AN ASSESSEMENT OF THE COFFEE VALUE CHAIN IN THANDAUNGGYI TOWNSHIP (KAYIN STATE)

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DISCLAIMER

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ABBREVIATIONS

ASEAN	Association of South East Asian Nations
CCI	Chamber of Commerce and Industry
CDN	Consortium of Dutch NGOs
CEPA	Cambridge Economic Policy Associates
CFs	Community Facilitators
CRIETC	Coffee Research Institute, Extension and Training Centre
CSO	Civil Society Organizations
DOA	Department of Agriculture
FAO	Food and Agriculture Organization
FBO	Faith Based Organization
FGD	Focus Group Discussions
GAFSP	Global Agriculture and Food Security Program
GDP	Gross Domestic Product
IFC	International Finance Corporation
IDP	Internally Displaced People
JICA	Japan International Cooperating Agency
LIFT	Livelihoods and Food Security Trust Fund
MADB	Myanmar Agriculture Development Bank
MCA	Myanmar Coffee Association
MFE	Myanmar Farmers Enterprises
MFI	Micro-Finance Institutions
MFVG	Myanmar Fruits and Vegetables Group (a working group under UMFCCI)
MIS	Market Information System
MoALI	Ministry of Agriculture, Livestock and Irrigation
MSP	Multi-Stakeholder Platform
NGO	Non-government Organizations
ODA	Overseas Development Assistance
SCAA	Specialty Coffee Association of America
SNV	Netherlands Development Organization
UMFCCFI	Union of Myanmar Federation of Chamber of Commerce and Industry
VC	Value Chain
VCA	Value Chain Analysis
VCD	Value Chain Development
WI	Winrock International

Table of Contents

I. BACKGROUND OF THE ASSESSMENT

There are few studies and assessments on the coffee value chain in Myanmar. One brief assessment was done and published by the Cambridge Economic Policy Associates (CEPA) in 2015, an institution contracted by the International Finance Corporation (IFC) to conduct an agribusiness sector diagnosis of Myanmar. CEPA was commissioned by IFC to 1) analyse/identify the most promising subsectors and commodities for IFC/Global Agriculture and Food Security Program (GAFSP) investment and advisory services and 2) identify specific IFC/GAFSP investment opportunities and related partners[1]. Coffee was one of the commodities assessed among several value chains under the contract. The assessment is nationwide in scope and provided an overview of the coffee value chain in the country, identified constraints and opportunities and potential investment areas. Winrock International with funding support from USAID has also done an assessment of coffee value chain in connection with their implementation of the Value Chains for Rural Development project in October 2014 where development of coffee is a focus. The coffee initiative under the said project focuses on four communities in Shan state. Later, in 2017, Winrock as requested by the government initiated an assessment of the coffee value chain in order to develop a national coffee strategy. As part of the assessment, a workshop with coffee value chain stakeholders was conducted to chart and plan for the formulation of the national coffee development strategy. The Food and Agriculture Organization (FAO) has also published significant information on coffee in the country and developed a manual for coffee growing in Myanmar.

In the assessment conducted by CEPA, Kayin state was identified as an area where the agronomic conditions are conducive for growing coffee and where a significant number of farmers are already producing. In the value chain prioritization conducted by CDN and SNV for Kayin state, coffee was therefore chosen as a value chain that has economic potential for the targeted farmers of the Livelihoods and Food Security Trust Fund (LIFT) project in Kayin state. It is in this regard that this area-focused assessment of coffee value chain has been conducted. The assessment identifies economic opportunities for coffee producers (and other value chain stakeholders) given the local agronomic conditions and domestic and international market dynamics.

[1] Cambridge Economic Policy Institute (CEPA), Agribusiness Country Diagnostic-Myanmar, commissioned by International Finance Corporation (IFC) for Global Agriculture and Food Security Program (GASFP), April 2016

II. METHODOLOGY

The value chain assessment was conducted starting with a desk review of available data from various sources (publications, reports and internet data) such as reports from Winrock International, the National Coffee Strategy, and secondary data from Ministry of Agriculture and the Myanmar Coffee Association (MCA).

In addition, interviews with various key stakeholders engaged in coffee production, research, processing and marketing activities and field surveys with coffee producers were done. A first field assessment was done in 55 villages in the Thandaunggyi, Leik Tho and Baw Ga Li townships in August 2017 with support from community facilitators from the four local partners (PKBA, KMSS, BMB and KKBA). In every village, a focus group discussion was organized which were attended by 8-12 coffee farmers on average. In addition, five processors from Taungoo, seven Taungoo traders, one staff member from the Department of Agriculture working at the Kyauk Taing demonstration coffee farm, and both the previous head and his successor of the Coffee Research, Information, Extension and Training Centre at Pyin Oo Lwin were interviewed for the first assessment.

However, it was later identified that the first assessment was too limited in terms of primary data. Therefore, the findings of the first assessment were later strengthened with evidence from a second field survey based on more extensive field data gathering.

This second assessment, which took place in June 2018, was done by a local coffee expert with an existing network in the project area. This second study helped in getting a better picture of the overall situation regarding coffee production around Thandaunggyi. For this assessment, respondents were selected based on references in relevant documents as well as through contacts in the field, such as the MoALI staff. Gathering of data was done through both individual interviews as well as group discussions. In total, 56 people were consulted.[2] The data collection mainly took place in the project area (mainly the Thandaunggyi township) and nearby locations where key stakeholders such as traders are located, for example in the region of Taungoo.[3]

Box 1: Measures and terms explained

Robusta = Pin To (low land species, more caffeine)
Arabica = Pin Myint (high land species, less caffeine than Robusta)
1 viss = 3.6 pounds / 1.65 kg
1 bucket = approx. 5 viss of coffee cherry
Yellow seed = green bean from ripe cherry
Green seed = green bean from non-ripe cherry

[2] See the annexes for a list of respondents

[3] As the field surveys and interviews were only focused on selected townships around Thandaunggyi area, it must be noted that the findings in this report might not reflect the overall situation in the whole Kayin state. Also, all farmers interviewed produce coffee next to other crops, so findings might not reflect the situation for farmers who only grow coffee.

III. OVERVIEW OF THE COFFEE VALUE CHAIN IN MYANMAR

3.1 Production

Coffee production in Myanmar is quite small. The total production area reported is about 30,000-50,000[4] hectares with an average yield of 0.6 tons per hectare per year. Total production is estimated at approximately 6,800 metric tons (MTs) for the 2016/17.[5] According to FAO, the sector contributes approximately $9 million to the Gross Domestic Product (GDP)[6]. The coffee varieties grown are Robusta and Arabica. Unfortunately, Myanmar does usually not feature in international production statistics. But to put it in perspective: the production volume in Myanmar is believed to be less than 25% of that of neighbouring Laos, 25% of Thailand's and less than 0,2% of Vietnam.

The CEPA report mentions that there is a small number of commercial plantations in Myanmar, such as two estates owned by an entrepreneur called Tint Soe Lin – one 120-hectare estate that is already in use and one of 400-hectare planned to produce coffee by 2018 in Shan State. Other commercial producers include U Than Aung, a 40-hectare plantation growing mainly Arabica coffee in Northern Shan State and Blue Mountain coffee with a plantation of around 28 hectares located in Mandalay[7]. Most processing and trading of coffee is centred around Mandalay.[8]

The variety most grown in Myanmar is Arabica, while Robusta is also grown in specific areas (on average, of the total coffee production in Myanmar 80% Arabica and 20% Robusta – see graph below). In Kayin State, most of the coffee produced is Robusta.

[4] As also mentioned by Winrock International (2018), locating reliable information on coffee production levels in Myanmar is a challenge. While the Winrock (2018) reports 30,000, a recent article in the Myanmar Times reports 50,000 acres of coffee plantations in the country (https://www.mmtimes.com/national-news/nay-pyi-taw/26188-myanmar-coffee-exports-to-stimulate-agro-sector.html)

[5] Winrock International (2018) Strategic value chain analysis of the coffee sector in Myanmar.

[6] FAOStat

[7] Cambridge Economic Policy Institute (CEPA), Agribusiness Country Diagnostic-Myanmar, commissioned by International Finance Corporation (IFC) for Global Agriculture and Food Security Program (GASFP), April 2016

[8] Winrock International (2018) Strategic Value Chain Analysis of the Coffee Value Chain in Myanmar.

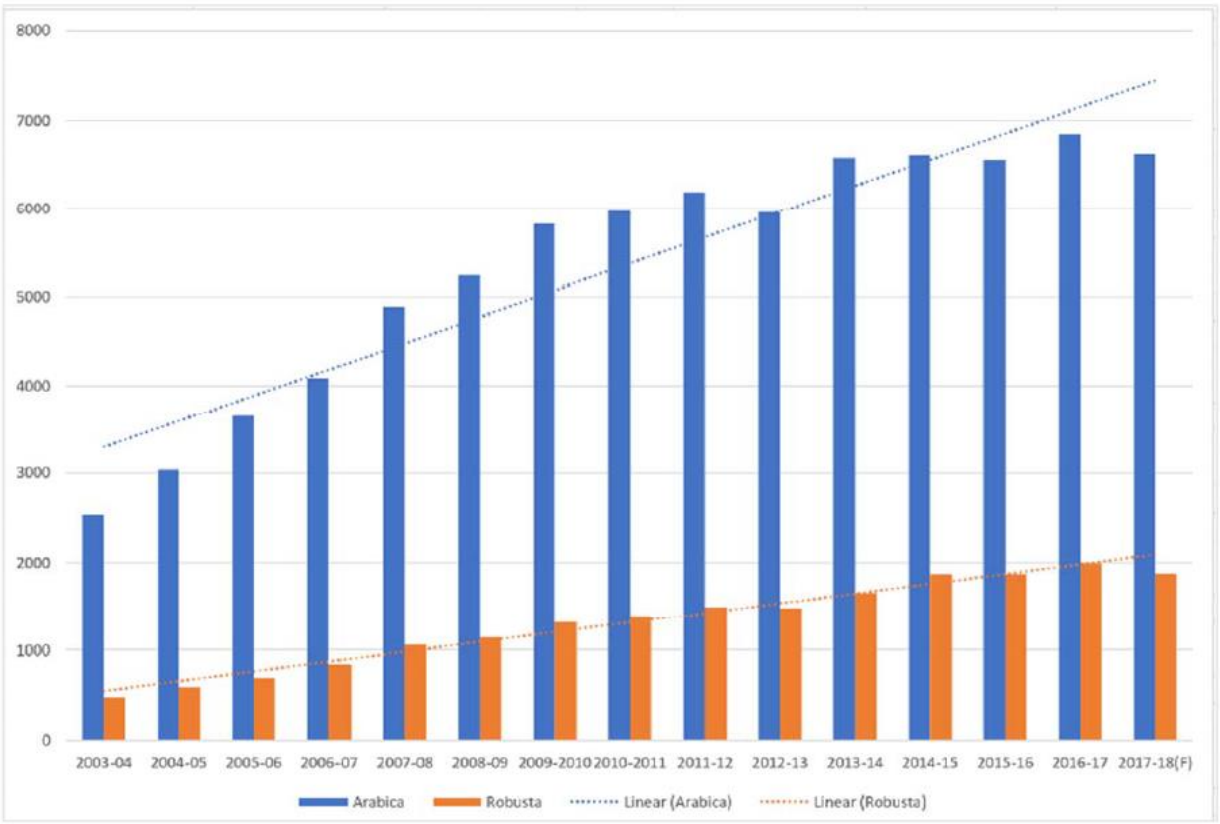

Figure 1: Arabica and Robusta production in Myanmar (MT GBE) (Winrock International 2018: p. 4)

The Department of Agriculture (DoA) plans to grow commercial Robusta coffee in Pyinmana township, close to Naypyidaw. According to the DoA, there is great potential to expand the plantations in the area due to its sea-level elevation and prevailing soil quality which are conducive for growing the Robusta variety. The government has tested and established 400 acres of Robusta coffee in the area and is planning to extend it up to 10,000 acres. While the volume of coffee production is increasing, one of the challenges in this area is that local demand is low, as there is no trading house close to Pyinmana.

