International Labour Organization

UNEARTHING THE POTENTIAL FOR INCLUSIVE GROWTH

A RAPID MARKET ASSESSMENT OF THE HORTICULTURE SECTOR IN SOUTHERN SHAN STATE

the LAB
MARKET SYSTEMS DEVELOPMENT FOR DECENT WORK

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This study was written by Aatif Somji and Steve Hartrich. The research team would like to thank all those who participated in the interviews and focus groups.

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1 Introduction

1.1 Project introduction

The Myanmar SECO – UN Cluster on Trade and Productive Capacity project was signed between the Government of the Union of Myanmar through the Ministry of Commerce; the Government of Switzerland through the Swiss State Secretariat for Economic Affairs (SECO); and the implementing UN agencies: UNCTAD, ITC, UNIDO, ILO and UNOPS. The first phase of the project is planned to run for four years (2018 to 2022) with a total budget of USD 4.8 million.

The project aims to enhance horticultural productive capacity and improve tourism development, management and promotion for the Inle Lake region of Shan State, Myanmar. The project intervention is expected to enhance the livelihoods of the local beneficiary communities through income generation and employment creation, thus contributing to poverty reduction.

The International Labour Organization has been engaged to assist the Myanmar SECO – UN Cluster project through its work on Market Systems Development for Decent Work (the Lab). In this regard, the Lab has been tasked with conducting market systems analyses of both subjected sectors. The market systems approach is an implementation methodology which aims to address the root causes of why markets may not be meeting the needs of poor people. The approach works within existing market structures, aligning incentives between different market actors – both private and public – to improve the likelihood that positive results are sustained and even independently scaled-up after intervention. The market systems analyses for both sectors will be used as a basis alongside the findings from the project's inter-agency mission (end of November 2018) to support the redesign of the project's implementation phase, such that future interventions target key market constraints which have been identified through critical analysis.

1.2 Objective

This rapid market assessment (RMA) serves as a first look into the horticulture sector market system in Southern Shan State and will be followed by a more extensive market systems analysis to be completed by the end of February 2019. The purpose of this RMA is to relay initial findings to the UN Joint-Cluster implementation team and identify the areas that will be reviewed in further detail during the market systems analysis (MSA). Thus, the findings reported in this RMA are not intended to be comprehensive nor conclusive but more informative.

This assessment has been based on a mix of secondary and primary research. Primary research was conducted during two phases: the inter-agency mission (last week of November 2018) and the primary research interviews specific to the market analysis (first week of December 2018). The former were a series of formal meetings with high-level staff in key sector organisations, while the latter included semi-structured interviews with prominent organisations, businesses, producer associations, NGOs, community organisations and key informants in Taunggyi, Pindaya, Kalaw and Aungban.

The first section sets the scene of the broad horticulture sector, and outlines the challenges that were commonly cited as limiting the growth of the sector. Based on further analysis of these challenges, possible underlying constraints are then identified according to the market system. Third, further areas for consideration for the detailed market system analysis are proposed. The final section goes into more detail on five specific horticulture sub-sectors, evaluating them according to certain selection criteria and putting forward a suggested scoring of the different sub-sectors.

2 Horticulture Market Overview

Shan State is the hub of horticultural activity in Myanmar. Stakeholders repeatedly informed the research team of the high fertility of the land, which is able to naturally grow a diverse range of horticultural products. Crops that are grown in Southern Shan State include: Tea, Coffee, Mango, Avocado, Tomato, Potato, Aubergine, Onion, Garlic, Ginger, Turmeric, Chilli, Chayote. Almost all of the horticultural products in Shan State are sold on as raw, primary goods.

Farm size generally varies according to crop. Tree crops such as avocado or mango tend to be grown by richer orchard owners with significant acreage (often upwards of 5 acres) while crops such as ginger and turmeric are almost exclusively grown by small-holder farmers, with average plot sizes of around 0.5 acres.

While Southern Shan State produces many different fruits and vegetables, an overarching concern relates to the poor quality of these products. This is generally viewed as a result of 'traditional' approaches to farming including reusing seeds from the previous harvest and the overuse of pesticide and chemical fertiliser. Poor quality produce limits farmer access to higher-value markets and in turn, higher incomes.

Significant price fluctuations of horticulture products have an impact on farmer behaviour. At the commodity market, it was identified that the price for quality ginger had increased from MMK 600 to MMK 1,000 per viss[1] (USD 0.23 to USD 0.38 per KG) during the course of the week, up from 200 kyat per viss from one year ago. This level of price fluctuation is indicative of considerable risk and suggests that monoculture is not advisable. Rather, as the land supports diverse crops, crop diversification is likely an effective way to minimise risk. Intercropping can also be a way to reap harvests at multiple times in the year which help smooth income, and to provide optimal shade conditions for cash crops (e.g. avocado planted alongside coffee).

