

Recommendations for an action agenda on improving the regulation and the management of wild plant collection in Armenia

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Background

The practice of collecting and using wild plants in Armenia is not new. Reliance on nature, transferring ecological knowledge as a means of preserving traditional way of life has deep roots among the population of Armenia and in the greater Caucasus Region. Armenia's climatic conditions and the intact environment of some of its remote regions positively affect the quality of harvested plant material that are highly sought after. There is a wide variety of plants and fungi used by communities throughout Armenia. The Strategy and National Action Plan of the Republic of Armenia on Conservation, Protection, Reproduction and Use of Biological Diversity (2015) identifies:

- Edible plants – about 200 species,
- Wild fruits and berries – about 120 species,
- Honey plants – about 350 species, and
- Edible mushrooms – 290 species.

The above list includes plant species used as medicinal and aromatic plants. Sustainable use of biological resources of the Republic of Armenia are an important and integral part of the country's environmental and economic strategy. The overuse of biological resources, including economically valuable species as well as rare species and those under the threat of extinction, is considered by the Government of Armenia as one of many factors adversely impacting biodiversity in the country.

Government policy also recognizes that household and community welfare, esp. in rural areas, is dependent on the use of biological resources. These resources are critical to meeting many communities' nutritional needs as well as provide them supplemental income. As such, the government needs to pursue policies and strategies that have a dual aim of improved biodiversity protection and improved welfare for rural populations.

Over the past 6 months, the AUA Acopian Center for the Environment, Time Land Scientific-Educational Foundation, and Republic of Armenia Ministry of Environment have collaborated to implement the Managing the Regulated Wild Plant Collection in Armenia project. This project, funded by the U.S. Embassy in Armenia, aims:

1. To identify and engage key state and non-state stakeholders involved in wild plant collection and monitoring.
2. To identify an action agenda for the Armenian government to better manage wild edible plants and ensure its sustainability.
3. To promote an understanding and awareness on how to balance economic necessities and environmental concerns.

To make progress on these goals, the project has completed the following:

- a. Mapped the key stakeholders in wild plant harvest (governmental agencies, civil society organizations, community collectives or networks, businesses, and researchers) (see [here](#));
- b. Conducted a legislative and institutional review (Appendix 1);
- c. Reviewed the literature on past experience and research on wild harvest regulation and management in Armenia (Appendix 2);
- d. Created an online platform with resources related to wild plant harvesting and monitoring (see [here](#));
- e. Organized a multi-stakeholder workshop on wild harvest and its regulation and management (Appendix 3); and

- f. Based on the forgoing activities and outputs, developed recommendations for an Action Agenda on improving regulation and management of wild plant harvest in Armenia (the present document).

The recommendations for the action agenda, which inform the Government of Armenia on directions to pursue and options to examine, are grouped into the following overarching themes:

1. Accelerating and building capacity for biodiversity monitoring and inventory development
2. Enhancing the understanding of the economics of wild plant collection and products
3. Improving legal and institutional framework related to collection, processing, and sales of resources and products derived from wild plant harvest
4. Promoting private-sector initiatives
5. Shifting from wild harvest to cultivation
6. Empowering women and rural communities
7. Public education and awareness raising

Recommendations

1. Accelerating and building capacity for biodiversity monitoring and inventory development

Past studies highlight lack of the existence of a system (or systems) for effectively monitoring the populations of various species including plants. They also point at the shortcomings of the Red Book of Plants in Armenia, in particular to the absence of most of the country's endemic plants despite the fact that, according to those reports, collectors have been harvesting wild plants in protected areas with impunity.

The RA Ministry of Environment is expected to remedy this through the updating of the Red Book of Armenia. Ministry representatives also state that the Ministry intends to create a biodiversity inventory and monitoring system for Armenia. While there were plans to fund these, it is unclear to us at this point (i.e., Dec 2020) if these plans still hold under the current COVID pandemic and post-war conditions.

In the context of wild plant harvest, the publication of the new Red Book of Armenia will help identify an updated list of critically endangered species in need of protection. The biodiversity cadaster will help better understand the distribution, abundance, and health of economically valuable wild plants. These pieces of information are critical for developing sound policies and legislation. Without such information, the discussions run the risk of becoming groundless and subject to political manipulation by all sides, which can lead to failure to protect biodiversity or ensure community welfare.

Updating and publishing the Red Book of Endangered Species or creating and maintaining a biodiversity cadaster are large-scale, multi-year initiatives in need of continuous expert and financial resources. **To benefit from their results in the near future, efforts in these directions need to be strengthened and accelerated.**

As part of the completion or perhaps even establishment of such large-scale efforts, at least in the case of wild plants collection, a few activities could be explored in the short term to shed light on abundance, distribution, and health of economically valuable as well as endangered species. Building these capacities will also help with sustainability of large-scale efforts in biodiversity monitoring and inventorying.

Additionally, as there is no reliable information on quantities and types of wild plants harvested by rural communities for personal or commercial use, such studies could help provide a basic understanding of these.

It should be noted that in the absence of reliable information on distribution and abundance of species as well as harvest sites, quantities, and practices, it may not be possible to fully implement many of the wild harvest standards. For instance, both the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP) and the Green Caucasus Standard for Wild Collection require such information to verify compliance.¹

A few suggested activities include:

- a) Study the **relative significance of wild plant harvest on species** distribution, abundance, and health compared with other continuous or regular human activities such as, free-range grazing of livestock, large-scale cutting and collection of hay in meadows, use of pesticides or herbicides, and the like. In addition to these, there are a myriad other human activities that could impact plant biodiversity in a significant way including mining, deforestation, expansion of agriculture, urbanization, and so on. It is important to note, nonetheless, that while nationwide wild plant harvesting may not rank high as a source of stress to survival of certain species of importance, in specific areas there may be such a threat.
- b) Establishing an **information network** among wild harvest collectors, related civil society groups, associations, and private companies, instituting a voluntary information exchange platform on locations, types, and quantities of plants collected. This could also prove to be an important method of collecting information about specific areas in the country where specific species of concern may be in stress due to overharvesting or other reasons that may be reported.
- c) Utilizing **public-participation, citizen-science, university students, and community-level research** to access citizen knowledge on biodiversity and wild plant harvest. With proper information coordination and quality standards, these sources can be part of a complex system of updating information on the abundance and distribution of plants; community practices, use and benefits from wild plant harvest; and challenges and opportunities.
- d) Prioritizing **research focus on protected areas and national forests** close to human settlements as areas of more immediate impact and exposure.
- e) Conducting a **pilot study in a small number of protected areas** close to human settlements to understand the collection patterns and impact on plant diversity and ecosystem impact
- f) In developing the biodiversity cadaster, prioritize studying key species and map the distribution of important species to help plan their protection.
- g) Conducting **periodic analyses and synthesis of above-cited activities** (information exchange, citizen science, public participation, pilot studies, etc.) to shed light on policy-relevant facts and trends and implications for updating the Red Book and the biodiversity cadaster.

¹ For more on international wild harvest standards see *Wild Harvest Value Chain Assessment Report Armenia* (World Bank, 2018) prepared by International Center for Agribusiness Research and Education (ICARE). This and other related reports can be accessed here: <https://ace.aua.am/wild-plant-collection/resources/research-and-policy-papers/>.

2. Enhancing the understanding of the economics of sustainable wild plant collection, value chain, and products

In parallel to understanding plant biodiversity, distribution, and abundance, development of sound policy and legislation requires an understanding of the economics of wild plant collection, value chain, and products. Currently there are no economic analyses of this sector in Armenia. There is a big knowledge gap. Without a good understanding of the economics, for instance, license or permit fees cannot be adequately priced. If the fees are too low, biodiversity protection may suffer. If the fees are too high, economic welfare may suffer. Such economic analyses may also shed light on the political economy of the wild-harvest sector. Who benefits economically most? How can rural communities benefit more from their collected plants? What value-added activities can be done in rural areas to ensure higher share of the revenues stay in rural areas? When is it economically feasible to transition from wild harvest to cultivation? The specific economic analyses and assessments of an action agenda could include:

- a) **Monitoring the market of wild plant harvests** (quantities and prices) at various stages of the value chain. Government agencies can work with academic institutions, civil society, and communities collecting, and retailers to collect this information.
- b) Studying the opportunities and obstacles **for rural collectors to conduct value-added processing and connecting directly to end users of their wild plant harvest**. The study could also explore alternative value chains esp. those components that are normally wasted. Reportedly, there are intermediary businesses that work with collectors to improve their collection practices as well as processing the collected plants (e.g., cleaning, drying, sorting), all of which yields in higher income for rural collectors. There is already work done on adopting international quality standards (e.g., organic, etc.) that could also increase the value and yields of the wild harvest. Adoption of such practices and increasing connections to buyers can be created through cooperatives and trade networks as well. Another approach such a study could explore is the diversification of collected wild plant material in order to secure new or alternative markets.
- c) Studying the **current share of wild vs cultivated plant harvest and the economics of transition from wild harvest to cultivation**. For high-quantity production, such a transition would reduce pressure on the ecosystems where wild plant collection takes place. Moreover, such cultivation practices, if done properly, could help save the genetic stock of endangered species, which may also prove useful in attempts to restore ecosystems with such plants. Such a study could also attempt estimate what percent of the collections come from the wild or are cultivated (the volume of collected items has to be established). In order to levy satisfactory taxes (fees) from processors, the volume of collected items has first to be assessed. This, in turn, will form a baseline for economic analyses (տնտեսագիտական վերլուծումներ) necessary for legislative improvements.
- d) Studying and promoting **opportunities to a promote seed and seedling market** for urban consumers who may be interested in growing their own plants of nutritional or medicinal value. Development of such a do-it-yourself plant growing market should reduce some of the pressure on wild plant harvests, esp. plants that are endangered. Development of such markets should take care to avoid introduction of non-native and invasive species that could do harm in the long term.

3. Improving legal and institutional framework related to sustainable collection, processing, and sales of resources and products derived from wild plant harvest

Armenia's legislation defines rules and procedures that aim to regulate the collection and utilization of biodiversity products. For instance, the RA Forest Code and Law "On Flora" require mandatory permitting/licensing for the collection of wild plants in state-owned properties. They also stipulate that those receiving permit/license shall make payments to the state for their collected harvest. These laws, however, are not adequately implemented due to a lack of institutional capacity and the government's reluctance to impose what it perceives as regulatory and financial burdens on rural communities and the economy. As a result, the collection takes place without any regulatory oversight by the state to ensure that policy objectives are met.

