Feasibility Study for Alternative Livelihood of Forest-Depending Rural Population in Georgia – Challenges and Prospects

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<tr>
<td>ATM</td>
<td>Advance Team Meetings</td>
</tr>
<tr>
<td>Bank</td>
<td>The World Bank Group</td>
</tr>
<tr>
<td>CITES</td>
<td>Convention on International Trade in Endangered Species of Wild Fauna and Flora</td>
</tr>
<tr>
<td>CSO</td>
<td>Civil Society Organization; plural is CSOs</td>
</tr>
<tr>
<td>DD</td>
<td>Data Deficient</td>
</tr>
<tr>
<td>ENPI</td>
<td>European Neighbors Partnership Instrument</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>FGD</td>
<td>Focus Group Discussion; plural is FGDs</td>
</tr>
<tr>
<td>FGG</td>
<td>Focus Group Guide, used during FGDs</td>
</tr>
<tr>
<td>FLEG</td>
<td>Forest Law, Enforcement and Governance</td>
</tr>
<tr>
<td>GACP</td>
<td>Good Agricultural and Collection Practices</td>
</tr>
<tr>
<td>GoG</td>
<td>Government of Georgia</td>
</tr>
<tr>
<td>HH</td>
<td>Household; plural is HHs</td>
</tr>
<tr>
<td>IUCN</td>
<td>The International Union for Conservation of Nature</td>
</tr>
<tr>
<td>ISSC-MAP</td>
<td>International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants</td>
</tr>
<tr>
<td>kg</td>
<td>Kilogram</td>
</tr>
<tr>
<td>km</td>
<td>Kilometer</td>
</tr>
<tr>
<td>LLI</td>
<td>Local-Level Intermediary</td>
</tr>
<tr>
<td>m</td>
<td>Meters</td>
</tr>
<tr>
<td>MoENRP</td>
<td>Ministry of Environment and Natural Resource Protection</td>
</tr>
<tr>
<td>MT</td>
<td>Metric ton (1 000 kg)</td>
</tr>
<tr>
<td>NLI</td>
<td>National-Level Intermediary</td>
</tr>
<tr>
<td>NTFP</td>
<td>Non-Timber Forest Product; plural is NTFPs</td>
</tr>
<tr>
<td>NFA</td>
<td>National Forest Agency</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>NFC</td>
<td>National Forest Concept</td>
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<td>NFP</td>
<td>National Forest Program</td>
</tr>
<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
</tr>
<tr>
<td>RC</td>
<td>Risk Group</td>
</tr>
<tr>
<td>RCDA</td>
<td>Rural Communities Development Agency</td>
</tr>
<tr>
<td>RLI</td>
<td>Regional-Level Intermediary</td>
</tr>
<tr>
<td>Shelled</td>
<td>A nut (e.g., walnut) <em>after</em> the shell has been removed</td>
</tr>
<tr>
<td>TBSC</td>
<td>Tbilisi Business Service Center, the author of this Report</td>
</tr>
<tr>
<td>TOR</td>
<td>Terms Of Reference</td>
</tr>
<tr>
<td>TRAFFIC</td>
<td>UK Registered Charity dealing with trade in wild plants and animals</td>
</tr>
<tr>
<td>Unshelled</td>
<td>A nut (e.g., walnut) <em>before</em> the shell has been removed</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollar</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>wk</td>
<td>Week</td>
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<tr>
<td>WWF</td>
<td>World Wildlife Fund</td>
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1. EXECUTIVE SUMMARY

This is the Final Report for the Feasibility Study for Alternative Livelihood of Forest-Dependent Rural Population in Georgia – Challenges and Prospects (Project) done by TBSC Consulting (TBSC) on behalf of World Bank (Bank). Field work in six Target locations was done in late 2015 and this report was prepared in spring 2016. More than 100 people participated in in-depth Focus Group Discussions (FGDs) and individual interviews. Others in the NTFP value chain and experts were also interviewed.

This Executive Summary briefly discusses the conclusions and recommendations of Project. The organization of the Report is described at the end of this Executive Summary.

1.1. CONCLUSIONS

This Section summarizes the conclusions we reached concerning NTFPs and HH livelihoods in forest-edge communities. There are three Sub-Sections. The first summarizes the analytical context of the NTVP value chain. The remaining two Sub-Sections summarize conclusions about HHs and NTFPs and forest grazing.

Analytical Context – The NTFP Value Chain

Each Non-Timber Forest Product (NTFP) has a value chain, extending from when the NTFP is present in the forest (e.g., an undisturbed and uncollected wild blueberry) to eventual consumption of the NTFP by a consumer (e.g., the dried wild blueberry in yogurt). Usually the consumer is the same HH that collected the NTFP (e.g., self-consumption of a fresh wild blueberry). In other cases, the NTFP is sold by the collecting HH and changes hands through a number of intermediaries until it is finally consumed in either its close-to-original form (e.g., dried mushrooms) or as an ingredient in another product (e.g., dried blueberries in yogurt, medicinal herb preparation).

We analyzed our findings from the FGDs, individual interviews, conversations with value chain participants and interviews with experts in the context of a generic NTFP value chain. Not surprisingly, many of our conclusions and recommendations focus on HH activities and problems vis-à-vis NTFP. Nevertheless, there are significant problems in other parts of the value chain that directly affect how individual HHs benefit (or not) from NTFPs. This is particularly true due to the lack of National-Level Intermediaries (NLIs) in Georgia; this subject is mentioned in the following Sub-Section and discussed at length in Chapters 3 and 4.

HHs And NTFPs

This Sub-Section summarizes eight conclusions we reached concerning HHs and NTFPs. Each conclusion is elaborated in Chapter 3 and corresponding recommendations are shown in Chapter 4.

- NTFPs are a small but important part of HH livelihoods in forest-edge communities; a normal share is 15 to 20 percent of annual income or consumption though this figure varies greatly by individual HH

- The economic decisions made by HHs vis-à-vis NTFPs are rational; there are sound economic reasons HHs do not collect and sell more NTFPs than they do
• Individual HHs face barriers to increased collection of NTFPs; barriers relate to issues such as demographics, forest-features, collection methods, livelihoods, markets and a number of other areas

• Knowledge of NTFPs among the general public is poor; most Georgians are not aware of the benefits to be had from increased use of NTFPs in their personal consumption

• Some NTFPs are successfully sold in certain, not easily reproduced, situations; there are success stories, but the likelihood they can be duplicated elsewhere is low

• Enhanced opportunities in NTFPs should not be expected to reverse outward migration and depopulation; while steps can be taken to improve the economic benefits of NTFPs in forest-edge communities, the size of the improvements will not be sufficient to reverse outward migration

• Although a number of environmentally damaging collection methods are used, the generally low level of collection means that overall damage is usually small; at present collection levels, environmental damage is not a particular problem except for very specific exceptions

• Actors in the NTFP value chain, other than HHs, face a number of barriers to increased NTFP activity; the problems facing other actors affect the ability of HHs to benefit from NTFPs since those actors are the buyers of NTFP products collected by HHs.

Forest Grazing

This Sub-Section summarizes the single conclusion we reached concerning forest grazing. The conclusion is elaborated in Chapter 3 and corresponding recommendations are shown in Chapter 4.

• Damage from forest grazing is a highly localized problem, mostly related to the number of cows in a particular place rather than methods used; in many communities there are simply too many cows for the available grazing area, leading to cows grazing in the forest

1.2. RECOMMENDATIONS

We reflected on the conclusions (problems) noted in the previous Section (and discussed at length in Chapter 3) to arrive at a number of recommendations to improve the situation. Unfortunately, there is no magic bullet. Nevertheless, there are things to be done at the HH, national and forest levels. These are summarized in this Section; Chapter 4 discusses each at length.

HH-Level Recommendations

This Sub-Section summarizes recommendations concerning HHs and NTFPs. Each recommendation is elaborated in Chapter 4.

• A wide range of medias should be used to improve knowledge of NTFPs both in villages and among the general public; better informed villagers will be better able to exploit those NTFPs that do exist and a better informed general public will demand more NTFPs for consumption
Individual HHs should be given small grants for equipment to preserve NTFPs and to collect them safely; HHs will be able to collect and sell more preserved NTFPs than is the case today and the collection of NTFPs will become safer.

Transport cost equalization should be considered when setting social security payments; given that transport costs of NTFPs to markets are very high in remote communities, only some type of transport cost equalization will permit citizens in those communities to profitably sell their NTFPs.

**National-Level Recommendations**

This Sub-Section summarizes recommendations concerning national-level initiatives to increase benefits of NTFPs to individual HH in forest-edge communities. Each recommendation is elaborated in Chapter 4.

- One or more National-Level Intermediaries (NLIs) should be created for selected NTFPs; functions normally performed by NLIs will become feasible: 1) establish the Georgian mark for a particular NTFP to stimulate export demand, 2) perform proactive export development (e.g., exhibit at international trade shows) and 3) develop a portfolio of international customers so as to not be heavily dependent on any one customer.

- Public-Private Partnerships (PPPs) should be used to create the National-Level Intermediaries (NLIs); it is unlikely that the NLIs will be created by the private sector without significant public participation.

- Project One: A short-list of candidate NTFPs suitable for Georgian National-Level Intermediaries (NLIs) should be created; this will enable Georgia to quickly identify and reach agreement on those (few) NTFPs that might be suitable for Georgian NLIs.

- Project Two: Commercial feasibility studies for National-Level Intermediaries (NLIs) should be done for each NTFP on the short-list; the business cases for particular NTFPs and NLIs will be established.

- Project Three: Create Public-Private Partnerships (PPPs) to exploit each feasible National-Level Intermediary (NLI); the PPPs will become the NLIs and significantly increase demand for selected NTFP, thereby creating a ready market for NTFPs collected by individual HHs.

**Forest-Level Recommendations**

This Sub-Section summarizes recommendations concerning forest management *vis-à-vis* NTFPs. Each recommendation is elaborated in Chapter 4.

- Three NTFP Resource Assessments should be done as methodological tests; the Resource Assessments will establish the sustainable level of NTFP collection for the three selected NTFPs (probably part of the NLIs in other recommendations) and also establish the practice of Resource Assessments in Georgia.

- Forests should be proactively managed to increase NTFP quantity and density; proper management of forests, including anthropogenic management, will increase the quantity and density of NTFPs available for collection and, generally, improve the health of the forests.
- NTFP issues should strongly influence future forest management plans; NTFPs will become key elements of any forest management plans done in the future

1.3. REPORT ORGANIZATION

This Report has five Chapters and seven annexes. This first Chapter, this Executive Summary, summarizes the conclusions reached and recommendations made. The second Chapter describes the background for Project.

The third Chapter discusses the analytical context for analysis (i.e., the generic NTFP value chain) and details on the conclusions listed earlier in this Executive Summary. The fourth Chapter discusses the recommendations in detail, also listed earlier in this Executive Summary.

The fifth Chapter describes the methodology used in detail.

The first Annex (Chapter 6) gives results of the Focus Group Discussions (FGDs) and individual interviews done in the six Target locations. The facts described in this Annex shaped the conclusions and recommendations discussed in detail in Chapter 3 and 4.

The second Annex describes the prevalence of NTFPs in the Target locations; that is, what NTFP is found where. The third Annex discusses the sustainability of NTFP in Georgia; the conclusion of our expert in this area is that at present collection levels there does not appear to be a generalized problem with environmental damage created by NTFP collection methods.

The next three Annexes (Chapters 9 through 11) show a list of FGD participants, the Focus Group Guide (FGG) and the individual interview guide used in the six Target locations. Finally, the last Annex discusses the FairWild Standard; this Standard is considered in the recommendations.
2. BACKGROUND

This Chapter briefly describes the background for Project, Project objectives and the methodology used.

2.1. PROJECT BACKGROUND

In 2007, the World Bank, together with the European Union, the International Union for the Conservation of Nature (IUCN) and the Worldwide Fund for Nature (WWF), launched a program to improve Forest Law, Enforcement and Governance (FLEG) supporting Georgia and other European Neighborhood and Partnership Instrument (ENPI) member countries. The program promotes sustainable forest governance and protection in participating countries. The aim is to contribute the region’s forests to climate change adaptation and mitigation, to ecosystems and biodiversity protection and to sustainable livelihoods and income sources for local populations and national economies.

Simultaneously, the Government of Georgian (GoG) reshaped its approach regarding forest management. It adopted a National Forest Concept (NFC) in 2013 which serves as a basis for the development and improvement of forestry-sector-related legislation, institutional set-ups and other policy documents. In line with the NFC, the Ministry of Environment and Natural Resource Protection (MoENRP) launched the National Forest Program (NFP) process to facilitate a participatory approach towards forest policy formulation, planning and implementation at national and local level.

In line with FLEG activities and NFP, World Bank and other donors support a number of activities and initiatives related to forest resource utilization in Georgia. Those initiatives have different aspects and perspectives including reduced timber resource utilization, alternative energy sources, study of ecosystems and biodiversity, determining true economic value of forest resources, supporting agricultural activities and agroforestry.

Most of the studies have limitation in terms of thematic and geographic coverage. This is especially true for non-timber forest resources (NTFPs) with least data available. There is also lack of focus on how people-forest relationships might be revamped to match with sustainable forest management policy and practice.

2.2. PROJECT OBJECTIVES

The overarching goal of Project was to highlight the challenges and produce recommendation for building sustainable people-forest relationships in Georgia with special focus on the use of Non-Timber Forest Resources (NTFPs).

In order to achieve this objective, there were five sub-objectives:

- Document current use of NTFPs in forest-depending communities (i.e., how HHs and others collect NTFPs)
- Document how current (and potential) NTFPs contribute to HH livelihoods (i.e., how do HHs use NTFPs for own use and for sale)
- Identify the negative impact and unsustainable uses of NTFPs by local HHs and others
Recommend feasible strategies (i.e., interventions) to increase the benefits HHs receive from NTFPs and transition HHs (and others) from selected less environmentally sustainable NTFP uses and methods to more sustainable ones.

Ensure Stakeholders understand Project results and, most important, the interventions needed to transition HHs (and others) from less to more environmentally sustainable NTFP uses.

2.3. GENERAL METHODOLOGY

The Project comprised three phases. The first phase identified Target locations near the forest edge to conduct the fieldwork. This was not a simple task as the six Target locations (groups of villages at the forest edge) needed to be representative of the hundreds of forest-edge communities in Georgia. We also interviewed experts in the NTFP area as part of this phase.

The six Target locations covered all major forest types and ecological zones. The primary selection criteria for Target locations included 1) proximity to forest, 2) size and density of population, 3) NTFP product diversity, 4) relative importance of NTFP to HHs and 5) likelihood of localized sustainability problems. The proximity-to-forest filter was based on map analysis supplemented with interviews with municipal trustees. We started with a comprehensive list of all municipalities across Georgia and applied the filters to develop a final list of villages for further analysis. Additional consultations were conducted with local authorities to ensure the proper selection and take into account all local particularities.

The second phase concerned Focus Group Discussions (FGDs) and individual interviews in the six Target locations to understand people-forest relations and NTFP exploitation patterns. Each Target location was visited by the entire Project Team two times for this purpose. The first visit focused on community demographics and social and economic conditions, relations to forest, NTFP diversity and utilization of NTFPs by HHs. For the first visit the Project Team met with local government representatives and local forestry unit staff, performed preparatory work and collected initial data. Local recruiters were mobilized in each location to assist in FGD arrangements.

The second visit included a FGD and individual interviews. FGDs topics included general socio-economic conditions, NTFP availability, self-consumption and commercialization aspects, environmental damage to NTFPs, barriers to increased NTFP collection and environmental damage of forest grazing. These extensive fact-finding methods were fully documented and formed the basis of the conclusions and recommendations shown in this Report.

Based on the information collected, the third Phase focused on developing conclusions and recommendations that would stimulate the utilization of NTFPs, address sustainability issues and shape possible interventions with HHs to increase the benefits from NTFP economic activity. These matters are shown in this Report.
3. ANALYSIS AND CONCLUSIONS

This Chapter discusses our conclusions about the ability of HHs to benefit economically from NTFPs. Constraints, barriers and challenges necessarily reduce the economic benefits HHs receive from NTFPs, compared to a situation where the constraint, barrier or challenge did not exist. If a constraint, barrier or challenge was eliminated or mitigated, then the economic benefit HHs receive from NTFPs will increase. Measures to eliminate or mitigate constraints, barriers and challenges (recommendations) are discussed in the next Chapter.

