

Wild Harvest Value Chain Assessment Report

Armenia

Armenia Gender Project

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The Wild Harvest Sector review report has been commissioned by the World Bank Group's Armenia Gender Project, which is implemented by IFC and funded by Austria's Federal Ministry of Finance and the World Bank's multidonor Umbrella Facility for Gender Equality. The report was prepared by the International Center for Agribusiness Research and Education.



Armenia Gender Project

The World Bank Group's Armenia Gender project aims to support women engaged in the wild harvest sector, to help increase productivity, reduce poverty, and spur economic growth. The Armenia Gender project is implemented by IFC, a sister organization of the World Bank and member of the World Bank Group, and funded by Austria's Federal Ministry of Finance and the World Bank's multi-donor Umbrella Facility for Gender Equality.

This three-year project (2017-2020) provides advice to improve the regulatory environment in the sector, and helps women engage in more productive activities and improve their market access by fostering better links with buyers and producers.

Since many of Armenia's poorest people rely on the wild harvest for their main source of income, the government has identified the wild harvest value chain as an important area for poverty reduction, especially in mountainous and remote areas of the country.

The wild-harvest value chain was selected for the Project's intervention to make its potential to become a well-developed and profitable value chain in Armenia, with more effective participation by women. The improvement and development of the wild-harvest value chain is very important because: (i) the poorest people in the region rely on this value chain as their main income source; (ii) the sector has a high percentage of women who can benefit from gaining new skills to increase their engagement in higher value-added activities; and (iii) entry barriers for women are low (e.g., limited time and mobility requirements, access to technology and assets, and cultural constraints) and growth potential is huge.

The aim of the Armenia Gender project is to support women engaged in the wild harvest sector in two ways. Firstly, the project helps build women workers' and entrepreneurs' knowledge and skills, so they can engage in higher value activities and improve their links to producers and new markets, helping to generate better incomes. To this end, the project works with the Armenian Young Women's Association to train women in better product collection methods, storage and packaging, and help them improve their marketing skills to enhance their links with buyers and producers.

Secondly, the project works with the government to develop a strategy to boost the development of the sector and remove regulatory constraints. The aim is to help increase productivity and generate more income for women, which, in turn, helps spur economic growth and reduce poverty. To ensure the efficient implementation of regulatory reforms, more women need to be involved in the formal decision-making process, through public-private dialogue. To that end, the project also fosters better coordination among key stakeholders, including women's business associations, buyers, industry networks, and the government.

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Glossary

ADB	Asian Development Bank
AMD	Armenian Dram (1 USD = 485 AMD)
EU	European Union
FAO	Food and Agriculture Organization
GIZ	German Agency for International Cooperation (<i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i>)
GSP	Generalized System of Preferences
ICARE	International Center for Agribusiness Research and Education
IFC	International Finance Corporation
ISSC MAP	The international standard for sustainable wild collection of medicinal and aromatic plants
LLC	Limited Liability Company
MOA	Ministry of Agriculture
NGO	Nongovernmental Organization
OASI	Organic Agriculture Support Initiative
RA	Republic of Armenia
SNCO	State Noncommercial Organization
TOT	Training of Trainers
UN	United Nations
UNFPA	United Nations Population Fund
WBA	Women's Business Association

1. Introduction

The wild harvest sector in Armenia was not well recorded, but the volumes of harvest certainly increased with the promotion of organic agriculture during the recent years. Plants harvested mainly include herbs, berries, and wild fruit. Given the specifics of harvesting, it employs mainly women in rural areas and can be a major source of stable income for them. The Armenia Gender Project implemented by International Finance Corporation (IFC) aims at enhancing entrepreneurs' skills among women in rural areas through increased value-chain participation and collaboration within the Women's Business Association (WBA). The project also includes a component of policy support to the Ministry of Agriculture (MOA) for improvements in the wild harvest sector's regulatory environment that in turn will support inclusion of more women in formal decision making regarding these regulations.

1.1 The Project's objective

Wild harvest was defined by the MOA as an important sector guided by the objectives of poverty reduction and socially and environmentally sustainable development, especially in disadvantaged mountain areas and border regions, to support the Government to design a strategy for the wild harvest sector by conducting an in-depth technical analysis of the value chain to understand key issues and constraints to a more effective participation of women in the value chains. As defined by the Armenia Gender Project documentation, the wild harvest value chain was selected for interventions, because the poorest people in the regions may get involved in the sector as their main source of income. In addition, in the regions with high rate of seasonal migration, women are left as head of the household and often are in charge for generating income for living. Also, involvement in this sector has very low entry barriers and does not require any initial investment.

The wild harvest sector assessment was implemented in the several parts of the country, including Lori, Tavush, Kotayk, and Aragatsotn, where the air is clean and availability of mountains and plenty of sunlight creates the right environment for the wild produce. However, due to the State priorities and the project objectives,¹ the suggested marzes (Lori and Tavush) for further development were limited to bordering areas of the country and were selected from those with higher rates of poverty.²

1.2 Women employment in Armenia

Male and female employment patterns in Armenia differ significantly. Based on the survey of 767 men and 850 women implemented within UMFPA 'Men and gender equality in

¹ Armenia Poverty Profile in 2008–2016 reported by National Statistical Services, http://www.armstat.am/file/article/poverty_2017_english_2.pdf.

² Armenia/Gender Project: Women Business Association-led PPD in Armenia by Gayane Mkrtchyan, <http://www.publicprivatedialogue.org/workshop%202017/2017%20-Public%20Private%20Dialogue%20in%20Armenia.pdf>

Armenia’,³ about 42 percent of females are unemployed, which is nearly 10 percent more than males. Table 1 provides the summary of the employment details of men and women within the scope of that survey.

Table 1: Gender-based employment statistics in Armenia

Employment Status	Men N = 767, 100%		Women N = 850, 100%	
Never worked	40	5.2%	171	20.1%
Student	24	3.1%	48	5.6%
Unemployed	249	32.5%	356	41.9%
Formally employed	224	29.2%	185	21.8%
Informally employed	227	29.6%	68	8.0%
Studying and working	2	0.3%	1	0.1%
On child care or other leave	1	0.1%	19	2.2%
No answer	0	0.0%	2	0.2%

Source: United Nations Population Fund (UNFPA) 2016.

Another study implemented by the Asian Development Bank (ADB) in 2015 shows that although on average, women in Armenia have a higher level of education, their labor force participation rate is lower. Of those who are formally employed, women are mainly represented in public sector jobs, specifically in education and health care. About 69 percent of people in managerial positions are men.⁴

Of all contractual workers, only 26.8 percent are women. Women engaged in contractual activities are involved in seasonal works and are employed only four months a year.⁵

The situation is a bit different when it comes to agriculture and small-scale farming: about 58 percent of the rural households that have 0–2 ha of land are managed by women farmers. This is mainly because men in rural areas are engaged in seasonal migration, leaving women, children, and the elderly back home. This demonstrates the importance of alternative income such as the income from wild harvesting activities for women in rural areas.

1.3 Wild harvest: Recent global trends

The wild plants by regions and collection areas were summarized in the report published by IFOAM Organics International conducted for the International Trade Centre UNCTAD/WTO.⁶

³ UNFPA “Men and Gender equality in Armenia - Yerevan, 2016”
https://armenia.unfpa.org/sites/default/files/pub-pdf/MEN%20AND%20GENDER%20EQUALITY_Final_0.pdf.

⁴ Asian Development Bank. 2015. *Armenia Country Gender Assessment*.
<https://www.adb.org/sites/default/files/institutional-document/162152/arm-country-gender-assessment.pdf>.

⁵ International Center for Agribusiness Research and Education (ICARE) Foundation - Agricultural Census factsheets/ Women in Agriculture, <https://icare.am/wp-content/uploads/2017/12/arm-agriculture-FactSheets1.pdf>.

In **Europe**, Finland and Romania, followed by Bulgaria, Iceland, and Albania, were reported to have the largest collection areas. Around 200 different plant products were reported collected; however, the main categories for this region were wild berries and mushrooms. In **Africa**, the most important products in terms of quantity were reported to be shea butter, rosehip, gum Arabic, argan oil, and honey bush. Kenia and Zambia lead the list of largest reported collection areas in Africa.

The most important wild collected products in **North America** are wild rice, maple syrup, wild blueberries, and blue green algae. The main collection sites are located in the territory of Canada.

The **South American** region mainly exports Brazil nuts, coconut, heart of palm, and rosehip. In terms of collection area, Bolivia was reported to be the leading country, followed by Brazil, Peru, and Guatemala.

China is the leading country in **Asia** in terms of registered collection areas. Asia has the widest variety of collected products (approximately 241). Products such as bamboo shoots, walnuts, tea seeds, seaweed, berries, and mushrooms are collected in large quantities.

In **Australia and Oceania**, organic wild collection has little commercial importance. Products include game, noni, sandalwood, seaweed, kangaroo grass, and honey.

Although there are very different products collected in the wild and demanded by the global market, there are limitations to what Armenia can supply to the world. Main harvested plants in Armenia include herbs and wild berries. In turn, the herbs can be used for herbal tea, medicinal purposes, and extraction of oil to be used by the cosmetics industry.

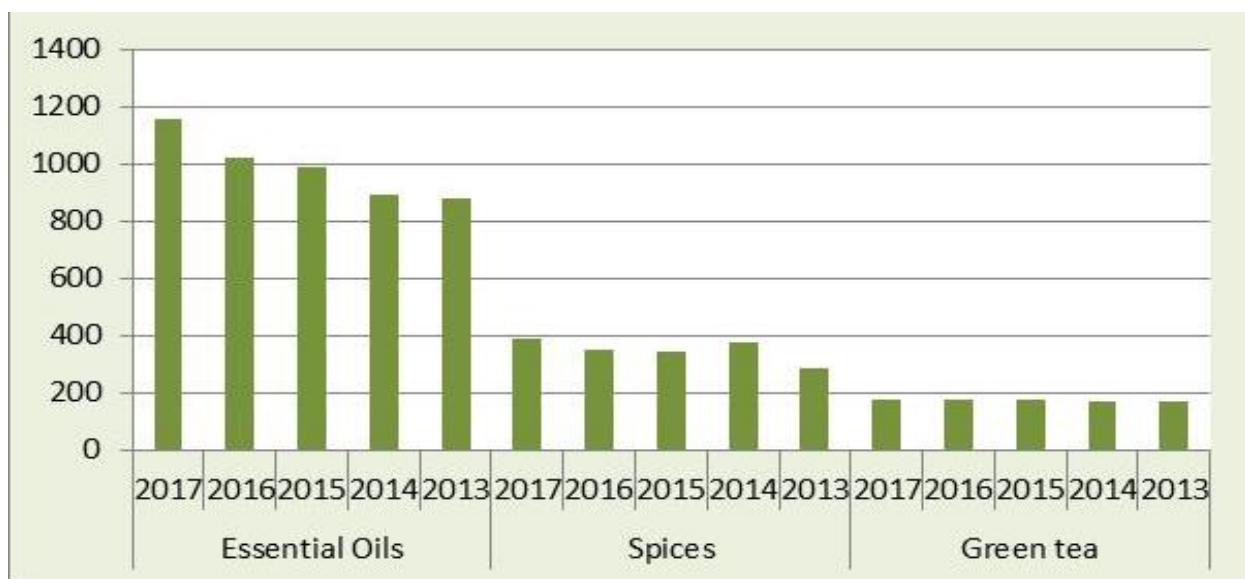
The European Union (EU) market for herbs and essential oils continues to be the largest one in the world. The European demand for fresh herbs is increasing, explained by the fact that healthy lifestyle, convenience, and interest in new tastes are becoming trendier.⁷ In addition to this, the growing multicultural society in Europe and Europeans habits of travelling more to exotic destinations bring interest to spices and herbs used in exotic cuisine. Fresh herbs, particularly basil, mint, and chives, continue to be top consumed products in this category. The cosmetic and medicinal use of herbs and oils is also very common. Increasing trends are observed in essential oils imports to the EU market.

In terms of this study, the trade data reported in Figure 1 contain **limitations** to whether the traded production was grown in the wild or was cultivated. Unfortunately, this limitation cannot be addressed with the provided trade data. However, since most of the plants harvested in the wild in Armenia are translated into herbal tea, spices, and essential oils, we will consider export markets for those categories.

⁶http://www.organicserices.com/fileadmin/files/05publications/Studies/World_Production_and_Marketing_of_Organic_Wild_Collected_Products_final.pdf.

