

# ASSESSMENT OF THE POTENTIAL OF NON-TIMBER FOREST PRODUCTS FOR NATURE- POSITIVE RECOVERY IN GEORGIA

**Tbilisi, 2023**

This study was prepared by the Caucasus Environmental NGO Network (CENN) within the framework of the Project Supporting the design and first implementation steps of the new global framework for biological diversity funded by the Federal Ministry of Environment, Nature Protection, Nuclear Safety and Consumer Protection of Germany through the International Climate Initiative (IKI), implemented by GIZ.

The views expressed by the authors in this document do not necessarily reflect the views of GIZ.

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## Acronyms

<b>ADC</b>	Austrian Development Cooperation
<b>BIOFIN</b>	Biodiversity Finance Initiative
<b>CENN</b>	Caucasus Environmental NGO Network
<b>CITES</b>	Convention on International Trade in Endangered Species of Wild Fauna and Flora
<b>CSO</b>	Civil Society Organizations
<b>EU</b>	European Union
<b>EUR</b>	Euro
<b>GEL</b>	Georgian Lari
<b>GeoStat</b>	National Statistics Office of Georgia
<b>GFPA</b>	“Georgian Forest Product” Association
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit
<b>HORECA</b>	hotel / restaurant / catering
<b>HS</b>	Harmonized System
<b>IFOAM</b>	International Federation of Organic Agriculture Movements
<b>IUCN</b>	International Union for Conservation of Nature
<b>MEPA</b>	Ministry of Environmental Protection and Agriculture
<b>MES</b>	Ministry of education and science of georgia
<b>MFA</b>	Ministry of Foreign Affairs of Georgia
<b>MoESD</b>	Ministry of Economy and Sustainable Development
<b>NFA</b>	National Forestry Agency
<b>NGO</b>	Non-Governmental Organization
<b>NTFP</b>	Non-Timber Forest Product
<b>PPP</b>	Public-Private Partnership
<b>RDA</b>	Rural Development Agency
<b>UNDP</b>	United Nations Development Programme
<b>USAID</b>	United States Agency for International Development
<b>USD</b>	United States Dollar
<b>WWF</b>	World Wildlife Fund

## Executive summary

Non-timber forest products (NTFPs) are “all biological materials other than timber, which are extracted from forests for human use” (Shackleton et al., 2011, p. 7). According to Shackleton et al. (2011), wooden products such as branches are also NTFPs as long as they are not harvested by large-scale companies, but by small-scale local traders and locals for their own use. Common NTFPs include berries, mushrooms, leaves as well as animal products and are used by humans both as a source for food and medicine (Clark, 2001).

Clark (2001) points out that “NTFPs provide small but significant sources of income, particularly for women and for families that do not have access to agricultural markets. NTFPs also provide critical supplies of food during periods when agricultural crops fail [...]” (p. 2). Due to this steady supply, Pullanikkatil and Shackleton (2019) find that NTFPs play an important part in lifting people out of poverty and therefore, are crucial in achieving the United Nations Sustainable Development Goal (SDG) 1 (No Poverty). However, because NTFPs have little economic value, using them alone is often not enough to escape poverty. The economic use of NTFPs must be integrated in Poverty Reduction Strategies for example taking into account sustainable forest management, as the basis for NTFPs, as well as in educational programmes on ecological and sustainable harvesting strategies. Ecological and sustainable harvesting can be labelled accordingly, resulting in higher prices and higher revenues (Pullanikkatil & Shackleton, 2019). Pérez (2005) also indicates that the integration of NTFPs into a state’s economic policy strategy is necessary to achieve prosperity.

To stimulate further revenue from NTFPs, not only a change in economic policies is required. According to Meinhold et al. (2022), the potential of NTFPs is far from fully exhausted. For example, in Georgia 98% of forests are located in mountainous regions and in these regions,

up to 78% are located on steep or very steep slopes. This means that harvesting is only possible under difficult technological conditions (Patarkalashvili, 2016). In order to simplify harvesting, technology must be enhanced and developed accordingly. In addition, Meinhold et al. (2022) emphasize that the food, chemical and pharmacy industries should intensify their research on NTFP related products in order to be able to produce more (intermediate) goods.

In order to effectively utilise the economic potential of NTFPs in Georgia, a legal basis is required in addition to an ecological and technological one. The “Forest Use Role”, as part of the “New Forest Code” from 2020, established a legal mechanism for sustainable forest management that includes the legal sale of NTFPs and thus simplifies access to the NTFP market (Gelashvili, 2021).

In all regions of Georgia, the rural population is engaged in collecting and selling NTFPs, representing their main sources of income. The extracted products are mainly sold as raw materials, however, in some cases the products are sold in a value-added form as well (e.g., jam and tea from various fruits). The main consumers of forest products harvested by collectors are open markets and, in rare cases, pharmacies and the Horeca sector (hotels, restaurants and cafes) (UNIQUE study team, 2021; Association “Georgian Forest Product” Preliminary Needs Assessment, 2020).

## Introduction

Forests are a key domain of the Earth's biodiversity. About 400 species of trees and shrubs grow in the natural forests of Georgia, which account for about 95-98% of the total forested area. Of these, 61 species are endemic to Georgia, and another 43 are endemic to the Caucasus (CENN, 2014). The forests of Georgia are included in the "priority places" of the World Wildlife Fund (WWF) and are considered biodiversity hotspots as defined by Conservation International. This, coupled with the conservation value of Georgian forests, determines its economic value as conservation provides ecosystem services vital for dependencies of industries on natural capital (i.e. eco-tourism, NTFPs, protective services, protection services, etc.). Georgia's forests provide vital resources to the country's population on a continual basis; it is supporting the operation of many sectors of the economy, the well-being of local communities, poverty reduction, and the establishment of a favourable environment for the country's sustainable growth.

Consequently, the extraction of non-timber forest resources is a traditional source of revenue for local inhabitants throughout Georgia's regions, and sometimes, one of the primary sources of income for local populations.

Guria, a western Georgian region is significant in this regard, as 48% of its territory is covered by forests (Administration of the State Trustee in the municipalities of Lanchkhuti, Ozurgeti and Chokhatauri).

The population of Guria is mainly employed in agriculture (fruit growing, horticulture, and tea cultivation). The most important agricultural products in the region are nuts, tea and citrus fruits. In recent years, blueberry production has significantly expanded. Regarding NTFPs, the collection of fruits and berries as well as medicinal herbs is popular.

Following amendments to the Forest Code in 2021 to regulate the non-timber forest market and introduce sustainable harvesting practices, have made it legally possible to facilitate and support commercial extraction of non-timber forest resources. This has increased the interest of residents living in the region to obtain additional commercial benefits from the non-timber forest resources, which will potentially in turn improve the economic situation of the people living in the region.

The emergence of an economic opportunity is accompanied by the risks of unsustainable and uncontrolled extraction that disregards any NTFP species harvesting standards. This endangers various species, since currently the stocks of NTFPs of a particular forest have not been studied and accounted for, and therefore the annual usage volumes have not been determined. Therefore, assessment of and accounting for NTFP inventories is important both for private collectors and companies to effectively plan and implement through sustainable harvesting, and primarily to ensure the issuance of permits for commercial exploitation of natural resources by the state.

A variety of non-timber forest resources in Guria creates an opportunity for the population living in the region to create additional sources of income and local communities to gradually achieve financial sustainability. Furthermore, there are few income-generating options for women in rural Georgia, with the NTFP sector being one of the few. This is both a challenge and an opportunity, as it is critical to implement targeted government programs and policies to provide sustainable and equitable livelihood for women in the face of growing pressures on forests, the introduction of new technologies, and emerging power dynamics.

The population mainly obtains the following products: forest mushrooms, fruits and leaves of wild blueberries and blackberries, currants, wild apples (Majalo), wild pears, eucalyptus leaves and branches, rose hip, and common bilberry. Medicinal herbs and wildflowers are also collected, such as: thyme, German chamomile, common yarrow, motherwort, nettle, horse-tooth, immortelle, etc. (See Table 1: NTFPs of economic value in the Guria region).

## Methodology

The goal of the study is to evaluate the non-timber forest products' potential for commercial application in the Guria region.



The study's methodology comprises the following cornerstones:

- Creation of a needs assessment questionnaire for organizations (both governmental and non-governmental) that have a direct or indirect relationship with and are working to develop the NTFP sector through various projects and supporting programs, as well as for forest product collectors and NTFP processing businesses..
- Creation of a list of interviewees and conducting telephone and in-person interviews.
- Screening of the effects of state - and international-implemented initiatives and programs on the NTFP sector.
- Meetings in person with local private collectors and businesses in Guria, disclosure of the existing method of cultivating NTFPs.

- Through the established interviews, understanding the level of involvement of women and men in the process of collecting and processing NTFPs and the gender balance. This entails a deeper understanding of women's engagement in the process, as well as an assessment of the necessary studies and potential solutions required to increase women's involvement.
- Determining the needs for modern equipment and transportation through communication with local companies and collectors.
- Based on the work experience of the Georgian Forest Product Association, conducting an analysis of the market potential and opportunities of NTFPs.
- In coordination with relevant experts in the field, evaluation of the prospects of NTFPs with the following criteria: population's high interest in specific products, high price, good sales indicator and the presence of commercial quantities of products in the forest.
- Based on the results of the interviews and analysis of existing studies, selection of the five most commercially promising NTFPs in the Guria region.
- Identification of the commercial potential of the five identified NTFPs, both for international (EU) and local markets.
- With the involvement of an NTFP expert, selection of forest area(s) in Guria and estimation of the volumes, employment potential and income generation potential of NTFPs through field work.
- Discussion of preliminary findings with MEPA, GIZ, and other stakeholders at the National Forum conducted within the NFP.
- Distribution of the initial draft of the Assessment to the NFA and other stakeholders for comments.

Within the project framework, active consultations were conducted with experts from the National Forestry Agency (NFA) and the United Nations Development Programme (UNDP) Biodiversity Finance Initiative (BIOFIN) coordination group. Through interviews with the Rural Development Agency (RDA) and close collaboration with the UNDP BIOFIN Group, assessments of existing subsidy schemes and potential for NTFPs as well as potential harmful incentives were conducted. The study included a recommendations document developed by the member companies of the Association of Georgian Forest Products in 2021. The document focuses on the needs and challenges of the non-timber forest market in local and international markets. During the research process, consultations were held with the production and export managers of following leading companies representing the sector: Geoflower LLC, Caucasian LLC, Farkon LLC, BPC LLC, and Milmart LLC, Martin Bauer Group.

On December 5, 2022, a meeting on "Enabling the Implementation of Georgia's Forest Sector Reform - ECO. Georgia" was held within the framework of the National Forestry Program (NFP), where the preliminary draft of the Assessment was presented and discussed with the attending stakeholders (GIZ, MEPA, NFA, etc.). The meeting focused on the following main findings:

- Inability to determine the market potential and scale for wild non-timber forest products due to a lack of official statistical data.
- The importance of increased contact between local government and forestry agency officials and local firms and collectors: information meetings, discussions.
- Critical importance of NTFP cultivation for the expansion of the market in terms of decreasing prices and increase of output.
- The lack of skilled labor and migration, and more.

In addition, the draft assessment was sent to NFA and companies operating in the NTFP sector for additional feedback. The outcomes of the discussion of NFP and comments provided by NFA/private sector were incorporated into the document.

## Market potential for NTFPs

### Overview of the non-timber forest products market of Georgia, challenges and solutions

According to interviews with companies in Georgia's NTFP sector, including the three most profitable NTFP collecting and processing enterprises (LLC Geoflower, LLC Caucasian, LLC Farkon), as well as medium-sized enterprises and entrepreneurs (LLC Milmart - Shemokmedi, Tianeti Nobati, LLC BPC, Ind. Entrepreneur Davit Tenieshvili, cooperative Nagomari), NTFP collection has increased in recent years, some companies stating that the collection rates has increased by 100% since 2015. Despite the fact that the market is limited, with only around 40 small, medium, and large firms manufacturing non-timber forest products, there is an annually increasing trend in NTFP sales, which is a solid indicator for economic development. On average, the production of NTFPs has been increasing by 50% for the past 5 years.

As per to the sources cited above (no official data is available), around 80% of NTFP products are exported, with particular demand in the European Union (EU) market while only 20% remain in the local market. Unsorted, un-packaged, and unbranded material is primarily shipped in dry form, while a tiny portion of processed Georgian forest non-mineral goods, including blueberry tea and rose-hip juice, are also exported.

Despite the recent increase in the output of Georgia's non-timber forest industry, the companies highlight the market's challenges. All the enterprises interviewed that work in various regions of Georgia acknowledge that finding manual labour becomes more difficult every year due to a decline in the rural population, with internal migration being the primary cause. Individuals leave villages to work in cities and administrative centres. As a result, each year fewer people live in villages (GeoStat, 2014); Tbilisi, for example, saw a 3.4% growth in population between 2015 and 2019, which happened at the expense the population declining in Racha-Lechkhumi and Kvemo Svaneti (5.7%), Imereti (5%), and Samegrelo-Zemo Svaneti (3.7%), Guria (2%), etc. a trend continuing up to today (The 2019 Migration Profile of Georgia, 2019). It must also be noted that seasonal migration is relevant in regions, where people travel for work abroad.

According to internal migration figures from the 2014 official census, more than 30,000 local permanent inhabitants departed the Guria region and migrated to neighbouring regions. This applies to both urban and rural migration, and the numbers for Georgia as a whole are as follows:

- As of 2014, more than 550,000 individuals had left their permanent residence and relocated to other cities and villages (Statistics Service of Georgia).

The assumption of Georgia's rising trend of migration and emigration is further supported by the State Commission on Migration Issues' findings and statistics, as well as interviews with NTFP enterprises.

According to every interview with NTFP enterprises, one of Georgia's key target markets is the EU market, where Georgian NTFP products have been successfully exported in recent years. However, competition in the EU's non-timber forest market is high. Albania, Bulgaria, and Romania produce NTFPs (i.e., rosehip, raspberry, blueberry, wild leaves, and medicinal plants) in much larger quantities at a cheaper price, and they are also geographically closer to other EU countries, which means lower costs due to logistics, economies of scale and more. Companies representing the sector in Georgia affirm that it is critical to introduce and promote the cultivation of many types of wild products (rosehip, mint, raspberry, medicinal plants, and so on) for the long-term sustainable growth of the NTFP market in Georgia. Cultivation will be crucial for Georgia to maintain and enhance its market share in the EU, allowing the sector to boost the quantity of goods provided and become a significant source of agricultural economic gains in Georgia.

It is critical to note that, as of 2021, the production of NTFPs has been legally recognised as an agricultural activity, providing farmers with an extra option to participate in state and international agricultural programs.

Hereafter, a list of difficulties and solutions related to the market potential of NTFPs in Georgia is provided:

### ***Product awareness***

Raising awareness of NTFPs in both domestic and foreign markets remains one of the industry's hurdles, preventing larger-scale sales. NTFPs are not well positioned in the local market due to high capital costs (See Ch. [Five most promising NTFPs in terms of commercial and economic potential](#)), and customers lack essential knowledge about the products, including the beneficial characteristics of the goods. Similarly, when working in export markets, it is critical to position each forest-derived product as an NTFP, emphasising its positive and possibly unique characteristics that distinguish them from other similarly cultivated products (Association "Georgian Forest Product" Preliminary Needs Assessment, 2020).

