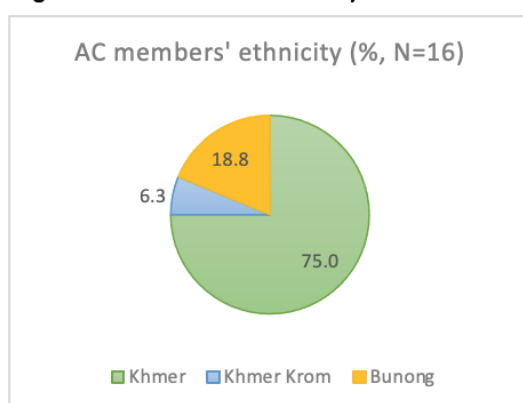
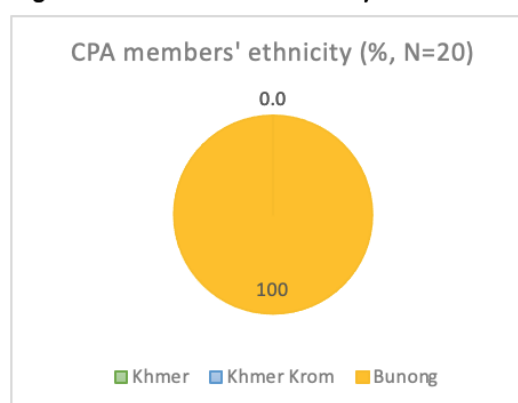


Figure 8: CPA members' Ethnicity



Survey Participant Education

Most respondents (60.7%) have received some education at primary level and some education at secondary school level, while only small percentage (1.8%) of respondents have completed postgraduate studies. Interestingly, those who have completed postgraduate studies are farmers and food retailers while none of AC members and CPA members have finished high school and postgraduate studies (Figure 9).

Figure 9: Participant Education Level

Education Level (%)	Farmers (N=130)	Food Retailers (N=32)	AC members (N=16)	CPA members (N=20)	Total (N=198)
No formal education	22.3	6.2	6.3	20.0	13.7
Some primary school	49.2	25.0	37.5	40.0	37.9
Finished primary school	2.3	0.0	12.5	20.0	8.7
Some secondary school	16.9	34.4	25.0	15.0	22.8
Finished secondary school	3.9	3.1	0.0	0.0	1.7
Some high school	1.5	3.1	18.7	5.0	7.1
Finished high school	3.1	21.9	0.0	0.0	6.3
Finished post graduate study	0.8	6.3	0.0	0.0	1.8

Production and Supplying Behaviors

Farmland

Out of all farmers/producers, 94.6% have their own farmland for their agricultural production. However, 16.9% of them rent farmland from others for their production. Of those who rent land, 68.2% already own their farmland and they rent more land for their production while 31.8% do not own any farmland. For those who own their farmland, the majority of them (23.6%) own less than a hectare while 16.3% own farmland more than 5 hectares (Figure 10). Most farmers/producers rent at least one hectare of farmland from others for their production (Figure 11).

Figure 10: Farmland Ownership

Land owned (%)	Vegetable (N=100)	Rice (N=73)	Cacao (N=27)	Avocado (N=43)	Total (N=123)
Less than a hectare	25.0	19.2	11.1	25.6	23.6
One hectare	14.0	12.3	7.4	18.6	13.8
Two hectares	15.0	16.4	22.2	7.0	15.4
Three hectares	10.0	12.3	11.1	9.3	9.8
Four hectares	11.0	12.3	11.1	7.0	9.8
Five hectares	7.0	6.8	7.4	11.6	7.3
More than five hectares	16.0	16.4	25.9	18.6	16.3
1.5 hectares	1.0	0.0	0.0	0.0	.8
2.5 hectares	0.0	2.7	3.7	0.0	1.6
3.5 hectares	1.0	1.4	0.0	2.3	1.6

Figure 11: Farmland Rental

Land Rental (%)	Vegetable (N=19)	Rice (N=12)	Cacao (N=3)	Avocado (N=5)	Total (N=22)
Less than a hectare	21.1	8.3	0.0	20.0	18.2
One hectare	36.8	33.3	33.3	40.0	36.4
Two hectares	15.8	25.0	0.0	20.0	13.6
Three hectares	15.8	16.7	33.3	0.0	18.2
Four hectares	10.5	8.3	0.0	0.0	9.1
1.5 hectares	0.0	8.3	33.3	20.0	4.5

Production Behavior

Almost all farmers or producers (92.3%) use non-chemical fertilizers for their farming or plantations (rice, vegetables, avocados, cacao...). However, some of them also use other substances for their production namely chemical fertilizers, pesticides and herbicides for different purposes (Figure 12). As shown in the Figure 12, 95.3% of vegetable farmers use non-chemical fertilizers for their vegetable plantation. Meanwhile, some of them also use chemical fertilizers, pesticides and herbicides for their vegetable plantation. This can be clearly seen that farmers or producers tend to use all types of fertilizers or substances (non-chemical fertilizers, chemical fertilizers, pesticides and herbicides for different purposes or stages for their plantation).

Currently, farmers in Mondulkiri use all types of substances including non-chemical fertilizers, chemical fertilizers, pesticides and herbicides for their agricultural production, yet they follow the safety standards claimed by a PDAFF official.

Figure 12: Production Behavior

Production Behavior (%)	Vegetable (N=107)	Rice (N=74)	Cacao (N=27)	Avocado (N=45)	Total (N=130)
Non-chemical fertilizers	95.3	93.2	96.3	82.2	92.3
Chemical fertilizers	55.1	51.4	29.6	28.9	50.8
Pesticides	59.8	50.0	37.0	46.7	55.4
Herbicides	62.6	55.4	44.4	73.3	63.1

There are different reasons why farmers/producers perceived that it is important to use non-chemical fertilizers. Those reasons include promoting organic food, maintaining underground biodiversity/soil quality, saving money, and preventing grass from growing quickly. Non-chemical fertilizers also provide more yields, help maintain long-lasting freshness of vegetables/fruits and do not cause any health issues for consumers. Farmers/producers also mentioned that products from non-chemical fertilizer usage can be sold at higher price with good market.

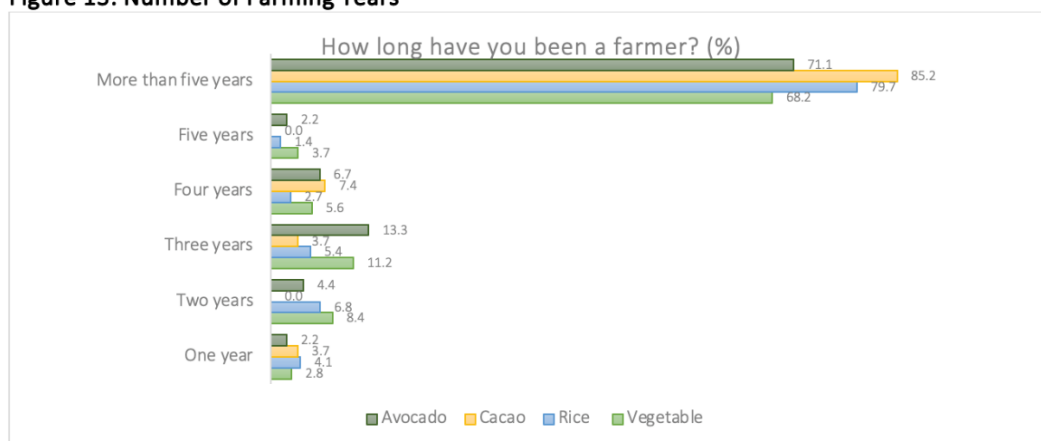
On the other hand, farmers/producers who use chemical fertilizers perceived that chemical fertilizers are important because they can help increase more yields or crops, turn poor soil into productive soil, and yields/crops grow fast.

Pesticides are used to protect yields or crops from insects, weeds, and fungal diseases. They also stop food crops from being contaminated by fungi, increase more yields or crops and prevent plants from dying quickly.

Finally, herbicides are believed to be vital to control undesired plants allowing them to grow healthily. They save resources on killing undesired plants, help yields or crops grow fast and destroy germs in the soil.

Most farmers from all types of plantations have been farmers for more than five years. Only a minority of them have planted for less than one year (Figure 13).

Figure 13: Number of Farming Years



Note: N=107 (vegetable farmers), N=74 (rice farmers), N=27 (cacao farmers), N=45 (avocado farmers)

Harvest Seasons

According to the farmers and producers, vegetables can be harvested throughout the year, but the months of November, December and January are the most productive (Figure 14). Vegetables harvested in Mondulkiri are in high demand and be sold out to the markets in different provinces, especially in the supermarkets mentioned by PDAFF officials.

For rice, farmers/producers pointed out that rice can be harvested from August to January. However, November and December are the months when they can harvest the most rice (Figure 15).

Figure 14: Vegetable Harvesting Months

Which months of the year are the high harvesting months for vegetables?	N=107 (%)
January	39.3
February	33.6
March	23.4
April	18.7
May	18.7
June	15.9
July	16.8
August	19.6
September	23.4
October	21.5
November	38.3
December	37.4

Figure 15: Rice Harvesting Months

Which months of the year are the high harvesting months for rice?	N=74 (%)
January	16.2
February	1.4
March	0.0
April	1.4
May	0.0
June	0.0
July	0.0
August	9.5
September	2.7
October	10.8
November	59.5
December	55.4

Cacao farmers/producers mentioned that they can harvest Cacao throughout the year, with December being the most productive month. However, some farmers have just planted cacao, and some have harvested but they have not yet sold to the company (Figure 16).

