Report on
Market Systems Analysis of Potential Products in the Agriculture Sector of Lao Cai and Son La provinces

September 2018

GREAT is an initiative of Aus4Equality Program managed by CowaterSogema on behalf of Australian Government.
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Abbreviations

ACIAR: Australian Centre for International Agricultural Research
BDS: Business Development Services
DARD: Department of Agriculture and Rural Development
DFAT: Australian Department of Foreign Affairs and Trade
DPI: Department of Planning and Investment
FAVRI: Fruit and Vegetable Research Institute
GALS: Gender Action Learning System
GESI: Gender Equality and Social Inclusion
GoV: Government of Vietnam
GRDP: Gross Regional Domestic Product
GREAT: Gender Responsive and Equitable Agriculture and Tourism
GSO: General Statistics Office
Ha: hectare(s)
IB: Inclusive Business
INGO: International Non-Government Organisation
M&E: Monitoring and evaluation
M4P: Markets for the Poor
MARD: Ministry of Agriculture and Rural Development
MERL: Monitoring, Evaluation, Research and Learning
MSD: Market Systems Development
NGO: Non-Government Organisation
NOMAFSI: Northern Mountainous Agriculture & Forestry Science Institute
NTFPRC: Non-Timber Forest Product Research Centre
PES: Provincial Engagement Strategy
PMU: Project Management Unit
PPC: Provincial People Committee
SC: Steering Committee
SCG: Savings and Credit Group
SEDP: Socio-Economic Development Program
VC: Value chain
VIMAMES: Vietnam Society for Medicinal Materials
VietGAP: Good Agriculture Practice for Vietnam
VITAS: Vietnam Tea Association
VWU: Vietnam Women’s Union
WEAMS : Women's Empowerment and Market Systems (WEAMS)
WEE  : Women’s Economic Empowerment
1. Introduction

1.1 Background

Economic development and women's empowerment are at the forefront of Australia’s current aid policy, intertwining issues that Australia’s bilateral Aid Investment Plan for Vietnam 2015-20 is focusing on through a single program: Gender Responsive and Equitable Agriculture and Tourism (Aus4Equality|GREAT). The Aus4Equality|GREAT Program also reflects the priorities in DFAT’s Vietnam Agricultural Strategy, such as innovation, private sector engagement and inclusive agriculture; as well as DFAT’s Vietnam Gender Equality Strategy which promotes women’s economic empowerment and leadership. The Project targets two provinces of Son La and Lao Cai in Northwestern Vietnam – being the poorest region of the country with high concentration of ethnic minority groups. The objectives of the Aus4Equality|GREAT are:

- **Objective 1** - Empowering local women: Women living in local communities have increased capacity, space and choices to beneficially engage with agriculture and tourism businesses.
- **Objective 2** – Inclusive businesses partnerships: Selected private sector actors within the agriculture and tourism sectors innovate to profitably and sustainably trade with more women entrepreneurs and operate in gender sensitive ways.
- **Objective 3** – Improving sector governance and policy: Government agencies reinforce policies, and enact plans, regulations and services that enable more inclusive socio-economic development.

This study is a part of the research conducted during the 6-month Inception Phase of Aus4Equality|GREAT. This study is expected to provide evidence for shaping the project’s focus on specific market systems or value chains to be targeted during the course of the project. In addition to identifying potential agricultural products in each of the provinces, this study will provide entry points and suggestions for the project’s interventions. In this regard, the study will contribute to the development of the Provincial Engagement Strategy (PES), which is a key strategic document to guide the implementation of Aus4Equality|GREAT in the two target provinces.

The next section describes the approach and methodology of this study. The main findings from the study are discussed in Part 2 where market assessments for the selected products are provided. Part 3 of this report presents conclusions and recommendations for Aus4Equality|GREAT.

1.2 Objectives and Approaches of the Study

The main objective of this study is to identify the agricultural products with most potential in the two targeted provinces for Aus4Equality|GREAT; and to identify opportunities as well as challenges for the Project and its partners to provide interventions in each selected product. To reach these objectives, the study aims to address the following questions:

- What are potential products in the agriculture sectors that can bring economic benefits for ethnic minority women and attract private sector investment?
- Who are key actors in the most promising product sub-sectors? Their roles and relationship?
- What are the main markets for the selected agricultural products in the two provinces? What is the demand for the selected products?
• What is the current market system for these selected products (key actors, core functions, supporting stakeholders, rules and regulations)? What are the major constraints for ethnic minority women to participate in the markets for these products?
• Who could be potential partners of Aus4Equality|GREAT to cooperate in the agriculture sector?

The study was conducted in two stages: (i) Desk study and (ii) Field study

**Desk study:**
Desk research was conducted through secondary source review including research documents, project reports, academic publications, government reports and statistics as well as methodological frameworks and tools. Desk research was carried out prior to field research as well as during report preparation. The number of studies reviewed by the research team in the two provinces is as follows:

- **Son La:** 23 relevant policies (including resolution, decision of the provincial and central levels; 21 product value chain assessment reports; Quick scan profile of 07 companies and 33 cooperatives.
- **Lao Cai:** 27 relevant policies (including resolution, decision of the provincial and central levels; 21 product value chain assessment reports; Quick scan profile of 14 companies and 39 cooperatives.

Key output of this stage was: Basic information about the agriculture sector; potential product and services; agriculture companies and cooperatives.

**Field study:**
The field research in the two provinces was conducted from February to March 2018 in Lao Cai and Son La by GREAT staff and members of PMUs to collect information related to the market systems for selected agriculture products. Interviews with other key informants in Hanoi took place in March and April 2018 to better understand the experience of organisations in working with the agricultural sector and their potential interest in working with Aus4Equality/GREAT. Qualitative research methodology was applied for this research due to the timeframe and the objective of the study.

In-depth interviews with key informants took place based on the guiding questions for different groups of key informant interviews are presented in the table 1 below. In total the study team has interviewed 23 representatives from government agencies, 18 service providers (input supply, financial service providers), 31 companies including cooperatives, provincial based businesses and businesses in Hanoi and 6 research institutions and universities. In addition, information on market opportunities, aspiration and challenges for local women to participate in agriculture markets were collected through 17 focus group discussions with men and women groups in 9 surveyed communes as a part of a parallel study on community assessment. The team organized frequent briefing sessions among research teams (including Social economic team, Policy team, and Agriculture team, and PMU representatives) to update the progress and share the initial findings.
## Types of Informants

<table>
<thead>
<tr>
<th>Types of Informants</th>
<th>Lao Cai</th>
<th>Son La</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government officials</td>
<td>15</td>
<td>8</td>
<td>23</td>
</tr>
<tr>
<td>Government service provider</td>
<td>11</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>Private sector</td>
<td>25</td>
<td>36</td>
<td>61</td>
</tr>
<tr>
<td>University &amp; Institute</td>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Community members</td>
<td>226</td>
<td>161</td>
<td>269</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>218</td>
<td>269</td>
</tr>
</tbody>
</table>

The below diagram demonstrates the four steps through which the study was conducted.

**Figure 1. Four Steps of the Study**

1. **Step 1. Scanning potential agriculture products in Lao Cai (Jan to Feb 2018)**
2. **Step 2. Pre-selection of potential products (From Jan-Feb 2018)**
3. **Step 3. Products appraising and ranking (2 Feb 2018)**
4. **Step 4: Market system analysis for the products selected (Feb to March 2018)**

In the first step, the product screening was made on the basis of three main criteria: 1) relevance to the main target beneficiaries, being ethnic minority women; 2) growth opportunity; and 3) feasibility. This screening process was made in consultation with the relevant actors and stakeholders in the agriculture sectors of the two provinces. Based on this screening, a list of shortlisted products was selected for further data collection and analysis (step 3 and 4 in the Figure 1 above). Based on the information collected from the field, appraisal and rankings were pursued and market systems analysis for the selected products was conducted in order to recommend the intervention strategies for Aus4Equality|GREAT.

A products selection matrix system which included the below criteria was applied. A list of products for selection was proposed by both the Program’s team and the PMUs in Son La and Lao Cai. A score from 1-5 was assigned to each product against each selection criteria. The products with highest scores were selected as priority products for the Program (See Annex 5 & 6 for scoring details).

### Table 2. Product Selection Criteria

<table>
<thead>
<tr>
<th>Relevance for ethnic minority women</th>
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</thead>
<tbody>
<tr>
<td>• #/% ethnic minority women current provide agriculture or related agriculture products and services, and employment; and potential for increased income for this target women</td>
</tr>
<tr>
<td>• There is potential for increased substantial number of ethnic minority women participated in providing agriculture products, services, or employment to create in income for this women group in the subsector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Growth Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The subsector has anticipated stability/growth in value in the last 3-4 years</td>
</tr>
<tr>
<td>• Current market scale (small, sufficient scale, large scale)</td>
</tr>
<tr>
<td>• Opportunity to develop supply (Unmet Market Demand)</td>
</tr>
<tr>
<td>• There are opportunities to leverage markets, finance and other improved supports in subsector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>• There is available potential large business partners/association/ business association in the subsector (i.e. inclusive business readiness)</td>
</tr>
</tbody>
</table>


There is available successful model to be replicated
There is available potential community/development/business partners and service providers to participate in the subsector
Any barriers, challenges, risks can be mitigated or overcome that fostering the development of value chain/subsector/market to create opportunity for target groups and ethnic minority community participate in the sector
Contribute to the preservation of cultural identities and not damage the natural environment

**Limitations:** The study was a rapid market assessment to identify opportunities for Program intervention strategies in both Lao Cai and Son La province. During a short timeframe, the study covers a number of selected potential products which have high potential for women engagement for increased income or job creation in both provinces. Quantitative data was limited. In this context, the team collected qualitative data through interviewing diverse stakeholders in the markets at all levels from country, province to community. Desk reviews were a useful source to supplement information gathered from interviews. The assessment findings and recommendations took into account stakeholders’ views and aligned with the provincial plans and policies. These fed into the development of the Provincial Engagement Strategy in agriculture sector in both provinces.

### 2. Main Findings

#### 2.1 Overview of the Agriculture Sector

##### 2.1.1 Agriculture Sector in Lao Cai province

Lao Cai is recognised as the more developed province in the Northwest region of Vietnam. The province has comparative advantages in tourism, trade and services compared to other provinces in the region. Accounting for 16% of the total GRDP, agriculture is not the largest sector in terms of GDP contribution, but it absorbs the majority of the province’s rural workforce and almost all of the 25 ethnic minority groups. The rural population constitutes 77% of the total population. In the target districts, the rural population accounts for between 82-95 percent of total population (e.g. 82% in Sa Pa; 93% in Bac Ha). Hence, the sector plays a vital role for poverty reduction, especially for ethnic minority groups. The sector has experienced rapid growth in recent years, is dominated by smallholder farmers and has a relatively nascent private sector.

In recent years, growth of the agriculture sector has been fuelled by a number of products with promising growth prospects and private sector investment. By 2016, commercial production has increased in rice (158,000ha), cinnamon (23,000ha), cardamom (16,000ha), tea (5,300ha), and fruit trees (3,900ha of longan; 2,000ha of banana; and around 1,000ha pineapple). Some high-value products have attracted private sector investment, including sturgeon and salmon breeding (96 breeding units) in Sa Pa, Bat Xat and Bac Ha districts; Cymbidium flower in Sa Pa district (100 ha); and vegetables in Sa Pa and Bac Ha districts. In addition, there is also a good potential in various Non-Timber Forest products and local unique products such as medicinal plants, honey and bees-wax, rice, bamboo-shoots, arrow-root, pumpkin, chili, ginger and mushroom. Those products are suitable for small-scale businesses and links to local markets.

Women, and in particular ethnic minority women, are the major labour force in agriculture in Lao Cai. In most agriculture products, women contribute between 60% to 65% labour at different stages of the supply chains, especially in land preparation, crop sowing/tree planting and caring, harvesting, semi-processing. Minority men spend more time in market related activities, which is partly due to the fact that men generally can speak Vietnamese language better than women. Men’s livelihood opportunities are more diversified in non-farm activities or other labour market opportunities.
There are some success stories of women-led vegetable, rice and chilli cooperatives. In some other products such as cardamom, rice and cassava, female traders or collectors outnumber men. Nevertheless, the number of women-led enterprises, including micro household businesses, in agriculture is still limited. Women-led enterprises account for 22% of registered businesses. Women are usually more risk adverse than men. As ethnic minority women are not usually the key decision makers in their households, starting businesses or running businesses is more challenging for them.

There have been a number of supporting polices put in place that aim at some specific targets to develop the agriculture sector in the Northwest region by the provincial authority. Annex 2 provides a list of important policy initiatives. Key objectives of these policies aim to: 1) increase value of agricultural and aquatic production by 5.4 to 6% per year; 2) increase total production value per hectare of cultivated land per year up to VND 80 million; 3) prioritise key agriculture products such as safe vegetables, tea, temperate fruit trees, medicinal plants, cinnamon, specialty rice and chili, livestock, flowers and cold water fish; 4) focus on product quality development by application of VietGAP. Organic and GACP certification; and 5) strengthen the linkage between agriculture production and processing, labelling, branding. In addition, there are also policies that promote innovative solutions toward sustainable production, more efficient use of available land resource and higher value agriculture production. There is a shift from providing direct support to farmers (for basic inputs such as seedings or fertilizer) to supporting cooperatives and companies which work with farmers groups and place greater emphasis on value chain development, quality management, post-harvest processing, product branding, capacity and marketing skills.

At the community and market level, informal rules and regulations are predominant, such as in the case of the community-based cardamom management agreement, or cross-border trade practices established and agreed among Chinese and Lao Cai traders.

2.1.2 Agriculture Sector in Son La province

Agriculture is a major economic sector of the province. By the end of 2016, the gross output from the agriculture sector was VND 9.095 million, which made of 30.3% of GRDP. The total product value per hectare of cultivated land was VND 25.7 million and VND 96.3 million per one hectare of aquaculture surface (DARD Son La, 2017). Until 2016, an estimated 80% of the provincial population was primarily engaged in the agriculture and forestry sectors. Total employment in the sector was 648,600 people. In the Aus4Equality|GREAT participating districts, the role of agriculture is generally more important than that of the province as a whole, particularly for ethnic minority groups who rely on agriculture as their dominant source of income. The provincial SEDP 2016-2020 established a target growth rate of 3.3% per annum in agriculture, forestry and fishery. In terms of share, it is planned that the agriculture sector would contribute 28% of total GRDP, while the corresponding figures for industry and services are respectively 24% and 48%.

In recent years, Son La’s main agricultural products are: dairy cows, maize, coffee, tea, sugar cane, fruits (longan, mango, banana, passion fruit), vegetables and buffalo. By the end of 2016, the number of agricultural products has reached sizable scales such as maize (150,000 ha), tea (4,300 ha), dairy cattle (23,000 head), sugar cane (6,300 ha), Arabica coffee (12,000 ha), fruit tree (Longan (8,500ha), mango (3,000 ha) and plum (4,000 ha)), and rice (51,000 ha). There is also growth potential for smaller scale from Non-Timber Forest products and local unique products such as medicinal plants, rice, rattan, lung bamboo, bamboo-shoot, arrow-root, pumpkin and mushroom. In recent years, more high-value products have emerged such as flowers in Moc Chau (around 100ha), sturgeon fish breeding, vegetables in Moc Chau and Mai Son; and passion fruits in Moc Chau, Van Ho, Thuan Chau and Yen Chau districts.

Improvements were also made toward more sustainable production including the replacement of maize in slopping land areas by fruit trees and other perennial crops. There were also improvements in certification, quality management, and traceability to add value to a number of
agricultural products with large market potential. The sector has attracted increasing investment from private investment, both foreign and domestic. Most notably, Nafoods Tay Bac Company has invested in a passion fruit factory; TH Group has informed a plan to build a beverage factory that would process different types of fruit juice; and the Northwest Stevia Agriculture Ltd company has invested in vegetable processing.

Women are the major labour force in agriculture. Inception background studies indicated a high level of engagement by women in key agricultural products, ranging from 60 to 80% of total labour in these products. However, access to technical training or wage employment opportunities remains limited for women, especially ethnic minority women. For instance, in many technical trainings organised by the State extension services, female participation varied between 20 to 30% only. For many ethnic minority women, their ability to attend technical training or be employed in agricultural processing businesses is constrained by their household workload, lack of proficiency in using the national language and hesitation to work far from their home villages. Some good examples of women-led agribusinesses in fruit and vegetables (especially some recent women-led cooperatives in vegetables in Moc Chau) were observed. However, the private sector generally, remains very modest. By the end of 2016, the number of private sector SMEs made only 0.03% of the total number of SMEs in Son La. Limited access to credit and other business development services were reported to be key constraints for women-led or co-managing businesses.