Overall, most coffee growers (80%) are small-holder farmers (25,000) with coffee plots of approximately 0.4 hectare. These farmers grow coffee in combination with other crops such as fruits and vegetables. Production is fragmented and unorganized, meaning farmers produce it individually, and very few coffee growers or farmers organizations exists[9].

3.2 Markets

The global consumption of coffee is forecasted at a record high of 163.2 million bags of 60 kg for 2018/19. As world coffee production is expected to reach 171.2 million, exports are expected to

[9] Ibid

rise in response to this increasing demand. The European Union coffee import is forecasted to rise by 1.0 million bags to 48.0 million bags - that accounts for over 40% of the world's coffee bean production. Import by the United States of America, as the second-largest importer, is forecasted to increase by 2.4 million bags to 27 million bags. The top suppliers of coffee beans to these countries are Brazil, Vietnam, Honduras and Colombia. [10]

In South East Asia, only few countries have records of coffee exports and these include Vietnam, Laos, Thailand, Indonesia and the Philippines. While there are few statistics about coffee production in Myanmar, these are absent in most international publications.

A bulk of the coffee produced in Myanmar is sold on the domestic market. A small quantity goes to export markets although there are various reports that international coffee firms such as Green Mountain Coffee are exploring the potential to source supply from the country. Myanmar coffee is generally exported to Thailand, China, India, Germany, the USA and Korea. Recently, the Myanmar Coffee Association started working closely with Winrock International, Nestle Myanmar and the Myanmar Department of Agriculture in exploring sustainable markets. In response, Thandaunggyi coffee growers also started communicating and linking with the Mandalay Coffee Association as a first step in the promotion of their coffee.[11]

From the total production of Myanmar coffee, it is estimated that only 6% is exported yearly. The highly competitive export market still needs to be developed. Robusta coffee, which is grown mainly in areas of low elevation, is commonly exported to China. Arabica coffee, which is high in quality, is also often sold to China, but the prices are usually lower than its commercial value due to low bargaining power of the unorganized producers and because it is often mixed with Robusta coffee when sold.

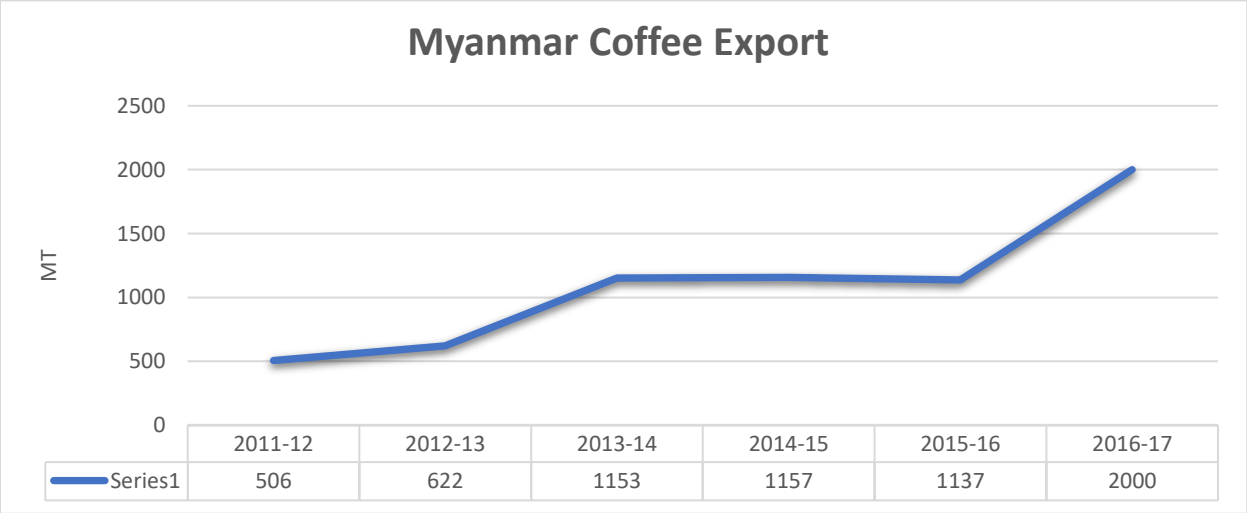

Figure 2: Myanmar Coffee Export Volumes 2011-2017 (Myanmar Coffee Association, Ministry of Trade)

[10] Coffee: World Markets and Trade; Foreign Agricultural Service/USDA, Office of Global Analysis, June 2018

[11] *Source: Kumudra news agency.*

Yearly, Myanmar imports over 100,000 MT Robusta coffee from Brazil and Vietnam. The Robusta coffee produced in Thandaunggyi and surroundings cannot meet the local demand in terms of volume. As such, the Yoma Company started growing Robusta coffee in the Ayeyarwady division at a 300 acres farm as a pilot project, assuming that the market demand for domestic coffee in this country will increase. The project is still at trial stage[12].

A significant finding of the CEPA assessment is that a growing middle-class and coffee preference over tea in Myanmar has led to growing domestic demand for coffee. While production in terms of volume is low, is the quality considered as high potential. In terms of grading, the quality of coffee is rated on a scale from 1 to 100, and for a specialty status coffee needs to score higher than 80. According to the Specialty Coffee Association of America, Myanmar's coffee crop has the potential to qualify as "premium and specialty coffee" scoring over 80, but current production methods still yield a too inconsistent product.

3.3 Key actors in the national coffee sector

Below, key players in the national coffee sector are listed:

a. **Research and development –**the Coffee Research Centre in Pyin Oo Lwin of the Department of Agriculture (DoA), Coffee Research Institute, Extension and Training Centre (CRIETC), Myanmar Farmers Enterprises (MFE)
b. **Input supply and service provision –** DoA, CRIETC
c. **Production** – The majority are small-holder farmers, but there are also small coffee plantations owned by companies such Sithar, Blue Mountains, Genius coffee, and larger plantations such as those from Saw Bo Thar.
d. **Processing** – Roasting companies such as Ayeyarwady, Lone Star Coffee, Genius coffee
e. **Marketing and trading** – Local trading companies, commercial exporters (some also taking up processing)
f. **Financing** – Myanmar Agriculture Development Bank (MADB) and MFIs. Most value chain stakeholders borrow from each other, plus small-holder farmers often rely on local NGOs or church-based organisations
g. **Support institutions** – Myanmar Coffee Association (MCA), Department of Agriculture (DoA)

3.4 Opportunities and constraints

Looking at the level of the national coffee value chain, several opportunities and constraints can be identified in various stages of production, post-harvest handling, transport, trading and

[12] Due to the shortage and quality of water in the area, it was recently found that more field trials are needed. *Source of the information: Yu Par Aung Win from DVB news.*

marketing including standards and product bulking, farmers organization, and financing. Below a summary of constraints and opportunities as identified from the reviewed assessments is provided.

Table 1: Summary of constraints and opportunities for the coffee value chain in Myanmar (national level)

Opportunities	***Constraints***
Conducive climatological conditions that farmers can capitalize on to expand production and increase yields	In general, coffee produced in Myanmar is of lower quality than coffee from neighbouring countries, exporters have a weak position in negotiating prices
Myanmar coffee has the potential to qualify as specialty coffee according to SCAA standards, which can provide increased access to international markets	Globally, a lack of awareness of the (potential) high quality Arabica that Myanmar can produce.[13]
Coffee is a non-perishable product that can easily be transported and stored without damage	Long distances and poor road infrastructure from production areas to international trading centres results in high cost of transport
South-East Asian countries are potential markets[14]: neighbouring China is expected to increase coffee consumption considerably; growing per capita consumption in Myanmar	A lack of capacity of producers and local processors on tasting and grading hinders achieving quality standards resulting in difficulties in obtaining better prices
Both lowland and upland areas in Myanmar are suitable for coffee production (Robusta and Arabica respectively)	Farmers lack skills and knowledge on improved cultivation and farming techniques resulting in low productivity
The government has given priority to the development of the coffee sector, thus more support and technical assistance to farmers and processors can be expected	Fragmented and uncoordinated production makes bulking of products difficult, thus reducing the bargaining power of the producers with traders
Inputs like fertilizers and pesticides are generally not used in current coffee farming practice (especially in the uplands) leading to organic production by default. This provides an opportunity for a price premium (although this needs further study and certification)	A lack of high quality, top notch coffee infrastructure: research stations, phytosanitary facilities, seed multiplication, extension service, nurseries and quality control

[13] At the same time, we need to realize that many other countries in the world like Indonesia, Colombia, Laos, etc. also have excellent conditions for growing coffee (soil fertility, temperatures, vegetation, etc.).

[14] Consumption from these countries is growing, at the same time they also produce their own coffee. A market analysis would be needed to assess Myanmar's potential to export to these countries.

Private companies have shown interest in investing in the coffee value chain	Farmers lack of access to capital/finance limits expanding and improving production
	A lack of a marketing strategy and objectives by all value chain stakeholders
	A lack of an articulated vision for the coffee sector by the government (so far)
	Poor quality planting materials (mostly obtained from China) result in lower production yields and quality

According to the CEPA assessment, Myanmar has the agronomic conditions in place to develop a large coffee sector, both for the higher value Arabica as well as the Robusta varieties. However, the sector is in an early stage of development, with most production carried out by smallholders and only a few commercial firms. The sector is currently too small to qualify for a GAFSP/IFC investment. Furthermore, there is too much uncertainty in terms of production volumes and quality for the Myanmar coffee sector to compete in the export market[15].

At the same time, some international investors/agribusinesses have started to explore possibilities to invest in coffee production and marketing in Myanmar. For instance, Green Mountain Coffee has reportedly explored the potential to purchase green coffee from farmers as part of a project led by Winrock International. In addition, a subsidiary of D&F Man Holdings (a global agricultural commodities company) looks at a $20m investment over four years to produce Robusta coffee for export markets on 3,700 Ha of land in the Ayeyarwady Division of Myanmar. Thus, the private sector shows some interest to invest which provides opportunities for the coffee sector to develop.

3.5 The government's agenda for the national coffee value chain

Since 2016, the government has been working on a national coffee strategy[16], engaging key coffee stakeholders to provide input tor this strategy. The DoA aims to expand the cultivation of highland coffee in Chin State, lowland coffee in the Kayin and Rakhine States and the Tanintharyi region. The DoA has announced that it aims to reach 200,000 acres of coffee plantations nationwide and 60,000 tons[17] of export by 2030.[18] Currently, Myanmar has about 30,000-50,000 acres of coffee plantations that yield about 8000 tons of coffee.[19] Shan State is the main

[15] Cambridge Economic Policy Institute (CEPA), Agribusiness Country Diagnostic-Myanmar, commissioned by International Finance Corporation (IFC) for Global Agriculture and Food Security Program (GASFP), April 2016

[16] However, to this date, this strategy has not been finalized yet.

[17] See https://www.moi.gov.mm/moi:eng/?q=news/8/11/2018/id-10788

[18] This announcement was among others made by Minister of Agriculture, Livestock and Irrigation. However, until so far, we were unable to find the actual strategy that describes how the Ministry aims to realize these objectives.