### ***Technological development***

It should be noted that technical advancement in the sector of NTFPs is modest. This applies to both processing machinery and collecting instruments used in primary product extraction. Technological advancement is critical in several areas, including: 1) sustainable extraction of NTFPs, which will be aided by appropriate working tools (such as non-plastic materials for collection, wooden baskets, special cutting tools, and equipment for inaccessible and difficult terrain); 2) production of more value-added products, which will increase the sectoral value of NTFPs; 3) production efficiency - additional processing equipment would boost non-timber forest products' overall productivity and raise the sector's appeal on both domestic and international markets (Giss Lab & AAP Ecology Georgia, 2020).

### ***Modern approaches to production***

It is important that businesses operating in the field of NTFPs have the right knowledge in terms of collecting and processing specific products, i.e., the post-harvest management. Similar approaches are important in terms of sustainable production and protection of the ecosystem. The increase in knowledge will help to deliver the product to the end user correctly and safely. These aspects are gaining special importance in recent trends, especially in developed export markets, where consumers pay special attention to the origin of products, quality and various environmental issues, i.e., to what extent the sustainable extraction and processing are protected in the food production. This trend is gradually gaining popularity in Georgia as well (CENN, 2022).

### ***Solutions to challenges in the NTFP sector***

The way to solve the above-mentioned challenges is to plan more activities with the representatives of the sector and work together with government institutions, donor organisations and other related parties. After the settlement of legal issues (compared to previous years), it is imperative to start working in the direction of sales

channels and marketing. The most important issue is to improve the awareness regarding the NTFPs, given that the consumer has information about them and, as a result of relevant marketing activities, the willingness to purchase. Marketing activities include advertisement of products through various channels, as well as participation in exhibitions/sales in Tbilisi and regions. Stimulating sales through such tools is an effective method<sup>1</sup>. Communication with local retail chains, pharmaceutical companies and representatives of the Horeca sector is crucial in order to offer them products and increase sales. Furthermore, it is necessary to inform the representatives of the sector regarding the access to finance. Businesses should participate in as many grant or co-financing programs as possible, which will contribute to business development and increase the motivation of employees. It is a key issue to train and increase the knowledge of NTFP businesses, especially primary producers, to ensure ecosystem protection and sustainable product extraction.

### ***Sales channels and logistics***

Unstable and unorganised sales markets in the local bazaars as well as the lack of appropriate infrastructure, reduce the commercial potential of NTFPs. Collectors need to sell the harvested products quickly, as there are no proper storage warehouses, which increases the probability of product spoilage. The NTFP market of is mainly of B2C type, that is, collectors sell their products directly to consumers in most cases, while retail chains, pharmacies and representatives of the Horeca sector are often unstable buyers. A good example of the volatility of the Horeca sector is the COVID-19 pandemic, which led to a standstill of the entire sector and all related businesses or companies found themselves in crisis. In addition, Georgian NTFPs, due to low awareness of its product quality and their high value, are not acceptable for the Horeca sector when they have much cheaper access to alternative imported products. At such times, it is important that NTFPs enjoy a high reputation and recognition in the local market. As for the export markets, only a few Georgian companies are active in this sector and are able to manage the complete process (from product extraction to preparation for export) and export both final products and value-added raw materials (Association “Georgian Forest Product” Preliminary Needs Assessment, 2020).

In this regard, the NFA’s main duty is to implement new legislation already in place (the Forest Code) in order to provide permits for collecting NTFPs as quickly, methodically, and fairly as possible. The NFA is also responsible for regularly preparing the vital information on particular forest areas (including coordinates) where and what NTFPs are collected, which is to be monitored, triangulated, and validated for data accuracy. It must be noted that according to the regulation “On Forest Use” authorized by the Government of Georgia’s resolution N221 on May 18, 2021, the interested party is required to submit the location of the harvest concerning the particular forest

area and the relevant GPS coordinates. Hence, the NFA requires field professionals to carry out such functions. Methodologies for resource assessment / inventories, as well as standard operating processes for permits, monitoring, and so on, must also be established.

Furthermore, it was revealed that local harvesters in Guria avoid collecting large quantities of NTFPs due to a lack of equipment or logistical support (drying, storage, transportation), and favouring to collect NTFPs only when there is a possibility of fast delivery to large corporations that provide both shipping and drying. As a result, small farms usually have limited non-timber forest product stocks and must sell primary resources to businesses at a low cost.

### ***Legislation***

Legislative progress has been made recently, as seen by the Government of Georgia’s decision to adopt a new “Forest Code” that went into effect in January 2021. The National Forestry Agency (NFA) is now providing pertinent permits in accordance with the resolution, which stipulates the regulation of non-timber forest product extraction. A license for one year costs GEL 200 (EUR 73). Regarding the tax, a nominal fee of 1 Tetri per kilogram was imposed on the extraction of non-timber forest products. According to the “Forest Code,” now the non-timber producers can extract forest resources for commercial purposes if they have the appropriate license. Before the adoption of the resolution, there was no limit for non-timber forest products harvested for commercial and personal purposes. Also, there were no established annual quotas for which the collector should not exceed, etc. The mentioned circumstances made it quite difficult for the collectors of non-timber forest products to work in a healthy environment in compliance with the law. It is worth noting the positive role of the Association “Georgia Forest Product” in lobbying and advocacy of the above-mentioned amendments. Moreover, the association is actively involved in the process of obtaining licenses and helps representatives of the sector navigate through bureaucratic procedures. Furthermore, the association was actively involved in the working process of the adoption of the resolution and played a major role in the development of a legal document that is best suited for harvesters (Decree of the Government of Georgia, 2021; Giss Lab & AAP Ecology Georgia, 2020).

### ***Limited access to finance and information***

The NTFP sector, constituting one of the largest components of the non-farm part of the rural economy, still experiences challenges in terms of limited access to finance and information. The existing grant programs in Georgia that are implemented by both governmental and international donors do not prioritize the NTFP sector, limiting the growth of the businesses. Such conditions handicap the possibilities of retooling the enterprise, raising the

<sup>1</sup> [Export Development Association \(EDA\), 2020, Small Business Guidelines](#); Association GFP Needs Assessment, 2020, CENN



qualification of personnel, updating/adding machinery or work tools, construction of warehouse/storage farms, etc. In addition to access to finance, there is a rather large communication gap, due to which non-timber forest resource collectors living in the regions do not have information about various export supporting or production capacity programs, events or possibilities of access to sales channels and thus, rendering them more dependent on existing companies that employ them. If they have access to this kind of information, they will have the opportunity to get a chance to find additional sales channels for business development and increase the promotion of their obtained/produced products. There is currently no full assessment of the existing NTFPs in Georgia, which is the steppingstone of all economic development forecasts and commercial evaluations (Association “Georgian Forest Product” Preliminary Needs Assessment, 2020). Therefore, an increase in NTFP harvesting and production can trigger unsustainable resource use (considering incomplete information on the availability of NTFP resources), control over local resources containing tradable products may be captured by local elites or outsiders engaged in commercial production, which can create accessibility problems to the rural communities on harvesting NTFPs for their own purpose.

As more information on the NTFP industry becomes accessible, these products are gaining traction in trading activities and becoming more prevalent than they were previously. NTFPs are mostly utilized for nutritional and health purposes in rural populations, as part of their overall diet or for health restoration. However, as previously stated, NTFPs also provide revenue for the community, providing critical sources of income for the poorest, preventing their situations from deteriorating further. NTFP revenue serves as a buffer during seasonal income shortages and can even be considered a foundation for earning enough income through local production and commerce to function as a source of poverty alleviation. This is further backed by the fact that many NTFP manufacturing and trading have a low entry skill level as well as a requirement for capital inputs. Even though the NTFP sector is built on green management principles, the industry is exposed to external market shocks, such as inflation, energy crises, and, most notably, the COVID-19 Pandemic. In terms of price increases, market shocks hit the majority of the NTFP sector’s value chains. However, harvesters suffer the most in regards of reimbursements since wage adjustments adapt slowly to the remaining value chain volatility. Since the COVID-19 epidemic hindered global trade, the demand for NTFP goods (due to declines in household incomes, HORECA, etc.), and logistics, it has had a detrimental effect on the revenues of most NTFP value chains in Georgia. In addition, the COVID-19 epidemic has compelled a number of NTFP enterprises to either halt manufacturing or permanently end operations; the conflict between Russia and Ukraine has worsened NTFP market restrictions in Georgia, as both nations get a sizable share of Guria’s exports. Considering Ukraine was the principal importer, butcher’s broom exports were stopped in 2022. What is more, the international market experienced price

instability, supply chain interruptions, and significant inflation during the Covid-19 epidemic (Erdogan et. Al., 2020). In such circumstances, in Georgia, local manufacturers’ production has grown more expensive, and several small enterprises have temporarily discontinued operations owing to supply chain interruptions and higher transportation expenses. Many small companies that rely on tourism have come to a standstill. Large companies had to establish new transport systems and increase expenses through additional procedures. In such circumstances, it can be asserted that market volatility and inflation have had a detrimental impact on the NTFP market in Georgia.

### ***Population outflow from the regions***

Migration of the rural population to the cities, as well as a large number of immigrants (the main part of which are residents of the region) create a shortage of labour force, which ultimately affects the quantity and quality of the products harvested and produced. The main cause of the problem is the unattractive salary, which, against the background of unfavourable economic situation in the country, demotivates the rural population to work in the mentioned field. The harvesting companies keep the salaries and prices low, while the share of profits increase as the NTFP moves closer to the consumer. This is fuelled by the fact that harvesters do not have other options of income in the area and are, therefore, “forced” into the only revenue source they can get (i.e., harvesting raw materials). Such circumstances render the supply market of harvesters unstable, with unequal distribution of profits between the harvesters and producer companies. Moreover, the labour shortage makes it difficult to collect non-timber forest products, thus reducing the supply, which is reflected in the increase in the prices of sold products. In the long term it is possible that the delivered products will be reduced.

In addition, “traditionally developed harvesting rules have to be respected and integrated in any development of new regulatory regime” (Pfund & Robinson, 2005: 39). With a rural outflow, first, there will no longer be an alliance working to preserve these rules, and second, these rules will be lost. The loss of harvesting knowledge leads to “lowered harvesting efficiency and the income per unit amount harvested is reduced” (Pfund & Robinson, 2005: 38). A weak alliance and a poor local governance within a decentralized system harbours the risk that “the landless/poor people who traditionally collected from the wild (perhaps along sustainable harvesting principles) have a strong risk of being excluded” (Pfund & Robinson, 2005). In order to achieve better prices, it is beneficial to have the NTFP certified. However, this requires knowledge about harvesting, production and trade, which could be lost with an outflow of people.

In order to take into account all aforementioned points, it is beneficial to consider them as part of a system that needs to be continuously improved – Meinhold et al. (2022) call it the technological innovation system (TIS).

The TIS consist of actors and networks, institutions and technology. Simply put, actors or stakeholders, as well as institutions need to improve their knowledge about sustainable harvesting, institutions need to set the legal and economic framework and harvesting technology needs to be adapted and improved to the respective framework conditions (Meinhold et al., 2022). Following Shackleton et al. (2015: pp. 4-5) “management of most NTFPs is based on limited and frequently untested western scientific assumptions and knowledge” and undermines the traditionally developed harvesting technologies and rules, which, as mentioned, need to be preserved. Harvesting strategies (and technologies) must be developed hand in hand with local and international experts. Which technology is used depends on the specific characteristics of the plant. A walnut tree, for example, is much more resistant than a grape bush and, therefore, can be managed more sustainably (Ticktin, 2015). Furthermore, it can be problematic or impossible to harvest with a huge harvester on very steep slopes ( $> 36^\circ$ ).

In Georgia and specifically in Guria, NTFPs sustainable harvesting principles and traditional knowledge are focused within the local population, who, together with theoretical/traditional knowledge, have experience in NTFP harvesting for both commercial and personal use. It must be noted that the locals from Guria are not as involved locally, as the neighbouring regions. Adjarian’s population, for instance, migrate to Guria to harvest large volumes of NTFPs for commercial purposes. To ensure the preservation of traditional knowledge, it is vital to encourage the participation of young local collectors, as one of the main obstacles is a lack of interest among younger generations and a lack of participation of local people in gathering wild berries and plants year after year. It is critical to defend collectors’ interests, such as equitable working conditions and increased salaries, and install trust in the new forest management system by increasing access to information and inclusion in the processes related to the new Forest Code. The collectors’ interests should be well implemented through the adoption of various standards, such as FairWild, FairTrade and more.

## Evaluation of export potential

It is important to highlight the export potential of NTFPs. In developed markets (EU, USA, Japan, Gulf countries, Israel, etc.) especially considering behavioural changes caused by the COVID-19 pandemic, the promotion of healthy and natural products is increasing, and food products are at the centre of attention. The pandemic has led to a change in consumer behaviour, which is reflected in consumers taking more care of their health (CBI, 2020). Based on this, consumers pay more attention to the product label, which contains information about product quality, manufacturing methods and other important factors (ibid). However, in economic perspective, supply is the quantity of an NTFP resource that producers are ready to offer at a particular price, not the amount that is naturally accessible in the

forest. Therefore, the notion that “demand” will exceed “supply” is not supported by economic theory. In this respect, the degree to which inflation causes commodity price increases is determined by the elasticity of a certain NTFP species. Suppliers of NTFPs with inelastic demand curves may find no incentive to export since there is no willingness to pay. However, the elastic demand curve for NTFPs means high commodity prices during inflation, which might endanger forest resources because there is a profit to harvesting more.

### Target markets

Among the developed economies listed above, the EU countries can be considered the most relevant and at the same time, affordable market for NTFPs of Georgia. This is based on several important factors that must be considered when identifying export markets, such as:

- The free trade agreement between Georgia and the EU provides an opportunity for products originating in Georgia (the products must meet the rules of origin and be awarded the EURO 1 certificate of origin) to enter the territory of the EU member states without import tax. This factor is the biggest stimulator of international trade, which guarantees long-term and stable trade.
- Transport and logistics to EU nations are generally well-organized and do not provide a significant obstacle for exporters.
- Georgia has access to land, sea and air transportation with EU member states, which allows manufacturers to choose the type and mode of transportation that is most convenient for them. Furthermore, the relatively small distances to the EU member states give Georgia a certain advantage over other non-EU countries, as it allows easy and timely product delivery.
- The stability of the EU market provides an opportunity for long-term investment in the NTFP sector and guarantees that local producers will be able to find stable business partners. The EU market is not characterised by instability and lack of credibility, unlike traditional trading partner countries such as Russia.
- There are many ways to promote products on the EU market, for example through: 1) Trade exhibitions that gather tens and hundreds of thousands of buyers during the event. It is the best way to find potential trade partners, 2) television and print media, 3) social media and websites, which has gained particular popularity in recent years and is one of the best options for product marketing today; 4) sectoral associations and organisations, which allow representatives of developing countries to establish business relations in the territory of the EU, 5) diplomatic representations of Georgia in EU member states, through which prod-

ucts can be positioned within various events and gatherings. The latter option is less used by local manufacturers, however, increased involvement of embassies is key in terms of increasing the promotion of Georgian products and finding potential partners.