Nearly all horticulture production is either consumed domestically or in neighbouring countries. Domestic produce is commonly sent to trading hubs in

1. Viss is the common measurement for goods of sale at the market in Myanmar. 1 viss is equal to 1.63kg.

Mandalay and Yangon, either directly via brokers or indirectly through wholesalers in Shan State (e.g. Aungban). Given the large tourism sector around the Inle Lake, some of the produce is consumed locally in restaurants and hotels. However, concerns are often voiced around food quality and food safety, which may be limiting the potential of the local tourism market. Informal cross-border trade is the most common route to neighbouring markets, where farmers send their produce hundreds of kilometres by road to the Chinese border at Muse and the Thai border at Myawaddy. Finally, there appears to be a nascent market for international exports to Europe and North America, based on high-quality, certified products such as Global GAP and Organic. Other potential international markets include formal trade with China and the ASEAN countries, which tend to have lower quality standards.

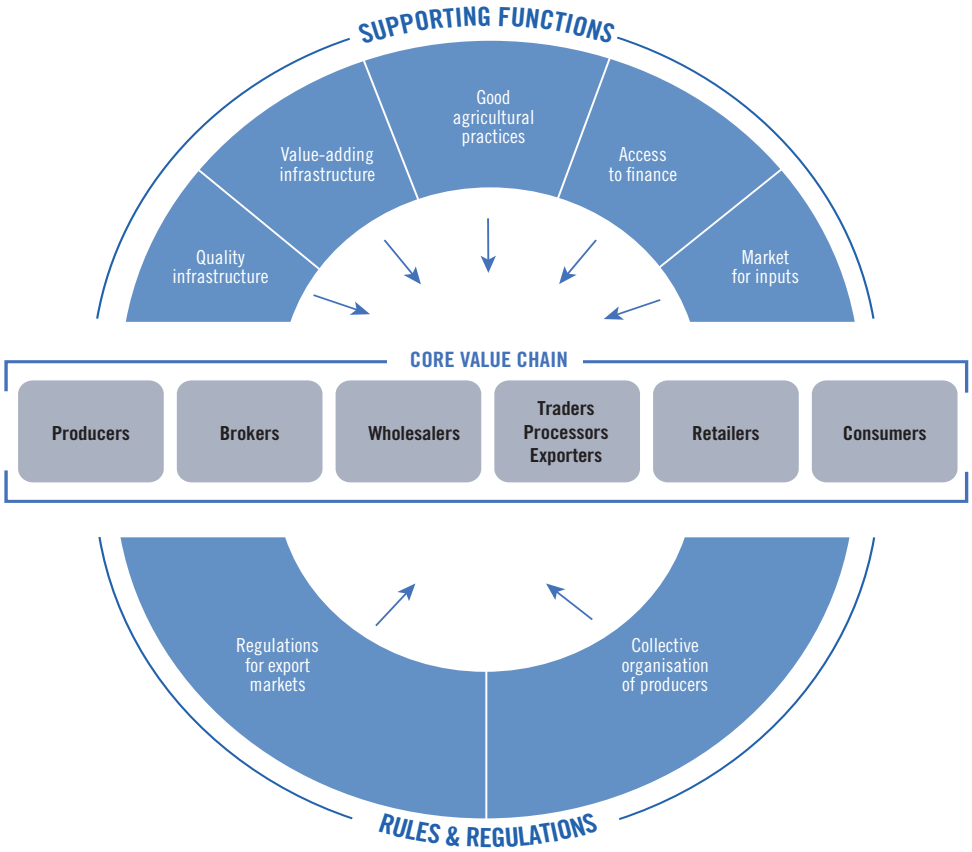
The Myanmar Fruit, Flower and Vegetable Producer and Exporter Association (MFVP) is the key producer association for the horticulture sector. Its main activities include capacity building of farmers, market information, marketing support and business linkages. The association also works extensively with donors, particularly in Southern Shan State. The local MFVP branch in the region has over 1,500 members and 8 specialised clusters including tea, coffee, mango, avocado, tomato and vegetables. However, MFVP membership appears to be structured simply as a loose collection of producers. Beyond this, there does not appear to be strong coordination or collaboration between them. For instance, none of the producers appeared to be aggregating their goods with those of others to sell in bulk with greater market power; rather, each engaged individually with various intermediaries to get their goods to market.

3 The Horticulture Market System

The market system is the overall picture of how a sector operates. The market system includes the supply-demand transactions in the core value chain - from producer to retailer to end consumer - and the 'supporting functions' and 'rules and regulations' that shape the way in which businesses and employees work in this core chain. The market system takes a broader scope because different actors in the value chain do not operate in a vacuum; their commercial success or well-being of the target group are influenced - directly and indirectly - by what happens in their surroundings. For example, financial services, which are a supporting function, do not directly operate within the horticulture value chain but strongly influence how businesses are set up, grow and operate.

Figure 1 shows an illustrative market system for the horticulture sector in Southern Shan State which includes a simplified value chain surrounded by the supporting functions and rules and regulations which strongly influence and constrain market performance. The market system varies somewhat by crop; however, a number of common constraints can still be established, as described below.

Figure 1: The Southern Shan State Horticulture Market System



3.1 Core Market

Limited value addition and market power:

As the vast majority or crops is sold in its raw form, the core value chain has little value addition and the movement of the product from producer to consumer is characterised by its trip through a series of intermediaries: brokers, wholesalers and commodity trading centres.