There are three Sections in this Chapter. The first Section describes the analytical context in which we analyzed problems; in particular, it discusses the generic value chain for NTFPs. The second Section focuses on problems facing individual HHs. The Section also includes one problem related to other actors in the value chain to the extent that the problem facing those actors also negatively affect individual HHs. Finally, the third Section discusses one conclusion related to forest grazing.

3.1. ANALYTICAL CONTEXT – THE NTFP VALUE CHAIN

All NTFPs have individual value chains from forest to consumer. The value chain includes all actors and activities required to bring an NTFP from the forest to the final consumer. In the forest, the NTFP is in a form available for collection. The final consumer purchases either: 1) the NTFP itself (e.g., a box of dried mushrooms) or 2) another product containing the NTFP (e.g., yogurt with dried wild blueberries).

A generic NTFP value chain is shown in the following chart. The value chain has a number of actors and steps. Physical products move upward and to the left (from forest to consumer) and money moves downward (from buyer to seller, and maybe to the owner of the forest). Information flows in both directions, often imperfectly. Finally, there is risk inherent in the value chain that must somehow be allocated among participants. The following Sub-Sections discuss each of these matters.

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1 Value chains are sometimes referred as supply chains or market chains.
1. Generic NTFP Value Chain

The six actors and steps are described in this Sub-Section. Conclusions about each actor, particularly related to the forest and individual HHs, are shown in the following Sections.

**Forest.** The forest is at the bottom of the value chain. The productivity of the forest for a particular NTFP depends on many physical features including past and current damages. The forest may unmanaged or managed to improve NTFP productivity. In theory, the owner of the forest should receive the value of the product that it produces (*e.g.*, a mushroom in the forest that is collected).\(^2\) If the owner is the one who manages the forest, then the value received by the owner should also include the cost of forest management.

**Individual HHs.** Virtually all NTFPs are collected by individual HHs usually for their own account but sometimes as day-labor-type employees of an actor further up the value chain.\(^3\) Collection is for either personal consumption (the bottom-left Use shown on the chart) or for sale up through the value chain. HHs sometimes take NTFPs to local markets where they are sold directly to consumers (another Use).

**Local-Level Intermediaries.** NTFPs move through a number of intermediaries, at each point there being some Use. Local-Level Intermediaries (LLIs) are usually individuals who buy products from individual HHs. They frequently know the HHs personally and may return on a

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\(^2\) Whether this actually occurs depends greatly on institutional arrangements (*i.e.*, are arrangements such that the owner can actually receive the value of the product).

\(^3\) An exception are crews who collect fir seeds and certain other NTFPs. The crews work together for an extended period, moving from place to place as a unit. Crew members are more similar to regular seasonal employees and less similar to day-labor-type employees.
semi-regular basis to the HHs to buy NTFPs. LLIs frequently sell through local markets, to either consumers or other intermediaries. NTFPs may move through a number of LLIs. Very few if any LLIs do any processing of the NTFP; it is sold in the same form as it is purchased from individual HHs. Some LLIs are individual HHs that also buy NTFPs from neighbors for on-sale to others.

A single conclusion about all intermediaries (Local-Level, Regional-Level and National-Level) is discussed in the next Section.

**Regional-Level Intermediaries.** Regional-Level Intermediaries (RLIs) cover a region. They receive NTFPs through LLIs, their own agents or individual HHs who bring NTFPs to the RLI. RLIs often process NTFPs so they are more suitable for on-sale up the value chain; steps to improve perishability are particularly important for RLIs. RLIs have either larger domestic customers (e.g., supermarket chains, food processors) or (only) one or two regular foreign customers. RLIs typically do not do extensive export development to develop new regular customers (e.g., they do not attend international trade shows) due to the limited scale of the RLI.

RLIs are distinguished from LLIs on the basis of size, territory covered and degree of processing of the NTFPs.

**National-Level Intermediaries.** National-Level Intermediaries (NLIs) for NTFPs do not exist in Georgia. These could be thought of as simply being large RLIs although they differ in three important ways. First, Georgian NLIs would establish the Georgian mark for a particular NTFP. Second, NLIs would be large enough to perform proactive export development (e.g., exhibit at international trade shows). Third, NLIs would have a number of (diversified) international customers, would not be heavily dependent on any one customer and would develop new customers on a continuous basis. NLIs would typically buy only RLIs due to the processing that RLIs perform.

In large countries with large sources of supply, there could be several NLIs, each perhaps specialized and competing with other domestic NLIs. Georgia is small and likely could not support multiple NLIs.

**International Buyers.** Finally, at the top of the value chain there are large International Buyers (e.g. Danone). These customers typically buy the same NTFP from many different places in the world; they are not particularly interested in Georgia per se except as another source of supply for a particular NTFP. For example, if Danone has a yogurt with dried wild blueberries, then the dried blueberries used could be from Georgia, or any of a number of other countries. In this case Danone is only interested in quality, price and supply reliability. These customers understand that any one country may have a bad year for a particular NTFP and therefore they mitigate their supply risk by diversifying their sources of supply by developing sources of supply in a number of countries.

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4 Perishability is also very important for individual HHs and LLIs. However, typically HHs and LLIs do not increase the shelf-life of NTFPs through some type of processing. Individual HHs and LLI typically only concern themselves with quantities of NTFPs that can be easily used or sold before the short shelf-life of the fresh NTFP ends (i.e., before the fresh NTFP spoils).

5 We use the term “mark” rather than “brand” since customers typically are not consumers but rather large processors (e.g., Danone) who think in terms of buying *Georgian dried wild blueberries*. 
**Flow Of Money**

As physical product moves up the value chain, money flows in the opposite direction. As a rule, transactions at the bottom of the value chain are in cash and those at the top are with normal trade terms (e.g., 30 day payables).

Payments may or may not be made to the owner of the forest depending on institutional arrangements.

**Value-Added**

The monetary value of a particular NTFP when it is in the forest (waiting to be collected) and when it is before the consumer (waiting to be consumed) are of course vastly different. The difference is the value-added by the entire value chain. Fresh wild blueberries may have a value (after collection and in the hands of the individual HH) of 2,00 GEL/kg when sold to LLIs. When used in dried form in yogurt the value may be 20,00 GEL/kg (wet weight) for the same dried blueberries. The difference, 18,00 GEL, is the value added by the entire value chain.

Each step in the value chain also has its own value added, noted by the plus signs. A classic value chain problem is how the value added for the entire value chain (e.g., the 18,00 GEL/kg noted for blueberries) is divided among all the value chain actors. The allocation of value is less related to the actual value added by an actor and more related to the bargaining power of the two actors involved in a transaction. For example, an individual HH with 5 kg of collected blueberries in the late afternoon is in a very weak bargaining position with an LLI in the late afternoon if the LLI is the only buyer available; the HH has no alternative but to sell at nearly any price. On the other hand, an individual HH with no collected blueberries in the early morning is in a strong bargaining position with an LLI in the early morning; the LLI must agree to pay enough to motivate the HH to go into the forest to collect the blueberries.

Generally, there is great asymmetry in bargaining power; bargaining power is lowest at the bottom of the value chain and largest at the top of the value chain.

**Flow of Information and Allocation of Supply and Market Risk**

Individual HHs face issues with information flow and allocation of risk as noted on the value chain chart shown earlier. The relative positions of value chain actors are summarized in the following chart and described in this Sub-Section. Generally speaking, international buyers are in a much favored position vis-à-vis individual HHs. As one moves up the value chain the favored position improves.

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6 In fact, the wild blueberries in the forest (waiting to be collected) also have a value that, theoretically, should be received by the owner of the forest. In practice though, it is very hard for the forest owner to actually receive that value from the value chain; some other participant in the value chain receives that value added.
2. Access To Information And Risk Allocation In Value Chain

<table>
<thead>
<tr>
<th>Access to Information</th>
<th>Limited Access</th>
<th>Moderately Limited Access</th>
<th>Fully Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Demand</td>
<td>• Better position than HHs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Price</td>
<td>• Not fully aware on demands higher along value chain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Quality standards</td>
<td>• Well aware of quantities and prices</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sets quality standards</td>
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<tr>
<th>Diversity Risk</th>
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<tbody>
<tr>
<td>Poorly Diversified</td>
</tr>
<tr>
<td>• Fully relying on middlemen</td>
</tr>
<tr>
<td>• Price taker, no bargaining power</td>
</tr>
<tr>
<td>• Depends on forest, season, yield</td>
</tr>
<tr>
<td>Moderately Diversified</td>
</tr>
<tr>
<td>• Has Multiple suppliers</td>
</tr>
<tr>
<td>• Sets price to HHs</td>
</tr>
<tr>
<td>• Aggregates small quantities</td>
</tr>
<tr>
<td>Greatly Diversified</td>
</tr>
<tr>
<td>• Access to global market</td>
</tr>
<tr>
<td>• Global market price</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Individual HHs</th>
<th>Intermediaries</th>
<th>International Buyer</th>
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Source: TBSC Analysis.

**Information Flow.** The best guarantor of more equal bargaining power, all else being equal, is the flow of information. Information has both content and temporal aspects. One content aspect would be knowledge about current market prices. One temporal aspect would be knowledge about expected market demand and prices in one month.

Generally, there is great asymmetry in information in three areas:

- Access to information; actors at the top of the value chain have much better access to information (about all value chain levels) than do individual HHs at the bottom of the value chain.

- Ability to collect needed information; actors at the top of the value chain have the resources to collect the information they need (*e.g.*, likely yields of a particular NTFP in a particular country in the next year).\(^7\)

- Freedom to take action; actors at the top of the value chain are in a much better position to take action in response to information.\(^8\)

Today, there are technical means (*e.g.*, informational web pages accessible by mobile phone) to level the playing field for items one and two. Less asymmetry in items one and two would enable actors at the bottom of the value chain to expand their freedom to act; HHs will change their behaviors if they are given good information. For example, if a HH knows prevailing prices for blueberries is high, then individual HHs will take extra steps to collect blueberries and transport them to market even in the absence of an up-front order.

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\(^7\) This information, if made available, would be of great value to individual HHs.

\(^8\) For example, an international buyer of NTFPs can relatively easily shift its purchasing from one country to another if supplies are expected to be tight in the first country. On the other hand, that knowledge, even if it was known, would be of very limited value to an individual HH.
Increasing the participation of the poor in the NTFP value chain will require addressing the information asymmetry.

**Allocation Of Risk.** For the *entire value chain* there are *supply and market risks* (imbalance of supply and demand, particularly in the short-term) that need to be borne by one actor or another. As with information, there are large asymmetries.

Individual HHs bear significant local *supply risks*; for a variety of reasons some years are good for a particular NTFP and other years are poor. Individual HHs mitigate some of this supply risk by diversifying their economic activities (*e.g.*, milk production, vegetable growing, NTFPs). It is likely that HHs diversify their economic activities in an optimal manner given their particular circumstances.  

However, the range of alternative economic activities is limited for individual HHs.

On the other hand, International Buyers are able to diversify away most of their supply risk by developing a number of alternative sources of supply. If a year is poor for wild mushrooms in Georgia, then it will be a good year in another country. International Buyers increasingly emphasize how they manage their supply risk in their public annual reports; these large actors can do this while individual HHs cannot.

Individual HHs also bear significant *local market risks*. If a HH collects a particular NTFP, then the HH may or may not find a customer for the NTFP. In the absence of a known customer, most individual HHs do not collect NTFPs beyond what they need for self-consumption. On the other hand, if a customer is known or highly likely (*e.g.*, a steady demand for raspberries) then HHs will collect that particular NTFP.

As one moves up the value chain, market risk decreases due to economies of scale. Larger intermediaries have more resources to seek out customers; their customers, when found, buy in larger quantities.

A certain level of supply and market risk (imbalance of supply and demand) is inherent in the value chain; some can be mitigated (diversified away) but it cannot be completely eliminated.

A key value chain issue is who bears that risk. As a general rule, it appears that the risk is disproportionately borne by actors at the bottom of the value chain since they are least able to diversify away the risk. The poor are least able to bear such risk; consequently, they frequently do not participate in the market (*i.e.*, they do not collect NTFPs because the risk of them doing so outweighs the benefits received).

Increasing the participation of the poor in the NTFP value chain will require addressing the inherent supply and market risks they bear. For individual HHs, this means both price received by the HH (raise it) and risk assumed by the HH (lower it) must be addressed.

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9 This is one aspect of the fact that the poor are, in fact, smart economic agents given their particular situation. For example, even if focusing exclusively on NTFPs would produce a higher average income, individual HHs will not adopt that strategy since there will be times when NTFPs will have poor results; at such times the HH will have no other income sources. This is the same reason why people buy insurance (accept less income now in exchange for greater certainty about the future). In a way, the perceived underinvestment in NTFPs could really be a result of the fact that villagers cannot insure against bad years, and therefore they cannot afford to invest as much in NTFPs as others might think optimal.
3.2. HHS AND NTFPS

This Section summarizes conclusions we reached based on the research undertaken in the six Target locations in the context of the value chain discussed in the previous Section.

After spending appreciable time in each of the six Target locations and discussing NTFP issues with more than 100 HHs, it became clear that there are more similarities among the Target locations regarding NTFPs than there are differences. This means that the conclusions noted in this Section (and later recommendations) can be generalized to most villages adjacent to forests.

**NTFPs Are A Small But Important Part Of HH Livelihoods In Forest-Edge Communities**

NTFP collection for self-consumption and sale has a 15 to 20 percent share in annual income or consumption. It should be noted that there is great variation in the percentage among individual HHs; some HHs do not collect any NTFPs, while (a few) others are very heavily involved.

Most villages collect NTFPs for self-consumption that are readily available close-by. HHs collect and consume the quantities they need. Among many more than 20 different types of NTFPs that are typically available, HHs regularly collect fewer than five species. The mix of species varies among locations. In no location are all possible species (located in the adjacent forest areas) collected.

We were told that NTFPs for self-consumption are an important safety net for individual HHs, particularly the poorest of the poor, in rural communities that do not have sufficient capacity to deal with food deficiencies or obtain medical treatment. This is especially true for high mountain communities where there are no grocery stores or pharmacies closer than 15 or 20 km. For these communities, NTFPs represent a valuable substitute for food and medical treatment. Unfortunately, detailed knowledge about NTFPs among older citizens is disappearing as the older citizens die.

Collection of NTFPs for sale is highly variable; even where there is a known buyer with annually published prices only about ten percent of HHs collect NTFPs to sell. Most villages adjacent to the forest edge are distant from larger markets and transport is very difficult or expensive (when compared to the value of the NTFP). Buyers do not visit remote villages. Collection of NTFPs is a *young man’s game*. However, most villages are largely depopulated especially by the younger generation. Consequently, the prevalence of collection of NTFPs for sale is generally low, with exceptions as noted later.

**The Economic Decisions Made By HHs vis-à-vis NTFPs Are Rational**

We spoke with many people in the Target locations and in offices in Tbilisi. A commonly held belief by those *not resident* in villages at the forest edge is that villagers make sub-optimal decisions in regard to their activities with NTFPs. Specifically, they do not do as much with NTFPs as they could, or should and they therefore suffer economically. There is a widespread belief that relatively simple interventions would greatly change this situation.

In our conversations with well over 100 villagers in the six Target locations it is clear that these beliefs among people *not resident* in villages are simply wrong. In fact, individual HHs appear to be acting entirely rationally in regard to NTFPs. If there is a ready buyer or ready
access to a market where sale is easy and transport costs low, then HHs collect and sell NTFPs. Where there is no ready buyer, or where transport costs to market are high, HHs do not collect or sell NTFPs. On the other hand, in nearly all cases, HHs do collect NTFPs for self-consumption. Local NTFPs are an important safety net for the poor in villages.

HHs engage in a range of economic activities such as dairy cows, vegetables, fruit orchards and NTFPs. The mix of activities reflects what is possible at the particular location for that particular HH. For example, locations vary according to suitability for fruit orchards while HHs vary according to the age of the HH members.