⁷ CBI - Dutch Ministry of Foreign Affairs, "Which Trends Offer Opportunities on the European Spices and Herbs Market?" <https://www.cbi.eu/market-information/spices-herbs/trends/>.

Figure 1: Value of EU imports of green tea, spices, and essential oils in 2013–2017 (US\$, millions)



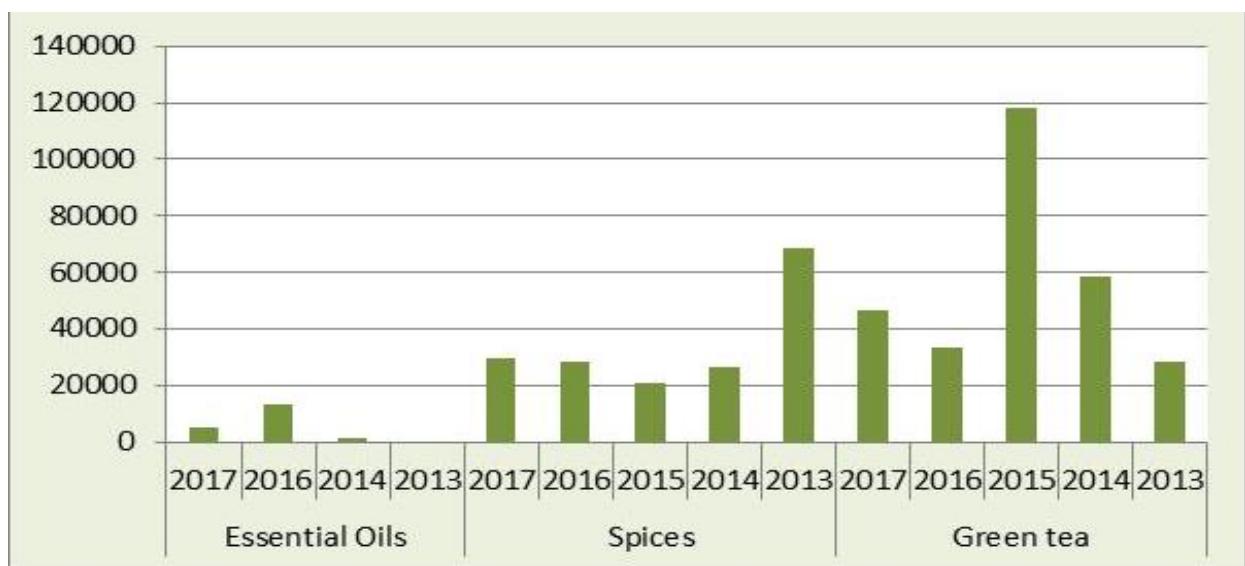
Source: Own calculations, data from United Nations (UN) Comtrade database.

1.4 Trade developments and possible markets for the Armenian wild produce

When discussing possible markets for wild produce, the scales of exported production should be considered. Russian and EU markets have previously been testified. Foreign traders require large amounts of wild produce, but limited operational capacities left Armenian producers no option to expand production and respond to increasing demand for the products. That is why currently small amounts are being targeted to some niche markets and as revealed, the Russian market is not as profitable as was expected by producers.

While analyzing trade data for Armenian wild produce, it was identified that exports of essential oils and spices add up to less than US\$30,000 (with Russia as a main market). Although green/herbal tea, as a category, is better known and exported, essential oils and spices still can be considered for export. Detailed information on exports of these categories of wild harvest is presented in Figure 2.

Figure 2: Value of Armenian exports of green tea, spices, and essential oils in 2013–2017 (US\$)

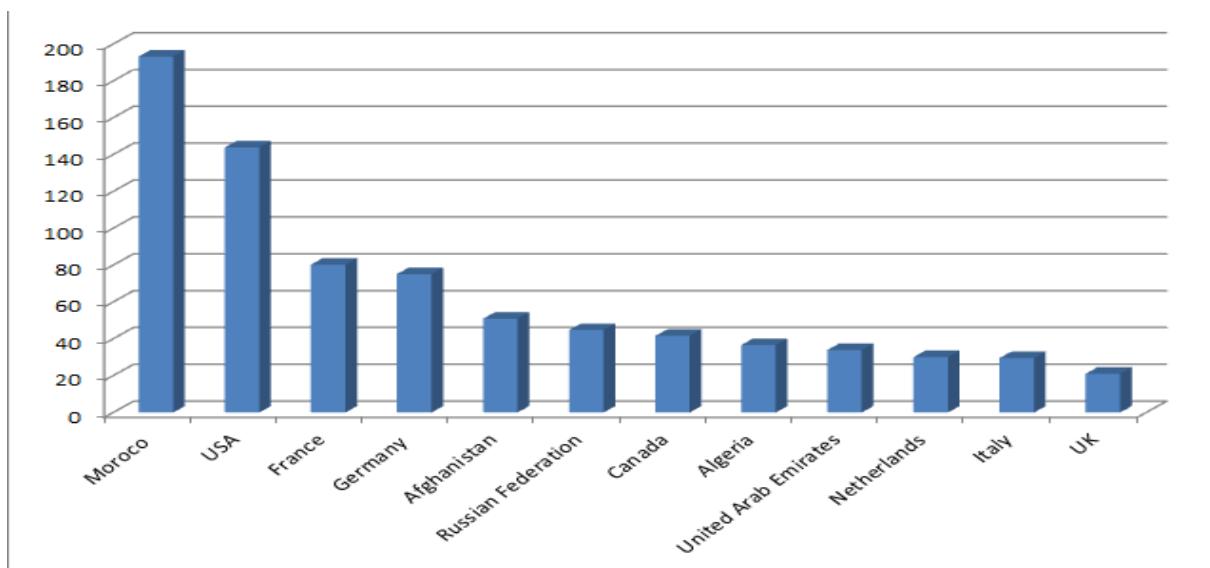


Source: Own calculations, data from UN Comtrade database.

Although herbal tea, as a category, accounts for the largest part within these categories, total volumes of herbal tea exports from Armenia are not very large. About 88 percent of all herbs exported from Armenia goes to the Russian Federation (UN Comtrade data).

The fluctuations from one year to another can be explained by the availability of wild herbs caused by favorable weather conditions. In any case, the herbs exports can be quite promising, especially in the light of high demand on the foreign markets. Trade data assessment on the UN Comtrade database and, particularly, analysis of import of green tea by the EU market show that the EU can be considered as a large prospective market for Armenian herbal tea exporters, given that the Armenian producers meet the food safety requirements for the EU market. Worldwide, the largest herbal tea importer is Morocco, which imported about 66 million kg of green tea in 2016. It is remarkable that if Morocco pays about US\$3 for 1 kg of green tea imported, it implements some value adding activities and exports the same produce at about US\$22 per kg. Details on the countries that import the highest volumes of green tea are presented in Figure 3.

Figure 3: Top herbal tea importers in 2016 (US\$, millions)



Source: Own calculations, data from UN Comtrade database.

The figure indicates the countries that can potentially be viewed as a market for the Armenian herbal tea production. For the Armenian producers, it is important to explore the requirements and import regulations of corresponding countries to be able to be competitive on those markets.

Overall, a lot of plants collected wild are marketed as organic. This fact demonstrates the potential for higher profitability for the collectors because organic produce has high value on the market; however, even higher profits can be achieved if the Armenian collectors expand the scope of their work to other value adding activities, such as cleaning, sorting, and packing.

2. Study Methodology

Preliminary information has proven that depending on the wild plant, the value chains may differ. However, there are chains that nearly duplicate each other. Keeping this in mind, the wild products under the focus were separated into two broad categories—herbs (whether medicinal or tea herbs) and fruits and berries.

The data collected for this study include both information collected directly from the stakeholders of the sector (in total, 39 respondents have participated in data collection) and that available from the secondary sources (that is, on the websites of specific organizations and extracted from certain available databases, such as Armstat or UN Comtrade datasets). The assignment consists of the following stages:

2.1 Stage 1: Evaluation of wild harvest skills of individuals and groups, as well as identification of wild harvest practices and methods utilized.

Semi-structured interviews and focus group discussions were selected as the main tools for the first stage of data collection. During the interview, the interviewer follows a specific outline - questionnaire (Appendix 1 and Appendix 2) to engage the respondent in informal discussion. The outlines were composed based on the Good Harvesting Practice for collected plant material suggested by the Food and Agriculture Organization (FAO).⁸ To get a comprehensive view of the value chain, the assessment was implemented at the level of participants of the entire value chain, including

- Farmers/collectors (including informal women groups),
- Transporters/middleman,
- Processors, and
- Consumers (through the retail sector).

The consumers were not surveyed, but the consumer preferences and prices paid at the consumer level were identified through retail sector inquiry.

2.2 Stage 2: Identification of skills gap of wild collectors

This stage of the assignment involves interviews with processors, state officials, and agencies that are involved in setting standards for wild harvest or are concerned with the sustainability of harvesting practices. A review of secondary sources of information, including standards and good agricultural practices for sustainable wild harvest, was also implemented.

⁸ "Guideline on the Commercial Collection of Plant Material from the Environment for Medicinal Purposes." G.Harnischfeger, ICMAP News, No. 7, June 12–14, 2000,
<http://www.fao.org/docrep/005/y4496e/y4496e35.htm>.

Standards developed by different international organizations such as the World Food Programme or German Agency for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit*, GIZ) were studied. The FAO Good Agricultural Practices for wild harvest collection and post-harvest handling was also used for setting benchmarks for skills assessment.

On the other hand, the local regulations for sustainable wild harvesting were obtained from the ‘Hayantar’ State noncommercial organization (SNCO) to ensure the compliance of collection practices with those set by the State.

All the assessed regulations and standards were then matched to the primary data on common harvesting practices to understand the gap in the skills of collectors that has to be addressed during preparation of the training manual.

2.3 Stage 3: Validation workshop

A validation workshop at the ICARE Foundation was organized after the research team successfully finished interviews and the desk study. The workshop was aimed at presenting preliminary study results to industry representatives and engaging a wide range of stakeholders in group discussions to challenge the results from the assessment stage and to solicit recommendations for the next steps. Representatives from nongovernmental organizations (NGOs), development organizations, universities, processing companies, and the MOA attended the event. The validation workshop was an important step for refining study results and improving policy recommendations.

2.4 Stage 4: Composing training manuals and implementing TOT

The development of a wild harvest manual is the last stage of the assignment. This manual is aimed at covering the skills gap of the collectors and is composed based on the needs of the collectors and the requirements of other players of the value chains. During preparation of the manual, the actual collection and post-harvest practices were juxtaposed with those required by the standards (keeping in mind sustainability principles), and the areas of improvement were revealed. The needs of the collectors in terms of access to market and access to finance were also addressed in the manual. The manual is a separate document that will serve as a principal handbook for training the trainers.

3. Overall Business Climate and Regulations for Wild Harvest

3.1 Organic standards for wild harvest

A major part of the wild harvest is implemented for further processing into organic products. There is one organic certification body in Armenia (Ecoglobe) that uses the Green Caucasus private standard which is assessed for equivalence with the EU organic legislation and recognition by the Swiss Organic Farming Ordinance and Republic of Armenia (RA) MOA.

Green Caucasus Standard for Wild Collection⁹

The harvest of plants and their parts, naturally growing in forests, natural areas, and agricultural lands, can be considered an organic production method given that

- The products are collected from a predetermined collection area that should be subjected to the certification/inspection measures discussed in Section 6 of the Standards;
- The areas have not received any treatments with products other than the ones listed in Annex 2 for three years before the collection of plants; and
- The collection causes no danger to the stability of natural habitat or to the conservation of the plants in the area where the collection takes place.

Plant parts should be collected in the percentages described as follows to avoid over-collection and to ensure stability of ecosystem:

- Roots, bulbs: 20 percent of the population.
- Leaves (bushes, trees): 30 percent of the leaves.
- Flowers: 70 percent.
- Seeds/fruits: 80 percent/70 percent - the products are from an operator managing the harvesting or collection of the products, who is well identified and familiar with the collection area.

The permission for the harvest of wild species should be obtained from local authorities and presented to the certification body; the responsible organization/authority should clearly define collection rules for all categories of species to be collected. Organic wild collection must be implemented in clean, unpolluted areas. Also, the collection should be well documented and the product can be traced back to its origin.

- Red-listed or otherwise threatened species should not be collected.