Both domestic and international supply chains have a relatively high number of intermediaries. Raw ginger was reported to pass through four intermediaries before arriving at the Bangladeshi border, still in raw form. The large number of different actors along the horticulture value chain is likely to lead to relatively higher prices for end consumers, while the limited ownership over the stages of the value chain by producers themselves is likely to lead to low added-value accruing to them.

In looking at another export example in more detail, raw mangoes pass through a number of hands before passing through the Chinese border. The process starts with communication between orchard owners and a delegate who is sent to Muse to gather information on market demand and price from commodity trading centres on the Myanmar side of the border. The delegate communicates prices to the producers and they decide how much produce to send over by road. By the time the produce reaches Muse, roughly 600 kilometres away, prices may have changed. At this point, farmers have already sent their produce and cannot feasibly bring it back so are forced to accept the prevailing market price. The delegate takes a service fee of MMK

100 per basket of mangoes (around 15 kg) and the mangoes are sold to the commodity trading centres who are responsible for the cross border trade. They sell the produce to brokers and wholesalers on the Chinese side of the border and take a 5% commission which comes out of the mango producers' revenue. Little is known about the produce once it crosses the border into China, though there are presumably a few more steps along the value chain before the product reaches the end consumer.

For the domestic market, very small-scale producers often sell their produce to local brokers who in turn sell it on to local wholesale markets, the most prominent of which is located in Aungban. Some small- and larger-scale producers transport their produce directly to the Aungban wholesale market, where they accept the highest price offered to them on that day. The farmers are generally price-takers, each acting as a very small player with limited access to complete market information. Even when they have limited information, it is subject to change through an opaque process. One small-scale farmer who was selling carrots was quoted a price of MKM 450 (USD 0.28) per basket in the morning, and by the time he got to the market in the afternoon, he said he could get a price of plus or minus MKM 50 –about 11% – from the same dealer. This is substantial amount of price fluctuation for any business owner, particularly for small-scale farmers with limited income.

Farming can be risky. It depends on getting the right inputs, applying them correctly and then not being hit by an adverse weather event, fungus or pest that destroys one's crops en masse. Even if everything during production goes according to plan, post-harvest losses can cut-down on the total produced crop and value that comes back to the farmers. One interviewee indicated that this is a challenge for both small-and large-scale farmers alike. For example, a mango producer indicated that post-harvest handling is not systematised and thus mangoes sometimes develop a fungus between the farm and end-market, rendering parts of his otherwise sellable crop as waste.

Market for high quality produce:

Low quality produce was frequently cited as a key challenge to developing the horticulture sector, coming from government, INGOs and farmer groups alike. In order to better understand this, it makes sense to analyse the incentives for farmers to produce at higher quality.

Current channels to reach the market such as local wholesale markets and border trade do not appear to pay a significant premium for quality. Therefore, farmers would have to link with new market channels in order to sell higher quality produce. Nascent higher quality markets do exist within Southern Shan, with private sector actors including farms (PRIME, Fresco) and processors/exporters (Heho Potato, Green Eastern Agri). It is unclear if producers have good information about these markets. Further assessment is also required regarding domestic and international demand for higher quality products and the appetite of these market players to engage with local producers.

Moreover, there are at least two significant barriers for producers to enter high quality markets. The first is investment in better quality inputs, which depends on the market for these inputs. The second is adherence to quality standards, a pre-requisite for export markets, which depends in part on the market for certification. Both of these are explored in further detail below. Finally, while the quality premium in high-quality markets may generally cover the costs of these barriers, price fluctuations may negate them.

3.2 Supporting Functions

Good agricultural practices:

Limited awareness of good agricultural practices by farmers was identified as a significant constraint to market development. The 'traditional' practices used by farmers, including the reusing of seeds from the previous harvest and the overuse of pesticide and chemical fertiliser, is likely to contribute to poor quality and yield of their produce. It seems that they may not have access to the technical knowledge required to increase the adoption of good agricultural practices. Another weakness identified was the limited technical capacity at the government level, which does not appear able to provide adequate trainings on this issue or valuable extension services.

One area for further research during the detailed market system analysis is to evaluate the technical capacity of input retailers, such as those of seeds and fertiliser. Companies with good technical knowledge may have an incentive to share this with farmers in order to build brand loyalty and help mutually scale up business operations. It would also be advisable to conduct a rigorous feasibility study of the long-term adoption of better agricultural practices to determine if the business case is viable and can be communicated to producers.

Market for inputs:

The quality of inputs such as seeds, pesticide and fertiliser were generally reported to be low. For example, there were several reports of non-native, cheap hybrid seeds being introduced – which require heavy fertilisation for cultivation. It was reported that some input suppliers sell heavy chemical-based fertilisers and pesticides which do little for the crop yields and cause long-term damage to the land.

High quality inputs are imported and generally much more expensive, which appear to limit their use among farmers and would make their produce less competitive both in international and domestic markets (where quality does not appear to be a strong determinant).

Value-addition infrastructure:

Storage, processing, and packaging were three steps commonly identified as areas which could strengthen the value of the horticulture market. However, all three would require significant capital investment which is challenging considering the fragmented agriculture market in which producers rarely seem to work together. Even for well-organised, large orchard mango producers, investing in cold storage or processing facilities did not seem to be something that had been strongly considered.