It is important to note that individual HHs have choices when selecting their mix of economic activities. They select a mix that is feasible and maximizes utility. Economic utility is distinct from income as it considers income and cost (typically time spent) plus risk. For example, income from a reliable source creates a higher utility than a greater but risky income from an unreliable source.

HHs generally consider repetitive collection of NTFPs (for sale as a business) as being a high risk and unreliable source of income. In addition, they consider many NTFP products as requiring a high input of labor compared to the value received; that is, they create limited utility. When there is a shortage of time or labor, HHs focus more on reliable and steady activities (e.g., dairy cows and cheese) rather than much less reliable or steady activities (e.g., NTFPs).

On the other hand, when HHs do have free time, a ready buyer for a particular NTFP and low transport costs, they do collect and sell NTFPs. Unfortunately, those three conditions are not regularly met in most locations for most NTFPs.

**Individual HHs Face Barriers To Increased Collection Of NTFPs**

HHs face quite a number of demographic, forest, livelihood, market and other barriers to increased exploitation of NTFPs. These barriers are listed below in no particular order. Most of these barriers exist in all Target locations and can be generalized to most forest edge communities in Georgia. The only exceptions are Keda and Gedsamania village in Kharagauli municipality; these are discussed in the next conclusion.

A particular HH probably does not face every barrier listed, but usually at least half of these barriers exist for any given HH.

**Demographic Barriers.**

- Significant outward migration in the past; up to 75 percent of citizens in ten years; remaining HH members are older, making collection problematic
- Few, if any, young people to do the physical labor needed for some NTFPs where the NTFP is distant from the home or requires significant physical effort

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10 In this case HHs are their own customer and transport costs are zero.
11 We did not research this point in detail, but conversations with a large number of HHs suggests that it is true.
12 This is why people buy insurance. They accept lower income now (because they must pay premiums) in exchange for more certainty for the future (no unexpectedly large losses).
Loss of knowledge of the forest and NTFPs as knowledgeable individuals age or move away.

**Forest Feature Barriers.**

- Insufficient *quantity* of NTFPs in the forest to support a great number of intense collectors; potentially some NTFPs for everyone or a lot of NTFPs for a few
- Low *density* of NTFPs in the forest; for some NTFPs a collector must travel between 5 and 30 km to obtain sufficient volumes
- Highly variable quantities of NTFPs from year to year and season to season (significant supply risk); although yields from commercially grown crops might vary from 25 to 125 percent of normal, quantities for NTFPs can vary from 0 to 300 percent of normal
- Physical dangers when collecting NTFPs (*e.g.*, steep slopes, falls from trees when collecting fir seeds, bears)
- Insufficient forest trails to reach good areas for collecting NTFPs
- Plant diseases reducing quantities of NTFPs (*e.g.*, chestnuts)
- Damage to forest floor and consequently to NTFPs from domestic pigs roaming wild in the forest; now less of a problem since most pig herds were destroyed by swine flu
- Afforestation of meadows, reducing the size of the meadow margin where NTFPs such as blueberries do best.

**Collection Methods.**

- In selected cases, over exploitation of a specific NTFP (*e.g.*, *Ruscus hypophyllum*, used for decorations and flower bouquet design); reduces quantities in the future
- Improper collection methods (always used by others) (*e.g.*, removal of entire Thyme plant rather than only leaves); reduces quantities in the future.

**Livelihood Barriers.**

- High opportunity cost of collecting NTFPs; time could be applied to more profitable activities (*e.g.*, cows and cheese)
- Uncertainty about NTFP demand and supply (demand and supply risk) from year to year and season to season
- NTFP collection occurs in short and intense periods (two weeks), followed by times with no NTFPs available
- Limited HH ability to invest time and money in developing a new NTFP livelihood (*e.g.*, money for equipment to extend shelf life of NTFPs, time to scout out the best places to collect a particular NTFP)
- General opinion that, with certain specific exceptions of individuals and NTFP, NTFPs provide a low return on time and money.
Market Barriers.

- Perishability of most NTFPs; collecting a critical mass over several days and bringing it to market at one time is difficult
- NTFP market risks (will buyers appear – demand risk – and low prices they offer – price risk); no effective way to diversify away those risks
- Costly to take large quantities of NTFPs to market; unavailability or limitations of public transport
- Limited knowledge of the NTFP value chain beyond what the Local-Level Intermediary (LLI) tells them; broader knowledge might include price and demand outside of the immediate area, contacts with other buyers, quality standards and which particular NTFP is favored.

Other Barriers.

- Climate change; perceived to cause greater variability in precipitation and date of last frost
- Lack of knowledge on 1) less common NTFPs that are nevertheless available in their particular forest and 2) the proper way to use such less common NTFPs
- Lack of knowledge of whether a particular location is part of the Forest Fund or not
- Lack of proper safety equipment to collect fir seeds
- No practice to collect NTFPs as a member of an organized group (with the exceptions of fir seeds and in areas where there is a danger from bears)
- Competition with cows in forest who also like to eat NTFPs (e.g., blueberries)
- Limited knowledge or practice to preserve perishable NTFPs except perhaps for self-consumption.

A number of these barriers can be addressed in the manner shown in the next Chapter on recommendations.

Knowledge of NTFPs Among the General Public is Poor

Although not a specific part of Project, we did informally inquire with associates and experts about the level of knowledge about NTFPs in the general public. This is important because the general public, outside villages at the forest edge, could be an important market for NTFPs. The general public could access NTFPs through collection (make a trip to a forest), direct purchase from HHs or through retailers.

We found that the general level of knowledge is poor. The general public does consume selected NTFPs and does occasionally seek out selected ones. However, the list and quantity

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13 HHs face a stark choice: 1) sell in the village at quite low prices or 2) transport the product to a market where prices are higher but also where transport costs per unit sold can be significant.
of items purchased is small compared to what is available. The reason for this is a general lack of knowledge of NTFPs and how they could be a normal part of a diet.

Generally speaking, most Georgians are not aware of the benefits to be had from increased use of NTFPs in their personal consumption.

Some NTFPs Are Successfully Sold In Certain, Not Easily Reproduced, Situations

While collection of NTFPs for sale is problematic in most cases, there are bright spots. Unfortunately, the particular features of those bright spots are not easily reproducible.

Keda. HHs in Keda benefit from NTFPs more than elsewhere because they are close to Batumi, giving them ready access to a good market. This situation is generally not reproducible elsewhere. There are long-established value chain arrangements between Keda and buyers in Batumi. Keda is 35 km from Batumi with good quality transport (i.e., suitable, frequent and inexpensive due to volume). As a result, buyers are well organized and present in the area. There is also a well-established local processor of NTFPs for jams and juices (using domestically produced fruits as well). This mobilizes individual HHs and creates a critical mass for selected NTFPs. Availability of additional selected NTFPs in Keda is problematic; supply does not meet (potential) demand.

Other places in Georgia with close and easy access to a large market would be similar to Keda, though there are not so many such places.

Gedsamania Village. HHs in Gedsamania village in Kharagauli municipality have created domestic raspberry farms. The domestic raspberries have motivated buyers to visit the village to buy the domestic raspberries; they also buy wild raspberries at the same time. In the absence of the domestic raspberries (a large and reliable supply) the buyers would not visit the village. We were told that growing domestic raspberries is simply more profitable than collecting wild raspberries if the HH has suitable land. The poor without suitable land benefit the most from the steady demand for wild raspberries.

This situation is of course reproducible in other locations. However, is should be noted that the benefit comes from domestic berry farms, not from NTFPs per se.

Unique Product. In some situations, there is a genuinely unique product with high unit value that is easily transported. The two major examples are snowdrop bulbs and fir seeds. In both cases, collection of the NTFP is generally restricted to one place due to a favorable location. In both cases, the product (bulb, seeds) are not particularly perishable, are easily transported and have a high unit value. This has led to stable demand for quite some time. There are CITES collection restrictions on snowdrop bulbs. We were told that monitoring and enforcing CITES restrictions is problematic.

The snowdrop and fir seed successes cannot be generally recreated in other locations.

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14 This demonstrates that if 1) there is a known buyer, 2) perishability issues are solved, 3) transport is readily available and 4) prices are more or less acceptable, then HHs will be motivated to exploit NTFPs as much as possible. Note that these factors are inter-related. The close proximity of processors in Batumi reduces transport time and cost, which permits payment of higher prices to HHs.
Enhanced Opportunities In NTFPs Should Not Be Expected To Reverse Outward Migration And Depopulation

We did not meet a single person who said they lived at the forest edge specifically because they could earn a good livelihood from NTFPs. On the other hand, we did meet a few HHs who have created a reasonably good business in NTFPs, given that they already live at the forest edge.

In other words, a few HHs have made the best of their situation. However, their success should not be considered a model for many others because of a number of barriers, noted in the previous conclusion. First, for many NTFPs in many places there are limited quantities of the NTFP in the forest; there are enough for a few extra people to work profitably but not enough for many others to do likewise. Second, product perishability and transport costs from many locations make collection inherently unprofitable.

Third, not all HHs have HH members physically able to do the hard work that most NTFP collection requires; most villages suffer from high outward migration in search of jobs and an aging population. As the population of villages declines and ages the quantity of NTFPs collected by the village will fall commensurately; this was often noted as the reason why NTFP availability in forests is generally increasing or at worst staying unchanged in many areas.

Given all this, fourth, it is highly unlikely that a person would return to a village for the purpose of working with NTFPs. This is particularly true since it would be very difficult for a person to diversify away the local supply risk that focusing on NTFPs would create.

This does not mean that steps should not be taken to improve the economic benefit of NTFPs; recommendations in the next Chapter address that issue. However, it does mean that one should not expect that such activities would be so successful that the outward migration of the young would be reversed or that a significant number of HHs would be raised out of poverty. Better NTFP utilization will have a real and measurable benefit for HHs at the forest edge, but only on the margin.

Although A Number Of Environmentally Damaging Collection Methods Are Used, The Generally Low Level Of Collection Means That Overall Damage Is Usually Small

In places HHs use collection methods for certain NTFPs that are damaging to the forest ecosystem. However, the overall damage from these poor methods is limited because of the generally low level of utilization of NTFPs among HHs.

These damaging practices include:

- Shaking walnuts and capers off trees and bushes with long wooden sticks; this is an easier but more damaging method
- Pulling mushrooms up from the root with minimum stem left in the ground; this is a faster but more damaging method, particularly when mushroom density is low to start with

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15 This is not to say that some young people might not return for a range of local jobs (e.g., cows, vegetables, orchards, NTFPs) or for social reasons (e.g., take care of aging parents).
Pulling up thyme plants from the root; this is easier for the collector and appears to be preferred by buyers, but it of course kills roots.

Cutting off branches of trees when collecting fir cones; this is a safer but more damaging method.

If the number of collectors was to increase (e.g., reverse outward migration) or if better commercial opportunities presented themselves, then collection quantities would increase and environmental damage caused by particular NTFPs would increase. As a result, while solving these poor collection methods at this time is really not needed, if steps are taken to increase collection rates then steps will need to be undertaken to change these poor practices.

On the other hand, there are specific exceptions to this general conclusion that need to be individually addressed. We were told anecdotally of the bay plant being under great stress due to the removal of the entire plant rather than just picking of leaves.

**Actors In The NTFP Value Chain, Other Than HHs, Face A Number Of Barriers To Increased NTFP Activity**

Many of the problems noted for individual HHs also apply to Local-Level Intermediaries (LLIs) and Regional-Level Intermediaries (RLIs). These problems affect the economic benefit received by HHs from NTFPs, so they are included in this Section.

Both LLIs and RLIs told us that they cannot find the quantities of NTFPs they would like. However, individual HHs told us this is related more to prices offered than to demographic or forest-related matters. Nevertheless, even if the LLIs and RLIs were to start paying more for NTFPs, then the demographic and forest-related barriers noted previously for individual HHs would come into play. It is unlikely that higher prices would by themselves cause people to move back into the forest edge to solve the demographic barriers. Higher prices, demand and collection would not by themselves solve the forest barriers noted previously.

LLIs have livelihood barriers similar to individual HHs. They do not have access to sufficient NTFP quantities to make this an ongoing business for them. LLIs typically have their own diversified set of economic activities in addition to NTFPs. LLIs face perishability problems and transport is also expensive; although they have larger quantities, the prices they receive from RLIs or other LLIs are still not so high. LLIs are exposed to the same seasonality and good-year/bad-year cycles of NTFPs faced by individual HHs. Finally, LLIs told us they do not have access to desired market information from further up the value chain.

RLIs have economy of scale issues. They do not have access to the quantities of NTFPs they desire. Most RLIs exist because an individual found one or two foreign buyers before starting the business. Essentially, the RLIs act as local buying agents for the foreign buyers; they do not purchase so much for their own account. The scale of their businesses are not sufficient to finance the marketing needed to develop a diversified mix of customers, and thereby become a National-Level Intermediary (NLI). Some RLIs may in fact be prohibited from doing so by their foreign partners.

There are no NLIs in Georgia. This means that most other actors in the value chain are restricted to domestic customers, except for those RLIs that have relations with one or two foreign buyers.
To the end, solving the problems for individual HHs noted previously by themselves will not solve the very real problems faced by actors further up the value chain. On the other hand, if the absence of NLIs is solved and if individual HHs are given some assistance (both described in the following Chapter on recommendations), then the network of LLIs and RLIs will probably develop on its own. If the absence of top actors (NLIs) and the barriers faced by bottom actors (individual HHs) are fixed, then the network of LLIs and RLIs will largely develop on its own.

3.3. GRAZING CONCLUSION

We assessed the grazing situation in the six Target locations and discussed these issues with more than 100 people in either FGDs or individual interviews. There is one general conclusion as shown in this Section.

**Damage from Forest Grazing Is a Highly Localized Problem, Mostly Related to the Number of Cows in a Particular Place Rather than Methods Used**

Among the Target locations there is a range of negative effects from forest grazing, from little or no negative effect to great negative effect. The difference in effects stems from the number of cows, the methods used to manage the cows and the extent of afforestation.

The type of damage varies. One effect is that as cows eat more favored plants in the forest (e.g., blueberries) other species thrive (e.g., Rhododendron). In certain locations, where the density of cows is particularly high, the value of forest grazing was estimated to be more than 300 GEL per year per cow. \(^{16}\)

**Number of Cows.** Cows do not normally choose to enter the forest to graze if there is sufficient meadow for them. Even the most favored foods in the forest for cows (e.g., blueberries) is not preferred to high quality meadow grasses. Generally speaking, there is a forest grazing problem only when there are too many cows for the available open grazing area; that is, when the density of cows (cows per grazing area) is too high.

This is, of course, part of a much larger problem related to the number of cows owned by HHs; where there is forest damage the grazable area is not sufficient to match the number of cows. The solution is to either increase the grazable area or reduce the number of cows to match the number that can be sustained. This is a very sensitive issue, essentially unrelated to NTFPs *per se*; it is not addressed by the recommendations in the next Chapter.

It should be noted that in many areas, the number of cows is falling due to outward migration of people. As there are fewer HHs, there are fewer cows. In many areas this helps match the number of cows to the available grazing area, reducing the damage done by forest grazing. On the other hand, attempts by Government to improve HH livelihoods in remote areas by increasing the number of cows (the highest value-added, least perishable activity for rural HHs) will result in better economic outcomes and increased damage in forests from grazing.

**Cow Management.** Damage from forest grazing is greater or smaller depending on how the cows are supervised. In Eastern Georgia, cows (from several HHs) are closely supervised by a dedicated shepherd; each HH is responsible for providing the shepherd according to a rotating schedule. In Western Georgia the cows are unsupervised for the entire day.

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\(^{16}\) In Keda. In other Target locations the figure varied between 250 and 400 GEL.
If the number of cows and available grazing areas are fixed, the damage to the forests is directly related to the cow management method. If supervised, as in Eastern Georgia, the cows will not be permitted to enter the forest and there will be no forest damage except from travel through the forest to reach a grazing area. Shepherds do not want cows to enter the forest because there are dangers in the forest (e.g., predatory animals, poor or even dangerous foods such as rhododendrons). If unsupervised as in Western Georgia, the cows will enter the forest to a degree if there are more cows than the available grazing area can easily accommodate (since cows prefer to not go into the forest).