A review of the legal-regulatory and institutional framework, however, shows that there is room to improve the effectiveness of this framework in order to achieve the dual policy objectives of biodiversity protection and economic welfare. This section will present directions in which such improvements could be made as well as approaches that may result in the most effective reforms. The suggested directions include:

- a) Form a **multi-stakeholder working group to develop legal-regulatory changes** with respect to wild plant harvest. Such a working group consisting of representatives of government agencies, legal experts, and other stakeholders (who actually implement or are going to implement the respective activities) would be beneficial, indeed necessary, in order to discuss and develop appropriate amendments to the legislation. Without this, the key public and stakeholder input opportunity would be e-draft.am, where legislative proposals are posted for a fixed period to solicit public comments. While a platform like e-draft.am are positive developments in Armenia legislative process, documents that are placed on that platform have gone through a very lengthy governmental inter-agency review making it unlikely that major changes are made to the proposed changes. Soliciting multi-stakeholder input at the proposal development phase will increase the chance of having more cogent solutions that advance the policy objectives.
- b) Reform **licensing, permitting and fee assessment system** to become better aligned with the dual policy objectives of biodiversity conservation and improving economic welfare. The existing licensing system for wild plant harvest collection is inadequate to achieve these because: (a) it imposes fees on local population—the vast majority of collectors—creating economic burden on people who already live in economic hardship; (b) it creates unnecessary administrative burden both for the collectors and forest authorities; and (c) it is neither practical nor enforceable (areas where collections are made do not have certain entrances and implementing control would involve greater resources that would likely exceed the fees to be collected).

Various reform options should be considered with respect to the licensing or permitting and fee assessment system. Key directions of reform that the literature and legislative review as well as the multi-stakeholder input suggest include: a) avoid burdening the individual collector, who most likely is socially and economically vulnerable; b) shift the responsibility of obtaining a permit and paying a fee away from the individual collector to other levels of the value chain, e.g., processors, wholesalers, or ultimate retailers (esp. supermarkets); and c) ensure administrative feasibility, where the costs do not exceed the benefits for the state and enterprise.

There are suggestions to examine a greater role of local governments in managing wild plant harvest, esp. on community property. Working with local communities and other government agencies to regulate and control the collection of wild plants in community property and state-owned lands (non-forest and non-SPAN) do not have regulations governing collection of wild plants. As for the harvest collected in private property, appropriate mechanism shall be in place to enable tracking the origin of the harvest. In

this respect, the role and functions of local self-governmental bodies may need to be further adjusted.

Local governments could also collaborate with the management of protected areas and national forests. In this respect, for instance, the communities as a whole where the collection takes place could obtain permits and pay fees if the quantities the community members collect exceed a certain amount.

With respect to any legal-regulatory developments in engaging local government, Ministry of Environment and other authorized bodies should work closely with the Prime Minister's office, which is developing a rural development strategy that has specific provisions on how to effectively and sustainably engage community members and local governments.²

As stated earlier, the amounts of fees to be levied should be based on information on the supply and demand of wild plants. The analysis can also cover the market structure in order to estimate possible positive and negative impacts of such mandatory fees for large, medium, small and micro businesses, as well.

The RA Ministry of Environment recognizes that there are deficiencies in the existing licensing and fee assessment system. The Ministry is currently working on a range of legislative amendments, including changes to the Law on Protected Areas and the Law on Flora, with the aim of improving the regulatory framework for wild plant harvest. The Ministry representatives, for instance, stated that they are seeking to introduce a criteria by which a permit and fees will be required if the collector is seeking profit. No permits and fees for collection will be required if the collector does not seek profit (e.g., for personal use). While it is commendable that the Ministry is working to improve the situation, the suggested reform, however, is unlikely to help to achieve the dual policy goals stated earlier. First, the emphasis primarily on the collector excludes the processors and retailers, which are much easier to reach and administer a permit and fee system. Second, it is difficult, if not impossible, to verify if a collector's claim to her/his non-profit motive. Third, the same quantity of the same type of wild harvest may in one case serve individual needs, while in another case be intended for sale. With no quantity caps, biodiversity protection objectives are gravely risked.

- c) Establish a **priority list of areas and species for which to implement a permitting requirements**. Wild harvest collection can take place in a wide variety of areas: SPNAs, national forests, state-owned property that is neither SPNA or national forest, community-owned property, and private property. From an ecological perspective, ideally, collection from all of these areas will be regulated as key and threatened plant species in the wild do not follow ownership boundaries and may be found in areas regardless of their ownership. Current legislation is limited with a general statement on protection of flora species regardless where they grow, but it does not provide any protection mechanisms for flora species outside of SPNAs and national forests. While this is problematic from a species protection perspective, it may be impractical to include a wider range of property types in the list. The state's institutional capacity for monitoring and enforcement is thin and prioritization may be required to ensure that some measurable level of protection is taking place. High-priority areas could include SPNAs and national forests. This can be followed by community-owned lands esp. if local governments are brought into the wild harvest management system. Private properties, esp. large ones, may be subject to

² Prime Minister's advisor Mr. Robert Ghukasyan noted in late 2020 that the government is developing a strategy on rural development, including role of citizens and local governments. Legislative reforms may benefit from considering the recommendations of this or similar strategies.

regulation if local governments are involved. The issue of prioritization should be examined when developing legislative reforms in this domain.

- d) Consider **cooperation agreements between the communities, “Hayantar” SNCO, SPNAs, processors, and retail chains**, for generating benefits, including payments for ecosystem services. In order to foster the development wild harvest collection as a specific type of provisioning ecosystem service, “Hayantar” SNCO (State Non-Commercial Organization) and the respective SPNAs could be prepared to have their input in organizing these services in a more quality and accessible manner for the users (e.g. pest control and other necessary work, useful information, marked traps, safety conditions etc.). In other words, the managing entities shall have relevant capacity and skills to provide additional services. Various types of cooperation agreements could be considered between the communities, “Hayantar” SNCO, SPNAs, retail chains, processors and other corporate players for generating benefits, including payments for ecosystem services. To enable such models it is recommended to develop a strategy accompanied with an action plan that will include implementation of assessments, raising public awareness and enhancing the capacity of managing entities.
- e) Provide **cultivation alternatives for communities that rely on wild harvest from state reserves and reserve zones of national parks**, where collection is prohibited by law. Despite its illegality, collection in these places is a common practice by virtue of the social conditions and the lack of alternative income for the local populations. In order to improve the situation, it is recommended to facilitate development of small and medium enterprises in the communities adjacent to the reserves or reserve zones.
- f) **Increase penalties and adjust the legal liability regime for collection, processing, and sales of threatened species**. Based on the anticipated changes, the Administrative Offenses Code of Armenia shall define tougher penalties for violations of legislative requirements for collection and sale of plant resources, specifically for species that are not allowed for collection or are subject to seasonal restrictions. These are welcome changes, though they need to be accompanied with intensive public education and awareness campaigns. Importantly, however, the collector should not be the only party liable. The processors and sellers of these plants and products from them should also be held liable. While the collection of endangered species and species listed on the Red Book of Plants in Armenia is punishable by law (collectors are punished when caught), no deterrent fines for vendors (վաճառեցիկ տուղանք) exist. In addition, the certificate issued by the head of the community shall be a mandatory requirement to prove that Red book species or those subject to seasonal restrictions (if sold during the restriction period) are cultivated in private lands. The copy (photo) of the certificate shall be available also at the final seller (natural or legal entity) to enable tracking the chain. At any stage in the value-chain, documentation should be available to prove the origin and legal basis of the harvest or its products. This shall include at the final stage retail sales. This shall be both for endangered species and red-book species collected or sold by individuals or businesses.
- g) Several reports, such as those by the World Bank and GIZ (see Appendix 2), suggest authorizing **a single governmental agency or a network of authorized entities** in charge of issuing wild collection licenses/certificates that will strengthen government monitoring and oversight without creating difficulties for various stakeholders within the sector (e.g., collectors, processors, traders, etc.). The complex issue of the institutions could be solved by clarification of the functions of the existing institutions or reserving new functions to them, or through establishing new structures/institutions as part of the responsibilities of the working group or groups.

4. Shifting from wild harvest to cultivation

Creating horticultural facilities to supply biodiversity products through *ex situ* cultivation could be a viable alternative that would **reduce the pressure on edible plant populations in the wild**. This could also ensure a **steady supply of high-quality products with export potential**. The study on the economics of shifting from wild harvest to cultivation proposed in recommendation 2 above will shed light on the level of incentives and support needed to facilitate the growth of cultivation businesses. In such efforts, a **focus on engendered and red-book species as a priority** will be particularly important. This market direction can be promoted through financing or tax incentives as well as corporate sustainability initiatives. Importantly, any policy development in this direction should view **rural communities as the primary beneficiary of the shift to cultivation**. This could be done by offering, for instance, financing and technical assistance for development of cultivation businesses for rural communities currently engaged in wild harvest.

5. Promoting private-sector initiatives

There is a great deal that the private for-profit and non-profit (civil society) sectors can do to make advances on the dual policy goals mentioned above. While some activities may require government or donor funding/incentives, many would not. They could also be organized on a voluntary basis to advance the interests of collector communities/networks or ultimate retailers of wild plant products.

- a) Promote **creation of network(s) of collectors and processors from various regions** of Armenia to improve the information exchange and mutual learning on market conditions, production of value-added goods or services, and sustainable harvest practices.
- b) Develop a **mobile application** to network collectors of wild edible plants that will provide them **information on the market** (e.g., retail prices, etc.) **and regulatory requirements** for various types of plants. All these will strengthen villagers negotiating position with respect to buyers as well as their knowledge of laws and regulations. Such mobile applications also have the potential to **provide valuable biodiversity data** through engaging harvesters to provide information.³
- c) Engaging **trade associations and cooperatives** in disseminating sustainable wild harvest practices and improving knowledge on sustainable wild harvest and international standards (e.g., organic, etc.) With initial upfront investments in these standards and practices, the high-quality products yielded will increase the chance of higher prices for the products sold.
- d) Network rural collectors and cultivators to **high-end or high-value restaurants and food outlets** that are willing to establish quality standards and work with suppliers to meet them.
- e) Large buyers (e.g., supermarkets or exporters) should develop **“supplier development programs,”** where they support the development of skills and know-how of village collectors or cultivators. They could also work with retailers, processors, and collectors to establish **voluntary self-monitoring and labeling standards for sustainably harvested wild edible plants**. With adequate consumer education and trust building, such a label can help

³ The American University of Armenia (AUA) and the Worcester Polytechnic Institute (WPI) are slated to engage student teams from both universities to develop prototypes for such a mobile application. After developing the prototype, expected by the end of summer 2021, it should be possible to better assess the viability of such a solution in Armenia and potentially elsewhere in the world. For more information on progress with this visit ace.aua.am or write to ace@aua.am.

develop a market for products that do not pose harm to biodiversity, esp. of critical or threatened species.