- The EU's population high purchasing power is also a factor that makes the EU worth considering as a target export destination.

### **Specific target countries**

Considering the EU as a single potential trading market is a mistake. All EU member states have specific features of the market, which is the most important factor in the development of an export strategy. It is necessary to identify countries where the products will be exported based on the commodity designated for exports. There are many factors to consider when identifying countries, such as: distance to the export country, product awareness, target segments, competition (import, export, and local production), the number of processing industries, re-export potential, etc. According to this methodology, a specific export market should be selected and the whole export strategy should be built on it.

### **Target industries**

When assessing the export potential of NTFPs, it should be noted that products can be positioned in three main industries, namely: food, pharmaceutical and cosmetic industries. Regarding the food industry, it is possible to provide both primary products in raw form and also as value-added final products. As for the pharmaceutical and cosmetic industries, the supply mainly consists of raw materials, which are processed in the production of final goods.

When selecting target industries, most common costs must be identified for an NTFP company. In general, these are often transportation and harvesting costs. Depending on the resource and its location, the costs can be unaffordable for a company. This means a better understanding of costs is required, be it in terms of quantitative data of various NTFPs across different regions and forests, how marginal costs are rising in face of reducing supply, and how the costs are distributed among the labour supply and the company, etc. Moreover, it is important for experts to examine the connection between prices and the supply and demand curves in order to understand different phases of resource depletion, changes in consumer demand, and overall NTFPs lifecycles. Such understandings will give insight on how to manage resource use and avoid possible market crashes or shortages that will impact the company's operations. Therefore, better research on the value chains of NTFPs must be conducted, as there is little knowledge about value adding to the product between the initial collection of the resource and its distribution to the end consumer. Quantification of such data must be

carried out on how the value is added to the product, accruing throughout the whole value chain. The findings will help in determining target industries and provide deeper understanding of the demands and supply of export markets. (Bürgener, 2007; Mankiw, 2004).

### **Quality of products**

When considering the EU market, the biggest challenge is the control of product quality and safety. With regards to NTFPs, special attention should be given to the phytosanitary control of products, which applies both directly to the specific product and to the packaging materials. Phytosanitary analyses of the exported products should be carried out during the preparation of a specific export batch, and also the packaging materials of the products should meet safety standards. In many cases, importers require a certificate of conformity of the packaging materials. These are issued by the packaging material manufacturing company. Since the production of packaging materials is limited in Georgia and mainly imported materials are used, it is crucial that the said certificate of conformity is submitted from the supplying company. In some cases, the purchase of imported packaging materials is associated with additional time and resources, which can become an obstacle for manufacturers. In this regard, Turkey has a positive effect on production efficiency, since logistically, importing from Turkey is a simple procedure. Also, in some cases, importers in the EU market request an additional laboratory analysis, which is an obstacle for Georgian exporters, due to the faulty local laboratory infrastructure. In such cases, exporters use the laboratory services available outside of Georgia, which in turn are associated with additional time and financial costs.

### **Standards**

The demand of NTFP has increased within the past years due to changing dietary habits, especially in western countries. Vegan products are increasingly in demand and the food industry is looking for appropriate substitute products. The development of new products will increase as more study is conducted in the field, which could subsequently result in a rise in demand. (Meinhold et al., 2022).

To follow up, certification schemes are gaining much market presence (and share) in the European Union. According to IFOAM Organics Europe, "In 2020, the EU's total area of farmland under organic production grew to 14.9 million hectares. Compared to 2019, the number of organic producers in the EU increased by 1.6% to 349,499. A significant growth of the EU's organic retail market accompanies this development, marked by a record growth of 15.1%, reaching 44.8 billion EUR, the second largest market, after the USA and followed by China". With the growth of labelled markets, producers are incentivised to undergo voluntary certification schemes to obtain or even maintain a certain market share in the EU. There is a number of standards (certification schemes) that can be ad-

hered to the NTFPs. This includes Fair Trade certification, organic certification and ecological certification.

Fair Trade is focused on the harvesters, ensuring that safe working conditions are met, and employee salaries are adequate. Organic certification is focused on the limited use or exclusion of pesticides in the production operations. Ecological certification is characterised by sustainable management of ecosystems, meaning that the products harvested are collected sustainably. It must be noted that the adherence of certification standards is a difficult feat for many NTFP producers in Georgia, as it includes a high level of organisation, well managed planning, product tracing and more. Apart from organisational capacity building, acquiring certificates can be costly, meaning that the NTFP producers must carefully conduct cost-benefit analyses whether they need the certificate or not (considering export potential and all related costs).

As stated, in the EU market particular attention is paid to specific production standards. Only a phytosanitary certificate is required to export primary goods from Georgia; other certificates are dependent on the importer and the characteristics of the products. Of course, bio certification and other high standards are useful in competitive environments, but they are not required. It should be noted that the standards are not mandatory for exports to the EU; although they are important from the point of view of competition, since the existence of a specific standard (certification) emphasises the safety and high quality of products. The following are the most important standards to be considered for the EU market:

- Global G.A.P.: Primary product standard (in case of cultivation)
- GRASSP: Primary Product Standard (in case of cultivation)
- HACCP: in case of a processing plant
- ISO: in case of processing plant
- BRCGS: in case of processing plant
- SEDEX: ethical and fair international trade standard
- Fair Trade: ethical and fair international trade standard
- Fair Wild: an environmental standard that involves sustainable extraction of resources and ecosystem protection, etc.

Unfortunately, not all listed standards are implemented by the certification organisations in Georgia, and when some standards are implemented, it may be necessary to invite a foreign organisation. It should be noted here that the certification of products in general and the existence of specific standards are important not only for the export market, but also for the local market. In order for Georgian products to become competitive and more attractive on foreign markets, start-up and medium-sized businesses need certification support activities. By observing

the NTFP market potential and based on its analysis, it is possible to introduce and encourage certification support programs. RDA is one of the entities assisting small and medium-sized enterprises (SMEs) with the implementation of international certificates by offering financial and logistical support. SMEs lack access to information and know-how on the procedures and technologies essential to get such certificates (FSC etc.). Nonetheless, many enterprises and government bodies are unaware of the existence of several sorts of certification systems (See also Recommendations.)

What is more, it must be noted that the association agreement between Georgia and the EU, among other things, implies the maximum approximation of Georgian legislation with the existing legislation in the EU, which includes the gradual introduction of production standards for the local market.

## Improved benefit sharing with sustainable extraction principles for local collectors

The Guria region is rich in forest resources, which provides the opportunity for a variety of forest uses. The area of the forest fund<sup>2</sup> is 86.4 thousand ha, of which 81.2 thousand ha are covered with forest. In addition to vast timber resources, significant numbers of NTFPs are distributed in the region. Despite the abundance of NTFP resources available in the region, an insignificant number of products are currently being harvested and traded in Guria.

A survey of local households in Guria found that collection of NTFP is often the only source of income during the harvesting seasons of the respective product (different for each NTFP species and regions) and therefore they are forced to collect regardless of the market price of the product. The season in Guria begins around the middle of March. The first commodity harvested is blueberry leaf, which must be fresh and is collected around the end of March and beginning of April. At that time, there is no other source of income from agricultural activities depending on the season. Local collectors talk about low delivery prices, and based on the information provided by the collectors, the delivery prices for the same products collected in other regions is about 20-30% higher than in Guria. According to the companies and harvesters, on average, 10-15% of the income share goes to the harvesters in Guria from the price of the final sold products.

Although, local communities have the skills and capacities for sustainable collection and processing of NTFPs, due to market driven forces and increased demand, overexploitation of NTFPs takes place in the region (especially for blueberry leaves and butcher's broom). Furthermore, NTFPs still cannot provide sufficient employment and in-

<sup>2</sup> "Integrity of forests and their resources owned by state forest fund and forests under different forms of ownership in Georgia" (The Forest Code of Georgia, 2020)

come generation opportunities in the region. On the other hand, unsustainable collecting/harvesting of NTFPs has adverse impacts on the forest and biodiversity.

NTFP inventory was carried out as part of the project using literature sources, stakeholder interviews, and field trips to the area. As a result, the following list of NTFPs with economic value was developed:

Table 1: NTFPs of economic value in the Guria region		
No	Name of NTFPs	Botanical Name
1	Dwarf Elder	<i>Sambucus ebulus L.</i>
2	Rose hip	<i>Rosa canina L.</i>
3	Common Dandelion	<i>Taraxacum officinale Weber ex Wigg.</i>
4	Common Mallow	<i>Malva sylvestris L.</i>
5	Wild Thyme	<i>Thymus serpyllum L.</i>
6	Cowslip	<i>Primula veris L.</i>
7	German Chamomile	<i>Matricaria chamomilla L.</i>
8	Bearberry	<i>Arctostaphylos uva-ursi (L.) Spreng.</i>
9	Elderberry	<i>Sambucus nigra L.</i>
10	Common Chicory	<i>Cichorium intybus L.</i>
11	Coltsfoot	<i>Tussilago farfara L.</i>
12	Oregano	<i>Origanum vulgare L.</i>
13	Common Hazel	<i>Corylus avellana L.</i>
14	Common Walnut	<i>Juglans regia L.</i>
15	Valerian	<i>Valeriana officinalis L.</i>
16	Barberry	<i>Berberis vulgaris L.</i>
17	Perforate St John's-wort	<i>Hypericum perforatum L.</i>
18	Common Knotgrass	<i>Polygonum aviculare L.</i>
19	Blackberry	<i>Rubus fruticosus L.</i>
20	Common Blueberry	<i>Vaccinium myrtillus L.</i>
21	Lingonberry	<i>Vaccinium vitis-idaea L.</i>
22	Broadleaf Plantain	<i>Plantago major L.</i>
23	Large-flowered Calamint	<i>Calamintha Grandiflora (L) Moench.</i>
24	European Red Raspberry	<i>Rubus idaeus L.</i>
25	Common Sage	<i>Salvia officinalis L.</i>
26	Common Yarrow	<i>Achillea millefolium L.</i>
27	Greater Celandine	<i>Chelidonium majus L.</i>
28	Motherwort	<i>Leonurus cardiaca L.</i>
29	Cornelian Cherry	<i>Cornus mas L.</i>
30	Stinging Nettle	<i>Urtica dioica L.</i>
31	Butcher's Broom	<i>Ruscus hypophyllum L.</i>
32	A large-leaved Ragwort	<i>Senecio rhombifolius (Willd.) Sch.Bip.</i>

Due to a lack of information on NTFP resources in the Guria region, data from only one available literature source were obtained for four NTFPs<sup>3</sup>:

**Table 2: Information on yields of NTFPs from the Guria region**

Nº	Name of NTFPs	Botanical Name	Yield (Tons)
1	Crab Apple	<i>Malus orientalis</i> Uglitzk.	1800
2	Cherry Plum	<i>Prunus cerasifera</i> Ehrh.	500
3	Blueberry	<i>Vaccinium</i>	800
4	Chestnut	<i>Castanea sativa</i> Mill.	1500

Although information on yield of the four species listed in Table 2, two of them, chestnut and cherry plum, are not included in the preceding list of NTFPs of commercial value (Table 1). Due to the fact that the Chestnut fruit is on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species and considering the principles of sustainable extraction, the long-term commercial worth of the product (chestnut fruit) is not addressed. Cherry plum, on the other hand, is not a wild culture species; it spreads organically from gardens and is planted in forest areas. Because most cherry plum fruit is collected in gardens, yards, and private areas, cherry plum is not classified an NTFP.

## Resource assessment of five target NTFP species

Based on field visits and interviews with local stakeholders (collectors, foresters, government authorities, etc.), Ozurgeti municipality was identified as a distinguished municipality for the extraction and processing of NTFPs. Specifically the following villages adjacent to the mountain slopes of Bakhmaro were considered in the assessment: Shekarini, Gomi, Vajikvari, Odasikedi, Askana, Mtispiri, Makvaneti, Gogieti, Laituri, Daba Naruja, Silauri and Nagomari.

The primary NTFPs gathered by the Ozurgeti communities for both personal use and sale were identified as a result of discussions, interviews, and field visits with community representatives, farmers, interested parties, and the population in the villages in Ozurgeti municipality.

As a result, five NTFP varieties were selected: blueberry, blackberry, spineless butcher's broom, flat leaved ragwort, and chestnut. These species are most often harvested in the Guria region and offer potential for economic growth on both the local and global markets. The most common resource among those harvested is blueberries, which are picked for both consumption and sale. Micro processing businesses purchase blueberries from the local populations, and process, brand, and sell them in both domestic and international markets.

In general, blueberry fruits and leaves are collected in the territories of Ozurgeti and Chokhatauri municipalities. From the villages of Ozurgeti, it is worth noting: Shemokmedi, Gomi, Mtispiri, Vakijvari, Makvaneti, Askana and other villages located 300-350 m a.s.l., which are geographically bordered by forests. For blueberry tea, the leaves are collected from all four species (see below), but for the most part from the *Vaccinium arctostaphylos* species. Tea leaf collection begins in early spring, after the snow has melted. Fruits are collected from all four species almost until the end of September. Based on the observations during the field trip, blueberries were distributed at 350 m a.s.l.. On the roadsides near the villages, the population collects the leaves for personal purposes, and in the higher forest, they are collected for sales purposes. Collection of leaves leads to a decrease in fruit yield, sometimes flowering and fruiting are no longer possible at all, which was confirmed by the population in the conversation. Therefore, it is necessary to evaluate resources, establish quota on blueberry tea leaves and fruits, and establish rotational-alternating collection systems.

**There are four blueberry species distributed in Guria, described in further detail below.**

1. *Vaccinium arctostaphylos* L. - Caucasian whortleberry
2. *Vaccinium myrtillus* L. - Blueberry
3. *Vaccinium vitis idaea* L. – Lingonberry
4. *Vaccinium uliginosum* L. - Bog blueberry

<sup>3</sup> Nizharadze, Buchukuri, 1977.

*Vaccinium arctostaphylos* L. - Caucasian whortleberry



**Botanical Description**

The Caucasian whortleberry belongs to the blueberry (Ericaceae) family. It is a 2-4 m tall shrub or deciduous tree, with reddish-white bell-shaped flowers. The fruit is a black berry. *Vaccinium arctostaphylos* L. flowers in May-June and bears fruit in September.

**Distribution**

It grows as undergrowth from sea level up to 2200 m, in the mixed-leaved, broad-leaved, dark-leaved forest belt, beech forest, spruce-fir forest, pine forest and subalpine birch forest.

*Vaccinium myrtillus* L. - European blueberry



**Botanical Description**

The European blueberry belongs to the blueberry (Ericaceae) family. It is a branched bush growing up to 50 cm high. Underground sprouts grow in the soil in different directions up to 1-2 m long, from which bushes of different ages develop. The leaves are thin, light green, 1-1.5 cm long, 0.5-1.5 cm wide, glossy, with finely serrated edges. The flowers are pale pink, with a greenish-orange or soft purple hue. The fruit is a spherical black berry, 6-10 mm in diameter, with a pleasant sweet-sour taste, covered with a changeable flake, with egg-shaped seeds up to 1 mm in size. The plant blooms in May-June, the fruit ripens in July-August.