[19] It must be noted that sources differ in terms of total acreage of coffee plantations and production. These numbers are based on Winrock (2018) and official DoA statistics.

production area in the country, with 27,000 acres of coffee plantation, followed by Kayin state with about 10,000 acres.[20]

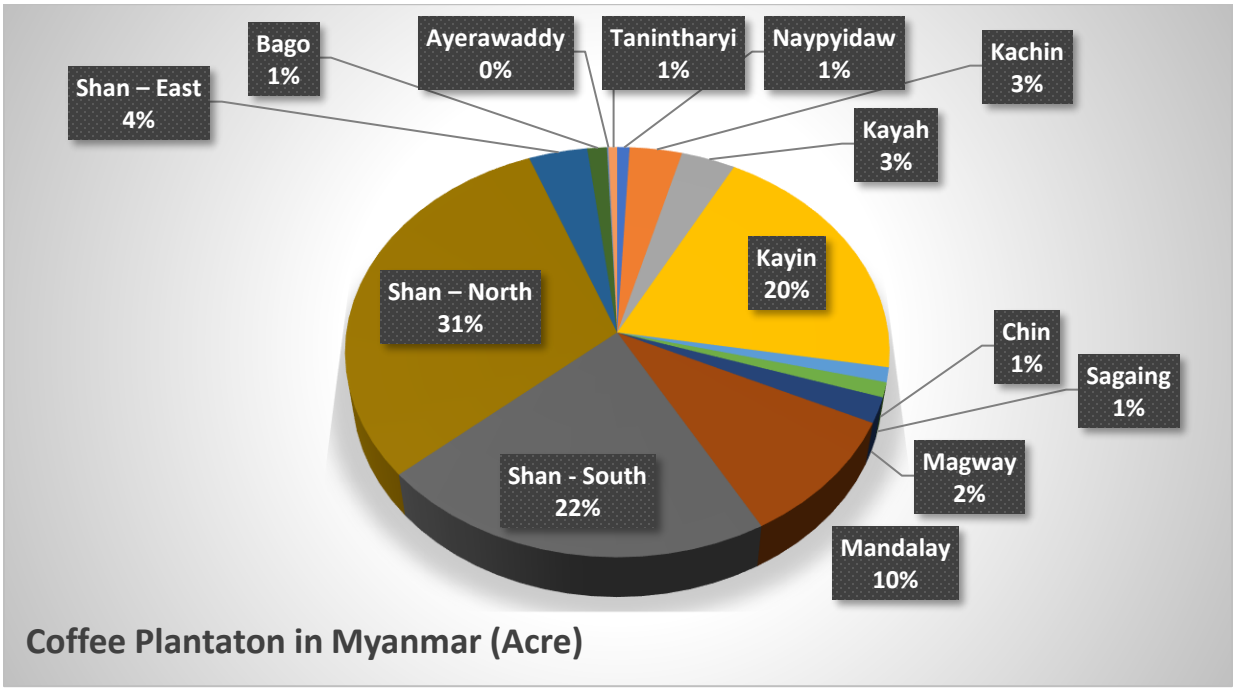

Figure 3: *Ratio of total size of coffee plantations per state in Myanmar, 2015-2016* (DoA)

There have been government strategies to develop the coffee sector before, but implementation has not yet resulted in a significant improvement of Myanmar's coffee in international coffee markets. Now, the DoA has again committed itself to support the development of the coffee industry.

While Arabica coffee is promoted as the main variety in Myanmar, as a sample has scored over 85 in the specialized coffee standards of the world market, the DoA is also planning on expanding Robusta coffee cultivation in the country. According to government statistics, the coffee export has rapidly increased (also see p. 10). Latest information indicates that Myanmar exports coffee to China, U.S, Korea, Japan, Switzerland, Taiwan and Germany.

IV. ANALYSIS OF THE COFFEE VALUE CHAIN IN THANDAUNGGYI

In collaboration with local consortium partners KKBA, PKBA and KMSS (first assessment) and a coffee expert (second assessment), a more area-specific assessment was initiated by SNV in the Thandaunggyi township to collect in-depth information about production methods, quality, competitiveness, markets, etc. specifically for the Kayin State. A combination of a survey questionnaire and in-depth interviews were conducted.

[20] Cambridge Economic Policy Institute (CEPA), Agribusiness Country Diagnostic-Myanmar, commissioned by International Finance Corporation (IFC) for Global Agriculture and Food Security Program (GASFP), April 2016

Both the supply and demand-side were reviewed to identify opportunities and constraints for the coffee value chain in the project area, with the purpose of ultimately identifying the most appropriate interventions to increase smallholder farmers' livelihoods and incomes. Below the findings are summarized.

4.1 General overview of the coffee value chain in Thandaunggyi township

According to data from the Department of Agriculture (DoA), most of the coffee plantations in Thandaunggyi grow the Robusta variety. The total planted area is estimated to be 6,800 acres with an annual production of about 300,000 viss (approximately 500 tons). The Thandaunggyi township is geographically divided in three sub-townships: Leik Tho, Baw Ga Li, and Thandaung. Leik Tho consists of 32 village tracts[21] with 116 small villages, Baw Ga Li consists of 15 village groups and 100 small villages, and Thandaung consists of 15 small villages. In these villages, coffee has been planted as part of traditional gardening, together with other crops such as cardamom, turmeric, durian, etc. The villages of Maung Nwet Gyi (Thandaung) and Alae Chaung (Leik Tho) generally produce most coffee[22]. Most coffee plantations can be found in forest areas, located just outside of the villages.

[21] A village tract is a fourth-level administrative subdivision of Myanmar's rural townships.
[22] Interview with Ms. Daw Mini Myint (Assistant Director, Coffee Extension Unit Office in Kyauk Taing State, Department of Agriculture).

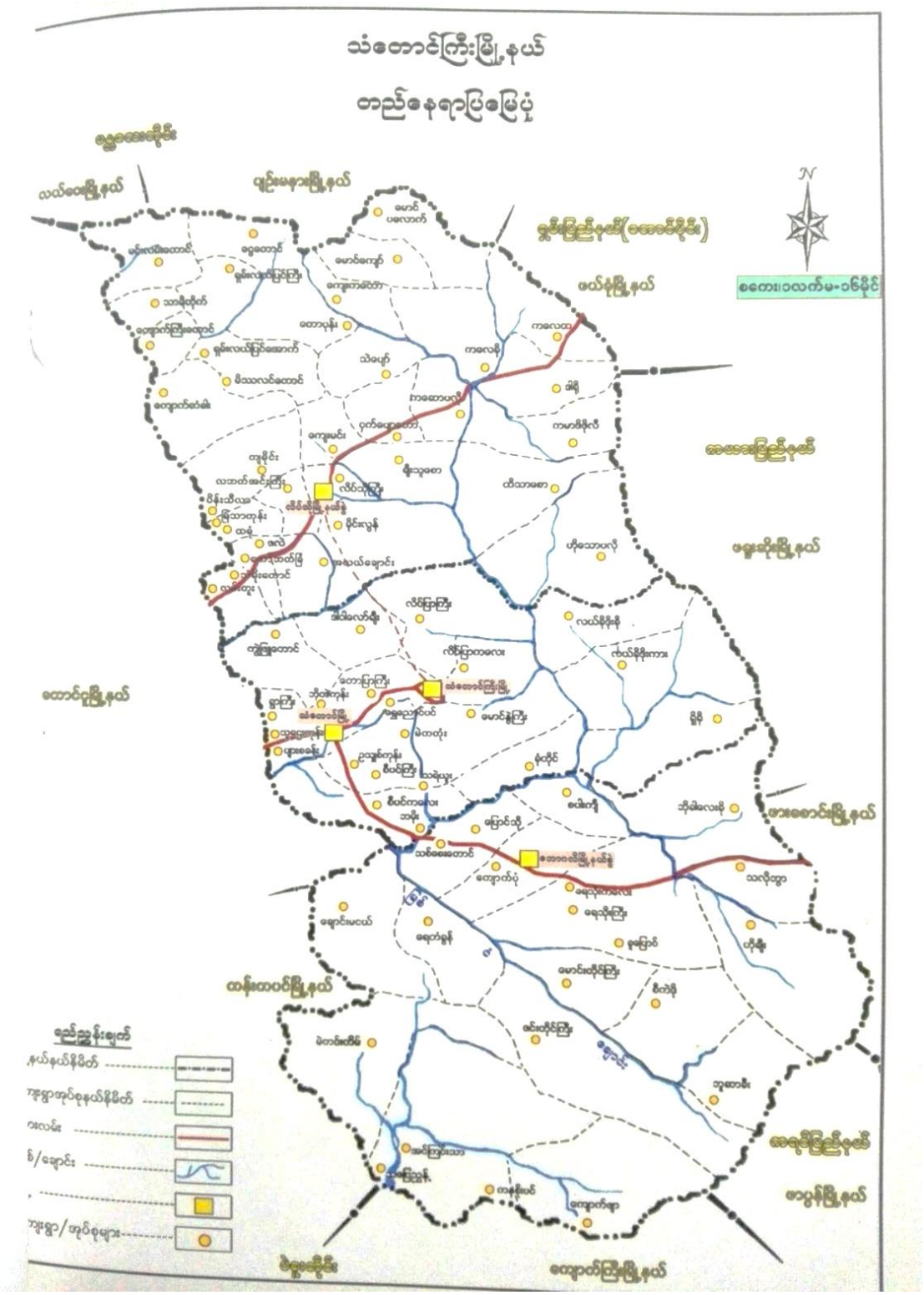

Figure 4: Coffee plantations and households in Thandaunggyi township (DoA)[23]

[23] The translation of the legend is as follows: a) the Kayin State border b) township borders c) roads d) water ways e) towns f) village

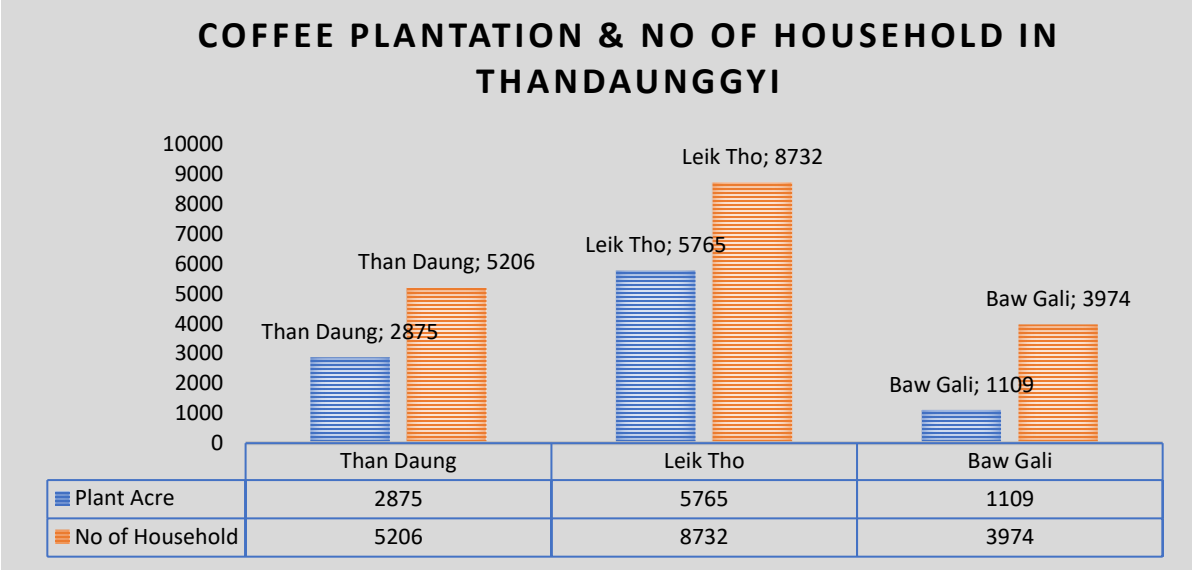

Figure 5: Coffee plantations and number of households in Thandaunggyi[24]

In Thandaunggyi, most of the coffee grown is the Robusta variety. While some varieties were brought to the Kyauk Taing demonstration coffee farm from Pyin Oo Lwin, local farmers also brought new varieties from Thailand and Malaysia through their personal network. As it is a cross-pollinating species, there are no statistics as it is difficult to identify of which specific type of Robusta the current coffee trees are.[25]

In earlier tests[26], the Robusta from the area received a grading score from 84-87 (out of 100), which means it is of good quality and even qualifies to become specialty coffee. Robusta has therefore been identified as a high potential crop by the DoA. As part of the national expansion plan for coffee cultivation, the DoA formulated the objective to plant an additional 10,000 acres (initially) in Kayin State for 2017-2018.