The provincial authorities have put in place a number of supporting policies which set specific targets to promote the agriculture sector. Annex 2 provides a list of important policy initiatives. Supporting mechanisms have been shifting from providing direct support on basic inputs like seeding or fertilizers, to supporting the development of cooperatives, companies which have clear market linkages to farmers in groups. This approach provides more focus on value chain development, quality management, post-harvest processing, product branding, capacity development and marketing skills. In general, these polices aim to: 1) improve skills in agriculture with the target of providing vocational and technical training for 50-55% of the rural labour force; 2) in terms of agricultural production, the main objectives are to promote large scale production on a commercial basis, improve access to support services, restructure toward value added products, and use land resources more efficiently; 3) enhance quality management by promoting applications of VietGAP, Global GAP and strengthening linkages across key actors and stakeholders in agricultural supply chains; 4) promote agricultural processing to add value to main products by attracting private investment, both domestic and foreign, to the agriculture sector; 5) promote consumption and export via trade promotion, branding and traceability, targeting a growth rate of 6 to 8% per year in exports; and 6) focus on the key agricultural products as the ‘backbone’ of the sector. These would include perennial crops such as tea, coffee, rubber, and sugarcane; fruits such as mango, longan, passion fruit, plum, avocado; vegetables such as cabbage, kohlrabi, potatoes and tomatoes; husbandry of buffaloes, cows, lean pig, chickens and ducks; and aquatic products including sturgeon, tilapia, fried fish, unisexual tilapia, carp, black carp and grass carp.

2.2 Selected Agricultural Products

The approach described earlier was used to select products with the most potential, evaluated on the basis of the criteria reflected in Table 1. The selected products for the two provinces are described below.

2.2.1 Selected Agriculture Products of Lao Cai

The selection process used for Lao Cai is described in Figure 2 below:
In the third step, a product selection matrix was applied. The selection process was jointly conducted by the Program’s advisory team and Lao Cai PMU. Products with a minimum threshold ranking underwent further investigation in the market system analysis. Some products with small scale, without sufficient supporting information for selection were not included in the assessment matrix. Specific product selection results can be found in Annex 5.

The selected products are categorized into two groups based on the readiness of inclusive business partners:

- **Group 1** consists of 9 selected products with a high level of inclusive business (IB) readiness: 1. Tea (lowland and upland tea); 2. Off-season vegetable; 3. Cinnamon; 4. Benzoin; 5. Medicinal plants; 6. Temperate fruits; and 7. Chili and rice crops. For these products, Aus4Equality|GREAT could partner with private sector partners. During consultations many of them have expressed willingness to partner with Aus4Equality|GREAT.

- **Group 2** includes 10 selected potential products with low IB readiness, including: 1. Livestock (buffalo, fattened cow, local pig and goat); 2. Specialty products (Foods and handicraft); 3. Coldwater fish; 4. Flowers (Cymbidium); 5. Spice (Ginger & turmeric); 6. Herbs. For these products, Aus4Equality|GREAT might support ethnic minority women producers to target the local markets or other small niche markets while looking for partnerships with private sector or NGOs.

Below is the brief description of the selected products for Lao Cai with regards to the selection criteria:

**Table 3. Brief Description of the Selected Products for Lao Cai**

<table>
<thead>
<tr>
<th>No</th>
<th>Product</th>
<th>Relevance</th>
<th>Opportunities for growth and competitiveness</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGH READINESS FOR IB</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Tea – Low land and upland</td>
<td>Ethnic minority women dominate in all production activities. Mass production involves a substantial number of ethnic minority women for low land tea; Upland tea production has potential</td>
<td>Quality improvement in terms of substance and consistency. Production standardization (VietGap for lowland tea and Organic for Upland tea).</td>
<td>Existing companies already establish inclusive models (Thanh Binh factory in Muong Khuong and Ban Lien factory in Bac Ha). The project will tap on the opportunities for consolidating the models,</td>
</tr>
<tr>
<td>No</td>
<td>Product</td>
<td>Relevance</td>
<td>Opportunities for growth and competitiveness</td>
<td>Feasibility</td>
</tr>
<tr>
<td>----</td>
<td>--------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>to link up with about 500 ethnic minority women.</td>
<td></td>
<td>on quality improvement and standardization.</td>
</tr>
<tr>
<td>2</td>
<td>Counter-season vegetables</td>
<td>Mainly participated by women at all levels of value chain.</td>
<td>Production of counter-season vegetables for large market in Hanoi and other provinces in summer time.</td>
<td>There are some existing models of Cooperatives which can be upscaled or replicated. Sapa is well known as an area of special quality vegetables in the North. Large supermarkets are searching for supplies from the area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Small land per household, and so involved a large number of ethnic minority women.</td>
<td>Sapa – Lao Cai are both of unique climate conditions compared with other provinces.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Highway between Hanoi and Lao Cai enables cost-efficient transportation.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cinnamon</td>
<td>Women and men equally participate in production at farm level.</td>
<td>Vietnam is among the top three exporters in global market.</td>
<td>Strong presence of private sector – many companies are sourcing from Lao Cai. Established relationship between private companies and farmers. Can quickly upgrade due to established knowledge of players in the value chain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Opportunities for creation of added value by product improvement, for instance, cinnamon powder, organic cinnamon, or fine processed cinnamon oil.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Benzoin</td>
<td>Potential to engage a large number of ethnic minority women, depending on marketing capacity of the lead private companies in the value chain.</td>
<td>Benzoin is in high demand from multinational companies. It can be used for various applications in cosmetic industry. Supply of benzoin is in shortage.</td>
<td>ethnic minority women can be trained to exploit gum from Fiscus trees, which are normally harvested for paper pulp industry. Importers are ready to invest and support local partners to build up supply base of benzoin.</td>
</tr>
<tr>
<td>5</td>
<td>Medicinal plants</td>
<td>Can involve ethnic minority women but the extent of engagement depends on particular products and capacity of pharmaceutical companies in the value chain.</td>
<td>Huge opportunity: domestic demand for medicinal product is booming. Lao Cai, as well as Son La, has unique temperate climate zones which can develop a variety of medicinal plants which other provinces cannot.</td>
<td>Some successful models have been already established (e.g. Traphaco Sapa – artichokes, or Nam Duong is sourcing supplies from Bac Ha for cough treating medicines). Engagement can be further enhanced if private pharmaceutical companies with interest to source ingredients from Lao Cai are identified.</td>
</tr>
<tr>
<td>No</td>
<td>Product</td>
<td>Relevance</td>
<td>Opportunities for growth and competitiveness</td>
<td>Feasibility</td>
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</tr>
<tr>
<td>6</td>
<td>Chili and local rice</td>
<td>High potential to engage some hundreds ethnic minority women. Ethnic minority women are also major players in most of production activities. High added value for ethnic minority women – sale price of rice is twice more than conventional price.</td>
<td>Rising demand for local specialities in Vietnam. Differentiation by local values associated with the rice and chili. Currently, chili and local rice from Lao Cai is famous in the North.</td>
<td>There is some existing cooperative specialized in rice and chili business. Opportunity for increasing production. More supply of chili and rice can be well absorbed by market.</td>
</tr>
</tbody>
</table>

**LOW READINESS FOR IB**

| 1  | Live stocks (Buffaloes, fatten-cows, local pigs) | Participated by women in all production activities Engagement of many ethnic minority women because these are conventional livelihoods of families. | Demand for cows and buffaloes are unfavourably affected by an increasing import of cows from overseas. Buffaloes and local pigs are treated as local specialities, not consumed in large volume. Except local pigs, cows and buffaloes are not the competitive products of Lao Cai. Other provinces are also raising cows. | No existing value chain led by companies that add more values to the products. Cows, local pigs, buffaloes are all sold through traditional channel, to markets/local traders, slaughters, and retailers in other provinces. Private sector appears not interested in investing in live stocks in Lao Cai at this point, probably because other provinces are more competitive. |

| 2  | Foods and handicrafts | Ethnic minority women are relevant due to skill requirement and light lifting nature of the jobs. It is challenging to engage a substantial number of ethnic minority women in these because limited market demand/size. | Moderate opportunity for growth, driven by tourism sector and support for apprenticeship in tourism area, Sapa and Bac Ha. High competitiveness: these products are associated with cultural local values and ethnic minority groups. | The sub-sector is already established. Supports can be provided to further enhance ethnic minority women engagement. However, this depends on availability of, and cooperation with, private partners in tourism sector. |

<p>| 3  | Cold water fish | Not involving significant number of ethnic minority women due to large investment requirement (some hundred thousands of dollars). Ethnic minority women may participate, but mainly as employees for cold water fish raising workshops in Sapa. | Sapa is the only location in the North can raise cold-water fishes, being a unique temperate climate zone in the North. Domestic demand for cold water fishes is huge, and not yet well met by domestic supply, evidenced by large volume still being imported from overseas. | No proven inclusive models in Sapa. The products are mainly for deep-pocket investors, and not engaging many ethnic minority women. |</p>
<table>
<thead>
<tr>
<th>No</th>
<th>Product</th>
<th>Relevance</th>
<th>Opportunities for growth and competitiveness</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Flowers</td>
<td>Similar to cold water fishes – this product requires high level of technical capacity and investment, and so, not involving a large number of ethnic minority women. This can however bring high income for farmers, who are often not the poor.</td>
<td>Demand for flowers is on the rise, driven by expanding affluent population. Hanoi is the main market for flowers from Sapa</td>
<td>There are active traders that help to bring flowers from Sapa down to Hanoi, but no inclusive models for ethnic minority women that can be replicated to a large extent.</td>
</tr>
<tr>
<td>4</td>
<td>Spice – Ginger &amp; Turmeric</td>
<td>ethnic minority women participation is assured as other agricultural crops. The number of ethnic minority women may be significant depending on the sale volumes of companies/ cooperatives.</td>
<td>High demand for export, but tough competition (The plantation area of ginger and turmeric is increasing across many provinces in Vietnam. Competitive advantages of Son La/Lao Cai is not clear for these.</td>
<td>No existing companies with strong commitment and market position identified yet. It takes time to establish market position for ginger and spice, 12 -24 months before upscaling.</td>
</tr>
</tbody>
</table>

### 2.2.1 Potential Agriculture Products of Son La

The selection process used for Son La is described in Figure 3 below:

**Figure 3. Product Selection Stages**

1. **Step 1. Scanning potential agriculture products in Son La (Jan to Feb 2018)**
   - Basic information about the agriculture sector
2. **Step 2. Pre-selection of potential products (From Jan-Feb 2018)**
   - List of 34 products (22 products for objective 2 and 12 for objective 1)
3. **Step 3. Products appraising and ranking (2 Feb 2018)**
   - List of 34 products (12 for IB readiness, 10 for VCs 12 for objective 1)
4. **Step 4: Market system analysis for the products selected (Feb to March 2018)**
   - List of 34 products (8 for IB readiness, 12 for VCs 12 for objective 1)
In the third step, a product selection matrix was applied. The selection process was jointly conducted by the Program’s advisory team and Son La PMU. Products with a minimum threshold ranking underwent further investigation in the market system analysis. Some products with small scale, without sufficient supporting information for selection were not included in the assessment matrix. Specific product selection results can be found in Annex 6.

The products selected for Aus4Equality|GREAT interventions are categorized into two groups. The readiness of inclusive business partners is the criterion used to classify these two groups from the products shortlisted using the three selection criteria above.

- **Group 1** consists of 8 selected potential products with high readiness for IB: 1. Tea; 2. Fruits (passion fruit, avocado, longan, citrus) 3. Off-season vegetable; 4. Local specialty (Local rice); 5. Cage-fish;. For these products, Aus4Equality|GREAT could partner with private sector partners. During consultations many of them have expressed the buy-in and willingness to partner with the Program.

- **Group 2** includes 13 selected potential products with low readiness for IB, including: 1. Fruit (Plum, persimmon). 2. Medicinal plant; 3. Spice crops (Ginger, turmeric); 4. Natural ingredients (Sontra - Docynia Indica and Amomum villosum); 5. Livestock (Buffalo, fattened-cow, local pig, goat); 6. Local specialty (Foods, mushroom). For these products, Aus4Equality|GREAT might promote ethnic minority women in these products to target the local markets or other small niche while seeking for partnerships with private sectors or NGOs.

Below is the brief description of the selected products in relation to the selection criteria:

### Table 4. Brief Description of the Selected Products for Son La

<table>
<thead>
<tr>
<th>No</th>
<th>Product</th>
<th>Relevance</th>
<th>Opportunities for growth and competitiveness</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGH READINESS FOR IB</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Tea</td>
<td>ethnic minority women dominate in all production activities. Mass production involves a substantial number of ethnic minority women.</td>
<td>Quality improvement in terms of substance and consistency. Production standardization. Various other opportunities for value chain optimization.</td>
<td>Large lead firms present in the project area.</td>
</tr>
<tr>
<td>2</td>
<td>Fruits</td>
<td>Mass production, involving a large number of households/ethnic minority women.</td>
<td>Differentiation value: citrus-local specialty, counter-season longan from Son La. High potential market demand for all products (Citrus, longan, and avocado).</td>
<td>Large factory with high demand for passion fruits avocadoes, and other varieties. Development of modern trade channel in Hanoi.</td>
</tr>
<tr>
<td>3</td>
<td>Counter-season vegetables</td>
<td>Mainly participated by women at all levels of value chain. Small land per household, and so involved a large number</td>
<td>Production of counter-season vegetables for large market in Hanoi and other provinces in summer time.</td>
<td>There are some existing models which can be upscaled or replicated. Moc Chau and Son La are well known as an</td>
</tr>
<tr>
<td>No</td>
<td>Product</td>
<td>Relevance</td>
<td>Opportunities for growth and competitiveness</td>
<td>Feasibility</td>
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</tbody>
</table>
| 4  | Local rice | May involve some hundreds ethnic minority women.  
ethnic minority women are also major players in most of production activities.  
High added value for ethnic minority women – sale price is twice more than conventional price. | Rising demand for local specialties in Vietnam.  
Differentiation by local values associated with the rice (e.g. made by ethnic minority groups from mountainous area in Son La). | There is existing cooperative specialized in rice business.  
Opportunity for increasing production (The cooperative may double its current sale).  
Available land for cultivation. |
| 5  | Cage-fish raising | Equal participation by ethnic minority women and men; ethnic minority women are more present in production.  
May be upscaled to involve some hundreds of ethnic minority women. | Potential for production expansion to meet provincial demand (More supply is possible considering provincial demand and current supply). | Affordable initial investment for households.  
Sufficient water surface for production expansion to a large scale.  
There are existing successful models raising cage-fishes already. |

### LOW READINESS FOR IB

<table>
<thead>
<tr>
<th>No</th>
<th>Product</th>
<th>Relevance</th>
<th>Opportunities for growth and competitiveness</th>
<th>Feasibility</th>
</tr>
</thead>
</table>
| 1  | Fruits – plums and local persimmon | Plums are on mass production, involving a large number of ethnic minority women.  
The same to local persimmon, but at a lesser extent. | Value of local specialties, but high market volatility, being sold mainly in traditional channel with narrow profit margin at household level.  
Also largely depending on China market. | No existing companies capable of marketing or processing the products to create high added value, and improving value chain competitiveness. |
| 2  | Medicinal plants | Ethnic minority women engagement is driven by sale by companies in linkage, but likely not substantial because of the nature that medicinal plants are not consumed in large volume. | Son La has unique conditions favourable for medicinal plantation, and a large reservation area with multiple precious medicinal species. | There were some companies that tried to make investments in the medicinal value chains but not successful.  
Medicinal plantation value chain is complicated requiring participation of businesses with strong capacity in production, |
<table>
<thead>
<tr>
<th>No</th>
<th>Product</th>
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<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Spice – Ginger &amp; Turmeric</td>
<td>ethnic minority women participation is assured as other agricultural crops. The number of ethnic minority women may be significant depending on the sale volumes of companies/cooperatives.</td>
<td>High demand for export, but tough competition (The plantation area of ginger and turmeric is increasing across many provinces in Vietnam. Competitive advantages of Son La/Lao Cai is not clear for these.)</td>
<td>No existing companies with strong commitment and market position identified yet. It takes time to establish market position for ginger and spice, 12-24 years before upscaling.</td>
</tr>
<tr>
<td>4</td>
<td>Natural ingredients (Sontra - Docynia Indica and Amomum villosum)</td>
<td>Large number of ethnic minority women participated in production of Sontra. Sontra production is not concentrated in Moc Chau and Van Ho.</td>
<td>Sontra has local value – being planted only in Son La and Yen Bai. Market growth for Sontra is domestic, and slow down, but can absorb huge volume through traditional trade channel. Demand for Amomum is mainly driven by China, and often volatile.</td>
<td>No companies that can lead the value chain development yet. A strong partner is vital to create added value for Sontra, for instance, for wine processing or selling by product brand in supermarkets/convenient stores. Possible to link up with traders in Lao Cai for to access to China market.</td>
</tr>
<tr>
<td>5</td>
<td>Live stocks (Fatten cows, local pigs, buffaloes, goats)</td>
<td>Large number of ethnic minority women participating in production.</td>
<td>Opportunities are varied by products: beef demand is uncertain because of strong competition by an increasing number of imported cows, local pigs in good demand but difficult to increase production (If the supply is too much, local pigs are no longer special, becoming conventional pork), buffaloes are currently not consumed in large volume.</td>
<td>No companies or businesses that could invest and sustainably develop the value chains through generation of higher value. The solution for livelihood improvement is therefore not yet clear.</td>
</tr>
<tr>
<td>6</td>
<td>Some local specialties (Foods, mushrooms)</td>
<td>Ethnic minority women participation depends on how the specialties are marketed by other players, companies or cooperatives.</td>
<td>Market demand may be high. This really depends on the specific products and the marketing. Demand is also volatile because consumers’ appetite is trendy, not stable like other products.</td>
<td>No clear companies or models exist for replication or production expansion.</td>
</tr>
<tr>
<td>No</td>
<td>Product</td>
<td>Relevance</td>
<td>Opportunities for growth and competitiveness</td>
<td>Feasibility</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Mushrooms are being produced at many places. Son La does have strong competitive advantage.</td>
<td></td>
</tr>
</tbody>
</table>

In both provinces, for the products in group 1, further analysis is presented in Section 2.4. For the products in group 2, a short summary is provided in the Annex. In addition to this, there is a group 3 that consists of the products with certain potential but where the readiness of IB partners is not yet at place. During the course of Aus4Equality|GREAT implementation, efforts will be paid to promote IB with these partners.