⁹ Green Caucasus Standard set by organic certification body Ecoglobe LLC, http://ecoglobe.com/wp-content/uploads/2013/12/10.3-Green-Caucasus-Standard-ENG_10.05.17_clean.pdf.

- Any damage to the plants must be minimized.
- Collection must not destroy or cause any damage to the habitat or to the feed for other organisms.
- Collectors must not leave behind litter, cause forest fire, illegal hunting, and so on.
- Collection must not be done close to big cities, nuclear facilities, industrial centers, and close to roads.
- Collectors must be properly trained on harvesting techniques, maximum permitted harvest quantities, relevant collection places, and environmental damages. To achieve this, it is recommended to implement collection in organized groups.
- The responsible organization or person must present an organic management plan.
- A detailed map (preferably 1:50,000, but not smaller than 1:250,000) of the collection area has to be presented—collection places, critical areas, and wholesale points must be marked on the map.
- Corresponding records on purchased, stored, transported, and sold quantities must be kept at all levels.
- Operators should strive for traceability at least until the level of local collection points.
- All stored, transported, and sold products must be properly labelled—labels including information on product, quantity, origin, packing date, organic condition, and certifier.
- Any contact with polluting substances should be avoided during post-harvest management (transport, drying, freezing, storing, and so on).
- Possible pollutants are detergents, disinfectants, rodenticides, fumigants, and so on.
- During harvest and at all post-harvest levels, products must be handled in appropriate sanitary conditions.

3.1.1 FairWild standard and internationally accepted wild collection regulations

Before the development of questionnaires and for ‘getting to know’ the sector, internationally accepted standards for wild collection have been reviewed. FairWild standard 2.0, which is referred in this document, has been prepared through a combination of existing FairWild Standard 1.0 and the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP).¹⁰ The standard is applied to wild collection operations with

¹⁰ FairWild Standard, <http://www.fairwild.org/standard/>.

the aim of demonstrating commitment to sustainable collection practices, fair trade principles, and social responsibility.

The purpose of the FairWild Standard is ensuring long-term survival and continued use of wild species and populations in their sites, at the same time, respecting cultures and traditions and supporting livelihoods of all stakeholders involved in the value chain, especially collectors and workers.

The FairWild Standard has 29 criteria and 11 principles that address social, ecological, and economic requirements for sustainability of the wild collection process. Both the principles and the criteria of FairWild are classified based on the following listed requirements:

Requirements for collection:

- Wild Collection and Conservation Requirements (Principles 1–2)
- Legal and Ethical Requirements (Principles 3–4)
- Social and Fair Trade Requirements (Principles 5–8)
- Management and Business Requirements (Principles 9–10)

For buyers of wild-collected products:

- Promotion of Buyer Commitment (Principle 11)

The FairWild Standard is followed by detailed information on Performance Indicators. These indicators are used for the assessment of applicants' compliance with certification requirements. Also, Performance Indicators can be used in a verification process where certification is not the expected outcome. A rating system is applied for the control points, assigning scores from 0 to 3 (where 0 indicates poor performance that is noncompliance and 3 indicates excellent performance). To receive certification, wild collection operation has to meet the minimum requirements defined for the relevant year, and the total score should increase annually. Additional performance indicators may be applied for wild species that are considered to be at high risk of unsustainable collection practices by the FairWild Foundation.

FairWild requirements for wild collection¹¹

Requirements for wild collection and conservation

- Wild resources are maintained.
- No negative impact on environment is caused.

Relationship between collectors and collecting station

¹¹ FairWild Requirements, <http://www.fairwild.org/requirements/>.

- Relationship with collectors on a fair contractual basis
- No discrimination
- No child labor
- Fair trade benefits for collector communities

Fair labor conditions in collecting and processing companies

- Fundamental principles and rights at work
- Good, healthy working conditions

Obligations of FairWild companies toward their suppliers and buyers

- Sustainable sourcing practices employed
- Fair trade practices: fair pricing and fair trade premiums paid to source

Legal and ethical requirements

- Compliance with laws, regulations, and agreements
- Customary rights respected

Management and business practices

- Good management and business practices applied
- Transparent cost calculation and benefit sharing throughout the value chain

3.1.2 Environmental regulations for wild harvest in RA

When collecting for commercial purposes, the RA decree on fees for natural recourse utilization¹² defines fees from AMD 50 to AMD 100 for 1 kg of herbs collected (amount varies depending on the type of the herb), and AMD 30 for 1 kg of fruits and berries collected.

‘Armforest’ SNCO and the Ministry of Nature Protection of the RA have been contacted for acquiring full information on laws and acts regulating the wild harvest sector in Armenia. Given the preliminary results of focus group discussions and in-depth interviews, legal acts that refer to collection of wild herbs, berries, and fruits; accounting/reporting of secondary forest use; and tariffs applied for unauthorized collection have been thoroughly studied.

According to decision of the Ministry of Agriculture N159 on ‘Secondary Forest Use’, individual entrepreneurs, legal entities, and natural persons (hereinafter, referred to as the

¹² <http://www.arlis.am/DocumentView.aspx?DocID=114090>.

applicant) may obtain the right to secondary forest use by submitting Application Form N1 and N2¹³ to the forest-use right holder. The ‘Secondary Forest Use’ contract is then signed, which allows the forest user to harvest non-wood timber, fruits, berries, nuts, mushrooms, edible plants and medicinal plants, and technical raw materials, as well as install bee hatcheries in the forestlands.

After the contract between the parties is signed, a forest ticket is issued to the forest user. Forest users are informed about the possible consequences of bridging the RA law on the efficient use of forest resources.

Accounting/reporting of secondary forest use: The resources of secondary forest use and their territorial distribution, as well as annual volumes of use, are determined by forest management plans. Each forestry organization carries out an ongoing secondary forest-use accounting and data registration in the secondary forest-use register, in accordance with the form filed and sealed by the forestry organization.

Collection of wild fruits and nuts: Collection of fruits and nuts can be done in all public and community forest areas, with the exception of cases prescribed by legislation of the RA. Fruits and nuts should be collected and harvested in a way that does not damage the corresponding tree species.

Collection of berries and mushrooms: Collection of berries and mushrooms can be done in all public and community forest areas, with the exception of cases prescribed by legislation of the RA. Harvest of herbs and mushrooms should be done by methods that exclude the damage of berries and fungi and do not impede their natural recovery and reproduction.

Collection of edible herbs, medical herbs, and technical raw materials: Collection of plants and their separate parts (leaves, buds, flowers, seeds, roots, flowers, seeds, roots, tubers) used as edible herbs, medical herbs, and technical raw materials can be carried out in all public and community forest areas except for the cases defined by the legislation of the RA. Tree buds should be collected when the bark sprouts have not yet begun. Collection of the buds should be stopped when their tops change color to green. Ground parts of herbs should be collected in a way that does not cause any damage to plant roots. Leaves of plants are collected during the flowering phase when they are completely formed. Inflorescence and flowers should be collected at the initial stage of flowering and cut off with mechanical appliances. During the collection of inflorescences and flowers, 20–25 percent of the total number of flowers for each plant should be left. Continuous collection of herbal raw materials from the same fields or shrubs is permitted only after complete restoration of the particular herb. In case of absence of any deadlines for repeated collection of herbal raw materials, it is necessary to

¹³ "Armforest" SNCO, Forest Sector Regulation Acts, pages 417–423 (source in Armenian)

<http://hayantar.am/wp-content/uploads/2015/09/Անսարսահն-ուրսուի-հրավական-ակտերի-ժողովածու.pdf>.

- Collect inflorescences of annual herbs and ground organisms from the same shrubs once in two years;
- Collect perennial herbs once in 2–3 years, depending on the type and location of the herb; and
- Collect underground plant parts not more than once every 3–5 years.

Chapter 2: Compensation tariffs for damage caused to fauna and flora as a consequence of violation of environmental protection laws¹⁴

Violation of environmental laws of maintenance, protection, and use of flora

As of this law, the following actions of legal entities and natural persons are considered as violation of environmental laws of maintenance, protection, and use of flora:

- Illegal collection of plants and their separate parts
- Other violations of the legislation on the use and protection of flora, as a result of which damage to flora is caused

Tariffs for damages caused to flora as a result of environmental law offenses

Tariffs for damages caused to flora as a result of environmental law violations are the following:

In case of unauthorized collection of fruits, berries, mushrooms, seeds, herbs, and other useful plants in protected natural areas, dendroparks and forests, forestry, and nutritional farms, for each kilogram, the following tariffs may apply:

- Greek nuts - AMD 3,000
- Rye, acorn - AMD 2,000
- Pear, apple - AMD 1,000
- Other fruits, berries, seeds, ***mushrooms, medicinal herbs***, and other useful plants - AMD 500.

The order of calculation of compensation size for damage caused to fauna and flora as a consequence of violation of environmental protection laws

- In the case of sale, purchase, acquisition, exchange, export, and import of animals and plants, which are illegally hunted, collected and/or harvested, or registered in the Red Book of the RA, the amount of compensation for damage shall be calculated as

¹⁴ ‘Armforest’ SNCO, Forest Sector Regulation Acts, “Compensation Tariffs for Damage Caused to Fauna and Flora as a Consequence of Violation of Environmental Protection Laws” pages 38–45.

fivefold of tariffs stated in Chapter 2 of this law for the illegal use of the appropriate type.

- The amount of compensation for damages caused to flora and fauna as a result of calculated environmental law offenses shall include the value of the damaged property as well as the amount calculated according to the legislation for the use of biodiversity, which is also subject to payment to the state budget of the RA.

The calculation of compensation size for damage caused to fauna and flora as a consequence of violation of environmental protection laws

According to this law, the calculation of the amount of damage caused to flora and fauna as a result of environmental law offenses shall be made by the state environmental inspectors as part of the preparation of the protocol on the violation of the environmental legislation as an integral annex to the protocol.

The order of charging the compensation amount for damage caused to fauna and flora as a consequence of violation of environmental protection laws

In accordance with this law, the amount of compensation for damages caused to flora and fauna as a result of environmental law offenses shall be charged to the state budget on the basis of the report drawn up by the environmental inspection body on the case of the offense.

In case of nonpayment of the amount of compensation to the state budget of the RA through the banking system within 10 days after the receipt of a record of compensation for damages caused to the fauna and flora by the environmental offenses, the payment of the money is ensured by the court based on the suit filed by the inspection body.

Although there are some regulations and standards set for wild collection (FairWild was even translated into Armenian), there is a very loose monitoring for application of any of the standards (with exception of the organic standard, in case the processor and/or collectors are going for organic certification). Non-regulated use of natural resources makes it difficult to implement the stocktaking of available plants and makes it impossible to monitor and control the unsustainable collection of herbs and their parts.

4. Assessment Results

4.1 Main products collected

The information on wild collection sites and plants growing in the regions has been acquired through a series of interviews with sector experts, with the organic certification body, and through the data provided by the Organic Agriculture Support Initiative (OASI), which has been supporting organic production in Armenia through its grant projects and awareness-raising campaigns since 2016. A total of 27 small farmer support projects and 18 grant scheme projects have been implemented in the scope of the OASI project. The regions depicted in Figure 4 have been certified for organic production of berries or herbs (for herbal tea production).

As discussed with the organic certification body representative in Armenia, there are no regional restrictions for organic wild harvest certification. The Green Caucasus Standard states that collection must not take place close to nuclear facilities or industrial centers. Nevertheless, the distance from these places is not specified. The main sites for wild herb collection are the Lori, Tavush, Vayoc, Dzor, and Kotayq regions. However, from the surveys, it became clear that some cosmetic producers avoid collecting herbs from wild collectors (due to insufficient stable supply and lack of organized collection) and prefer to cultivate herbs in small plots. Whenever they face a shortage of herbs for production of cosmetics, they self-organize teams of collectors who are armed with needed skills for wild collection. It was also clear that some varieties of herbs used in oil production are not usually collected in rural areas and that the entire process of training collectors on what and how to collect is a hassle for a processor.

Organic tea producers or those in conversion to organic production are mainly situated in the Lori and Tavush regions. The reasons for choosing these two regions for organic tea production are various: processors believe that forests and mountains where these herbs are grown are ecologically clean, the air is not polluted, the taste is better, and the herbs have more useful features. In addition to this, some NGOs conducted trainings on wild collection for the women in these regions, which makes collaboration of these groups with processors much easier. This has saved both time and money for the processors that would otherwise be spent on introducing the requirements regarding the quality of the collected product and the post-harvest handling procedures.