4.1.1 Coffee production

In the Thandaunggyi area, coffee is produced by small-scale farmers who grow coffee on their land next to other crops, such as durian, cardamom, lychee, and other cash crops. The volumes produced are relatively small. In terms of production techniques, most farmers use the multiple stem system which results in approximately 435 trees per acre. On average, farmers own about 500 trees on 1-2 acres of land, with an average production yield of 60-600 viss. This results in an average profit of about 1 million Kyat ($ 680) per year for each coffee farming household.[27] For small-scale farmers, this is a significant contribution to their household income.

[24] This field data was collected by U Soe Myint, manager of the Kyauk Taing coffee farm.
[25] See the annexes for more details on the Robusta varieties that are recommended by the MoALI.
[26] More specifically, coffee from Thandaunggyi and Maung Nwet Gyi were tested in the Pyin Oo Lwin laboratory in 2017 and 2018. Respectively, they received a grading of 87 and 84.
[27] This calculation is based on a standard plantation design and calculation costs made by Kyauk Taing coffee farm, MOALI: 2 kg coffee beans per tree, with 435 trees per acre per farmer and a gross revenue of 1,518,750 Kyat per

As mentioned, most of the coffee grown consists of the Robusta variety, but small quantities of Arabica are still produced in the project area (with an annual production of 450 viss), namely in the Thit Kwa Taung village in Leik Tho (300 viss) and Maung New Gyi village in Thandaunggyi (150 viss).


Figure 6 and 7: Arabica coffee plantation (left) and Robusta coffee plantation (right) in Thandaunggyi

Next to the small-scale farmers, there is one bigger coffee farm Kyauk Taing. This coffee plantation and study farm has been established by the government and is supervised by the DoA (also see 4.1.8).

Growing methods

Generally, coffee is grown in traditional ways, not using fertilizers or pesticides. This makes the production organic by default, but also leads to challenges such as low productivity. Sometimes leaves of other crops are placed under coffee trees as a natural fertilizer (for example, after the harvesting season from September to October, leaves from cardamom are used for such purposes). For land preparations and planting, farmers make use of traditional farm tools such as knives, bolos, axes and hoes. Low productivity of the area has also been a result of a lack of crop husbandry (applying dedicated ways of managing the coffee trees such as good planting, arranging proper shade, regular pruning, etc.). For example, farmers do not maintain their trees properly resulting in high plants. Farmers harvest only once instead of three times a year, meaning they harvest both ripe and unripe fruits. One of the reasons for doing so this is that farmers indicate that they do not have time to harvest multiple times, plus they are afraid that rats will affect their production.

Processing methods

year. Deducted from this is the plantation costs of 163 Kyat per tree per year, and production costs of 500 Kyat per kg, and taking a 10% loss of volume into account due to poor drying methods and packaging. However, this is only a standard calculation. In practice, the number of trees that the farmers grow varies and hence the profit they earn from coffee production differs.

In the Thandaunggyi area, farmers use the dry processing method after harvesting. This is common practice because dry processing does not require specific equipment, it is cheaper, less labour intensive and requires less water supply than the wet processing method. The beans are sun-dried. After drying, the parchment skin is crumbly and dry, and can easily be removed. The dry cherry is then hulled to produce a green bean. In Thandaunggyi, this is usually done using traditional pounding hand tools. The dry method used in the Thandaunggyi area is a low-cost process. As Robusta is a cheap variety, those producing the variety can usually not afford to make significant investments in its production (such as equipment).


Figure 8 and 9: Coffee milling in Thandaunggyi area using traditional hand pound for polishing and small rice milling machines for milling


Figure 10 and 11: Roasting coffee in the Thandaunggyi area

During wet processing, the coffee cherries are sorted by immersion in water. Bad or unripe fruit will float, and the good ripe fruit will sink. The pulp is then removed in a pulping machine, the remaining beans washed and dried in the sun. The wet method is more advanced and requires the use of specific equipment and substantial quantities of water.

In Myanmar, except for some larger plantations where full-wash processing is used, most small-holder Robusta coffee is processed using the dry method.[28] Some farmers from Thandaunggyi however, on advice by the DoA, attended coffee trainings on the wet processing method in Pyin Oo Lwin. After the trainings and a number of exchange visits the interest for the method was raised, and it was agreed that locations would be identified with enough water availability to indeed start the wet processing method. However, considering that the humidity in Thandaunggyi is not ideal for the wet processing method, it remains to be seen if this indeed leads to better quality.

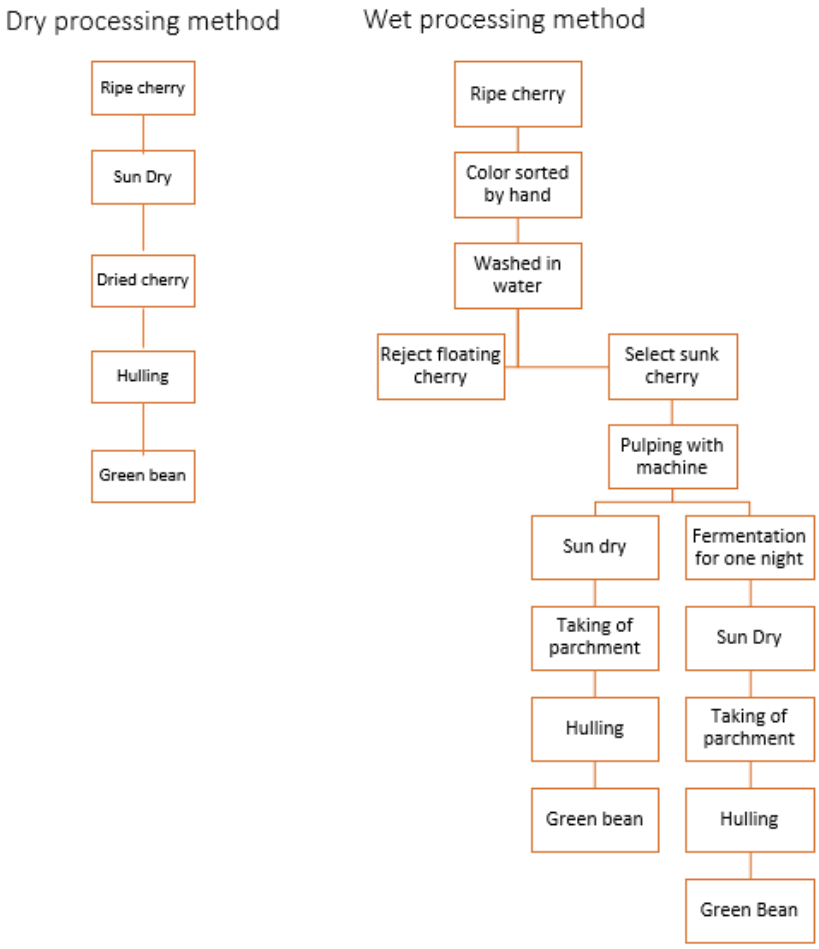

Figure 12: The dry and wet processing methods

[28] Edward Winston, Jacques Op de Laak, Tony Marsh, Herbert Lempke, Okkar Aung, Thaung Nyunt Keith Chapman: Arabica Coffee Manual for Myanmar; FAO Regional Office for Asia and the Pacific, Bangkok, Food and Agriculture Organization of the United Nations, August 2005

A significant number of coffee trees in the Thandaunggyi area are over 10-15 years old. Because no proper maintenance has been applied, it has caused crop yields to decrease considerably to approximately 7-10 buckets per acre. This continues to shrink each year, which makes replanting necessary.

In general, farmers do not have the habit of selecting or distinguishing different varieties (Arabica or Robusta), different bean size or different bean quality. Because Arabica coffee is only grown in small quantities and difficult to sell in these volumes, farmers tend to mix Arabica with Robusta coffee before selling to village traders. This leads to quality issues and difficulties with roasting for processors.

Price fluctuations have affected farmers' production strategies. Due to low prices in 2013-2014, several farmers cut down their coffee trees to replace them with other crops. When the price went up again after 2014 and interest for Robusta coffee grew, farmers regained their interest and planted Robusta coffee trees.

4.1.2 Input supply

As mentioned above, coffee farmers in the Thandaunggyi area do not use fertilizers or pesticides to ameliorate the soil nutrients or improve planting conditions, making coffee production organic by default.[29] The majority of the costs for growing coffee in Thandaunggyi involve labour fees for land preparation, digging the soil, seedlings planting and picking cherries at the harvest. Most seedlings are naturally grown under the bigger 'mother trees', although MoALI has been distributing seedlings from their nursery free of charge.[30] Considering that no pesticides or fertilizers are used in the Thandaunggyi area, most of the production costs for farmers are thus the labour charges. On average, those costs come down to 450,000 MMK ($ 286)[31] per acre. But although costs are low, the use of low-quality planting material will affect future productivity of the farmers' coffee trees, which will eventually affect their incomes.

[29] In future, this could provide opportunities to get organic certification. Quality improvement is however necessary first to become eligible. Moreover, certification requires investment which is not realistic for the value chains stakeholders at this point.
[30] About 70% of the farmers use offspring from their trees, while 30% indicated they received the plants from MoALI.
[31] Exchange rate as per 11/12/2018.

Table 2: Calculation of cost for one acre of Robusta in Thandaunggyi

Sr.	Activities	Unit	quantity	Rate	Total (MMK)
1.	Cleaning farms by burning bushes	Acre	1	100,000	100,000
2.	Ploughing	places	435	25	10,875
3.	Digging	Hole	435	200	87,000
4.	Nutrition and covering holes	Hole	435	200	87,000
5.	planting	plants	435	50	21,750
6.	Cleaning base of plants	Time x plants	4 x 435	50	87,000
7.	Mulching	plant	435	50	21,750
8.	Watering	Time x month x plants	2 x 4 x 435	10	34,800
	TOTAL Labour charges				**450,175**
9.	Cow/pig waste as fertilizer	holes	5	60,000	300,000
10.	Transportation nursery plants	pants	435	150	65,250
11.	Organic fertilizers	average		20,000	20,000
12.	Tools	Plant x rods	435 x 3	250	1,305
	TOTAL materials (if indeed used)				**386,555**
	TOTAL COST PER ACRE				**836,730**

4.1.3 Extension services

The DoA has started to provide extension services in coffee production to the coffee growing communities in Leik Tho, as the government has established a coffee extension office in Kyauk Taing with its own coffee plantation and a demonstration farm. This Kyauk Taing coffee farm plays multiple roles: research and development, the distribution of new seedlings from their nursery to farmers (free for charge), organizing coordination meetings to exchange information and providing training. However, capacity and budgets are low, and only few extension officers are available on the farm. Yearly, only two training sessions are provided. Therefore, a farmer-to-farmer approach is applied to the training, but a need has been identified to scale up the services to township level. Moreover, trainings have only focused on production techniques, while farmers can also benefit from trainings in drying, processing, sorting, grading and marketing. The trainings have also mainly focused on growing Arabica, while most of the farmers in the Thandaunggyi area grow the Robusta variety.

Research and development are also a responsibility of the Kyauk Taing coffee farm. Together with Nestlé, a pilot coffee farm was set up from 2013, during which farmers from 49 village were trained. Although the pilot project ended in 2016, the Kyauk Taing coffee farm still plans to build

their own Robusta coffee research & laboratory centre as well as three drying buildings with each a pulping machine and a roaster.