### 2.3 Market Systems of the Selected Products

Analysis of the market system of the agriculture sector in Lao Cai and Son La includes core market functions and actors, supporting functions and stakeholders, and rules and regulations. The figure 4 below describes the market systems in the sector, which are discussed below.

**Figure 4. Market Systems of the Agriculture Sector in Lao Cai & Son La**

#### 2.3.1 Core market function and actors

As highlighted in Section 2.2, potential products are selected as the focus of the program interventions. This includes group 1 with high IB readiness; group 2 with low IB readiness; and a group 3 without IB readiness. These products vary in their supply chain structures and characteristics. Key actors involved in these products include farmers, collectors, processors, and consumers. Of these actors, companies (processors or exporters) appear to be the most influential in the supply chains and hence could exert strong influence on the performance of the market systems. Despite having been involved in the sector for 8-15 years, most of the companies consulted were small and medium enterprises; they have difficulty with quality control, market access, or limited management skills.

The key actors will be discussed in the value chain analysis for these products (see Section 2.4).
2.3.2 Key supporting functions and stakeholders

Supporting Functions

Extension services
Agricultural extension services in Lao Cai and Son La are made up of both public and private services. 

*The public services are based partly on a bottom-up approach*, developed by government in consultation with producers and the private sector. While these extension services are relatively effective in terms of basic production techniques, they are not up to date with local research and international best practice in agricultural and collection practices, largely due to the lack of exposure of the state extension service.

*Several agricultural companies/cooperatives have invested in their own extension capacity* to capture the added value potential from input quality improvement and sustainable supply of raw material. For example, production of Passion fruit in Moc Chau (Son La) and Tea in Muong Khuong (Lao Cai) use their own technicians to support farmers in the supply chain. In the case of Cinnamon, companies cooperate with public extension services.

Business development services
A wide range of Business Development Services (BDS) are available in Vietnam, covering market research, business planning, product development and certification, post-harvest processing, marketing branding and packaging, certification of standardized systems, financing, logistics and transportation. In both provinces, BDSs support input material, technical support, financial credit, logistics and branding. Other services could be mobilized from sources outside the provinces to expand the suite of services provided. BDS are not yet a driver of agriculture sector development and it is not widely used.

Research & Development
A number of scientific research institutions have been involved in genetic conservation of agro-plants, medicinal plants and forest trees. R&D is constrained by low capacity in terms of financial and technical investment and access to qualified specialists and is not yet able to contribute to improving the competitiveness of the agricultural sector.

Certification
There are multiple support services for certification operating in Vietnam, including Control Union, Veritas, Ecolink, IMO, Ecocert, CERES and Fairtrade Vietnam. Moreover, several national bodies provide certification services such as the National Agro-Forestry-Fisheries Quality Assurance Department (NAFIQAD) under MARD which provides GAP and GlobalGAP certification. In addition, certification services for most common standards, for example, in quality and food safety management (ISO 9001, ISO 22000), good practices (GACP, GMP) and voluntary certifications (organic or fair trade) are also available. Certification has been growing for many agriculture products in recent years.

Access to finance
Commercial banks are the key financial institutions to provide financial services to companies. Other sources of finance available in the provinces include the Vietnam Bank for Social Policy (VBSP), Vietnam Development Bank (VDB) and People Credit Fund (PCF). Access to finance is a constraint for many companies, especially for SMEs due to high interest rates, complex appraisal and due diligence procedures, lack of collateral, weak financial management, or lack of information about relevant credit options.
**Supporting Stakeholders**

In addition to the key players (as above), other indirect market system actors include:

- Government agencies at both the central and provincial levels which provide public services on extension, plant protection, veterinaries and quality assurance. These include Ministry of Agriculture and Rural Development (MARD), provincial Department of Agriculture and Rural Development (DARD), and Department of Industry and Trade (DoIT);
- Input suppliers and service providers: suppliers of production inputs such as fertilizers, seedlings, pesticides, packaging; or providers of other support services such as certification, technical consulting, logistics, marketing and distribution;
- Research institutions such as FAVRI, NOMAFSI, Post-Harvest and Processing Institute; NTFPRC; VIMAMES; Northwest University and Thai Nguyen University;
- Associations including sector associations (e.g. Cardamom Association), government trade promotion agencies such as VITAS and VietTrade; and
- Mass organizations such as the Vietnam Women Union and Farmers Associations.

### 2.3.3 Rules and Regulations

A number of supporting policies are in place which establish specific targets such as: 1) to increase value of agricultural and aquatic production by 5.4 to 6% per year; 2) increase total production value per hectare of cultivated land per year up to 80 VND million; 3) prioritise key agriculture products such as safe vegetables, tea, temperate fruit trees, medicinal plants, cinnamon, specialty rice and chili, livestock, flowers and cold water fish; 4) focus on product quality development by application of VietGAP, Organic and GACP certification; and 5) strengthen the linkage between agriculture production and processing, labelling, branding. In addition, there are also policies that promote innovative solutions toward sustainable production, more efficient use of available land resources and higher value agriculture production. There has been a shift from providing direct support to farmers for basic inputs such as seed or fertilizer, to supporting cooperatives and companies which work with farmers groups, placing greater emphasis on value chain development, quality management, post-harvest processing, product branding, capacity and marketing skills). This shift in policy focus is in line with the MSD approach and thus very relevant for Aus4Equality|GREAT.

At the community and market level, informal rules and regulations are predominant, such as in the case of the community-based cardamom management agreement, or cross-border trade practices established and agreed among Chinese and Lao Cai traders.

### 2.4 Value Chain Analysis of the Selected Agricultural Products

#### 2.4.1 Value Chain Analysis for Safe Vegetables

Map of vegetable value chain – Son La
Above is the map of the vegetable value chain for Son La. From households, vegetables are delivered to local collectors and vegetables cooperatives. A small volume of vegetables are directly sold to local markets by some households. Vegetable cooperatives’ markets are organizational buyers, being supermarkets and trade businesses in Hanoi. Meanwhile, the local collectors/traders may supply to: 1) provincial wholesalers who then distribute the vegetables to wholesalers in Hanoi or retail markets in Son La, or 2) bypass provincial wholesalers to sell directly to wholesalers in Hanoi. The latter option (2) is common for those who already have long-standing relationship with buyers in Hanoi. From Hanoi wholesale markets, vegetables are transferred to various retailers across Hanoi. In general, inter-provincial trade between Son La and other provinces in the Northwest region is not significant. The major portion of vegetables sold goes to Hanoi.

Trade volumes are differentiated by varieties. For instance, 20-30% of cabbage, 60-70% of chayote, and 30-40% of H’Mong Mustard Green from Son La is delivered to Hanoi; and daily output of the Son La wholesale market is more than 100 tons/day.

A prospective important development is the investment of a Korean high-tech agriculture processing factory (SI factory) in Moc Chau/Van Ho. This factory will seek vegetable supplies at volumes of about 300 ha when at full capacity or about 30 tons/day. However, the project is not yet completed. The SI factory is not targeting the domestic market, rather its output will be destined for Korea.

The structure of the vegetables value chain in Lao Cai is similar to the one in Son La. However, vegetable producing households in the Lao Cai value chain are largely concentrated in Sa Pa, and Bac Ha district to a lesser extent. Similar to Moc Chau and Van Ho, these two districts are where vegetable varieties of the temperate zone weather can be produced to meet the demand unmet by supplies from Hanoi and other provinces in the Red River Delta. No significant investment project in vegetable production in Lao Cai has been reported so far.

1 Rau An Toan Coop in Moc Chau and To Mua Coop are the two cooperatives well known in Moc Chau and Van Ho for successfully establishing vegetables supply chains to modern trade outlets in Hanoi. Overall, the number of vegetables Coops in Moc Chau and Van Ho is limited, having less than five Coops that are actually active.

2 'International Trade Opportunities for Indigenous and Conventional Vegies from Son La and Lao Cai', Nhan Tran, Trang Truong, and Dale Y, ACIAR.
There are also a few notable vegetable cooperatives in Lao Cai, two in Sa Pa and two in Bac Ha, that sell to supermarkets in Hanoi. In terms of distribution outside of province, production in Bac Ha appears not to be competitive due to high transportation costs.\(^3\)

A slight difference from Son La is that inter-provincial trade occurs between Lao Cai to Dien Bien and Yen Bai. Another difference is that the daily output of Lao Cai’s wholesale market is only about half of that of Son La, roughly 50 tons/day.

Overall picture of supply and demand

Consumption of vegetables in Vietnam had been continuously increasing for many years. This is consistently proven by various studies on Vietnam average household food consumption. The share of average expenditure for vegetables has increased from about 8% in 1999\(^4\) to 13.3% in 2013. However, the increase in vegetables appears to have been slowing down in recent years. In 2016, the share of vegetables consumed remained at about 13% of the average household’s income.\(^5\)

In terms of value, the amount spent for vegetables varies across locations in the countries. National average food expenditure per household is estimated at VND 450,000/month, equivalent to about VND 50,000/month for vegetables; In large cities, Ho Chi Minh, Hanoi and Danang, this number is around VND 900,000/month or about VND 110,000/month for vegetables\(^6\). These are mathematically translated into demand volume for vegetables as below:

<table>
<thead>
<tr>
<th>Markets</th>
<th>Est. average income (VND)</th>
<th>Est. vegetables Expenditure (VND)</th>
<th>Equivalent volume (yearly) (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National average</td>
<td>450,000</td>
<td>50,000</td>
<td>120 = 10kg*12months</td>
</tr>
<tr>
<td>Hanoi/Ho Chi Minh</td>
<td>900,000</td>
<td>110,000</td>
<td>144 = 12kg*12months</td>
</tr>
</tbody>
</table>

The expenditure for vegetables as well as other foods at the household level is expected to increase stably in the face of income increase.

The above information on vegetable consumption in Vietnam suggests that average consumption of vegetables is in the range of 100 – 140 kg/year. Thus, current vegetable consumption in Vietnam fits well with the international average of 130 kg per capita\(^7\), suggesting that **Vietnam’s domestic demand for vegetables has been generally stagnant**. The vegetable market can be considered to be relatively mature, with domestic demand being sufficiently met by supply. This is particularly true for large cities, Hanoi and Ho Chi Minh, where vegetables expenditure is already high, being about 140 kg plus annually.

Market opportunities

In the face of mature market status, the vegetable sub-sector needs to focus on a differentiation strategy by producing counter-seasonal vegetable items that other provincial competitors cannot undertake due to their unique climate.

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\(^3\) Transportation of vegetables from Bac Ha to Hanoi costs 4,000 vnd/kg, as opposed to 1,000 VND/kg for vegetables from Moc Chau/Van Ho and Sapa.


\(^6\) http://english.vietnamnet.vn/fms/business/152702/vietnamese-spending-on-food-triples-within-five-years.html

\(^7\) http://www.helgilibrary.com/indicators/vegetable-consumption-per-capita/world/
Following this, the opportunities for interventions can be found in:

- Production of counter-seasonal vegetables for Hanoi and other large cities in Red River Delta. Such items are ones that cannot be grown in other provinces in the summer from May to Oct; for instance, chayote or Hmong Mustard bean.
- Production of accredited safe vegetables that are in high demand from domestic consumers. Even though VietGap or organic vegetables being sold at various outlets in Hanoi and elsewhere, the supply is yet to meet demand. Hanoi consumption of vegetables is estimated at about 1m tons, but the total supply from its own safe vegie plantation area, as planned by 2020, is only 6,000 ha, equivalent to more than 150,000 tons of vegetables, which is still far below its demand.⁸
- Establishment or enhancement of market access for businesses with linkages to ethnic minority women: this should aim to target modern trade channels where added value of safety and local specialties can be realised through effective branding.
- Production expansion for current vegetable cooperatives to capture the increasing demand for foods in general as a result of increased income and urbanization. Increase in income of households in Hanoi and everywhere else leads to more demand for vegetables, particularly specialties from different areas across regions in the countries.

**Opportunities for interventions to increase ethnic minority women’s involvement in the vegetable value chain**

Ethnic minority women’s involvement should be integrated in interventions which provide support for building up safely accredited value chains which provide counter-seasonal vegetables. Cabbages, chayote, Hmong Mustard green, and Broccoli are the major varieties. The economic added value for ethnic minority women will be generated through:

- Premium of sale price for safety certified products through modern trade channels (supermarkets and convenient stores). This is normally 10% higher than the market price. For instance, Hmong cabbage can be VND 6,000/kg, as opposed to VND 5,000/kg if sold to local collectors who then sell the cabbages to wholesalers in Hanoi. The total premium at farm level can be in between 20-30 million VND/ha⁹;
- Additional income from the sale of vegetables for ethnic minority women who have not had any income from vegetable sales previously. On average, income from vegetable production will be in the range of 50-70 million VND/year;
- Additional income as a result of improved productivity which leads to more sales due to more production volume. The magnitude of the added value will depend on the specific technical capacity gaps of the target community.

In Lao Cai, the potential number of ethnic minority women that could join vegetable value chains through intervention of GRET is 1500, of which 1000 is from Sa Pa and 500 from Bac Ha.¹⁰ These are made of 1) ethnic minority women joins existing cooperatives’ supply base to meet with additional demand from market expansion; and probably 2) those participated in new value chain set up by new private companies/cooperatives.

In Son La, the potential number of households to participate in the vegetables sub-sector is similar to Lao Cai. Ten cooperatives or SMEs can be supported to make linkages between ethnic minority women/households and modern trade market channels in Hanoi or elsewhere. It can be estimated that these need to establish a supply base of about 1,000 households (100 households for each). In fact, more ethnic minority women can become direct beneficiaries once the SI factory is up and running in Son La. This factory plans to source supplies from 800 ha,

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⁹ Estimated yield/ha: 20 – 30 tons; each ton gets 1m vnd of premium, meaning 20 – 30 m vnd of ha earned from premium
¹⁰ This number is derived from assessment of private sector presence and the feasibility of the private sector, including cooperatives, to set up vegetables value chains participated by ethnic minority women.
which suggests an opportunity for engagement of more than 2,400 ethnic minority women\textsuperscript{11}. However, this is not yet confirmed.

Constraints for participation of Ethnic Minority Women

\textit{At sub-sector level}:

- Ethnic minority women’s access to market is currently undermined by the lack of capable actors, who can play an effective role connecting ethnic minority women and markets. This is evidenced by a poor population of cooperatives and companies that have successfully set up sustainable relationships with buyers in modern trade channels to sell vegetables at premium prices. In both Son La and Lao Cai, the examples of proven business cases in which vegetables are supplied by households and distributed by companies/cooperatives and linked to modern trade outlets are limited, less than five in each of the provinces.

- More ethnic minority women can participate in existing value chains if the lead businesses increase sales so that annexing new ethnic minority women is required to expand the supply base. However, production expansion is not likely to impact on large numbers of ethnic minority women because it takes considerable time for companies to build up sustainable business relationship with new buyers. A good lesson can be seen from the two successful vegetable cooperatives, one in Son La and one Lao Cai. These cooperatives spent five years establishing linkages with only about 50 households to serve the current customer base, which is composed of supermarkets in Hanoi with stable volume orders of some tons per day. Therefore, it is not practical to set a target to involve more than 1,000 ethnic minority women in vegetables within the three-year timeframe of the Program.

\textit{At household level}:

- Safe vegetable production requires strict application of specific techniques. In addition, supermarkets, convenient stores, or organizational customers often demand consistent daily supply. Meeting this demand is challenging for smallholders such as ethnic minority women, who typically apply traditional production methods meaning that yields vary and hence do not enable them to deliver the volume or quality required.\textsuperscript{12}

- Lack of awareness and skills to conduct commercial production as per market demand makes it difficult for ethnic minority women to effectively cooperate with companies and cooperatives.

- Underdeveloped production infrastructure: accessible and solid land with irrigation is a requirement for vegetable plantation. Ethnic minority women with land not meeting this requirement are technically not included in the value chain.

- The business model for selling vegetables to high-end markets, including supermarkets and malls is associated with high investment costs and logistic facilities, which are often inaccessible to ethnic minority women.