Figure 4 also illustrates organically certified berries and fruits producers along the territory of the country. Wild berry collection is mainly concentrated in two regions: Lori and Tavush; in all other cases, berries are produced in commercial orchards rather than collected from forests. Because berries are perishable, wild berries collected from these regions are either being sold to middlemen who then contact producers for sale or are delivered to nearby markets. Thus, establishment of fruits and berries processing plants in the region and subsequent export to neighboring Georgia (which is a closer market, than Yerevan) may close the value chain for wild berries.

Figure 4: Certified wild collection sites in Armenia



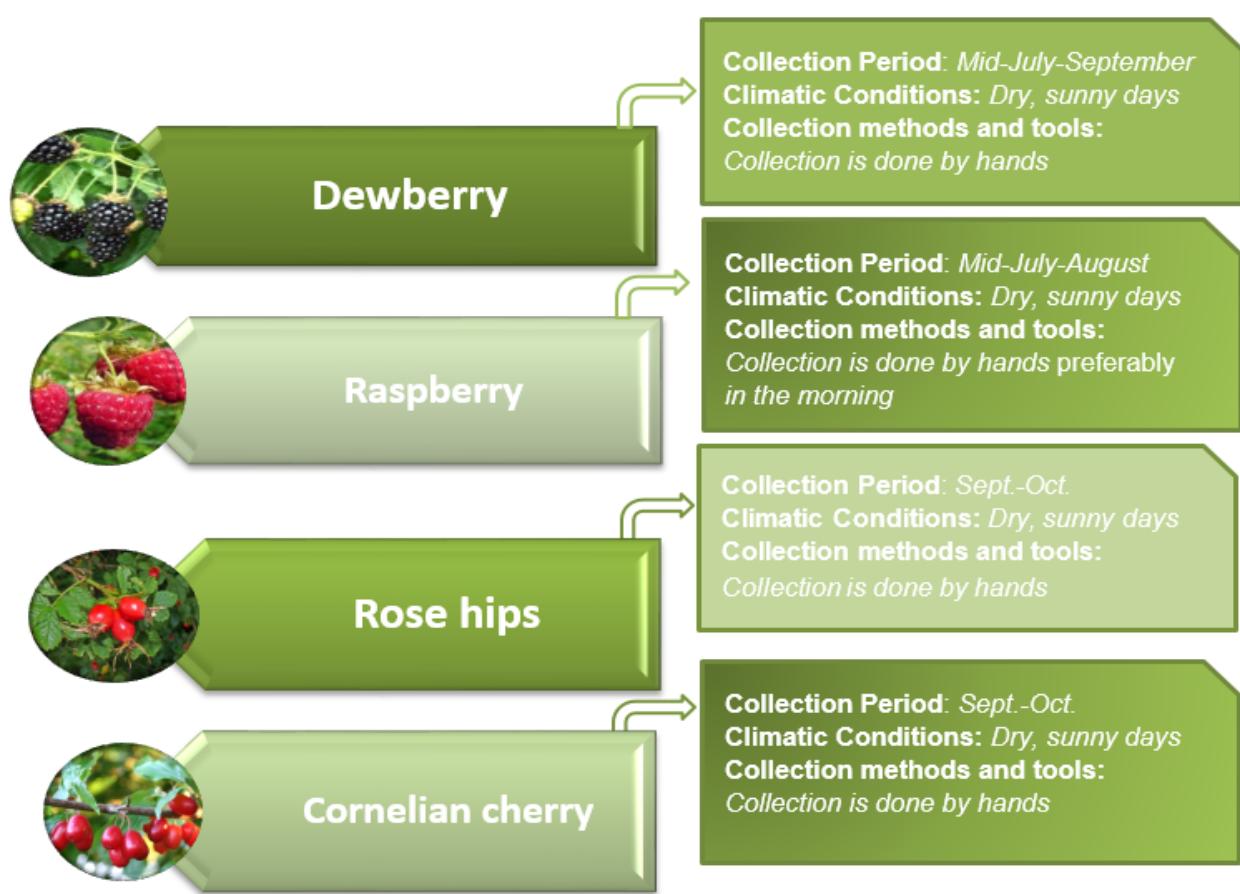
Source: OASI.

- **Herbs** 
- **Berries** 

4.1.1 Berries

One of the objectives of interviews conducted with rural women was identifying wild herbs and berries most commonly collected in the regions of Armenia. Wild berries presented in Figure 5 are most commonly collected by rural women in Armenia. Reasons behind the collection of these berries were different: some stated that they collect these wild berries because climatic conditions in their region are favorable for these types; others explain that they follow the demand coming from processors or middlemen they cooperate with. For some groups of respondents, the collection of berries is preferable over collection of wild herbs since the requirements set by processors of berries are few and easy to follow. No specific tools or methods were used for collection of berries. In some of the cases, interviewed women talked about simple safety rules, that is, wearing gloves, boots, and clothes to protect themselves from injuries. Also some collected varieties, such as rose hips, require using scissors for collection. All the interviewed women involved in collection of berries were well aware of collection periods for each berry and climatic conditions favorable for collection. Many of them preferred going for collection from early morning when is not yet too hot and there is enough time to collect larger quantities. Also, the interviews with processors revealed that berries, especially dewberries and raspberries, stay fresh when are picked early in the morning; the afternoon sun softens the berries. The collected fresh berries are usually sold by the collectors on the way home; in other words, the collector does not carry the berries from the forest to the village but prefers to sell them to middlemen or final customers right after the collection.

Figure 5: Common wild berries collected



Source: Current research findings.

The collectors do not usually take the initiative to introduce a specific type of wild produce to processors. Processors are usually the ones who would conduct a research to understand what else can be collected in a region and then discuss the idea with the women groups they cooperate with.

4.1.2 Herbs

An important note from the interviews was that the interviewed rural women are currently more involved in commercial herb collection rather than collection of berries. Motives for this were diverse, but it is often explained by the increasing demand for herbs by processors or projects initiated by local NGOs. This is also explained by the fact that the herb collection season is longer, and there are different varieties demanded by the same processor. This creates some business bonds between women groups and the specific processor, and the collection takes place based on the agreement to supply certain volumes within a certain period. To keep this business relationship and to ensure a stable income, the collectors often choose to work with one processor and pick the produce requested by that partner. A wide range of herbs is currently being collected by rural women, but usually producers come up with ideas for expanding a product line and require new types of herbs. One example is Ziziphora that previously was not collected by rural women, but currently due to the demand from the producer's side, it is one of the herbs that rural women collect and plan to increase

the scales of collection. Interviews revealed that a wide range of herbs available in the region is not yet properly investigated but has huge potential in medicine and cosmetics. Most of the collectors indicated that the knowledge about herbs has been acquired from their grandparents, and only a few of them had books or any informative booklets that can guide them to identify wild herbs or crops. Although thyme, mint, chamomile, and melissa are the most collected herbs, sorrel, tutsan, polygonatum, and flowers of tilia are also gaining popularity owing to the demand from the producers.

Figure 6: Common wild herbs collected

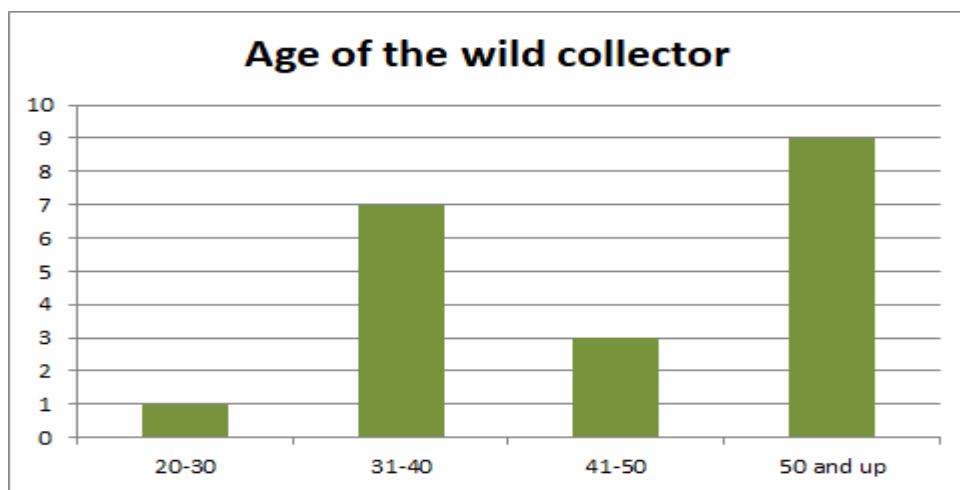


Source: Current research findings.

4.2 Respondents' profile

Collectors who participated in the assignment were represented by two types of women: one type had the exposure to international projects and was working more as an informal group; the other type were individual collectors with no former training on wild harvest requirements and methods. Participants who were experienced in working with international projects were a World Vision-supported women's group (focus group discussion), the Armenian Young Women Association beneficiaries (individual interviews), and Green Lane NGO beneficiaries from Tavush Marz (individual interviews). The rest of the collectors were individuals from the Sanahin and Odzun communities of Lori marz, as well as from Kotayk and Vayots Dzor. In general, wild collectors were women over 30 years of age. The largest age category comprised women over 50 years, most of whom did not have any other employment sources.

Figure 7: Wild collectors' age distribution



Source: Current research findings.

Middlemen interviewed were from Alaverdi and nearby villages. Processors interviewed included both herbal tea processing plants and berries processors located in Lori Marz as well as elsewhere in Armenia. Noyan, Tamara fruit, Marcadzor LLC, Edna LLC, and Ayrum Fruit cooperative established with the support of Oxfam in Ayrum were part of the processing plants surveyed. Supermarkets visited and interviewed were SAS and Green Day organic shop in Yerevan.

Organizations such as Ecoglobe (organic certification body) and Hayantar SNCO were visited for interviews on current harvesting regulations and requirements.

The total number of respondents, including members of the value chain and stakeholders, was 39.

The respondents' role in the wild harvest value chain and their distribution by regions is presented in Table 2.

Table 2: Types of respondents and their locations across the country

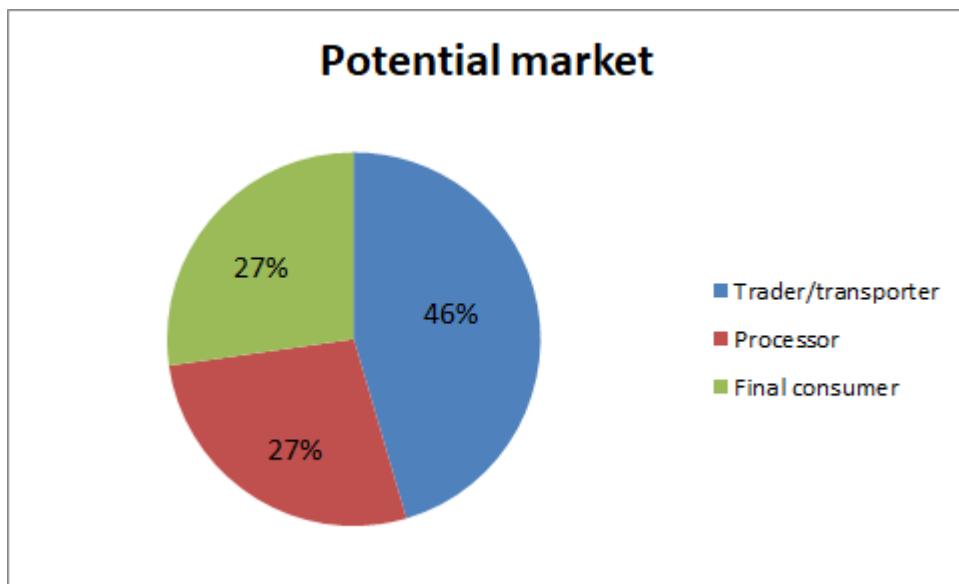
Interviews	Syunik	Kotayk	Tavush	Lori	Yerevan	Total
Collectors	—	3	1	14	—	18
Processors	1	1	3	1	3	9
Middlemen	—	—	—	4	—	4
Stores/cafés	—	—	—	—	3	3
NGOs	—	—	—	—	3	3
State agencies	—	—	—	—	1	1
Financial institutions	—	—	—	—	1	1
Total	1	4	4	18	11	39

4.3 Procurement sources and collaboration across the value chain

The main players of the value chain for both herbs and berries include primary collectors, middlemen, processing plants, and distribution centers (markets, stores). Some of the actors of the value chains may drop out if a certain function is performed by another actor of the

chain. In the cases discussed within the scope of this study, the possible markets for the wild harvest primary collectors were identified as shown in Figure 8.