4.1.4 Processing and trading

Village collectors/hullers

Village collectors often take up the role of pre-processing the coffee beans by hulling the dried cherries with a hulling machine. Village collectors charge a service fee of 200 to 500 MMK ($ 0,13 – 0,32) per bucket. The hulling machines are mostly imported from China.

The farmers make the decision in which stage the coffee bean will be traded, whether as fresh cherries (500 MMK/$ 0,32 per basket), dried cherries or green beans (2000-2200 MMK/$ 1,27-1,40 per viss).

Some farmers take loans from the village collectors (generally at a monthly interest rate of 4 to 5%) and in that sense depend on them. Village collectors in turn borrow from Taungoo traders (also for a monthly interest rate of 4 to 5%) and get 7-12% commission on the volumes traded.

Taungoo traders

There are about 20-25 trade houses in Taungoo, who also trade other crops from the region (such as cardamom) next to coffee. The traders distinguish three different colours of the coffee beans: 1) types that are over 20% yellow, which comes from Thandaunggyi, and has a better fragrance than the other types, 2) yellowish green (mixture), which has a bitter taste and is therefore preferred by the Chinese market, 3) those that are about 80% green, which is from Leik Tho and Baw Ga Li.

The Taungoo traders provide loans to the village collectors or directly to the farmers, who repay their loans at the time of harvest. About 90% of the farmers take loans from the Taungoo traders. The price of the coffee is often set in advance, mostly based on the price of the previous year. The traders in Taungoo mainly sell to one Chinese buyer who buys all the cash crops from the traders.

Due to the improved infrastructure and transportation to Taungoo, and due to the direct communication with roasters from Yangon and Shan State, some farmers sell directly to roasters and pay off their debt directly to them.

Chinese importers

Most coffee from Thandaunggyi is sold to one Chinese/Myanmar buyer who has a long-term relationship with the Taungoo traders. The green beans coffee is bought without any further intervention to improve the quality of the product. On average, yearly 500 tons is exported

through the Chinese buyer, which makes the Thandaunggyi coffee production and trade largely dependent on the Chinese market.

The Chinese buyer's representatives are in Mandalay and Shwe Li (at the Chinese border). The dependency on one single buyer who determines the price, means that there is little opportunity for price negotiations or quality-based pricing. Therefore, the Taungoo traders add little value to the coffee except for cleaning the beans and distinguishing colours by hand-picking. Coffee trade, though generates the highest revenue for these traders as compared to the other crops.

Local processors/manufacturers

Next to export to China, about 120,000 viss coffee is sold yearly to the domestic market. This is a niche market consisting of coffee retailers who sell coffee mainly in souvenir shops but also for local consumption. There are about four to five of these local processors[32] in Taungoo and Thandaunggyi. This coffee is mostly sold as espresso, a mix of 70% Robusta and 30% Arabica. A couple of local traders[33] have started coffee processing, packaging and selling to these local wholesalers and retailers in Taungoo and Thandaunggyi. The Myanmar Coffee Association (MCA) has brokered and supported the linkages between the local traders and manufacturers.

Processing of coffee is the next important step to improve the quality and taste of coffee. As the farmers usually do not distinguish different types, size and quality of the coffee beans, high skills are required to properly roast the coffee.

Box 2: Effects of no quality control in Thandaunggyi

A leading instant coffee manufacturer from Myanmar explained that as they get different bean sizes, mixed colors and non-cleaned coffee supplied from Thandaunggyi, they often needed to redo the cleaning process which leads to reduced volumes and higher costs. The producer therefore decided to change their strategy and instead import coffee from Brazil, Vietnam and Laos which has led to a better-quality product.

4.1.5 The end market

As mentioned, most of the coffee from Thandaunggyi is sold in the form of coffee beans to the local or Chinese market. Of the farmers interviewed, about 70% of farmers sell their beans to wholesalers, 20% to retailers and 10% to others, such as direct consumers. A large majority of farmers (90%) indicated that they do not know how to promote their product. Only 10% had attempted to get their coffee graded for quality and informed their buyers on this. Most farmers are not aware of developments in the national and international coffee market. To the question who the farmers prefer to sell their coffee to, 40% preferred to local manufacturers and 40% to

[32] Those include Linn Coffee (who also sells in other parts of Myanmar), Everwin Coffee, Poe La Min Coffee, Genius Coffee, Sithar Coffee and Karen Coffee.
[33] U Saw Bo Thar from Thandaunggyi and Lin from Leik Tho.

exporters. In choosing their preference, 90% indicated that they find a secured market more important than a better price.

The traders who sell to the local market receive support from the government to promote especially Robusta coffee from Thandaunggyi. The government (in collaboration with the Japan International Cooperating Agency) has supported them in advertising their products, providing them a loan for a coffee processing facility and technical support. Nestlé has showed interest in coffee from Thandaunggyi in the past, and through a MoU with the MoALI they have been training farmers from the Kyauk Taing demonstration farm. But after this pilot project, they were unable to find the volume they were looking for and activities ended.

Although domestic demand for specialty coffee is increasing, competition is too. There has been an expansion of coffee farms in the Kayin, Chin and Kayah states. One way to distinguish coffee from Thandaunggyi is to improve the quality. At the same time, as the China buyer pays the same price for different levels of quality, there is not much incentive to invest in better quality. The Myanmar buyers also only have a limited interest in better quality (as the domestic market as different demand, such as a bitter taste, than for example the European market). This context hinders the willingness to invest in improving the coffee quality. However, farmers have indicated that they are willing to produce better quality if there is a market that is also interested in this quality. This means that they are interested to explore alternative markets.

4.1.6 Overview of the value chain

Based on the above, the following value chain map can be drawn:

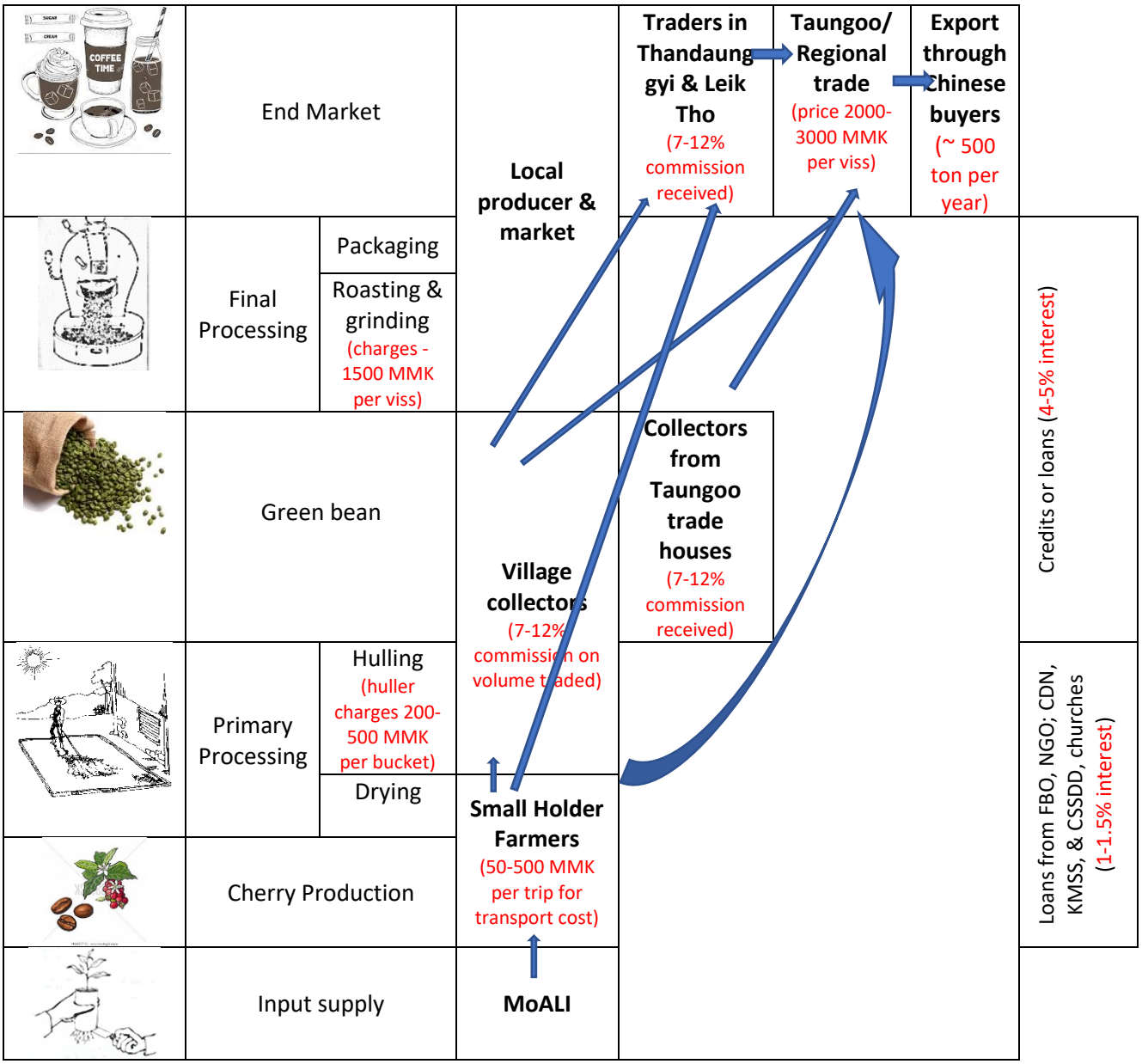

Figure 13: The coffee value chain map starting from Thandaunggyi

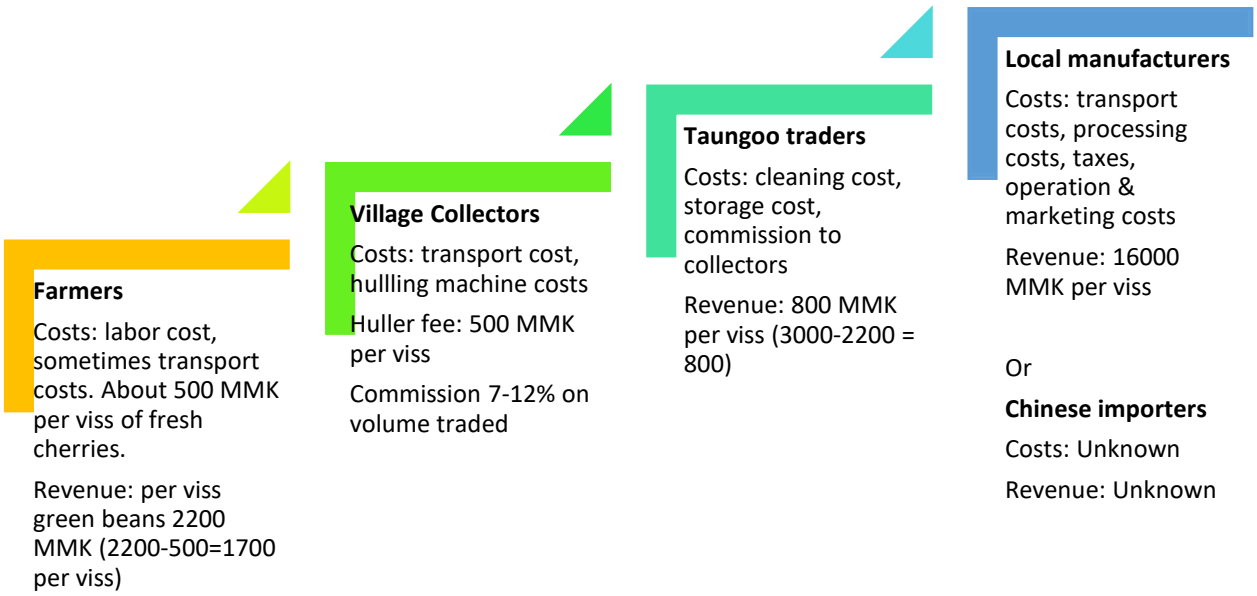

Figure 14: Costing and build-up of price[34]

Generally, the coffee from the Thandaunggyi area follows one of the below routes:

Channel 1 (the export route): Farmers – (Village collectors) - Taungoo traders – Chinese importers. This channel accounts for nearly 500 tons yearly and is the main channel used.