PDAFF officials supported that the majority of farmers have recently started planting cacao while they have not yet profited from their plantation.

May, June and July are the three months when farmers/producers can harvest more avocados (Figure 17). However, PDAFF officials claimed that avocado do not have a market like vegetables because there is no contract farming between farmers and companies for their production. Avocado farmers plant different types of avocados that cannot be harvested at the same time, leading to the less investor interest in avocados in Mondulkiri. Besides, imported avocados from Vietnam seem to have a broader market than the Cambodian avocados because Vietnamese avocados are available all year round (Phnom Penh Post, 2019).

Figure 16: Cacao Harvesting Months

Which months of the year are the high harvesting months for cacao?	N=27 (%)
January	7.4
February	7.4
March	3.7
April	3.7
May	7.4
June	18.5
July	14.8
August	11.1
September	3.7
October	3.7
November	7.4
December	44.4
Just planted, not yet harvested	18.5

Figure 17: Avocado Harvesting Months

Which months of the year are the high harvesting months for avocado?	N=45 (%)
January	2.2
February	2.2
March	8.9
April	15.6
May	35.6
June	48.9
July	37.8
August	8.9
September	0.0
October	4.4
November	4.4
December	6.7
Just planted, not yet harvested	6.7

Wild honey can be collected between February and May. However, March and April are the most productive months for wild honey collection because there is less rainfall which makes it easier to collect honey. In addition, some wild honey can be collected in February and May.

Water for Production

Regarding the water for production, the vast majority of all types of farmers/producers rely mostly on rainwater for their farming activities which they store in the ponds. Groundwater from wells is the second most common source of water for their farming.

For vegetable farmers/producers, they mostly pump water from ponds (rainwater), wells (groundwater), and streams for their plantations. As per the information from WWF’s energy team, farmers use between 5 and 7 liters of diesel or petrol per day for their production which costs them approximately 8 million riels per year for water pumping. As minority of them also depend on private water operators, canals and lakes.

Most rice farmers and producers use water from ponds or rely on rainwater for their production, followed by water from streams. However, around 7% of them use water from wells (groundwater), canals and lakes for their production.

The majority of cacao farmers and producers get water from ponds (rainwater), wells (groundwater) and streams while a very small proportion of them use water from lakes for their plantation.

It is noticeable that most avocado farmers depend more on rainwater for their plantation while some of them also use water from wells (groundwater), private operator sources and streams.

Supplying Behavior

According to the survey, 53.1% of food retailers buy food from middlemen while 46.9% purchase directly from farmers/producers. Almost all of them prefer to buy local products,

with only 3.1% buying imported products more. Retailers purchase more local products because they want to support local businesses, local products are cheaper than imported ones, local products are safer products and more delicious than imported ones. The local products that they buy are vegetables, rice, avocado, wild bamboo, wild honey, meat/fish, passion fruits, dragon fruits, durian, rambutan and garlic.

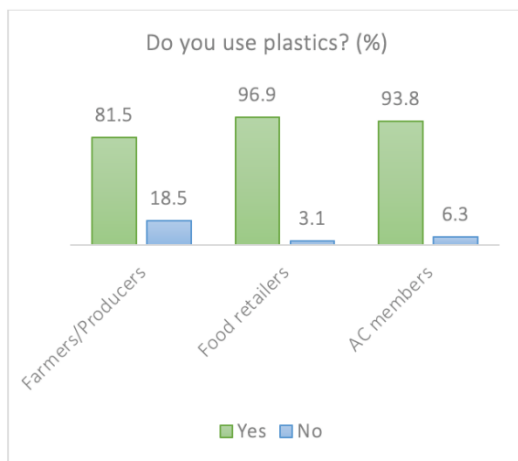
For food retailers who buy more imported products, they stated that imported products are not available locally, price of imported products is cheaper than local products' and local products are not available in all seasons. The imported products that they purchase are vegetables, rice, avocado, wild honey and meat/fish. Around 60% of food retailers buy foods every day and some buy three times per week. They sometimes pick up by themselves and sometimes farmers/suppliers/middlemen distributed to their retail shops/restaurants.

Waste Management

Waste Management

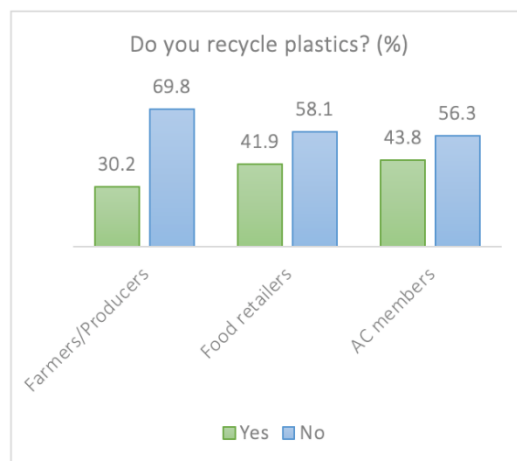
From the survey, most farmers/producers, food retailers and AC members use plastics including plastic bags, containers baler twine and so on for production and food supply (Figure 18). Among those who use plastics, 30.2% of farmers/producers, 41.9% of food retailers and 43.8% of AC members recycle their used plastics (Figure 19).

Figure 18: Plastic Usage



Note: N=130 (farmers), N=32(retailers), N=16 (AC members)

Figure 19: Plastic Recycle

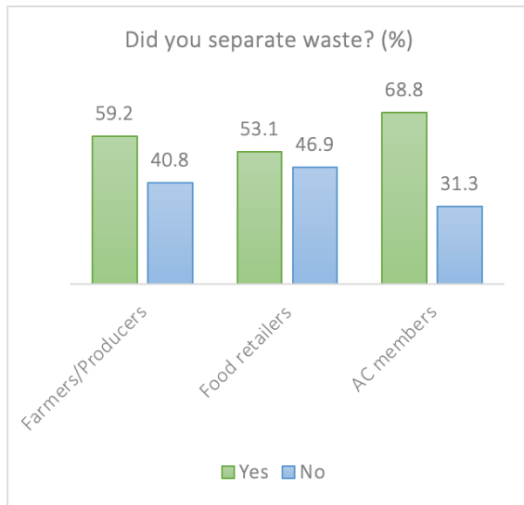


Note: N=106 (farmers), N=31(retailers), N=15 (AC members)

Regarding their waste management, most of farmers/producers, food retailers and AC members separate their waste between liquid and solid waste (Figure 20). For those who do not separate waste, they just place all types of waste in one container.

Moreover, 39.2 % of farmers/producers and 62.5% of AC members make compost from their waste while none of food retailers compost from their retailing waste (Figure 21). There are different ways of making compost depending on farmers/producers or AC members.

Figure 20: Waste Separation



Note: N=130 (farmers), N=32(retailers), N=16 (AC members)

Figure 21: Making Compost

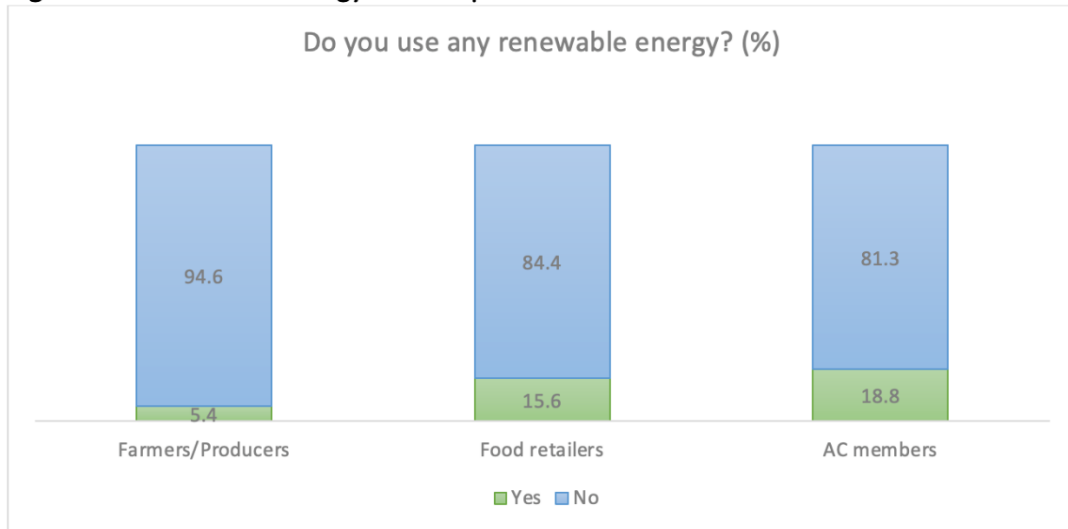


Note: N=130 (farmers), N=32(retailers), N=16 (AC members)

Renewable Energy Consumption

Farmers/producers, food retailers and AC members use solar panels for energy consumption (Figure 22). In addition to that, AC members use solar water pumps for their AC operation.

Figure 22: Renewable Energy Consumption



Note: N=130 (farmers), N=32(retailers), N=16 (AC members)

Agricultural Standard/CamGAP, Agricultural Practices, and Agricultural Practice Challenges

Agricultural Standard Practices in Cambodia

The Department of Plant Protection Sanitary and Phytosanitary of the General Directorate of Agriculture (GDA) is responsible for promoting CamGAP and organic standards for safe/organic fruit and vegetable production in Cambodia. In 2010, the Cambodian Good Agricultural Practices (CamGAP) was introduced to promote safe fruit and vegetable production in

Cambodia while Cam Organic was introduced to promote organic fruit and vegetable production in Cambodia in 2020 (GDA, 2023). The GDA official mentioned that the Department of Plant Protection Sanitary and Phytosanitary provides capacity development to farmers and focal persons and supports the registration for CamGAP certificate and Cam Organic certificate. By July 2023, department trained 1, 642 focal persons and 13, 032 farmers on CamGAP (GDA, 2023). The GDA official pointed out that the GDA got some applications from some farms for Cam Organic certificate; however, none of farmers or farms have been granted the Cam Organic certificate by the Cambodian government because farmers or farms in question have not satisfied the requirements to be awarded the Cam Organic certificate.