6. Empowering women in rural communities

Women are the primary collectors of wild edible plant harvest. An estimated 90% or so of collectors and local processors are women whereas only 50% are at the sales end of the value chain (World Bank 2016). While women are active in some stages of the value chain in this sector, they are particularly underrepresented in the formal, higher-income and value-add links of the value chain. Compounding this are traditional roles expected of women and lack of encouragement and skills (including lack of access to training and finance, including easy-to-pay-back microloans) to be entrepreneurial and enter into higher-income and value-added activities. The table below summarizes different types of gender-based constraints in wild harvest value chain in Armenia discussed in [Wild Harvest Value Chain Analysis – Armenia \(World Bank, 2016\)](#).

Different Types of Gender-based Constraints in the Wild Harvest Value Chain

Dimension	Observed and Measurable Unequal Conditions	Factors Leading to the Observed Gender Inequalities	Gender-based Constraint Statement
Practices and participation	<p>Women are actively participating in different stages of the value chain—from the collection of crops till the product realization in the market.</p> <p>Women, compared with men, have less access to trainings and extension programs, due to weak transportation systems, insufficient infrastructures in rural areas, and overloaded housework.</p>	<p>Women are mainly represented in the production stage of the value chain.</p> <p>Women, as a matter of practice, are excluded from those stages of selected value chain where income is generated and added value is accumulated.</p> <p>They lack the marketing skills and leadership features to become successful in product realization along with men.</p>	<p>The overall development of the value chain will itself improve the economic situation for women, because they are actively engaged nearly in all stages of the value chain.</p> <p>Women might become more successful and economically empowered through the selected value chain if they have equal access to trainings and extension programs. Women need to develop their marketing and leadership skills.</p>
Access to assets	<p>Although the law provides equal ownership rights both for men and women, the number of women possessing ownership rights over land is incompatibly low compared to those of men.</p> <p>The hereditary rights are basically in favor of men. The sons become the lawful owners of land and other types of capital.</p> <p>Women encounter tangible difficulties in getting financial aid and loans, due to the absence of collateral.</p>	<p>After the privatization processes in the 1990s, women became de jure co-owners of land in rural areas. Yet, de facto, all decisions about the actual use of land were made exclusively by men.</p> <p>Societal norms about the 'natural' roles assigned to men and women are steadily perpetuating an 'economic subordinate' role for women.</p> <p>Women need guarantees of repayment to get loans from banks.</p>	<p>The main constraints on women's access to vital assets are the hereditary customs and rights on the one hand, and perceptions and societal norms about the 'normal' gendered roles on the other.</p>

<p>Beliefs and perceptions</p>	<p>The traditional stereotypes about the proper roles of men and women are very dominant in every aspect of social life. Women are predominantly perceived as mothers, wives, and caregivers, and men as “breadwinners.”</p> <p>Although Armenia rates quite high in providing equal educational opportunities for men and women, in career advancement and fulfilling high management positions, women encounter more difficulties than do men.</p>	<p>Traditional stereotypes about proper gender roles are dominating not only among men, but among women, as well.</p> <p>The economic disadvantaged situation for women in its turn constrains their opportunities for maintaining active roles in social life, to a tangible degree.</p>	<p>Belief systems and perceptions about gender roles are not conducive to equal opportunities for men and women both in terms of economic empowerment and decision-making authority.</p> <p>The economic betterment of women’s situation will gradually improve their opportunities for decision-making positions within their communities and in the wider society, as a whole.</p>
<p>Laws, policies, and institutions</p>	<p>The laws and regulations provide equal opportunities for both sexes.</p> <p>There are not discriminatory practices in laws or other related policies.</p> <p>The main discriminatory effects are caused mainly by the poor implementation of these laws and regulations.</p>	<p>The main obstacle constraining the effective implementation of nondiscriminatory laws and regulations are social norms and hereditary rights over land and on other types of capital.</p>	<p>The situation of women might be improved if social norms about the proper roles, rights, and responsibilities for men and women change over time.</p>

Source: [Wild Harvest Value Chain Analysis - Armenia \(World Bank, 2016\)](#)

This report as well as a subsequent one commissioned again by the World Bank and conducted in 2018 by ICARE make recommendations on addressing the gender gap issues in the wild harvest sector. While unnecessary to repeat their recommendations here in detail, they can be summarized as follows. Some of the recommendations, however, are new and not addressed in the two above-cited reports.

- a) Facilitate **networking of women** including informal ones as well as cooperatives, associations, alliances, and the like. This will facilitate the exchange and collaboration among women participants in the selected value chain.
- b) Offer **trainings focused on leadership, marketing, decision-making, financial management, and risk-taking** skills and abilities.
- c) Offer **trainings in sustainable wild harvest and value-added processing and product development**. This could include better use 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. Additionally, implementing international wild harvest standards may offer opportunities for generating higher income. Trainings will be needed for utilizing such standards.

- d) Promote **formation of business entities owned and operated by women**. Some of these supply side of the market.
- e) Offer **financial products and services tailored to women**, e.g., easy-to-payback microloans, with adequate technical and financial management support. There is ample global experience in lending to women, who tend to have high repayment rates than men.
- f) Engage more **women in the formal decision-making** processes on policies and programs, thereby increasing their stake and ownership in these important outcomes.
- g) Explore possibility of **women-owned business and production** as a **branding opportunity**, esp. for markets abroad and niche markets in Armenia.
- h) **Gender-sensitive practices and policies** should be implemented throughout development initiatives, e.g., trainings, business development, and financing, etc.

7. Public education, training, and awareness raising

There is need for education, training, and awareness raising in multiple directions.

- a) Collector networks, civil society groups, universities can **organize workshops and online e-learning courses** and seminars on:
 - Sustainable harvesting skills and practices;
 - Value-added services related to wild plant harvest;
 - Monitoring and managing natural resources at the local community level; and
 - Mapping the distribution and abundance of wild plants for isolated and rare plant populations, and designating sensitive habitats, creating collectors' database for biodiversity products in communities, and regulating the collection within protected areas with an emphasis on *in situ* conservation with the assistance of scientist experts.
- b) Consider **organizing public events and festivals** where women collecting wild plants can present their collection practices and processing/preparation skills. These could include soaps, homeopathic remedies, beverages, culinary traditions, and more. Such events can be used to promote sustainable harvesting and responsible consumption practices.
- c) Civil society organizations and universities should **work with processors and retailers to adopt and promote standards on sustainable production and harvesting** including labels that are compliant with responsible sales and marketing of green products, including wild harvest.
- d) Civil society organizations can work with media to **promote awareness raising** on responsible consumption, esp. as it related to wild harvest and protection of endangered or red-book species.
- e) School children and youth groups could participate in **curricular and extra-curricular activities** to collect wild plants, process or prepare useful products, using sustainable approaches. They could also collect traditional knowledge from family members and recording them into shared platforms such as <https://1000leaf.aua.am/>.
 - For improved enforcement of existing or new laws, often training is needed to reduce the risks of collecting of endangered or red-book species. Awareness raising and training of authorities (including environmental inspectors, forest rangers, and enforcement officers) in the identification of endangered species will be essential. A great deal of this can be

done through online e-learning modules, which can be supplemented with mobile phone applications that provide needed information.

Appendices

Appendix 1. Grigoryan, Heghine (2020). Analysis of the Legislation and Institutional Framework for Collection of Plant Resources. *AUA Acopian Center for the Environment*.

Appendix 2. Elagöz, Vahram (2020). Wild Plant Harvest in Armenia: An Overview of the Sector and Government Strategies on Regulation, Conservation, Protection and Use of Biodiversity. *AUA Acopian Center for the Environment*.

Appendix 3. Multi-Stakeholder Workshop

Appendix 1

Analysis of The Legislation and Institutional Framework for Collection of Plant Resources.

Heghine Grigoryan, AUA Acopian Center for the Environment (June 2020)

List of acronyms

SPNA – Specially Protected Nature Areas

COAO – Code of Administrative Offences of Republic of Armenia

UNDP – United Nations Development Program

SNCO – State Non-Commercial Organization

LSGB – Local Self Government Body

Introduction

1. The aim of this analysis is to present approaches to the development of legal solutions to the collection of plant resources in RA and to the institutional structure of the field, which will be presented to the decision-makers, businesses, civil society, and other stakeholders.
2. The proposed approaches are based on international experience and the analysis of the current legislation of RA, taking into account the peculiarities of the environmental and related legislation of RA.
3. The approaches proposed in the frames of this analysis present some directions of legal regulations, which can become a topic for broad discussions and serve as a ground for making amendments and additions to the corresponding legal acts.
4. Currently, the collection of plant resources is carried out spontaneously without adhering to the requirements set by the legislation. Such a practice leads to unsustainable use of bio-resources. At the same time, the payments for the utilization of state-owned resources are not made.
5. The collection of plant resources is carried out both in forests and in SPNAs as well as in state-owned, community-owned agricultural lands and lands of other significance⁴. In contrast to some legal regulations of collection of plant resources in forests and SPNAs, the collection in state- and community-owned agricultural lands and in lands of other significance are not included of the scope of legal regulation.
6. There is no preliminary data on the number of plant resources and their collection procedures in state- and community-owned lands which are not included in forests and specially protected nature areas. The scope of this program does not give the possibility to carry out such an assessment and research which would later be the ground for legal analysis. Moreover, according to the first article of RA Law on Flora, plants growing in agricultural areas are not considered plant resources, consequently, they are beyond the scope of this analysis. It is beyond doubt that the research of these issues can help to gain insight into the market structure and the share of consumed products in the market, which are collected from the lands beyond the areas of forest funds and it can be a subject of additional research.
7. The above-mentioned issue indicates that the rules and requirements defined by law are not fully met, which shows the ineffectiveness of legal regulations as well as issues with the oversight. It is, therefore, necessary to re-evaluate their effectiveness and review the existing approaches in order to improve the effectiveness of legal regulation and bring the existing collection practices into legal field.

⁴ More than 68% of land fund of the Republic of Armenia (RA Government Decision N 1379, 03.10.2019) are agricultural land. 51% of the above-mentioned lands are pastures and 6% is grasslands. Moreover, according to the ownership pattern, 97% of pastures and 55% of grasslands are considered community-owned and state-owned and the rest are considered as private property. Natural fodders are considered as main food source for large and small cattle and legal regulations of use (incomplete regulations) refer to this field. Whereas these ecosystems provide a number of other services, namely being the source of food, herbs and technical plants. Many endemic rare species, that are registered in the Red book of RA grow here. For plant collection people do not make the payment for the use of natural resources, naturally without taking into account the natural possibilities of reproduction of flora resources.