**Afforestation.** As noted previously, the density of cows is an important consideration in damage from forest grazing. We were told that in many areas, particularly areas with declining populations, that dramatic afforestation is occurring; meadows are filling with berry and other types of bushes. This means the available grazing area is falling and consequently the number of cows that can be supported is also falling. Where afforestation is greatest, it is possible that damage from forest grazing is increasing fastest if depopulation is not occurring at a commensurate rate.

On the other hand, the number of cows owned by HHs in forest edge villages is falling as the outward migration occurs.

To the end, we found that forest grazing does damage the forest, but not everywhere. Even where it occurs, the damage must be assessed in light of other economic matters (e.g., HH livelihoods from having too many cows for the available grazing area).
4. RECOMMENDATIONS

The Chapter shows recommendations that would increase the economic benefits to HHs from NTFP exploitation. Recommendations fall into three groups:

- HH-level recommendations
- National-level recommendations
- Forest-level recommendations.

Implementing only the HH-level recommendations, without also implementing the national-level recommendations, will produce benefits for individual HHs for self-consumption of NTFPs. Achieving benefits for individual HHs from increased sale of NTFP essentially requires also implementing the national-level recommendations. Forest-level recommendations will create benefits under all situations.

4.1. HH-LEVEL RECOMMENDATIONS

This Section discusses recommendations to be implemented at the HH level. By themselves, without implementing the national-level recommendations shown in the next Section, these (HH-level) recommendations will produce benefits for self-consumption of NTFPs. If national-level recommendations are implemented, benefits will expand to include increased sales of NTFPs.

A Wide Range of Medias Should Be Used to Improve Knowledge of NTFPs Both in Villages and Among the General Public

As noted in the previous Chapter, there are a number of knowledge gaps about NTFPs among citizens living at the forest edge. There is another knowledge gap among the general public.

At the village level, a broad public information program should be undertaken to fill the knowledge gaps. Individual HHs should be given (effectively and repeatedly) information on the types of NTFPs that are present in the forests adjacent to their homes; how to find, identify (particularly to avoid poisonous mushrooms), sustainably collect and preserve each type of NTFP; the use of each type of NTFP (e.g., self-consumption, medicinal purposes, sale); requirements for sale and market value of each type of NTFP; real-time market data and contacts for Local-Level Intermediaries (LLIs) and so forth. Land ownership issues should likewise be clarified for village residents.

Some NTFPs are already well known to village residents, but a wide range of NTFPs are available in the forest but simply unknown; knowledge about those NTFPs has been lost over the years. An effective informational campaign among villagers would likely double the number of types of NTFPs that are collected and, with a National-Level Intermediary (NLI) as noted in the next Section, could double average cash income from NTFPs. The ability of individual HHs to obtain foods from the forest as a social safety net would increase dramatically.

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17 We note, however, that few of the people we spoke with said they needed more NTFPs for self-consumption; individual HHs are generally able to collect what they need under present circumstances.
Separately, a public information program to improve knowledge of NTFPs among the general public would increase demand for existing and new NTFPs.

For both publics, the public information programs should use the best available communication methods including public service announcements, reality TV shows, brochures, guidebooks, cookbooks, mobile apps, web sites and so forth.

Implementing this recommendation will increase knowledge of NTFPs among villagers and the general public, increase domestic demand for NTFPs and help individual HHs better profit from collecting NTFPs for either self-consumption (e.g., avoidance of need to purchase some foods or certain pharmaceuticals) or for sale.

**Individual HHs Should Be Given Small Grants for Equipment to Preserve NTFPs and to Collect Them Safely**

There is an existing national-level program to develop cooperatives, many of which focus on NTFPs. The cooperatives are suitable for locations where there is a large enough concentration of NTFPs and HH members to collect them. These important efforts should continue.

On the other hand, this recommendation would build on the co-op effort by helping individual HHs where there is not an existing cooperative.

A key problem facing HHs is the perishability of collected NTFPs. Usually HHs cannot collect enough quantity in a day or two to warrant a trip to a market to sell the NTFP. Likewise, by the time the HH has collected enough NTFP to sell, the NTFP has started to spoil. Not surprisingly, HHs do not collect such NTFPs. Mushrooms and berries are classic examples of such perishable NTFPs, though there are others.

Simple private drying equipment, granted to HHs along with NTFP sorting instructions, would go far to solving this problem. In most areas the quantity of NTFPs available in the forest do not warrant centralized drying facilities; small personal electrical dryers are a much more appropriate technology.\(^{18}\) Personal dryers would permit the HH to collect and preserve greater quantities of NTFPs for self-consumption or to make travel to a market profitable.

In some cases, HH members engage in dangerous work to collect NTFPs. Fir seeds are the best example. Mushrooms collected on steep slopes is another example. Basic safety equipment should either be required or provided for free to the crews and individuals performing this dangerous work.

Implementing this recommendation would improve the ability of HHs to collect and store NTFPs for either self-consumption or sale. It would also significantly improve the safety of NTFP collection and increase the quantity of NTFPs that can be collected safely.\(^{19}\)

The benefit of this recommendation will be much greater if National-Level Intermediaries (NLIs) are created as noted in the next Section since commercial demand for NTFPs will increase and sales of NTFPs by HHs will increase commensurately.

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\(^{18}\) We found every HH we interviewed had electricity. There is little reluctance to use electricity for profitable purposes. The number of villages in Georgia without electricity is fewer than 20.

\(^{19}\) In some places, more than half of NTFPs are not collected due to the danger of doing so.
Transport Cost Equalization Should Be Considered When Setting Social Security Payments

Cost equalization schemes are governmental programs undertaken to permit citizens in more-expensive-to-do-business locations to compete with citizens in less-expensive-to-do-business locations; to level the playing field. Rural electrification schemes are a classic example (i.e., rural HHs pay the same electricity rates as city dwellers even though the cost of providing electricity through remote transmission lines is many times greater).

Some HHs at the forest edge are at a significant competitive disadvantage due to their poor transport infrastructure. These villages are away from public transport and any movement of NTFPs from the village to markets (or other products in the reverse direction) is much more expensive than is the case for other villages. This means that residents of these remote villages will always suffer competitively.

Two solutions would be to improve transport infrastructure or provide some type of direct transport subsidy to reflect increased transport costs. We considered these options but they did not seem practical.

However, one possibility is to reflect this difference in costs and competitiveness when setting Social Security Payments. We did not research this subject closely, but the cost difference is real, is straightforward to calculate and would be relatively easy to incorporate into existing social security payment schemes.

Implementing this recommendation would permit residents in remote villages, often the people closest to the NTFP source, to be cost competitive with residents in non-remote villages. Participation in NTFP collection for sale would increase.

4.2. NATIONAL-LEVEL NTFP RECOMMENDATIONS

The economic benefits of NTFPs for individual HHs for self-consumption can be improved by implementing the recommendations shown in the previous Section. Expanding benefits to include collection of NTFPs for sale requires also implementing the national-level recommendations shown in this Section.

One or More National-Level Intermediaries (NLIs) Should Be Created for Selected NTFPs

Unfortunately, there is no easy solution to the major problem noted earlier within NTFP value chains: lack of critical mass for commercial purposes at each step of the value chain. Individual HHs often cannot collect enough of an NTFP to warrant transporting it to market or to motivate a Local-Level Intermediary (LLI) to visit the village. Most LLIs are not focused exclusively on NTFPs because there is not enough profit in the NTFPs for a livelihood; it is at best a part-time job. Many villages are never visited by LLIs. Region-Level Intermediaries (RLIs) do serve their one or two foreign customers (or large domestic customers) but they cannot obtain all the NTFPs they desire and they are not large enough to proactively develop foreign customers or develop the Georgian mark for NTFPs.

As noted previously, Georgia does not have a National-Level Intermediary (NLI). This means that functions of NLIs that create critical mass are not performed, specifically: 1) establish the Georgian mark for a particular NTFP to stimulate export demand, 2) perform proactive export
development (e.g., exhibit at international trade shows) and 3) develop a portfolio of international customers so as to not be heavily dependent on any one customer.

Without an NLI, these functions cannot be expected to be performed and economic activity concerning NTFPs will be reduced.

NLIs should be created to address the critical mass for commercial purposes problem at each level of the value chain. NLIs should be large enough to develop foreign markets for particular NTFPs and should develop the Georgian mark for NTFPs. The NLIs should pull product through the value chain and would thus significantly reduce the market risk for individual HHs. NLIs should be large enough to manage their own market risk. Coupled with HH-level recommendations, noted in the previous Section, one or more NLIs would likely create significant commercial activity at the level of the individual HHs.

Public-Private Partnerships (PPPs) Should Be Used To Create National-Level Intermediaries (NLIs)

It is unlikely that the private sector will be able to create NLIs on their own. Selling to large international buyers or large domestic markets requires a ready and large source of supply (i.e., an existing NLI). Developing a large and reliable source of supply requires a large investment in supply chain development. A large investment requires assured large international buyers (i.e., existing international buyers). This creates a vicious circle: selling to international buyers requires an existing NLI and one cannot expect the private sector to create an NLI without existing large international buyers.

The vicious circle should be broken by focusing on creating one or more NLIs through one or more Public-Private Partnerships (PPPs). As a rule, we hesitate to recommend interference with market operations, and creating PPPs will certainly be a market interference. However, we see no other way to effectively address the critical mass issue for even one NTFP.

There are three steps towards creating one or more NLIs as PPPs. Each step has a following recommendation in the context of a project that would be performed to execute the recommendation:

- Project One: A short-list of candidate NTFPs suitable for Georgian National-Level Intermediaries (NLIs) should be created

- Project Two: Commercial feasibility studies for National-Level Intermediaries (NLIs) should be done for each NTFP on the short-list

- Project Three: Create Public-Private Partnerships (PPPs) to exploit each feasible National-Level Intermediary (NLI).

Project One: A Short-List Of Candidate NTFPs Suitable For Georgian National-Level Intermediaries (NLIs) Should Be Created

Many NTFPs are traded in the world, with varying market sizes. Some of those NTFPs are available in Georgian forests. Project One should create a short list of matches between international demand and Georgian supply of NTFPs. The NTFPs on the short list will be

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20 Demonstrating this for particular NTFPs is the objective of the recommendations in this Section.
studied much more thoroughly as part of the next two recommendations. NTFPs truly unique to Georgia should receive particular attention.

This need not be a large effort; in fact, Projects One and Two could be combined. Generally good information exists on international trade in the most important NTFPs (prices, quantities, suppliers). Additional work will be needed for less noteworthy NTFPs that Georgia happens to possess. Information on supply of NTFPs in Georgia is poor since a forest inventory has not yet been done. Nevertheless, a relatively small effort would be needed to sufficiently characterize supply for the purposes of Project One; more detail will be needed later for NTFPs that move into Projects Two and Three.

The international demand for NTFPs should be matched against the supply of NTFPs in Georgia to create a short-list of five or so candidate NTFPs for further study in Project Two. A range of criteria should be used to create the short-list including size of international demand, share that Georgia would need to participate, availability and other limitations (e.g., inclusion in the national red-book list).

Doing this Project will enable Georgia to quickly identify and reach agreement on those (few) NTFPs that might be suitable for Georgian NLIs. These (few) NTFPs will be thoroughly analyzed as part of Project Two.\(^2\)

**Project Two: Commercial Feasibility Studies For National-Level Intermediaries (NLIs) Should Be Done For Each NTFP On The Short-List**

Ultimately, NLIs should be based on a sound business case; a business case is sound if an NLI is able to pay all its costs and also attract capital (i.e., is sufficiently profitable given its risk). The feasibility studies done as part of this Project Two should establish the commercial viability of the business case, or show that there is no business case (i.e., the NTFP is not suitable for a NLI).

A normal feasibility study should be done for each of the short-listed NTFPs in the context of an NLI handling nearly all exports of the particular NTFP. For example, if the overall supply of dried mushrooms is 1 200 MT (as estimated in Project One), then the Terms of Reference (TOR) for the new NLI are that it will handle 1 200 MT of dried mushrooms, it will commit to purchasing that quantity from suppliers lower in the value chain and it will engage in export marketing activities needed to sell 1 200 MT.

The feasibility studies should address issues such as:

- International markets (e.g., product standards, size, price, value chain arrangements, customers, competitors, barriers of entry/exit)
- Sources of supply and cost structure (e.g., likely quantity and delivered cost of the NTFP to the NLI)
- Likely operating profitability (e.g., match between likely international price and costs)
- Required investment, primarily working capital to support the purchase commitment and marketing

\(^2\) The _reach agreement on_ phrase is important. We found that if you ask three people for the most important NTFPs to develop for export, then you would get four answers.
Basic profitability (e.g., return on investment)\(^{22}\)

Organizational and legal structure of a to-be-created NLI.

The study should also assess to what extent the Fairwild Standard adoption should be implemented for domestic producers for the NTFP in question.

The feasibility studies done as part of this Project Two will document the (fewer) NTFPs that could be commercialized by an NLI.

**Project Three: Create Public-Private Partnerships (PPPs) To Exploit Each Feasible National-Level Intermediary (NLI)**

In this Project Three, full investment plans should be developed for the NTFPs where creating an NLI is commercially feasible, as determined in Project Two. Public-Private Partnerships (PPPs) will likely be needed; they should be created on the basis of investment plans prepared as part of this Project Three.

The investment plans should document the profitability that can be expected, and the level of public support needed to attract capital. For example, if a purely private NLI for a particular NTFP would create a rate of return (perhaps measured by an Internal Rate of Return) of 7 percent, and the riskiness of the venture requires a 14 percent rate of return to attract capital, then it is likely that a 50-50 Public-Private Partnership (PPP) will be needed. That is, half the investment capital will need to come from public sources and half from private sources. Other mixes of public and private capital will result from the investment plans.

At the outset, governance and ownership of the PPPs should be shared in proportion to the contributed capital, though the private investor should always retain majority control. If the capital is 50-50 public-private, then initial ownership should be 49 percent public and 51 percent private. Once the business begins to operate and is profitable, the riskiness of the business will be reduced somewhat and the private owner should be able to buy out the public ownership at concessionary rates (e.g., at original cost with an imputed rate of return of perhaps zero percent). In this way, the PPP is a way manage risk; risk is shifted from the investor to the government until such time as the sustainability of the NLI becomes clear.

In exchange for the *public* part of the PPP, clear supplier protection schemes should be put in place. These should ensure that individual HHs in villages at the forest edge receive their fair share of value added by the value chain going through the NLI.

An NLI will stimulate the development of the value chain; it will be a guaranteed buyer. An NLI will also be able to spread international marketing costs over large quantities thereby reducing unit costs per output. A PPP will ensure achieving economies of scale and development of the value chain of commercialized NTFPs.

With the guaranteed buyer (NLI) at the top of value chain, market information will flow adequately and risk allocation between the value chain members will be reshuffled decreasing the burden on individual HHs.

\(^{22}\) Project Three will address the use of a PPP as the NLI. As PPPs, the rate of return for the NLI need not reach market rates. However, the feasibility study needs to demonstrate reasonable profitability to be eligible to create a PPP.
4.3. FOREST-LEVEL INTERVENTIONS

The recommendations in this Section discuss how to improve the productivity of the forests, thereby increasing NTFP quantity and density.

Three NTFP Resource Assessments Should Be Done as Methodological Tests

Annex III discusses the sustainability of NTFP collection and includes a Resource Assessment Framework. The first few steps (Situation Analysis, Resource Inventory, Yield And Regeneration Studies and Assessment Of Harvest Impacts) should be undertaken for three NTFPs as a way to test the methodology in Georgia.

The selected NTFPs should be the same as the short-listed NTFPs for creating National-Level Intermediaries (NLIs) discussed in the previous Section. The Assessment will determine the available supply and provide guidance on the collection methods that should be used.

Forests Should Be Proactively Managed to Increase NTFP Quantity and Density

As noted elsewhere, the quality of forests vis-à-vis NTFPs is declining. In a few cases, this is due to poor collection practices for NTFPs, although the greatest causes are due to factors unrelated to NTFP collection (e.g., climate change, afforestation, forest grazing).