According the GDA’s work progress report in July 2023, the GDA team has produced several sources to support the implementation of CamGAP and Cam Organic certifications. These include CamGAP Certification Manual, Evaluation and Recording Manual, IEC materials in the forms of Leaflets and Posters on management of fruit and vegetable safety, Food Safety Module, CamGAP Logo Sticker (for sticking on fruits and vegetables applied CamGAP), QR Code Application, Certification for Farmers/Farms, Implementation of Promotion of Quality Products and Food Safety System, and Implementation of Farm Evaluation for CamGAP and Cam Organic Certificates.

Knowledge on Agricultural Standards

Based on the interviews with survey respondents, farmers had difficulty differentiating between organic standards and CamGAP. Most farmers/producers, food retailers and AC members were not aware of standards for agricultural products, accounting for 70.3%. Among those who knew the standards (29.7%), farmers/producers were the most informed, accounting for 36.9%, followed by food retailers at 15.6% and CPA members at 5%.

The survey also found that among those who knew the standards for agricultural products, most of them could recall CamGAP and organic standards, while some could not remember or properly name the standards.

Figure 23: What standards do respondents know?

What standards do you know? (%)	Farmers/Producers (N=48)	Food Retailers (N=5)	CPA members (N=1)
CamGAP	56.3	40.0	100.0
Organic standard	10.4	20.0	0.0
There is laboratory to monitor the quality	2.1	0.0	0.0
Organic fertilizer/Liquid Compost	4.2	0.0	0.0
EU organic standard	0.0	20	0.0
Do not remember	27.1	40	0.0

For farmers/producers who knew agricultural standards, only 10.4% of them claimed to have a certificate. These certificates are CamGAP and Organic certificates. Based on interviews with four PDAFF officials and a GDA official, only two families in Mondulkiri were granted CamGAP certificates, and they are all in Senmonorom district while no farmers have organic standard certificate granted by the government. Nationally, 853 farms submitted their application for

CamGAP certification and 736 farms of them were granted the CamGAP certificate by the government as of July 2023 (GDA, 2023).

As per an interview with a GDA official, the government has granted only CamGAP certificates to farmers while still working on promoting the provision of Cam Organic certificates to farmers. That official also mentioned that some farmers may have organic standards granted by other third parties (private companies) who work to promote organic standards themselves. So far, none of the farmers in Cambodia have been granted the Cam Organic certificate by the Cambodian government yet.

Agricultural Standard Certificate Criteria

Farmers/producers, food retailers and CPA members who knew agricultural standards mentioned that they also knew some criteria needed to be qualified for the certificate. The three main criteria which farmers/producers, food retailers and CPA members could recall are 1) attending a training course on agricultural standard, 2) having agricultural production areas inspected by CamGAP experts and 3) having production samples analyzed in the laboratory and confirmed in terms of safety (Figure 24). However, it is proven that those who knew the agricultural standards did not know much about the criteria or the process to get the organic standard and CamGAP certificates. Therefore, more efforts needed to raise more awareness amidst farmers particularly.

Figure 24: Agricultural Standard Criteria

Criteria to get organic standard certificate/CamGAP certificate (%)	Farmers/Producers (N=48)	Food Retailers (N=2)	CPA members (N=1)
Attending training courses	91.7	100	100
Cleaning and sanitizing installation/packaging facilities	50.0	100	0.0
Production samples analyzed in the lab and confirmed in terms of safety	52.1	100	100
Agricultural production areas are inspected by CamGAP expert	56.3	100	100
Plant naturally	2.1	0.0	0.0
Good knowledge on organic vegetable plantation techniques	2.1	0.0	0.0
Planting without using chemical fertilizer, making fence to protect plants and making compost	2.1	0.0	0.0
To receive information on agriculture and hygiene	0.0	0.0	100

Consideration on Having Organic Standard/CamGAP Certificate

Of farmers/producers who knew agricultural standards (N=48), 91.7% want to get an organic standard certificate or CamGAP certificate. The reasons are to promote organic/safe products, promote sustainable production, maintain stable price of agricultural products, get healthy products from applying agricultural standards, create a broader market for the products and get knowledge on technical standards for plantation. However, 8.7% of farmers/producers do

not want to obtain the certificates because it takes more resources and time to get them, they do not understand the organic standards or CamGAP and they do not harvest a lot of products. The PDAFF officials mentioned that farmers/producers do not want to get certificates because 1) farmers/producers do not see the difference between having certificate and not having one, 2) farmers do not own farmland and 3) farmers have to pay money for the process of getting the certificate.

Although most farmers do not have CamGAP certificates and none of them have organic standard certificates from the government, the government has made efforts to promote the certification of CamGAP and Cam Organic for farmers by working collaboratively with private sectors, UN agencies, development partners and farmers claimed by a GDA official and four PDAFF officials. The purpose of the efforts is to promote sustainable agricultural production and consumption in Cambodia and align with ASEAN GAP and Global GAP.

Agricultural Standard Practices

According to the results from the survey, 75% of farmers/producers currently practice agricultural standards. When probing more, 44.4% of them could mention that they apply CamGAP, 86.1% just said that they apply agricultural standards in general while 5.6% do not know which types of standards they currently practice. As per the interviews with a GDA official and four PDAFF officials, most of farmers/producers do not practice organic standards because it is either difficult or time-consuming for them to get the products. PDAFF officials said that most vegetable farmers/producers in Mondulkiri follow the CamGAP for their vegetable production, though they do not possess CamGAP certificates. Their product quality is comparable to those produced by CamGAP certified farmers. PDAFF officials could make this claim because farmers sold their products as a group (CamGAP certified and non-certified farmers sold together), and their products were evaluated for quality in the laboratory by a vegetable committee in the community before being brought to market.

Farmers or producers who know the agricultural standards, but do not follow any agricultural standards, such as CamGAP, rely on their own knowledge and habits to produce their crops. The following are some of the ways in which these farmers or producers practice their agricultural production

Figure 25: Agricultural Production Practices

Agricultural Production Practices	N=12 (%)
I practice by myself by using both chemical fertilizer and non-chemical fertilizer	8.3
I till the land, earth up, spray chicken-shit fertilizer then plant the crops.	8.3
I plough soil, stock water and use non-chemical fertilizer	16.7
I plough soil placing compost in the lower surface before plantation.	8.3
First I use chemical fertilizer, then I use compost and plant accordingly.	8.3
I place non-chemical fertilizer in the soil and take care of vegetables with non-chemical fertilizer	8.3
I have knowledge on agriculture and I make organic fertilizer by myself	8.3
Soil preparation and plantation depend on non-chemical fertilizer	8.3
I dig the soil as the whole, place rotten leaves and place chromolaena odorata on top for two weeks.	8.3
I till the land, earth up, spray compost, spray crops and water	8.3
I till the land, place cow-shit fertilizer in the lower surface, then use chemical fertilizer and herbicide	8.3
I use pesticide only when there are insects.	16.7
I use chemical fertilizer and pesticide after the plants grow a little bit.	8.3

Product Purchase Consideration

Food retailers tend to view positively farmers/producers who possess agricultural standard/CamGAP certificates. They believed that products produced by farmers/producers with these certifications are safe, non-chemical, have no negative impact on health. Additionally, they perceived that farmers/producers with agricultural standards/CamGAP have knowledge on how to use chemical fertilizers in the right amount to produce safe products. All food retailers who are aware of agricultural standards/CamGAP consider the farmers'/producers' agricultural standard/CamGAP certificates when purchasing their products. They do so because they want to promote organic, safe and healthy foods, as well as sustainable production and consumption.

Of all AC members, 93.8% consider the current agricultural standards or CamGAP certificates of farmers or producers when purchasing products from them. They consider because they want to promote organic foods, safe foods, healthy food consumption, sustainable production and consumption, and expand the market for safe food production. The remaining 6.2% do not consider current agricultural standards or CamGAP certificate of farmers when purchasing food from farmers because the farmers, whom they purchase practice family production which is considered safe among AC members.

Almost all ACs (81.3%) have their own standards for farmers or producers that must be met before they can buy products from them. These standards include CamGAP, the use of organic fertilizers/compost, limited chemical fertilizers, and organic farming techniques. Moreover, planting areas must be separated and cleaned for specific crops, and rice must be safely packed with enough heat. AC members are able to determine whether farmers/producers follow organic standards/CamGAP because they regularly monitor their practices in response to their standards. They provide ongoing support to ensure that farmers/producers are practicing correctly, support them on how to produce more products in response to the standards and expand the market for standard products, help provide crops (cucumber crops) to farmers, and evaluate farmers' agricultural products in response to the agricultural standards.

Wild Honey Collection Management

CPAs who manage sustainable wild honey collection have technical guideline to work with wild honey collectors. The technical guide mostly covers how to collect wild honey in a sustainable way (Figure 26).