RA Legislation on the collection of plant resources

8. The relations in the field of collection of plant resources in RA are regulated by RA Constitution⁵, Forest Code of RA⁶, Tax Code of RA⁷, RA Civil Code⁸, RA Code of Administrative Offences⁹, RA Law on Flora¹⁰, RA Law on Specially Protected Nature Areas¹¹, RA Law on Environmental Control¹², RA Law on Compensation Tariffs for the Damage Caused to Flora and Fauna¹³, RA Law on Drugs¹⁴ as well as by a number of decisions made by RA Government and other normative legal acts.
9. The scope of legal relations regulated by the main legal acts in the context of the collection of plant resources is presented below.

RA Constitution

10. According to Article 12 of RA Constitution, “The State fosters the protection, improvement, and restoration of the environment, the rational use of natural resources guided by the principle of sustainable development and taking into account the accountability to the future generation. Each and every person has the responsibility to take care of the environment.” This constitutional norm does not directly refer to the collection of plant resources. Nonetheless, its comprehensive formulation also includes this manner of nature utilization.

Forest Code of RA

11. Forest Code of RA regulates the relations connected with the management of RA forests and forest lands: conservation, protection, restoration, afforestation, and effective use of forest lands as well as with forest inventory, monitoring, control.
12. According to the third article of Forest Code, the harvesting and removal of **fruits, berries, nuts, mushrooms, plants and herbs, technical raw material from forests is considered non-wood forest products**. The harvesting of non-wood forest products in forests is regulated by **indirect rules of forest use** (Article 38).

Tax Code of RA

13. RA Tax Code regulates the relations related to the taxes and fees, prescribes the principles of the tax system, the concepts and types of taxes and **fees, taxpayers**, tax rates, the procedure and terms of tax calculation, payment, and, in cases prescribed by the Code, levying tax liabilities, as well as tax privileges.

⁵ Passed on 06.12.2015, enforced on 22.12.2015, 2015.12.21/Special Edition Article1118:

⁶ Passed on 24.10.2005., enforced on 17.12.2005, 2005.12.07/75(447) Article1432:

⁷ Passed on 04.10.2016, enforced on 01.01.2018, 2016.11.04/79(1259) Article1038:

⁸ Passed on 05.05.1998, enforced on 01.01.1999, 1998.08.10/17(50):

⁹ Passed on 06.12.1985, enforced on 01.06.1986, 1985/23:

¹⁰ Passed on 23.11.1999, enforced on 27.12.1999, 1999.12.27/31(97) :

¹¹ Passed on 27.11.2006, enforced on 04.01.2007, 2006.12.25/66(521) Article1363:

¹² Passed on 11.04.2005, enforced on 28.05.2005, 2005.05.18/28(400) Article548:

¹³ Passed on 03.05.2005, enforced on 18.06.2005, 2005.06.08/35(407) Article625:

¹⁴ Passed on 17.05.2016, enforced on 15.12.2016, 2016.06.15/47(1227) Article549:

14. According to the seventh Article of Tax Code, one of the mandatory payments is the **payment for the utilization of nature**, which is the payment made to the State Budget of RA for the efficient and integrated use of state-owned natural resources as well as for the purpose of compensating for the utilization of natural resources (Article 197, part 1). According to the 6th point of the 1st part of Article 200, bio-resources are considered to be **objects of nature utilization payment**.
15. According to the 6th point of the 1st part of Article 198, **payers of nature utilization payment for the utilization of biological resources shall be those using biological resources constituting objects of flora and fauna**.
16. According to the 6th point of the 1st part of Article 201 of RA Tax Code, the base of nature utilization payment for the utilization of bio-resources shall be the amount, weight or the unit (quantity) or any other physical characteristic of measurement constituting an object of flora and fauna.

Civil Code of RA

17. Civil Code of RA, among other legal relations, regulates the commercial relations between legal and natural persons, including relations for the collection of plant resources. The Code defines the trade and lease (lease of some forest lands) relations and is also applicable for the collection of plant resources and their sales.

RA Code of Administrative Offences

18. According to RA Code of Administrative Offences, people carrying out **unauthorized collection of wild berries, nuts, mushrooms, and berries** must be held liable. In particular, according to Article 72 of RA Code of Administrative Offences:
*“Unauthorized collection of wild berries, nuts, mushrooms, berries and etc. in those forests, where it is banned or is allowed only to people with forest permits, leads to imposition of a fine on citizens at the amount of twenty times of the minimum wage.
Collecting wild berries, nuts, berries, and etc. in violation of the deadlines and the manner set for collecting them issues a warning or a fine to citizens at the amount of five times of their minimum wage¹⁵ and to the officials at the amount of twenty-five times of the minimum wage.”*
19. Article 93 of RA Code of Administrative Offences imposes responsibility for the collection of plants included in Red book, in particular:
“Unauthorized collection of plants or their roots, flowers, fruits registered in Red book will lead to imposition of fines on citizens at the set amount of 80 times of the minimum wage and on officials at the amount of 150 times of the minimum wage.”

RA Law on Flora

20. RA Law on Flora regulates the social relations in the field of conservation, protection, use, and reproduction of flora. The law also defines certain important concepts. The most important thereof in this context are the following:
Endangered plant – a rare species of plant, the specimen of which continuously decreases with time.
Red book of plants - a comprehensive document meeting the international requirements which contains information on rare, endangered plants and on their coexistence

¹⁵ According to the RA Law on Minimum Salary, 1000 AMD is considered as a basis for fine calculations.

conditions, geographical distribution, ecological conditions, on the current condition of biological characteristics, and on preservation measures.

Flora - the integrity of trees, bushes, herbs (including mosses, selagos, equisetum, and pterophyte) as well as the integrity of types of algae, fungi, and lichen and their coexistence under natural conditions.

Flora resources - the amount of existing types of plants subject to utilization and their coexistence in a certain geographical area.

RA Law on Specially Protected Nature Areas

21. RA Law on Specially Protected Nature Areas regulates the legal relations in the field of the natural development, restoration, preservation, reproduction, and use of individual objects and RA specially protected areas as ecosystems having environmental, economic, social, scientific, educational, historical-cultural, aesthetic, medical, and recreational values.
22. According to the 6th point of Article 16, the collection of plants, flowers, fruits and seeds in state reserves and in reserve zones of national parks is prohibited except collecting the ones intended for scientific research.

RA Law on Environmental Control

23. The law regulates the issues related to the organization and implication of control over the implementation of RA environmental legislation and defines the legal and economic grounds of environmental control and the peculiarities, order, conditions of the implementation of control of environmental legislation norms.
24. The 5th point of Article 5 of the law defines the directions of control on the utilization and preservation of flora, *in particular the fulfillment of the requirements of conservation, protection, utilization, and reproduction of plant resources, compliance with the requirement of preservation of plants in Red book and of plant communities, compliance with the requirements of preservation of habitats of plant resources, compliance with the requirements of the use of plant resources for agricultural, industrial and social purposes.*
25. The control in the above-mentioned directions is carried out by Environmental Protection and Mining Inspection Body of RA.

RA Law on Compensation Tariffs for the Damage Caused to Flora and Fauna due to Environmental Offences

26. The law defines the compensation tariffs for the damage caused to flora and fauna due to environmental offences and its calculation and collection procedures. In case of unauthorized collection of fruits, berries, mushrooms, seeds, herbs, and other useful plants, the damage compensation tariffs are set for each kilogram or other physical units. The highest tariffs are set for the destruction or unauthorized collection of plants registered in RA Red book.

RA Law on Drugs

27. The Law regulates the relations of the circulation of medicines, substances, herbal substances and preparations, and investigational medicinal products with the aim of securing a safe, effective, quality, and affordable medicinal product and reliable information thereon to the population. This Law also defines the powers of the competent

state authorities of the Republic of Armenia and the powers of entities involved in the circulation of medicinal products in this sphere.

28. In the frames of the given analysis the following terms defined by law are of utter importance:

Medicinal product: any substance of human and/or animal and/or vegetable (micro-organisms, plants, parts of plants, plant extraction, other plant substances) and/or chemical and/or biotechnological origin in an appropriate dosage and dosage form, and the requisite packaging and labeling, which presented as having properties for treating or preventing disease in human beings or animals.

Herbal substances: whole, fragmented or cut plants, plant parts, algae, fungi, lichen in an unprocessed, usually dried, form, but sometimes fresh used for the purpose of preparing or manufacturing of medicinal products;

The proper cultivation and collection of medicinal herbs: a component of quality assurance which guarantees the quality of medicinal herb raw material for the invariable production.

29. The procedure of proper cultivation and collection of medicinal herbs is defined by the RA Government decree on “Approving the rules of proper production of drugs.”¹⁶

Permit on the collection of plant resources (indirect use of forest)

30. **Currently, the collection of plant resources in forests and in specially protected nature areas is, in fact, carried out by the people living in the nearby areas of forests, mostly without a relevant permit (contract of indirect use of forest and forest ticket/permit).¹⁷ The goods collected without a relevant permit, not only serve the individual needs but also to make profit. The goods are sold along the streets, are delivered to storing and processing companies as well as to retail chains and shops. The collection without permission and without proper control poses a threat in terms of preservation of forest inventory and in terms of ensuring its reproduction, as a result thereof the ecosystem can be disturbed and certain species can be eliminated.**
31. It is obvious, that the traditional occupation of the people living near forests is linked to forests and the usage of its goods which help to solve vital social issues. Especially, that there is a serious employment problem in those areas and the opportunities to earn money is very limited. **Thus, the regulations of the field of plant resources collection should be based on such solutions which will not generate additional social and administrative burden for inhabitants.**
32. Considering the peculiarities of entities involved in the supply chain (processing companies, retail chains, retail outlets), **a unified simple approach is required which will be acceptable and applicable for all the entities.**
33. According to RA Forest Code, the use of state-owned bio-resources is paid and can be done only if there is a relevant permission. According to the first point of the Article 22 of Law on Flora, the use of state-owned plant resources for industrial purposes is paid and is considered to be a licensed activity. The only exception is defined according in the first point of Article 44 of Forest Code of RA, according to which citizens have the right to be in state-owned or community-owned forests **without any permission** to have a rest, to

¹⁶ Passed on 25.11.2010, was enforced on 01.01.2011, 2010.12.22/64(798) Article.1493.

¹⁷ An Assessment of Wildlife Trade in Armenia with Recommendations for Interventions: Final report: September 2015 – February 2016. FPWC and Fauna&Flora International, pp. 2, 7, 11, 40-42:

collect wild berries, berries, nuts, mushrooms and plants for personal use with the exception of certain cases stipulated by law or other legal acts. It is worth mentioning, there is no legal act defining the exact volume of collected goods to be considered for personal use.