Storage facilities, such as cold storage, could extend the shelf-life of products and help mitigate post-harvest losses, which were cited as a concern by government, INGOs and MFVP. They would also provide a mechanism to sell produce more consistently throughout the year, allowing producers to sell outside of the often narrow harvest window for seasonal crops in which excess supply pushes down the price.

Picture 1: Tea processing equipment

Processing would allow greater value to be created from the products although, apart from a few facilities in Heho, the scale of processing in Southern Shan State is limited. Almost all fruits and vegetables in Shan State are sold on as raw, primary goods which limits the amount of value that can be extracted from the crop. The potential benefits of processing are particularly high for crops with a short harvest window, as it provides an additional market for produce that has excess supply for a short period of time.

Packaging seems relatively less of a priority, particularly if selling in bulk, but it would nonetheless assist with the marketing of produce from Shan State. For processed or more formally marketed goods, packaging is often imported from China and seems to be readily available and to a standard which is acceptable.

Quality infrastructure & Certification:

Quality infrastructure refers to the structures which assure national quality, safety issues and allow compliance with international trade requirements. Examples include technical regulation, standardisation, testing, inspection, certification and accreditation. Based on initial conversations with government, it appears that the ministries have limited capacities to deliver services along the various areas of quality infrastructure.

Certification is a key step to improving the quality standards, and therefore the potential value of the produce. This is most notably the case for export markets. However, this is a costly process, both in terms of the preparation involved to be ready for certification and the price of the certification itself (ranging from 5,000 to 10,000 USD for a medium-sized factory).

Producer certification is typically carried out at the request of processors, which limits producers to only selling to the holder of the certificate. Low willingness by processors to share the price premium would limit ability to improve farmer incomes. Group certification among producers might be an alternative way to enter these higher quality markets, but this requires significant capital expenditure, access to buyers as well as collaboration between producers – which appears to be lacking (see below).

In addition to certification, other key challenges related to quality infrastructure include the development of standardisation capacities, and the testing and certification capacity in Shan State.

Picture 2: Using solar dryers to reduce aflatoxin levels in chillis

Regarding standardisation capacities, the government is currently working to align Myanmar GAP with ASEAN GAP. It has also developed mandatory and voluntary standards for horticulture and fruit products in Myanmar. The development of an organic national standard has been initiated. Local testing capacities in Shan State are weak: critical tests for aflatoxin, heavy metal and pesticide residues are not available for the horticulture sector. The success story of reducing aflatoxin levels in chilli demonstrates the potential to improve food safety in Myanmar. Building on this accomplishment would improve consumer protection and export potential, contributing to sustainable development for the country. Certification capacity is relatively scarce: Control Union is the most active local operator while Guardian Independent Certification is also present but focused more on the processing sub-sector. A small but growing number of individuals and small firms providing services for agricultural extension, GAP and food safety could facilitate the promotion and use of quality and food safety standards.

Given the short timeframe associated with the research, quality infrastructure related to processed products was not reviewed to any extent and will be reviewed in further detail in the market systems analysis.

Access to finance:

Farmer access to financial services could finance the use of better inputs, farm labour or mechanisation – all of which could have an impact on the amount and/or quality of production. However, access to formal financial services is not easily available to farmers as the financial sector is largely nascent and has historically had a very limited presence in rural areas of the country. Even if farmers are aware of financial services, they are unlikely to have the collateral, formal financial history or business plan that banks require to lend to businesses.

In many rural settings throughout the world, access to smaller-scale, less formal finance is often available through microfinance. However, one interviewee indicated that microfinance is limited in Myanmar relative to surrounding countries (its penetration in rural Southern Shan State was not analysed during this study).

3.3 Rules and Regulations

Collective organisation of producers:

MFVP serves as the largest coordination mechanism for horticulture farmers within Myanmar and Southern Shan State. The organisation is volunteer-run and entry costs MKM 5000 (USD 3) with annual membership fees of MKM 1,000 (USD 0.60). MFVP's membership base is comprised mostly of export-oriented, large-scale producers with its main service being capacity building of members on food safety and input quality[2] as well as sourcing end-markets. MFVP does not gather farmers together to sell goods in bulk.

There appears to be a very weak appetite for collective organisation among small-scale farmers, with very few examples of cooperatives or other groups, formal or informal, that pool together to improve market power, voice or sharing of market information and practices. This may be due to persisting social norms linked to historical rules which discourage 'associations' (e.g. Unlawful Associations Act, 1908) and a top-down government approach which has historically encouraged subordination rather than cooperation.

Requirements for export markets:

This refers to technical regulations which are imposed by the government; international, regional and national standards; and voluntary sustainability standards. Concerning horticulture products in general, the requirements for export markets entail greater adherence to quality and food safety standards. Specific requirements are likely to vary according to the product selected and the destination markets. A more detailed analysis will be provided in the market system analysis once sub-sectors have been selected.