Figure 8: Potential markets or procurement sources for wild harvest



Source: Current research findings.

Figure 8 shows that primary collectors sell mainly to middlemen (traders/transporters); however, in the cases when the collectors were collaborating directly with the processor or the final consumer, the price paid for the product would usually be higher (detailed analysis of price paid at different stages of the value chain is presented in section 4.6).

Collaboration on contractual basis

In all cases where there was collector-processor collaboration, the relationship was regulated on the basis of oral agreement. Once a team of collectors is formed, producers/processors inform them about the requirements for the wild produce and communicate possible consequences of breaking the agreed rules. Possible consequences vary from paying decreased prices for wild herbs/berries or not accepting collected plants at all. In any case, the processors are seeking to establish stable collaboration, because on the next level of the supply chain, they are making legal agreements and formal contracts for supplying the produce to groceries or for exporting (in case of the herbs).

Provision of support to suppliers

Three groups of stakeholders involved in wild harvest value chain may provide support to collecting women: processors/middlemen, local NGOs, and international organizations. It is worth mentioning that usually support from these stakeholders is not provided on a systematic basis; it may be a one-time grant or a training implemented before collaboration with wild collectors.

Figure 9: Sources and reported ways of supporting the collectors

Processors/ Middleman

- *Prepayment*
- *Informal Training*
- *Transportation*

Local NGOs

- *Tools for wild collection*
- *Training and support for access to market*
- *Supervision*

International Organizations

- *Targeted technical support: equipment for drying and packaging*
- *Training*

Source: Current research findings.

Support from processors/middlemen: Very common forms of support provided to wild collectors may include prepayment for the wild produce acquired, informal training, and transportation. Transportation is often implemented by the processors/middlemen, and in cases with effective collaboration, the collectors are not paying for it. All the interviewed processors stated that they have provided training to women collector groups, which was first of all done to secure the desired quality of the produce. In very rare cases, the prepayment is being provided to collectors upon request.

Support from local NGOs: The role of some NGOs in assisting women farmers throughout the value chain of wild collection has been huge. As pointed out by women collectors, they would never think of making wild collection commercial if they did not have the first wave of support from NGOs. Trainings provided by local NGOs covered a wide range of topics starting from identifying wild herbs and finishing with enhancing leadership skills among wild collectors. Targeted support from NGOs usually included tools and equipment necessary for wild collection. Some NGOs organize realization of production within their network and use the NGO digital platform or Facebook page for that purpose (a skill the collectors do not have).

Within the scope of the projects implemented in the Lori region, some women groups received access to drying facilities, which enabled them to undertake drying of herbs and earn higher returns for supplied quantity.

International organizations: Women collector groups may benefit from collaboration with international organizations both directly and indirectly. Because of lack of negotiations skills and project proposal-writing skills among these groups of women, direct support from

international organizations is very difficult to obtain. Usually the support will be in the form of training on wild harvest practices or in the form of basic tools applied during wild harvest (hats, gloves, scissors, and so on). However, very often the supporting NGOs apply to grants announced by international organizations to get freezing and drying facilities or equipment for packaging the goods. Indirectly, the women groups may benefit in cases when the processing plant is established in the area around their community, which creates the demand for wild herbs and berries.

4.4 Wild plants post-harvest handling

There is one general observation regarding post-harvest handling procedure: processors that were either in conversion to organic production or have received organic certification organize the process in accordance with organic standards. Because there are clear requirements, they would usually buy fresh herbs and berries and implement future steps on their own. Participation in trainings on organic standards for wild harvest, as was mentioned, helped them understand the whole process better. These types of processors were also more capable and willing to train the collectors on sustainable harvesting practices.

The produce under review would commonly go through the post-harvest handling steps presented in Figure 10.

Figure 10: Wild plants post-harvest handling



Source: Current research findings.

Drying

The situation for nonorganic producers is different. The drying process may be implemented either in a room of an apartment or in a balcony in the case of small producers. There was only one case observed where the NGO interviewed provided space and equipment for drying herbs to women collaborating with them. Women collectors were aware of the basic requirements for drying herbs: the place should be clean and well ventilated, and direct sun rays should be avoided. However, as in the majority of cases, drying is done at home, it is

impossible to always follow accepted standards of drying, and it is not feasible to increase the scales of collection because the area is limited.

Storage

Women collectors who are required to do cleaning and drying of herbs usually store the herbs in paper sacks before handing it to processors. There is no specific space separated for storage if the post-harvest handling is done by the collectors. They comply with the requirement of having a dry place for the storage and often are not aware of other specifications. When it comes to processors, especially those who have to comply with organic regulations, it becomes clear that they are aware of the good practices for storage; they have separate storage facilities that are clean and are not used for any other purposes, humidity is always under control, and the herbs are stored in hermetic containers.

Needless to say, that these requirements do not hold for the storage of berries and fruits. These are perishable goods and have to get to processing or to the sales point as soon as they are transported.

Packaging

None of the interviewed women collectors undertake packaging before sale (neither berries nor herbs). In the case of herbs, if required, they first clean, sort, and then, put the herbs in sacks and hand it to the processor. The material for sacks is usually defined by the processor; it is either paper or jute sacks. Packaging of herbs is usually implemented by the processors.

In the case of berries, no packaging is required after the collection. Women collectors put berries in the buckets and hand over to the middlemen.

4.5 Skills, access to information, and access to finance

Participation in trainings

A majority of the collectors have participated in trainings on wild collection; this refers to formal training organized by local and international NGOs or by the producers themselves. In most of the cases, wild collectors were very satisfied with the training received as they could use the skills received in the harvesting process and realized that the information provided fully complies with the requirements of partner-processor. However, they still feel the need for training on recognizing and fully identifying wild herbs and berries growing in their regions. The main organizations that conducted training for wild collectors were Green Lane, World Vision, and AYWA, as well as tea producers/processors (in the latter case, this is rather a transfer of the know-how and dos and don'ts of wild collection than a formal training). Unlike the collectors, interviewed middlemen have never participated in any training and as stated, all requirements were easily communicated between them and processors and/or collectors, so this group did not even think there may be a need for some additional information on handling and transporting the product. It should be noted that training for collectors are not regularly organized; once a formal training is organized, future

communication about requirements or any updates related to their work is done through a phone call or informal meeting in a rural community with one or two members of the group.

In most of the cases, processors were very consistent with the requirements for the quality of collected herbs, and informal trainings or meetings with collectors were vital for transferring the knowledge and skills to them. In some cases, processors train the collectors on the requirements for the wild produce by showing them the plant sample: color, degree of maturity of herbs, and any activities that should be undertaken before the acquisition of wild plants.

Skills that collectors should possess to increase the effectiveness of the supply process: Producers/processors interviewed were concerned about the soft skills of collectors rather than their technical skills. As explained by interviewees, collectors acquire technical skills more easily compared to soft skills (ability to effectively communicate, sense of responsibility, and readiness to cooperate on agreed terms). The issues the processors faced were mainly related to the fact that the collectors may not maintain business relations that are based on oral communication and could sell the collected herbs or berries to other processors. This distorts the supplies of necessary volumes of raw material and may cause interruptions in the supply of final produce to the consumers. And if, in the collector-to-processor step there is no formal contract, the collector is usually not penalized for undersupplying; however, in the processor-to-retailer step, the amounts supplied are secured by contract, which means that the processor can not afford to violate the terms of agreement.

Knowledge of proper drying of herbs: A diverse set of skill needs and knowledge have been identified from interviews with producers/processors. Tea producers were concerned with ensuring quality of herbs throughout the value chain, that is caused by the lack of proper information on the drying technology of herbs, which, as stated, is one of the most important parts of the whole production cycle and where risks of infection with mold is high. Because not all the processors interviewed own specific dryers for tea production, controlling the drying process is becoming more complex and the knowledge for making drying as safe as possible, while at the same time retaining essential oils of herbs and freshness of leaves, is vital for ensuring customer satisfaction in competitive market.

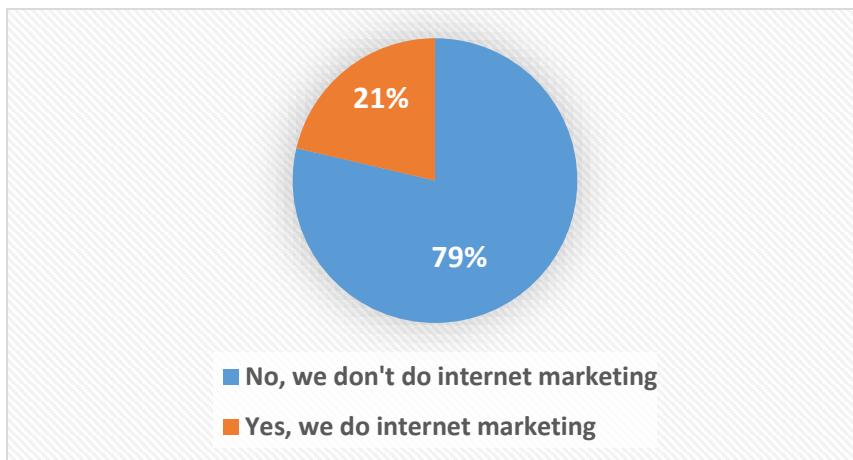
Knowledge of better utilization of herbs: Some processors require only leaves of herbs when acquiring those from collectors. Meanwhile, it is possible to use other parts of the collected herbs, for example, in making cosmetics and medicine. These are some ideas that can be better investigated and then practically applied. Most of the processors lack the knowledge on other possible ways of utilization of herbs without intensive intervention and the extra high costs of processing.

General knowledge of tea processing: Although some of the tea producers have been in this business for a long time, they still feel the need for trainings or information-sharing on the processing technology for herbal tea. They were particularly interested in maintaining the light green color of the herbs, avoiding breaking of leaves, and retaining the good appearance of the herbs, as well as maintaining dried herbs free of insects (specifically moth).

Knowledge of environment protection: Nearly all processors interviewed were concerned with environment protection and making wild harvest sustainable. Environment protection skills were identified by processors as important both for them and for collectors who are in direct contact with nature. Some processors, who were interested in converting to organic production, did perceive organic practices as a way of moving to sustainable agriculture that will bring considerably less harm to the environment and will ensure future supplies of wild herbs and berries.

Knowledge of marketing and finance: Most of the processors have efficiently used their network and skills to find niche markets for their produce both locally and internationally. But the market for herbal tea and processed wild berries is competitive, and marketing skills in this spectrum are necessary for staying in competition. It is important to possess effective negotiation skills to form and maintain business relations with suppliers and potential partners. Knowledge of finance was important especially to processors who were new in the business and were interested in understanding optimal scales of production, cost-benefit analysis, and product pricing strategy. However, these supporting aspects of production were completely neglected by the collectors and middlemen—79 percent of respondents (all interviewed collectors and middlemen and 7 percent of producers among them never implemented Internet marketing).

Figure 11: Internet marketing for promotion of products



Source: Current research findings.

Willingness to start a new business or expand the existing one

Eight-eight percent of the respondents (collectors, processors, and middlemen among them) expressed their willingness to either expand the scope of current activities or start a new business. Only 12 percent of respondents (they were collectors and middlemen) were not thinking of either expanding or starting a new business because their plans were highly dependent on those of the processors.

Collectors: For some collectors, wild harvest was a new business experience (although they were conducting the collection but not with the purpose of making profits from that) which offered new opportunities for rural women living in remote areas. The commercial scale of

wild harvest served as an additional source of income and made it possible to cover daily expenses of the household. Because more and more producers are interested in wild herbs and berries, respondents noted that they can expand the variety of wild plants collected, involve more people from neighborhood, and expand the scales of operation. However, very few of them were thinking of expanding to other activities across the value chain. In one particular case, women involved in collection of wild berries increased the scales of operations and expanded into dewberry and raspberry cultivation in their own backyards. In most of the cases, the expansion is seen as an activity that requires additional financing, which the rural residents lack.

Collection

Processors: All the interviewed processors had a strong desire to expand the existing business or start a new one along with the existing one. For some of them, the difficulty in expansion was

collaboration with collectors who, as discussed previously, are not always ready to cooperate on agreed terms and conditions. Often, the processors do not operate at full capacity but see the need for expansion because the demand for production continuously increases. Entering other markets (mainly Russian) is also considered as an alternative to expansion in the local market, but the concerns about inability to supply the needed volumes is hindering the initiative, such as this one.