Channel 2 (the domestic market route): Farmers – (Village collectors) - Local processors/manufacturers – Local consumers. This channel became the second biggest channel after 2016, due to increased coffee consumption in the domestic market and active promotion of Thandaunggyi coffee.[35]

Channel 3 (the souvenir shop route): Farmers – Local village collectors and processors – Souvenir shops/local retailers - Consumers. This channel is relatively new and only small amounts of coffee are traded through this route.

Generally, farmers are currently not involved in bulking production, hence village collectors or traders buy coffee from individual farmers. Several factors influence the farmers' choice not to bulk: it is difficult to determine strategic collection points in the hilly area of Thandaunggyi; a lack of access to finance forces farmers to take loans from traders, which predetermines their buyers and hampers selling as a collective; and the farmer groups in their current set-up are not strong enough (yet) to collectively strategize in overcoming these challenges in the project area.

[34] Unfortunately, we were not able to collect data on the price that the Chinese buyers offer for coffee from Taungoo.
[35] Unfortunately, we were not able to collect data on amounts traded through channel 2 and 3.

4.1.7 Finance

Income from coffee is received only after the harvest; therefore, most farmers depend on village collectors, traders from Taungoo, NGOs and religious faith organizations for their household and agricultural financing throughout the year. Christian organization such as CSSDD provide farmers with loans of max 100 lakh MMK for a 1%-1.5% interest rate. In some villages, PACT Myanmar's financing program provides loans of maximum 10 million MMK for each farmer. Trade houses from Taungoo and village trader give out loans for a monthly 4%-5% interest rate with a return scheme during harvest time. None of the farmers or traders in the value chain borrows money through formal financial channels such as banks.

4.1.8 Government strategy and policies

In the past years, the government has tried to promote the production and trade of coffee from Myanmar. Since 2016, it has been working on a national coffee strategy,[36] engaging many coffee stakeholders to provide input tor this strategy[37]. As part of this strategy, a national expansion plan for coffee has been formulated by the MoALI, where plans have been set out to plant 5,000 of coffee plantations between 2018-2030 and to produce about 15,000 tons of coffee beans by 2030 on these plantations[38].

As part of these efforts, Kayin State has been identified as a key coffee production area for both Arabica and Robusta varieties that would be supported. The DoA has set up a coffee extension office and research station in Kyauk Taing to reach out to more farmers in need of technical and marketing assistance. From this extension office, it has distributed coffee seedlings and has offered training to farmers. Some of these training focused on Arabica, and most seedlings distributed were Arabica, as it is expected to fetch higher prices on the market. This has raised the interests of farmers to start growing Arabica next to Robusta. The DoA plans to set up more demonstration farms in Kayin State in future. It has also organized product exhibitions in the past together with the Ministry of Trade and Commerce, which provided an opportunity for processors to showcase their coffee products.

In addition to the realized support, the DoA aims to plant an additional 10,000 acres of coffee plantations in 2017-2018 in Kayin State. The government has also planned to promote coffee from the Thandaunggyi area as an ASEAN Organic Zone area to produce organic products and distribute seedlings for 1000 acres of organic coffee plantations in 2018-2019. However, at the

[36] To date, this strategy has not been finished yet and still under development. See https://www.mmtimes.com/business/22908-myanmar-moves-to-jump-start-coffee-cultivation.html.
[37] For example, coffee stakeholders were invited by the government to a coffee forum in Nay Pyi Taw on 17 August 2017, during which inputs for the coffee strategy were formulated.
[38] See http://www.globalnewlightofmyanmar.com/boosting-coffee-plantation-myanmar/

time of research it was unclear to what extent these plans had been realized and what future plans for this zone are.

4.1.9 Organization of the value chain

In and around Thandaunggyi, there is no formal value chain organization for coffee. There are farmer groups who deal with multiple crops, but there is no organization that deals specifically with coffee, such as a coffee trader association or a multi-stakeholder platform. Most coffee traders and processors in Thandaunggyi and Taungoo are small business owners who are also not affiliated with the Chamber of Commerce. In 2016, a coffee stakeholder group was formed by the government but due to lack of technical assistance and commitment it has largely become inactive. The Myanmar Coffee Association (MCA) has been providing some support in linking farmer groups with traders and local retailers, but no local organization like the MCA exist. Moreover, the MCA has mainly been focusing on Arabica and not on Robusta, which means that in practice, support from MCA has been limited so far.

V. OPPORTUNITIES AND CONSTRAINTS

Although there is potential for developing the coffee value chain in Kayin State, there are also several constraints when it comes to product quality, marketing, and trading.

Table 3: Summary of opportunities and constraints for the coffee value chain in Thandaunggyi

Value chain activity	**Opportunities**	**Constraints**
Production	• Rich and fertile soil with low and high elevations suitable for growing both Robusta and Arabica coffee varieties • There is potential to expand plantations and increase volume of production • Production is organic	• Farmers lack basic skills and knowledge to improve coffee production and quality • Poor-quality seed(ling)s obtained from China are still being used by most farmers • Production areas are far from trading centres which causes high transport costs • Farmers lack access to quality extension services to improve plantations and production

Input supply and extension services	• A government extension office in Kyauk Taing has been established and can assist growers in coffee variety selection and promotion of appropriate technologies for drying, processing and product quality improvement	• Capacity of government extension agents to provide quality technical assistance is inadequate • Trainings and nursery plants have been focusing on Arabica, while most farmers grow Robusta
Post-harvest handling and processing	• Coffee is a non-perishable product that can easily be transported and stored without damage • Proper post-harvest techniques and practices have been developed that the farmers could learn	• Farmers lack knowledge in proper harvesting, drying and processing which results in low quality • Farmers mix different varieties, colours and sizes of coffee beans which makes it less interesting for buyers
Trading and marketing	• The growing middle class in Southeast Asian countries are a potential market which provides opportunities for Myanmar coffee • Myanmar coffee has the potential to qualify as specialty coffee as determined by SCAA thereby improving its potential to access international markets	• No bulking of production is done by farmers, hence forging a solid marketing tie with good and established buyers remains difficult • There is only one Chinese buyer who buys most coffee and determines the price • So far, this Chinese buyer has not shown interest in paying prices according to quality, also reducing the motivation of other buyers to do so • Even though there is a growing demand for coffee in Southeast Asian countries, there is also fierce competition from neighbouring countries (Laos, Vietnam, etc.) who produce better quality

Organization of the value chain	• A coffee stakeholder group was initiated by the government in 2016 that can be reactivated to support planning for coffee development in the area • The Union of Myanmar Federation of Chamber and Commerce and Industries (UMFCCI) and the Myanmar Coffee Association can support establishment of a coffee stakeholder group in the Thandaunggyi area • The government has been developing a national coffee strategy. Although not finalized yet, this might provide momentum for further action	• Coffee activities in the Thandaunggyi area have been uncoordinated so far • Due to a lack of coordination, there has been no clear strategy for strengthening and investing in the value chain to improve the area's competitive position
Access to finance	• The government and other financing institutions have available credit lines that can be tapped by coffee growers and processors[39]	• Most farmers do not have access to capital, limiting their ability to make investments in volume and quality • Government and other financing institutions are reluctant to provide loans due to lack of organization or association in the area

[39] An example is the microfinance program by Pact, World Vision and several Christian churches, which provides loans to households to start up livelihoods and income generating activities (not directly related to agriculture). The bank "A Bank" has recently launched agricultural value chain financing for farmers' cooperatives, who can become eligible for a loan when they have a buying agreement with a buyer or processor. There is also an SME loan program from the Ministry of Industry, from which coffee roasters/processors and other related businesses can make use. In Shan State, the Rabo Bank supports coffee farmers through the Winrock Project with help of the Myanmar Coffee Association. Perhaps Rabo Bank might also be interested to support coffee farmers in Kayin State.

For the formulated constraints, the following solutions are proposed.

Table 4: Proposed market-based solutions to identified constraints in the Thandaunggyi coffee value chain

Constraints/Opportunities	Market-based solutions	Potential provider	Constraints to apply the solutions	Project interventions to address these constraints
Production				
Farmers lack basic skills and knowledge to improve coffee production	Increasing and improving extension services to farmers on improving coffee production techniques and plantation management	Department of Agriculture (DoA) extension agents, NGOs, agri-businesses.	Need for increased capacity of government extension agents on improving coffee production, lack of resources by the government, agri-businesses are not linked or have no interest in Kayin coffee growers yet.	Specialized, practical training for extension agents on improving coffee production and crop husbandry, making use of existing knowledge of main coffee centres such as Pyin Oo Lwin and Ywangan. Creating interest and build business linkages with (local) agri-businesses interested in sourcing coffee from Kayin who can provide inputs and extension services to farmers.
Poor-quality seedlings are used by most farmers	Provision of good quality and high-yielding coffee seeds/ seedlings as planting materials to replace old China variety	Department of Agriculture (DoA) through extension office	Good planting materials may not be readily available locally, lack of resources by the DoA	Collaborate with Kyauk Taing demonstration farm to explore opportunities for project area. Alternatively, obtain planting stocks from nearby countries and establish plant nurseries. In the meantime, provide an awareness training for

				farmers on the benefits of saving good seeds.
Production areas are far from trading centres which leads to high transportation costs	Synchronize harvesting in order to bulk transport of coffee products and establish common collection points	Village collectors and traders	Farmers may not be able to follow schedules of collection and transport	1) Establish common collection points where farmers will deliver products according to agreed schedules 2) train farmers in harvesting planning
Input supply				
No fertilizers or pesticides used, which keeps productivity low	Explore opportunities for organic fertilizers	Department of Agriculture (DoA), NGOs	These might not be available in the local market or too expensive	Exploration by extension services to what is available in terms of organic fertilizers. In addition, train and motivate farmers in soil conservation and applying organic compost. This combination has turned out to be the best option to keep the coffee organic.
Need for increased capacity of government extension agents to provide quality technical assistance	Enhance or upgrade the capacity (knowledge and skills) of government extension agents on coffee production,	Department of Agriculture (DoA)	Not enough resources from the government to finance capacity development of their extension agents	Solicit support from external donors to finance a capacity development program for government extension agents on coffee value chain development. Such a

	processing and marketing			program should be designed in cooperation with all coffee stakeholders including farmers to make it suitable for addressing local needs.
Post-harvest handling and processing				
Farmers lack knowledge in proper harvesting, drying and sorting, resulting in low quality of beans	Equip farmers with the right skills and knowledge on harvesting and drying	Department of Agriculture (DoA) extension agents, NGOs	Farmers interest may decrease if they do not get a better price for improved production	Sensitize farmers on the importance of adopting proper harvesting and drying techniques as it relates to better prices, work with other stakeholders to motivate them to pay a price based on quality
Marketing and Trading				
Farmers do not bulk production, hence building strong linkages with good and established buyers remains difficult	Introduce product bulking to improve producers bargaining position and negotiate better prices with established and reliable buyers	Department of Agriculture (DoA) extension agents, Myanmar Coffee Association, and NGOs	Farmers and producers may not be interested in bulking	Train and facilitate strong collaboration among producers (for example by building on the Crop Producer Groups as established by CDN-ZOA and partners), raise awareness on the benefits of bulking, facilitate marketing contracts with established buyers for clear demand which increases farmers' motivation to bulk.