34. In addition to the above, in the state-owned and community-owned forests¹⁸ as well as in forests included in specially protected natural areas (reserves managed by “Hayantar” SNCO), the collection of plant resources is carried out in compliance with the rules of indirect use of forests.
35. According to the first part of Article 38 of RA Forest Code, the collection of **non-wood forest products, that is of fruits, berries, nuts, mushrooms, edible herbs, and medicinal herbs, technical raw materials** is permitted without damaging the forest as well as it is permitted to install beehives, hives, to hay harvest and to graze animals according to the **contract on forest use and forest ticket/permit**. By the order N159 given by the Minister of Agriculture on September 18th, 2012 on approving the procedure of indirect forest use in state-owned and community-owned forest areas, the implementation procedure of indirect forest use and the procedure of obtaining permits were approved. The aforementioned procedure is applicable also to the areas included in specially protected nature areas.
36. According to the order N159 of RA Minister of Agriculture, the indirect forest use can be carried out in two ways: 1. Without obtaining the right to use the forest lands, 2. By lease of forest lands. In either case, the indirect forest use for industrial purposes should be carried out in compliance with the forest management plans.
37. According to the 10th point of the order N159 given by RA Minister of Agriculture, the registration of indirect forest use is to be carried out by inputting the necessary data in the registration book. *The permissible volume for collection, the permissible square, areas and the surface, the number of forest tickets/permits, and the deadline for forest use* are to be registered.
38. There are contradictory regulations on indirect uses of forests between Article 38 of RA Forest Code and Article 22 of RA Law on Flora. In particular, according to Article 38 of RA Forest Code, the indirect use of forest, including the collection of wild plants, fruits, and berries, is carried out in compliance with the contract on forest permit/ticket and the forest use. Whereas Article 22 of RA Law on Flora stipulates that in the Republic of Armenia the use of state-owned objects for industrial purposes (not household purposes) is paid and is considered to be a licensed activity. The existence of such a provision in RA Law on Flora presupposes the relevant regulations in RA Law on Licensed activity¹⁹, where there is no regulation. It is noteworthy, that RA Law on Flora is not only applied to forests but also to wild species growing out of forest areas, nonetheless, due to imperfect legal regulations, a license is not issued for the collection of those wild species and there is no payment made for the use of nature. It is necessary to repeal the controversial and imperfect regulation of the licensing requirement, as it is unnecessary to burden the citizens by making them go through the licensing process and this will definitely lead to multiple violations of the established requirement. Consequently, such an approach to legal regulation is not grounded.

¹⁸ In RA there are no community-owned forests yet.

¹⁹ Passed on 30.05.2001, enforced on 08.08.2001, 2001.08.08/26(158) Article 581.

39. Currently, the Law on Flora is in the amendment phase. Extensive amendments are envisaged in the current Law on Flora, which is stipulated by the bill²⁰ of RA law on Making Amendments and Addenda to the RA law. In particular, the license requirement is envisaged to be replaced by the requirement of obtaining permits, due to which the above-mentioned legal inconsistencies will be eliminated. Nonetheless, it should be noted, that the regulation of the use of plant resources in community-owned areas is left out from the scope of the project. Though the 8th Article of RA Law on Flora refers to the RA Law on local self-government bodies, here too, the use of plant resources in community-owned areas is not regulated.
40. It is noteworthy there is no approved management plan for forestry. The development of management plans is underway and it is implemented through the means of UNDP and RA state budget. The development of all RA forestry management plans is foreseen to be completed by 2021. What refers to SPNAs, only the management plan²¹ of “Dilijan” National Park has been adopted, the others are expected to be adopted in 2021-2022.
41. Apart from the approval of the management plans of forests and SPNAs, it is of utmost importance to specify the boundaries of those areas. It is important for defining the legal boundaries of managing and regulating entities. Currently, there are quite serious inaccuracies between cadastral and forestry maps. There has been no state inventory of forests since the independence. Because of the illegal alienation of forest lands during those three decades, the forest inventory lands have been reduced, in some areas illegal construction has been carried out. Due to the decrease in livestock, in some parts, the forest ‘occupied’ the lands of communities as a result of natural regeneration. The volume of such inaccuracies is about 30.000 hectares.
42. In practice, the permit for indirect use of forest is aimed at solving the following problems:
a. to ensure the collection of nature utilization payment for the collection of state-owned resources. b. to ensure the preservation of ecosystems and the sustainable use of resources. Nonetheless, the analysis of practice shows that the fulfillment of the above-mentioned tasks is impossible under the current legal and regulatory conditions. It is conditioned by *the consideration of not complicating the social situation of the population. Secondly, it is due to the lack of necessary resources²² to exercise proper control and supervision.*
43. In addition to the above, it is worth noting that currently there are no exact estimations of the volume of resources in question. This would give the opportunity to form an idea about the economic value of these resources. The newly developed forest management plans are envisaged to include activities for the assessment of forest ecosystem services, which will help to form a clear image of the economic value of resources and of the possibility of their effective use.
44. Taking into account the fact that the people living in communities near forests have limited opportunities of earning income and given the fact that to exercise proper control and supervision of indirect forest use in forests can require incomparably greater resources than the payment for the forest use, **we find it expedient to consider the opportunity of eliminating the requirement of obtaining a permit irrespective of resource volume, in case plant resources collection is carried out without obtaining a permit for it.** This approach can be an incentive for eliminating the illegal logging.

²⁰ <https://www.e-draft.am/projects/598/about>

²¹ Passed on 23.02.2017 enforced on 19.03.2017, 2017.03.09/15(1290) Article 226.

²² For more details, refer to the chapter “Control and liability.”

45. At the same time, taking into account the necessity of preservation of rare species and the sustainable use of bio-resources, **we propose to develop and implement awareness-raising activities for people engaged in indirect forest use. With the help of these activities, the population will obtain necessary knowledge and skills.** Simultaneously, it will be necessary to improve the capacity of the institution responsible for the violations of established rules.
46. It is worth noting that in case the requirement for indirect forest use is eliminated, “Hayantar” SNCO will be more interested in collecting and selling or cultivating the collected products. Though currently such provision is legally prescribed to “Hayantar” SNCO, it is not being implemented.
47. In separate cases, citizens grow fruits, berries, and plants in industrial amounts on their lands, thus, in such cases, they freely, without any permission, own the crop. Nonetheless, in cases when citizens grow rare plants or species registered in the Red book on their lands, **it will be necessary to confirm this fact by a relevant certificate issued by a local self-government body, the copy (scan) of which should also be available to the seller/retailer.** The need for such regulation is due to the consideration of excluding and regulating the collection of forbidden species or the ones the collection of which is limited in forest and specially protected nature areas.
48. The issuance of the aforementioned certificate will not impose additional complications, as the community head is obliged to carry out an annual land calculation to compile the land balance, thus local self-government body has systematic information on all the lands, their surface, their targeted and functional significance as well as on the species being cultivated.

Issues and peculiarities of the application of nature utilization payments for collectors, processors and retailers

49. According to the 6th point of the first part of Article 198 of RA Tax Code, the users of plant resources and fauna objects of the Republic of Armenia are considered to be the payers of nature utilization payments, that is to say, the immediate processors are the payers.
50. As it has already been noted, it is not expedient to charge the residents of communities near forest areas for forest use. What refers to processing companies, retail chains, and retail shops, to determine the need for charging nature utilization fees for the goods purchased from them, it is necessary to get the answers to the following questions:
- 1) What volume of bio-resources do the processing companies and retail chains acquire?
 - 2) Which percentage of the bio-resources acquired by the above-mentioned companies is collected from forests and which percentage is from specially protected nature areas and which percentage from their own lands.
 - 3) Does the sum of nature utilization payments for the bio-resources acquired by processing companies and retail chains justify the additional expenditure and administration which will be created for businesses, and those resources needed for the competent state bodies to exercise control over the nature utilization fee calculation and payment for processing of bio-resources.
 - 4) What impact will have the burdening of businesses with a new type of mandatory payments on the development of businesses, in particular on small and medium enterprises.

51. The answers to the above-mentioned questions can be key determinants to justify or to refute the need to charge the processing companies and retail chains for the use of bio-resources. Consequently, we consider it necessary to carry out relevant economic analysis, including the analysis of market structure, the results thereof will predetermine the need for amendments to RA Tax Code on charging nature utilization payments.

Other economic tools

52. The charging of nature utilization payments in the field of processing of bio-resources is the only economic tool enshrined in RA legislation. In this regard, it should be noted that the opportunities for the use of economic tools, which are related to the provision of ecosystem services, are rather wide. It should be added that these opportunities are somewhat underestimated in Armenia.

53. Nonetheless, in cooperation with the Ministry of Environment of the Republic of Armenia and international partners, a number of studies have been carried out on the implementation of voluntary payment for ecosystem services in Armenia. Moreover, a pilot program has been implemented to study the feasibility of introducing the payment for ecosystem services in a specific community. The activities are continuous.

54. The collection of plant resources in forests and specially protected nature areas is a type of ecosystem services (from the provided service group), consequently, this service has certain economic value. Thus, to convert the economic value of the aforementioned resources into income, it is necessary for the governing institutions of those areas (“Hayantar” SNCO and SNCOs of SPNA) to have their investment in making those services of better quality and more affordable for the users (for instance, implementing pest control and taking other necessary measures, making the necessary information available, indicating the routes, following certain safety rules, providing information on the collection of species which are prohibited or have seasonal restriction and etc.). In other words, the governing institutions should have the necessary capacities to provide additional services. Moreover, the idea of product branding can be considered as one of the additional services²³.

55. To develop and to put those models into practice **it is necessary to develop a clear strategy with the appropriate action plan which will include the necessary capacity building activities for implementing the necessary assessments, developing the infrastructures as well as for informing the residents and the governing bodies of forest areas.**

56. In case the above-mentioned model is implemented, we believe the obligation for paying for those services should not be directly put on the residents of communities near forest areas. Instead, it is necessary to consider the creation of relevant legal field between local self-government bodies²⁴ of communities near forests or processing companies and retail chains and “Hayantar” SNCO, in the frames of which the inhabitants will carry out collection in compliance with the established rules and in permissible volumes, afterward they will deliver the goods to those organizations.

²³ Fruits, berries, herbs, and other crops have a clear competitive advantage, consequently, they can be labeled with the appropriate forestry mark, which will make the product recognizable and will add value.

²⁴ At first glance it may seem unreasonable for the local self-government bodies to pay for the ecosystem services provided to the residents, but in case of sustainable collection and provision of quality services, especially to people living in near forest areas, the use of this scheme can be a significant social contribution. Moreover, it will prevent people from leaving those settlements.