Nevertheless, there are steps that should be taken to better manage the forests with the purpose of improving NTFP quantities and densities. Undesirable forest types should be replanted with healthier mixes of trees. Access trails should be developed to ease access to rich NTFP locations. The optimal density of cows should be developed for each area and then enforced. Afforestation should be reversed or at least better controlled. Biological fences should be created in meadows to keep cows within the meadow and out of the forest. Pigs should not be allowed to run free in the forest. Unattended grazing in vulnerable areas should be prohibited. Vulnerable areas should be identified as part of forest management plan.

Local meadow development plans should be prepared and then implemented by local residents. Part of these plans should include instruction on how to properly supervise cows so they do not graze in the forest. The mix of plant species in the meadows should be changed to increase fodder quality.

Anthropogenic management of forests should be adopted which includes development of human-modified forest gardens and agroforestry systems. This was a historical practice during Soviet times (e.g., development of forest walnut trees).

Over time, implementing recommendation would increase the quantity and density of NTFPs in forests.

NTFP Issues Should Strongly Influence Future Forest Management Plans

NTFP productivity of forests can be increased through effective forest management methods. For example, wild blueberries do best in certain forest conditions and those conditions can be created through active forest management methods.

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23 It should be noted that a consequence of this may be a reduction in the number of permitted cows and a commensurate reduction in income for individual HHs.
Forest management should be based on landscape or forest management plans. In Georgia, those plans do not yet exist. Nevertheless, when forest management plans begin to be prepared steps to improve NTFP productivity should be key elements.

For example, the forest plans will include forest zones; those zones should include NTFP features. Some zones should be designated for anthropogenic management. In these zones, steps should be taken to intentionally modify the forest to improve productivity. For example, forest orchards should be created for some fruits (e.g., wild pear).

Emphasis on NTFP issues in forest management plans will increase the sustainability and productivity and profitability of NTFPs, thereby reducing local dependence on timber. Anthropogenic management of selected forest zones will increase the density of NTFPs in the zone, with commensurate benefits for productivity.
5. DETAILED METHODOLOGY

This Chapter presents detailed methodology used by the Project Team for Project. There are six Sections. The first Section shows Project objectives. The second Section outlines the key research questions reflecting Project objectives. The next Section describes how we selected (filtered) the six Target locations for fieldwork. The last two Sections describes fieldwork activities and the analytical process we followed to reach conclusions.

5.1. PROJECT OBJECTIVES

The main objective of Project is to recommend how to transition HHs (and others) from less environmentally sustainable uses of NTFPs to more environmentally sustainable uses.

In order to achieve this objective, there are five sub-objectives:

- Document current use of NTFPs in forest-depending communities (i.e., how HHs and others collect NTFPs)
- Document how current (and potential) NTFPs contribute to HH livelihoods (i.e., how do HHs use NTFPs for own use and for sale)
- Identify the negative impact and unsustainable uses of NTFPs by local HHs and others
- Recommend feasible strategies (i.e., interventions) to increase the benefits HHs receive from NTFPs and transition HHs (and others) from selected less environmentally sustainable NTFP uses and methods to more sustainable ones
- Ensure Stakeholders understand Project results and, most important, the interventions needed to transition HHs (and others) from less to more environmentally sustainable NTFP uses.

Project looked at the main internal, external and sectorial developments, programs and institutions that affect people-forest relationship patterns in various regions of Georgia and worked out recommendations for sustaining such relationship in the context of Georgia’s social, economic, environmental and policy context. The study covered all geographic and ecological zones of Georgia and included environmental assessment of the current types of forest use by rural populations as well.

5.2. KEY RESEARCH QUESTIONS

The key research questions were defined through consultation with stakeholders and the Bank; they are grounded in the Project objectives noted in the previous Section.

Research topics (essentially Focus Group Discussion (FGD) topics) were as follows:

- Understand current available resources and trends for the past five to twenty years
- Consumption of NTFPs and their importance in HH’s economics
- Understand the commercial aspects of NTFPs in local communities and trends in commercial exploitation
Assess the environmental damage created by NTFP collection

Barriers to increased NTFP collection and respectively increased economic benefits to HHs

Prevalence of and damage to environment from forest grazing by livestock.

Each of these topics were covered in detail during FGDs. The meaning of each topic is elaborated in the following paragraphs.

Available Resources And Trends. The first part of the FGDs aimed to understand the main resources that are available around the Target location. Participants were asked to name all NTFPs that are available in their forest and group them into categories. The categories included edible, medicinal, decorative and other types of plants and honey production (i.e., placing domestic bee-hives in the forest during blossom season). The trends of availability in terms of quantity and ease of access were discussed as well as how each has changed over the past five, ten and twenty years for each affected category and what were the possible causes of change.

Consumption And Importance Of NTFPs Among HHs. During the second part of the FGDs participants were asked to underline NTFPs which are collected by HHs for either self-consumption or sale. Further discussion concerned what happens to collected NTFPs between collection in the forest and final use or sale. Among the possible options were: consumed fresh or processed, dried, sold fresh or processed using various channels (e.g., wholesaler, local market), sold to commercial user (processor or collection center). The objective was to understand the common practice of NTFP use among different product categories.

Commercial Aspects Of NTFPs. Participants were asked to share information about the commercial exploitation of NTFPs in their communities: the number of commercial entities operating in the area, availability of collection centers, organization of value chains for specific products and problems or disadvantages of the processor operating in the area.

Environmental Damage of NTFPs. Participants were asked to think about the types of environmental damage that are created by NTFP collection, excluding forest grazing (a separate subject later). While talking about environmental damage, timber and firewood were not precluded in the discussion. Significant changes in the forest eco-system for the past decades that negatively affected the environment were discussed.

Barriers to Increased NTFP Collection. Moderator outlined barriers preventing increased NTFP collection and respectively increased economic benefits for HHs. Monetary barriers such as unfavorable pricing, more beneficial alternative activities and non-monetary barriers of accessing markets and buyers, transportation difficulties, perceived regulations and restrictions on use were discussed. The impact of these matters on HH behavior were also discussed.

Environmental Damage Of Forest Grazing. The last part of the discussion concentrated on prevalence of and damage to the environment from forest grazing. Participants were asked to describe the way livestock interacts with the forest, the availability of pastures, how cattle grazing is organized by HHs, seasonal migration to other pastures (if any) and how the cost of feeding livestock would change if there were no access to the forest.
5.3. TARGET LOCATION SELECTION

This Section discusses the method used to select the six Target locations for FGDs. The selected locations are characterized in terms of demographics, floristic types and local species are discussed in the Annex.

Filtering Process

Selecting the Target locations was not an obvious matter. The sizes of the eventual Target locations ranged from small to very small. There are hundreds of such villages in Georgia. Selecting the six final Target locations required an organized approach.

The Target location filtering and selection criteria were defined in the Inception Report and were applied to candidate locations. The selection process for the fieldwork combined a set of criteria and multi-level filtering to identify the villages or group of villages for fieldwork (i.e., the six Target locations). The result of this analysis was a list of six villages, by name, where fieldwork was done.

The following chart summarizes the selection process.

Source: TBSC Analysis.

We started with all geographic and ecological zones in Georgia. The areas range from arid semi-desert (light zones) to Kolkheti region wetlands. The zones differ in altitude from sea level to 5 000 meters and they form vertical girdles. In Georgia, forests range from subtropical zones on the Black Sea coast to alpine forests in valleys at 2 600 meters.

Filters One And Two: Forest Type; Proximity To Forest Margin

Filter One: Forest Type. Forests of Georgia are situated on seven different natural-historical areas (i.e., forest vegetation regions). The areas are shown on the following chart and are named as follows:

- Kolkheti Region (I)
- Upper and Central Kartli Region (II)
- Javakheti Region (III)
- Eastern Trans-Caucasus Region (IV)
- Kakheti Region (V)
- Khevi and Piriqita (Reversed)
- Khevsureti Region (VI)
- Tusheti Region (VII)
4. Forest And Vegetation Regions In Georgia

Filter Two: Proximity To Forest Margin. To focus on more specific locations, the forest density was assessed in each region; the density of forest vegetation was reviewed and evaluated. Areas with medium forest density are areas where there are forest margins; we assessed places where there is both forest and non-forested areas, the intersection of the two being the forest margin.

The following chart marks areas with medium forest density (i.e., areas with a forest margin). These are the parts of the seven forest and vegetation type regions noted previously. NTFPs are typically produced from forest margins (i.e., where HHs can access the NTFPs in the forest).

Note that at this filter level, a medium forest density was desired. This meant that there was a mix of forest and non-forested areas, and therefore some forest margin areas. Later filters focused on high-forest density within the areas with medium forest density.
5. Areas With Medium Forest Density (forest margin areas)

Filters Three And Four: Geographical Region; Municipality

Filter Three: Match Geographical Region. The next step was to match specific geographical regions to the geo-botanical districts with high forest density. The geographical districts are large and may cover more than one region. Considering the geographic and territorial arrangements, we divided those districts into eight sub-districts characterized with high forest density.

- Ajara
- Svaneti
- Rachia
- Samtskhe – Javakheti
- Imereti
- Mtskheta-Tianeti
- Shida Kartli
- Kvemo Kartli
- Kakheti

Those sub-districts are conditional and they do not necessarily cover the whole region (e.g. Adjara does not constitute of all five administrative units rather only those which are adjacent to forest).

Filter Four: Municipality. In Georgia, there are three organizational levels: region (e.g., Adjara, Kakheti), municipality (e.g., Shuahevi, Khulo, Akhmeta, Telavi) and village (usually less than 1 000 inhabitants). For fieldwork purposes, we concentrated on individual villages or a set of adjacent villages (i.e., the Target locations). Rural HHs within those Target
locations are the primary research group. Consequently, we define Target locations as a subset of villages adjacent to forests.

The sub-distRICTs identified in the previous filter somewhat match existing regional territories in Georgia. Municipality is a next level below. For each sub-district, a list of municipalities was matched. The matching exercise was done with the consultation of field experts and other stakeholders (i.e., National Forest Agency and Biodiversity Department under MoENRP). We included only those municipalities characterized with high forest density and that are adjacent to forests.

The following chart shows 19 municipalities in the regions noted in Filter Four.

<table>
<thead>
<tr>
<th>Region</th>
<th>Municipality</th>
</tr>
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<tbody>
<tr>
<td>Ajara</td>
<td>Khulo</td>
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<tr>
<td></td>
<td>Keda</td>
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<tr>
<td></td>
<td>Shuakhevi</td>
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<tr>
<td>Svaneti</td>
<td>Lentekhi</td>
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<td></td>
<td>Tsageri</td>
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<td></td>
<td>Mestia</td>
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<td>Racha</td>
<td>Ambrolauri</td>
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<td></td>
<td>Oni</td>
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<tr>
<td>Samtskhe ~Javakheti</td>
<td>Adigeni</td>
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<tr>
<td></td>
<td>Aspindza</td>
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<tr>
<td></td>
<td>Akhalkalaki</td>
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<td></td>
<td>Borjomi</td>
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<tr>
<td>Imereti</td>
<td>Kharagauli</td>
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<tr>
<td>Mtskheta-Tianeti</td>
<td>Dusheti</td>
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<tr>
<td></td>
<td>Tianeti</td>
</tr>
<tr>
<td>Shida Kartli</td>
<td>Kareli</td>
</tr>
<tr>
<td>Kvemo Kartli</td>
<td>Dmanisi</td>
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<tr>
<td>Kakheti</td>
<td>Akhmeta</td>
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<tr>
<td></td>
<td>Dedoplistkaro</td>
</tr>
</tbody>
</table>

Source: TBSC Analysis.

**Filter Five: Eliminate Duplicative Municipalities**

We used Filter Five (and later Filter Six) to make final selections of Target locations. We applied Filter Five from our desks, giving a first approximation of the best municipalities and villages to investigate further. We eliminated duplicative municipalities and made initial choices of individual villages. As Filter Six (discussed later), we then visited the six selected municipalities and reassessed villages to make final choices of the Target locations.

From Filter Four there were 19 municipalities, within which we needed to select the six Target locations. We first reduced the number of municipalities from 19 to six applying a number of criteria, listed below. Among similar municipalities (sharing features as noted by the criteria) we selected only one municipality. Municipalities that share basic characteristics with another municipality were eliminated, leaving only one municipality of each type. For this analysis, we made assumptions about individual villages to enable us to apply the filter at the municipality level. Assumptions were later checked in site visits.
The selection criteria were as follows. These same criteria were used again when we visited the six selected municipalities to make final choices of individual villages (i.e., the Target locations) as part of Filter Six.

**Proximity To Forest.** The proximity of villages to the forest was analyzed and three concentric circles were developed around the forest at a distance of five, ten and 15 kilometers. Those villages inside the five kilometer circle were classified as being in *close proximity* to the forest, those villages within the five to ten kilometer annular area were classified as being in *proximity* of the forest. Those villages within the ten to 15 kilometer annular area were classified as being *in the area* of the forest and those villages outside the 15 kilometer circle were classified as being *not in proximity* of the forest.

**Size And Density Of Population.** The demographic situation of villages was analyzed including the number of total HHs and the number of poor HHs (relying on state social aid statistics). The larger villages in terms of population were given priority to make the fieldwork more representative.

**NTFP Product Diversity.** Biodiversity of the forest was considered as well. High biodiversity gives HHs access to a range of NTFPs, thereby stimulating use of NTFPs generally. The more diverse the forests, adjacent to villages, the more informational would be the fieldwork. The diversity of NTFPs enabled us to collect information about various NTFPs exploited by HHs.

**Relative Importance Of NTFP For HHs.** The dependence on forest resources by local HHs can be measured by proportionate share of other activities or resources. Given the data limitations, it is difficult to properly measure the relative share of NTFP for each village. However, we analyzed the dominant activities of HHs in selected villages and drew conclusions based on that. If sheep and animal husbandry is the dominant agricultural activity in the village, it may indicate that forest exploitation and collection has relatively small share.

**Likelihood Of Localized Problem.** Based on initial research findings, most of the problems associated with NTFPs are of a local nature rather than systemic. Therefore, we discussed with local key informants and evaluated the villages for the likelihood of similar localized problems.

**Additional Criteria.** As a further screening tool, we collected additional qualitative information for villages. We spoke with Governmental staff in each municipality and asked them to qualitatively describe the villages including the above-mentioned features. We asked them to provide additional information such as the commercial activity related to local forests and NTFPs, existing collection centers, local private enterprises engaged in forest-related activities, NGOs working on environmental issues and so forth. All those findings are presented in Annex.

The results of Filter Five, the selected municipalities, are shown in the following chart.
The Team visited the six selected municipalities two to three weeks before the expected date of the FGD; these were Advance Team Meetings (ATMs). We met with local Government representatives and local forestry unit staff. We discussed the criteria listed in the previous Sub-Section (Filter Five) and reached agreement on the specific village that would be the Target location in that municipality.

During each ATM the Team did preparatory work and collected initial data. Preparatory work including agreeing on how FGD participants would be recruited and selecting a Local Agent who would make all local logistical arrangements. Initial data was used to prepare for the FGDs, particularly preparing tailored Focus Group Guides (FFGs).

The subjects discussed during the ATMs included what types of HHs use NTFPs, how NTFPs are extracted from the forests (methods), how NTFPs are used (value chains), how HHs think about NTFPs and the importance of NTFPs to HH income.

The end result of the ATMs, and Filter Six, were six Target locations, each a small village (or small cluster of villages) adjacent to the forest.

**5.4. FOCUS GROUP DISCUSSIONS**

Local Agents were given instructions during the ATMs about the profile of FGD participants. The participants were to (and did) include mainly local citizens directly involved in NTFP collection, commercial entity representatives, local representatives of the NFA, local authorities and Civil Society Organizations (CSOs). Details on the participants in each FGD are shown in the Annex.
Local Agents recruited participants using the specified criteria. The recruitment process was supervised regularly by the Team and the Local Agents contacted expected participants three days before and the day before the FGD. These supervisory steps ensured unforeseen problems were avoided or solved at an early stage. All FGDs were done with a minimum of problems with participants.