Potential partners in the value chain

- All current operating cooperatives in Son La and Lao Cai are potential partners of the Project. These are Rau An Toan Coop in Moc Chau, vegetable cooperatives in To Mua – Moc Chau, Sa Pa, Bac Ha. The SI factory with plans to source vegetables supply from 800 ha in Moc Chau is also a significant potential partner which could change the sub-sector landscape quickly.

\textsuperscript{11} On average, 0.3 ha of land ownership each household.

\textsuperscript{12} For example, the production is suspended if a wedding celebrity or local festival happens in the area. Supply committed to/contracted with buyer is not delivered as result.
2.4.2 Value Chain Analysis for Fruit

2.4.2.1 Plum value chain in Lao Cai & Son La

Plums are mainly planted in Bac Ha, Lao Cai, with a plantation area of nearly 3,000 ha. The plum value chain structure is fairly traditional, as shown above. Local collectors purchase plums from individual households to obtain sufficient volume for transportation to wholesalers outside the province or exporters who already have a customer base of Chinese importers. From wholesalers, plums are sold to retailers and the end buyers in other provinces across the country. The market is highly competitive, with many players at all levels of the value chain. An average provincial trader typically has sale volume of about 500-700 tons per year. Given that total production is approximately 20-25,000 tons\(^{13}\), there are probably more than 10 provincial traders, and dozens of local collectors. Notably, plums may be harvested when the fruits are still green or ripe. The green ones are only sold to the Chinese market and to some food processing factories and the ripe ones are sold to domestic consumers. A very small portion of plums are sold in local markets for local buyers and tourists. Sellers in local markets can be both from collectors and individual households.

Plums in Son La is perceived by domestic consumers as a local specialty. These are in high demand in the domestic market, reflected by strong demand from local and provincial traders for both products, and also by high prices of these. The price of plum is 20-30,000 VND/kg in high harvest season; however, in the beginning of plum season in May and June, plums may be sold up to 180-200,000 VND/kg. So far, the plums from Bac Ha (Lao cai) and Moc Chau (Son La) have secured a very good position in local consumers' appetites. Local persimmon from Moc Chau, Son La, is similar and local traders often have to compete to get supplies from farmers.

Plums are also reportedly traded at large volumes to China from time to time. The demand for plum and local persimmon is currently strong in the domestic market. The trend for specialties with good tastes is seen as a key explanation. However, the total area of plum is still modest, 2,500 ha in Son La and 500 ha in Bac Ha, equivalent to 25,000 tons of annual production (assuming yield of 8 tons/ha). This volume can be well absorbed by the domestic market alone.

Competition from China is significant for both of plums and local persimmon. A particular challenge is that China plums are often marketed as local plums by traders. Many buyers have mistaken China plums as those from Sa Pa. As per Plantation Department of MARD, in 2016 and 2017, imported volume of plums from China is up to nearly 10,000 tons (being 9,100 tons in 2019 alone).

\(^{13}\) Yield: 7-8 tons/ha, over 3,000 ha (2,500 ha in Son La and 500 ha in Lao Cai)
The market opportunity for plum and local persimmon can be found in the actions to increase production volume in parallel with the establishment of credible distribution network to differentiate locally grown produce with the that from China.

Market opportunities

Based on data of production and export, the average fruit consumption in Vietnam is estimated in between 70-90 kg per capita per year. Global average consumption of fruit is 74 kg per capita, with consumption in Thailand and China at 99 and 81 kg per capita, respectively. The fruit consumption in Vietnam is on a similar level to neighbouring countries, suggesting the domestic demand is likely to be stable in the long run.

However, the growth of fruit consumption does exist and is driven by income growth. The share of fruit accounts for about 8% of total household expenditure. Sufficient fruit intake has been achieved and availability of various fruit options in a tropical agricultural country, demand for fruit in general has been relatively well met by the domestic supply. However, it is varied across varieties, depending on differentiated values of specific products and how the fruit is marketed to end consumers.

In reality, like vegetables, consumers’ buying behaviours towards fruits are underpinned by: (a) freshness, (b) safety assurance, (c) nutrition, (d) specialty, (e) convenience to obtain, (f) right to make choice. The more income and competition between varieties, the more consumers moving through the values cited above.

Average fruit consumption in Vietnam is estimated between 70-90 kg per capita per year, which is similar to neighbouring countries. Domestic demand is likely to be stable in the coming years. In Lao Cai and Son La, plums and pears are considered a local specialty and are in high demand in the domestic market. This is reflected by strong demand for both products from local and provincial traders, and by higher prices compared to other locations. However, the supply remains limited relative to demand. Farmers in Bac Ha, Lao Cai produce around 4,000 tons per year on 500 ha and farmers in Moc Chau, Van Ho, Son La produced around 16,000 tons per year on 1,700 ha, which does not meet the domestic market demand.

Opportunities for interventions to increase ethnic minority women’s involvement in the value chain

Both plums and local persimmon hold local specialty value. Expanding plantation land to increase supply to market to create more revenue for producers is not advised because it would reduce the sense of scarcity in consumers’ minds if the plums were to become widely available, lowering the product’s special value to some extent. Rather, if added economic value is sought, the focus should be on improving production techniques to reduce loss impacted by weather and increase yield.

More value should be created from modern marketing techniques, like brand value or stories of ethnic minority groups that earn their living from local plum production. The purpose of this is to secure a brand position in consumers’ minds as to the local values of plums and persimmon, and to differentiate them from other plums from China that are without clear originality and sold at cheaper prices.

Ethnic minority women should be placed at the centre of the above interventions. Further in-depth study is suggested to assess the level of impact of interventions. In general, additional income for well branded plums should be at least 10-15% higher than the average market

14 http://www.helgilibrary.com/indicators/fruit-consumption-per-capita/world/
However, ethnic minority women will realise this if the branding is associated with an organization of ethnic minority women, like a cooperative.

The potential number of ethnic minority women to engage in, and benefit from, interventions in the plum value chain is estimated between 500-700 in Lao Cai and about 3,000 in Son La. This is premised on the assessment of additional revenue achieved from Program interventions.

**Constraints for participation of Ethnic Minority Women**

Ethnic minority women’s engagement is necessarily attached to the presence of companies and cooperatives that could help ethnic minority women to process and sell plums to markets outside the province. However, these players are currently absent in Son La and Lao Cai. Plum sale by households therefore has to be made through traditional market channels, which are highly volatile, putting ethnic minority women’s engagement in an unsustainable position. In reality, the same as many other agricultural products that are being sold through traditional trade channels, the price of plums from Son La and Lao Cai is up and down from time to time throughout the year. Occasionally, it may reduce to the level where the production is no longer profitable, discouraging ethnic minority women’s participation as a result. And partly due to this, the fruit plantation area of Lao Cai has been reduced to less than 1,000 ha over the last few years.

Ethnic minority women are also engaged at the production level. It is difficult, or impractical, for ethnic minority women to participate upstream in the value chain because of the lack of language proficiency and other trade-related skills. Furthermore, ethnic minority women cannot create added value for themselves due to the status of having poor post-harvest processing facilities.

Competition for plums from China is seen as a huge challenge. China plums are normally sold at cheaper prices than Son La or Lao Cai, and even worse, they are claimed by traders to be from Son La and Lao Cai. Branding local plums (Tam Hoa or Bac Ha) as local specialties in the market is very difficult. This will eventually have an impact on the production of smallholder farmers, including ethnic minority women.

**Potential partners**

No strong potential partners were noted during the study mission. More action to attract business interest and identify relevant partners for the development of plum value chain will be carried out during Program implementation.

**2.4.2.2 Passion Fruit Value Chain Son La**

**Map of passion fruit value chain – Son La**

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15 Interview plum trader in Moc Chau
There are about 500 ha of passion fruits being cultivated in Son La, with an estimated yield of 60 tons/ha, total provincial production, about 3,000 tons/year. Passion fruits harvested from households are sold to cooperatives, local collectors, and recently, Nafoods, a company that has just established its presence in Moc Chau. From cooperative and local traders, the fruits are exported to China through Chinese importers. However, those sold to Nafoods Company are processed into concentrates before being exporting to higher value markets of Europe and America.

In terms of key actors in this value chain there are two notable points: 1) So far, there is only one passion fruit cooperative, with 230 members and 280 ha of passion fruits; and 2) Passion fruit is one of multiple varieties targeted by Nafoods. The company plans to establish operations to process supply from 5,000 ha, of which 300-400 ha are in Moc Chau and Van Ho. Passion fruits represent a business opportunity in Son La.

**Market opportunities**

A reliable data source on global markets for passion fruits was not found during the research. Passion fruits are made of different varieties: purple passion fruits (*Passiflora edulis sims*), yellow passion fruits (*Passiflora edulis flaviparaca*), and sweet granadilla (*Passiflora liguralis*). The variety grown in Vietnam is the purple passion fruit. Intense flavour, strong and naturally concentrated aroma suggest that passion fruits can be used as valuable ingredients in the food industry. Besides this, passion fruits are characterised by their health benefits, for being a rich source of vitamins, antioxidants, minerals, and fibre.

The desk-based review revealed that passion fruit stands out amongst tropical fruits in recent years and has become more widely available. Passion fruits of Vietnam are mainly destined for the Chinese market in fresh form. The demand from China appears very strong so far, however, sudden demand drops in impacting Vietnamese farmers are common. Relying on the Chinese market is risky for all agricultural products in Vietnam, including passion fruit.

Nafoods and Hoang Anh Gia Lai have emerged as key players (exporters) of passion fruits from Vietnam. Nafoods has claimed to account for 7-8% of global demand for passion fruit concentrates, with Vietnam taking a share of 10% of the international market for this, equivalent to about 3,000 tons)\(^{16}\). Both companies have built up supply areas for processing factories across the country. HAGL currently owns 1,270 ha in Gia Lai, while Nafoods is developing a plantation on an area of 3,000 ha, also in Gia Lai. Son La’s passion fruit cultivation covers about 500 ha and is understood to be supplying both Nafoods and the Chinese market.

As per the two companies, their markets for passion fruits are well secured. Nafoods, in particular, has been confident in ability to master processing technologies to make passion fruit concentrates and puree, and so, can expand its market further.

Nevertheless, the risks inherent with passion fruits remain high because of reliance on varieties imported from Taiwan and China. Transportation time for passion fruits is required to be less than 10 days, which is challenging in terms of the supply chain logistics. Furthermore, the export market is not yet stable, particularly having China as the primary market. The price of passion fruit fluctuates substantially. in 2017, the price range was 14,000 – 47,000 VND/kg in the beginning but reduced to only 10 – 18,000 VND/kg towards the end of the year.

The opportunity for passion fruits is therefore tied with specific marketing capacity and markets of companies that sources supplies from the area for processing into other products, such as the passion fruit concentrate produced by Nafoods.

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Opportunities for interventions to increase ethnic minority women’s involvement

Support for increasing the production volume provides opportunities for 1) new ethnic minority women to participate in the value chain; and 2) ethnic minority women already in the value chain to improve income by improving the yield or expanding production. To address the issue of the requirement for a large upfront investment, ethnic minority women may try to start small scale production to begin with and scale up gradually as investment is recovered and reinvested. The short cycle of 90-day production, coupled with high profitability,\(^\text{17}\) can allow for production upscaling to happen rapidly and within a year.

Additional values as a result of the Aus4Equality|GREAT’s interventions therefore can be derived from:

- New plantation of passion fruits: VND 200m/ha;
- Increase in productivity: if properly cultivated, passion fruit yield may be up to 60 tons/ha. As demonstrated by the cooperative in Moc Chau, Son La, the current yield only achieves 25 tons/ha

As mentioned above, the market for passion fruits will depend on specific marketing capacity of individual companies that source supply from smallholders, including ethnic minority women. Production expansion should not be rolled out when companies with solid customer bases and commitments to work with farmers in Son La, like Nafoods, are not yet identified.

The potential number of ethnic minority women to engage in, and benefit from, interventions in the passion fruit value chain is estimated at 500. This is based on the potential to expand the current cooperative’s operation and demand from Nafoods for supplies to make passion fruit concentrates.

Constraints for participation of Ethnic Minority Women

Cultivation and harvesting techniques are not a major challenge to farmers. In reality, the fruits are seen as an ‘easy crop’ to manage. Technicality is not a constraint to ethnic minority women’ engagement in the sector. However, ethnic minority women’s engagement is constrained by: 1) the high level of upfront investment in passion fruit production, estimated at VND 80m/ha, which many households are not able to afford; 2) the lack of reliable sources for seeds/seedlings supply is another major constraint: currently, passion fruit seedlings/seeds are imported from China or Taiwan and the risk with this is that the variety’s quality is not properly controlled, and; 3) sufficient water supply is needed for passion fruits production and smallholder farmers may not be able to join the value chain if their land does not satisfy this condition.

Potential partners

Nafoods is the most significant potential partner in Son La. The company has already set up operations in Moc Chau and plans to expand production which require high volume of passion fruit supply from more local producers including women.

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\(^{17}\) Estimated revenue: VND 300m/ha; Production cost: VND 100m/ha. Estimated profit: VND 200m/ha
2.4.2.3 Avocado Value Chain Son La

Map of avocados value chain – Son La

Avocados are not yet developed as a major product of Son La, accounting for only about 100 ha. The value chain for avocados is quite straightforward. Households sell harvested avocados to local collectors who then distribute to wholesalers, and then retailers in other provinces (See above). A minor volume is traded directly to end buyers by households, local traders, wholesalers, and retailers.

Market opportunities

Avocados are special fruits, containing high levels of protein, vitamin, minerals, salts, carbohydrates, and water. Previous studies have found that avocados generate 150-300 calories per 100 grams. Avocado is recognized as the richest nutritious fruit in the world, with calorific content of three times of a banana. The avocado originated from central America and migrated to Vietnam in Lam Dong in 1940.

The market for avocados is international and domestic. In terms of international markets, the total global export of avocados in 2016 was 1.8 million tons. Major exporter countries include Mexico, Peru, Chile, Spain, and the USA. The average export price varies depending on the origin. The lowest export price is given for avocados from South Africa, costing USD 1.2/kg; whereas export prices from other countries are in between USD 1.9 – 3 /kg.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Value exported in 2016 (USD thousand)</th>
<th>Trade balance in 2016 (USD thousand)</th>
<th>Quantity exported in 2016</th>
<th>Quantity Unit</th>
<th>Unit value (USD/unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>4,353,956</td>
<td>(470,374)</td>
<td>1,882,380</td>
<td>Tons</td>
<td>2,313</td>
</tr>
<tr>
<td>Mexico</td>
<td>2,102,981</td>
<td>2,102,974</td>
<td>926,597</td>
<td>Tons</td>
<td>2,270</td>
</tr>
<tr>
<td>Peru</td>
<td>396,583</td>
<td>396,583</td>
<td>194,098</td>
<td>Tons</td>
<td>2,043</td>
</tr>
<tr>
<td>Netherlands</td>
<td>477,240</td>
<td>(2,684)</td>
<td>147,540</td>
<td>Tons</td>
<td>3,235</td>
</tr>
<tr>
<td>Chile</td>
<td>363,264</td>
<td>345,416</td>
<td>147,125</td>
<td>Tons</td>
<td>2,469</td>
</tr>
<tr>
<td>Spain</td>
<td>269,105</td>
<td>72,091</td>
<td>91,568</td>
<td>Tons</td>
<td>2,939</td>
</tr>
<tr>
<td>USA</td>
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<td>(1,864,223)</td>
<td>60,061</td>
<td>Tons</td>
<td>2,142</td>
</tr>
<tr>
<td>South Africa</td>
<td>72,202</td>
<td>67,583</td>
<td>57,866</td>
<td>Tons</td>
<td>1,248</td>
</tr>
<tr>
<td>Kenya</td>
<td>97,926</td>
<td>97,896</td>
<td>50,082</td>
<td>Tons</td>
<td>1,955</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>33,449</td>
<td>33,421</td>
<td>26,357</td>
<td>Tons</td>
<td>1,269</td>
</tr>
</tbody>
</table>
### Countries Value exported in 2016 (USD thousand) | Trade balance in 2016 (USD thousand) | Quantity exported in 2016 | Quantity Unit | Unit value (USD/unit)
--- | --- | --- | --- | ---
New Zealand | 87,720 | 87,715 | 25,873 | Tons | 3,390
Israel | 41,683 | 41,683 | 25,324 | Tons | 1,646
France | 58,282 | (318,498) | 20,292 | Tons | 2,872
Belgium | 42,618 | (28,391) | 18,681 | Tons | 2,281
Colombia | 35,040 | 35,024 | 18,201 | Tons | 1,925
Germany | 40,300 | (163,110) | 12,324 | Tons | 3,270

Source: author’s estimates based on different sources.

Global export volume for avocado has been steadily rising since 2013, with rates of 1.2 million, 1.4 million, 1.6 million and 1.8 million tons in 2013, 2014, 2015, and 2016 respectively.