**Distribution**

It is widespread in the highlands of Georgia, in the sub-alpine and alpine belt in the deciduous forests, on the meadows.

*Vaccinium vitis idaea* L. – Lingonberry



**Botanical Description**

The lingonberry belongs to the blueberry (Ericaceae) family. It is an evergreen shrub with spreading or raised branches, the leaves are leathery, short-stalked, elliptic or obovate, 3 cm long, 2 cm wide, dark green on top. The flowers are bell-shaped, white or pink. The fruit is a spherical, glossy berry with a diameter of up to 8 mm. The seed is greyish-red colour. The plant blooms in May-June, the fruit ripens in August-September.

**Distribution**

Red blueberries grow in subalpine and alpine forests on meadows, in Rhododendron, Dekian zones and on rocks.

*Vaccinium uliginosum* L. - Bog blueberry



**Botanical Description**

Widespread in the subalpine zone at 2400-2600 m a.s.l. commonly grows with blueberry (*Vaccinium myrtillus*) in Caucasian rhododendrons (also known as Deka in Georgia). Breeds in stony areas.

### **Distribution**

Areas of Distribution - Sakornia, Khino, Sarbiela, Maksvalta.

### **Types of use**

As food, blueberries are used both raw and processed. The fruit can be used for preparing jam, juice, compote, and can also be kept frozen. They are widely used in the food industry to make fruit wines, liqueurs and other drinks. Due to their high pectin content, excellent jellies are made from blueberries. Tea is made from its leaves.

Blueberry has been used in folk medicine since ancient times. A decoction of blueberry fruits is considered a gastrointestinal regulating agent. Neomirtidine, a glucoside contained in blueberry leaves, significantly reduces blood and urine sugars and is recommended for the treatment of diabetes.

The fruit is also used as an excellent dye for technical purposes. By adding acid or alkali, dyes of different colours are obtained. It is also a honey plant - blueberry honey has unique properties as well, containing more antioxidants compared to other types of honey and highest levels of flavonoids for immune and anti-inflammatory benefits<sup>4</sup>.

### **Sustainable Harvesting (fruit)**

Blueberries can be harvested by hand or with harvesting tools. Fruit selection is carried out before drying. Collected fruits must be ripe, dry and clean. However, if blueberries are to be transported over long distances, it is preferable to collect them when they are less ripe. It is also not desirable to collect blueberry fruits in humid weather, because wet fruits easily rot. Blueberry fruits, which are to be transported and used for processing, should preferably be collected together with leaves, and if intended for drying or other processing, fruits are collected in a clean form without leaves.

Depending on its use, the blueberry fruit is collected at different times. Fruits and berries are harvested at the peak of maturity to make fruit juices, extracts and syrups. For wine production, blueberry fruits are also harvested in the ripe phase. When the fruit accumulates as much sugar as possible, it has more aromatic substances, essential oils and vitamins.

If blueberries are harvested sustainably they can be collected annually. Blueberry resources may only be harvested if the fruit yield is at least 80%. It is forbidden to cut or break fruit-bearing branches while collecting blueberry fruits. It is recommended to use a berry picker when collecting raw materials.

### **Sustainable Harvesting (Leaves)**

Blueberry leaves should be collected throughout the flowering period of the plant. Fully developed leaves located in the middle and lower part of the stem should be collected. For sustainability purposes, no more than 30% of the leaves in a certain area should be collected.

### **Commercial use**

Wild blueberries are actively harvested in the mountainous villages of Guria, and they are delivered to enterprises both in Guria and neighbouring regions. In total, about 15-20% percent of the blueberry resource stock in Guria is being exploited.

According to local farmers, the total resource stock of blueberry in the region is impossible to count. However, every year in Guria at least 40-50 tons of blueberry fruits are collected, with a potential for more. In 2022, the price of one kilogramme of wild blueberries (raw) started from GEL 10 (EUR 3.6<sup>5</sup>). Up to 500 locals are involved in collecting blueberries seasonally.

The wild blueberry leaf is as relevant as the blueberry fruit, and it is harvested in the same villages and in large quantities. At least 50 tons are collected every year. The price of raw blueberry leaf started from 4 GEL in 2022, and the price of processed raw material was GEL 80 (EUR 29) per kg. Blueberry leaves are actively used in the production of tea and medicine.

4 <https://www.georgianbayhoney.com/?fbclid=IwAR0IDpEDAw5fsNjYPI51w5xveH6hbHUC24rA3SL1ri3Q-vDeYi42jvKAY-M>

5 National Bank of Georgia - Official exchange rate - 08.22.



**Table 3: Blueberry products (fruits, leaves) collected from 2015 to 2020 in the Guria region**

№	Company	Harvested fruit/leaf	Total Quantity (tons)
1	Geoflower	Fruit	20 tonnes
2	Caucasan	Fruit, leaf	5 tonnes
3	Milmart	Leaf	1 tonne

### Spineless Butcher's-broom (*Ruscus Hypophyllum L.*)



#### **Brief botanical description**

It is an evergreen shrub of the lily family up to 60 cm tall. Its leaf-like branches (cladodium) are 2-4 cm wide and up to 1 cm long, with a short to medium-length blunt spike at the end. The leaves of Spineless Butcher's-broom are highly modified. They are declined and on the lower side of the petioles or cladodes, there is a crust in the middle part, where flowers also develop. The dioecious greenish or whitish flowers sit in clusters on the underside of the cladodium on the midrib. After flowering, a ball-like red berry fruit develops.

#### **Distribution**

Spineless Butcher's-broom grows mainly in damp forest glades, in the regions of Western Georgia up to 1800 m a.s.l. In eastern Georgia it is only found in the Borjomi valley.

#### **Types of use**

It is worth noting the fact that cladodiums do not change their shape and bright green colour when dried. Therefore, it is of special interest for flower shops. Some flower shop manufacturers in various regions of Western Georgia have been unsustainably exploiting the plant. This plant is widely represented in terms of area, however, its stock is small, and has decreased even more sharply in the last decade due to the above-mentioned plant characteristics.

In the Guria region, Spineless Butcher's-broom is widespread in river valleys, it is a relict plant. The plant is not abundant, but the population collects it. The harvesting is primarily conducted in the villages connected to the mountains of Ozurgeti Municipality, in the wetland valleys

of the rivers (Shekardani, Gomi, Mtispiri, Vakijvari, Makvaneti, Askana and other villages located 300-350 m a.s.l. which are geographically bordered by forests). The existing stock in the forest is at least 50 tons, of which only about 20 percent is utilized.

#### **Commercial use**

Spineless Butcher's-broom is used to decorate bouquets. A portion of the harvest is sold in the local market, while the majority is exported to Armenia and Ukraine. It is sold by bundles with 1 bundle consisting of about 100 stems and weights 4-5 kilograms. The market price of 1 bundle in 2022 was GEL 4.5(EUR 1.8). Up to 150 locals are seasonally engaged in harvesting.

#### **Sustainable harvesting**

It is necessary to make inventory, quotas and rotational-alternating collection.

### Blackberry (*Rubus fruticosus L.*)



#### **Brief botanical description**

The plant belongs to the rose family. It is a bushy (or semi-shrubby) plant with acutely curved prickly shoots, the length of which is up to 1.5 m. The flowers are large, up to 3 cm in diameter. The fruit is made up of individual seeds with multiple heads, which are attached to each other and to the flower seat by the roots, black in colour, with ash flakes. Blackberry blooms in June-July, the fruit ripens in August-September.

### **Distribution**

There are 37 species in Georgia, 27 of them are endemic. *Rubus fruticosus* grows on forest edges, meadows, bushes, on the banks of roads, rivers and streams.

### **Types of use**

Blackberry fruits, leaves and roots are used for treatment (diarrhea, inflammation, ect,). Blackberry fruit contains 3-5% sugar (glucose and fructose), up to 1.5% organic acids (malic, citric), tannins, pectin, cellulose, vitamins of group B, carotene, ascorbic acid, as well as a lot of potassium salts, copper, manganese. The leaves contain tannins, flavonoids, vitamin C, organic acids, and a small amount of essential oil. Ripe blackberry fruit and juice are used to quench thirst, colds and high temperatures. Ripe fruits are used both as food and as a laxative in case of constipation, and the pulp is used as an astringent.

### **Sustainable harvesting (fruit)**

Blackberries can be harvested by hand or with harvesting tools. If the blackberry fruit is to be transported over a long distance, it is preferable to collect it when it is less ripe. It is also not desirable to collect blackberry fruits in humid weather, because wet fruits easily rot. Collected fruits must be ripe, dry and clean. Fruit selection is done before drying. Blackberry fruit, which should be transported and used for processing, should preferably be collected together with leaves, and if it is intended for drying or other processing - the fruit is collected in a clean form, without leaves.

Depending on the use of blackberry fruit, it is collected at different times. For example: to make fruit juices, extracts and syrups, fruits and berries are harvested in the phase of full fruit maturity. To make wines, blackberry fruits are also harvested during the ripening phase, during the accumulation of as much sugar as possible, when there are more aromatic substances, essential oils and vitamins.

Under conditions of sustainable collection, harvesting of blackberry fruits is allowed annually. No more than 80% of the resource can be collected. When collecting blackberry fruits, it is forbidden to cut or break fruit-bearing branches. It is recommended to use a berry picker when collecting.

### **Sustainable collection (leaf)**

Blackberry leaves should be collected throughout the flowering period of the plant. Fully developed leaves located in the middle and lower part of the stem should be collected. No more than 30% of the resource can be collected for sustainability purposes.

### **Commercial use**

Fruits are collected in almost the entire territory of the municipality, both in agricultural plots, in abandoned tea plantations and in the territory of the forest fund (mainly

in cleared degraded areas). Fruits are mainly collected for personal consumption and local market. There are no processing enterprises. In the last 3-4 years, tea making from small amounts of blackberry leaves has gained ground. They are mainly bought by tourists and also taken abroad. Up to 15 species of blackberries grow in Guria, resources are plentiful, and it is possible to pick them without quotas.

### **Flat-leaved ragwort (*Senecio rhombifolius* (Willd.) Sch. Bip. *S. platyphillus* D.C.)**



### **Brief botanical description**

It belongs to the family of flowering plants. Flat-leaved ragwort is a long-rooted perennial plant lying horizontally in the soil. The height of the flowering, heart-filled stem is 100-150 cm, in some places it reaches 200 cm, which is round in circumference and thinly grooved along its length.

### **Distribution**

It blooms between July-September. It is usually found within the subalpine lichen and weeds (tall grass). It grows in subalpine low-frequency deciduous and coniferous forests. It is more abundant in forest streams and low-lying moist areas.

In Georgia, it grows in the upper and subalpine forest belt, Adjara, Svaneti and Abkhazia. More often, at an altitude of 1500-2500 m a.s.l. Alkaloids (platyphyllin, seneciphyllin, neoplatyphyllin, saracin) are found in all parts of this plant.

### **Commercial use**

The "Platyfillin hydrotartrate" is obtained from the roots and the above-ground parts of the plant, which is used for spasms of the abdominal muscles, also used for stomach and duodenal ulcers, bronchial asthma, hypertension, angina pectoris, blood vessel spasms, as well as in ophthalmology to dilate the pupil of the eye. In 2022, the delivery price of primary raw materials was GEL 0.90-1.20 per KG

(EUR 0.4)<sup>6</sup>. Resource extraction takes place mainly in high mountain villages: Bakhmaro, Zoti, Chkhakoura, Kvalgha.

### ***Sustainable harvesting (roots)***

No more than 20% of Flat-leaved ragwort available in the area can be collected. Extraction of plant roots and stems is not allowed in erosion-prone, riparian, soil protection areas of forests, as well as in young (frequency 0.8-1.0) and uncultivated crops. The roots and stems of the Flat-leaved ragwort should be collected with shovels and secateurs at the end of the plant's growing season. When the above-ground parts begin to wither, it is quite difficult to find the plant after the above-ground parts of the plant have completely died. It is also possible to collect before the plant begins to grow in early spring. When extracting the roots and stems of the plant, the remnants of the above-ground parts should remain.

### ***Chestnut (Castanea sativa)***



#### ***Brief botanical description***

A 30-35 m tall species of the beech family, chestnut trees have spreading, branching stems. It is listed as a vulnerable species on Georgia's Red List.

#### ***Distribution***

The Caucasus, Central and Southern Europe, and Asia Minor are among its general distribution regions. It is widespread in the forests of the higher and lower mountain belts in Georgia.

Chestnut (*Castanea sativa*) is widely distributed in the municipality of Ozurgeti and across the floristic area of Guria from 60-100 m to 1200-1400 m above sea-level. It can be found in groups of chestnuts that are both pure (monodominant) and mixed (polydominant).

#### ***Commercial use***

Chestnut has been used as a building material for furniture, fences, poles, and other goods since old period

as it is a tree with high quality timber. Huge portions of the mountain chestnut trees were destroyed by flagrant breaches of the exploitation and maintenance norms for chestnut forests, and they were gradually replaced by secondary woods, primarily with Hornbeam (*Carpinus caucasica*). In addition to being a substantial source of timber, chestnut woods contribute to maintaining the ecological balance on mountain slopes.

Because chestnut produces honey, beekeepers cultivate it practically everywhere and on all sorts of soil. Particularly significant is chestnut fruit, which is an income source to Ozurgeti's population.

Fruits are harvested in almost every community in the municipality, for example, beside tea plantations, along roadsides, on particular trees in river valleys and small streams, and in chestnut forests on forest fund lands. Chestnuts cultivated in gardens are also harvested in some regions (Guria, Samegrelo, Adjara, Kakheti and Imereti). The populace gathers for their own use, sells on the local market, and exports, primarily to Armenia.

One of the prevalent chestnut towns is Nagomari, where 10 tons of chestnuts or 50% of the existing forest area are collected annually. In the town of Najuri, up to 5 tons of chestnuts were taken in 2022 equalling almost 50% of the local supply, chestnuts are also harvested. Other adjacent towns also benefit the popularity of chestnut harvesting and distribution, with an annual average harvest of 40–50 tons. Since the resource has not yet been counted and studied, it is difficult to provide a precise estimate of the total stock of chestnuts in Ozurgeti municipality.

#### ***Sustainable harvesting***

Chestnut trees have recently suffered significant damage in Georgia (as well as in other nations) from a variety of insect infestation (i.e. chestnut moths, horse-chestnut leaf miner). As a plant on the red list, chestnuts need to be quoted and monitored to ensure that there is sufficient fruit for forest reproduction.

#### ***Gender distribution in the collection process***

Compared to other forest resources, including timber, the percentage of women who collect non-timber forest resources is greater. According to the interviews conducted the "Georgian Forest Product" Association, more than 3,000 persons are employed seasonally throughout Georgia for gathering NTFPs in raw form and delivering them to respective enterprises. Furthermore, the majority of collectors are women, with 70% of collectors being female and 30% being male. In addition to collecting, the same poll discovered that the 30 organizations interviewed employ an additional 400 individuals in processing (processing plants, warehousing enterprises, etc.), with a higher share of employees being women (about 70%).