A typical day for an FGD was as follows. The Team arrived at the Target location about 1000 in the morning and met with the Local Agent and usually some municipal or village officials; generally, the Team had previously met the officials during the ATMs. The Local Agent arranged for participants to arrive at the FGD location by about 1030, in some cases providing transportation. The usual location was a school or other Governmental building. In small villages a home was used and in one case the front porch of a home. All locations were comfortable for the participants.

The FGDs varied from two and a half hours to three and a half hours in length. The FGD was moderated by a Team member well experienced in such matters. A detailed Focus Group Guide (FGG) was used; a copy of the FGG is shown in the Annex. Detailed notes were taken and the FGD was taped for later transcription. Maps and props were used to identify particular locations where NTFPs exist or are collected.

All FGD participants were thanked for their participation.

The balance of the day was dedicated to individual interviews in the Target location and a visit to the local forest to observe the impact of NTFP collection. Local Agents pre-arranged most individual interviews using the same criteria as used to select FGD participants. Individual interviews were used to collect additional data regarding NTFP collection and confirm the key topics discussed in the FGDs. A detailed interview guide was used; a copy is shown in the Annex. Most individual interviews were from 30 to 45 minutes in length.

In total, 62 people participated in FGDs in the six Target locations; details are shown in the Annex. A bit less than 60 percent of FGD participants were men. We endeavored to maintain gender balance since more women than men are engaged in NTFP collection due to cultural and historical reasons. However, given the same cultural reasons, women were relatively less willing to participate in the FGDs.

In addition, 43 individual interviews were done in the six Target locations.

Detailed results of the FGDs and individual interviews are shown in the Annex.

5.5. ANALYTICAL PROCESS

The analytical process comprised three steps, each described in this Section.

Documentation

First, results from the FGDs and individual interviews were fully documented. FGD transcripts were prepared and shared among the Team members. Additionally, each Team member prepared individual notes of both FGDs and individual interviews and circulated them among the Team. Data from individual interviews was entered into a small database.
Based on the transcripts and detailed notes, reports were prepared for each site including the following information, all described in detail in the Annex.

- Detailed description of each Target location in terms of the key research questions
- Main observations and conclusions generalizing study goals in the light of project objectives
- Pre-agreed data-table and main indicators for each Target location
- Other insightful information and interpretations; not what people said, but rather in the context of what does it mean.

Analysis

Second, the Team met several times to discuss what we had learned, what was needed to minimize environmental damage from NTFP collection and what could be done to increase the economic benefit of NTFPs for rural HHs. The results of these discussions are the Conclusions and Recommendations shown in earlier Chapters.

Individual Team members were assigned particular topics to document; those pieces have been incorporated in this Report.

Prepare Report

The final step was to prepare this report. This has been a difficult process.

- The amount of information collected was large, requiring a lot of synthesis of results
- The amount of environmental damage from NTFP collection was small; there were no particular collection methods to be criticized
- Improving the economic benefit of NTFPs for HHs required going well beyond the individual HH; indeed, the entire NTFP value chain needed to be studied to reach conclusions about how to improve matters at the level of the individual HH
- We went through several versions internally before we were happy with the final set of conclusions and recommendations.

At this time, the Report is ready for review by all stakeholders.
ANNEX I – FOCUS GROUP DISCUSSIONS AND INDIVIDUAL INTERVIEWS

This Annex shows FGD and individual interview results for each Target location. The FGD comments are organized by Target location (six Sections) and comments on individual interviews are shown in a single Section at the end of the Annex.

There is a fair amount of detail for each Target location (i.e., in each of the six Sections), organized into four Sub-Sections. The Sub-Sections discuss the Advance Team Meeting (ATM); execution of the FGD; demographics of the community and description of the local forest and finally FGD results. FGD results include discussion of the six key areas covered by Project: availability of NTFPs, importance of NTFPs to HH economics, commercial aspects of NTFPs, environmental damage, barriers to increased NTFP collection and forest grazing.

Comments from all individual interviews is discussed in the last Section. The individual interviews were used to confirm comments made in the FGDs. No substantive issues arose from only the individual interviews.

Some of the information shown in this Annex was used to reach Conclusions and Recommendations shown in earlier Chapters. Some information was useful in not reaching a conclusion in a particular area; that is, the situation did not warrant a conclusion per se.

TARGET AREA - KHARAGAULI

Advance Team Meeting

The ATM was on November 9, 2015. The Team met with local government representatives and forestry unit staff. Among the discussed topics were the availability of NTFPs and the use and dependency of HHs on NTFPs. The local forester described the interaction of HHs from various villages to the forest and protected territories.

There are about 80 villages in the Kharagauli municipality. Virtually all villages are involved in NTFP collection depending on the location and availability of different NTFPs. Collected products include mushrooms, berries, chestnut and other wild fruits. HHs generally collect for self-consumption. Approximately 15 to 20 percent of HHs collect NTFPs to sell on the main road or in local markets (mostly in Zestaponi).

There are no commercial processors of NTFPs in the municipality. However, there is one village, Gedsamania, which attracts middlemen and merchants buying raspberries. Given its geographic location and suitable conditions for cultivating raspberries, HHs have established small raspberry farms. Reportedly, in Gedsamania about 50 percent of HHs grow raspberries and sell directly from their houses. The sale of domesticated raspberries brings buyers to the village who also can and do buy wild raspberries.

The Local Agent was identified to assist the Team in planning and organizing the remaining fieldwork activities.

The specific village for the FGD was agreed to be Khidari.
Focus Group Execution

The FGD was organized into two parts. The first FGD was organized in Khunevi village with eight participants at the local administrative building. Approximately one hour was spent for individual interviews among participants. A second FGD was held in Khidari village at the local trustee’s office. The number of participants was twelve with four women and eight men. The composition of the FGD was the local representative of the NFA, municipal and village authorities and villagers who are actively engaged in NTFP collection. The FGD was for two hours.

Demographics And Description Of Local Forests

Khidari village was the target location. The village is located adjacent to Borjomi-Kharagauli national park; the forest is less than five kilometers distance. Total area of the village is 645 ha with a population of 1 100 inhabitants.

Demographics. At the recommendation of local government officials, FGD and individual participants represented two different groups of villages. The first group (Khunevi) includes five villages: Bzhnevi, Getsamania, Vertkvila, Vertkvichala and Khunevi. Khunevi village (at 600 m) is the center of the community. Total population in this group of villages is 2 066 people in 642 HHs. Major agricultural activity is livestock breeding and growing of berry crops. About 20 percent of HHs have plantations of domestic raspberries. A small group of HHs (about 3 percent) grow blueberry crop varieties as well. It is common for HHs to collect wild berries for sale. Beekeeping is a common activity for about 30 percent of HHs. Fruit and vegetable growing is less common in the community; basically it is done for self-consumption only.

In the Soviet period, local residents were exiled to other regions of Georgia (Samtskhe Javakheti, Shida Kartli, Kvemo Kartli). Outbound migration was significant in the 1990s as well. However, since 2010, migration has been reversed; some residents have come back to the villages. Interview data indicates that growing of berry crop varieties is economically valuable for HHs and might become an important factor of protection from migration for local team.24

The second group is Khidari village, located in the river Borimela gorge (520 m). The population of the village is 1 080 people among 380 HHs. Residents are more focused on NTFPs than is the case in the Khunevi group, although villages in both groups are located on the forest edge. Major activity in Khidari village is livestock breeding, beekeeping and fruit growing. Vegetable growing is done for self-consumption.

In Khidari, HHs have limited access to agricultural land; traditional activities are diversified among animal husbandry (mainly cattle farming), corn production and NTFP collection.

Total number of cattle in the Khunevi group is 3 200; poultry – 2 300; pigs – 340; sheep and goats – 35 and bee hives 360. In the Khidari group the number cattle is 2 400; poultry – 1 700; pigs – 210; sheep and goats – 10 and bee hives 400.

Flora. The Khunevi group of villages is surrounded by broadleaf and coniferous mixed forests with Colchic relic understory, which is a common type of the forest in the Ajara-

24 Note these are domesticated berries, not NTFP berries.
Imereti mountain range and northern-western part of Great Caucasus. The major habitat surrounding Khidari village is Beech forest with Colchic relic understory.

From hard-wood species mixed forests are formed by: Pine (*Pinus kochiana*), Fir (*Abies nordmanniana*), Georgian oak (*Quercus iberica*), beech (*Fagus orientalis*), Zelkova (*Zelkova carpintifolia*), ash (*Fraxinus excelsior*), elm (*Ulmus glabra, U. elliptica*), maple (*Acer laetum*), Norway maple (*Acer platanoides*), wire-but (*Pterocarya fraxinifolia*), lime (*Tilia begoniifolia*), maple (*Acer campestre*), willow (*Salix micans, S. pantosericea*), Caucasian wild pear (*Pyrus caucasica*), apple (*Malus orientalis*), wild persimmon (*Diospyros lotus*), Fig (*Ficus carica*) and Yew (*Taxus baccata*).

Common evergreen bushes of this habitat are: *Rhododendron ponticum*, *Laurus nobilis*, *Ruscus colchicus*, *R. ponticus*, *Daphne pontica*, *Ilex colchica*, *Rhododendron ungernii*, *Epigaea gaultherioides* and *Buxus colchica*. Deciduous shrubs are common: *Vaccinium arctostaphylos*, *Staphylea colchica*, *Viburnum orientale*, *Philadelphus caucasicus*, *Euonymus leiophloea*, *Hypericum xylosteifolium*, *Swida australis*, *Corylus avellana*, *Frangula alnus*, *Mespilus germanica*, *Rubus caucasicus* and *Crataegus microphylla*.

Fern and lianas that form this forest are: Colchic ivy (*Hedera colchica*), Tamus (*Tamus communis*) and silk-vine (*Periploca graeca*), hops (*Humulus lupulus*), prickly ivy (*Smilax excelsa*) and clematis (*Clematis vitalba, C. viticella*). Ferns include *Matteuccia struthioptensis*, *Athryrium filix-femina*, *Blechnum spicant* and *Dryopteris affinis*.

Herbaceous vegetation of mixed forests is formed by: *Brachypodium sylvaticum*, *Oplismenus undulatifolius*, *Cardamine impatiens*, *Oxalis corniculata*, *Fragaria vesca*, *Lapsana intermedia*, *Brunnera macrophylla*, *Clinopodium vulgare*, *Arthraxon langsdorffii*, *Salvia glutinosa*, *Veronica officinalis* and *Viola alba*.

**Major Species.** Major habitat formed by beech is beech forest with Colchic understory (*Fageta fruticosa colchica*). Common species of such type forests are: *Fagus orientalis*, *Castanea sativa*, *Zelkova carpinifolia*, *Pterocarya fraxinifolia*, *Diospyros lotus* and *Taxus baccata*. Species mixed with the beech tree are: *Abies nordmanniana*, *Picea orientalis*, *Pinus kochiana*, *Quercus iberetina*, *Q. hartwissiana*, *Acer laetum*, *Carpinus caucasica*, *Tilia begoniifolia*, *Ficus carica*, *Pyrus caucasica*, *Malus orientalis*, *Staphylea colchica* and *S. pinnata*.

The following bushes create the understory in the beech forest: *Laurocerasus officinalis*, *Rhododendron panticum*, *R. ungerinii*, *Ruscus panticus*, *R. colchica*, *Ilex colchica*, *Daphne pontica*, *Epigaea gaultherioides*, *Vaccinium arctostaphyllos* and *Viburnum orientale da Buxus colchica*. The following lianas can be found: *Hedera colchica*, *Dioscorea caucascica*, *Tamus communis* and *Periploca graeca*. Ferns include: *Matteuccia struthioptensis*, *Athryrium filix-femina*, *Polypodium vulgare*, *Phyllitis scolopendrium*, *Pteris cretica*, *Asperula odorata*, *Calamintha grandiflora*, *Festuca drymeja*, *Salvia glutinosa* and *Viola alba*.

**Focus Group Discussion Results**

**Availability Of NTFPs.** The Target location is rich in various NTFP categories. Compared to other Target locations, Kharagauli has more diverse mushrooms such as *Amanita caesarea*, *Armillariella mellea*, *Cantharellus cibarius* and *Lactarius piperatus*.
Edible and inedible plants mentioned by FGD participants (with approximate harvestable quantities available) include the following.\textsuperscript{25}

\textsuperscript{25} This is a list of NTFPs that participants are aware of. In fact, in this and other Target locations there are many more NTFPs that are not known among local residents.
Chestnut (10 MT)  |  Whitethorn  |  Crab-apple (10 MT)
Hazelnut (10 MT)  |  Cornel (10 MT)  |  Wild pear (10 MT)
Walnut  |  Sweetbrier (1 MT)  |  Capers (10 MT)
Blackberry  |  Mushroom, all types (5 MT)  |  Snowdrop bulbs (20 MT)
Raspberry  |  Medlar  |  Medicinal plants (15 MT).
Blueberry (500 kg)  |  |  |

Medicinal plants include thyme, plantain, chamomile, wild mint, linden tree flowers, blueberry leaves, valerian, elder and bay leaves. Decorative plants are also available such as cyclamen, snowdrops and madder.

HHs are not aware about possible use of forest biomass. Wild honey collection is also non-existent.

The quantities noted above could be tripled if all local villages were included.

There have been localized reductions in available quantities of particular NTFPs in the past few years. Blueberries are highly threatened because bushes are withering or being eaten by livestock. Chestnut trees are also withering, perhaps due to Chestnut blight.

Other NTFPs are mostly stable in terms of quantity and ease of access.

**Importance Of NTFPs To HH Economics.** All NTFPs listed by FGD participants are used by HHs for self-consumption. Self-consumption volume per HH varies from 1 to 50 kg annually depending on the product.

About 20 percent of HHs are actively engaged in NTFP collection. Similar to other Target areas, there are mainly four types of NTFPs that are exploited for non-personal use.

Mushrooms are the most utilized NTFP in the area. *Amanita caesarea* is a highly valued product with starting sales price of five GEL/kg. Approximately ten HHs collect mushrooms regularly every year. Mushrooms are characterized with high degree of harvest seasonality and are vulnerable to weather conditions. The maximum amount collected by one HH in one season was 50 kg, giving an income of 250 GEL/yr. Such cases are mostly exceptions with an average of 25 to 30 kg collected per season, giving an income of 125 to 150 GEL/yr. The selling channels include local markets, restaurants or the highway.

Chestnut is a widely exploited NTFP. Average collected volume for one HH varies from 80 to 100 kg. The selling price is 2.50 GEL/kg, giving an income of 200 to 250 GEL/yr. Wholesalers buy directly from HHs.

Capers (*capparis spinose*) is also an exploited NTFP, available in large quantities. HHs collect up to 200 kg of wild capers every year and process it at home, mainly through pickling. Pickling preserves the product and partially solves the perishability issue. The product is sold at a market in Zestaponi at a price of 2.50 GEL/kg, giving a potential income of 500 GEL/yr if none is used for self-consumption.
Medlar and elder are widely used to make distilled spirits, mainly fruit brandy. Grapes are quite scarce in the area and the alternative traditional drink is brandy.

Beekeeping is a traditional activity, but only ten percent of HHs have beehives. The number of hives per HH ranges from 10 to 250, with an average of 40 hives. Bees collect chestnut and linden tree nectar. Honey is harvested twice a year, in May and August. According to HHs, bees depend on the forest for 70 percent of their activity.

NTFP collection is not organized; most HHs independently decide what and when to collect. Mostly middle-aged HH members are engaged in the activity. There are no cooperatives specializing in NTFPs; however, the general perception of cooperatives is positive. Participants think that higher productivity could be achieved through cooperatives.

There is active cultivation of domesticated raspberry and blackberry in Kharagauli. More and more HHs use grafted plants to give a high quality harvest. Two cooperatives started seedling tree nurseries, one of them specializing in berries.26

Collection methods vary among NTFPs. Walnuts are shaken off trees using long wood sticks; the walnuts fall to the ground. As a result, small branches are broken and buds are damaged. A similar method is used while harvesting capers (capparis spinose), cutting outside branches and twigs. Mushrooms are pulled manually from its roots with minimum stem left in the ground. Berries are mainly collected through manual picking of berries from the bush.