3.4 Next Steps

The analysis to be conducted in the next stage and completed by the end of February 2019 will take a more thorough review of the constraints to the two selected sub-sectors – both of which will be selected by the UN Joint Cluster implementing agencies based on the evidence presented in section 4. Through the upcoming market systems analysis, a deeper analysis will be conducted to reach a better understanding of each sub-sector, its constraints and their corresponding root causes. As a part of the upcoming market systems analysis, the following aspects will be reviewed in closer detail:

- The rules and regulations and how they impact the supply of inputs, production quality and standards as well as value addition and exports of the two selected horticulture sub-sectors;
- Quality infrastructure and standards and the extent to which they are accessible, understood, used and constrain the selected sub sectors;
- The demand-side of horticulture products for export; and
- The linkages between the two horticulture products and tourism market demand.

2. WinRock, FAO and GIZ project have funded these trainings

4 Sub-sector selection

A sub-sector selection exercise has been conducted to help the project identify two higher-potential sectors for which it could implement in a more focused manner. The sector selection research has been based on both quantitative and qualitative research and was conducted on five of the most prominent horticulture sub-sectors in Southern Shan State: ginger, avocado, mango, tomato and tea.

To evaluate the sub-sectors as objectively as possible, a set of selection criteria were defined before the research commenced[3]. These criteria can be categorised into three principle groups: the **relevance** that each sub-sector has to the target group of male and female farmers, workers and SMEs; the **opportunity** for future inclusive growth through local, national and international linkages to markets and the creation and improvement of jobs; and the **feasibility** of the project to drive sustainable change within the market system through willing and able actors, taking into account existing programmes and implementing agency expertise.

The matrix below compiles the primary and secondary data collected on a shortlist of horticulture sub-sectors for Southern Shan State. Each is scored from 1-3 (weak, medium or strong potential) according to the overarching three criteria to produce a total score out of 9. The scorings have been conducted as a means of prioritising implementation sub-sectors for the project.

3. Criteria was agreed upon by the UN Joint Cluster implementing agencies in October 2018.

GINGER

Relevance

Presence of target group

- Ginger supply chain provides seasonal employment for approximately 18-19,000 individuals in Southern Shan State.
- Production is undertaken mostly by smallholders, with average plot size of 0.5 acres. Almost all producers have less than 2 acres.
- Ginger is one of the main sources of income for about 10,000 households in six townships in Southern Shan.

Representation of women

- Tasks with the highest value, such as husbandry and land preparation, are traditionally performed by men. Weeding, harvesting, cleaning and sorting performed by women.

SCORE: 2

Opportunity

Scale

- Southern Shan State:
  - 51,000 Metric Tons (MTs); 85% of national production
  - 8,000 acres
  - 6.4 MTs per acre

- Grown mostly in:
  - Kalaw
  - Pindaya
  - Ywangan
  - Pinlaung
  - Hopong
  - Nyangshwe

- Higher yields than most major ginger-producing and exporting countries. Strong potential to be price competitive in international markets.
- 40% of production consumed domestically, 60% exported – mostly via border trade to China, India, Bangladesh, Pakistan.
- Border trade exports transported by road and ship. International exports done via cargo freight.
- Opportunities for processing, mostly for dried or ground ginger.
- Growing demand for high-quality ginger in Europe (Netherlands, Germany) and USA based on food safety, environmental and organic standards, primarily for higher value dried ginger and organic fresh ginger.
- Organic fresh ginger production cycle complements that of Peru, which could serve the US market.

Decent work

- Price premium for chemical-free ginger = 150%
- Organic price premium = 200%
- Increased production of higher-quality fresh and/or processed ginger has the potential to improve the incomes of farmers. If the market continues to grow, there is also potential for more farmers to crowd-in.
- Chemical-free/organic production methods would reduce hazards related to agro-chemical exposure, improving working conditions.
- For regular quality ginger, the cost to set up a plantation is K1-1.5m for one acre, which can yield revenues of K4-5m based on the current market price (K1,000/viss). Profit per acre of roughly K2.5-4m.
- Strong incentive for more jobs to be created in the ginger value chain, both for regular quality and higher-quality.

SCORE: 3

Feasibility	**Capacity of market actors** ▪ Farmers already producing ginger, but most goes to Aungban or other wholesale markets where price is key purchasing determinant. ▪ Most likely lacking technical capacity for better agricultural practices to stimulate change in the market system. ▪ Market for higher-quality produce may also not be evident to smallholders. ▪ Private investment in processing infrastructure (e.g. washing stations) for ginger already taking place in Southern Shan State (SPSH, Heho Potato, Green-Eastern Agri, Myanmar Agri-Business Group) and elsewhere in Myanmar (Organic Agroland, Naypyidaw). **Willingness to change** ▪ Right incentives seem to exist for switching to higher-quality ginger production. Need for technical assistance, ideally market-driven. ▪ Market agents able to facilitate large-scale change include processors and exporters. Direct trade between farmers and these actors would remove intermediaries and allow greater value to be maintained by producers. **Existing programmes** ▪ Winrock VC-RD: Shifting production to high-quality, residue-free/organic ginger, linking producers to buyers in high-value markets, supporting private sector development of processing capacity. ▪ ILO Vision Zero Fund: Awareness raising among farmers on use of agrochemicals, capacity building of input retailers and DoA on information sharing on safe use of chemicals, support creation of farmer groups to promote information sharing on good practices, promote certification processes (e.g. GAP, Organic). ▪ Good potential to leverage pre-existing activities. Winrock activities in ginger only scaled up in 2017 and programme expected to close in 2019. Open to collaboration. ILO activities strongly complement the aims of this programme. **Implementing agency expertise** ▪ UNCTAD: International trade, market access conditions (tariffs and non-tariff measures). ▪ UNIDO: Good agricultural practices, certification, quality infrastructure, food safety. **Complementarities** ▪ Development of the high-quality fresh and processed ginger market will likely enhance synergies between production and trade through greater export markets and improve environmental sustainability through better agricultural practices including reduced use of pesticide and chemical fertiliser. No apparent attraction for tourism. **SCORE:** 2.5