Figure 26: Honey Collection Guideline

Technical Guideline is about	N=19 (%)
It guides that we have to wear gloves to retain the honey hygiene	42.1
It guides us to keep the honey head for 20% for feeding baby bees	36.8
It guides that we should only use bamboo knife to harvest honey	21.1
It guides that we should wear gloves and shocks to protect ourselves for harvesting honey	21.1
It guides us to have some equipment such as container, gloves, plastic bads, lighter & bamboo knife before harvesting	15.8
It guides to only harvest honey in the community not further than that	10.5
It guides us not to harvest baby bees and we need to wait for 3-4 months before next harvesting	10.5
It guides us that we should collect dead woods to fire for smoke	10.5
It guides that we should never use mosquito repellent to spray on bees for honey harvesting	10.5
It guides that we should use clean plastic bag to harvest honey	10.5
It guides that we should not cut or burn trees to avoid the wild bee extinction	10.5
It guides us to only harvest the honey from the head side because there is more honey, not from the baby bee side	5.3
It guides that we should clean well before getting the honey	5.3
It guides that we should use gloves to pure honey into the bottle and ensure no dusks in the honey	5.3
It guides that we should not fire bees because it can kill bees	5.3
It guides that we should throw the fire or smoke to the bees	5.3
It guides how to protect honey from sunlight and wind	5.3
It guides how to storage honey in cool area and monitor quality before selling	5.3

Challenges

58.3% of all farmers/producers found it challenging to practice the organic standard. The most challenging concern was that pests easily destroy organic products. Other challenges include time constraints in producing organic products, difficulty in marketing organic products, limited supply of organic products, organic products being easily destroyed when exposed to sunlight, worms making vegetables stunted, slow cash flow from selling organic products and lack of knowledge on organic product implementation. Due to these reasons, none of the farmers/producers applied the organic standard for their production.

Most farmers/producers from all plant types also pointed out that they have faced difficulties in accessing water for their production. These difficulties include water shortage during dry season, no irrigation system available in their areas, high price of the water and insufficient water storage for production.

While purchasing products applying agricultural standard/CamGAP, food retailers faced some challenges including slow food supplying and irregular food availability.

AC members have encountered some challenges when supporting farmers/producers. These challenges are the need for more resources from ACs to monitor the compliance of farming practices of farmers and the unwillingness of farmers/producers to get agricultural standard certificates.

Of all CPA members participated in the survey, 55% support wild honey collectors on Geographical Indication. However, they have faced some challenges in supporting those wild honey collectors. These challenges include the need for more resources to support wild honey collectors to better understand the Geographical Indication, wild honey collectors' lack knowledge on the Geographical Indication, and wild honey collectors' lack of collaborate with CPA members to understand the Geographical Indication.

Regarding trust earning from wild honey buyers, 50% of CPA members mentioned that they have difficulties in supporting wild honey collectors in gaining trust from buyers. The difficulties are 1) buyers tend to give lower price to wild honey because they used to be cheated, 2) buyers tend not to buy honey directly from honey collectors and instead buy from those whom they trust more, 3) cash flow from middlemen is slow after buying wild honey from the community, 4) honey is sold at the same prices which customers do not buy from the community, 5) wild honey collectors lack hygienic techniques and 6) CPA members do not have enough money to buy wild honey from honey collectors and collectors sell by themselves, resulting in the loss of trust from buyers.

CPA members face several challenges when promoting sustainable wild honey collection. These challenges include 1) deforestation for wild honey collection, 2) firing for wild honey collection, 3) trashing in the forest after wild honey collection, 4) wild honey collection in the endangered honey areas, 5) honey collected before its season, 6) no market and all honey from honey collectors not purchased by CPA members, 7) low honey price, 8) climate change, 9) competition from middlemen in purchasing honey from the community and 10) bushfire from burning farming land affecting the honey collection areas every year.

The government has worked to promote sustainable production and consumption. However, the representative from GDA mentioned that the GDA team has faced some challenges when promoting CamGAP and Cam Organic. Limited supplying of CamGAP is a challenge for safe/organic fruit and vegetable production because the majority of Cambodian farmers have small farmland which they cannot produce enough products for supplying to the market. Another challenge mentioned by the GDA official is about the budget to promote CamGAP and Cam Organic. Though the government allocates national funds on this work every year, it still needs more financial support from different stakeholders (donors, development agencies or private sectors) to fasten the promotion of CamGAP and Cam Organic in Cambodia.

The PDAFF officials also stated that it is challenging to work with farmers because it is resource-consuming to support farmers and most farmers do not commit to training on agricultural standards if they do not get the benefits in return.

Support

Of farmers/producers who currently practice agricultural standard, 80.6% have received support from local authorities/government officials, non-governmental organizations and private companies. The support includes training on agricultural practices using organic standards/CamGAP, training on strategic market negotiation, on-going support on the agricultural practices using organic standards/CamGAP, grant for agricultural practices using organic standard/CamGAP and providing seeds for planting. Furthermore, PDAFF officials

mentioned that farmers were sent to Vietnam or other provinces to gain agricultural production experience from other farmers, and it was supported by PDAFF and other donor's funds. The visits allowed farmers to learn how to raise animal, plant pepper, plant vegetables, do modern farming, make compost and find a market for their agricultural products.

AC members support farmers/producers to get agricultural standard certificates such as CamGAP certificate, One Village One Product certificate, Safe Vegetable certificate and Good Farmer certificate. AC members also provide other support to farmers/producers in the community which are 1) farmers can buy inputs from AC at a reasonable price and sell their products to AC at a larger market with higher prices, 2) providing loans to farmers, 3) saving for farmers, 4) assisting farmers to apply specifications and grading needed by company, 5) facilitating contract farming between farmers and private companies, 6) following up with farmers on food safety and hygiene practices, 7) supporting farmers to obtain CamGAP certificates, 8) selling compost to farmers, 9) providing rice seeds to farmers, 10) guiding farmers on how to grow cacao properly and 11) providing technical support on cultivation to farmers.

CPA members support wild honey collectors to promote sustainable wild honey collection. The support includes 1) management/patrolling of protected areas against deforestation for wild honey collection, 2) training on patrolling, forest management, harvesting and marketing of wild honey products to communities, 3) preventing forest fires and planting more trees, and 4) supporting the conservation of bee extinction.

So far, the government has collaborated with different stakeholders including private sectors and development agencies including FAO, World Bank, ADB, Heifer, World Vision and so on to promote agricultural standards (CamGAP and Cam Organic) mentioned by a GDA official. The GDA supports farmers, private companies and development agencies in terms of providing training on CamGAP/Cam Organic, distributing relevant documents on agricultural standards including CamGAP Certification Manual, Food Safety Module and so on, and providing technical support to farmers to be eligible for certificates.

DISCUSSIONS AND CONCLUSION

Healthy production contributes itself to healthy consumption, leading sustainable production and consumption. In the last decade, farmers/producers have increasingly tended to produce more safe products due to the demand for fresh, safe and nutritious produce, the benefits gained from producing safe products, and compliance with government safety standards. However, organic products seem not preferred by farmers/producers because they require more resources for organic farming and result in lower yields. Most farmers practice safety standards that they have learned from PDAFF or GDA officials on how to produce safe fruits and vegetables.

Most farmers in Mondulkiri do not have CamGAP certificates. However, their agricultural production is not different from those who have CamGAP certificates because they have the knowledge on how to produce safe fruits and vegetables. They participated in different trainings, visited other provinces or countries for good farming practices, and received support from skilled government officials. Besides, the perception on no difference between having

CamGAP certificate and not having one remains popular amongst farmers. Their products can be sold at the same price as those of farmers who own CamGAP certificates. This is why they do not consider having the certificate. While farmers/producers have put more efforts in producing safe products, more and more food retailers are considering safe products for their supply to direct consumers.

Amidst vegetable farmers, rice farmers, avocado farmers and cacao farmers, only vegetable farmers received more support from different stakeholders to produce safe vegetables and find markets for their produce. Avocado and Cacao farmers have not received much support yet in terms of finding markets for their products and technical production support. Farmers could produce more avocados, but there is no farming contract between avocado farmers and investors yet. Besides, Cacao plantation is new to farmers in the areas which requires more technical support. Agricultural production depends heavily on rainwater or groundwater which sometimes causes water shortage during dry seasons, affecting the sustainable agricultural production.

Regarding honey collection, collectors seem to have more knowledge in collecting honey in a sustainable way. Yet gaining trust from buyers and direct sales from the community remains challenges for collectors which may discourage them.

RECOMMENDATIONS FOR FUTURE IMPLEMENTATION

Several recommendations should be taken into consideration by WWF Cambodia staff to promote sustainable production and consumptions and guide for future project implementation. These recommendations are:

- **Promotion of women participation in the ACs and CPAs:** From the study findings, women participation in productive roles especially in ACs and CPAs is low compared to their counterpart. Therefore, the encouragement of women participating in the ACs and CPAs should be taken into account to promote women participation, allowing them to bring their talent contributing to the sustainable production.
- **Contract farming for avocado farmers:** So far, Avocado farmers have farmed and harvested for some years already, but there is no contract farming between avocado farmers and investors yet. Therefore, finding market for avocado farmers will create a sense of security for them in terms of income generation from their production, motivating them to produce more products.
- **Introduction one specific avocado crop:** Farmers have farmed different types of avocados which they cannot harvest at the same time and it is hard for selling. Therefore, the introduction of one specific avocado type should be considered because this can allow farmers to harvest at the same time and turn the investor's interest, expanding the market for avocado products.
- **Support Farmers on Cacao Plantation:** Most Cacao farmers have planted Cacao based on their knowledge, yet they have not gotten any technical support from relevant

stakeholders. Thus, the technical support provision to Cacao farmers may enable them to plant productively which they can profit more from their plantation.