The average agricultural land owned by HHs is less than 0.5 ha. HHs diversify their activities among three main directions. Agricultural resources make up to 60 percent in total annual HH income while NTFPs reach about 35 percent of income including the domestic cultivation of various berries. The remaining five percent comes from beekeeping and other activities.

**Commercial Aspects Of NTFPs.** There are no commercial entities operating in the area. Collectors only interact with wholesaler in the value chain. Wholesalers purchase certain products directly from HHs or local markets.

Individual HHs partially sell to end users as well mainly along the highway or in the local market. Every Sunday, HHs bring collected NTFPs to a market in Zestaponi that is reportedly a large hub for wholesalers. They purchase in large quantities and transport products to either Tbilisi or processing entities. HHs are not aware what portion of collected NTFPs goes to processing and what is consumed by end-users.

**Environmental Damage.** According to HHs, general forest condition has deteriorated significantly. It has direct effect on NTFPs as well. Today, Rhododendron ponticum, called common rhododendron or pontic rhododendron, dominates more than 40 percent of the forest area. The same plant occupied less than five percent of the territory 20 years ago. Livestock does not eat the plant.27 Its nectar has hallucinogenic effects and is not suitable for high quality honey production. Mushroom population has also decreased because of this plant.

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26 This is an example of a traditional NTFP that is being displaced by domesticated crops.
27 One theory is that the Rhododendron has flourished because other competing species are popular with cows. In this case, forest grazing has negatively changed the mix of forest species.
NTFP quantities have decreased due to described changes in forest eco-system. However, its negative impact is not fully realized because of severe migration from the village.\textsuperscript{28}

Soil erosion and emaciation processes are not significant in the area. There are no noticeable climate changes.

HHs do not attribute these problems to NTFP collection. Our limited and qualitative observations suggest this opinion is correct.

**Barriers To Increased NTFP Collection.** Unfavorable prices are key constraints for HHs to exploit more NTFPs. The prices offered do not compensate for the work involved. In the absence of collection centers and processing facilities, collected NTFPs perish within two or three days. Not every HH has its own transportation, so they are able to take collected NTFPs in limited quantities to the local market via public transport.

Merchants and wholesalers appear in the village and express motivation to buy certain NTFPs. However, such cases are few and rather fragmented. If HHs invest time to collect NTFPs, there is no guarantee that the buyer will appear and purchase even at the low price usually offered.

**Forest Grazing.** Livestock is one of the key activity as HHs have relatively small size agricultural lands compared to Eastern Georgia. Each HH has four or five cows out of which two are milking cows. Other animals such as pigs and goat are very rare totaling less than 20 in number in the whole village.

The pastures and meadows around the village would be sufficient if families owned no more than three cows. The excess of cows (four or five per HH) means forest adjacent areas are actively used for grazing. Livestock migrates to summer pasture for three months during the year. The pastures are three kilometers distance from the village in high altitude mountains. The villagers take turn in supervising the cows while in the pastures only. Other than that, grazing is unorganized around the village. This has been a traditional practice of livestock breeding in the area.

Participants agreed that there is overgrazing around the village due to the large number of cows. However, they do not consider significant negative impact of grazing on forest territory.

**TARGET AREA – AMBROLAURI**

**Advance Team Meeting**

The Team visited Ambrolauri on November 10, 2015 and conducted a number of meetings with local stakeholders. The meeting objectives were similar to other ATMs: to understand the current situation in regards to NTFPs, to identify the target location and FGD participants and produce a customized logistical plan.

The chief of the regional forestry unit gave a general overview of local forests, available NTFPs and areas of distribution. He also described the collection patterns of various NTFPs.

\textsuperscript{28} This was a common theme. HHs report that quantities of NTFPs available for self-consumption have not particularly decreased but a key cause could simply be that fewer HHs remain to collect them.
Except for fir cones (seeds), there is limited exploitation of NTFPs by HHs; most NTFPs are collected for self-consumption.

The Team also met with the commercial company Geo Flowers in Ambrolauri. The Company specializes in processing medicinal plants that are exported to Germany. However, it also has a dried-fruit business line. The latter is mostly executed on specific demand from identified customers. The Company also collects thorn from the Adigeni and Akhaltsikhe municipalities and blackberry leaves from the Imereti Region. Bilberry comes from Khulo municipality while wild apple, pear, primrose and nettle are purchased from local HHs as well as in other regions of Georgia.

The Team met with the local administration to introduce Project and upcoming activities. The meeting findings were also consistent with previously discussed issues with other stakeholders. The authorities designated a Local Agent from the Namanevi village to assist the Team in further planning activities.

The specific village for the FGD was agreed to be Namanevi.

**Focus Group Execution**

The FGD in Namanevi village was conducted at village community center building. There were ten participants with four female and six male attendees. The composition of the FGD was local trustee, small and medium size farmers, teacher, local representative of NFA and villagers engaged in NTFP collection. The meeting continued for an hour and 45 minutes. The next two hours was dedicated for individual interviews in the village assisted by the village trustee.

**Demographics And Description Of Local Forests**

**Demographics.** The Namanevi community includes four villages: Namanevi, Tkhmori, Khonchiori and Zeda (upper) Shavra. The community is located in the river Shareuli gorge. Namanevi village is at 1160 m and is the center of the community. The population of the village is 56 people in 20 HHs.

The population of the community was as high as 430 people in 180 HHs. There was a significant outward migration in the Soviet period. During the 1990s about one-third of the population (140 people in 98 HHs) migrated to Ambrolauri, other parts of the Racha region or to Tbilisi.

The major agricultural activity in Namanevi village is livestock breeding. About 15 percent of HHs are beekeepers. Fruit and vegetable growing is less important economically for HHs and is basically done for self-consumption. The total number of cattle 2260; poultry – 670; pigs – 440; sheep and goats – 20 and bee hives – 180.

**Flora.** The major type of vegetation is broadleaf and coniferous mixed forest. Smaller areas are covered by beech forest with Colchic relic understory. Except for small differences in climate and its species composition, the mixed forest is quite similar to mixed forests in Imereti and Ajara. Because of a more favorable climate, fir cones have better quality in this area as most cones mature during the preferred collection season; time of maturation is the most important criteria for marketability of this forest product.

Common species in the mixed forests are:

Major habitat formed by beech is beech forest with Colchic understory (Fageta fruticosa colchica). There are two different communities in these habitats:

- Beech forest with the cherry laurel (Laurocerasus officinalis) understory (Fageta – laurocerasosa)
- Beech forest with typical understory of Caucasian blueberry (Vaccinium arctostaphylos) (Fageta – vacciniosa)

**Major Habitats Of Local Species.** Common species of these forests are: Fagus orientalis, Castanea sativa, Zelkova carpinifolia, Pterocarya fraxinifolia, Diospyros lotus, Taxus baccata. Species mixed with the beech tree are: Abies nordmanniana, Picea orientalis, Pinus kochiana, Quercus imeretina, Q. hartwissiana, Acer laetum, Carpinus caucasica, Tilia begoniifolia, Ficus carica, Pyrus caucasica, Malus orientalis, Staphylea colchica and S. pinnata.

The following bushes create the understory in the beech forest: Laurocerasus officinalis, Rhododendron ponticum, R. ungernii, Ruscus panticus, R. colchicus, Ilex colchica, Daphne pontica, Epigaea gaultherioides, Vaccinium arctostaphylos, Viburnum orientale da Buxus colchica. The following lianas can be found - Hedera colchica, Dioscorea caucasica, Tamus communis, Periploca graeca. Ferns - Matteuccia struthioptenis, Athyrium filix-femina, Polypodium vulgar, Phyllitis scolopendrium, Pteris cretica, Asperula odorata, Calamintha grandiflora, Festuca drymeja, Salvia glutinosa and Viola alba.

**Focus Group Discussion Results**

**Availability Of NTFPs.** The Racha region is unique and rich in NTFPs. All major categories of NTFPs are available.

Edible plants mentioned by FGD participants include:

- Sweetbrier
- Wild pear
- Crab-apple
- Blueberry
- Blackberry
- Whitethorn
Mushrooms (Manita Caesarea, Cantharellus cibarius, Lactarius piperatus, shampignions, Agaricus Bisporus)

Hazelnut

Chestnut

Walnut

Beech.

Medicinal plants named by FGD participants include: rhododendron ponticum, aristolochia iberica, elder, blackberry leaves, chamomile, equisetum arvense, origanum vulgare, tussilago farfara, hypericum gentianoides, viburnum and chamomile. Decorative plants include cyclamen, snowdrops and primrose. Racha is unique for its fir trees and fir seeds.

Access to NTFPs has increased over the past five to ten years. As people migrate to urban areas, more resources are available in the forest. The number of population in only Namanevi village has decreased from 1 200 to 200 individuals over the past decade. Currently there are 300 people living in the entire community.

The decrease in population has also led to fewer livestock in the area.

The meadows and pastures are covered with blackberry bushes and other types of shrubs. Blueberry bushes are also decreasing in size; the particular blueberry species is a low bush which is being overshadowed by other plants and bushes.²⁹

In general, the forest area is expanding and covering territories not included in the forest fund. The population is not aware of current status of particular territories whether it belongs to forest land or the village.

Importance Of NTFPs To HH Economics. HHs are highly dependent on NTFPs in the absence of supermarket and regular public transport in the village. HHs have very limited access to outside areas. All NTFPs listed by the FGD participants are consumed by HHs for personal use.

NTFPs are collected for sale, but fewer than ten percent of HHs are engaged in the activity. A company in Ambrolauri (GeoFlower) publishes a list of NTFPs and purchase prices every year in the local newspaper. According to FGD participants, the presence of the processing company and a ready buyer is not sufficient incentive for many HHs to engage in NTFP collection. The key reason is the cost of delivering the product to the factory and the low factory price.

The price for apple is 0,15 GEL/kg at the factory gate. The price drops to 0,10 GEL/kg if a buyer comes directly to the HH. Domestic apples are grown in the orchards and a very small portion is collected in the forest. HHs mostly sell domestic apples which are small in size and relatively low quality.

Sweetbrier is also collected and sold to GeoFlowers. The maximum amount one HH collected was 600 kg and the selling price was 0,7 GEL/kg, giving an income of 420 GEL/yr. However, collecting sweetbrier is very time-consuming and not many HHs choose to collect the product.

²⁹ This is an example where some management of a forest NTFP would pay dividends; by pruning bushes the sunlight reaching the blueberries would increase and yields would increase.

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Hazelnut is in high demand and wholesalers come to the village directly. HHs collect hazelnut in the forest and sells four or five bags of 45 kg each per year. The selling price varies from four to five GEL/kg, giving an income from 720 to 1 125 GEL/yr.

Fir seeds are collected in the Namanevi and Tlughi areas. Approximately ten HHs are engaged regularly in this activity. There is a collection center in Tlughi. Annually 20 to 25 MT of fur seeds are collected in both communities. The average selling price is one GEL/kg, giving a HH income of about 2 000 GEL/yr. The price is announced each year and product conditions are agreed. The collectors climb trees 20 to 30 m high and remove the seeds from the trees. There is a clear evidence of environmental damage caused by the method. Often whole branches are cut which slows the species’ natural regeneration process.30

HHs use different sale channels depending on the NTFP. The most common practice for fruits and berries is to sell directly to processing units, requiring transport to the firms. Nuts are mostly sold to wholesalers and merchants.

The aging population in the village are less engaged in NTFP collection. Mostly middle-aged members exploit forest resources. Fir seeds are the exception, with only young adults able to climb high on the tree.

The collection process is largely unorganized; it is not common to collectively gather NTFPs. The exception applies to fir seeds. Young people form crews which share different functions while collecting the seeds (e.g., installing equipment, picking the seeds).

Beekeeping is also a small portion of the HHs income. There are only 20 to 30 hives in the area. All completely rely on forest resources for the bees’ activity.

Among the traditional activities, agricultural resources make up to 70 percent of HH income. The main source of income for villagers is livestock breeding and selling dairy products. Each HHs with two milking cows on average receives about 350 to 400 GEL per month through selling cheese and milk. The remaining 30 percent of HH income comes from NTFPs.

**Commercial Aspects Of NTFPs.** GeoFlowers is a commercial entity processing different types of NTFP, located in Ambrolauri. The company’s business model is mostly sorting, drying and packaging different types of herbs and fruits for a foreign processor. The company purchases the inputs from individual HHs as well as wholesalers. It also has own mobile purchasing facilities and collects the NTFPs from villages. However, HHs complain that prices offered are very low. Conversely, the company often cannot purchase the desired quantity. The company does not have strict requirements about the product quality and accepts farm-grown fruit as well.

**Environmental Damage.** Similar to other areas, Racha is not an exception in terms of worsening general forest conditions. In fact, afforestation is the most acute problem around the villages. Meadows are covered with shrubs and high quality trees are not regenerating. Depopulation also affects the number of cows in the area; smaller territory is used by livestock for grazing.

HHs do not attribute these problems to NTFP collection. Our limited and qualitative observations suggest this opinion is correct.

30 We were told that one motivation for this practice is that collecting seeds is dangerous, and cutting an entire branch reduces the danger.
**Barriers To Increased NTFP Collection.** Poor road infrastructure and cost of delivery are the key obstacles for HHs in Namanevi to collect more NTFPs. The processing factory is located in the municipal center. However, remote villages have difficulties to transport products to the factory. Public transport is not available regularly in those areas and HHs cannot take more than 10 kg per trip.

FGD participants said the price offered by the processing factory is not sufficient to break-even in most cases.

Availability of safety equipment is also important for collecting fir seeds. Currently available (artisanal) equipment is not reliable which increases the risk and danger of collecting fir seeds.

**Forest Grazing.** Due to severe population migration, the available pastures and meadows are in surplus for the livestock. Each family has three cows on average. There is only one case of modern barn-farming of 20 cows in the village. The cows use the meadows around the village for grazing. However, the forest is expanding and the meadows are gradually being covered with bushes and shrubs.

Pig farming has decreased over past five years by almost 95 percent due to animal disease. Less than five percent of HHs own four to five pigs. Same areas are used by pigs for grazing.

In both cases, grazing is unsupervised. The animals freely move around the territory.

There is no evident damage to the forest due to grazing since animals have minimum interaction to the forest.

**TARGET AREA – KEDA**

**Advance Team Meeting**

The ATM was on November 11, 2015 in Keda Municipality with local authorities. Government representatives gave a brief overview of NTFP utilization by HHs. HHs mainly collect blueberries, raspberries, chestnuts and mushrooms for self-consumption and sale. Other widely collected products include snowdrop bulbs and spineless butcher broom, both with possible environmental damage due to unsustainable collection methods.

Commercial processing is done by a newly established private company that purchases locally collected NTFPs and processes in its facilities. The company produces juices and jams. There are middle-man buyers of NTFPs which buy large quantities of fruits and deliver them in Batumi where there are a couple of freezing facilities.31

A Local Agent was identified to take over the planning process.

The Team also met with local representative of NFA who admitted that there are very limited controlling mechanisms of NTFP collection and assessing of environmental damage. Under such risks are mainly plants covered by the CITES convention though execution and monitoring is rather difficult.

31 Keda is unique among the target locations because it is in close proximity to a large market (Batumi) and roads to the market are of good quality and are easily passable.
The Dologani village was selected as the Target location.

**Focus Group Execution**

The FGD in Dologani was organized in the Keda municipality building. Representatives from different communities were mobilized by the Local Agent and transportation was arranged for each participant. There were ten participants, with men dominating the meeting. The composition of the FGD was the representatives of village and municipal authorities and villagers collecting different types of NTFPs. The meeting lasted two hours and 20 minutes. The individual interviews were conducted mainly in Dologani village.

**Demographics And Description Of Local Forests**

**Demographics.** The ATM in Keda revealed the diverse use of NTFPs by HHs from multiple villages. For this reason, residents of various villages (Dologani, Oktomberi, Koromkheti) were involved in FGDs and individual interviews.