57. Conceptual documents on the development of ecosystem services have been adopted in RA (RA Government protocols “On the approving the concept of creating innovative and economic mechanisms in the field of nature protection”²⁵ and “On approving the program of measures for the implementation of tasks arising from the concept of creating innovative financial and economic mechanisms in the field of nature protection”²⁶). Nonetheless, no practical measures have been taken in terms of the aforementioned problem during the period of the action plan (2015-2018). The concept of implementing the institute of ecosystem services is also introduced in RA bill²⁷ on “Environmental policy”, the amended version of which has not been practiced/enforced yet.
58. According to RA law on “Specially protected nature areas,” the collection of plant resources is prohibited in state reserve areas as well as in reserve areas of national parks. Despite of the legal ban, the collection of plant resources is still being carried out in the aforementioned areas. The main reason for this situation is the lack or limited alternative sources of income, **thus, apart from holding inhabitants responsible for illegal collection of plant resources it is necessary to take the required measures to meet their essential needs as well as to develop the small and medium-sized enterprises.**
59. To that end, **first of all**, it is necessary to identify the communities which are located in the vicinity of state reserves or reserve zones of national parks, and the population thereof is mainly engaged in collection of plant resources. **Secondly**, it is necessary to select the best option of investment programs in the respective communities and **thirdly**, together with banks and credit companies to develop subsidized, privileged loan programs. Moreover, **it is important for the privileged loanee not to violate the rules of forest use, otherwise, those privileged loan terms will be ceased.**
60. The implementation of this offer can commence with the help of relevant pilot grants. Such experience was practiced in 2019 in Haghartsin and Teghut communities and the grants were aimed at the prevention of illegal logging. Together with the WWF office in Armenia, 52 grant projects with a total of 150.000.000 AMD budget have been implemented as a result of which rather successful businesses have been created and the illegal logging has been significantly reduced.

Control and responsibility

61. As it has already been noted, RA Nature protection and Inspectorate for Nature Protection and Mineral Resources exercise control over the observance of plant resources collection rules. The aforementioned body is authorized to record violations in case they are detected and to apply administrative sanctions to the offender.
62. Moreover, the control is exercised in forests and SPNAs by relevant SNCO bodies, i.e., foresters. The latter is not authorized to take punitive measures in case violations are detected. In those cases, they are entitled to inform RA police or the inspectors of the relevant territorial department of Inspectorate for Nature Protection and Mineral Resources.
63. The 2019 annual report²⁸ of RA Inspectorate for Nature Protection and Mineral Resources is not detailed enough to form an image of the results of the control over the observance of the rules of plant resources collection. The data presented under the title “The use and

²⁵ Passed on 25.04.2013թ., enforced on 30.04.2013, not published yet.

²⁶ Passed on 14.11.2013թ., enforced on 14.11.2013, not published yet.

²⁷ http://www.parliament.am/news.php?do=view&cat_id=2&day=03&month=09&year=2019&NewsID=11954&lang=arm

²⁸ https://www.ecoinspect.am/wp-content/uploads/2020/06/hashvetvutyun_2019.pdf

protection of nature” in the report is very generalized. It mostly refers to illegal logging, consequently, the mentioned fines are also for those legal violations.

64. It should be noted that the control over the collection of plant resources is rather complicated in a sense that if the violation is not recorded at that moment, very often it is impossible to fix how many plant resources have been collected as opposed to illegal logging, when there are stumps, saw trails, car tires tracks and other signs of logging.
65. **In order to increase the effectiveness of control over the collection of species which are banned or have seasonal restrictions as well as the collection in banned areas, it is necessary to make the appropriate amendments to Article 72 “Unauthorized collection of fruits, nuts, mushrooms and berries” of RA Code of Administrative Offences.** In particular, we propose to remove the word “unauthorized” from the title and the text of the article as the elimination of the requirement to obtain a permit implies that everyone has the opportunity to carry out such activities in compliance with the established rules.
66. The issue of taking punitive measures for **the collection of plants which are included in the Red book or for their sales** is not settled either in RA Code of Administrative Offences. Such an approach creates a vicious circle and the sellers (who can also be the ones who have collected) cannot be subject to punishment (for instance the sales of snowdrops (included in Red book) in the center of Yerevan in spring).
67. To fill in the above-mentioned gap, **we consider it necessary to make the relevant additions in Article 93 of RA Code of Administrative Offences which will stipulate responsibility for the sales of species included in Red book.** Moreover, there should be some reservations for the cases when the plant was grown on personal property areas or on the land which is used on other grounds and when there is a reference letter on this from the head of the community.

The system of competent bodies and their power

68. The table below maps the powers of state bodies in the field of conservation and protection of flora, their inventory, cadaster management, use and control.

	RA Government	RA Environmental Protection and Mining Inspection Body	RA Ministry of Environment	Department of SPNAs and Biodiversity	Department of licensing, permits and agreements	RA Forest Committee Ministry of Environment	“Hayantar” SNCO (governed by the Forest Committee)	Territorial Administration Bodies	Local Self-Government Bodies
Policy development	<ul style="list-style-type: none"> - ensuring the implementation of state policy - implementation of state policy of conservation, protection and reproduction of flora 		<ul style="list-style-type: none"> - The development of policy programs and strategies in the field of sustainable management, conservation, protection of flora, as well as SPNAs, in the field of rational use and reproduction of flora resources, the provision and analysis of their implementation process. - The development of economic mechanisms and toolkit for environmental protection and rational use and reproduction of flora resources. 	<ul style="list-style-type: none"> - Ensures the development and implementation of strategies, programs and policy on sustainable management of biodiversity. 					
Program development	<ul style="list-style-type: none"> - Approval of state programs in forest sector - Approval of state programs in the field of conservation, protection, use and reproduction of plant resources (hereinafter referred to as state programs). 			<ul style="list-style-type: none"> - Presents proposals for the protection, development, balancing of ecological, social, economic potential of biodiversity, specially protected areas, and monitors the measures taken 		<ul style="list-style-type: none"> - In cooperation with relevant international organizations, develops programs for efficient use of forest resources. - Develops and organizes fire safety 		<ul style="list-style-type: none"> - Participation in the development of state programs and in their implementation within the scope of its competence. 	

				for their implementation.		programs in forest lands, as well as programs for pest and disease control measures. - Develops and implements investment programs within the framework of public-private partnership.			
Conservation and Protection	<ul style="list-style-type: none"> - Defining the order of plant resources protection and use. - Approval of Red book of plants and the list of plants included in it. 		<ul style="list-style-type: none"> - Managing the Red books of RA plants and animals. 	<ul style="list-style-type: none"> - Runs the Red book of plants of the Republic of Armenia. 				<ul style="list-style-type: none"> - Support for conservation of specially protected nature areas (state reserves, national parks, state sanctuaries, natural monuments), botanical gardens and arboretums. - Implementation of measures for the protection of flora in coordination with the authorized body in that field. 	<ul style="list-style-type: none"> - Carries out control over the implementation of environmental measures in community-owned lands in the manner prescribed by law.
Use and permissions	<ul style="list-style-type: none"> - Approval of the list of objects 		<ul style="list-style-type: none"> - Issuance of permits, contracts for the protection 	<ul style="list-style-type: none"> - Participates in the development 	<ul style="list-style-type: none"> - Signing of contracts 	<ul style="list-style-type: none"> - Organizes the management 	<ul style="list-style-type: none"> - Taking measures for 		

	subject to use of plant resources, approval of the amount of payment and its charging procedure		of the environment and the use of natural resources through a unified system.	activities of economic mechanisms for biodiversity conservation, rational use and reproduction of bioresource management.	and issuance of permits for the use of plant resources.	of state forestries. - Carries out the management and the use of state forests. - Accepts applications for lease or gratuitous use of forests or forest lands in the manner prescribed by law, organizes tenders, provides, consent.	the effective use of forest resources. - Construction of production and supporting facilities related to management of forests.		
Cadaster, monitoring, inventory	- Defining the order of organizing and monitoring of flora - The approval of cadaster operation procedure of flora.		- Management, registration, and monitoring of flora, including specially protected nature areas, forests arboretums, and hunting farms. - Creation of nature resource cadaster and its maintenance.		- Inventory and monitoring of wild plant resources, ensuring information bank and cadaster management process.	- Organizes the state registration of forests, forest lands and maintenance of forest cadaster.			- Carries out current inventory of lands located within administrative boundaries of the community, the current classification of land area coverages and compiles the land balance of the community.
Control		- Implement requirements set for the							

		<p>conservation, protection, use and reproduction of plant resources.</p> <ul style="list-style-type: none">- Ensure that the established rules for the export of plant resources from the Republic of Armenia and their import to the Republic of Armenia are maintained.- Ensure that requirements set for the protection of plants registered in the Red Book, as well as plant communities are met.- Ensure that requirements for the protection of habitats of plant resources are met.- Ensure that requirements for the use of plant resources for agricultural, industrial and							
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		social purposes are met.							
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The role of local self-government bodies

69. Article 8 of RA Law on flora prescribes the definition of the competences of local self-government bodies in the field of flora conservation, protection, use and reproduction to the RA Law on Local self-government bodies²⁹, nonetheless, the latter does not define any competence of local self-government bodies.
70. It should be noted, that currently, the capacities and resources of local self-government bodies practically are not sufficient to carry out any work in the field of flora conservation, protection, use, and reproduction.
71. However, local self-government bodies can play a key role in organizing the collection of flora in compliance with the established requirements for communities near forest. In this regard, **local self-government bodies, as institutions that daily keep in contact with the population, can efficiently raise the population's awareness on collection rules, on the species that are subject to collection as well as on the restrictions and prohibitions also on the liability in case of violation of the established rules.**
72. The websites and social network sites of local self-government bodies can widely be used to raise awareness. Their accessibility is constantly increasing and though unofficial, they become operative and efficient sources of information dissemination.
73. So far, "Hayantar" SNCO and local Self-government bodies have not cooperated in this context. Likewise, there has been no such attempt to fight against the illegal logging, whereas the use of these opportunities of raising awareness is feasible and efficient, and its implementation does not require resources. In this sense, **we consider it necessary to reach agreements between the appropriate branches of "Hayantar" SNCO and Local self-government bodies of communities near forest areas.**
74. In addition to awareness-raising activities, local self-government bodies, in cooperation with RA Ministry of Environment or "Hayantar" SNCO, **can organize practical trainings for the population on the rules of sustainable collection of plant resources.**
75. Taking into account the volume of collected plant resources and their sales opportunities, Local self-government bodies **can include the creation of community infrastructures necessary for market development and the involvement of investors in the community development plan, namely the production of dried fruits, alcoholic beverages and canned food, the creation of a logistic network and the creation of other economic capacities in the community**