*Increasingly high global consumption of avocados represents a significant opportunity for Vietnam to increase exports.* Given the gap between the current export price and retail price in Vietnam (USD 1 to USD 3/kg across the year), export of Vietnam avocados is feasible in terms of cost competition. However, *whether the avocado sector is well suited for export will depend on the presence of capable exporters, committed to working with Vietnamese farmers.* With regards to the domestic market, information on avocado consumption is limited. Avocado production is concentrated in Vietnam’s highland area in Tay Nguyen, with 2,700ha being cultivated – equivalent to about 40,000 tons of avocados. Indicators of market demand for avocados can be derived from the price of this product throughout the year. Avocados are sold domestically for between VND 20-70,000 per kg. Meanwhile, imported avocados can be priced at VND 100,000 per kg. The domestic market demand for avocados appears to be quite strong.

**Opportunities for interventions to increase ethnic minority women’s involvement**

The potential contribution of Aus4Equality/GREAT includes:

- New plantations of avocados, especially in the area where rice, cassava, and maize are no longer profitable;
- For those already cultivating avocados, increase productivity and quality by application of best practice techniques or standards, like VietGAP;
- Another option may be to develop added value for ethnic minority women/households by providing tourists with tours of the avocado plantations; and
- Integration of new companies or cooperatives into the value chain to improve market access for smallholder farmers.

The potential number of ethnic minority women to engage in, and benefit from, interventions in the avocado value chain is estimated at about 100-200. This however may change depending on specific business plans of companies sourcing avocados from these areas.

**Constraints for participation of Ethnic Minority Women**

Given that avocados are not yet a major product in the province, engagement of ethnic minority women in the production of this fruit will face a range of challenges including access to market information, production techniques and reliable supply of seeds/seedlings.
Potential partners

No obvious potential partners were identified during the study mission. Further exploration of partners is to be made during the implementation phase.

2.4.2.4 Citrus Value Chain Son La Map of citrus value chain – Son La

The value chain for citrus in Son La is similar to that of avocados (see above). Households sell their citruses to local collectors in Mai Chau. From local collectors, citruses flow to wholesalers and retailers, through traditional distribution channels.

Market opportunities

Citruses from Son La are classified as a local specialty, sold only in domestic markets. Competition with citrus from other regions is therefore high. Currently, there are many different varieties of oranges, being claimed as specialties from different areas in Vietnam. These are, for example, ‘Cam Cao Phong’ from Hoa Binh province; ‘Cam sanh’ from Ham Yen, Ha Giang; ‘Cam canh’ from various locations; and ‘Cam bu’ from Ha Tinh. The competitive landscape for citruses/oranges in the Vietnamese domestic market is strong.

However, citruses from Moc Chau, Son La, can target a niche market segment with limited volume. The fruits have differentiated values in terms of taste which is solely attributed to the unique soil and climate conditions of the area in which they are grown. Investing in branding and developing new distribution channels to get citruses from Moc Chau to supermarkets in Hanoi or other provinces will add value for producers from the region. Expanding production to meet demand in this way may contribute to increased income for ethnic minority women engaged in the production of citrus.

Opportunities for interventions to increase ethnic minority women’s involvement

Support for new plantations and production improvement will provide opportunities for engaging ethnic minority women in citrus production. Further investigation into potential marketing strategies and implementation partners will need to be conducted in order to specifically target the incomes of ethnic minority women. In the end, as mentioned above, due to strong competition with oranges from other regions, it is the lead actor(s) in the value chain who will determine the interventions. For example, cooperatives may be the active players to bring citruses to modern trade channels and create more value as a result, but among many factors, the availability of capable and strong leadership is vital to the success of any intervention. The
potential number of ethnic minority women to join the citrus value chain is estimated at about 200, considering the land available for plantation and current market absorption.

Constraints for participation of Ethnic Minority Women
It usually takes 4-5 years for the first harvest from a new plantation. The upfront investment and long delay in turning a profit is prohibitive for new entrants to the value chain. For those already in citrus production, the engagement is confined to production capability of a given farm. Transportation is mostly undertaken by men who are physically fit enough to handle heavy trade volumes across long distances from the field to collection points, especially given the difficult road conditions. With respect to training, because ethnic minority women normally cannot drive, they will not be able to participate the training if it is in locations far from the villages. Market information is not readily accessible for ethnic minority women producers and sales are made only to local collectors, who are also far from end users. Price volatility and demand movement represents a major risk to new entrants and smallholders, particularly ethnic minority women.

Potential partners
No strong potential partner was identified in the mission. Further exploration of partners will be undertaken during the implementation phase.

2.4.3 Value Chain Analysis for Tea in Lao Cai and Son La
Tea in Lao Cai can be separated into two different varieties with two distinct value chains. The tea in Bac Ha district is ancient and grows wild, and is sold to a niche market, both domestically and internationally. In contrast, the tea in Muong Khuong is known as ‘commercial’ Shan tea, planted in rows, and is sold at the average commodity price. Its value is therefore structured differently to the speciality tea.

Map of commercial tea value chain (Lowland tea) in Lao Cai

The value chain for commercial tea varieties in Muong Khuong, Lao Cai, is dominated by a single company: Thanh Binh Tea Company. The linkage between farmers and the company and markets downstream is fairly straightforward. All tea farmers sell their harvested fresh tea leaves to Thanh Binh Company, who then processes the leaves into various tea drinks, like green tea, for export to average value markets, mainly in the Middle East. The Company either exports via exporters or directly depending on specific orders and buyers.

The total tea plantation in Muong Khuong is 2,000 ha, among which 1,000 ha is certified by VietGAP. The average amount of land under cultivation is 0.3 ha/household. This translates to
about 6,000 households and therefore, ethnic minority women participating in tea value chain in Muong Khuong, Lao Cai.

Map of ancient Shan tea value chain (Upland tea) – Bac Ha/Lao Cai

In the ancient Shan tea value chain, farmers sell their fresh tea leaves to a factory in Ban Lien village for processing. The tea is then directly exported to overseas importers or via exporters based outside Lao Cai. A small volume is for local collection agents who are basically the collection arm of Chinese buyers. Some households process the fresh teal leaves on site to make green tea for local markets.

Ban Lien factory is current sourcing tea leaves from about 200 households. In the last two year, the factory’s output was insufficient to service orders from importers in Europe. Consequently, the factory has plans to expand its supplier base to other communes in Bac Ha.

Sales of tea through Chinese import channels is not stable, with demand fluctuating through the year. In addition, Chinese buyers trade leaves of any quality, not only the buds and leaves next to the buds, which leads farmers to indiscriminately harvest the leaves, reducing the overall quality of their yields.

Map of tea value chain in Son La

Unlike Lao Cai, solely commercial varieties of tea are grown in Son La, planted in rows in large volumes. The map of the commercial tea value chain in Son La is provided below:
Overall, tea processing factories in Son La rely largely on local collectors for the supply of fresh tea leaves. Collectors purchase tea leaves directly from households. There is a small proportion of households selling tea leaves directly to factories and these are usually those residing in proximity to the factories, making transportation of the tea leaves to the factories’ gate easy.

From local factories, tea is then exported through exporters who often work for multiple tea factories from different locations in Vietnam. Normally, the tea collected is mixed by exporters to obtain an average quality as desired by overseas importers. Sometimes, local factories export directly to overseas buyers. Local factories may purchase tea from each other when supply is insufficient to meet demand. In general, it is estimated that 90% of tea from Son La is exported to Middle Eastern countries, and the remaining to Taiwan and Japan.

There are less than five factories, either in the form of private companies or cooperatives, operating in the province. Each of these is sourcing considerable volumes of fresh tea from farmers. Dai Loc factory and Tan Lap Cooperative consume roughly 5,000 tons and 10,000 tons of fresh tea leaves per year respectively.

Market opportunities

Vietnam’s gross national production of tea is estimated at about 160,000 tons/year, of which about 30,000 tons are absorbed by the domestic market with the remaining tea being exported. With regards to Vietnam’s tea exports, there are three clearly differentiated market segments: 1) high value at small volume, largely exported to Europe and North America; 2) average value markets in Middle Eastern region (mainly Pakistan and Afghanistan); 3) medium to high price markets, such as Taiwan. Market opportunities for upland tea in Son La and Lao Cai include:

- High value segments of the domestic market: to serve increasing domestic demand for local specialties. Associating speciality tea products with ethnic minority culture or local traditions, and marketing to Vietnamese buyers will expand a niche market;
- High value segments in Europe: production certified by recognised standards and networking with partners can help to achieve sales premiums;
- Improve productivity of commercial tea at the farm level to meet the increasing demand of specific buyers of local tea.

Opportunities for interventions to increase ethnic minority women’s involvement

The opportunity for ethnic minority women to participate in branding to create added value for this product is limited because it is mostly carried out at the private sector business level, not involving ethnic minority women significantly.

More involvement of ethnic minority women is seen in the opportunities of export value chains. The improvement of technical capacity to set up production systems that standardised quality, will be a key intervention. Other support for complying with standards at the processing level will be important. In this case, ethnic minority women will be the indirect beneficiaries. In addition, technical capacity may also improve productivity by applying best practice harvesting techniques and enhancing plant density.

In Lao Cai, the potential added value includes:

- Improvement in productivity of tea in Muong Khuong. Current yields are about 7 tons/ha, compared with the yield of more than 10 tons/ha in similar cultivation conditions, for example, in Lai Chau. If three additional tons per ha are achieved, added income for smallholder farmers will be about VND 10 million per ha.
- The potential for improving productivity in Bac Ha is substantial. Current yield is less than 1 ton/kg. Increasing plantation density and technical skills can increase the current yield to 3 tons/ha, equivalent to also nearly VND 10 million per ha.
Additionally, ethnic minority women will be paid a 10-20% premium by the Ban Lien factory if organic certification is obtained\(^\text{18}\). The expansion of the supply base of Ban Lien factory will help some ethnic minority women to enter or continue to participate in the organic value chain. For those new entrants to the tea sector in Ban Lien, added income will be VND 5-7 million/ha.

The population of ethnic minority women beneficiaries in the tea value chain may reach more than 5,000 of which 4,500 of those will participate in the commercial tea area of Muong Khuong factory and 500 in the ancient tea production and supplying to Ban Lien factory in Bac Ha, Lao Cai.

In Son La, the potential added value includes:

- Establishment of direct linkages between ethnic minority women and processors, eliminating the local collector layer in the value chain, allowing farmers to seek higher prices for their harvest. This will enable ethnic minority women to understand better technical requirements from buyers and therefore improve the quality of their tea leaves. Furthermore, farm-gate tea leaf prices may increase 10% due to the absence of local traders.
- Improvement of productivity at places where the yield is below average levels. For instance, the yield of Tan Lap is currently 9 tons/ha; It is believed that if production techniques are properly applied, this can increase to more than 12 tons/ha.
- Increasing stability in sales for farmers will improve resilience to shocks and reduce risk.

The population of beneficiaries in the tea value chain in Son La may reach 4,500. This can be achieved by partnering with two factories, each will work with more than 2,000 ethnic minority women.

Constraints for participation of ethnic minority women

There are no major constraints for ethnic minority women to participate in the tea value chain. Most activities in the tea value chain are dominated by ethnic minority women. Women participate in growing seedling, cultivation, harvesting, delivery of harvested tea leaves, and processing factories. Similarly to many other crops, traditional subsistence-based production makes it difficult for ethnic minority women produce commercial yields. This issue particularly exists in the ancient Shan tea value chain, where participants are ethnic minority women living in places far from the main road and do not have much knowledge of marketing practices.

Specifically, the challenges to ethnic minority women effectively engaging in the tea value chain are:

- Insufficient cultivation capacity, especially the skills to better apply Good Agriculture Practices (GAPs) and Integrated Pest Management (IPMs) at the farm level (for lowland tea) and skills to apply Organic cultivation practices (for the upland tea);
- Weak the production organisation skills to support collective production via groups or cooperatives and to increase compliance with GAPs and meeting traceability requirements;
- Poor infrastructure in upland areas for transporting fresh tea leaves from farm to processing facilities causing quality damage and consequently a high loss ratio; and
- In some areas, women having limited power to co-manage income from tea necessary for further investment in cultivation and expansion (Mong and Giay).

In both provinces, the engagement of ethnic minority women eventually depends on whether local processors are able to secure a solid market position. Given that most tea from Son La and Muong Khuong, Lao Cai being exported to Middle Eastern countries, and in the face of

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\(^{18}\) The Ban Lien factory has secured a good position in the European market. Its current supply base from Ban Lien commune is not enough to meet with the orders from its customers.
fierce competition from other factories in other provinces in Vietnam, the factories that are sourcing tea from Son La/Muong Khuong- Lao Cai may lose market share, and hence, badly affect the income of households in the provinces.

**Son La:** Son La is differentiated from Lao Cai by the dominant status of local traders of fresh tea leaves, the presence of these in Son La can be perceived as a constraint that prevents ethnic minority women and households from interacting directly with factories. As a result, specific information of market demand as to technical requirements or trade volume is under presented to ethnic minority women, and so are the opportunities for performance improvement. In a nutshell, the lack of established relationships between ethnic minority women and processors is a constraint to ethnic minority women’s engagement to a large extent.

**Potential partners**

**Lao Cai:**

- Thanh Binh Tea Company: is the only processor that purchases all fresh tea leaves supply from households in Muong Khuong district, Lao Cai. The company has established a strong linkage with around 5,000 households (2,000 ha plantation). It seeks to partner with development actors to further enhance farmers’ production capacity towards complying with VietGAP standards while increasing productivity. Quality improvement could also be the basis for a potential partnership. Thanh Binh’s output is mainly absorbed by importers in the Middle East.

- Hiep Thanh Tea Company: runs a tea processing factory in Ban Lien, Bac Ha district of Lao Cai. The factory has been present in the district for 10 years, since 2008, and is major source of cash income for more than 200 households in the area. Its products are organic certified, of high value, and being exported to Europe and America. To meet the orders from European importers, Hiep Thanh is looking for partners to expand its organic supply base to include hundreds of new farmers in other communes.

**Son La:**

- Tan Lap Cooperative in Moc Chau district, Son La: is a large operation, with sale volumes of 2,000 tons of dried tea (equivalent to 8,000 tons of fresh tea leaves). Tan Lap is currently buying tea leaves directly from 420 households, and the remaining input demand is met by intermediary local collectors. The cooperative is looking for partners to improve farmers’ production performance in both quality and quantity. The presence of local collectors has been an obstacle to quality improvement for a long time because these tend to trade off long term benefits of quality for short term price gains;

- Dai Loc Tea Company: is another factory located in Van Ho district, Son La. Dai Loc has an operational scale of about 50% of that of Tan Lap (1,000 tons of dried tea), but experiences similar challenges in quality and quantity, and is seeking partners to support the improvement of its value chain’s competitiveness.

### 2.4.4 Value Chain Analysis for cinnamon Lao Cai

Cinnamon in Lao Cai is referred to in three different products: cinnamon bark, cinnamon oil, and cinnamon wood. Each of these has different value chains with different actors. However, all cinnamon values start with the cinnamon plantation resource, which is belonged to households.
**Producers:** *Cinnamon Cassia* is the main cinnamon variety cultivated in Yen Bai. Cinnamon planting material is mostly prepared and produced by farmers, in which seeds are collected from small-leaf trees, regardless of quality, and then preserved for nursing. The seedlings are open-root. Producers' interest in types of seedlings is varied. There is a long delay between planting and harvest (10-15 years) which is why the concern for quality is minimal at the planting stage.

**Commune collectors:** This group purchases all outputs from harvest: wood, leaves, and dried cinnamon bark. The deal pricing is done either per tree or based on the volume of bark, leaves, and wood. In the former case, farmers sell whole areas to collectors who will have to undertake all the harvesting. This approach is applied by those with labour constraints in the family. In the latter case, farmers conduct the harvesting themselves and then sell the output to collectors. There are usually 3-7 commune collectors. The collectors have their own 2-ton trucks to transport the farm outputs to district collectors. Commune collectors sometimes sell directly to processors outside Lao Cai. In such cases, a sufficient volume is required. The commune collectors carry their supply to the main road where processors’ trucks (7 tons) wait for uploading. There is no fixed market for the cinnamon bark flow from commune collectors. It could be sold to district collectors or large processors, depending on the price and availability of transportation. An estimated 70% of farm output is sold through commune collectors.\(^\text{19}\)

**District collectors:** These are usually located in the district areas where large buyers trucks in other provinces collect the bark. District collectors sometimes send their own trucks to villages to buy directly from producers to save cost. Notably, district collectors may not be local. They are the representatives of the processors or factories and assigned to be based in the district to secure supply on an ongoing basis. An estimated 30% of farm output is sold through district collectors.

**Processors/ Exporters:** Conduct bark peeling, grading, and packaging for export market. The bark may be ground to make cinnamon powder according to customers' orders. The grinding is not common across processors. With a total export of up to 30,000 tons of cinnamon bark per year, the number of cinnamon exporters is significant. Due to low entry barriers to the business (cinnamon bark is simply traded as raw material with minimum processing necessary), it has mushroomed. No exporters or collectors in particular dominate the supply in Lao Cai. Each has contact with local traders or collectors, and sometimes create their own agents, who will seek out other exporters for the sake of revenue maximization. Most overseas buyers are wholesalers and factories. Vietnam exporters seemed to have little understanding of what their supply will be used for at the end of the value chain.

\(^{19}\) Based on responses of households in the survey
**Producer:** Similar to the cinnamon bark producers.