Low capacity of producers and roasters on tasting and grading coffee, resulting in inconsistent quality being marketed	Train and involve producers, roasters, processors and traders on tasting/cupping and grading	Myanmar Coffee Association, (international) buyers	Lack of coordination between stakeholders who are involved in cupping and grading	Institutionalize cupping and grading activities among producers and roasters in the area by organizing a local coffee association
Matching coffee production with a good market is difficult due to poor-quality products	Improve coffee quality production that meets the market standards	Department of Agriculture (DoA) extension agents	Lack of interest of farmers to improve coffee quality according to market standards due to lack of incentives	Train farmers and involve downstream value chain stakeholders to show the profitability of good quality production
Weak competitive position of Thandaunggyi coffee (also because of good quality coffee production in other countries) makes it difficult to enter alternative markets	Further market analysis and research on specific demand needed to determine details of a further strategy	Department of Agriculture (DoA), NGOs, Myanmar Coffee Association	Being able to compete in global markets might be difficult and requires long-term investments	Government to formulate a strategy and action plan, alternatively explore opportunities in the domestic markets
		Value chain organization		
No organization or coordination of the coffee value chain in the Thandaunggyi area	Facilitate the establishment of a Multi-Stakeholder Platform to serve as an anchor organization in the development of coffee value chain in the area	Government extension agents, Myanmar Coffee Association, traders, processors, farmers groups, NGOs	Difficulty in bringing together various coffee stakeholders with different business interest	Explore opportunities to reactivate the 2016 coffee group, apply lessons from cardamom MSP (as set up by SNV in 2017 under the LIFT project)
		Finance		

Most farmers do not have access to capital which limits investments in productivity and quality	Train farmers in financial management, facilitate access to capital	Government, NGOs, other financial institutions	Farmers are not able to fulfil the requirements for loan assistance as prescribed by the lending institutions	Assist farmers to become eligible in acquiring loans from government lending programs or other financial institutions. Farmers can also be assisted in getting form 7, which they need as collateral to apply for a loan at a bank.
Government and other financing institutions are reluctant to extend loans due to lack of organization or association in the area	Facilitate organizing of farmers organizations or association to serve as conduits for government lending program	Government financial institutions, NGOs, government extension agents	Due to bureaucracy, loan assistance may not come on time	Facilitate coordination between and among government lending institutions and farmers organization

VI. FINAL RECOMMENDATIONS

Based on this analysis, we suggest considering the following (short-term and long-term) interventions to strengthen the coffee value chain in the Thandaunggyi area, will there be a next project phase.

Most production challenges are a result of a lack of awareness and organization of farmers. By **strengthening farmers groups and training them on multiple topics** such as crop husbandry, the need for good quality seedlings, improved growing methods, improved post-harvest handling and drying techniques[40] could be the basis of a longer-term training program for the farmers. Such a long-term training program would require regular follow-up visits to support farmers in applying the techniques in practice. Strengthening farmers groups also provides the basis for bulking production and joint collection schemes.[41] Naturally, such training and strengthening farmer groups would be the role of the DoA extension agents. However, we have seen that, though DoA has specialists available, limited resources are currently a barrier to deliver appropriate, high-quality training to all farmers in the area.[42] We therefore suggest that future activities focus on providing such trainings to the farmers together with the DoA extension officers to support building their capacity. We also suggest supporting the DoA in **further development of extension services** and bring in national and international experts where needed.

Making farmers understand what the market demands can provide additional motivation for the farmers to start investing in quality improvement. By **setting up a new Multi-Stakeholder Platform (separate from the cardamom MSP)**, direct contact between farmers and buyers/traders can be facilitated. Such a platform should preferable involve all stakeholders of the value chain in Thandaunggyi (farmer representatives, village collectors, Taungoo traders, extension officers, local buyers)[43] for better coordination and communication across the chain. Activities could include regular meetings during which updates on market dynamics are exchanged, workshops to train stakeholders on specific topics (processing methods, pricing mechanisms, etc.), setting up a standardization (and traceability) system for grading coffee

[40] While we acknowledge that the wet processing method leads to better quality beans than the dry processing method, we doubt whether switching to the wet processing method in the Thandaunggyi area is realistic as it requires significant investment in equipment and volumes of water, while the Robusta brings much less profits than Arabica. This could possibly be solved by establishing a central wet processing facility –however, further research on the feasibility is needed.

[41] The DoA has had a positive experience with establishing a coffee collection center in Mandalay, where farmers deliver their production and quality control and grading can be promoted. This concept could also be explored for Thandaunggyi.

[42] When it concerns training in drying, processing and roasting, other stakeholders such as local processors could also benefit.

[43] While ideally this should also involve international buyers, we do not consider this as a realistic scenario. Alternatively, a coffee expert who is knowledgeable about the demands from the international market could attend meetings or provide presentation/workshops.

beans, developing joint strategies for further strengthening of the chain and advocacy strategies to improve the business environment.[44]

The **MSP should also directly engage with (national) government policies and strategies**. While the government has formulated the ambition to strengthen the national coffee value chain and has made some initial investments, the MSP could pressure for more concrete action and provide input regarding specific needs for the Thandaunggyi area. A next project phase could focus on **developing a Kayin State coffee strategy** (as Kayin state is the only state with most of the farmers growing Robusta) as an input to the existing national coffee strategy. The MSP could play a key role in assessing all stakeholders' needs and formulating the Kayin State strategy. Such a strategy should be built on a detailed analysis of local production, (local) demand, capacity and potential involvement of the government and others, looking at how the market position of Robusta in the (domestic and global) market can be improved through the efforts of local stakeholders (including processors, traders, exporters, research institutions, financial service providers, etc.). The project could hire a consultant to assist the MSP in the analysis, and stakeholder workshops could be organized by the project to facilitate a participatory process to develop the strategy and formulate concrete objectives. The strategy could distinguish short-term interventions (focused on for example quality improvement, organizing farmer groups and bulking) and long-term interventions (looking at the policy/advocacy side, for example arguing for investment in extension services). It is estimated that the development of such a strategy, including collecting all the inputs and consulting the different stakeholders, will take approximately 6 months.

We noticed that most of the discussion on improving the coffee value chain tends to focus on production, processing and local trading, but lacks the formulation of an articulated vision in terms of marketing. To realize improvements in practice, local production needs to be positioned in global market dynamics. In order to move away from the situation in which the coffee farmers and other stakeholders from the Thandaunggyi area depend on one Chinese buyer who only pays a low price, alternative markets that will pay a better price for good quality Robusta need to be explored for sustainable growth of the local coffee sector. But even though a sample of Robusta coffee from Thandaunggyi scored 84-87 (meaning that is has the potential to become categorized as specialty coffee), this does not automatically mean that it will find a market. The global coffee market is (over)crowded and highly competitive. Many neighbouring countries such as Laos already produce good quality coffee. A more **detailed end market analysis** could support the development of a realistic vision, the identification of suitable target markets and the formulation of a concrete strategy with steps how to get there. It might as well be that targeting the domestic market is a more realistic short-term scenario, while exploring international markets is a more suitable strategy for the long run. Therefore,

[44] As many stakeholders of the coffee value chain are also involved in cardamom, a coffee MSP could also be set up as a sub-platform or the two can even be merged.

such an end market analysis would also need to include research on the domestic market and especially focus on demand for Robusta.

Such detailed market analysis could also help the MSP in their engagement with the government. As mentioned, the drafting of a national coffee strategy was started, but concrete action plans have not fully materialized yet (or at least are not yet known to the researcher at the time of preparing this report). Coffee value chain stakeholders across the country would benefit from **priority setting and policy decisions by the government** on a vision, what to focus on (local or international markets), on allocation of budgets and on the formulation of a concrete program and interventions. We suggest therefore that future (project) activities should collaborate with the government to formulate a concrete action plan. Coffee value chain stakeholders can then link their activities and collaborate accordingly.

REFERENCES

1. Blouin, Arthur and Macchiavello, Roco: Strategic Default in the International Coffee Market; Reference number F-89305-CCP-1; International Growth Centre; August 14, 2017
2. Cambridge Economic Policy Associates Ltd: Agribusiness Country Diagnostic -Myanmar; Project of Global Agriculture and Food Security program (GAFSP) and International Finance Corporation (IFC); April 2016
3. Workshop Report; Myanmar Coffee Stakeholder Workshop; Thingaha Hotel, Nay Pyi Taw, 17; organized by Department of Agriculture-Ministry of Agriculture, Livestock and Agriculture, Win rock International, Myanmar Coffee Association; August 2017
4. Myanmar Coffee Value Chain, Myanmar (Burma) USAID Value Chains for Rural Development; Winrock International publication
5. Naki B. Mendoza; Myanmar's journey to specialty coffee and its lessons for smallholder farmers; Devex Impact Newsletter; May 6, 2016
6. Kim Valakone: Scoping Study for Development of Coffee Sector Strategy for Xieng Khouang Province, Lao PDR, LURAS Project; July-August 2016
7. Edward Winston, Jacques Op de Laak, Tony Marsh, Herbert Lempke, Okkar Aung, Thaung Nyunt, and Keith Chapman: Arabica Coffee Manual for Myanmar; FAO Regional Office for Asia and the Pacific, Bangkok; August 2005
8. International Coffee Council (ICC): Coffee consumption in East and Southeast Asia: 1990 – 2012 112th Session 3 – 7 March 2014 London, United Kingdom
9. Derek Byerlee, Dolly Kyaw, U San Thein, and L Seng Kham: Agribusiness Models for Inclusive Growth in Myanmar: Diagnosis and Ways Forward; Working Paper 133; Department of Agricultural, Food, and Resource Economics; Department of Economics; Michigan State University; East Lansing, Michigan 48824; May 2014
10. Coffee: World Markets and Trends, Unites States Department of Agriculture, Foreign Agricultural Service, June 2018
11. Winrock International (2018) Strategic Value Chain Analysis of the Coffee Sector in Myanmar

ANNEX I – RECOMMENDED ROBUSTA VARIETIES

Among the Robusta varieties, MoALI has recommend growing the following varieties as these have been proven to generate better yields.

Table: Recommended Robusta varieties

Sr.	Varieties	Yield (ton/ha)	Fruits/ kg	Type 1 (%)	Rust resistance
1.	TR4	7.3	777	70.9	High
2.	TR5	6.3	756	72.5	High
3.	TR6	5.6	792	75	Very high
4.	TR7	4.5	734	72.8	High
5.	TR8	4.2	657	68.4	High
6.	TR9	5.5	511	85.8	Very high
7.	TR11	4.2	747	67.2	High
8.	TR12	4.3	487	93.1	Very high
9.	TR13	5.2	498	53.1	Very high

ANNEX II – OTHER DATA ON COFFEE PRODUCTION AND TRADE IN MYANMAR

Table: Coffee production in Myanmar (2015-2016)

Region	Plant (Acre)	Harvest (Acre)	Yield (Ton)	Production (Ton)
Naypyidaw	396	396	0.17	71.13
Kachin	1680	1399	0.22	308.66
Kayah	1738	919	0.22	211.18
Kayin	9812	5707	0.30	1763.94
Chin	568	477	0.18	89.65
Sagaing	572	508	0.32	163.54
Magway	987	137	0.09	13.18
Mandalay	4851	2283	0.22	524.61
Shan	27635	17057	0.30	5245.82
Shan - South	10691	7035	0.22	1562.71
Shan – North	15061	9591	0.37	3594.58
Shan – East	1883	431	0.20	88.53
Bago	631	105	0.27	28.89
Ayeyarwady	43	-	-	-
Tanintharyi	279	42	0.26	11.05
TOTAL	**49192**	**29028**	**0.29**	**8431**

Source: Interview Kyauk Taing coffee demonstration farm (October 2018)

Table: Re-exports by all importing non-member countries (In 60kg bags)

Calendar years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Myanmar	0	4000	3000	5000	6000	3000	2000	1000	1000	0	1000	2000	1000	2000	4000	8000	-
Total	**3,716**	**4,425**	**4,905**	**5,181**	**5,335**	**4,919**	**4,505**	**4,294**	**3,676**	**4,252**	**5,198**	**5,311**	**5,535**	**5,970**	**5,965**	**6,013**	