<sup>6</sup> National Bank of Georgia - Official exchange rate - 08.22.

The situation is nearly the same in the Guria region, where women account for approximately 70% of collectors in the harvesting (blueberry leaves, blackberry leaves, Butcher's Broom) and processing steps (in tea processing facilities). The majority of people engaged in the harvesting and processing of NTFPs are between the ages of 40 and 60, and they work both in firms (production, bending, drying, distribution) and in the field (collection of wild plants). According to the same findings, women are more likely than males to utilize non-timber resources for social or economic reasons, and it is feasible to mobilise more women in this direction. This can be attributed to many reasons. Women perform a variety of duties along the value chain, but their roles are often underappreciated and undervalued, owing to the fact that they work in the informal sector, are part-time employees, or carry out their activities at home. There are many barriers to promoting women's empowerment but Gender-based and social-cultural obstacles are particularly difficult to overcome.

It is advised that informal sector of the NTFP be recognized in order to improve women's financial well-being. Furthermore, as NTFP commercialization progresses, an attempt to expand processing and production may be connected with the introduction of new technologies; consequently, great attention should be taken to ensure that men do not displace women in this event. However, these recommendations can be associated with risks (i.e. willingness to declare revenue, taxation, etc.), therefore, further studies are required to assess the dynamics of women involvement and their empowerment in the NTFP sector.

In terms of revenue, the prices of NTFPs are determined by their quality and yearly season, the revenue per kilogramme of harvest is defined by the price of the product throughout the collection process, and the income per kilogramme is the same for both men and women.

In addition to working with businesses and delivering wild NTFPs, physical collectors also offer local tourists wild blueberries and raspberries by the kilogramme, which is considerably more common in high-mountain resort regions. In Bakhmaro, for example, practically all of the blueberries are sold on the spot and purchased by tourists. Harvesters claim that at such periods, the products are more lucrative and are sold at a greater price.

## Five most promising NTFPs in terms of commercial and economic potential

The "Georgian Forest Products" Association conducted interviews with local NTFP product collectors in the Guria region. The interviews were designed to determine the five most promising NTFPs in terms of commercial and economic potential. The potential of the identified NTFPs was assessed for both domestic and foreign markets. The product selection approach is based on a diverse set of criteria: 1) the product's capacity and resources; 2) the product should not be on the IUCN Red List; 3) the prices of the products in terms of profitability; 4) logistical considerations (such as transportation needs and storage conditions). The EU is going to be considered the most attractive export destination for Georgian NTFPs.

The majority of the NTFPs being produced in Guria is wild blueberry and blackberry leaf tea (Chai Nagomari, Chai Shekarini). Tea that has already been processed and sorted is sold through local trade networks. Raw materials are transported to company warehouses unpacked, then dried and sorted into bags. The percentage of blueberry and blackberry leaves grown in Guria sold in the local market (packed tea) is roughly 15%, with the remaining 85% dried and sorted items sent to the EU and Russian markets. Aside from the domestic market, a portion of the packed and branded tea raw materials are shipped to Russia.

95% of the dried leaves are transported to Germany and Poland, which are the top importers of wild blueberry and blackberry leaves into the EU. Large companies based in the neighbouring areas of Imereti (Ltds "Geoflowers", "Farkon", and "Caucasan") and Adjara (Ltd "Eukafarm") acquire the NTFPs harvested in Guria. "Geoflower" obtains the largest amount of Guria blueberry and blackberry leaves (up to 15 tons). The price of packaged blueberry and blackberry leaves in the local market is GEL 70-80 (EUR 30<sup>7</sup>) per kilogramme. On the EU market, dried blueberry and blackberry leaves cost between EUR 30-35.

While local market sales prices do not differ significantly from raw material export prices, local producers explain that export is far more profitable because it does not necessarily require additional human resource and material costs for packaging and branding, as well as entry fees to trade networks, which are extremely high and frequently, as medium-sized enterprises state, are unable to pay. Furthermore, export has a far greater potential since there is a significantly higher demand for the goods and moving large quantities of goods reduces expenses.

Wild blueberry fruit harvesting is a time-consuming and labour-intensive process that takes place mostly in Guria's highlands, with Adjarians accounting for around 80% of harvesters. 40% of the wild goods are sold on the spot (to

<sup>7</sup> National Bank of Georgia - Official Exchange Rate of 1 EUR to GEL 2.85 - 08.22.

Bakhmaro vacationers, e local people). The raw blueberry price ranges on average between GEL 15- 40 depending on the season. The remaining fruit is collected by Georgian pharmaceutical and tea enterprises in Georgia. It is impossible to differentiate the amounts harvested from Guria since Adjara harvesters blend the volumes of blueberries collected in Guria and Adjara and sell them together. However, the survey of companies and collectors shows that from the total volume, about 15-20 tons of berries are collected in the highland villages of Guria.

Butcher's Broom is often collected by locals. Collectors claim that Butcher's Broom collection fell in 2021-2022, citing the COVID-19 pandemic as the cause for onerous export regulations. Additionally, in 2022, export chances with one of the biggest importers, Ukraine, were lost due to the war ignited by Russia.

Butcher's Broom is mostly exported in three directions: to Armenia, Russia, and Ukraine. Up to 50–60 tons of Butcher's Broom were gathered and shipped between 2015 and 2020.

Only 20 tons of Butcher's Broom were gathered in 2022, which was half of the number harvested the previous year. According to locals, one of the reasons for the fall in harvesting Butcher's Broom is that it is utilised for recreational purposes as well as a decorative and packing material. Butcher's Broom was relatively uncompetitive in the previous five years (2017-2022), its usage was more popular. However, the use of other evergreen decorative plants (species) is progressively becoming popular, diminishing the need for Butcher's Broom in recent years.

Blackberry leaves are gathered in small quantities but are marketed on both domestic and international markets. Guria's wild blackberry leaf collection, on the other hand, has begun since the introduction of harvesting wild blueberry leaves. Every season since 2021, blackberry leaf harvesting amounted to a total of 4-5 tons. A kilogramme of blackberry leaf costs about the same as a kilogramme of blueberry leaf, with prices ranging from GEL 3 to 4 (EUR 1.6).

#### List of the five identified NTFPs in Guria

The following five products are considered the most promising in the Guria region in terms of economic and commercial prospects, both on domestic and international markets. The five NTFPs with the greatest economic potential were chosen using the following criteria:

- The degree of interest and seasonal engagement of Guria's local collectors.
- The number of products generated annually by local businesses.
- Revenues from product manufacturing.
- Market demand, including pricing and quantity; volume of the value chain.
- The number of stocks in the forest.

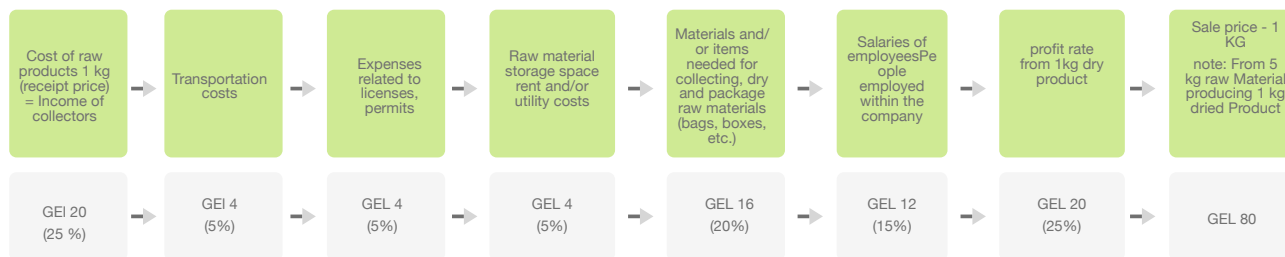
**Table 4: NTFPs identified in the Guria region**

Wild Blueberry Crop Latin Name: <i>Vaccinium angustifolium</i>	Wild Blueberry Leaves Latin Name: <i>Vaccinium angustifolium</i>	Wild Blackberry Leaves Latin Name: <i>Rubus moluccanus</i>	Butcher's Broom (ძმერხლი) Latin Name: <i>Ruscus aculeatus</i>	Ragwort (ხარისშუბლა) Latin: <i>Senecio rhombifolius</i>
HS <sup>8</sup> Code: 081040	HS Code: 121190	HS Code: 121190	HS Code: 060290	HS Code: 060290
Price in Georgia (primary fresh products): 1 kg – 10+ GEL	Price in Georgia (primary fresh products): 1 kg – 4 GEL	Price in Georgia (primary fresh products): 1 kg – 3-4 GEL	Price in Georgia (primary fresh products): 1 bunch – 4.5 GEL (1 bunch=4-5 kg)	Price in Georgia (primary fresh products): 1 kg – 0.9 GEL

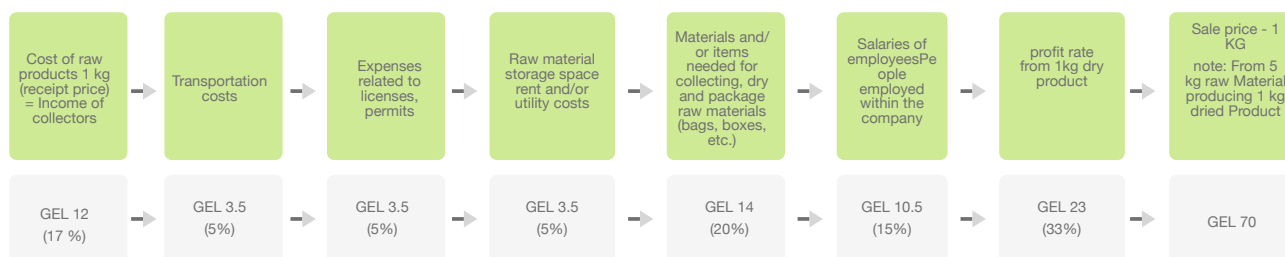
During the interviews, the interviewed companies provided detailed information related to sales and delivery prices, as well as existing costs. This information was used to analyse the value chain of products related to blueberry and blackberry leaves in Guria.

The table summarises the costs incurred by NTFP processing enterprises in the manufacturing of finished goods. Each cost (shipping, packing, etc.) is determined in proportion to the end product's selling price per 1 kg of dry raw material. It should be noted that 4-5 kilos of raw blackberry and blueberry leaves are required to produce the final 1 kilogram of dried product. This fact is taken into consideration when calculating expenses. In addition to the prices, the table highlights the collectors' share, which is the cost of delivering basic raw materials to the firm per 1 kg. The profit margin is calculated after subtracting all expenditures from the stated data. The percentage distribution and percentages in the table are based on data given by the blueberry leaf and blackberry leaf receiving firms.

**Figure 1: Value Chain of Wild Blueberry Leaves (Company Costs, Revenues, Profits and Incomes of Collectors and Company Employees)**



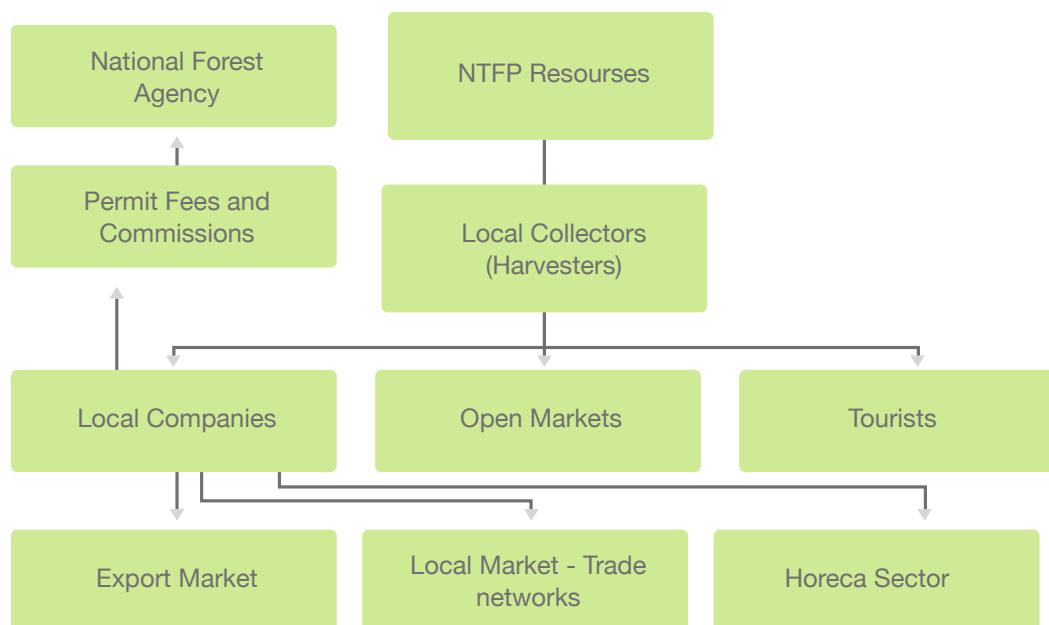
**Figure 2: Value Chain of Wild Blackberry Leaves (Company Costs, Revenues, Profits + Incomes of Collectors and Company Employees)**



According to the figure 1, which is based on information supplied by the companies, the income earned for 1 ton of dried blueberry leaves (equivalent to five tons of raw materials) is 80,000 GEL, with the company profiting 20,000 GEL. The harvesters' share of the 80,000 GEL is 20,000 GEL for products made from 5 tons of raw materials. Furthermore, the firm compensates its employees 12,000 GEL in salary for processing 1 ton of raw materials. Although the company's profit is higher in the case of wild blackberry leaves (figure 2), the proportions are almost same, and the harvesters' and employees' remuneration is lower.