- **Promotion of benefits of CamGAP certificate:** Currently most farmers do not perceive the difference between having CamGAP certificate and not having CamGAP certificate. To motivate farmers to consider having CamGAP certificate, WWF Cambodia staff should consider explicating more benefits of owning CamGAP certificate than those who do not have CamGAP certificate.
- **Promotion of direct purchase from farmers:** Most food retailers purchase products from middlemen, this tendency can lead to the loss of revenue for farmers or honey collectors. Therefore, the promotion of liaison between food retailers and producers can help promote the income of producers and food retailers get reasonable price for their direct purchase from producers.
- **Liaison with relevant stakeholders including government officials (especially the GDA of the Ministry of Agriculture, Forestry and Fisheries), private companies, UN agencies or development agencies to promote sustainable production and consumption:** WWF cannot work alone to promote sustainable production and consumption and WWF project is fund-based which there is limited period of project implementation. Hence, the collaboration with other stakeholders allows WWF Cambodia to them to support producers in a sustainable way.
- **Irrigation system development:** Most producers claimed that they still face water shortage for their production during dry season. Therefore, the support on building irrigation system for farmers may allow them to have enough water for their production, contributing to the sustainable production.
- **Promotion of the purchase collection of wild honey by CPAs:** CPAs should be encouraged to purchase wild honey from collectors for storage and selling. This is because buyers tend to trust CPAs more than individual collectors. However, CPAs often lack the resources to buy honey from collectors.

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ANNEXES

ANNEXE 1: Research Tools

QUESTIONNAIRE (FARMERS-CACAO, AVOCADO, RICE) & (PRODUCERS-VEGETABLES)

Respondent's Full Name		
Address		
City/ Town		
Country _____		
Telephone Number	Interview Date	
Interviewer's name	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
I.D.#		
Time Interview Began	Ended	Interview length
I declare that this interview was conducted in compliant with Havas Barefoot's standard and international research standard of agreement and confidentiality. All answers provided in this questionnaire will be kept confidentially.	Signature and Name of Interviewer	Signature and Name of Supervisor

INTRODUCTION:

Interviewer Read Out

Good morning/afternoon, my name is..... from Havas Barefoot. We are conducting a study in collaboration with the World Wide Fund for Nature Cambodia on **Sustainable Agricultural Productions** in Mondulhiri and I would like to ask for around 30 minutes of your time for the interview. The purpose of this study is to collect and analyze information for development research purposes and not to sell anything. I would like to assure that all your information will be kept confidential and will be used for this study only.

Could you spare around **30 minutes*** for this interview?

SCREENING

S1. Do you currently own or rent your farmland or both? (SA)

- a. Own land only (Go to S2)
- b. Rented land only (Skip to S2a)
- c. Both own and rented land (Go to S2)
- d. No (Terminate)
- e. Don't know (Terminate)

Ask S2 to those who answered code a and c in S1

S2. What size of the land do you own? (SA)

- a. Less than a hectare
- b. One hectare
- c. Two hectares
- d. Three hectares
- e. Four hectares
- f. Five hectares
- g. More than five hectares
- h. Do not know (Terminate)
- i. Other, please specify:....

Ask S2a to those who answered code b and c in S1

S2a. What size of the land do you rent? (SA)

- a. Less than a hectare
- b. One hectare
- c. Two hectares
- d. Three hectares
- e. Four hectares
- f. Five hectares
- g. More than five hectares
- h. Do not know (Terminate)
- i. Other, please specify:....

S3. How long have you been a farmer? (SA)

- a. Less than one year (Terminate)
- b. One year
- c. Two years
- d. Three years
- e. Four years
- f. Five years
- g. More than five years
- h. Other, please specify:....

S4. Do you plant on your land or your rent land? (SA)

- a. Yes
- b. No (Terminate)

S5. What do you plant on your land or what do you harvest? (MA)

- a. Vegetables
- b. Rice
- c. Cacao
- d. Avocado
- e. Wild bamboo
- f. Wild honey
- g. Other, please specify:....

None of "a", "b", "c" & "d" (Terminate)

S6. What is the main source of your household revenue? (SA)

- a. Selling vegetables
- b. Selling rice
- c. Selling cacao
- d. Selling avocado
- e. Other, please specify:... (Terminate)

AGRICULTURAL PRODUCTIONS

Q1. When you plant your crops, which of following...do you use? (MA)

- a. Non-chemical fertilizers
- b. Chemical fertilizers
- c. Pesticides
- d. Herbicides
- e. others, please specify:....

Ask Q2 only when "a" in Q1 is selected

Q2. On a scale from 1 to 5 which 1 is not important at all and 5 is very important, how do you rate the importance of **non-chemical fertilizer** usage for agricultural productions? (SA)

1. Not important at all
2. Not important
3. Neither unimportant nor important
4. Important
5. Very important

Ask Q2a only to those who answered Code "4" and Code "5" in Q2

Q2a. Why is non-chemical fertilizer usage important? (MA)

- a. To promote organic food production
- b. To maintain underground biodiversity/ To maintain soil quality
- c. Non-chemical fertilizer usage saves money
- d. Does not cause health issues
- e. Other, please specify:...

Ask Q3 only when "b" in Q1 is selected

Q3. On a scale from 1 to 5 which 1 is not important at all and 5 is very important, how do you rate the importance of **chemical fertilizer** usage for agricultural productions? (SA)

1. Not important at all
2. Not important
3. Neither unimportant nor important
4. Important
5. Very important

Ask Q3a only to those who answered Code "4" and Code "5" in Q3

Q3a. Why is chemical fertilizer usage important? (MA)

- a. Increase more yields or crops

- b. Turn poor soil into productive land
- c. Yields and crops grow fast
- d. Other, please specify:...

Ask Q4 only when “c” in Q1 is selected

Q4. On a scale from 1 to 5 which 1 is not important at all and 5 is very important, how do you rate the importance of **pesticide** usage for agricultural productions? (SA)

- 1. Not important at all
- 2. Not important
- 3. Neither unimportant nor important
- 4. Important
- 5. Very important

Ask Q4a only to those who answered Code “4” and Code “5” in Q4

Q4a. Why is pesticide usage important? (MA)

- a. Protect yields or crops from insects, weeds and fungal diseases
- b. Stop food crops from being contaminated by fungi
- c. Other, please specify:...

Ask Q5 only when “d” in Q1 is selected

Q5. On a scale from 1 to 5 which 1 is not important at all and 5 is very important, how do you rate the importance of **herbicide** usage for agricultural productions? (SA)

- 1. Not important at all
- 2. Not important
- 3. Neither unimportant nor important
- 4. Important
- 5. Very important

Ask Q5a only to those who answered Code “4” and Code “5” in Q5

Q5a. Why is herbicide usage important?

- a. Control undesired plants on farms, allowing the plants to grow healthily
- b. Save resources on killing undesired plants
- c. Other, please specify:...

Ask Q6 only when “e” in Q1 is selected

Q6. On a scale from 1 to 5 which 1 is not important at all and 5 is very important, how do you rate the importance of **“e”** usage for agricultural productions? (SA)

- 1. Not important at all
- 2. Not important
- 3. Neither unimportant nor important
- 4. Important
- 5. Very important

Ask Q6a only to those who answered Code “4” and Code “5” in Q6

Q6a. Why is pesticide usage important? (OA)

.....

Q7. Which months of the year are the highest harvesting months for...(Vegetable, Cacao, Rice and Avocado)? (MA)

Note to programmer: Please show code "a", code "b", code "c" & code "d" selected in S5.

January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

Q8. May you let me know how much income in average is the main family member's monthly income in your household? (SA)?

Below USD100	1
USD101 – USD200	2
USD201 – USD300	3
USD301 – USD400	4
USD401 – USD500	5
USD501 – USD600	6
USD601 – USD700	7
Above USD700	8

Q9. Where do you get the water from for your plantation (vegetables, rice, avocado or cacao)? (MA)

Note to programmer: Please show code "a", code "b", code "c" & code "d" selected in S5.

- a. Pumping water from the pond from rainwater
- b. Pumping water from well (groundwater)
- c. Using water from private water operator
- d. Using water from public water operator
- e. Pumping from the stream
- f. Pumping from canal
- g. Other, please specify:.....

Q10. Do you have any challenges accessing water for your plantation (vegetables, rice, avocado or cacao)? (SA)

- a. Yes

- b. No (Skip Q11)

Q11. If yes, what are those challenges? (MA)

- a. Water shortage during dry season/Depending on rainwater for farming.
- b. No irrigation systems available in my area
- c. Water price is high.
- d. Other, please specify:....

Q12. Do you use any renewable energy for your plantation (vegetables, rice, avocado or cacao)? (SA)

- a. Yes
- b. No (Skip Q13)

Q13. What types of renewable energy do you use? (MA)

- a. Solar panel
- b. Solar water pump
- c. Other, please specify:....

WASTE MANAGEMENT

Q14. Do you use plastics such as baler twine or plastic bags for your plantation (vegetables, rice, avocado or cacao)? (SA)

- a. Yes
- b. No (Skip Q15)

Q15. Did you recycle plastics such as baler twine and plastic bags...from your plantation (vegetables, rice, avocado or cacao)? (SA)

- a. Yes
- b. No

Q16. Did you separate waste, for instance, household waste and agricultural waste? (SA)

- a. Yes
- b. No

Q17. How do you manage your household waste? (SA)

- a. Separate liquid and solid waste
- b. Place all wastes in one container
- c. Other, please specify:....

Q18. Did you recycle plastic waste (e.g. plastic bags, plastic containers...) from household?