Middlemen: Few middlemen consider wild harvest as a seasonal job and an opportunity to earn money along with their permanent jobs. Most of the middlemen managed to establish strong ties both with suppliers and producers, and owing to successful cooperation, the willingness to expand the existing business is high. However, expansion is highly related to technical upgrade (the acquisition of refrigerated tracks or containers and upgraded vehicles). Because some of the middlemen have already been in this business for several years, they could recognize the opportunity for increased profits in the expansion of berries and herbs supply. An example of such expansion could be the establishment of own orchard of dewberry or setting up own fruit processing operations, which however requires financial investments.

4.6 Added values, margins by each stakeholder in selected value chains

4.6.1 Wild berries

Stakeholders involved: Women collectors and middlemen

Collection period of wild berries starts in mid-July (dewberry) and continues until the beginning of October (cornelian cherry). Middlemen who collaborate with women collectors may provide transportation means for the collectors and supervise the collection in the first phase of collaboration. In rare cases, some tools necessary for the collection process may also be provided. Interviewed women collectors did not emphasize the importance of simple safety rules, that is, wearing gloves, boots, and clothes to protect themselves from injuries. To ensure that the required amount by processors is met, sometimes middlemen themselves may be involved in collection of berries. However, often middlemen also set the upper limit for collection quantities—no more than 200 kg is accepted daily to manage the transportation

of collected berries. This implies that the proper planning of collected quantities is important for maximizing the value chain participants' profits. Depending on the requirements of middlemen, collectors may first implement cleaning of wild berries—removing leaves and thorns. Basic requirements set by middlemen for the collection process is providing healthy and strong berries in clean buckets. Easy-to-carry-out requirements are the main motive for women collectors to get involved in the collection of berries. During the peak touristic season, women collectors set aside some of the collected berries to sell to tourists. This means that the collectors do not want to rely only on the quantities sold to the middlemen and hope to make more profit if there is an opportunity to sell directly to consumers. Usually the collectors get paid between AMD 350 and AMD 500 for 1 kg of fresh dewberries collected, if they are sold to the middlemen. If the collectors manage to sell directly to the consumer, the price will vary between AMD 800 and AMD 1,000 depending on the point of sale location (highway by forests versus markets in bigger cities).

Stakeholders involved: Women collectors and middlemen

Processing

Neither interviewed collectors nor middlemen in observed regions had storage space or refrigerators for processing of wild berries. As noted during interviews, most demanded wild berries (dewberries, raspberries) are highly perishable, so middlemen most often do not store those but take the berries directly to the market or processing plant (in 100 percent of the cases, payment is being made at the moment of procurement). Because middlemen and/or collectors do not store berries for more than 2 hours, cool backyards of their houses usually serve as a storing place. Lack of networking and communications skills of interviewed middlemen made them choose an easy way of realization of collected berries, that is, selling the berries in the nearby markets. As revealed, only transportation of wild berries from collection points to marketplace ensures profit margin of 5–50 percent for middlemen, so investment in a refrigerating system, although envisioned, is not planned for the short run. The profits of middlemen vary depending on the sales point. Fresh berries are sold to the processors for about AMD 500 to AMD 650 for 1 kg, while the final consumer gets those from the middlemen at about AMD 1,000 to AMD 1,200 per 1 kg.

Stakeholders involved: Processing companies

Processing plants, if located in areas, will have their network of collectors and middlemen to get their supplies. The average processor has a refrigerated storage room where the berries are kept until the minimum required amount is received to start the production line. Main products produced from berries are preserves, juices, and jams. Often, when larger quantities of raw materials are requested, the processor encourages the collectors and middlemen to supply more fruits and berries. However, work with one person as opposed to a company pays about AMD 50 per kg provided by middlemen, as opposed to

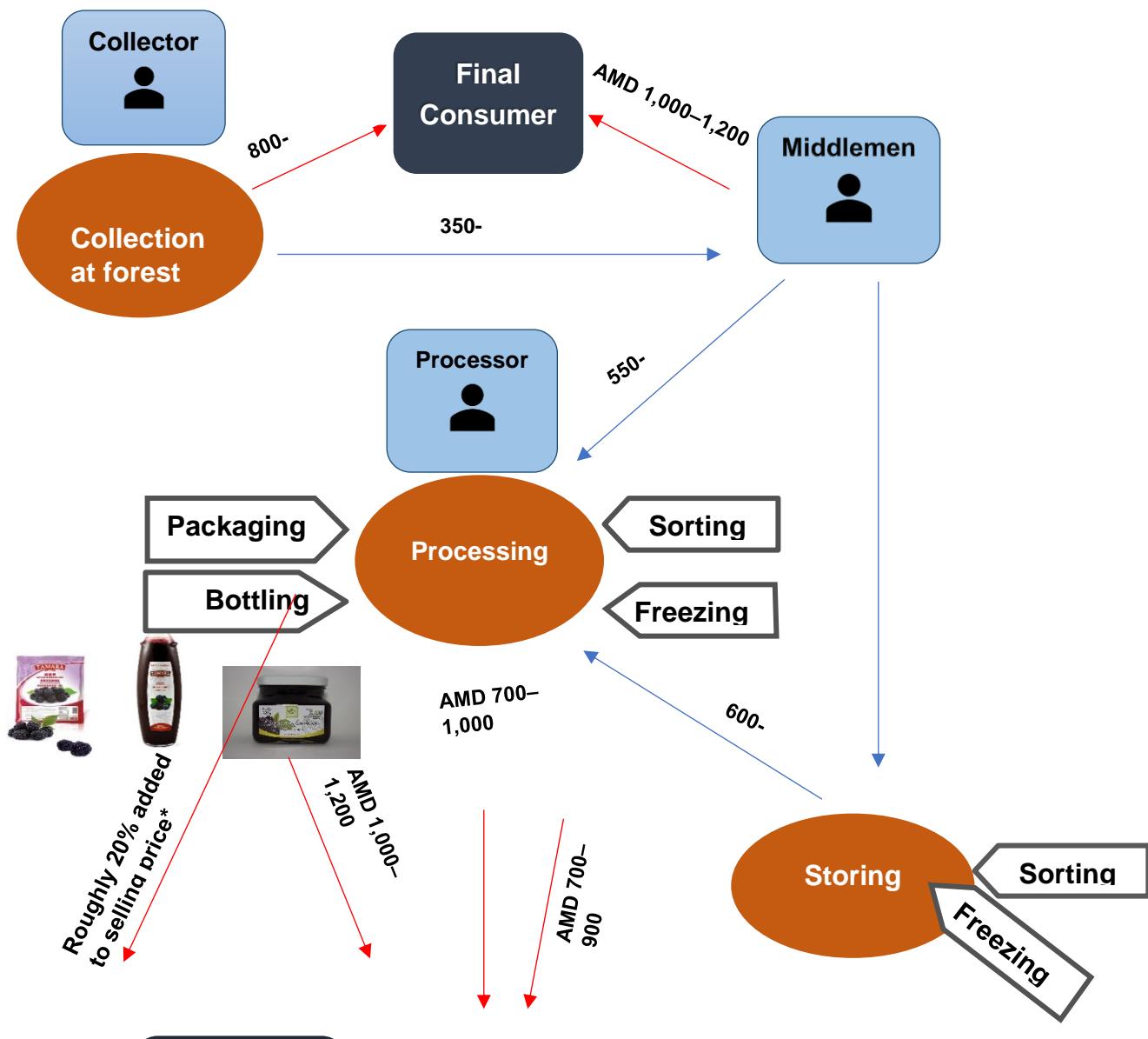
Processing

pays a higher price to middlemen to supply because it is easier to group of collectors, the more for the produce

Storing

that supplied by individual collectors. The final product is sold on the local supermarkets or is exported. The export price paid to processors would normally be about 20 percent higher.

Figure 12: Typical dewberry value chain



Source: Current market analysis.

Note: *Prices for goods from wild berries in export markets are roughly 20 percent higher compared to prices of similar products in Armenian supermarkets.

4.6.2 Wild herbs

Stakeholders involved: Women collectors

Collection period of demanded wild herbs (thyme, mint, melissa, and chamomile) starts in mid-May and continues until the beginning of October. Ideally, before the start of the collection period, collectors receive training from producers/processors on the requirements set for each type of wild herb. A group leader is assigned by the producer/processor, or

Collection

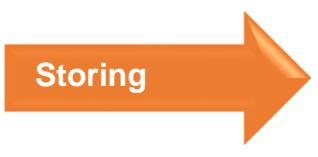
she is selected by women collectors. Group leaders become the connecting point between producers/processors and other women collectors by supervising the process and negotiating the prices of collected herbs. An important point in the collection of wild herbs is the requirement set for each herb type, which may include additional activities to be carried out by collectors and consequently, increase the costs of collection. Some of the producers/processors interviewed buy fresh herbs that have not passed the first phase of cleaning. The price for fresh herbs varies from AMD 400 to AMD 500 for 1 kg depending on the region where collection takes place and the experience of wild collectors (the ones that are just starting on this process with no preliminary market information require lower price for the same quality of herb). Producers/processors who have separate place for drying of wild herbs usually require basic cleaning (for example, removing dust, unhealthy leaves) and pay AMD 1,200 to AMD 2,500 for 1 kg of fresh wild herbs. Collectors do first-phase cleaning in their own houses and in a majority of the cases, no technical support is provided to the collecting women for implementation of additional activities. Some producers that do not have the required place and conditions for drying fully and hence, trust this process to women collectors. So, the collectors are responsible for cleaning the herbs, removing stems, and drying the leaves. The only process left to the producers is packaging. The prices paid for dry herbs in this case varies from AMD 5,000 to AMD 7,000.

Stakeholders involved: Women collectors and producers

Considering the fact that some tea producers are either producing organic tea or are in conversion to organic production, storing conditions strongly follow organic standards of production. Storage has to be clean and dry and used only for keeping these specific goods. The picture is completely different with nonorganic producers. The only requirement set for collectors in this case is having a dry area to avoid humidity and mold in herbs. There is no specific space separated for storage if the post-harvest handling is done by the collectors. The process does not follow any safety requirements and it is up to the collector to decide the techniques of storing. As long as it satisfies the producers' expectations of product quality, both sides are not much concerned with renovating the place or having separate rooms for storing.

Stakeholders involved: Women collectors and producers

The main activities undertaken by women collectors before handling wild herbs are cleaning, sorting, drying, and putting the herbs in sacks. Again, it should be noted that activities are entrusted to collectors in two cases: if the producer/processor does not own a place for processing or if the long-term collaboration between collectors and processors resulted in mutual trust. In most of the cases, organic producers were the ones who owned production plants equipped with dryers and with automated packing machines. Collectors who are obliged to do cleaning, sorting, and drying also put the herbs in sacks and transfer the sacks to producers. None of the collectors was doing packaging before handing the products to producers. Producers that do packaging consider this as a way of controlling the quality of product before it is delivered to the final customers.