²⁹ Passed on 07.05.2002թ., enforced on 21.06.2002թ., ՀՀ ՊՏ 2002.06.21/21(196) Article 473:

Appendix of Legal and Institutional Review: The list of legal acts

1. RA Forest Code
2. RA Law on Flora
3. RA Tax Code
4. RA Civil Code
5. RA Land Code
6. RA Law on Specially Protected Nature Areas
7. RA Code of Administrative Offences
8. RA Law on Environmental Control
9. RA Law on Compensation Tariffs for the damage to Fauna and Flora Due to Environmental Offences
10. RA Law on Standardization «
11. RA Law on Legal Acts
12. RA Law on Drugs
13. RA Government Decree on Approval the Procedure for State Flora Cadaster Maintenance
14. RA Government Decree on Approval of the Procedure of Providing Data on State Cadaster of Flora
15. RA Government Decree on Approving the Procedure for Organizing Flora Monitoring
16. RA Government Decree on Approving the Flora State Registration Program
17. RA Government Decree on Procedure for Provision of State Forests and Forest Lands Use
18. RA Government Decree on Procedure for the Provision of Use of the State Border Forests and Forestlands of Military Significance
19. RA Government Decree on Establishing the Procedure for Forest Use and Conservation in the Protection Forests
20. RA Government Decree on Recognizing the RA Government Decree N49 of 2001, January 23 on defining the procedure of forest use invalid and making some amendments in the decision N 142 of September 7.
21. The Decision of RA Minister of Agriculture on Defining the Procedures for the State Forest Use: Approval of Logging, Forms and Invoicing the Tickets (Permits).
22. The Order of the Minister of Agriculture of RA on Approving the Procedure of Indirect Use of State Forest and Community Forestland Use.
23. The Order of the Minister of Agriculture of RA on Approving the List and the Quantity of Agricultural, Forest and Ornamental Plants, Flora products.

Appendix 2

Wild Plant Harvest in Armenia: An Overview of the Sector and Government Strategies on Regulation, Conservation, Protection and Use of Biodiversity.

Vahram Elagöz, Ph.D. AUA Acopian Center for the Environment (June 2020)

Republic of Armenia ratified a number of international environmental treaties, conventions and their protocols related to biodiversity³⁰. As early as in 1999 a *Biodiversity Strategy and Action Plan of the Republic of Armenia* (BSAP) was developed and submitted to the *Secretariat of the Convention on Biological Diversity*. Following the acceptance of the Action Plan, the government committed to adopt the documents related to the BSAP. These include **(a)** the improvement of legislative and governance frameworks, **(b)** the establishment of new specially protected nature areas (SPNA), **(c)** the establishment of preconditions for biodiversity inventory and monitoring, **(d)** the promotion of scientific research, and **(d)** the implementation of activities on public awareness raising and ecological education³⁰. The government acknowledges the role of biodiversity to be equally important for safeguarding ecosystem services in terms of regulation of soil and climatic conditions, provision of clear water, mitigation of the consequences of natural disasters and others.³⁰ Included in the services provided by ecosystems are **provisioning** (e.g., food, clean water and air, fuel resources), **regulating** (e.g., climate, prevention of natural disasters, epidemics and erosion, bioenvironment), **supporting** (e.g., soil formation, photosynthesis, cycling of nitrogen, carbon, oxygen and water), and **cultural** (e.g., aesthetic, religious, scientific-cognitive, social and spiritual values, traditions, recreation). The above-mentioned BSAP was planned for the period of 2000-2004. Thereafter significant changes have been registered in the fields of biodiversity-related legislative improvements and the strengthening of institutional frameworks, among others.

In 2010 a *Strategic Plan for Biodiversity 2011-2020 under the Convention and Aichi Biodiversity Targets* was adopted by the parties to the convention during the 10th Conference of Parties in Nagoya, Japan. In this document it is stated that “[T]he well-being of Armenia’s population is greatly dependent on availability of biological resources, which are the strategic resources for the country, equally to underground resources.” Furthermore, the document identifies the useful species of flora and macrofungi of Armenia, which are used as food and are represented as follows: **(a)** Edible plants – about 200 species; **(b)** Wild fruits and berries – about 120 species (about 40% of dendroflora of Armenia); **(c)** Honey plants – about 350 species; and **(d)** Edible mushrooms – 290 species. The overuse of biological resources (incl. economically valuable species as well as rare species and those under the threat of extinction) is seen as one of many factors having an adverse impact on the status of biodiversity in Armenia³⁰. The commitments of Republic of Armenia to further strengthen regulations governing biodiversity have been reiterated again in 6th National Report to the Convention on Biological Diversity³¹. The implementation of these international commitments, no doubt, contributes to effective environmental protection and biodiversity conservation.

A 2010 study of *legal and institutional framework for value chains based on biodiversity products and respective business practices* found numerous contradictions and non-regulated mechanisms that required regulation³². The scope of this study was to analyze **(a)** existing political, legal and institutional frameworks related to value chain development based on biodiversity products in

³⁰ Strategy of the Republic of Armenia on Conservation, Protection, Reproduction and Use of Biological Diversity, 2015.

³¹ 6th National Report to the Convention on Biological Diversity of the Republic of Armenia, 2019.

³² Analysis of legal and institutional frameworks for value chains based on biodiversity products and respective business practices, 2010.

Armenia, **(b)** existing informal practices regulating biodiversity resource use (*i.e.*, wild collections) for commercial purposes, **(c)** financial/ transaction costs (money, time, etc.) along with the chain of submitting various forms and/or applications for different type of permits, license fees, etc., **(d)** relevant regulations for export/import of final products based on biodiversity resources, and **(e)** existing constraints and gaps in the respective political and legal frameworks³². One of the conclusions of this analysis was the absence of a single official body of the Republic of Armenia in charge of issuing wild collection certificates, due to the absence of relevant legal acts on this matter³². In other words, there was not any legal basis to certify wild collection in Armenia. Based on the legal law-making works and after the clarification of the regulating mechanisms, the 2010 study recommended the complex issue of the institutions to be discussed and clarified. Since the major aspect of this analysis focused on the process of acquisition, one of the offered solutions was to form a working group consisting of professionals, lawyers and other stakeholders (who actually implement or are going to implement the respective activities), in order to discuss and develop appropriate amendments to the existing laws in form of respective legal acts drafts, by which the processes of acquisition, standardization, export and import would be regulated. Based on the same principles, it was also recommended that a working group be formed for the implementation of legal mechanisms for the protection of certain species and areas. Furthermore, the study suggested that this issue of the institutions could be solved by the clarification of the functions of the existing institutions or reserving new functions to them or, alternatively, through establishing new structures/institutions³². These observations will, no doubt, bear great significance in drafting an action agenda upon completion of the present project.

Armenia, as part of the Southern Caucasus region, is considered as one of the centers of origins for cultivated plants, in particular, cereals and fruit crops. Ancestral varieties of cultivated crops and wild edible plants not only constitute important plant genetic resources for food and agriculture but also contribute to the economic growth, food security, and food sovereignty³³. The trade and local harvest in the region involves a wide range of species including endemic plant species. A study by the NGO Fauna & Flora International to assess *legal and illegal wildlife trade and its potential impact on biodiversity* revealed that the trade in wildlife took place outside government's official regulation and management, representing a significant economic, environmental and security threat³⁴. Along with literature and legislation review, the study included the monitoring of street markets, interviews and field surveys. The surveys on wild plant collection were conducted in mountainous regions of southern Armenia, including Ararat, and Vayots dzor regions/marzes³⁴. In the areas surveyed, more than 100 species of plants have been identified as regularly collected by community people, including medicinal, ornamental and edible plants (*e.g.*, rosemary, valerian, ginseng, and liquorice) most of which are collected with roots and readied for the market. An inquiry with the now Ministry of Environment, revealed no official records of these transactions: at the time of the publication of the report there was no official monitoring data on the trade or use of medicinal and edible plants in Armenia³⁴.

Armenia's climatic conditions and the intact environment of remote regions in Armenia, particularly that of Tavush, Lori and Syunik regions/marzes, positively affect the quality of plant material harvested from forests and make them products with high demand both in the domestic and international markets³⁵. Reliance on nature, transferring ecological knowledge as a means of preserving traditional way of life, frequently referred to as "green mentality", has deep roots among

³³ National Report on the State of Plant Genetic Resources in Armenia – FAO Country Report, 2008.

³⁴ A. Mkrtychyan *et al.* An Assessment of Wildlife Trade in Armenia with Recommendations for Interventions - Final Report 2015-2016.

³⁵ Wild Harvest Value Chain Analysis - Armenia (World Bank Group Report, 2016)

many ethnicities in Armenia and in the greater Caucasus region³⁶, thus the practice of collecting and using wild products in Armenia is not new.

It is also important to acknowledge and emphasize the predominant role Armenian women play in maintaining these traditions, including the reliance on wild harvests for economic reasons. Rural households are traditionally involved in collection of wild products. Main players for the value chain for both herbs and berries include collectors (predominantly women), middlemen, processing plants, and distribution centers. A value chain analysis of the wild harvest sector revealed an above-average presentation of women in all segments of the value chain, from collecting and processing till the final stage of realization, with the exception of transportation³⁵. Generally, the collector-processor relationship is regulated on the basis of oral agreements. The identification of existing cooperation between different stakeholders and the gender issues at different stages of the value chains have been specific focal points of several studies in the past^{32, 37, 38}. The Armenian government has identified the wild harvest value chain as an important sector with the objectives of poverty reduction and socially and environmentally sustainable development, which in turn would foster women's economic empowerment and gender equality⁹. Some of the important general findings of another study from 2010 on *processors and traders involved in the value chain of selected biodiversity products in Armenia* identified **(a)** the market demand and sales opportunities as a major problem for collectors, wholesale procurers (middlemen), and processors; **(b)** the urgent need for better market knowledge and assurances; and more importantly **(c)** paying special attention to sustainability issues³⁹. The study highlights the need of basic training for collectors of specific herbs on collection processes as current collection practices often harm plants and an intensification of their use following market demand would negatively affect the environment and the government's commitment to protect biodiversity³⁹.