- a. Yes
- b. No

Q19. Do you make compost from your waste? (SA)

- a. Yes
- b. No (Skip Q20)

Q20. If yes, how do you make compost? (MA)

- a. Add green material in a bin/container

- b. Add kitchen scraps such as peelings, fruit cores, uneaten leftovers, eggshells... in a bin/container
- c. Add water in a bin/container
- d. Other, please specify:....

AGRICULTURAL PRACTICES APPLYING ORGANIC STANDARDS

- Q21. Do you know Standards for Organic Products? (SA)
- a. Yes (Go to Q22)
 - b. No (Skip to Q37)
- Q22. What standards for organic products do you know? (MA)
- a. CamGAP
 - b. Other, please specify:...
- Q23. Do you have an organic standard certificate? (SA)
- a. Yes (Go to Q24)
 - b. No (Go to Q25)
- Q24. If yes, what are your certificates? (MA)
- a. CamGAP certificate
 - b. Other, please specify:...
- Q25. What criteria should you have to get an organic standard certificate/CamGAP certificate? (MA)
- a. Attending training courses
 - b. Cleaning and sanitizing installation/packaging facilities
 - c. Production samples analyzed in the lab and confirmed in terms of safety
 - d. Agricultural production areas are inspected by CamGAP expert
 - e. Other, please specify:...
- Q26. Do you want to get the organic standard certificate/CamGAP certificate? (SA)
- a. Yes (Go to Q27)
 - b. No (Go to Q28)
- Q27. Why do you want to get the organic standard certificate/CamGAP certificate? (MA)
- a. Promote organic products
 - b. Promote sustainable production
 - c. Other, please specify:...
- Ask Q28 to only those who answer “b” in Q26
- Q28. Why do you not want to get the organic standard certificate/CamGAP certificate? (MA)
- a. It takes more resources to get it
 - b. Long process to get it
 - c. Other, please specify:...
- Q29. When you farm, do you currently practice any organic standards (Such as CamGAP and Organic Standards)? (SA)
- a. Yes (Go to Q30)
 - b. No (Go to Q36)
- Q30. If yes, what standards do you currently practice? (MA)
- a. CamGAP

- b. Organic Standards
- c. Other, please specify:...

Q31. Do you have any challenges when applying the CamGAP/Organic Standards? (SA)

- a. Yes (Go to Q32)
- b. No (Go to Q33)

Q32. If yes, what are the challenges when applying the CamGAP and Organic Standards? (MA)

- a. Time is critical to produce organic products
- b. It is harder to market organic products
- c. Limited supply of organic food
- d. Pests easily destroy organic products.
- e. Other, please specify:....

Q33. Did you ever get support from relevant stakeholders to promoting agricultural production applying CamGAP/organic standards? (SA)

- a. Yes (Go to Q34)
- b. No (Go to Q37)

Q34. If yes, who did you support from? (MA)

- a. Local authority/Government
- b. Non-Governmental Organizations/Development Agencies/UN agencies
- c. Private Company
- d. Other, please specify:....

Q35. What support did you get? (MA)

- a. Training on agricultural practices using organic standards/CamGAP.
- b. Training on strategic market negotiation
- c. On-going support on the agricultural practices using organic standards/CamGAP
- d. Grant for agricultural practices using organic standards/CamGAP
- e. Other, please specify:

Ask Q36 to those who answered “b” in Q29, if not please proceed to Q37

Q36. If you do not practice agricultural practices (Organic standards/CamGAP) when farming, what is your current practice? (OA)

Q37. According to your opinion, what are the characters of environmental friendly foods? (MA)

- a. Food with renewed/renewable packaging
- b. Food with not over-packaged
- c. There is the environmental friendly product trademark on the packaging (e.g. CamGAP)
- d. Locally grown food staffs
- e. Food from chemical and fertilizer free farming
- f. Organic foods

- g. Fresh foods
- h. Food which is available in big packaging
- i. Food produced only by small farmers
- j. I do not know
- k. Other, please specify:

DEMOGRAPHIC INFORMATION

Q38. What is your gender? (SA)

- a. Female
- b. Male
- c. Prefer not to say

Q39. How old are you?

Record actual age: _____

Q40. How many family members are there in your household?

Record actual current family members in the household: _____

Q41. How long have you lived in your current residence? Record the number of years: _____

Q42. What is your ethnicity? (SA)

- a. Khmer
- b. Khmer Krom
- c. Cham
- d. Kreung
- e. Kuy
- f. Tampuan
- g. Bunong
- h. Other, please specify: (Please show option which interviewer can type the answer)

Q43. Please select the highest level of education you have completed from this card. (SA)

- a. No formal education
- b. Some primary school
- c. Finished primary school
- d. Some secondary school
- e. Finished secondary school
- f. Some high school
- g. Finished high school
- h. Some university
- i. Finished university
- j. Some post graduate study
- k. Finished post graduate study
- l. Some vocational training
- m. Finished vocational diploma
- n. Other, please specify:.....

MAPPING INFORMATION

Q44. Type in important landmark nearby the respondent's house

Q45. Type respondent's address: House number, street number, village, commune, district, province

Q46. Record GPS coordinates of the respondent's house

Q47. Take the front picture of the respondent's house

Q48. Ask for respondent's phone number

QUESTIONNAIRE (FOOD RETAILERS/RESTAURANTS)

Respondent's Full Name		
Address		
City/ Town		
Country _____		
Telephone Number		Interview Date
Interviewer's name	□ □ □ □ □	
I.D.#		
Time Interview Began	Ended	Interview length
I declare that this interview was conducted in compliant with Havas Barefoot's standard and international research standard of agreement and confidentiality. All answers provided in this questionnaire will be kept confidentially.	Signature and Name of Interviewer	Signature and Name of Supervisor

INTRODUCTION:

Interviewer Read Out

Good morning/afternoon, my name is..... from Havas Barefoot. We are conducting a study in collaboration with the World Wide Fund for Nature Cambodia on **Sustainable Agricultural Productions** in Mondulkiri and I would like to ask for around 30 minutes of your time for the interview. The purpose of this study is to collect and analyze information for development research purposes and not to sell anything. I would like to assure that all your information will be kept confidential and will be used for this study only.

Could you spare around **30 minutes*** for this interview?

SCREENING

- S1. How long have you been running this food retailer/restaurant? (SA)
- Less than one year (Terminate)
 - One year
 - Two years
 - Three years
 - Four years
 - Five years
 - More than five years
 - Other, please specify:....
- S2. Are you a decision maker in purchasing food for your food/retailer/restaurant? (SA)
- Yes
 - No (Terminate)
- S3. What food/product do you buy for your food retailer/restaurant? (MA)
- Vegetables
 - Rice
 - Cacao
 - Avocado
 - Wild bamboo
 - Wild honey
 - Other, please specify:....
 - None of "a", "b", "c", "d", "e" & "f" (Terminate)

FOOD PURCHASE BEHAVIOR

- Q1. Where do you mostly buy food/product from for retailing/restaurant? (SA)
- From supplier/middleman
 - From farmer
 - Other, please specify:....
- Q2. Do you buy more local products or more imported products? (SA)
- More local products (Go to Q3)
 - More imported products (Go to Q5)

Please only answers selected in S3

- Q3. What local products do you buy? (MA)
- Vegetables
 - Rice
 - Cacao
 - Avocado
 - Wild bamboo
 - Wild honey
 - Meat/Fish

h. Other, please specify:...

Q4. Why do you buy local products? (MA)

- a. Support local people's production
- b. Price of local products is cheaper than the price of imported products
- c. Local product is safer than imported product
- d. Other, please:...

Please only answers selected in S3

Q5. What imported products do you buy? (MA)

- a. Vegetables
- b. Rice
- c. Cacao
- d. Avocado
- e. Wild bamboo
- f. Wild honey
- g. Meat/Fish
- h. Other, please specify:...

Q6. Why do you buy imported products? (MA)

- a. Products are not available locally
- b. Price of imported products is cheaper than price of local products
- c. Other, please specify:...

Q7. How often do you buy food? (SA)

- a. Daily
- b. Six times a week
- c. Five times a week
- d. Four times a week
- e. Three times a week
- f. Twice a week
- g. Once a week
- h. Once every two weeks
- i. Once every three weeks
- j. Once a month
- k. Other, please specify:....

Q8. How do you get food? (SA)

- a. The supplier/farmers/middleman brings to my shop/restaurant
- b. I pick up by myself
- c. Sometimes the supplier/farmers/middleman brings to my shop/restaurant and sometimes I pick up by myself
- d. Other, please specify:...

WASTE MANAGEMENT

Q9. Is the plastics used when you buy food? (SA)

- a. Yes (Go to Q10)
- b. No (Go to Q11)

Q10. If yes, what types of plastics are they? (MA)

- a. Plastic bags
- b. Plastic containers
- c. Baler twine
- d. Other, please specify:.....

Q11. Do you use plastics such as plastic bags or containers for your food retail/restaurant? (SA)

- a. Yes (Go to Q12)
- b. No (Go to Q13)

Q12. If yes, do you recycle plastics such as plastic bags or containers? (SA)

- a. Yes
- b. No

Q13. Did you separate waste from your food retail/restaurant? (SA)

- a. Yes (Go to Q14)
- b. No (Go to Q15)

Q14. How do you separate your food retail/restaurant waste? (SA)

- a. Separate liquid and solid waste
- b. Separate plastic waste and non-plastic waste
- c. Other, please specify:....

Q15. Do you make compost from your food retail/restaurant waste? (SA)

- a. Yes (Go to Q16)
- b. No (Go to Q17)

Q16. If yes, how do you make compost? (MA)

- a. Add green material in a bin/container
- b. Add kitchen scraps such as peelings, fruit cores, uneaten leftovers, eggshells... in a bin/container
- c. Add water in a bin/container
- d. Other, please specify:....