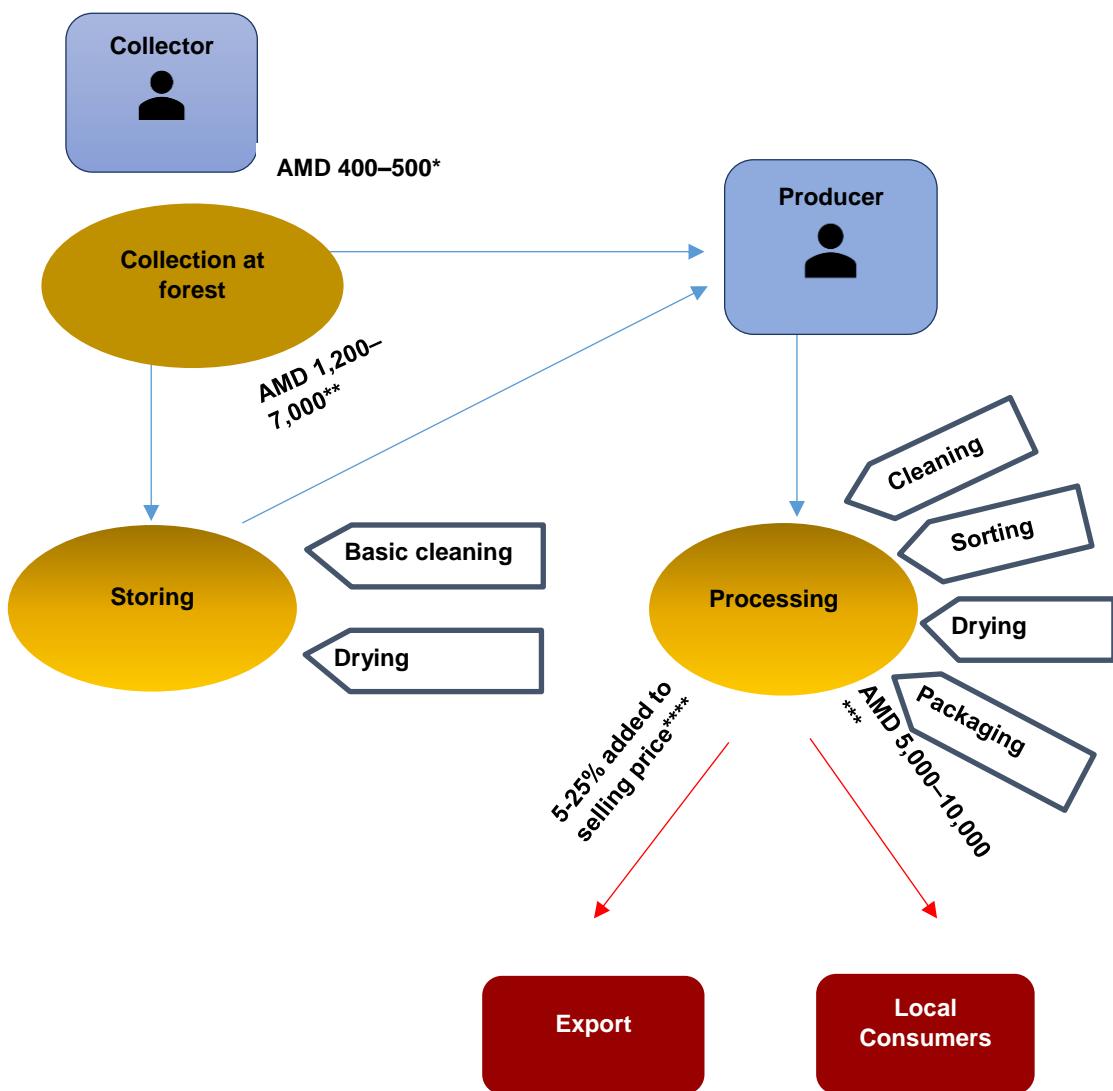


Storing



Processing

Figure 13: Typical thyme value chain



Source: Current research findings.

Note:

*The prices for fresh wild thyme that have not passed the first-phase cleaning vary from AMD 150 to AMD 400 per kg.

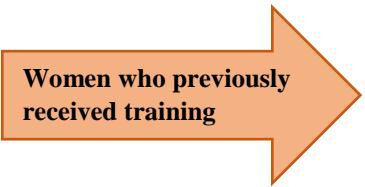
**Depending on post-harvest activities carried out by collectors, the price paid by producers may vary from AMD 600 to AMD 3,500 (for 1 kg fresh herb equivalent).

***Prices for wild thyme teas may vary from AMD 5,000–10,000 depending on the type of package and design (for 1 kg fresh herb equivalent).

****Small margins are added to teas exported to the Russian market. Armenian teas targeted to niche specialized stores in the United States or the EU may be sold with a markup of up to 25 percent.

4.6.3 Business opportunities for women entrepreneurs

Before unlocking business opportunities for women entrepreneurs, two groups of women collectors should be discussed first.

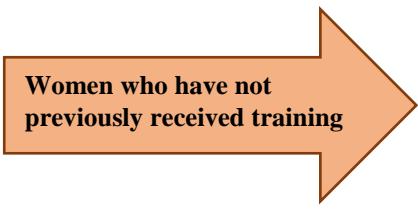


Women who previously received training

In Lori and Tavush marzes, where local NGOs have previously conducted trainings, women collectors were comparably more organized and, most importantly, they already realized the profit opportunities of wild collection. As was indicated by interviewed producers/processors—organizing groups of women collectors for wild harvest was the toughest part of the whole managerial work. Moreover, already organized women collectors had leaders who were guiding them throughout the process. The leaders were in constant contact with producers/processors and the requirements, deadlines, and prices were agreed in close collaboration with them. Some of distinguishing qualities of women leaders in these groups are proactiveness and profit-seeking behavior. Realizing the profitability of the business, the leaders were actively looking for new collectors interested in wild harvest to ensure the volumes of supply demanded by processors.

When it comes to export of wild produce, still a lot of work should be done to enter foreign markets. Currently, few producers export their products to foreign markets. The export volumes are small and are targeted to several small niche markets. The underlying reasons are very different: some producers are unable to find partners abroad, some producers can not secure large volumes of homogeneous quality herbs, and some have very limited production capacity. Importing companies on foreign markets usually require large amounts of processed goods, which means that well-organized collaboration among collectors is a must to fully utilize the potential of export.

An interesting example of training and value chain actors' collaboration was observed in village Vardenik, where the youth NGO 'Hamaynqi Zarkerak' had established and ran a social enterprise where they involved about 70 families from the community. Local women collect herbs from nearby mountains and young people are actively involved in processing and packaging of the produce. About half of the revenues is paid as salaries, and the other half is directed toward development of the community.



Women who have not previously received training

This group of women is the most difficult in terms of utilizing business opportunities. For them, wild collection is something they can do during their free time along with other agricultural activities. Compared to the first group, these women have a hard time recognizing the profitability

of wild collection and consider wild collection as a business opportunity to improve their livelihoods. The collection is unorganized, with no clear timing indicated for collection. Furthermore, the awareness about sustainability of wild collection practices or dos and don'ts of wild collection were not properly investigated, questioning the compliance of harvest with environmental regulations. Therefore, it is strongly advised to show best practices of wild harvest to this group of collectors. Women leaders of collection groups or successful women entrepreneurs may be involved in sharing experiences, particularly highlighting the economic benefits of wild collection. These meetings can serve as a basis for further expansion of the network of women collectors, which may eventually lead to establishment of an association.

As revealed during meetings with producers and validation workshops, there is a strong need for a well-organized team of collectors with responsible leaders who possess some managerial skills. In this sense, training more women collectors and forming a team/association of collectors in the marzes of Armenia will promote the development of strong bilateral relations between producers and collectors.

5. Harvested Goods and Possible Expansion on the Example of Wild Herbs and Berries

5.1 Main herbs and berries harvested and current and prospective markets for wild produce

Different sources state that approximately 2,000 herbs and plants grown in Armenia, which comprise nearly 60 percent of total flora, have been previously used for a number of reasons: food production, chemistry, medicine, and cosmetics production. As of now, less than 100 types of biodiversity products are being used, out of which only 30–40 types are used extensively.¹⁵

When it comes to marzes observed by the ICARE research team, there were no sharp differences across them in terms of varieties of wild herbs and berries commonly collected (see Table 3). Not surprisingly, the regions are very rich in the varieties of herbs and berries, but the potential is not fully disclosed, mainly due to a number of reasons, including the following:

- Lack of stocktaking of available natural resources and collected volumes
- Lack of awareness on available regional wild plants among collectors (including lack of research projects and state support aimed at revealing the potential of wild flora in marzes)
- Lack of information on market demand for the wild plants
- Weakly organized collection process and poor teamwork
- Lack of technical support from producer's side to organize logistics

The top collected herbs in the observed regions are thyme, mint, melissa, and chamomile, which is explained by high demand for these plants from the processing industry. Wild herbs following the top ones are collected in comparably small quantities (less than 100 kg of each wild herb annually), because the demand for these herbs is small and collectors themselves are not very interested in promoting new types of wild herbs among producers/processors. Although huge efforts have been made by local NGOs to capacitate women collectors with necessary skills for collection, the collection process is still weakly organized.

Table 3: Wild herbs and berries commonly collected in Armenia

Wild Herbs	Wild Berries
Thyme	Dewberry
Mint	Raspberry

¹⁵ AM Partners Consulting Company, “Analysis of Processors and Traders Involved in Value Chain of Selected Biodiversity Products in Armenia.”

Wild Herbs	Wild Berries
Melissa	Cornelian cherry
Chamomile	Rose hip
Sorrel	Haw
Tilia flower	Polygonatum
Tutsan	Medlar
Oregano	Green nuts
Falcaria vulgaris	Cornelian cherry
Rumex acetosa	Wild apple
Ziziphora	Wild pear

Source: Current research findings.

Women collectors heavily depend on the supervision of local NGOs or producers/processors they cooperate with for expansion of the varieties of herbs they collect. In a few cases, producers distributed books to collectors as guidance for them to easily identify wild plants grown in Armenia.

Producers/processors usually take the initiative to introduce new wild plants into production. One of the recently observed types of plants is ziziphora which is currently being used in tea production. Current markets for juices, preserves, and teas are local supermarkets (in marzes and in Yerevan), specialized tea shops, and touristic centers in marzes that may sell both herbal teas and cosmetic oils. Traditional Armenian events that coincide with the touristic season are also considered as an opportunity for rural women collectors and small producers to sell their products. Opportunities for export of final product made from wild herbs and berries were also analyzed within the scope of the study.

Figure 14 summarizes the top export destinations for each wild product category.

Figure 14: Current markets for wild produce



Source: ICARE interviews, trade data, and exporting organizations websites.

During the validation workshop, it was emphasized that although often neglected, there are some wild plants and berries that may have high market potential both locally and abroad. The list of prospective plants is presented in Figures 15 and 16.

Figure 15: Berries with market potential



Figure 16: Herbs with market potential



Source: Current research findings.

Additional value adding activities that can be implemented by women collectors. The observations received from focus group discussions were not sharply different from the information acquired during in-depth interviews. Participants were very much concerned about the quality of harvested herbs and berries, and instead of looking at additional activities that can be carried out by women collectors, participants pointed out the following ways to help collectors increase the quality of supplied plants:

- Involvement of women with leadership potential
- Illustrative representation of sustainable and environmentally friendly harvesting practices
- Clean harvest that follows agreed terms defined by producers/processors

The workshop participants agreed that intensive work with collectors for making a change in attitude and mindset is required. This first relates to the ability to work in a group, while implementing collection and primary processing in accordance with the requirements set by the processor or any other partner organization. This ensures the homogeneity and stable high quality of the goods collected.

6. Conclusions and Recommendations

Support from local and international NGOs and most important, prominent leadership skills among women entrepreneurs have definitely played a huge role in activating the wild harvest sector in the regions of Armenia. With high rates of poverty, wild collection served as a main source of income for a large number of women in rural communities. Although tangible progress has already been observed in this sector, organizing groups of women collectors for wild harvest still remains the toughest part of the whole managerial work. During the value chain assessment, the issue of unsustainable wild harvesting practices has been raised, which implies that aside from promoting value adding activities among women collectors, leader women collectors, NGOs, and processors/producers should work hard on training women collectors on environmentally friendly harvesting practices.

Cosmetics producers, tea producers, and producers of jams, juices, and preserves have successfully unlocked export markets for these products. However, as discussed during interviews with producers/processors, export is currently targeted to small niche markets and boutique stores because the producers are not yet capable of supplying required amounts of produce to large retail stores. Supply of larger volumes of homogeneous production may be feasible with the development of a better collaboration scheme among collectors and across the value chain.

Validation workshops and in-depth interviews with sector representatives reaffirmed the low regulation of the wild harvest sector. Although environmental charges are clearly defined by regulation, the payment procedure and the regulating body/authority are not well defined, posing a question of possible irrelevance of defined charges. Who pays the taxes, what is the amount of tax applied, and most important, what state body/organization is eligible to collect taxes are questions that hinder smooth development of the sector.

Sets of recommendations for the sustainable development of the wild collection sector include macro- and micro-level recommendations. The macro level relates to the set of recommendations to be addressed by policy makers—legal and governing authorities. These recommendations would create an enabling environment for the sector's development and improve the exporting potential for wild collection. On the other hand, micro-level recommendations are aimed at capacitating direct participants of the value chain and can be implemented by the participants or partner NGOs.

Macro-level recommendations

Improving wild sector regulations: One of the critical steps needed for improvement of unsustainable harvesting practices is revision of the current regulation on the wild harvest sector. In particular, points covering environmental taxes and the role of state authorities in defining and collecting these taxes should be well examined. The legal fee charged according to Armenian legislation for the permission to carry out wild collection for commercial purpose is not very large and can easily be paid by collectors, however, many of them are not aware of the existing requirements. Besides it is very difficult to come up with mechanisms

for enforcement of fee payment. This forced the Government authorities to impose payments on exporters of processed goods from the raw material collected in wild. This creates uneven competition between processors exporting the produce and those selling in the local market.