Source: International Coffee Organization

Table: Imports by all importing non-member countries (in thousand 60kg bags)

Calendar years	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Myanmar	57	55	62	82	64	83	109	159	195	315	257	353	189	202	210	
Total	**16,290**	**17,233**	**16,920**	**19,535**	**19,494**	**19,881**	**21,480**	**22,968**	**22,739**	**24,932**	**25,764**	**27,259**	**28,787**	**29,049**	**29,819**	

Source: International Coffee Organization

Table: Coffee plantations in Thandaunggyi Township (2018-2019)

Sr.	**Sub-townships**	**Plant Acre**	**No of Household**	**Total Population**	**F**	**M**
1.	Thandaung	2875	5206	29093	14567	14526
2.	Leik Tho	5765	8732	53732	27561	26171
3.	Baw Ga Li	1109	3974	22599	11617	10982
	TOTAL	**9751**	**17912**	**105424**	**53745**	**51679**

Source: Interview Kyauk Taing coffee demonstration farm (October 2018)

Table: Coffee plantations in Thandaunggyi (2018-2019)

Sr.	**Village**	**Plant Acre**	**Coffee Farm Household**	**No of Household**	**Total Population**	**F**	**M**
1.	Thandaunggyi	116	30%	1161	7114	3573	3541
2.	Thandaung	24	10%	1301	6936	3552	3384
3.	Taw Pyar Gyi	460	80%	315	1618	818	800
4.	Mon Taing	236	70%	109	589	287	302
5.	Maung Nwet Gyi	375	92%	245	1476	730	746
6.	Leik Pyar Galay	166	70%	64	325	156	169
7.	Leik Pyar Gyi	201	80%	66	416	191	225
8.	Dar War Law Chi	117	37%	245	1354	647	707
9.	Shi So	74	25%	98	214	109	105
10.	Lel Kho Doe Ka	98	65%	70	198	101	97
11.	Ywa Gyi	106	15%	927	5203	2598	2605
12.	Si Pin Gyi	225	62%	197	960	478	482
13.	Si Pin Galay	28	37%	192	1534	756	778
14.	Kwyal Phyu Taung	285	67%	216	1176	571	605
15.	Lel Kho Doe Kho	109					
	Thandaunggyi township	**2875**		**5206**	**29093**	**14567**	**14526**

Source: Interview Kyauk Taing coffee demonstration farm (October 2018)

Table: Coffee plantations in Leik Tho Township (2018-2019)

Sr.	**Village**	**Plant Acre**	**Coffee Farm Household**	**No of household**	**Total Population**	**F**	**M**
0.	Leik Tho	-		502	3537	1820	1717
1.	Min Lan Taung Myo	193		207	1277	698	695
2.	A Lei Kyaung	609	94%	333	1987	949	1038

3.	Mine Lun	300	85%	275	1572	815	757
4.	Za Lei	764	95%	259	1188	577	611
5.	Thar Moe Taung	89	17%	217	1138	582	556
6.	Leik Tho Gyi	321	72%	168	1454	646	808
7.	La Phet Inn Gyi	205	64%	651	3238	1717	1521
8.	Hta Mon	83	12%	595	2697	1373	1324
9.	Kya Mine	86	7%	338	2250	1176	1074
10.	Kyauk Ta Ga	80	12%	229	1859	930	929
11.	Meik Thalin Taung	327	47%	285	1445	776	669
12.	Kyay Min	95	13%	210	1740	920	820
13.	Nga Pyaw Taw	86	22%	111	1039	550	489
14.	Thae Pyaw	123	59%	152	1338	696	642
15.	Ka Saw Pa Lo	55	47%	230	1785	969	816
16.	Chie Thu Saw	112	41%	366	2227	1132	1095
17.	Shan Lel Pyin Gyi	223	52%	463	1489	788	701
18.	Min Lan Taung	193	72%	212	1408	757	651
19.	Ngwe Taung auk	129	73%	176	679	327	352
20.	Shan Lel Pyin auk	300	80%	241	1896	998	898
21.	Kyauk Kyi Taung	181	67%	182	1518	760	758
22.	Kyay Ka Taw	128	67%	185	1655	915	758
23.	Taw Pone	177	72%	211	3430	733	697
24.	Ka Lay Kho	132	70%	377	2244	1155	1089
25.	Maung Kyaw	47	27%	135	1212	607	603
26.	Mauk Ba Lauk	50	44%	164	1321	661	660
27.	Kalay Hta	105	45%	513	2810	1444	1366
28.	Da Yoe	135	60%	228	1279	618	661
29.	Ho Thar Pa Lo	144	67%	165	884	471	413
30.	Maw Di Mo Li	155	73%	170	953	496	457
31.	Htee Thar Saw	148	70%	182	1183	585	598
32.	Thar Mi Taik	187	49%				
	Leik Tho township	**5767**		**8732**	**53732**	**27561**	**26171**

Source: Interview Kyauk Taing coffee demonstration farm (October 2018)

Table: coffee plantations in Baw Ga Li Township (2018-2019)

Sr.	**Village**	**Plant Acre**	**Coffee farm household**	**No of Household**	**Total Population**	**F**	**M**
0.	Baw Ga Li	-		435	2013	1029	984
1.	Kyauk Pon	208	80%	203	960	509	450
2.	Pyaung Tho	155	80%	132	650	326	324
3.	Saba Kyi	136	55%	278	1518	744	774
4.	Bo Kha Lay Kho		75%	164	1074	560	514
5.	Thalo Bwa	38	20%	159	1035	541	494
6.	Ho Chie	85	45%	160	1044	545	499
7.	Si Kae Doe	45	20%	164	1071	557	514
8.	Maung Daing Gyi	2	1%	115	752	391	361
9.	Yay Thoe Gyi	118	37%	296	1611	833	778
10.	Zin Taing Gyi	18	5%	173	1130	589	541
11.	Chaung Ma Nge	18	3%	180	1189	621	568
12.	Kyauk Phyar	16	3%	176	1149	598	551
13.	Ya Tagon	55	10%	241	1407	734	673
14.	Mae Ting Tain	35	10%	243	1473	776	697
15.	Tha Pyay Nyunt	40	10%	855	4523	2264	2259
16.	Bo Galay Ni	140					
	Baw Ga Li township	**1109**		**3974**	**22599**	**11617**	**10892**

Source: Interview Kyauk Taing coffee demonstration farm (October 2018)

Table: Costs and revenues of coffee production in Thandaunggyi

Coffee Data in Kayin State				Projected revenue per year/average farmer	
	Number	Unit			
Average trees per acre	435.00	trees		Production	625
Average yield/tree	1.25	viss		% losses	63
average production area/farmer	1.50	acre		Saleable volume	563
average selling price/viss	2,700.00	Kyats		Gross sales	1,518,750
picking cost/viss	150.00	Kyats			
Parchment/viss	150.00	Kyats		Less:	
Sorting, packing/viss	200.00	Kyats		picking costs	93,750
transport cost/viss	300.00	Kyats		parchment	93,750
Losses due to improper handling	10.00	%		transport	187,500
Amortization per tree	153.00	Kyats		plantation cost	76,500
Average trees per family	500.00	trees		(amortization)	
				Total	451,500
Plantation establishment cost	1,000,000	Kyat		Gross profit	1,067,250
Cost per tree	2,298.85	Kyats		exchange rate	1,300
Lifespan	15.00	years		Dollar value	821
Yearly amortization	153.26				

Source: Interview Kyauk Taing coffee demonstration farm (October 2018)

Table: The organic coffee "1000 Acre" project by MoALI

Sr.	List of small plants received			List of small plants distributed (May 2018)		
	Village	Farmers	Acre	Village	Farmers	Acre
Robusta	3	81	61.5	1	23	31
Arabica	13	897	938.75	3	118	125
Thandaung thu (Kwat thit -3) (Catuii)			5			5 (1000 plants)
TOTAL	**16**	**978**	**1001.25**	**4**	**141**	**156**

Source: Interview Kyauk Taing coffee demonstration farm (October 2018)

Table: The planning for new plantations in Kayin State by MoALI (as reported by the Kyauk Taing Coffee Farm, MOALI)

Sr.	Area	Details	2017-2018 Planted (Acre)
1.	Pha An districts		9660
	• Pha An township	10	
	• Hlaing Bwe	55	
	• Baw ga li	1079	
	• Thandaung – Leik Tho	5716	
2.	Pha Pun Districts		3
3.	Myawaddy		35
4.	Kawkareik Districts		114
	• Kawkareik township	69	
	• Phaya Thone Su	10	
	• Kyar In Seik Kyi	10	
	• Paing Kyon	15	

Source: Interview Kyauk Taing coffee demonstration farm (October 2018)

ANNEX III – SURVEY QUESTIONNAIRE FIRST ASSESSMENT

The following survey was conducted during the first assessment for this report.

MARKET ACCESS

1. What do you see as your main needs/opportunities in accessing markets?
2. To whom do you sell your product or service (large firms, small firms, wholesalers, exporters, retailers, direct to consumers, etc.)? What percentage goes to each?
3. How do you promote and market your products/services?
4. How strong is the market for your products/services right now? Next year?
5. Are some markets (customer groups) better than others in terms of sales and revenue growth? Which ones?
6. Do you ever collaborate with other firms on promotion and/or marketing?
7. Do you have a brochure for customers that describe your firm's capabilities?

TECHNOLOGY / PRODUCT DEVELOPMENT

1. What are your major needs/ opportunities in product design and manufacturing (or service delivery)?
2. What are your products and/or services in order of contribution to gross revenue?
3. What have you done recently to improve your products or services?
4. Please describe your important pieces of production machinery (type, age, make, features)
5. What kind of equipment or machinery could improve your business?
6. Do some of your workers need additional training? In what field / skills?

MANAGEMENT/ORGANIZATION

1. In the area of organization and management, what are your major needs/opportunities?
2. Who does most of the work in the areas of: general management/supervision, product design, purchasing, production, shipping, accounting, marketing, repairs, etc. (owner, employees, or external)?
3. What processes do you subcontract?
4. Do you sometimes collaborate with other firms to produce and deliver customer orders?
5. Which aspects of your business do you intend to change in the next 2 years (machinery, equipment, computers, new products, marketing strategy, quality control, management system, worker skills, etc.)?
6. What management skills would you like to strengthen in order to grow your business?

INPUT SUPPLY

1. What are your major needs/opportunities in the areas of input cost, quality, and availability?
2. Who are your most important suppliers and what do you buy from each?

3. Are there problems in obtaining some important inputs? Explain.
4. Have you ever purchased inputs jointly with other business? Explain.

FINANCE

1. Where do you go when you need money for your business?
2. Do you get credit from input suppliers? What are the terms?
3. Do you get production financing from your buyers? What are the terms?
4. Do you have need for additional financing now? If so, what would it be used for?

What sources (formal or informal) have you approached for loans, and what have been the key problems, if any?

BUSINESS MEMBERSHIP ORGANIZATIONS

1. Is your industry/trade sector represented by national or local business associations? If so, please name them.
2. Are you a member?
3. What are the primary functions and benefits of these associations?
4. What additional services should they provide?

POLICIES

1. What government policies/regulations benefit your business?
2. What government policies/regulations are obstacles to growing your business?

INFRASTRUCTURE

1. What are the most important infrastructure constraints affecting your business' growth and profitability (road/transport conditions, telephone service, electric supply, crime/corruption, storage, etc.)?
2. What is your industry doing about these problems?

FINAL OPEN-ENDED QUESTIONS

1. What do you think are the strengths of your industry locally and/or internationally?
2. What are the main weaknesses of your industry?
3. What do you think is the greatest challenge facing your industry today?
4. Can you name some business owners in your industry who are leaders –for example, in terms of technology, product design, quality, or marketing?