Q17. Do you use any renewable energy for your food retail/restaurant? (SA)

- a. Yes (Go to Q18)
- b. No (Go to Q19)

Q18. What types of renewable energy do you use? (MA)

- a. Solar panel for food retail/restaurant energy consumption
- b. Solar water pump
- c. Other, please specify:....

AGRICULTURAL PRACTICES APPLYING ORGANIC STANDARDS

Q19. Do you know Standards for Organic Products? (SA)

- a. Yes (Go to Q20)
- b. No (Go to Q29)

Q20. What standards for organic products do you know? (MA)

- a. CamGAP
- b. Other, please specify:.....

Q21. Do you know the criteria for producers/farmers to get an Organic Standard/CamGAP certificate? (SA)

- a. Yes (Go to Q22)
- b. No (Go to Q23)

Q22. If yes, what are the criteria to get Organic Standard/CamGAP certificate? (MA)

- a. Attending training courses
- b. Cleaning and sanitizing installation/packaging facilities
- c. Production samples analyzed in the lab and confirmed in terms of safety
- d. Agricultural production areas are inspected by CamGAP expert
- e. Other, please specify:...

Q23. How do you think if producers have organic standard/CamGAP certificate? (OA)

Q24. When you buy food/product from farmers/suppliers, do you consider organic products or CamGAP/Organic Standard certificate of producers/farmers? (SA)

- a. Yes (Go to Q25)
- b. No (Go to Q28)

Q25. Why do you consider organic foods for your food retail/restaurants? (MA)

- a. Promote organic foods
- b. Promote healthy food consumption
- c. Promote sustainable production and consumption
- d. Other, please specify:

Q26. Do you have any challenges buying organic products from farmers/producers? (MA)

- a. Yes (Go to Q27)
- b. No (Go to Q28)

Q27. What challenges do you face buying organic products from farmers/producers? (MA)

- a. Organic food supplying is slow
- b. Organic food is not regularly available
- c. Other, please specify:...

Q28. Why do you not consider organic food for your food retail/restaurants? (MA)

- a. Organic food price is high which some consumers do not want to buy food from me
- b. Organic food supplying is slow
- c. Organic food is not available in my areas
- d. Other, please specify:.....

Q29. According to your opinion, what are the characters of environmental friendly foods? (MA)

- a. Food with renewed/renewable packaging
- b. Food with not over-packaged
- c. There is the environmental friendly product trademark on the packaging (e.g. CamGAP)
- d. Locally grown food staffs
- e. Food from chemical and fertilizer free farming
- f. Organic foods
- g. Fresh foods
- h. Food which is available in big packaging
- i. Food produced only by small farmers

- j. I do not know
- k. Other, please specify:

DEMOGRAPHIC INFORMATION

Q30. What is your gender? (SA)

- a. Female
- b. Male
- c. Prefer not to say

Q31. How old are you?

Record actual age:_____

Q32. How many family members are there in your household?

Record actual current family members in the household:_____

Q33. How long have you lived in your current residence?

Q34. What is your ethnicity?

- a. Khmer
- b. Khmer Krom
- c. Cham
- d. Kreung
- e. Kuy
- f. Tampuan
- g. Bunong
- h. Other, please specify: (Please show option which interviewer can type the answer)

Q35. Please select the highest level of education you have completed from this card. (SA)

- a. No formal education
- b. Some primary school
- c. Finished primary school
- d. Some secondary school
- e. Finished secondary school
- f. Some high school
- g. Finished high school
- h. Some university
- i. Finished university
- j. Some post graduate study
- k. Finished post graduate study
- l. Some vocational training
- m. Finished vocational diploma
- n. Other, please specify:.....

MAPPING INFORMATION

Q36. Type in important landmark nearby the respondent's house

Q37. Type respondent's address: House number, street number, village, commune, district, province

Q38. Record GPS coordinates of the respondent's house

Q39. Take the front picture of the respondent's house

Q40. Ask for respondent's phone number

QUESTIONNAIRE (AGRICULTURAL COOPERATIVE MEMBERS-RICE, AVOCADO, CACAO & VEGETABLES)

Respondent's Full Name		
Address		
City/ Town		
Country _____		
Telephone Number		Interview Date
Interviewer's name		□ □ □ □ □
I.D.#		
Time Interview Began	Ended	Interview length
I declare that this interview was conducted in compliance with Havas Barefoot's standard and international research standard of agreement and confidentiality. All answers provided in this questionnaire will be kept confidentially.	Signature and Name of Interviewer	Signature and Name of Supervisor

INTRODUCTION:

Interviewer Read Out

Good morning/afternoon, my name is..... from Havas Barefoot. We are conducting a study in collaboration with the World Wide Fund for Nature Cambodia on **Sustainable Agricultural Productions** in Mondulkiri and I would like to ask for around 30 minutes of your time for the interview. The purpose of this study is to collect and analyze information for development research purposes and not to sell anything. I would like to assure that all your information will be kept confidential and will be used for this study only.

Could you spare around **30 minutes*** for this interview?

SCREENING

- S1. Are you a member of an Agricultural Cooperative? (SA)
- a. Yes
 - b. No (Terminate)
- S2. How long have you been a member of Agricultural Cooperative? (SA)
- a. Less than one year (Terminate)
 - b. One year
 - c. Two years
 - d. Three years
 - e. Four years
 - f. Five years
 - g. More than five years
 - h. Other, please specify:....
- S3. Which AC types are you a member in? (MA)
- a. Vegetable AC
 - b. Rice AC
 - c. Cacao AC
 - d. Avocado AC
 - e. Other, please specify:...(Terminate) (Note to programmer: Terminate if “a”, “b”, “c”, & “d” are not selected)

AGRICULTURAL COOPERATIVE

- Q1. What is your role in the Agricultural Cooperative? (SA)
- a. AC chief
 - b. AC deputy chief
 - c. AC secretary
 - d. AC member
 - e. Other, please specify:...
- Q2. What does AC support farmers in your community? (MA)
- a. Farmers can buy inputs from AC at a reasonable price
 - b. Farmers can sell their products to AC at larger market at higher prices
 - c. Providing loan to farmers
 - d. Saving for farmers
 - e. Assisting farmer to apply specification and grading needed by company
 - f. Facilitating contract farming with private company and farmer
 - g. Follow-up farmers on food safety and personal hygiene practices
 - h. Supporting farmers to obtain CamGAP/organic standard certificate
 - i. Other, please specify:....
- Q3. Which months of the year are the high harvesting months for...(Vegetable, Cacao, Rice and Avocado)? (MA)

Note to programmer: Please show all answers selected in S3.

January	1
February	2
March	3

April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

WASTE MANAGEMENT

- Q4. Does the AC use plastics when purchasing or selling agricultural products? (SA)
- a. Yes (Go to Q5)
 - b. No (Go to Q6)
- Q5. If yes, what types of plastics are they? (MA)
- a. Plastic bags
 - b. Plastic containers
 - c. Baler twine
 - d. Other, please specify:.....
- Q6. Does your AC recycle plastics such as plastic bags or containers or baler twine? (SA)
- a. Yes
 - b. No
- Q7. Did you separate waste from your AC operation? (SA)
- a. Yes (Go to Q8)
 - b. No (Go to Q9)
- Q8. How does your AC separate waste from your AC operation? (SA)
- a. Separate liquid and solid waste
 - b. Separate plastic waste and non-plastic waste
 - c. Other, please specify:....
- Q9. Do you make compost from your AC operation waste? (SA)
- a. Yes (Go to Q10)
 - b. No (Go to Q11)
- Q10. If yes, how do you make compost? (MA)
- a. Add green material in a bin/container
 - b. Add kitchen scraps such as peelings, fruit cores, uneaten leftovers, eggshells... in a bin/container
 - c. Add water in a bin/container
 - d. Other, please specify:....
- Q11. Does your AC use any renewable energy for AC operation? (SA)
- a. Yes (Go to Q12)
 - b. No (Skip Q13)
- Q12. What types of renewable energy does your AC use? (MA)
- a. Solar panel for energy consumption
 - b. Solar water pump

- c. Other, please specify....

AGRICULTURAL PRACTICES APPLYING ORGANIC STANDARDS

Q13. When your AC buys food from farmers, does your AC consider current agricultural practices or CamGAP/Organic Standard certificate of farmers? (SA)

- a. Yes (Go to Q14)
- b. No (Go to Q15)

Q14. Why does your AC consider agricultural practices or CamGAP/Organic Standard certificate of farmers ? (MA)

- a. Promote organic foods
- b. Promote healthy food consumption
- c. Promote sustainable production and consumption
- d. Other, please specify:

Q15. Why does your AC not consider agricultural practices or CamGAP/Organic Standard certificate of farmers? (MA)

- a. Organic food price is high which it is hard for selling
- b. Organic food supplying is slow
- c. Organic food is not favored by consumers
- d. Other, please specify:.....

Q16. Do you use any organic standards in your AC with farmers/producers?

- a. Yes (Go to Q17)
- b. No (Go to Q19)

Q17. What standards for organic products do you use in your AC and with farmers/producers? (MA)

- a. CamGAP
- b. Other, please specify:.....

Q18. How can your AC know whether farmers/producers apply organic standards/CamGAP? (MA)

- a. AC members regularly monitor the practices of farmers/producers in response to organic standards
- b. AC members keep providing ongoing support to farmers/producers to ensure they practice correctly
- c. Other, please specify:.....

Q19. Does your AC buy products which organic standards/CamGAP is not applied by farmers/producers?