**Table 6: General Value Chain of NTFP Production**

Figure 3: General value chain of NTFP production



There are a number of factors that affect how the NTFP market chains are organised and how formal their interactions are (Figure 3):

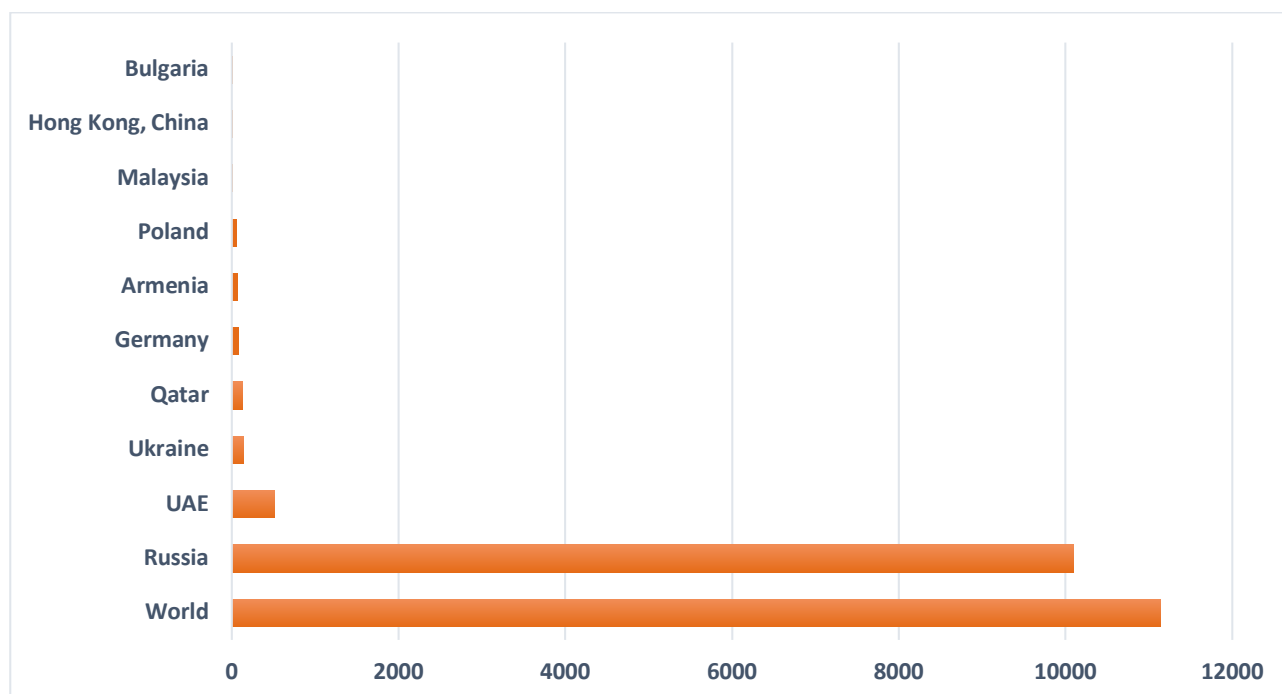
- The interaction between landowners and harvesters as well as the requirement for NTFP enterprises are impacted by the NTFPs size, quantity, and distribution across the forest.

- NTFP processing that occurs before the product is delivered to the ultimate customer has an influence on the supply chain layers that are involved in various forms of processing and value-adding. This includes the number of small-scale processing businesses participating in the value chain as well as the cost of the machinery utilised for NTFP manufacture.
- Seasonality, climate change and other external factors define the calculated desire and capability of companies to collect or purchase NTFPs.
- The National Forestry Agency's annual fee and permit adjustments for businesses that are subject to the new Forest Code must be taken into account in the value chain.

#### Trade statistics

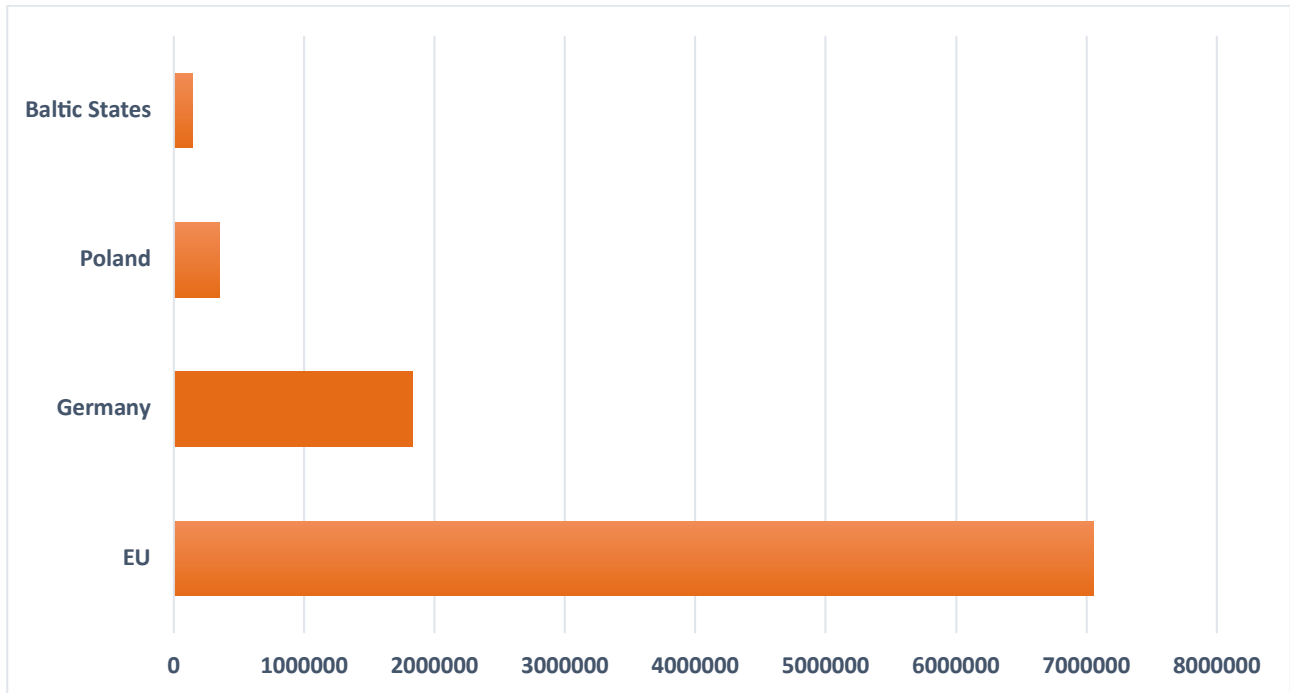
Because many NTFPs do not have their own separate Harmonized System (HS) codes and instead fall under the codes of cultivated species, it is extremely challenging to determine the exact numbers of NTFPs in terms of international trade. For instance, wild blueberries have mixed with cultivated blueberries and lack their own distinct coding. The same applies for blackberries, blueberry leaves, and a variety of other products. Ragwort and butcher's broom are under HS code 060290 and the same applies for leaves of wild blueberries and blackberries. As a result, the statistics presented below are not just for NTFPs but also for a set of products that contain NTFP species.

**Figure 4: Top importing markets for the product exported by Georgia from 2017 to 2021. Product: Fresh blue and red blueberries, and other fruits of the genus Vaccinium (HS code 081040). Unit: US Dollar thousand. (2017-2021)**



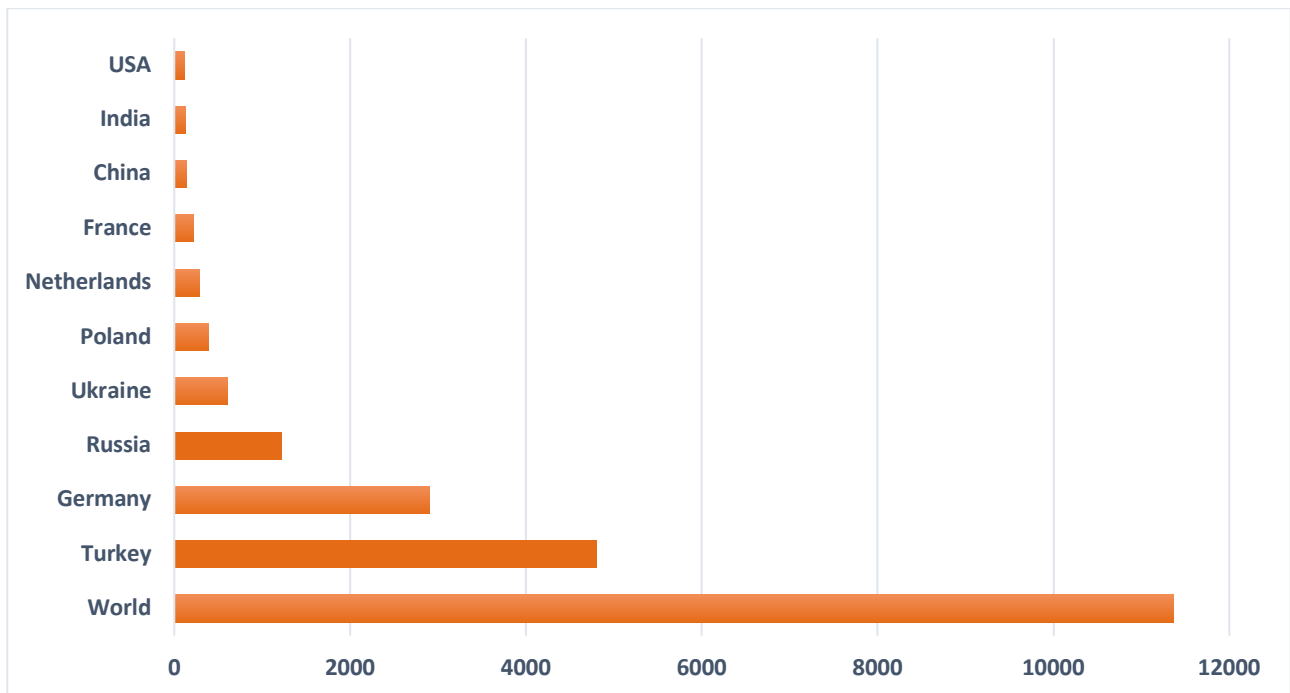
Source: Intracen Trademap

**Figure 5: Imported product by EU and target markets from 2017 to 2021. Product: Fresh blue and red blueberries, and other fruits of the genus Vaccinium (HS code 081040). Unit: US Dollar thousand. (2017-2021)**



Source: Intracen Trademap

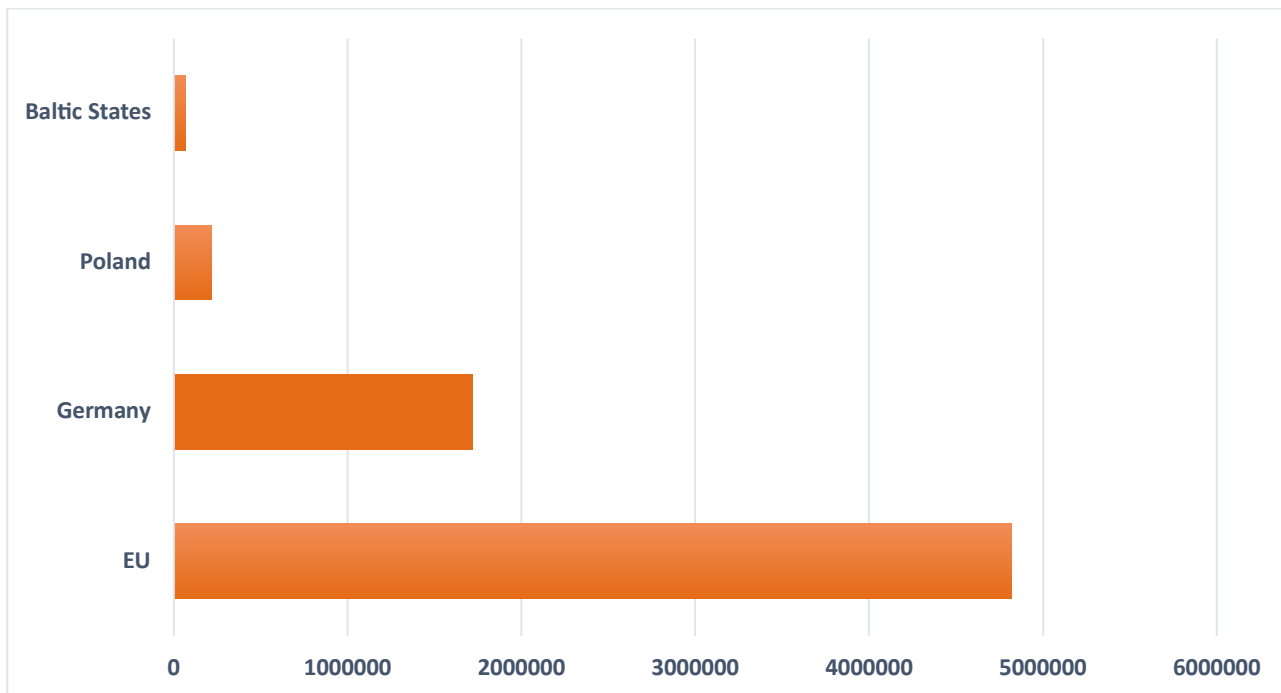
**Figure 6: Top importing markets for the products exported by Georgia from 2017 to 2021. Product: Plants, parts of plants (HS code 121190). Unit: US Dollar thousand. (2017-2021)**



Source: Intracen Trademap

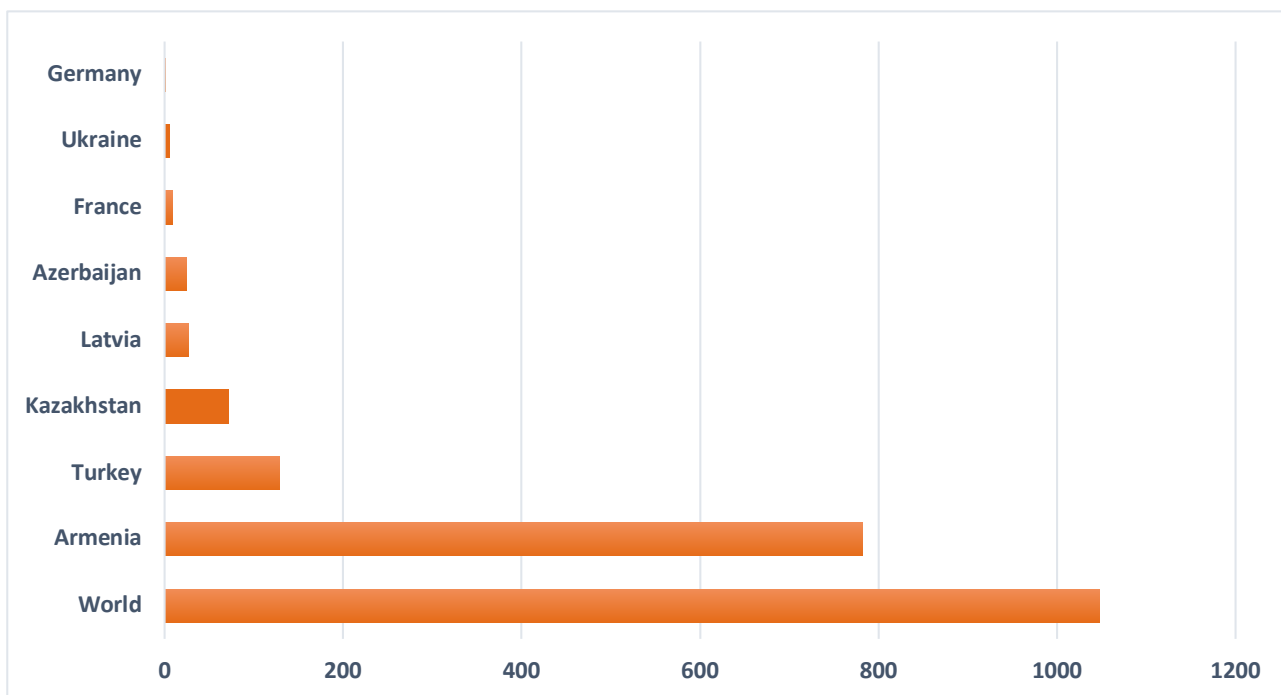


**Figure 7: Product imported by EU and target markets from 2017 to 2021. Product: Plants, parts of plants (HS code 121190). Figure Unit: US Dollar thousand.**