AVOCADO

Relevance

Presence of target group

- Unclear how many people are employed within the avocado value chain. Rough estimate of 4,000-10,000 farmers/ orchard owners.
- Orchard owners each have between 2 and 5 acres of land.
- Avocados commonly sold on the tree to local collectors/distributors, which provides another level of employment.

Representation of women

- Men and women have different roles in cultivation which are used to justify why men are paid more for their labour than women (e.g. K5,000 vs K3,500 in Shan State)
- Men: Climb trees, fertilise trees, pick and carry fruit.
- Women: Planting seedlings, post-harvest handling, packaging.

SCORE: 2

Opportunity

Scale

- Southern Shan State:
  - 200,000 MTs
  - 12,000 acres (significant growth, from only 1,000 acres in 2014)
  - 10 MTs per acre
- Grown mostly in:
  - Hopong
  - Taunggyi
  - Nyangshwe
  - Ywangan (lower quality)
  - Pindaya (lower quality)
- Growing cycle:
  - Feb-May: Seeding
  - June-July: Growing
- Dec-Jan: Harvest
- Naturally grown, with over 70 local varieties of mixed quality.
- Hass varieties introduced from California and New Zealand.
- MFVP has identified 10 local varieties as suitable for both domestic consumption and international export, which include Amara Hass, Little Hopong, Aung Moe and Upland Queen.
- Growing domestic market, primarily from use in sweet smoothie drink, and from expats/middle-class demand for fresh avocado in Yangon.
- Border trade:
  - Thailand- Distributors transport to Myawaddy and Thachileik either through agents or directly to border.
  - China- Often tagged as 'Made in Yunnan' and certified by AQSIQ (Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China)
- Other export markets: Cambodia, Hong Kong.
- No evidence of export to non-Asian markets, unclear if such demand exists.
- Very little production that meets international standard levels (100-200 acres). Addressing this could boost export prospects.
- Trees yield little fruit in first year and take 3-6 years to mature. Requires a longer-term commitment to realise its potential. Grafting for local varieties has begun and these should be ready for significant export within 3 years.
- Can be intercropped with other cash crops, such as coffee.
- Limited driver of broader growth as avocado exported as raw material.
- Fragile and easily perishable which may limit feasibility for large-scale exports without corresponding investment in cold storage and other infrastructure.

Decent work

- Avocado farming appears to have grown significantly over the last 10-20 years.
- 1 acre can yield around 10 MTs, with a market price of K10m and profit of around K4-5m.
- Limited potential for improving income of target group as most producers are medium-to-large scale, rich orchard owners.
- Conversely, job opportunities for collectors and distributors may improve.

SCORE: 2

Feasibility	**Capacity of market actors** ▪ MFVP and Myanmar Avocado Association have both been very active in developing the avocado market, through promoting better agricultural practices for avocado cultivation (e.g. grafting), business events such as trade fairs to connect producers with domestic and international traders, and connecting farmers with banks to facilitate loans. ▪ MFVP/MAVO completed construction of processing and packing plant, for inspection for AQSIQ certification by China, which would solidify formal trade. ▪ Shan State Government Committee investing in a 2,500-acre international level avocado cultivation zone. **Willingness to change** ▪ Current challenges faced by producers are large post-harvest losses and limited export markets. ▪ Investment in better agricultural practices and certification to globally-accepted standards would be first steps towards greater export for avocados, which would overcome these challenges. ▪ Thus, there appears to be strong incentives for producers to change their behaviour. **Existing programmes** ▪ DaNa Facility: Exploring facilitating the issuing of legal certificates such as Good Agricultural Practices to increase prices and access to markets. ▪ UNODC: Encourages growing of avocado (along with tea and primarily coffee) as an alternative livelihood source to opium. ▪ Both programmes are relatively 'light-touch' with regard to the avocado value chain, which means that there could be good potential for programme interventions to have a significant impact (after some initial period). **Implementing agency expertise** ▪ UNIDO: Adherence to certification and quality and food safety standards appears critical. Expertise on infrastructure for export, such as cold storage, also required. ▪ UNCTAD: Technical assistance in marketing and exporting to non-Asian markets. **Complementarities** ▪ Avocado plantations could counter problems of deforestation linked to cheroot leaf cultivation. ▪ Cash crop alternative to opium. ▪ Strong potential to cater to tourist demand at hotels/restaurants in Southern Shan. **SCORE:** 3

MANGO

Relevance

Presence of target group

- Total number of mango producers unclear.
- 700 members of the Mango Cluster of MFVP, Southern Shan State.
- Mostly rich orchard owners, with more than 5 acres of land.
- Limited capacity to have transformative effect on other workers (e.g. employees) if orchard owners capture the profit gains.
- SME growth may be stimulated through storage and processing facilities.