There are three major uses of wild plants in Armenia: medicinal, culinary and commercial. Collections are particularly wide-spread in the Ararat and Vayots Dzor regions/marzes. The evaluations of the field surveys conducted by Flora & Fauna International showed that, in these regions, over 100 species are regularly collected of which 45 are medicinal, 45 edible, and 19 decorative plant species. The local markets are fairly small; plants are mostly harvested above ground and in spring time; and as such not considered a threat to the biodiversity as long as they are done for personal use or local trade³⁴. In contrast, unsustainable harvesting of particular crops such as liquorice (*Glycyrrhiza glabra*) in big quantities as well as cases of harvesting wild plants with roots pose certain risks. Some unofficial records about collecting and exporting wild bulbs from the mountains suggested they were destined for export for personal use rather than for industrial needs as no official records existed³⁴. This issue of sustainable use and management of wild plant collection was addressed through the following recommendations in the wild harvest value chain assessment report prepared by ICARE in 2018: **(a)** wide-scale awareness raising campaigns conducted in regions neighboring to forested areas, **(b)** increased involvement of local NGOs and regional authorities, **(c)** emphasizing the benefits of proper treatment of biodiversity resources, and **(d)** the collection of a broader palette of biodiversity products in order to secure the sustainability of the collections³⁹. Improving collection area traceability as well as the eligibility of collection areas for organic certification are equally important in terms of sustainability and would undoubtedly improve the export potential of Armenian biodiversity products⁴⁰.

³⁶ N. Stepanyan-Gandilyan. Traditions of the Green Mentality in Yezidi (Kurdish) Culture, 2015.

³⁷ Wild Harvest Value Chain Assessment Report Armenia. ICARE, 2018.

³⁸ G. Mkrtchyan, Armenia Gender Project - Women Business Association led in Public-Private-Dialogue, 2017.

³⁹ Analysis of processors and traders involved in value chain of selected biodiversity products in Armenia, 2010.

⁴⁰ Wild Plant Sampling Report (GTZ Project, 2011)

It is important to note that while regions in Armenia are very rich in varieties of herbs and berries, the potential is not fully disclosed. While historically about 2,000 species (approximately 60% of the total flora of Armenia) were used for different purposes, as previously noted less than 100 species are currently commercialized in one form or the other³⁹. Moreover, respondents to a survey during the analysis of processors and traders involved in the value chain identified seven, namely *blackberry, chervil, rosehip, thyme, walnut, cornelian cherry, and wild/apple and pear* to lead the list of products, although some 30 biodiversity products were also declared to be used (*i.e.*, collected, traded, processed): 15 species of berries, 3 types of mushrooms, 4 types of essential oil plants, 8-10 medical plants⁵.

Reasons for not taking advantage of the wide range of biodiversity products include a lack of **(a)** stocktaking of available natural resources and collected volumes, **(b)** awareness on available regional wild plants among collectors, **(c)** technical support from producer's site to organize logistics, **(d)** information on market demand for the wild plants, and **(e)** missing state support⁸. A National Action Plan of the Republic of Armenia on Biodiversity Conservation, Protection, Reproduction and Use for 2016 – 2020 is in existence, listing the activities, aims, implementers, timeframes, sources of financing, and expected outcomes. Government bodies such as the Ministry of Environment, Ministry of Agriculture (now within the Ministry of Economy), Ministry of Territorial Administration and Infrastructure, Ministry of Education, Science, Culture, and Sport; and academic institutions including the National Academy of Sciences, and the Armenian National Agrarian University (both by agreement) are the principal implementers³⁰. According to the environmental regulations for wild harvest in Armenia, the collection of wild herbs, berries, and fruits fall under the category of secondary forest use and compensation tariffs for damage caused to flora and fauna as a consequence of violation of environmental protection laws do exist (Hayantar /Armforest SNCO, Forest Sector Regulation Acts)⁸. Nevertheless, despite the recommendations of the two earlier studies from 2010, the implementation of regulations *vis à vis* legal entities and natural persons, violations of environmental protection laws, unsustainable wild harvesting practices, and problems with monitoring still pose as major obstacles on the government's efforts to managing the regulated wild plant collection in Armenia⁸.

Long-term projects such as the World Bank Group's Armenia Gender Project aim to support women engaged in the wild harvest sector through increased productivity, reduction of poverty, and promotion of economic growth⁴¹. The training of women collectors on environmentally-friendly harvesting practices, as part of the value chain assessment ought to be encouraged. Implementing good harvesting practices recommended by the International Federation of Organic Agriculture Movements (IFOAM) aiming to standardize especially plant material to be used as pharmaceuticals would no doubt appreciate the value of the products in this sector⁴². Better collaboration among collectors and across the value chain would improve the diversification of plant material collected from the wild, in order to secure the sustainability of the collections. One of the main issues of this sector is the lack of awareness, at the collector level, of the market demand in terms of quality and quantity. Wild plant collectors frequently experience difficulties with marketing of collected produce or fail to collect to the maximum of their capacity. A holistic approach to solve the issue of balancing supply and demand is required and can be achieved through training of especially the women collectors which in some regions dominate this segment of the value chain (*e.g.*, over 90% in the Ararat region/marz and over 50% in the Vayots dzor region/marz).

The need to organize women collectors, hone leadership skills among women entrepreneurs as well as improve their market access by fostering better links with buyers and producers⁴¹ with the support from both local and international NGOs would play a large role in activating wild harvest

⁴¹ G. Mkrtchyan. Armenia Gender Project - Factsheet (2017)

⁴² K. Başer. Sustainable wild harvesting of medicinal and aromatic plants an educational approach - document, 2000.

sector in regions. Results of workshops and interviews as part of the 2018 analysis reaffirmed the low regulation of the wild harvest sector, as previously discussed⁸. Although environmental charges are clearly defined by regulation, the payment procedure and the regulating body/ authority is not well-defined, pushing defined charges into irrelevance. Supporting wild sector regulations; improving the mechanisms for the enforcement of fee payments; promoting social entrepreneurship especially among women collectors; organizing experience-sharing workshops to better engage a wide range of stakeholders; supporting the development of alternative product value chains (e.g., essential oils from herb stems or berry fruit and seed that are normally wasted); enabling access to information on the variety and diversity of wild plants & berries that grow and are in demand in markets; and promoting research on biodiversity in Armenia such as stocktaking of wild plants and nature's capacity in terms of quality and quantity in Armenia's regions implemented especially by producers/ processors or NGOs were among the recommendations of the extensive 2018 study⁸. The collection of biodiversity products, frequently conducted in a spontaneous way -and often without licensing/permits and payments of nature use/environmental fees; the absence of proper control from the authorized state bodies (what is collected and how); the absence of license/permit for wild collection becoming a problem during exports their products -when submission of wild collection certificate is required but also questions regarding the payment of taxes; the amount of taxes applied, and what state body/ organization is eligible to collect taxes remain to this date as major obstacles^{32, 8}.

The exploitation of natural resources through the actions of multiple stakeholders has significant negative impacts on the biodiversity of not only Armenia but across Southern Caucasus, which despite existing national biodiversity strategies and action plans constitutes a significant challenge for government conservation efforts that can only be overcome through coordinated involvement across different entities with a stake in this sector including businesses, a range of government authorities as well as academic institutions^{30, 43}.

⁴³ [Integrated Biodiversity Management South Caucasus](#) (IBiS) Programme of the *German Society for International Cooperation* (GIZ), 2015.

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- (5) **A. Mkrtchyan et al.** An Assessment of Wildlife Trade in Armenia with Recommendations for Interventions - Final Report 2015-2016. (*Foundation for the Preservation of Wildlife and Cultural Assets | Fauna & Flora International*)
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- (9) **G. Mkrtchyan.** [Armenia Gender Project - Women Business Association led in Public-Private-Dialogue, 2017.](#)
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Appendix 3

Multistakeholder workshop

On September 16, 2020, the American University of Armenia (AUA) Acopian Center for the Environment organized a workshop on regulating the harvest of wild plants in Armenia, bringing together over 40 representatives of governmental agencies, civil society, business, international organizations, and academic institutions.

The workshop facilitated a discussion among stakeholders about ways in which wild plant harvest in Armenia can be regulated to achieve the dual policy goals of economic and food security for rural populations while protecting the country's rich plant biodiversity.

Workshop participants discussed improving community engagement, public-private partnerships, changes in legislation, better monitoring and enforcement mechanisms, and awareness-raising campaigns to help improve the government's capacity to effectively regulate wild plant collection. The recording of the workshop is available on the AUA Acopian Center's YouTube channel: https://youtu.be/byU_vp3XIMM

List of Workshop Participants

Aghavni Harutyunyan	AUA Acopian Center for the Environment
Alen Amirkhanyan	AUA Acopian Center for the Environment
Alexander Arakelyan	AUA Acopian Center for the Environment
Garabet Kazanjian	AUA Acopian Center for the Environment
Gohar Shahinyan	AUA Acopian Center for the Environment
Harutyun Alpetyan	AUA Acopian Center for the Environment
Heghine Grigoryan	AUA Acopian Center for the Environment
Nellie Kesoyan	AUA Acopian Center for the Environment
Norayr Ben Ohanian	AUA Acopian Center for the Environment
Siranush Harutyunyan	AUA Acopian Center for the Environment
Tatev Haroyan	AUA Acopian Center for the Environment
Tatevik Vardanyan	AUA Acopian Center for the Environment
Vahram Elagoz	AUA Acopian Center for the Environment
Rafik Santrosyan	American University of Armenia
Karine Javakhyan	American University of Armenia
Husik Sargsyan	Time Land Fund Kalavan
Aram Aghasyan	RA Ministry of Environment
Artur Ghavalyan	RA Ministry of Environment
Hakob Matevosyan	RA Ministry of Environment
Inesa Zargaryan	RA Ministry of Environment
Marina Aydinyan	RA Ministry of Environment
Voskehat Grigoryan	RA Ministry of Environment
Tigran Tananyan	U.S. Embassy in Armenia
Christopher C. Ellis	U.S. Embassy in Armenia
Varsik Martirosyan	RA Ministry of Economy

Karen Eroyants	Environmental Protection and Mining Inspection Body of the Republic of Armenia
Vardan Torchyan	Austrian Development Agency
Hovhannes Ghazaryan	Small Grants Programme - Armenia (Global Environmental Facility)
Tatyana Danielyan	SME Cooperation Association NGO, SGP-grantee NGO
Margarita Muradyan	Teach for Armenia
Anna Mangasaryan	CARD Foundation, Herbs for Growth (HEGO) project
Sona Telunts	CARD Foundation, Herbs for Growth (HEGO) project
Tamar Sargsyan	CARD Foundation, Herbs for Growth (HEGO) project
Meri Sahakyan	FAO Armenia
Fleur Scheele	Fauna and Flora International
Artush Khachatryan	Hamaynqi Zarkerak
Ani Harutyunyan	Hayantar SNCO
Hasmik Hayrapetyan	International Center for Agribusiness Research and Education (ICARE)
Lusine Tadevosyan	International Center for Agribusiness Research and Education (ICARE), AUA Acopian Center for the Environment
Ruzanna Kartashyan	DARMAN Herbal Tea
Nelli Drnoyan	Ajdahak NGO
Areg Galstyan	Antaram
Mariam Poghosyan	Armenian Young Women's Association