- a. Yes (Go to Q20)
- b. No (Go to Q22)

Q20. If yes, does your AC have standards set for those farmers/producers before purchasing? (SA)

- a. Yes (Go to Q21)
- b. No (Go to Q22)

Q21. What standards do farmers/producers should have so that AC buys from farmers/producers? (OA)

Q22. Does your AC support farmers/producers to get an organic standard certificate? (SA)

- a. Yes (Go to Q23)
- b. No (Go to Q25))

Q23. What certificate do you help with? (MA)

- a. CamGAP
- b. Other, please specify: ...

Q24. What challenges does your AC encounter to support farmers/producers to have an organic standard/CamGAP certificate? (MA)

- a. More resources from AC spent to monitor the compliance of farming
- b. Farmers/producers are not willing to get an organic standard certificate
- c. Other, please specify:...

Q25. According to your opinion, what are the characters of environmental friendly foods? (MA)

- a. Food with renewed/renewable packaging
- b. Food with not over-packaged
- c. There is the environmental friendly product trademark on the packaging (e.g. CamGAP)
- d. Locally grown food staffs
- e. Food from chemical and fertilizer free farming
- f. Organic foods
- g. Fresh foods
- h. Food which is available in big packaging
- i. Food produced only by small farmers
- j. I do not know
- k. Other, please specify:

DEMOGRAPHIC INFORMATION

Q26. What is your gender? (SA)

- a. Female
- b. Male
- c. Prefer not to say

Q27. How old are you?

Record actual age: _____

Q28. How many family members are there in your household?

Record actual current family members in the household: _____

Q29. How long have you lived in your current residence?

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- b. Khmer Krom

- c. Cham
- d. Kreung
- e. Kuy
- f. Tampuan
- g. Bunong
- h. Other, please specify: (Please show option which interviewer can type the answer)

Q31. Please select the highest level of education you have completed from this card. (SA)

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- e. Finished secondary school
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- h. Some university
- i. Finished university
- j. Some post graduate study
- k. Finished post graduate study
- l. Some vocational training
- m. Finished vocational diploma
- n. Other, please specify:.....

MAPPING INFORMATION

Q32. Type in important landmark nearby the respondent's house

Q33. Type respondent's address: House number, street number, village, commune, district, province

Q34. Record GPS coordinates of the respondent's house

Q35. Take the front picture of the respondent's house

Q36. Ask for respondent's phone number

QUESTIONNAIRE (COMMUNITY PROTECTED AREA MEMBERS)

Respondent's Full Name		
Address		
City/ Town		
Country _____		
Telephone Number	Interview Date	
Interviewer's name	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
I.D.#		
Time Interview Began	Ended	Interview length
I declare that this interview was conducted in compliant with Havas Barefoot's standard and international research standard of agreement and confidentiality. All answers provided in this questionnaire will be kept confidentially.	Signature and Name of Interviewer	Signature and Name of Supervisor

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Could you spare around **30 minutes*** for this interview?

SCREENING

- S1. Are you a member of a Community Protected Area? (SA)
 - a. Yes
 - b. No (Terminate)
- S2. How long have you been a member of a Community Protected Area? (SA)
 - a. Less than one year (Terminate)
 - b. One year
 - c. Two years
 - d. Three years
 - e. Four years
 - f. Five years
 - g. More than five years
 - h. Other, please specify:....

- S3. Are you a CPA member of a Wild Honey Collecting Group?
- Yes
 - No (Terminate)

COMMUNITY PROTECTED AREA

- Q1. What is your role in the Community Protected Area (CPA)? (SA)
- CPA chief
 - CPA deputy chief
 - CPA secretary
 - CPA member
 - Other, please specify:...
- Q2. What does CPA support in terms of sustainable wild honey collection? (MA)
- Management/Patrolling of Protected Areas against deforestation for wild honey collection
 - Training on patrolling, forest management, harvesting and marketing of wild honey products to communities
 - Other, please specify:.....
- Q3. What challenges does CPA face when promoting sustainable wild honey collection? (MA)
- Deforestation for wild honey collection
 - Firing for wild honey collection
 - Trashing in the forest during wild honey collection
 - Wild honey collection in the endangered honey areas
 - Other, please specify:...
- Q4. Which months of the year are the high harvesting months for wild honey collection? (MA)

January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

AGRICULTURAL PRACTICES APPLYING ORGANIC STANDARDS

- Q5. Do you know Standards for Organic Products? (SA)
- Yes (Go to Q6)
 - No (Go to Q8)
- Q6. What standards for organic products do you know? (MA)
- CamGAP
 - Other, please specify:.....
- Q7. What criteria to get organic standard/CamGAP certificate do you know? (MA)
- Attending training courses
 - Cleaning and sanitizing installation/packaging facilities
 - Production samples analyzed in the lab and confirmed in terms of safety
 - Agricultural production areas are inspected by CamGAP expert
 - Other, please specify:...
- Q8. When your CPA manages the sustainable wild honey collection, does your CPA have technical guideline to work with wild honey collectors? (SA)
- Yes (Go to Q9)
 - No (Go to Q10)
- Q9. What is the technical guideline all about? (OA)
- Q10. Does your CPA support wild honey collectors to get the Geographical Indication?
- Yes (Go to Q11)
 - No (Go to Q13)
- Q11. Does your CPA have any challenges to support wild honey collectors to get the Geographical Indication?
- Yes (Go to Q12)
 - No
- Q12. What are the challenges to support wild honey collectors to get the Geographical Indication? (MA)
- More resources needed to support wild honey collectors to get the Geographical Indication
 - Wild honey collectors lack knowledge to get the Geographical Indication
 - Hard to get the trust from buyers
 - Wild honey collectors do not collaborate with us to get the Geographical Indication
 - Other, please specify:.....
- Q13. Do you have any challenges to support wild honey collectors to get trust from honey buyers? (SA)
- Yes (Go to Q14)
 - No (Go to Q15)
- Q14. What challenges do you have to support wild honey collectors to get trust from honey buyers? (MA)
- Buyers tend to give low price to the wild honey because they used to be cheated on not wild/natural honey
 - Buyers tend not to buy honey directly from honey collectors, they buy from those whom they trust more
 - Other, please specify:.....

Q15. According to your opinion, what are the characters of environmental friendly foods?
(MA)

- a. Food with renewed/renewable packaging
- b. Food with not over-packaged
- c. There is the environmental friendly product trademark on the packaging (e.g. CamGAP)
- d. Locally grown food staffs
- e. Food from chemical and fertilizer free farming
- f. Organic foods
- g. Fresh foods
- h. Food which is available in big packaging
- i. Food produced only by small farmers
- j. I do not know
- k. Other, please specify:

DEMOGRAPHIC INFORMATION

Q16. What is your gender? (SA)

- a. Female
- b. Male
- c. Prefer not to say

Q17. How old are you?

Record actual age: _____

Q18. How many family members are there in your household?

Record actual current family members in the household: _____

Q19. How long have you lived in your current residence?

Q20. What is your ethnicity?

- a. Khmer
- b. Khmer Krom
- c. Cham
- d. Kreung
- e. Kuy
- f. Tampuan
- g. Bunong
- h. Other, please specify: (Please show option which interviewer can type the answer)

Q21. Please select the highest level of education you have completed from this card. (SA)

- a. No formal education
- b. Some primary school
- c. Finished primary school
- d. Some secondary school
- e. Finished secondary school
- f. Some high school
- g. Finished high school

- h. Some university
- i. Finished university
- j. Some post graduate study
- k. Finished post graduate study
- l. Some vocational training
- m. Finished vocational diploma
- n. Other, please specify:.....

MAPPING INFORMATION

Q22. Type in important landmark nearby the respondent's house

Q23. Type respondent's address: House number, street number, village, commune, district, province

Q24. Record GPS coordinates of the respondent's house

Q25. Take the front picture of the respondent's house

Q26. Ask for respondent's phone number

INTERVIEW GUIDE (GENERAL DIRECTORATE OF AGRICULTURE AND PROVINCIAL DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES)

Interviewer Read Out

Good morning/afternoon, my name is..... from Havas Barefoot. We are conducting a study on **Sustainable Agricultural Productions** in Mondulkiri and I would like to ask for around 60 minutes of your time for the interview. The purpose of this study is to collect and analyze information for development research purposes and not to sell anything. I would like to assure that all your information will be kept confidential and will be used for this study only.

Could you spare around **60 minutes*** for this interview?

Q1. May you let me know your full name? How old are you?

Q2. What is your role in the General Directorate of Agriculture (GDA)/Provincial Department of Agriculture, Forestry and Fisheries (PDAFF)?

Q3. For how long have you been working for GDA/PDAFF?

Q4. What does GDA/PDAFF do in terms of sustainable agricultural productions?

Q5. How does GDA/PDAFF do to promote the organic standard/CamGAP certificate provision to farmers/producers?

Q5. What support does GDA/PDAFF get from to promote the organic standard/CamGAP certificate provision to farmers/producers?

Q5. Since when has GDA/PDAFF focused on promoting the organic standard/CamGAP certificate provision to farmers/producers? And why?

Q6. What challenges does GDA/PDAFF face when promoting the organic standard/CamGAP certificate provision to farmers/producers?

Q7. How does GDA/PDAFF do to deal with those challenges?

Q8. What are the positive changes that GDA/PDAFF contributes? What are the expected changes?

Q9. What does GAP/PDAFF plan to do to promote the organic standard/CamGAP certificate provision to farmers/producers or promote sustainable consumption and production in the next five years?

Q10. What recommendations/suggestions from GDA/PDAFF to with organic and CamGAP certificate?