**Commune collectors:** As discussed above, collecting all of leaves, wood, and cinnamon bark from households.

**District distillers:** Buy leaves collected from farm by commune collectors who transport harvested leaves directly to the distillery’s gate. There are four large oil processing factories in Lao Cai, the largest of which is called Techvina, and which is located in Bac Ngam. Oil distilling technologies are simple. The final product has 60-80% oil component. Further processing may be applied to increase the oil content to 90%, but this is not yet available in Vietnam. Occasionally, oil is distilled from bark in small volumes to serve the domestic market. Bark oil production costs are much higher than those associated with leaf oil production. Leaf oil distilling is carried out at some households as well, using simple distilling facilities. The number of these changes from time to time depending on market price. In practice, when the oil price exceeds VND 600,000/kg, there are many households to distil cinnamon leaves for oil in the household and many cease this activity when the price is lowered below VND 600K/kg.

**Chinese oil buyers:** Chinese traders are the only buyers of cinnamon oil distilled from Vietnam, and Lao Cai in particular. From Chinese traders, the cinnamon oil is sold to other processors in China to be further processed into higher quality products or sold directly to end consumers through retailers or wholesalers for simple application. In terms of product development and application, further study is recommended to understand how the cinnamon oil is processed to make final products for applications in different industries.
Producer: Similar as the cinnamon back’s producers.

Commune collectors: Collect adequate volume of wood from farm – 8m3 is a full load for a 2 ton truck. Collectors may classify the wood into different grades for better pricing. An estimated 50% of wood from farms is sold through commune collectors.

District collectors: Keep contacts with many inter-provincial wood dealers, who source wood material as input supply for wood processing villages in major wood processing centres20, such as Phu Tho, Ha Tay and Hanoi. Small size cinnamon wood is used to make pressed wood in the form of board in varied dimensions for furniture application. An estimated 50% of wood from farm is sold through district collectors.

Wood Processors: Make furniture and wooden products and sell to markets through long established distribution networks. It should be noted that cinnamon wood is relatively cheap compared with many other types of wood material for processing. Furniture made from cinnamon wood is relevant for rural markets or those with budget constraints in cities.

The value chain for wood products is complicated and out of the scope of this study. A reference for wood value chain is provide below.

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Cinnamon seeds value chain:

Due to the need for expansion and replantation, seeds have emerged as a valuable product from the cinnamon tree. The price of cinnamon has risen to VND 300,000/kg in 2015 from VND 150,000/kg in 2014. Nevertheless, the value chain of seeds is simple in which farmers sell their collected seeds to some households with nursery gardens in the villages who will then supply the seedlings to producers in the area or from outside. Observation in the field suggests that the cinnamon seed value chain is not yet firmly established. Out of 44 households which participated in the survey, 15 families earned income from sales of seeds in 2015. The seeds were generally not collected by best practice techniques. Most of the surveyed households see seeds as a bonus not a business in its own right.

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20 There are about more than 300 wood processing villages in the North of Vietnam
Market opportunities

- The market opportunities for cinnamon products are strongly related to export activities given that global cinnamon production is concentrated in only a few countries and that the consumption of cinnamon is worldwide.
- Total global imports of cinnamon bark in 2016 was nearly 160,000 tons. This demand is sufficiently met by supply from cinnamon producing countries, including Vietnam which exported 30,000 tons in 2016 (or 20% of the global market).
- Vietnam’s new cinnamon plantation has been increasing sharply over recent years. It is understood that at least 20,000 ha of new plantation has been created in Lao Cai and Yen Bai. The national cinnamon supply, when the new plantation comes to harvest, will be substantial. Including the new plantation, Vietnam’s supply to the world may be up to 50-60,000 tons per year in the next 4-5 years.
- In respect to cinnamon oil, opportunities in refining oil processing exist in Lao Cai.

Market opportunities are seen not on production expansion, but rather, in improving technical capacity to process products of higher values.

Opportunities for interventions to increase ethnic minority women’s involvement

Increasing ethnic minority women’s involvement in the cinnamon value chain should be derived from the market opportunity for higher value products, in which some activities can be processed at the farm level. Interventions in the direction that supports expansion of the supply base are not recommended because the market appears mature while the supply, especially from new plantations in Vietnam, continues to rise.\(^{21}\)

Specific actions are to be identified in relation to specific business plans of private companies that source supply from Lao Cai. Potential interventions may be:

- Application of techniques to achieve organic certified cinnamon. This will help ethnic minority women to earn 10-15% premium on farm-gate prices.
- Improve processing techniques to not sell only raw materials, making tube/clean cinnamon is an example.
- Support businesses with linkages to ethnic minority women to develop higher value products, like cinnamon powder, high quality oil from bark and leaves, and products well packaged for niche customers.

The number of ethnic minority women as beneficiaries of the project is expected to be 3,000. These will participate in organic production and higher value processing.

Constraints for participation of Ethnic Minority Women

Overall, women play an equal role to men in cinnamon production at the farm level, although there are some slight differences in the division of labour by products (leaves, bark, wood, and seed). Two key considerations to note are:

- Women tend to be more active in stream activities such as plantation, cultivation, and harvesting, and less in downstream activities which require more interaction with outsiders, such as processing, sales, and transportation, however, the difference is not significant.
- Seed collection is clearly dominated by women. However, this business is not yet common across households nor seen as a viable stand-alone business.

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\(^{21}\) In 2015 in 2016, total global imports are around 150 – 160,000 tons, suggesting demand growth is trivial. With more plantation, Vietnam will be able to add 30,000 tons more on the top of its current export of 30,000 tons. This additional supply will be difficult to be absorbed by the global demand.
Though the participation looks balanced in terms of labour, men usually take heavy lifting jobs, such as sawing or transporting, and women are in charge of lighter work like peeling, sorting, or drying bark. In the case where men and women are engaged, the labour division is decided by the context. For instance, a wife may deal with the sales when the husband is busy working on something else.

**Constraints to ethnic minority women’s engagement in the value chain:**

- By tradition, women's social interactions are limited. Compounded by language barriers, women are not able to participate in downstream activities, more on the market side, like sale of harvested cinnamon.
- The lack of market information and production capacity confine households, including ethnic minority women, within basic and traditional processing.

**Potential partners**

There are many cinnamon traders and processors in Vietnam. These are not based in Lao Cai, rather in other provinces, like Bac Giang or Bac Ninh for logistical reasons, and sourcing cinnamon bark from both Lao Cai and Yen Bai. Identification of the right partners among these is to be carried out during implementation. The potential partners should be those working on large scale and targeted improvements for added value at the household level. Visimex and Vinasamex are the largest companies seeking partnership to address this. However, a detailed assessment of partner candidates is to be conducted to better understand the needs of potential partners and the opportunities for engaging ethnic minority women.

Oil processor, Techvina, has processing facilities in Lao Cai and sources cinnamon tea leaves from Bac Ha. Techvina may be a good partner for the Program if it plans to invest in more advanced refining technology to make higher value oil for American and European markets, instead of China which only buys commodity oil from Vietnam at a low price.

### 2.4.5 Value Chain Analysis for Benzoin Lao Cai

**VC map of benzoin**

Benzoin is an extremely aromatic gum released from Styrax tonkinensis trees. It can be used for various applications in the cosmetics industry. The Styrax tonkinensis trees are normally harvested to provide wood for paper industry. However, the gum of Styrax tonkinensis has been found just recently in Van Ban, Lao Cai. Its value chain is straightforward. Benzoin is tapped from Styrax tonkinensis trees by households and sold to companies, who either directly export or indirectly through exporters. Importers are usually companies in Europe or America that can use the gum for the production of cosmetic products.
Market opportunities

Studies of the benzoin market were not available at the time of writing this report. However, the demand from individual importers suggests that the product is in short supply. Duc Phu is the only company in Lao Cai that has set up a value chain with Mane, an international cosmetic processor that uses benzoin as input for its production. The company has an expressed interest in absorbing the full supply from Lao Cai. Nevertheless, the trade volume from Duc Phu to Mane will increase quickly to reach 12 tons in 2018 onwards.

Overall, benzoin is a newly emerging product with high demand from export markets. It is suitable for agro-forestry models, which combine more than one products in farm production, for instance, Styrax tonkinensis, ginger, medicinal plant, and lemon grass. Benzoin is an opportunity for women to take care of the deforestation as well, by planting agricultural crops under forest canopy.

Opportunities for interventions to increase ethnic minority women’s involvement

The target to increase engagement of ethnic minority women should be in line with support for increasing the current production volume. Key interventions could be:

- Provide technical training for farmers to harvest gum from the fiscus trees. Ficus trees are normally exploited for wood, farmers need to change their production habit to also apply new techniques for harvesting benzoin gum.
- Organize farmers into groups to secure sufficient volume to meet with importers’ demand.

Added economics for benzoin farmers are derived from the sale of this product. Because farmers did not exploit Styrax tonkinensis trees for gum before, any income from benzoin can be treated as additional income for households.

Price of benzoin gum is about VND 300,000/kg maximum, and each tree can yield about 0.7 kg. The income from benzoin per household therefore will depend on the number of trees on a given households’ land. Below is the comparison of income from gum as opposed to timber:

<table>
<thead>
<tr>
<th>Tree size</th>
<th>Income from timber (VND)</th>
<th>Gum production per year (kg)</th>
<th>Yearly income from gum (VND165k/kg)</th>
<th>Total income for gum (VND during 3 yrs)</th>
<th>Added value (VND)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (3-5 yrs)</td>
<td>100,000</td>
<td>0.3</td>
<td>49.500</td>
<td>148,500</td>
<td>48,500</td>
</tr>
<tr>
<td>Middle (6-8 yrs)</td>
<td>100,000</td>
<td>1</td>
<td>165,000</td>
<td>495,000</td>
<td>330,000</td>
</tr>
<tr>
<td>Thick (&gt; 8 yrs)</td>
<td>700,000</td>
<td>2</td>
<td>330,000</td>
<td>990,000</td>
<td>660,000</td>
</tr>
</tbody>
</table>

Not all Styrax tonkinensis trees can generate gum. Certain technical conditions must be satisfied. The specific population of ethnic minority women to join in benzoin value chain needs to be validated by technical experts. However, with 3,600 ha of Styrax tonkinensis trees and considering the purchase order of Duc Phuc Jsc, which is sourcing benzoin from Van Ban, the potential number of ethnic minority women to engage in this value chain is estimated at about 500 households.

Constraints for participation of ethnic minority women

The engagement of ethnic minority women in the value chain depends on the presence of companies that already have established relationships with importers. Currently there is only one company sourcing benzoin from Van Ban, Lao Cai. In the future, it is expected that the number of businesses producing benzoin will mushroom because the fiscus tree area in Lao Cai is substantial, approximately 4,000 ha. Nevertheless, it will take time for a company to establish relationships with overseas customers.
At farm level, the constraints are:

- Limited technical capacity to exploit benzoin. Certain techniques are to be applied to ensure that the gum released at the right time and maintains good quality. However, technical knowledge on this is limited because the benzoin is a new product in the province, and in Vietnam. Very few women have been trained in cultivation and taping practices.
- Difficulty to reach a large number of ethnic minority women because the resource is confined mainly within Van Ban, Bao Yen and Bao Thang districts.
- Lack of awareness within the community of the economic value of the Styrax tonkinensis. The trees are being perceived to be only useful for paper wood production purposes.

Potential partners

Duc Phu is the only company with and established relationship with Mane, an international importer of benzoin, and with farmers in Van Ban, Lao Cai. As expressed by the company, more substantial volumes can be absorbed by its buyer. The company is planning to develop a partnership with other stakeholders to convince farmers of benzoin’s economic value and provide technical training. Duc Phu appears not to have sufficient capacity or resources to roll out these activities itself.

2.4.6 Value Chain Analysis for Medicinal plant

2.4.6.1 Medicinal plant value chain Lao Cai

Map of medicinal plant value chain – Lao Cai

Lao Cai’s medicinal plant value chain has only recently been developed. This sub-sector covers a rich diversity of a dozen different varieties. Harvested medicinal herbs are all sold by households to (a) pharmaceutical companies, or (b) Local traders/ Cooperatives. At local traders/Cooperatives, medicinal herbs are primarily processed by sorting, drying and simple packaging, and are then sent to pharmaceutical companies, where the herbs’ substance is extracted and further processed into complete medicines for sale to pharmacies or hospitals. Some cooperatives of households have been established so that the demand for consistent quality and quantity at desired volumes can be satisfied. A small portion of semi-processed medicinal herbs is sold to tourists through retail outlets in local markets or at tourism attraction places across the province. The most established value chain is for artichokes, in which Traphaco Sa Pa is the lead and sourcing supply from about 200 households (90 ha). Currently, apart from Traphaco Sa Pa, there are only a few companies present in the province: Vietnam...
Phyto-pharmaceutical Medicines, Nam Duoc, Nam Ha, and Tan Phat Green. Each of these gets different medicines for their specific target market segments.

**Market opportunities**

Overall, the market opportunity for the medicinal plant value chain is massive in Vietnam. Vietnam consumes about 100,000 tons of medicinal plants per year, of which 70-80% is imported from China. This suggests a massive demand unmet by domestic supply. With about 200 ha of medicinal plantation, the total supply from Lao Cai is estimated at 2-4,000 tons year, just a very tiny fraction of domestic demand. In addition, Lao Cai can focus on some specific varieties that requires specific weather conditions which only Lao Cai affords. The market opportunity for Lao Cai medicinal plant cultivation is significant.

**Opportunities for interventions to increase ethnic minority women’s involvement**

It is clear that due to unique climate features, Lao Cai has an opportunity for pharmaceutical factories to set up a sustainable supply base to secure inputs for processing. Traphaco is an illustrative case in point. Its Artichoke products is produced by using supplies from households only in Lao Cai and Traphaco’s commercial brand is well known in Vietnam’s domestic market. The Program’s interventions should be focused on helping potential companies to develop their own medicinal plant resources in Lao Cai. This could be new plantations or expansion of the current production area, which may increase ethnic minority women’s engagement in the medicinal plant value chain.

Key interventions for increasing ethnic minority women’s involvement:

- Support for establishing linkages with pharmaceutical companies that often lack experience in organization of production amongst multiple households. Understanding of culture, production habits, and the way to use resources of locals is critical for a successful partnership between companies and households, including ethnic minority women.
- Provide technical training for farmers. Interventions that help to establish GACP-WHO certified production system will improve the position of ethnic minority women/households in the value chain because GACP certification is planned to become legally compulsory sooner or later in Vietnam.

**Added economic value from medicinal plant cultivation is varied depending on the varieties.**

Surveys from the field on some key varieties reveals the following:

<table>
<thead>
<tr>
<th>TT</th>
<th>Item</th>
<th>Unit</th>
<th>Angelica sinensis</th>
<th>Platycodon grandiflorum</th>
<th>Salvia miltiorrhiza</th>
<th>Codonopsis pilosula</th>
<th>Amomun Vilosum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Productivity/ha</td>
<td>Kg (fresh)</td>
<td>10,000</td>
<td>8,000</td>
<td>8,000</td>
<td>2,000</td>
<td>800</td>
</tr>
<tr>
<td>2</td>
<td>Revenue</td>
<td>1,000 vnd</td>
<td>200,000</td>
<td>160,000</td>
<td>144,000</td>
<td>80,000</td>
<td>32,000</td>
</tr>
<tr>
<td>3</td>
<td>Cost</td>
<td>1,000 vnd</td>
<td>96,000</td>
<td>90,000</td>
<td>90,000</td>
<td>48,000</td>
<td>16,000</td>
</tr>
<tr>
<td>4</td>
<td>Profit</td>
<td>1,000 vnd</td>
<td>104,000</td>
<td>70,000</td>
<td>54,000</td>
<td>32,000</td>
<td>16,000</td>
</tr>
</tbody>
</table>

Compared with traditional crops, such as maize or rice, which generate about VND20-30 million/ha, medicinal plants clearly offer greater economic benefit.

The current Lao Cai medicinal plant cultivation is about 200 ha. Considering the demand and business plans of companies in the province and also of those interested in establishing a supply base in Lao Cai, 100-200 ha more will be needed for new production. This is translated
into an opportunity for about 500 ethnic minority women to engage in the medicinal plant value chain.

**Constraints for participation of Ethnic Minority Women**

Similar to other crops, ethnic minority women's engagement relies on linkages with pharmaceutical companies. However, the limited number of these is a constraint to developing this value chain. And this situation is not going to be improved in the short run because of the high entry barrier to the phyto-pharmaceutical sub-sector. Not only adequate financial capital but strong technical and marketing capacity is also required for new entrants.

Production techniques are an issue. Medicinal plants are much more difficult to cultivate in comparison with conventional agricultural products in terms of cultivation, harvesting, and post-harvest processing. For other crops, like maize or tea, the revenue is calculated based on volume, but it is the substance content in medicinal plants that decide the value. There are incidents in which harvested plants have a good appearance but are not valuable because of low substance content after being tested. Specific cultivation techniques, combined with the right soil composition are key for producing valuable medicinal plants. However, the knowledge base on medicinal plant cultivation is still being developed in the phyto-pharmaceutical sector.