Expand exporting potential: The study revealed that the top four countries importing herbal tea worldwide are Morocco, the United States, France, and Germany. More research revealed that in addition to own consumption, Morocco also demands herbs for further processing and export. This means that for accessing the Moroccan market, Armenian producers will have to get in contact with large processing plants (that may organize pick-up and shipment themselves), rather than supermarkets and stores, and will have to supply in bulk. However, for accessing the United States and EU countries, Armenian processors will have to enter the retail/consumer market and will need to comply with food safety regulations while taking care of cleaning, drying, and packaging the goods. Export facilitation by the Government and trade development agencies may be needed. Because Armenia already enjoys trade preferences within the scope of the GSP+ regime with the EU countries, market access should not have technical barriers except for quality compliance. In this case, organic certification (preferably the standard that is recognized by the consumers in EU market) can serve as one proof for the quality of the production. To sum up, although the wholesale market can be attractive, for the volumes of product Armenia can provide, it would rather be feasible to target niche, high-end markets in the EU, Russia, and the United States, where there is a large Armenian diaspora.

Promoting social entrepreneurship in communities: Successful cases of social entrepreneurship should be properly investigated and promoted in the marzes observed. Women collectors should be well aware of the benefits social entrepreneurship may offer and the experience of successful social entrepreneurs in the agricultural sector must be utilized. Well-formed social entrepreneurship will be one solution to increased demand for wild herbs and berries. With a motivated and result-driven organizing team, social enterprise for wild collection can be a viable option in economically vulnerable villages of observed regions.

Promoting research on biodiversity in Armenia: Stocktaking of wild plants and nature's capacity in terms of quality and quantities in marzes would be highly recommended. It should be clear that there are not many intensive research projects on biodiversity in Armenia implemented by producers/processors or NGOs cooperating with groups of women collectors.

Micro-level recommendations

Expanding into other activities of the value chain: Successful cases of wild collection implementation in Armenia did prove that women collectors can increase their profit margin by expanding into activities that are usually performed by middlemen or processors. The groups of collectors that were able to clean, dry, and sort wild herbs and those that were able to deliver to final consumers for berries were able to get higher profits.

Organizing experience-sharing workshops: Women leaders of collection groups or successful women entrepreneurs may be involved in sharing experiences, particularly highlighting the economic benefits of wild collection. These meetings can serve as a basis for further expansion of the network of women collectors which may eventually lead to establishment of an association.

The following trainings can be provided:

- **Sustainable wild harvest practices:** All the interviewed producers/processors strongly pointed out the need for homogeneous quality of wild herbs in a predetermined quantity. To achieve this, producers/processors should take the initiative to organize trainings before harvest to introduce sustainable wild harvest practices to women collectors and to inform them about possible environmental damages that may occur as a result of incautious collection. It is a fact that groups that have women leaders perform better, so women leaders should particularly be identified first and then trained to be able to lead the team.
- **Cost-benefit calculations/basic finance:** The needs assessment part of the study revealed that many collectors never considered any value adding activities that, if implemented, could result in higher profitability for the collectors. Enhanced financial literacy would allow estimation of opportunity costs and calculation of profits associated with implementation of additional activities.
- **Basic Internet marketing:** The contact details of fruits and berries processors, as well as herbs processors and exporters are listed on different websites, such as Spyur business directory. Introduction of Internet search engines and the ability to connect with possible customers will allow collectors to reach out to the markets for the collected herbs or berries.
- **Effective collaboration/teamwork:** Middlemen and processors would often look for large quantities of produce to lower per unit transportation costs for the raw material. However, specifically in the case of fresh herbs and berries, a single collector would not be able to provide large volumes of the produce in the same day (often there is very little time from collection to processing since the goods are perishable), thus the collaboration of several collectors will enable better access to markets.
- **Leadership skills:** Often processors or middlemen would not be willing to set times for contacting each collector individually and would rather have a team leader who organizes collectors and serves as a contact point for communication regarding supply quality, quantity, and payment terms. The leadership and entrepreneurship skills enhancement will thus improve the partnership between the value chain actors.

Encouraging research: In addition to larger-scale studies that can be implemented through state or development projects, private parties should be encouraged to carry out their own research to have information on the variety and diversity of wild plants and berries that grow

and are in demand in the markets in Armenia and abroad. Producers/processors should disseminate up-to-date information on wild herbs and berries demanded from women collectors and encourage them to supply new varieties.

Development of alternative product value chains: One of the most promising trends in wild produce processing in the world is the production of essential oils. Although well in demand for cosmetics and medicinal purposes, essential oils are not widely produced in Armenia. The value chain study revealed that a lot of wild collection byproducts (such as herb stems and berry/fruit seeds) are being wasted. If processed into essential oils, these could provide additional income to all participants of the value chain.

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Appendix

Appendix 1. Wild collectors' questionnaire

Name _____

Address _____

Name of the cooperative, if applicable _____

Phone number _____

Note for the interviewer: For all open questions please specify the good

Section 1. Collecting Personnel and Collection Process

1.1. How do you decide on what wild produce to collect?

1.2. Have you ever received any training or instructions on conducting wild harvest?

Yes (Please, specify) _____ No _____

1.3. Please indicate wild harvest produce, corresponding harvest periods, collection methods, and conditions.

Wild produce	Wild harvest period	Wild harvest methods and tools used	Environmental conditions during wild harvest (weather, soil humidity)

1.4. Please mention any endangered species that are prohibited for collection in your area?

1.5. Is there a specific time period when the collection of a plant is prohibited? If yes, please mention the plant and the time period.

1.6. Are there permits for wild collection? Please mention the regulations that have impact on this activity.

1.7. Are there specific harvesting requirements set by the processor, final user, or state authority for any wild produce collected? If there are, please mention the plant and the specific requirements.

1.8. What are the practices you noticed that may have negative impact on the next year's harvest?

Section 2. Wild Herbs and Berries Post-Harvest Handling

2.1. Is there any other activity you implement before selling the wild produce (sorting, cleaning, storing, drying, labeling, and so on). (**For interviewer:** If any of those activities are implemented, go to question 2.2; if no, continue to section 3)

2.2. Do you clean the weed (if applicable) and wash the wild produce?

Yes _____

No _____

2.3. If you store the harvested goods, what are the storage conditions (do you have specific facility for that—is it dry, is it dark, what else is it used for)?

2.4. If you dry the herb, what are the drying conditions (do you have specific facility for that—is it dry, is it dark, what else is it used for)?

2.5. Do you package and label the product?

Yes _____

No _____

Section 3. Value Chain

3.1. Please mention the share of sales and sales price for each group of procures for each type of product?

Wild produce	Possible procurers	Share of sales by procurers	Sales price by procurers (AMD)
	Trader/transporter Processor Final consumer Other (clarify)	% % % %	AMD AMD AMD AMD
	Trader/transporter Processor Final consumer Other (clarify)	% % % %	AMD AMD AMD AMD
	Trader/transporter Processor Final consumer Other (clarify)	% % % %	AMD AMD AMD AMD

		%	
	Trader/transporter	_____	_____AMD
	Processor	_____	_____AMD
	Final consumer	_____	_____AMD
	Other (clarify)	_____	_____AMD

3.2. Do you get any support from the processor/procurer? (**For interviewer:** Cash advance, transportation, boxes, training, and so on)

3.3. Do you make contracts with the processor/procurer?

Yes _____

No _____

3.4. Can you switch the processor/procurer if needed? Why? _____

3.5. When did you get paid for wild produce, please select one option.

Got paid before delivery	Got paid upon delivery	Got paid after delivery
		_____ days after

3.6. Are you satisfied with the relationship with processors/procurers? Please explain.

3.7. Do you collaborate with other collectors/associations in the area? If yes, please describe how.

Section 4. Access to Information and Access to Finance

4.1. How do you identify the price for selling the produce and the market where you would like to sell?

4.2. What information/skills/knowledge would you need to increase profitability of your activity? (**For interviewer:** Prices on the market that can be used for identifying what to collect, skills to communicate/bargain with traders, marketing skills to be able to add more value before the produce is sold, and so on).

4.3. Do you use Internet marketing to improve efficiency of operations and increase profitability of wild collection?

4.4. Would you be interested in starting a new business or expanding the existing one? Please explain.

4.5. How can you get the initial funding for establishment of a new business or for the support of current operation?

Appendix 2. Food processing company questionnaire

Name of the company and legal status _____

Address _____

Contact person _____ Position _____

Phone number _____

Note for the interviewer: For all open questions, please specify the plant.

Section 1. Collecting Personnel and Collection Process

- 1.1. What are the most important problems in buying wild produce?
- 1.2. Do you have requirements regarding collected wild produce, including quality, cleanliness, and so on?
- 1.3. Do you conduct training for collectors or anyhow inform them about those requirements?
- 1.4. Please mention skills the wild collectors need to have to increase efficiency of the chain and long-term sustainability of operations.
- 1.5. Please mention regulations/procedures that need to be improved to increase efficiency of the chain and long-term sustainability of operations.
- 1.6. What value-adding activity, if implemented will motivate you to pay higher price for the collected goods? (please consider also the increased volumes of produce)
- 1.7. Please fill in the following table regarding volumes and price of raw materials purchased.

Type	Volumes (kg) 2016	Cost AMD/US\$ per kg 2016	Volumes (kg) 2017	Cost AMD/US\$ per kg 2017

Section 2. Wild Herbs or Berries Post-Harvest Handling

- 2.6. What activities are usually implemented starting from the procurement of wild produce by your company and until the product is ready to go to final consumers?
- 2.7. If you store the goods, what are the storage conditions (do you have specific facility for that—is it dry, is it dark, what else is it used for)?

2.8. Do you purge and wash the wild produce?

Yes _____

No _____

2.9. If you dry the herbs, what are the drying conditions (do you have specific facility for that—is it dry, is it dark, what else is it used for)?

2.10. If you package the goods, what are packaging conditions (do you have specific facility for that—is it dry, is it dark, what else is it used for)?

2.11. If collection volumes increase, will you be interested to increase your processing volumes?

2.12. What percentage of capacity do you use during your busiest months?

Months _____ Capacity _____ %.

Section 3. Value Chain

3.1. Please mention all types of wild produce your company procures and sources of supply with corresponding volumes (%)

Type of produce	Source of produce (procurement)	Proportion purchased from the particular source
	Farmers Own supply Other _____	_____ % _____ % _____ %
	Farmers Own supply Other _____	_____ % _____ % _____ %
	Farmers Own supply Other _____	_____ % _____ % _____ %
	Farmers Own supply Other _____	_____ % _____ % _____ %

3.2. How many suppliers/collectors do you work with? _____

3.3. Do you provide any support to the collectors/suppliers? (*For interviewer: Cash advance, transportation, boxes, and so on*)

3.4. Do you make contracts with suppliers/collectors? _____

3.5. Can you switch the suppliers/collectors, if needed? Why? _____

3.6. When do you pay for wild produce, please select one option

Pay before delivery	Pay upon delivery	Pay after delivery
		_____ days after

3.7. Are you satisfied with the relationship with suppliers? Please explain.

3.8. Where do you sell your products (types, for example, frozen, jams, juice, and so on) after processing, and what is the value of sales of each product type to certain buyers?

Product	Local market/buyer type	Export /buyer type	Value of sales AMD/US\$

Section 4. Access to Information and Access to Finance

4.6. How do you identify the price for purchasing the produce and find the potential suppliers?

4.7. What information/skills/knowledge would you need to increase profitability of your activity? (**For interviewer:** Prices on the market that can be used for identifying what to collect, skills to communicate/bargain with traders, marketing skills to be able to add more value before the produce is sold, and so on).

4.8. Do you use Internet marketing to improve efficiency of operations and increase profitability of your operations?

4.9. Would you be interested in starting a new business or expanding the existing one? Please explain.

4.10. How can you get the initial funding for establishment of a new business or for the support of current operation?

Appendix 3. Validation workshop agenda

Presentation of the wild collection skills assessment study results and findings discussion

International Center for Agribusiness Research and Education, 2 floor, Teryan 74

April 5, 2018, 16:00 – 18:00

16:00–16:05	Gayane Mkrtchyan, Armenia Gender Project Manager, International Finance Corporation
16:05–16:30	Anna Yeritsyan, International Center for Agribusiness Research and Education - Presentation of the wild collection value chains assessment study results
16:30–18:00	Working group discussion and study findings recap