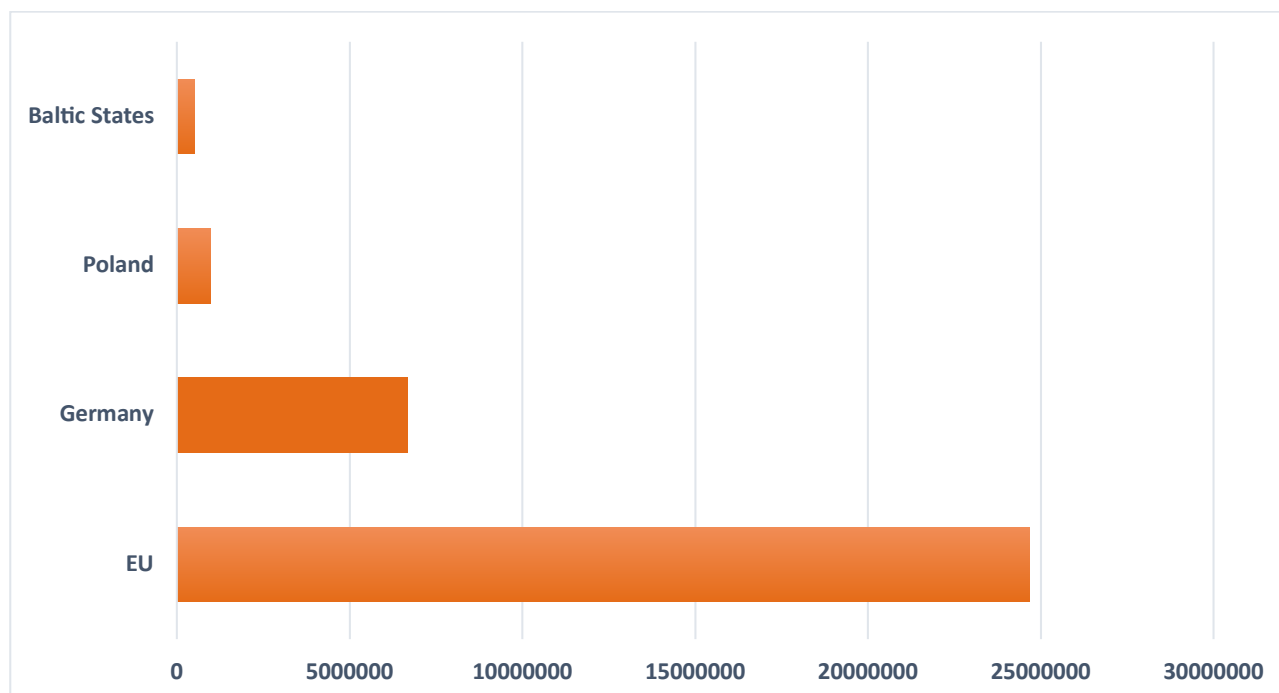
Source: Intracen Trademap

**Figure 8: Top importing markets for the product exported by Georgia from 2017 to 2021. Product: Live plants (HS code 060290). Unit: US Dollar thousand.**



Source: Intracen Trademap

**Figure 9: Imported product by EU and target markets from 2017 to 2021. Product: Live plants (HS code: 060290). Unit: US Dollar thousand.**



Source: Intracen Trademap

The diversification of export markets is one of Georgia's most challenging problems. A significant portion of blueberry crop is sold to Russia. It is advised to focus on established and stable markets. In general, Georgian products have untapped potential in the EU, which should be taken advantage of and converted into a strategy.

### Sustainable harvesting volumes and assessment of potential for cultivation

Based on the data gathered about the production of the Association's member companies and the information provided by the local households, farmers, and collectors in Guria, it is apparent that the extraction of NTFPs is less common, and the quantities and sales are relatively low when compared to other regions in Georgia (for example, Adjara, Mtskheta-Mtianeti, Racha). This is based on a comparison of the collected volumes of NTFPs, where up to 1,000 people were employed in blueberry harvesting in Adjara during the 2022 season. In Guria, Adjarian harvesters collect wilder blueberry fruits than the local Guria population. A survey of the local population in Guria indicated that approximately 150 persons in 10 villages along the slopes of Bakhmaro Gomi Mountain harvest butcher's broom, blueberry leaves, blueberry fruits, chestnut, and blackberry leaves.

The following are the amounts of NTFPs sold, as stated by local collectors and large companies that collect and handle seasonal non-NTFPs from Guria:

- 20 tons of wild blueberry fruits (up to 100 people are involved in the collection)
- 40 tons of wild blueberry leaves (up to 150 people are involved in the collection, including blueberry fruit pickers)
- 30 tons of Butcher's Broom (up to 100 people are involved in the collection)
- 15 tons of Ragwort (up to 50 people are involved in the collection)
- 5 tons of Blackberry Leaves (collected by up to 50 people, including blueberry collectors)

In Guria, extensive plantations of wild blueberries are cultivated in the villages around Ozurgeti Municipality. No separate figures for wild blueberries are available since they share a single identifying code with cultivated blueberries. However, based on interviews with a number of stakeholders, the percentage of wild blueberries in Georgia's overall market and in Guria is negligible (To note, 2,100 hectares of blueberries are planted in Georgia, and there are many orchards under construction).

Financially, between 2020 and 2022, the profits from the sale of blueberries (both wild and cultivated) was 3.769 million USD (EUR 3.769 million), with 363 tons of blueberries sold. Compared to 2020, the number of blueberries sold for the year 2022 exceeds 1,600 tons, and the income received is USD 8 million. Cultivated blueberries have an average export price of USD 6.5 (local price GEL 8-10 GEL/EUR 3.3).

In terms of price, wild blueberries are much more valuable than cultivated ones. According to the information provided by farmers, in 2022 the price of cultivated blueberries started from 8 GEL, while the sales price of wild

blueberries started from GEL 20 (EUR 7.3), and in some cases the income from wild blueberries exceeded Gel 40 (EUR 14.7).

The information supplied by local collectors and the data provided by the companies shows the percentage of wild blueberries in Georgia's overall blueberry output does not surpass 5% where 95% is cultivated. It should be stated that only blueberries are cultivated in Guria. The remaining NTFPs are gathered in the forest (butcher's broom can be found in yards for recreational uses).

## Needs assessment and recommendations for nature-positive investment

### Market Access Requirements

The standards and procedures that apply to goods produced in EU Member States must be met by imported products (processed & non-processed). Products packaging and labelling, maximum residue levels of pesticides (if applicable), hygiene and other specific requirements have to be considered when targeting the EU market. Providing the highest levels of safety for its citizens is a top policy priority for the EU. In order to assure the safety of imported or locally manufactured food products, exporters must prove that their goods are fit for use and adhere to the EU's General Food Law<sup>9</sup> (in the case of food products). Products are not allowed to enter the EU market if compliance is not met. Exporters are required to have a traceability system in place along the whole supply chain per the General Food Law's legal framework. This is done so that the quality of food products may be verified from consumer to producer through the use of a traceability system. The EU mandates exporters to remove or recall any commodities that are no longer fit for use after they enter the EU market. Additionally, the EU is legally required to be immediately notified of this, so they may monitor the situation and take the necessary steps to maintain food safety. If this is not done, commercial relationships with EU customers may collapse, and the company's reputation in the EU market may suffer.

Plant health regulations apply to plant origin products transported to the EU. The European Commission has adopted phytosanitary measures to limit the introduction and spread of organisms that are harmful to plants and plant products in Europe. These regulations are managed by the respective food safety agencies in the importing and exporting nations.

### Organic Products

Currently, there are two different systems for importing organic products from third countries (developing non-EU countries) into the European Union:

1) Recognition (equivalence) of third countries by the European Union: countries whose organic food production system complies with the principles and standards of organic production of the European Union.

2) Recognition of controlling and certifying bodies/institutes by the European Union: the equivalence of specific countries is not recognised by the European Union, but the European Union individually grants the right to control and issue an organic certificate (equivalence) to the certifying body or bodies operating in this country, within the scope of their competence.

In Georgia, [Caucascert LLC](#) is the responsible and authorized body for organic certification. ([European Commission](#)).

### Labelling

If the product is manufactured outside of the EU's borders, the importing company is responsible for the accuracy of the information on the food label. As a result, importers are constantly communicating with exporters about labelling issues and double-checking label information. Food-related information should not be misleading. It should only provide characteristics about the food that do define it. Food characteristics including its nature, type, quality, composition, quantity, expiration date, country of origin or place of origin, production method, or manufacturing process, must not contain misleading information. Aside from the legal requirements, it is vital to confirm the aesthetic side of the label with the importer (design, fonts, colours etc.). The language of the label should be the official language of the importing state. Bilingual labelling is also common, however the importer should verify the second language. The following subjects should be included on the label:

- Product Name
- Net Quantity
- Maximum Durability Date
- Storage Conditions
- Country of Origin
- Instruction of Use
- Lot Number
- Nutritional Facts (if applicable)

When exporting large quantities, the necessary information should be printed on stickers and attached outside the packaging materials. Importers are sometimes required to provide label information in the form of printed separate documents (European Commission: [Access2Markets](#)).

### Packaging

It is of great importance that the quality of the raw materials used in the production of packaging materials corresponds to the requirements that apply in a specific importing country of the EU. For example, whether the

<sup>9</sup> EU General Food Law: [https://food.ec.europa.eu/horizontal-topics/general-food-law\\_en](https://food.ec.europa.eu/horizontal-topics/general-food-law_en).

packaging material is recyclable and biodegradable. In the absence of similar types of packaging materials, the least harmful options for the environment should be chosen. Retail and wholesale chains try to take environmental protection into account as much as possible and buy only properly packaged products from their suppliers. Food packaging materials must meet the regulations of the importing country, and the importer may request a certificate of conformity for the quality of the packaging materials. The certificate of conformity is issued by the packaging material manufacturing company (local and/or imported). Also, compliance can be determined based on laboratory analysis. (European Commission: [Access2Markets](#)).

### Market Trends

Below are the quality criteria that determine the market trends on NTFPs.

- **Focus on health:** Consumers in the EU are being more attentive and aware to their daily eating habits. People may attempt to eat healthier foods and strengthen their immune systems, for instance. After the COVID-19 pandemic, this trend has become increasingly prominent (Kartari, A., et. Al., 2020)<sup>10</sup>.
- **Swift delivery:** Retail and wholesale chains wish to collaborate with vendors who can transport goods speedily. Especially the increased logistics expenses caused this situation.
- **Quality of the products:** The organic market is expanding internationally, particularly in the EU<sup>11</sup>. People are increasingly seeking organic goods from grocery stores and other food-related businesses, and organic stores and restaurants are rapidly expanding.
- **Environment:** In addition to personal health concerns, EU consumers are cautious when it comes to environmental issues. Customers attempt to purchase products with minimal packaging, read the labels, and pay attention to how the goods are processed, among other things<sup>12</sup>.

It is necessary to take customer purchasing patterns into account, therefore following market trends is a reliable strategy to increase income ([CBI](#)).

## Recommendations

### Policy Recommendations

The first official recommendations were made in 2021, within the framework of the “Green Budget Project” approved by the Environmental Protection and Natural Resources Committee of the Parliament of Georgia, which was prepared by CENN with the support of the Austrian Development Cooperation (ADC). The recommendations included establishing payment systems for NTFP collection and selecting forest areas based on a forest management plan and an annual action plan by a forest managing agency. Furthermore, the “Green Budget” emphasized the significance of revising RDA (formerly ARDA) programs in funding, stimulation, education, marketing, and other sectors to integrate the sustainable use of forest resources, which is in accordance with the new rural development strategy of Georgia and the European legislative classifier of “agricultural.” This necessitates the development of an action plan that incorporates strategic goals and approaches at the level of objectives and actions. It should be highlighted that, as stated in the Assessment, the recommendations have been partially met because there is a set fees for NTFP collection. To elaborate further, in discussions with the companies operating in the Guria region and the collectors of NTFPs, there is quite a lot of potential and interest in the following state programmes: provision of effective extension services to farmers; providing agricultural cooperatives with equipment; promotion of modern orchards; promotion of Georgian tea production; co-financing the purchase of harvesting equipment for farmers; development of quality schemes at national and regional level; implementation of international standards and promotion of products; support for the promotion of Georgian agro-food products/carrying out events; and credit/leasing co-financing.

Concerning the potential role of NTFPs in rural development and diversification of the local economy in Guria, the absence of state support in this direction is important to note. In this respect, a suitable option might be the expansion of the RDA’s business development promotion programs in the agricultural sector. Support programs should be tailored to the size and capabilities of businesses (start-ups, small, medium, and big), and programs should be adapted to specific regional challenges. At this point, the programs that are available are oriented to large businesses since they fit the requirements (required financial resources for participation, ownership of a plot of land, etc.). Small start-up enterprises cannot meet these standards since they lack the significant funds necessary for taking part in RDA programmes. In this regard, it is critical to collaborate with the Forest Products Association, MEPA, RDA to alter current programs. Since there is still no separate NTFP support programme and in-

<sup>10</sup> COVID-19 STUDY: European food behaviors, EIT

<sup>11</sup> <https://orgprints.org/id/eprint/44094/1/travnicek-et-al-2022-europe.pdf>; [https://agriculture.ec.europa.eu/farming/organic-farming/organics-glance\\_en](https://agriculture.ec.europa.eu/farming/organic-farming/organics-glance_en)

<sup>12</sup> [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_20\\_331](https://ec.europa.eu/commission/presscorner/detail/en/IP_20_331)

stead, it is integrated with other agricultural activities, the required programme needs to work at the regional level with the representatives of the private sector to respond to the challenges and peculiarities of the individual NTFP sector. RDA currently has two ongoing projects that give assistance to enterprises operating in the NTFP sector: 1) co-financing for storage and processing companies -40% grant of up to GEL 500,000 (Approx. EUR 175,013.00); 2) Within the integrated program of pilot regions, the program can fully finance the interest rate of a business loan for two years and provide a 30% grant for projects valued up to one million GEL and no less than 300,000 GEL (Approx. EUR 105,000.00).

The RDA program adjustment is an ongoing process that primarily affects agricultural sectors. However, there have previously been certain instances where, within the context of existing programmes, forest-related companies have received subsidies and credits. The most successful process development would be driven by individual initiatives supported by the local context based on research. In the context of Guria, identifying important RDA programs and collaborating to upgrade them with a focus on the NTFP sector is key. Technical assistance may also be important in gaining political support. Based on the study's findings, it is suggested to choose from the following RDA programs: national and regional quality schemes, application of international standards, and product marketing. **Thematically, expanding the following programmes is recommended: Bioproduction Promotion Programme to include NTFP products and certification schemes of NTFPs; Georgian tea plantation rehabilitation program to include blueberry and blackberry tea, as well as developing the "wild tea" brand from wild tea plantations, which may also be called a forest product; Plant the Future programme, where the most commercially viable NTFP species list should be elaborated with field experts.**

Georgia must first differentiate and record separately the quantities of wild and cultivated NTFPs sold in local and international markets according to each region of Georgia, allowing for the compilation of official and accurate data of distinct wild products that are currently available. This will allow Georgia to have an appropriate and effective economic and social strategy for the development of the NTFP market as well as to construct suitable and successful programs supporting the NTFP sector per region. To that end, it is essential that the Ministry of Economy and Sustainable Development, in collaboration with the Ministry of Environmental Protection and Agriculture, develop a mechanism for recording NTFPs at the regional level, with GeoStat assigning separate codes and statistics for Georgia's NTFP market.