Not all sites can be used for medicinal plant cultivation. Usually, plantation of specific varieties needs to be tested for a number of seasons prior to rolling out full scale cultivation. The introduction of new plants by companies hence takes time, without guaranteed outcomes. So, ethnic minority women's engagement remains uncertain at this point.

A shortage of traceable and good quality sources of medicinal seeds/seedlings for farm production is another factor undermining medicinal plant value chain development. Currently, seeds/seedlings without transparent information of origin are being sold at a high cost and questionable quality in the market, making medicinal plant production riskier for households.

The artichokes value chain is a good example where households connected with Traphaco have been provided with technical support from the company in supplying artichokes of a certain standard of quality and quantity as required by the company.

**Potential partners**

All phyto-pharmaceutical businesses with interests in sustainably sourcing medicinal plant ingredients from Lao Cai could be potential partners of the project. For the time being, specific candidates may be:

- **Traphaco Sa Pa**: a subsidiary of Traphaco, one of the largest pharmaceutical companies in Vietnam. It was established as an arm of Traphaco to source ingredient inputs for the factory in Hanoi. Traphaco is already working with hundreds of artichokes farmers in Sa Pa, and plans to expand the production into Bac Ha. The company is also looking at developing a medicinal tea business line. The Program can be a partner of Traphaco to implement its business plan, on the condition of ethnic minority women being included.
- **Nam Duoc**: is buying Cat Canh, a material for making syrup that can effectively treat coughing. Nam Duoc has a factory in Ha Nam, a province in the Red River Delta. The company wants to establish its own medicinal plant resource area in Lao Cai.
- **Vietmec**: is a newly established pharmaceutical company. Its business strategy is to diversify products using different natural ingredients. Readily drinkable medicines are understood to be the company’s target. It therefore wants to set up a supply base from various locations in Vietnam to provide diversified inputs for its products.
- **Tam Phat Green**: is small local business, trading medicinal herbs from local producers to factories in the area.

Except Traphaco, all other companies have not had long-standing business in Lao Cai. Further identification and assessment of potential companies is to be carried out during implementation.
2.3.6.2 Medicinal plant value chain in Son La

Value chain map and description of key actors

Compared with Lao Cai, the medicinal plant value chain in Son La is less developed, even though Son La’s medicinal plant base is very rich, with 241 different varieties among which about 100 varieties are locally unique. Notably, 12 varieties are in demand. Moc Chau and Van Ho have plans to develop medicinal plantations of 2600 ha, 1,300 and 1,315 ha in Moc Chau and Van Ho respectively. However, medicinal plant cultivation is not yet popular at the household level. Farmers largely exploit medicinal herbs growing in the wild. The value chain is simply structured and unstable (see above map). A notable player is the Son La Medicinal and Health Care Facilities Company (SLM) that is sourcing supplies of different medicinal herbs from households to sell on to pharmaceutical companies or traditional medicinal clinics. The SLM Company’s trade volume is estimated at 270 tons/year. Apart from SLM, there are local traders who also purchase medicinal herbs from households, to supply to pharmaceutical factories and traditional clinics as well. There are no reliable statistics on the trade volume of local traders and companies in Son La. In reality, the trade varies from year to year, and no large pharmaceutical companies have clearly emerged as lead actors with established brands for unique medicinal products from Son La.

Market opportunities

The current import of nearly 60-70,000 tons of medicinal ingredients from China for phyto-pharmaceutical factories in Vietnam is a common opportunity denominator for Son La or any other provinces in Vietnam, to develop its own medicinal plantation resource. The opportunity is not only confined with the domestic supply gap, but also in the ability of Son La to provide a diversity of ingredients. According to DARD, Son La could produce around 100 medical plant varieties, many of these are unique to the province. In addition, there are 12 different varieties with large stocks growing in the wild in the province. Son La PPC has approved a master plan for medical plants which aims at 34,000 ha by 2020. The plan is in the early stages of operation offering a number of investment incentives. Private investment in the sub-sector is yet to come, though provincial officials confirmed that there has been a number of companies who have conducted feasibility assessments of different investment options in recent years. Son La’s conditions for medicinal plantation are attractive to pharmaceutical companies that want to set up sustainable supply bases for processing.

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22 As per the Report of Son La’s Provincial Medicinal Plantation Development Plan
Opportunities for interventions to increase ethnic minority women’s involvement

Similarly to Lao Cai, potential interventions for increasing ethnic minority women’s involvement in Son La should focus on:

- Support for establishing linkages with pharmaceutical companies: this activity requires more effort than in Lao Cai because of the current absence of strong businesses in Son La. It may cover a range of activities from investment promotion/attraction to facilitation for initial operational setup.
- Provide technical training for farmers: this will depend on particular business plans of companies in the area. In addition to basic training, potential interventions will include helping to establish standardized production systems to meet market needs, such as GACP-WHO.

Consultation with stakeholders in the field suggested that Aus4Equality/GREAT could aim at a target of additional 200ha for medical plants (in addition to the existing area) and benefit between 300 to 500 ethnic minority women. This is based on an estimate that 200-300 ha which can be practically developed to provide inputs for companies which are the lead actors in the medicinal plant value chain.

Constraints for participation of ethnic minority women

Ethnic minority women’s engagement could be constrained by the two factors. Firstly, medical plants require specific technical skills. Medicinal plants are different from conventional agricultural products in terms of cultivation, harvesting, and post-harvest processing. In addition, the techniques need to be suitable to soil conditions to generate medicinal substances as expected. This could present a ‘technical barrier’ for many ethnic minority women to engage in this sub-sector. In addition, partnerships with pharmaceutical companies are vital. Without these companies, medical plants cannot be processed by farmers. At this stage, there are companies such as Tien Dai Phat with an estimated investment of VND 300 billion or Cao Nguyen Company which plans to develop Cordycept in Moc Chau. However, these companies have not yet invested in factories and the progresses of these investments are yet to be realised. Even when these factories are in operation, effects on demand for medical plants would not be substantial. Unlike other agricultural products, medicinal ingredients are not traded in large volumes, companies usually demand some dozens of tons of inputs. Therefore, the number of ethnic minority women to join medicinal plantation value chain would be modest.

Potential partners

As per the Report of the Provincial Medicinal Plan, private investors in the medicinal sub-sector in Son La are: (a) Joint Stocks Hi-Tech Food Processing Company plans to invest in a factory in Van Ho, (b) Cao Nguyen company in a testing phase for cordycept product in Moc Chau, (c) Linh Duoc Son Hoa Binh Cooperative invests in a model of Nua plantation intercropping with maize, and (d) Tien Dai Phat with plan to invest in medicinal plantation and processing in Moc Chau.

None of the above have been completed, providing no conclusive foundation for assessing the economic impact of the medicinal production model. The opportunity for Program interventions will depend on whether the project could identify and attract committed phyto-pharmaceutical companies to set up value chains sourcing ingredients from Son La.
The two products, local rice and chilly, share the same value chain structure because the actors beyond household level normally purchase both of these products as local specialties in their product portfolio. A major part of farm output is sold to cooperatives – there are two cooperatives sourcing supplies of rice and chilly from Bat Xat, Muong Khuong, Bac Ha, and Sa Pa (Hoa Loi Coop and Tien Phong Coop). Farmers do sell their products directly to local markets but in very tiny volumes. From the two cooperatives, chilly and rice are channelled through agents or distributors in other provinces to end users. Husks are purchased from households and dried, milled, and bagged by cooperatives. Sometimes, agents will conduct the milling themselves because the rice is not of good taste if not cooked within 10 days after milling. Trade volumes of local rice from the coops is estimated at 700 tons in 2017, in which 300 tons from Hoa Loi and 400 tons from Tien Phong Coop. 400 tons of chilly was sold by Hoa Loi in 2017.

**Market opportunities**

Chilly and local rice from Lao Cai are seen as local specialties having special value to domestic consumers. The demand for specialties from different regions in Vietnam is on the rise. The chilly sale by Hoa Loi has increased substantially over the last three years: less than 100 tons in 2015, 100 tons in 2016, and 400 tons in 2017. Tien Phong Cooperative also revealed that their current sale of 300 tons of rice can be doubled to 600 tons if they can arrange sufficient capital for investment in farming at households.

However, to tap into the current market demand, cooperatives need to step up their marketing activities. Establishing an agent network, building a local brand to create differentiation values, and improving service quality will add significant value to these products.

**Opportunities for interventions to increase ethnic minority women’s involvement**

The target to increase engagement of ethnic minority women in chilly and local rice products should be associated with production expansion of the cooperatives. Key interventions should include:

- Providing technical training for farmers to improve farm performance: currently, farming mainly relies on general experience in the community. Productivity has not been stable between seasons due to weather conditions and technical capacity.
- Developing supply of high quality seeds through supports to the provincial seed centre or other service providers to improve output quality.
• Supporting the organisation of production and coordinating with Cooperatives so that supply will be stable in terms of quality and quantity, improving competitiveness of the value chain in the market;

**Rice**

• Added economics for local rice farmers are derived from high price of the products:
  o The local rice, namely Seng cu, is at VND 18,000/kg, compared with VND 8,000/kg of conventional rice. The average yield of 5 tons/ha can be improved to 6 tons/ha, if technical cultivation is improved, and the additional income from this will be about VND 10m/ha.
• Additional income also comes from new plantation to serve the sale increase of cooperatives. It will be VND 30-40 m/ha.
• The Tien Phong Cooperative is currently sourcing from 100 ha with 500 households. It plans to double the operation to 1,000 households. Hoa Loi also expects to increase its supply base from 200 households to about 400 households over the next three years. Overall, the number of ethnic minority women who can engage in local rice production with support from the Program is estimated at 600 in total.

**Chilly**

Similar to local rice, the number of ethnic minority women to participate in the Project may be counted from new farmers that join the chilly value chain. Hoa Loi cooperative is looking at increasing its sale volume from 400 tons/year to 1000 tons/year. This provides an opportunity for engagement for at least 500 ethnic minority women.

Added economics for chilly farmers are derived from high prices:

• The average yield of 7 tons/ha can be increased to more than 10 tons/ha, if technical cultivation is improved, and the additional income from this will be about VND 30m/ha.
• Additional income also comes from new plantation to serve the sale increase of coops. It will be VND 60- 80 m/ha

**Constraints for participation of ethnic minority women**

Cooperatives are the bridge connecting ethnic minority women to markets. Constraints to ethnic minority women’s engagement can be firstly found at cooperatives. Whether ethnic minority women can effectively join the value chain will entirely depend on business plans and available resources of the cooperatives. Current constraints of the Cooperatives include working capital and marketing capacity to a lesser extent.

At the farm level, ethnic minority women’s engagement is challenged by: (a) a lack of reliable sources for seed supply in the district which degrades rice quality year by year when farmers re-use the seed; (b) that upgrading production to include more ethnic minority women is limited by requirements for typical soil and climate conditions to ensure unique quality and taste for both rice and chilly; and (c) a lack of good irrigation and the risk of climate change (drought) which will undermines production outcomes.

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23 Supermarkets or convenient stores often ask for stable quality and quantity supply
24 Chilly price: VND 17,000/kg; additional 3 tons has revenue of VND 50m, and estimated profit is 60% (VND 30m)
25 Sale price: 16m/tons; Yield: 7 tons/ha; Revenue: 112 m/ha; Cost: 30-50m/ha; Profit: 60 – 80m/ha
26 Cooperatives provide households with varieties, whilst technical training is from local extension centre.
27 Working capital and marketing has been expressed by Hoa Loi and Tien Phong cooperative as major bottlenecks to the cooperatives’ capacity expansion.
28 Only chilly planted in Muong Khuong offers special spice that chilly from other locations cannot deliver.
Potential partners

Tien Phong and Hoa Loi are private actors that can be the leverage point for the project to increase incomes for ethnic minority women. These are already in the business, understand the market and plan to expand their production in coming years. Both of these have processing sites near Lao Cai city, and are actively sourcing supplies from different areas in the province.

Other cooperatives or companies that are interested in local specialties include the Project’s partners, provided that they are committed and capable of establishing inclusive business models involving a significant number of ethnic minority women (at least 50 households).

A provincial seed centre or extension centre are both important partners for helping ethnic minority women to obtain reliable seed inputs and technical assistance on production.

2.4.8. Vale Chain Analysis for Specialty rice Son La

Value Chain Map - Te Dau Rice Chain in Son La

The value chain of local rice, ‘Te dau’, in Son la is similar to the one in Lao Cai (See above). Harvested rice is sold to Te Dau Song Khua cooperative, local traders or directly to local markets. The difference is that Te Dau value chain is still embryonic, mainly traded within the province, and at very small volumes. As revealed by Song Khua Cooperative, 70-80% of sale is for customers in Son La and the remaining 20-30% is destined to distributors and agents in Hanoi. Husks are purchased from the household and dried, milled, and bagged by cooperatives. Sometimes, agents will conduct the milling themselves because the rice is not of good taste if not cooked within 10 days after milling. Trade volumes of local rice from Song Khua Cooperatives is estimated at 300 tons in 2017. This is supplied by 147 households on 30 ha.

Market opportunities

Local rice from Son La/Lao Cai are seen as local specialties having special values to domestic consumers. The demand for specialties from different regions in Vietnam is on the rise. It is important to note that there are many different rice varieties, being claimed as local specialties from different provinces in Vietnam, for instance, Dien Bien rice from Dien Bien or Duc Tho rice from Ha Tinh. The players in these value chains are highly active in securing a good market position for their products. To be successful, Song Khua Cooperative needs to define a good marketing plan, in which the target segment should be primarily the locals in Son La and that this is to be carried out in parallel with an establishment of a network of distributors in Hanoi.

29 As reflected by the Coop, the demand from local market is high; but Te Dau is not yet made available at retail outlets in Son La to serve local customers. Te Dau is now being sold only at some market places in the district.
In essence, the opportunity will eventually depend on the ability of Song Khua Cooperative to expand its market share, which in turn will trigger expansion of the production base with more ethnic minority women participants.

Opportunities for interventions to increase ethnic minority women’s involvement

The target to increase engagement of ethnic minority women in local rice is necessarily associated with production expansion of the cooperatives. Similar to rice and chilly value chain in Lao Cai, key interventions should be:

- Provide technical training for farmers to improve farm performance.
- Supports for ethnic minority women in organization of production and coordination with Cooperative so that supply will be stable in terms of quality and quantity, improving competitiveness of the value chain in the market.\(^{30}\)

In addition to the above, interventions need to also focus on strengthening Song Khua Cooperative’s marketing capacity to increase trade volume, enabling more ethnic minority women to participate in Te Dau value chain.

Added economic value for local rice farmers is derived from the high price of Te Dau, which is VND 15,000/kg, compared with VND 8,000/kg of conventional rice. Given current average yields of 5 tons/ha, ethnic minority women can earn an additional income of VND 40m/ha.

Song Khua Cooperative can increase sales from current volumes of 140 tons/year to 300 tons/year. Using the information available, it is estimated that Aus4Equality|GREAT and its partners could reach around 200 ethnic minority households. These households could join the existing cooperative or new cooperatives established under support from Aus4Equality|GREAT partners.

Constraints for participation of ethnic minority women

The engagement of ethnic minority women in the value chain is entirely driven by the business plans and available resources of the Te Dau Song Khua Cooperative, which is the only player bringing Te Dau to customers outside Son La, through distribution agents and marketing activity. However, Te Dau Cooperative’s operation is currently constrained by limited working capital and marketing capacity.

At the farm level, getting more ethnic minority women to join the value chain is also constrained by (a) limited land suitable for Te Dau plantation in Moc Chau; and (b) underdeveloped field irrigation infrastructure.

Potential partners

Song Khua Cooperative is the only actor which can integrate ethnic minority women and the market. Other involved actors may be the local extension centre, and some other relevant provincial agencies, like Division of Quality Management.

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30 Supermarkets or convenient stores often ask for stable quality and quantity supply
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The engagement of ethnic minority women in the value chain is entirely driven by the business plans and available resources of the Te Dau Song Khua Cooperative, which is the only player bringing Te Dau to customers outside Son La, through distribution agents and marketing activity. However, Te Dau Cooperative’s operation is currently constrained by limited working capital and marketing capacity.

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Potential partners

Song Khua Cooperative is the only actor which can integrate ethnic minority women and the market. Other involved actors may be the local extension centre, and some other relevant provincial agencies, like Division of Quality Management.

Map of cage fishes value chain – Son La

\textsuperscript{32} Supermarkets or convenient stores often ask for stable quality and quantity supply
Cage fishes are raised by households in a river at locations normally far away the villages. Households have to reside nearby the cage to take care of the fishes during the reproduction cycle, which normally happens for about 6 months, from Feb to Aug. Fish are raised in cages, and on average four cages per household. 200 out of 300 fingerlings will survive to the end with weight of 2-3 kg/fish.

Households can sell their fish to local traders or tourists who pass the cages on river tours. Sometimes, households take the fish to sell directly to end users in local markets. It is not clear of the percentage of trade volume for each of these channels. Some farmers reflected that the sale to local traders and tourists often accounts for about 70% of total sales.