Representation of women

- Unclear. Orchard owners appear to be exclusively male, so majority of profits unlikely to accrue to women.

SCORE: 1.5

Opportunity

Scale

- Southern Shan State:
  - 15,000 acres of mango plantation.
  - Estimated 38,000 MTs produced
- Region:
  - Taunggyi
- Sein Ta Lone and Broken Heart varieties are most common.
- Sein Ta Lone is prized for its sweet taste and appearance.
- Broken Heart produces a double yield, and is better suited for processing.
- Investment in Good Agricultural Practice (GAP) certificates:
  - 20 Myanmar GAP certified
  - 1 Global GAP pilot, facilitated by GIZ
- Mostly exported to China via border trade (80%).
- Remainder consumed domestically (15% wholesalers, 5% local markets).
- Market advantage over neighbouring regions due to later harvest season (June-July).
- Malaysia, Singapore and Indonesia as potential regional export markets due to lower import rules/regulations.
- Post-harvest losses a key challenge, particularly with lack of cold storage and limited access to international markets.
- Potential market for processing (e.g. mango leather), but this appears to be done on very small-scale (home industry). Unclear how much demand exists.

Decent work

- Potential to greatly improve the income from mangoes if more producers are able to become certified to Global GAP standards.

SCORE: 2

Feasibility

Capacity of market actors

- Good progress already being made regarding Myanmar and Global GAP certification.
- MFVP Mango Cluster appears to be well-organised and open to new ideas.
- MFVP and GIZ are investing in a packing house to sort mangoes by weight.
- MFVP Mango Cluster members are investing in processing for local markets (juice, puree, dried mango and mango leather).
- MFVP currently trying to set up a company under the MFVP umbrella to sell mangoes with a stamp of quality for all members.

Willingness to change

- Clear incentive to improve agricultural practices if higher prices are assured.
- Unclear where this demand will come from: Singapore, Malaysia, Hong Kong?
- Border trade processes with China are extremely opaque and consist of several intermediaries with little added value (Delegations and Commodity Centres), creating distrust and demotivation for farmers.
- Mango trees most productive between 15 and 20 years, so any changes to practices are limited to existing mango producers.

Existing programmes

- GIZ has been working on mango value chain for a number of years. Unclear how much progress has been made in upgrading the value chain and becoming export-ready if most mangoes still go via border trade to China.

Implementing agency expertise

- UNIDO: Certification to quality and food safety standards appears to be the biggest constraint to development of the export market. Assistance regarding infrastructure for storage and packing also might be of use.
- UNCTAD: Developing formal trading relationships with regional partners would be a good first step to improving the export market for mangoes.

Complementarities

- Limited effect of developing mango value chain on social development if majority of producers are wealthy, medium-scale producers.
- Potential to stimulate employment in other aspects of the value chain such as storage, packing and processing. Given the short harvest period of mangoes, these facilities could be shared with other horticulture products (e.g. avocado), creating value addition in these sub-sectors.
- Unlikely to have a strong link to tourism market.

SCORE: 2.5

TOMATO

Relevance

Presence of target group

- Estimated that up to 150,000 people depend on agriculture around the Inle Lake for their livelihood. Majority of these are likely to be tomato farmers.
- Unlikely that many more jobs will be created in this sector. Particularly given the issues discussed below.

Representation of women

- Unclear. Observed mostly women cultivating the tomatoes.

SCORE: 3

Opportunity

Scale

- Southern Shan State:
  - 7,200 acres of tomato production
- Region:
  - Inle Lake
- Overuse of pesticides and chemical fertiliser a key challenge.
- Continuous expansion of tomato farming on Inle Lake will have a direct effect on the environment, raising questions over how much supply can feasibly grow.
- Limited means of processing, which would help preserve and add value to the tomatoes produced. The current variety of tomatoes being farmed does not seem to be suitable for processing.
- 106 acres of GAP Group Certification, across 5 villages.
- Local seed markets do not exist, and hybrid seeds require heavy fertilisation.
- Uncertainty over demand: farmer groups have delivered orders to hotels and restaurants free of charge to build up their business, but they refuse to use the produce for fear of food safety.
- Given these struggles with domestic consumption, unlikely to be in a position to export.
- Floating farms reportedly incur higher costs for production, making them less competitive than alternative growing arrangements.

Decent work

- Market already appears quite saturated.
- Possibility of greater income if producers are able to obtain certification and domestic markets are willing to pay a premium for these higher-quality tomatoes.
- Possibility to also improve income through processing, though similar concerns were voiced with tinned tomatoes regarding food safety and chemical use.