In the Guria region, micro-processing enterprises gather primarily five types of the aforementioned NTFPs from the local area and process/sell them on both domestic and international markets. However, in Guria in 2022, only permits for the extraction of Butcher's Broom were authorised by the NFA for the production of NTFP resources. NFA considers it essential to evaluate other primary

NTFP resources, which necessitates the description of these resources and the formulation of their consumption quotas to safeguard sustainability and prevent excessive and disorderly extraction.

Products made in Georgia lose competitiveness in both domestic and international markets due to a lack of branding and marketing. Branding and marketing refer to both the visual aspect of products and their market recognition. Without marketing efforts, selling any sort of product can be challenging; this is especially true for non-timber forest products, given that consumer knowledge of them is not very high. In cooperation with NFA, GFP, the private sector and other stakeholders, it is recommended to create a single "Georgian Forest Product" brand and conduct marketing campaigns promoting various sorts of NTFPs under its umbrella. To generate awareness and establish a single NTFP brand in the market, it is critical to place NTFPs under a new brand at promotional events, outside Georgia as well as on domestic markets.

It should be emphasized that Biofin also plays an important role in the growth of the non-wood forest products sector. Its primary goal is to conduct research to develop market regulatory mechanisms, therefore encouraging the governance of the non-timber forest products market and the implementation of high standards by promoting sustainable extraction and a positive environmental effect. Biofin does not intend to actively implement programs supporting enterprises and startups in the near future; but, based on the study they have conducted and the outcomes, they do not rule out supporting these sorts of programs in the future.

### *Economic Development*

It is strongly recommended to keep a complete record of the NTFP collection and commercial data in Georgia. Since most NTFP items lack unique HS codes, as was discussed in the chapter on trade statistics, it is highly challenging to assess a product's potential using trade data. An interview with the National Statistics Office of Georgia (GeoStat) revealed that there is practically no information available for NTFPs. GeoStat records only show 13 companies (more than 30 companies are members of GFP) registered as collectors of wild plants, and nothing is known about their output, sources, or quantities. According to GeoStat, NTFPs are not accounted for since there is insufficient data on the market and the companies who represent it. NTFP market capitalisation is low and not very attractive from a financial standpoint. State agencies (Revenue Service, MoESD, MEPA) must take an interest in producing official statistical data regarding a specific business and distinguishing wild forest NTFPs from "domesticated" NTFPs. What is more, accounting must be carried out for harvested volumes of NTFPs separately and the quantities of sold products. One possible explanation for the absence of official statistics on NTFPs (sale, export, and internal market) is that their legal extraction and sale for enterprises was only permitted by state legislation in 2021. Thus, to

provide an accurate and timely appraisal of the potential for NTFPs and to close the existing gap, it is imperative to commence and establish the framework for the collection of official statistical data. The data should include:

- The number of NTFPs that are produced in Georgia, broken down by species and geographical locations.
- The quantity of imports and sales of primary product (raw material) in Georgia.
- The quantity of imports and sales of processed products (fruit juices, jams, sauces, dried fruit, cosmetics, pharmaceutical products, etc.) in Georgia.

Such data is critical for discovering and studying export markets to determine where demand exists. As previously stated, safety management of collected/produced NTFPs is essential since the nations identified as prospective trade partners are embracing current trends and customer demands are growing tougher. Certification is the foundation of long-term commercial relationships, which is followed by a strong public image, a solid reputation, and high-quality products.

In terms of economic development, free personal use of non-timber forest products and the introduction of commercial use helps to promote local industry and raise local community incomes by increasing the number of legal jobs, which is reflected in average earnings of households. This is especially true for communities in Georgia, living near forests, as 31% of those living near protected areas claim they gather non-timber forest products, while 16% of those living in other regions say the same (Green Budget Project, 2021). According to the interviews conducted in Guria, many poor households rely on NTFPs for cash income, which serves as a buffer during financially challenging seasons. Furthermore, several NTFPs (mushrooms and some berry species) are harvested by impoverished and elderly women (CENN, 2019). This necessitates specialized programs and initiatives that provide education, knowledge, and financial opportunities to the NTFP sector's most disadvantaged people. In order to better understand how the most vulnerable people could be lifted from poverty, more research is necessary on how NTFPs are contributing to the household economy and how different socioeconomic variables may impact this contribution.

To determine Georgia's competitive advantage in target markets (the EU, domestic markets, and Russia), the marketplaces of importing countries should be examined separately, in terms of pricing, volume, and quality. In addition to the importing countries, the markets of the top producing countries for NTFPs, where the same commodities are exported to Georgia, should be studied. Maintaining constant communication and collaboration with trade groups, sectoral associations, and clusters is vital. The study can be conducted entailing to the following directions:

- Import, export, production, and trade balance numbers for the world and prospective export markets.

- Potential export markets' consumption and purchasing power.
- Competitor analysis.
- Pricing Policy.
- Promotional initiatives in possible export markets (for example, trade fairs).
- Trade regulations with possible export markets and import tariffs. For example, it is critical to concentrate on markets with which Georgia has Free trade or other preferential trade agreements, i.e. the EU, China, the United States, and Japan.

### **Capacity Development**

Georgian NTFPs are one of the agriculture sector's emerging promising areas, with the potential to increase Georgia's prospects of becoming a producer of high-quality, environmentally friendly commodities. However, it is essential to take the necessary steps, such as training harvesters in sustainable resource collection and post-harvest management, developing sales channels in developed countries' domestic and international markets, investing in logistical infrastructure and quality standards, and so on. It is feasible to minimize the degree of youth migration from rural to urban regions by introducing new possibilities, whether through governmental programs (e.g., RDA) or internationally financed granting schemes that can develop revenue sources at the local level. At the same time, the reasons for migration are complex, not merely financial, and more research on how to maintain the young working population in rural regions is needed.

To ensure the long-term sustainability of Georgia's NTFP market, it is essential to conduct research on wild plant cultivation methods and to implement all feasible wild plant cultivation initiatives. It entails agronomic intervention, which is critical at the start of the cultivation phase in order to choose the appropriate species and NTFP variations that flourish in diverse locations of the region (soil analysis, selection of varieties). Furthermore, it is important to consider market demand for specific species. If the marginal costs of supplying a certain NTFP climb sharply over time, a variety of scenarios are possible. High costs might encourage product cultivation or substitution with similar products. A species may be subjected to cultivation if returns from collecting remain competitive over time and availability declines sufficiently. With the increased market demand for NTFPs, it can be hypothesized that extraction would increase until demand and supply reach an equilibrium. Moreover, policies might be passed to safeguard NTFPs. This can lead to resource depletion and higher harvest costs, eventually leading to extraction failure. Considering that there are no product substitutes for the NTFP species and that the market price remains high, cultivation of the product is most likely the solution. This can increase the number of products available and make Georgian goods more competitive in terms of pricing in the EU market, as well as to assist new manufacturers in the domestic market. This will also allow the emergence of new start-ups in Georgia's saturated market. However,

it should be noted that the perceived rarity of a species in a market must be separated from genuine ecological rarity in terms of low population numbers. Price increases can be caused by perceived or actual scarcity. Strategies and market research must be developed in order to undertake cultivation. Each species must be thoroughly researched in terms of its estimated worth, how it is viewed on various markets and cultivation methods. Such programs do not exist yet and should be created.

The summary of the NTFP market challenges and recommendations are listed in table 5 below.

<b>Table 5: NTFP market challenges and recommendations</b>			
<b>N</b>	<b>Problem</b>	<b>Recommendation</b>	<b>Implementing entity</b>
1	No reliable official statistical data are available to determine the potential and size of the market for wild NTFPs.	<p>It is critical that the Ministry of Economy and Sustainable Development and the Ministry of Agriculture and Environmental Protection develop methods for monitoring NTFPs for the assignment of distinct codes and the production of yearly reports based on the pricing of products sold locally and at export.</p> <p>To find competitive advantages, it is critical to examine the competition and conduct research comparing the quality and price discrepancies between the Georgian and EU markets.</p>	<p>MoESD</p> <p>GFPA</p>
2	Due to their scarcity and high production costs, Georgian NTFPs cannot compete with imported goods on the local market (labour, collection, transportation from the forest, high taxes in trade networks).	<p>For the local market, it is critical to develop a single NTFP trademark that would consolidate all products and boost customer appeal, trust, and high-quality perception.</p> <p>Forest product cultivation is critical to the expansion of the market for these commodities in terms of decreasing prices and increasing output. After researching different species and selecting a specific location, cultivation strategies should be developed while taking global practices and the potential of local forest resources (soil, habitat, and environmental conditions) into account. All NTFPs from Georgian forests should be grouped together under a quality label, giving these goods a distinct identity.</p> <p>Georgia's most successful example is blueberry cultivation, with an attempt to plant raspberries in East Georgia. Cultivated species are distinct from wild species. They have a distinct taste and appearance.</p> <p>There have been several trial attempts to produce medicinal plants, but none have been successful. Specific strategies must be developed in order to implement cultivation techniques and processes after the target species has been identified based on separate research in terms of cultivation and habitat. Such programs do not already exist and must be developed.</p>	<p>GFPA</p> <p>NFA</p> <p>GIZ</p> <p>CENN</p> <p>MoESD</p> <p>MEPA</p>

3	<p>For most businesses, opportunities to market their products and grow their businesses are limited. They lack access to foreign donors and importing nations within the EU, as well as understanding of international standards, procedures, and exporting processes.</p>	<p>The Committee on Agrarian Issues is active in arranging and encouraging business training sessions for start-ups, international exhibitions, and sales. It also collaborates with Enterprise Georgia, GITA, United States Agency for International Development (USAID), RDA, and industry organisations (such as the Association of Forest Products and the Export Development Association). Programs for corporate co-financing should also consider existing NTFP business start-ups. This involves expanding the function of the RDA in terms of consultations and small business capacity building. Such activities can be incorporated into some RDA programs, which require additional needs assessments of small companies and consultations with RDA.</p> <p>Hence, such modifications require not only feasibility studies of programme expansion on NTFPs, but also, with new directions in the RDA, institutional capacity building is required. Such initiatives can be supported by donor funded project and organisations that have expert opinion in the NTFP sector.</p> <p>MoESD should provide more facilitation for companies to gain access to foreign markets by supporting sales channels. In addition, domestic market should also be utilized by cooperating with supermarkets, organizing trade fairs, etc. In cooperation with the Ministry of Foreign Affairs, the maximum involvement of diplomatic missions of Georgia is necessary for providing opportunities for companies representing the NTFP market to participate in high-level international business forums and exhibitions abroad. These resources should be used in promoting products and finding potential trade partners.</p>	<p>MEPA MoESD MFA RDA GIZ GFPA ECO.Georgia</p>
4	<p>During the collection of particular data, many firms and distributors refrain from specifying their figures, which makes an accurate analysis difficult.</p>	<p>More cooperation is essential between representatives of local governments and forestry authorities as well as local firms and collectors, for example through information meetings and consultations. Local collectors lack confidence in and understanding of the new Forest Code, resulting in sceptical and disengaged attitudes.</p>	<p>NFA GeoStat GFPA</p>
5	<p>The market is being hampered by a shortage of competent labour, and as a result of internal and external migration, fewer people are interested in harvesting NTFPs. Aside from migration, the bulk of personnel in the organisations examined are between the ages of 40 and 60. Due to the lack of young people working in this industry, traditional knowledge and collection processes are in danger.</p>	<p>It is critical to provide training programs and courses that allow young people to broaden their understanding of conventional manufacturing, NTFP sustainable harvesting and the NTFP market. It is critical to implement regional start-up support programs for the NTFP industry.</p> <p>Donor-funded projects, associations, and other entities can help fill knowledge gaps by developing educational modules and programs.</p> <p>Targeted policies (i.e. microfinance or government-subsidized credit programs) for young women to get cheap credit can contribute in start-ups or expansions of NTFP companies.</p>	<p>MEPA MES GFPA RDA NFA</p>



## Further Studies

- Along with statistical data processing of NTFP collection and commerce, it is critical to conduct seasonal inventory of forest areas and develop a methodology for assessing and recording existing resources in order to accurately determine the exact volume of each resource in each forest area and, if necessary, determine quotas and develop a permit policy. Only then would it be possible to assess the long-term prospects of the local and worldwide markets. In 2022, CENN developed general Guidelines for Sustainable Management of Non-Timber Forest Products for resource assessment and proper planning, as well as in terms of sustainable harvesting and climate change; however, the methodology is to be more approximated to the characteristics and localities of NTFP species, different markets and more.
- Analyse the NTFP market competition on the EU level and possibly on the global scale. It is vital to assess the worldwide demand for such NTFPs (i.e. medicinal plants), which are available in great numbers in the forests of Georgia but are not gathered and produced owing to a lack of trade routes, information and poor motivation among the local people.
- In collaboration with trade networks, development of a long-term marketing plan of NTFPs in the local market are required (together with the Horeca sector, ecotourism businesses and other interested parties).
- Study on how NTFPs are contributing to the household economy and how different socioeconomic variables may impact this contribution.
- Development of training modules for rural young (between ages 18-34) and vulnerable communities (50% women) in the NTFP sector, covering business and commercial skills (sales channels, logistics, financial knowledge, etc.) donor opportunities, sustainable harvesting methods (including production processes), and so on.
- In coordination with NFA, Association GFP and the private sector, conduct studies on cultivation feasibility of selected NTFP species.
- Separate study of the EU, domestic markets, etc. to determine Georgia's competitive advantage in importing countries.

## Conclusion

NTFPs have sparked a surge of interest among development organizations and the Georgian government in recent years. This is due to a growing understanding of the contribution that NTFPs provide to the livelihoods of a vast number of people and the growth of the private sector. NTFPs can support sustainable development by improving rural communities' financial income and raising the value of forest resources, theoretically giving an incentive for conservation.

However, there is a growing need for information and mechanisms to support a diverse range of stakeholders, including not only local communities, but also development agencies, government agencies, non-governmental organizations (NGOs), and private sector institutions involved in NTFP trading and marketing. Data is required to guide the selection of NTFPs for development, as well as how and where investments should be directed.

Although efforts focused on NTFPs, broad guidance in this area is lacking. This might simply be because NTFPs represent such a variety of products that generalizations of economic models, mechanisms, and so on may not be sufficient. A thorough, product-specific research can be a step forward, with individual cases determining whether or not progress is made. What is required is an analysis that allows the results of several case studies to be combined and compared. This can be done by analyzing the processes involved in the NTFP sector: production, collection, processing, storage, transport, marketing, and sale, export potential, NTFP household economy, etc. Such a type of approach can provide enough information to the stakeholders on the causes of present or possible failures in the commercialization of NTFPs, its sustainability and development potential.

Notwithstanding the need for greater progress in the sector, positive steps are being taken toward its improvement (legalization of the industry, research, etc.) that will benefit the economy by providing more employment and producing income for communities and the government alike.

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