**Market opportunities**

Domestic consumers are the target market for fish from Son La. Total provincial aquaculture production of Son La is more than 5,000 tons/year (Vietnam Statistics Office). The current population of Son La is 1,149,000 people. Not all of the population can afford to consume fish. Assuming only half of the population can consume fish throughout a year, the average consumption of fish is about 10 kg per capita. Compared with the national average of 33 kg per capita, fish are under-consumed, suggesting that additional 10-20% of the current supply can be absorbed by demand with Son La and Hoa Binh, the neighbouring province.

**Opportunities for interventions to increase ethnic minority women’s involvement**

An increase in ethnic minority women’s participation in the value chain can be achieved by supporting them to invest in cage fish raising. This is to tap into the opportunity to expand further the supply base of fishes for the province. As estimated above, this expansion may comfortably account for 10- 20% of current supply base, or 500-1,000 tons, equivalent to 1,000-2,000 cages. Taking an average of 4 cages per household, the potential number of ethnic minority women/households to participate in cage fish value chain is about 500.

By engaging in this business, each household may realise a profit of VND 50- 60 million. This is calculated based on an assumption of 4 cages/ethnic minority women and that fish are sold at a price of VND 80,000/kg.

Using the existing projections in Moc Chau and Van Ho, Aus4Equality|GREAT and its partners could reach about 500 households with about 1800-2000 cages, producing 750 to 1000 tons per year.

**Constraints for participation of ethnic minority women**

Increasing ethnic minority women’s involvement in cage fish production is undermined by market uncertainty. The sale of fish depends on the level of tourists, which are completely unknown to ethnic minority women. Local traders come to buy the fish sometimes and offer purchase prices at large discounts. Order volumes from traders are also not stable. Engaging more ethnic minority women in cage fish value chain depends on if the risk associated with market demand volatility can be identified and managed. A solution for investment in a boat to be used mainly for transporting fishes to tourist boats in the river for sale to tourists has been mentioned by households. Nevertheless, the costs and benefits must be further assessed. Even if this passes cost /benefit analysis, feasible financing sources are not available. Most of the commercial banks require collateral for loans and ethnic minority women usually don’t have assets eligible for collateral and so cannot satisfy this condition. Similar to citruses, difficult road

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conditions are another factor that stops ethnic minority women from participating in sale activities, which are dominated by men. It is not likely that the road conditions will be fixed soon.

**Potential partners**

Fish cooperatives may be potential partners. Assessment of cooperatives is to be conducted during implementation to make sure that the cooperatives are capable of upscaling production.
4. Conclusions and Recommendations

Selected agriculture products offer clear opportunities for significant numbers of women in the target districts of Son La and Lao Cai provinces for increased income and employment through women’s economic empowerment or inclusive business models. Analysis of selected product value chains and private sector roles and interests reveal there are several opportunities for Program interventions:

**Products in Group 1 consists of 5 products in Son La and 8 products in Lao Cai.** These products meet two requirements (raw material supply potential and private sector interest to engage women in the supply chain). Aus4Equality/GREAT could partner with private sector for local, national and international markets using these products (links with Program Objective 2).

**Products in Group 2 and Group 3** have not identified business partners interested in the IB models. These are low IB readiness products. With these products, the Program will focus on value chain development solutions that help expand local market opportunities and/or link women producer groups to other market actors such as traders and supply service providers (links with Program Objective 1).

**The selected value chains vary in levels of development between the provinces.** Companies involved in each value chain differ in terms of business models, financial health, market access, management and innovation capacity. Some companies are in their start-up phase, whilst others are more developed and familiar with inclusive business models. There are some existing linkages the Program could harness between trading companies and small producers as well as inclusive business models using products such as Chili, Cinnamon and Benzoic in Lao Cai and using tea in Son La. The study revealed four common challenges for local producers (including women) that prevent them from engaging more effectively in the market. These are: 1) small scale (often subsistence) production mainly at the household level limits capacity of supply; 2) limited access to quality and affordable supply inputs; 3) limited knowledge and skills on advanced production and processing technology that could be used to lower investment costs; and 4) lack of focus on improving productivity and quality of produce.

**Supporting services such as finance, extension training, business development services and certification have different levels of availability and development in both provinces.** In Son La province, credit cooperatives in Moc Chau district are more proactive in providing credit to traders and cooperatives. However, access to finance from commercial banks for producers and companies is still a constraint due to high interest rates, complex appraisal and due diligence procedures, lack of collateral, and weak financial management. In Lao Cai, more bottom-up public extension services are available to producers and seen as quite effective in terms of basic production techniques. However, advanced techniques are not being fully explored due to limited linkages with local research and international best practice in agriculture.

The regulatory environment in both provinces has been able to facilitate rapid structural transformation in the agriculture sector. In recent years, Son La province has become more supportive and responsive to the needs of the private sector and producers, through issuance and enforcement of supporting policies to promote agriculture (one of the major economic sectors in the provinces). There are policies that promote innovative business solutions toward sustainable production, more efficient use of available land resources and higher value...
agriculture production. There has been a shift away from providing direct support to farmers with input supply such as seedlings or fertilizer, to supporting cooperatives and companies working with farmers groups, placing greater emphasis on value chain development, quality management, post-harvest processing, product branding, capacity and marketing skills that benefit a large number of farmers.

Agriculture has a major role to play in the provincial economy of Lao Cai with government attention focused on policies that support high-tech investment such as flower plantation and cold-water fish raising that require high financial investment and technical know-how. These policies emphasise larger scale production are not directed at small scale producers many of whom will be the target group of Aus4Equality|GREAT program. In addition, small producers face barriers to improved trade conditions due to informal rules and regulations at community and market level such as ‘the community-based cardamom management agreement’, or ‘cross-border trade practices’ established and agreed among Chinese and Lao Cai traders. These informal arrangements can limit the potential of small scale producers to engage in and benefit from the market.

In Son La there is a good mix of small, medium and large-scale companies that are making significant financial investment in target districts to expand their raw material supply to higher value-added products. In Lao Cai there are fewer small scale companies interested in the IB models.

### 4.1. Recommendations

This study demonstrates that economic return from agriculture for local producers in Lao Cai and Son La is limited by deficiencies of market systems. As a result, farmers (including women farmers) lack market knowledge and skills to implement commercial economic activities for higher incomes. Therefore, key approaches to be applied include market systems development and market-based approaches to women’s economic empowerment to enhance inclusion, innovation and productivity in the agriculture sector. The program should partner with a range of private sector partners and market actors including: agribusiness SOEs, cooperatives, social enterprises and the broader private sector (e.g. banks, business services etc.)

To ensure the success of inclusive business partnerships, some prerequisite conditions and criteria should be applied by the Aus4Equality|GREAT team during the scoping of partnership opportunities. While there are significant levels of women, including ethnic-minority women, engaged in the selected products value chains, there remains a ‘skills gap’ in terms of technical skills, work attitude and work practices required by private sector businesses at higher levels of the value chain. Therefore, closing the gaps are essential to facilitating development of the partnership between private sector partners and producer groups, and contributing to enhanced income for all. These require interventions at three 3 levels.

#### 4.1.1 Recommended interventions at the Sector Level

At the agriculture sector level, the intervention should aim to three major targets:

**Raising awareness of ethnic minority women on commercial production:**

Local producers, including women, are investing in products that are neither being demanded nor meeting the consumers or organisational requirements in terms of quality and quantity. Improved skills and knowledge are required to enable business-minded management of farms to help women understand and compare input costs with revenue of output to achieve economic added value, ensuring sustainable income improvement.

Potential interventions: awareness raising may be delivered in a range of possible actions, for example, training, study tours, demonstrations and facilitation of dialogue between ethnic
minority women with more experience in business and those with less. Integrating daily practical economic activities in the awareness raising process is crucial to enable and solidify changes in farmers’ mindsets.

Awareness raising can target women community-wide, at places where the value chains are potentially developed. However, priority should be given to locations already of interest to private sector players.

Potential implementation partners: The public service agencies or mass organizations like the Women’s Union, Farmer’s Union and Agriculture Extension System are seen to be the most relevant to engage beneficiaries in skills development. These organisations own an established network of agents at commune and village levels and have solid experience in working with local ethnic minority communities. INGOs are also encouraged to participate in this activity by leveraging their new community development approaches proven in other projects.

**Improving access to financing sources:**

Access to finance remains a major constraint for a majority of households. While local loan schemes are available (such as households being able to borrow up to VND 50 million and cooperatives up to VND 500 million), many women and local businesses (including women led businesses) do not benefit from this policy. Participation is limited due to, a lack of skills to develop good business plans and apply for loan from commercial banks or local credit institutions; the lack of land use rights to be used as collateral for the loans; and loan sizes are too small.

Potential interventions could include:

- Link interested financial service providers to households and cooperatives and support them to improve finance access. The People’s Credit Fund in Moc Chau or Lienviet Post Bank are the examples of financial institutions willing to work with households and are currently seeking potential solutions to manage loan default risk. This presents an opportunity for the Program to work with financial partners to improve risk management practices and support ethnic minority women to gain better access to finance.
- Provision of training to facilitate improved access to financing through Aus4Equality/GREAT partners activities. Such trainings should focus on basic business skills and production techniques.
- Promote replication models of micro-finance. CARE, an INGO, has successfully established a women’s credit and savings group in Dien Bien. In addition, there are multiple cases across the country, in which Women’s Unions have set up and run effective micro funds for farmers’ groups. All these models can be customized to local conditions and replicated across the Program target areas.

Potential implementation partners:

Financial institutions, Women Unions, Commercial Banks, and NGOs with clearly established experiences in micro finance.

**Support for value chain infrastructure improvement:**

Underdeveloped infrastructure is a key obstacle to bring competitively priced products to the market for both local producers and traders. For instance, transportation of fish from fish cages at the river bank to marketplaces is very difficult, or impossible sometimes, due to bad road conditions.

Potential interventions: the Program should not invest directly in building and infrastructure; rather it should support infrastructure improvement. Interventions could be the facilitation of dialogue to identify demand and connect with relevant governmental development programs,
promoting investment by involving private sector or residents in the target area, and supporting implementing of innovations that improve infrastructure conditions.

Potential implementation partners:
Department of Planning and Investment (DPI), Department of Agriculture and Rural Development (DARD), Department of Industry and Trade (DoIT), and District People Committees (DPCs).

Other potential partners may be private partners that provide input services or solutions for creation of higher added value. Suppliers of, or investors in, storage or cooling/processing facilities and transportation service are such examples.

4.1.2. Recommended interventions at the Product Level

Private sector engagement enables ethnic minority women’s participation in market-based value chains. The Program’s ‘Product Level’ strategy is recommended to be broken down into four types of interventions: 1) private sector engagement promotion; 2) support for effective engagement of ethnic minority women in value chains; 3) upscaling successful/women inclusive models; and 4) innovation promotion.

Private sector engagement promotion

Private sector plays a crucial role to develop value chains that include women. While there is increasing demand for higher quality products, sometimes this is beyond the capacity of farmers in general and women in particular to deliver these products on their own. The private sector could play an important role in filling the expectation gap and connect producers to markets. Potential interventions should be applied selectively depending on the level of private sector availability in the target area. These could include:

- Support for target companies to explore and understand business opportunities in the local area through investment promotion workshops, dialogue to facilitate exchange of information between local governments and companies, or investor/buyer visits are examples. Other activities like branding of local specialties or registering for geographical indicator\(^{34}\) can be also carried out to increase attractiveness of the area to private businesses.
- Capacity building support for companies operating in the region and assist them to engage with ethnic minority suppliers.
- Support for improving the enabling environment; including addressing policy bottlenecks, which are varied depending on different value chains. For instance, limited loan access is a reality in all value chains or absent support for supply of varieties for local rice production. Support should be directed at convening public private dialogue to identify issues and propose initiatives conducive to Program outcomes for target beneficiaries.

Potential implementation partners:
DARD, DOIT, DPCs are seen as relevant partners to promote private sector engagement. While DARD can help private companies to develop plantation resources for processing input, DOIT

\(^{34}\) A geographical indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are unique to that origin (Source: http://www.wipo.int/geo_indications/en/).
can facilitate linkages with markets, like supermarkets or convenient stores in other provinces. Sub-sector associations are also important and should be involved. These associations are in a strong position to understand local products and players in the sub-sector, and hence, can provide practical information for prospective market actors.

**Supports for effective engagement of women in selected product value chains**

Private market actors tend to concentrate only in the areas where the associated risks can be well controlled. They consider carefully when they make new investments in remote areas that engage directly with local producers. It is essential to support interested companies to establish effective business relationships with women to reduce the level of perceived risk.

**Potential interventions:**

There are a range of interventions to support effective engagement of women. At the product level, the key focus should be confined to three major themes:

- **Develop Women’s Producer Groups:** Support group formation and capacity building for groups. Capacity building for groups should cover management and technical aspects and relate directly to the specific products that women are producing. Specific trainings need to place emphasis on skills and expertise to enable collective actions in sales and production.

- **Enhancing Women’s Leadership:** Women with potential to become good group leaders are to be identified and supported to improve management skills. Encouraging women in social activities or collective actions in production and distribution of products will enhance their confidence and ability to interact with other actors in the market.

- **Promote Women’s Business Networking:** This aims to share experience and create more business opportunities for women. Meetings between groups, promoting women to participate more in activities downstream, and organisation of provincial workshops where they can meet and exchange lessons of their roles in the groups.

**Potential implementation partners:**

The Women’s Union is the most relevant social organisation for building women producer groups for both agricultural production or tourism services, considering its well-established network in all villages in Lao Cai and Son La. NGOs with expertise and experience in gender should be invited to diversify the implementation capacities and enrich local support to ethnic minority women.

Other organisations or agencies may be suitable, depending on the topics of the activities.

**Upscaling successful inclusive business models**

Successful inclusive business models could be replicated by other business partners or scaled up by companies.

**Potential interventions include:**

- Identify successful inclusive business models and conditions for replication.

- Identify potential candidates and provide support for replicating successful models and implementing activities for replication. Specific actions are to be defined in relation to specific models and consider practical context realities.

- Organise public private dialogues and propose policy initiatives conducive to successful model replication in the sub-sector.
Innovation:

Innovation is an important strategy that contributes to the improvement of sub-sector competitiveness. Within the target provinces an innovative context is limited, and this restricts exploration of new ideas and supporting realization of those ideas. Potential innovation subjects are wide and diverse. Given the current limitations, there are strong opportunities to cover a full range of topics from an innovation perspective, such as inputs to farm to techniques or operational procedures that increase values in terms of quality, quantity, and service for finished products.

Potential interventions should be organized along the process from identification of initiatives, to support for assessing and implementing the ideas:

- Calls for innovation proposals: the should be open on an on-going basis throughout the Program lifetime. The Program should lead the coordination and management role in innovation activities, to attract candidates with new ideas, help candidates prepare proposals, assess proposals, and assist Partners implement their ideas into reality. Plantation of new vegetable varieties to meet an untapped market segment or a cooperation model that brings about quality consistency and large supply volumes to serve large customers are examples of such ideas.
- Support for innovations is open to all stakeholders in the sub-sectors. These can be, for example, extension service centers, private companies, or farmer groups and cooperatives. The innovation subjects are also not limited. The transfer of new rice varieties or investment in processing facilities that help to increase ethnic minority women’s participation/productivity, are examples.
- Support for assessing the innovations and preparing proposals to be submitted to the Project.
- Monitoring and evaluating the performance and outcomes of the innovations.

Other activities may also include cultivating championship and leadership roles of ethnic minority women and supporting any business case to increase women’s opportunities to innovate in the private sector.

4.1.3 Recommended Interventions at the Private Sector Level

The Program should actively select business partners with inclusive business plans consistent with the Program’s objectives. In principle, the Program and partner companies will co-invest and hence share in the risk of running the inclusive business model.

Potential interventions will be decided depending on the particular business plans of partners.

- The Program is responsible for identifying companies with potential opportunities to create additional income for ethnic minority women and improve ethnic minority women’s participation in their business model.
- The Program and partners will negotiate and agree action plans in terms of what to do, who to engage, and how.
- The Program and partners will oversee the implementation of interventions and propose adjustments as needed.

4.1.4 Recommendations for New Products

The Lao Cai and Son La agriculture sector has experienced rapid structural change in recent years and new opportunities are emerging. The list of selected products is not fixed. The
Program should be open to consider other potential products to be proposed by partners as long they meet the established criteria. The Program should contribute to promoting inclusive sector development in these products, by identifying new opportunities for women to be engaged, in line with the adaptive management approach.

The program should work with partners to:

- Further investigate consumer and private sector demand for these products, as well as opportunities and challenges (both in local, national and international markets).
- Support piloting of new business models to develop product supply chains with private sector (promotion of commercial production approach, certification, branding and marketing, market linkages etc.).
- Leverage investment from private sector to up-scale successful business models.
- Crowding-in more women into business models to increase production and scale.

The Program should launch an Innovation Funding Scheme to support new business ideas and innovations by and for ethnic minority women and their businesses.

Potential innovation partners include: NOMAFSI, NGOs, agribusiness (companies/cooperatives); Rural development and cooperative sub-department under DARD; Agriculture Extension Centre; Non-Timber Forest Product Research Institute; Women Union, entrepreneurs.