SCORE: 1

Feasibility	**Capacity of market actors** ▪ Unclear who the key market actors are, and if they are formed into associations. ▪ More likely to be an informal association of inhabitants of Inle Lake. **Willingness to change** ▪ Positive change may require shifting tomato production away from Inle Lake. Unclear which actors would be willing to do this, and it may require starting these farms from scratch. **Existing programmes** ▪ IFC: Promoting Myanmar GAP for tomatoes on Inle Lake to boost productivity and profitability of farmers through sustainable farming. Unclear what the results are to date. ▪ GIZ: SAFI working on storage facility and cooling system; controlling of water inflow from Inle Lake; minimising use of pesticides and chemical fertiliser. **Implementing agency expertise** ▪ UNIDO: Good Agricultural Practices, quality and food safety standards, infrastructure for processing tomatoes. ▪ *Limited export potential, unclear how UNCTAD could add significant value.* **Complementarities** ▪ Tomatoes predominantly grown on the Inle Lake. Clear environmental impact through reduction in total lake area and quality of water. ▪ Weak links to trade as tomatoes consumed by domestic market. ▪ Clear link to tourism, as the floating farms are a tourist attraction. However, likely trade-off in the long-run between horticulture development and tourism due to environmental challenges. **SCORE:** 1.5

TEA

Relevance

Presence of target group

- Total number of tea producers unclear, though it appears to be a very popular crop for the hilly areas of Southern Shan State.

Representation of women

- Increased involvement of women in tea leaf plucking and processing. However, this increased involvement concerns to a lesser extent the relevant decision making roles and opportunities for discussion with men on both economic and social issues, needed in further analysis.

SCORE: 2

Opportunity

Scale

- Over 100,000 MTs of tea produced in Myanmar (FAOSTAT).
- Southern Shan State:
  - Estimated 25,000 MTs (25% of total production)
- Regions:
  - Pinlaung
  - Pindaya
  - Lawksawk
  - Ywangan
- Seemingly ideal conditions for tea-growing due to high altitude, hilly slopes in these regions and good soil quality.
- Large domestic market
- Around 80 Myanmar companies are exporting green tea. The largest quantities of green tea from Myanmar are exported to Japan, Malaysia, and Singapore.
- Interest developing from EU markets. 2016/17 main buyers France, Germany and Netherlands.
- Tea exporters are following the Hazard Analysis and Critical Control Point (HACCP) principles.
- Organic green tea introduced to European markets through BIOFACH, an organic trade fair.
- Complementary services could include processing of the tea, packaging facilities and greater marketing specifically of Myanmar tea on international markets.
- Relatively easy to export, and less perishable than e.g. fresh fruit.

Decent work

- Extremely strong potential to improve income of tea producers/associations if they can achieve organic certification.
- Price of regular green tea is $6/kg while organic sells for $68/kg.

SCORE: 3

Feasibility

Capacity of market actors

- Production methods still largely artisanal, with tea produced using traditional means.
- Good Agricultural Practices are being introduced, largely due to GIZ. Through GIZ's technical trainings the yield increased by 50% within the last two years. Due to improved quality, farmer income rose by 30%.
- Seemingly good degree of cooperation among different actors of tea production, united under the Myanmar Tea Producer and Exporters Association (10,000 members in Myanmar).
- Existing access to (small) international markets. Scope to develop these pre-existing relationships in order to sell greater quantities.
- More processing factories are being constructed, still relatively small scale.
- Financing of infrastructure and certification appear to be the main constraints to further development of the sector.

Willingness to change

- Tea Producer and Exporter Association appear willing to explore higher-quality markets. MFVP Tea Cluster also active. Both may require assistance with financing for machinery and certification.
- Pindaya Tea Culture Horizon Development Network (PTCHDN) has helped to set up another community-based tea processing factory, with assistance from international donors.

Existing programmes

- GIZ: Original model tea processing factory and replication x7. Assisted with access to finance via public-private dialogues with domestic banks. Helped secure access to international markets.
- HELVETAS: BioTrade project. Working with Myanmar Tea Producer and Exporters Association and twelve private companies from Myanmar, including from Southern Shan State. Focus on staff development and training, international marketing and establishment of partnerships for sustainable tea production. Funded by SECO.
- Potential to leverage the data and learnings of these programmes. Business model of shared ownership of processing factories already established, so strong potential for buy-in from producers (as opposed to direct delivery).

Implementing agency expertise

- UNIDO: Quality and food safety standards, technical assistance with certification processes, infrastructure for processing, packaging, etc.
- UNCTAD: Helping to build local enterprise groups with joint ownership of processing factories, linking to high-value export markets (EU) by study of market access conditions.

Complementarities

- Clear links between production, processing and trade.
- Tea-pickers mostly female, with scope to include them in the ownership of processing so they are able to enjoy some benefits of higher prices.
- Strong potential to link to tourism sector through:
  - Agro-tourism e.g. tour of tea plantations and processing factories.
  - Catering to tourists' needs through provision of high quality tea.

SCORE: 3

Summary of provisional scoring:

Sub-sector	Relevance	Opportunity	Feasibility	TOTAL
Tea	2	3	3	**8**
Ginger	2	3	2.5	**7.5**
Avocado	2	2	3	**7**
Mango	1.5	2	2.5	**6**
Tomato	3	1	1.5	**5.5**

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