Keda municipality is located at 560 m, on the left bank of the river Adjaristskali. The population is roughly 20,000 people. There are 64 villages in the municipality. HHs collect wild fruits, nuts and berries in the forests. HHs cultivate blueberries as well. Snowdrops are widely collected in the forest as well as domesticated in personal gardens. Few HHs specialize in collecting ornamental herbaceous plants and shrubs as well.

The major agricultural activities of HHs are livestock breeding, beekeeping and fruit growing. Vegetable growing has smaller economic importance for HHs and usually is done for self-consumption only.

Total number of cattle in the Keda community is 4,180; poultry – 9,200; pigs – 540; sheep and goats – 385 and bee hives – 3,510. In the Makhunceti community the number of cattle is 5,640; poultry – 11,600; pigs – 940 and sheep and goats – 200.

**Flora.** The Keda municipality borders the Kintrishi protected area (established 1959) and a protected landscape (established 2007) which was established to protect Colchic flora and fauna originated in the tertiary geological period. The Kintrishi and Tskhenistskali river gorges are separated by the Adjara-Meskheti mountain range.

Local flora is extremely diverse and includes several formations and habitats formed by relict species common for Kolkhetian or Colchic forests. Lower and middle mountain belt forests (from 50 to 1,500 m) are formed by broadleaf deciduous species – pedunculate oak (*Quercus robur* = *Q. hartwissiana*), chestnut (*Castanea sativa*), beech (*Fagus orientalis*), Zelkova (*Zelkova carpinifolia*), ash (*Fraxinus excelsior*), elm (*Ulmus glabra, U. elliptica*), maple (*Acer laetum*), maple (*Acer campestre*), wire-but (*Pterocarya fraxinifolia*), lime (*Tilia begoniifolia*) and yew (*Taxus bacata*). The upper mountain belt forest is formed by dark coniferous species – pine (*Pinus kochiana*) and fir (*Abies nordmanniana*).

The understory of these forests is rich, including Colchic evergreen and wintergreen shrubs: *Laurocerasus officinalis, Rhododendron ponticum, Rh. ungernii, Ilex colchica, Laurocerasus officinalis, Ruscus colchicus* and *R. panticus*. In the river Adjaristskali gorge are small fragments of riparian forest formed by pedunculate oak (*Q. robur*), wing-nut (*Pterocarya fraxinifolia*) and white aspen (*Populus alba*).

Common formations of the forests in surroundings areas are:
- Beech forest with the understory of Unger rhododendron (L) (*Fageta-rhododendrosa ungernii*)
- Beech forest with the cherry laurel (*Laurocerasus officinalis*) understory (*Fageta – laurocerasosa*)
- Beech forest with typical understory of Caucasian blueberry (*Vaccinium arctostaphylos*) (*Fageta – vacciniosa*)
- Hornbeam forest with the understory of Pontic rhododendron, (*C. betulus – Rh. ponticum*)
- Pine (*Pinus kochiana*) forest with the understory of blueberry (*Vaccinium myrtillus*) (*Pineta myrtillosa*)
- Hornbeam forest with laurel understory (*C. betulus - Laurocerasus officinalis*)
- Dark coniferous forest with Colchic understory (*Piceeto-Abieta fruticosa colchica*).


**Focus Group Discussion Results**

**Availability of NTFPs.** The Dologani FGD participants shared a quite comprehensive list of NTFPs that are available in the area.

Edible plants mentioned by FGD participants include:

- Blackberry
- Blueberry
- Strawberry
- Sweetbrier in small quantities
- Leeks
- Wild asparagus
- Nettle (*urtica*)
- Smelax excels
- Bay leaves
- Capers
- Medlar
- Wild pear
- Wild endemic persimmon
- Chestnut
- Hazelnut
Mushrooms.

FGD participants also named various medicinal plants available in the area: wild mint, nit weed (*Hypericum gentianoides*), blackberry leaves, cherry laurel (*Prunus laurocerasus*), plantain, elder, field horsetail (*Equisetum arvense*) and *Senecio rhombifolius*. Snowdrop bulbs and *Ruscus hypophyllum* are widespread decorative plants.

In recent years, quantities of certain NTFPs have fallen. Chestnut trees are withering across the region and their quantity is decreasing. Blueberry bushes are also declining in number as they are grazed by cows or overshadowed by bigger trees at high altitude zones. Mushroom quantities have also decreased due to unsustainable harvesting methods; collectors pull the entire plant out of the soil with roots attached which reduces the regeneration process.

Climate changes have also reduced NTFP quantities, with less atmospheric precipitation and more droughts.

**Importance Of NTFPs To HH Economics.** Approximately 30 percent of HHs are extensively engaged in NTFP collection for non-personal use. Virtually all HHs use NTFPs for self-consumption in small quantities.

Blueberry is the most exploited NTFP. HHs usually collect up to 300 kg per season while the total volume in the area exceeds 100 MT per season. Only 40 percent of the available product is collected currently. The remaining is extremely difficult to reach and cannot be accessed without special equipment. Demand is much higher but cannot be met under these circumstances. The blueberry harvest season lasts for 1.5 months.

Wholesalers regularly visit the area and purchase the collected product offering 2,00 to 2,50 GEL/kg, giving an income of 600 to 750 GEL/yr. Those visits are usually known in advance and HHs try to match the collection process to them. There are four fruit drying facilities in Batumi that process blueberries and export to foreign markets.

The cultivation of wild blueberry is not feasible as it requires a special micro climate. A local cooperative for domestic blueberries and non-domestic spices has been established.

Chestnuts are also a highly demanded NTFP. Approximately 20 percent of HHs collect chestnuts every year. The collected quantity varies between 500 and 700 kg. There are collections centers and identified wholesalers who buy chestnuts. The average price per kilo is 2,00 GEL/kg, giving an income of 1 000 to 1 400 GEL/yr. The majority of collected chestnuts are exported to Turkey, where they are widely used in local cuisine. Although demand is high, HHs cannot extract more resources from the forest because of degrading and decreasing harvest.

*Ruscus hypophyllum* is a local endemic plant used for decorations and flower bouquet design. There are a couple of HHs that collect the product and deliver to florist shops in Batumi. Each HH used to collect 50 bunches of plant stalks every week. Now, due to excessive use, HHs are able to collect only 15 bunches of plant stalks each week. There are approximately 50 stalks in each bunch with average height of 60 cm. The price per stalk varies between 0,02 and 0,05 GEL, giving an income of 15 to 38 GEL/wk.

Snowdrop bulbs are endemic spices that are collected by ten percent of HHs. The snowdrop bulb trade is regulated under the CITES convention ratified by Georgia. Approximately ten
percent of HHs grow and collect bulbs during the season. Part of the bulbs are planted in private yards while some portion is collected in the forest. HHs collect about 600 to 700 kg of bulbs every year. The price varies 0.70 to 0.80 GEL/kg depending the size and the quality of the bulb, giving an income of 420 to 560 GEL/yr. In total 20 MT of bulbs are exported from Georgia annually.

Bulbs that do not comply with the standard (i.e., small size, lower quality) are usually taken back and planted in yards. FGD participants said they ensure the sustainable harvesting of the bulbs.

Some families collect snowdrop flowers for sale to florists. There are a couple of HHs that collect 2 000snowdrop flower bunches every year and sell for 0.20 GEL each, giving an income of 400 GEL/yr.

Mushrooms are collected by fewer than ten HHs. Usually, those HHs specialize in particular mushrooms and become familiar with the collection territory. They collect up to 500 kg of mushrooms per season. One can collect 20 to 30 kg of mushrooms per trip. The average selling price one GEL/kg, giving an income of 500 GEL/yr.

In most cases, wholesalers purchase directly from HHs. Prices offered are acceptable for HHs. This is partially because there are fewer alternative activities which are more profitable. There is high migration to Turkey mostly from rural areas of Adjara. The migrants earn 80 to 100 GEL net per day, much more than can be earned locally through all activities. Such working opportunities are usually seasonal and last for two or three months.

NTFP collection is performed by middle aged HH members. The process is not organized; HHs independently collect NTFPs except blueberries. Blueberries grow in high altitude zones a couple kilometers from the village. HHs usually collect blueberries in groups to avoid bear attacks.

According to FGD participants, annual HH income is 4 000 GEL. Different sources of income are agricultural resources (e.g., vineyards, crop harvesting) at 70 percent, NTFPs contribute 25 percent while other activities constitute 5 percent.

Commercial Aspects Of NTFPs. There are number of commercial entities specializing in NTFPs, which are mostly located in Batumi. Due to its strategic location and access to foreign market, Batumi is attractive for such entities.

The collected berries are transported to processing facilities in Batumi. There are both freezing and drying facilities which process NTFPs and export to foreign markets.

HHs mostly sell to wholesalers who come to the area. Those wholesalers are part of this value chain. The prices offered are acceptable for HHs, which creates incentives to engage in this activity.

The demand from commercial entities has been stable during the past couple years. There has been no significant fluctuation in terms of the demand. However, on the negative side, the overall available quantity has declined.

Environment Damage, Alder-tree (Alnus) is overtaking the majority of the forest area. As a result, overall forest quality is declining; the availability of NTFPs is decreasing as a result.
In high altitude zones, the blueberry bush population is threatened by tall trees overshadowing and not enough sunlight. Livestock is also a threat for such bushes as cows easily graze them. Chestnut trees are withering; HHs are not quite sure of exact causes.\textsuperscript{32}

Soil erosion and landslides are quite common in Adjara region. Keda municipality has number of eco-migrants from high mountainous areas.

HHs do not attribute these problems to NTFP collection. Our limited and qualitative observations suggest this opinion is correct.

**Barriers To Increased NTFP Collection.** The key barrier for HHs to exploit more NTFP resources is the available quantity. Prices offered are more or less acceptable for HHs. However, the resources available in the forest is limited. HHs already collect and sell as much as possible. Keda is close to Batumi where multiple NTFP processors operate. Therefore, the transportation can be made rather easily.\textsuperscript{33}

Besides lack of resources, accessibility in the forest is also an obstacle. Most NTFPs are difficult to collect. Special trails in the forest would facilitate an already labor intensive job. Additional barriers are created in the forest by timber waste. The waste after cutting the timber stays in the forest and creates hazards (\textit{e.g.}, spread of disease).

**Forest Grazing.** Each family owns up to three cows because of lack of land resources. It has become risky to freely let cows in the forest because of wild animals. It is not common to supervise livestock by a shepherd. Grazing is not organized among HHs.

HHs depend mostly on forest resources to feed the cows. Only 30 percent of livestock migrates to summer pastures for three months. Shepherds take one or two week shifts to supervise the cows while on the pasture.

The annual cost of cows in the absence of forest grazing would almost double from 300 GEL up to 600 GEL.

No negative impact of grazing is perceived by FGD participants on forest eco-systems.

**TARGET AREA – DUSHETI**

**Advance Team Meeting**

The ATM meeting was on November 13, 2015 with the Deputy Governor, representatives of the municipal administration and head of the Rural Communities Development Agency (RCDA). It was stressed that NTFPs are highly publicized in this region and multiple cooperatives have been established specializing in NTFPs. Given the region’s geographic location, HHs have limited land resources and their traditional activities are diversified among cultivating basic crops, livestock breeding and NTFP collection. About 50 percent of

\textsuperscript{32} Likely Chestnut Blight.

\textsuperscript{33} This demonstrates that if 1) there is a known buyer, 2) perishability issues are solved, 3) transport is readily available and 4) prices are more or less acceptable, then HHs will be motivated to exploit NTFPs as much as possible. Note that these factors are inter-related. The close proximity of processors in Batumi reduces transport time and cost, which permits payment of higher prices to HHs.
population is engaged in NTFP collection mainly for self-consumption since most villages have limited access to markets.

The Team met with regional forestry unit staff, to discuss the general condition of forests, HHs interactions with the forest and grazing issues.

A Local Agent was identified to assist in planning and organizing the FGD.

The specific village for the FGDs was agreed to be Sharakhevi.

**Focus Group Execution**

The FGD was conducted in Sharakhevi village, at one of the participant’s private house. The gender distribution of the participants was balanced among thirteen people with seven women and six men. The composition of the FGD was the local representative of NFA, municipal authority representative and villagers who collect NTFPs. The youngest FGD participant was 45 while the oldest was 78 years old. The focus group lasted an hour and 30 minutes. One of the participant assisted the Team to walk around the village for individual interviews. There were ten interviews conducted in total.

**Demographics And Description Of Local Forests**

**Demographics.** The Magharoskari community includes 10 occupied villages with 280 people. The community is located on the both of the banks of the White Aragvi river. The villages are very close to the forests, with some houses located on the forest edge. The FGD was held in Kveemo (lower) Sharakhevi village (1 250 m), where the current population is 45 people among 15 HHs.

There are also 14 abandoned villages in the community. Migration of the local population started in the 1930s. Rates of the migration from the Magharoskari community became significant in the 1990s. A small number of people moved to Dusheti, while most migration was to Tbilisi or other regions of Georgia.

The major agricultural activity in the Magharoskari community is livestock breeding. Fruit and vegetable growing have small economic importance for HHs and it is done basically for self-consumption. A major horticultural activity that is economically important for local householders is nut growing. Ten percent of HHs are involved in beekeeping.

**Flora.** The Magharoskari community is surrounded by two major habitats – riparian forest distributed along the river Aragvi and middle mountain belt forest formed by beech, oak and hornbeam.

The riparian forest is formed by black alder (*Alnus glutinosa=A. barbata*), hornbeam (*Carpinus betulus*), maple (*Acer campestre, A. velutinum*), lime (*Tilia begoniifolia*), ash (*Fraxinus excelsior*), elm (*Ulmus minor*), Caucasian wild pear (*Pyrus caucasica*) and mulberry (*Morus alba*).

The understory is created by hawthorn (*Crataegus pentagyna*), hazelnut (*Corylus avellana*), *Clematis* (*Clematis vitalba*) and *Smilax* (*Smilax excelsa*). The most common herbaceous

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34 Here and elsewhere, there were relatively few young people because there are few young people in the villages.
plants in this habitat are: *Oplismenus undulatifolium*, *Circaea lutetiana*, *Stachys sylvatica*, *Asperula odorata*, *Pachyphragma macrophyllum*, *Lapsana grandiflora*, *Sanicula europaea*, *Geranium robertianum* and *Salvia glutinosa*.

The most common habitats in the local forests of the middle mountain belt are:

- Beech forests with woodruff cover (*Asperulo-Fagetum*)
- Beech forest with the phachyphragma (*Pachyphragma macrophyllum*) cover (*Fageta pachyphragmosa*)
- Beech forest with blackberry (*Rubus hirtus*) cover (*Fageta rubosa*)
- Georgian oak forest with herbal cover (*Quercetum iberici herbosa*) with herbal species - *Campanula rapunculoides*, *Carex bushiorum*, *Clinopodium vulgare*, *Dactylis glomerata*, *Polygonatum glaberrimum* and *Veronica peduncularis*.


**Focus Group Discussion Results**

**Availability Of NTFPs.** Village Sharakevi is located on the river Sharakeula. The river divides the village into two parts. The village is in the forest; it is the last populated village in the gorge. The local forest is rich in NTFPs and HHs seem to be well aware of those resources.

Edible plants mentioned by FGD participants include:

- Sweetbrier
- Crab-apple
- Wild pear
- Whitethorn
- Blackthorn
- Barberry
- Medlar
- Cornel
- Wild plum
- Damson plum
- Beech
- Acorn
- Chequer tree (*Sorbus torminalis*)
- Gooseberry
- Blackberry
- Strawberry
- Raspberry
- Mushroom
- Walnut
- Hazelnut.
Medicinal plants include wild thyme, *organum vulgare*, nit weed (*hypericum gentianoides*), valerian, wild mint, persicaria (*polygonum*), plantain, milfoil (*achillea*), linden tree, sow-foot (*tussilago farfara*), cotinus and madder.

Beekeeping is a traditional activity but it is fading gradually due to outward migration (of people, not the bees). Three HHs own on average 20 bee hives, and one HH has about one hundred beehives. The area offers favorable conditions for beekeeping with rich resources available.

Access to NTFPs has increased over the past five to ten years. As people migrate to urban areas, more resources are available in the forest. The majority of NTFPs have increased in quantities with very few exceptions. One exception is damson plum which is a relatively short tree that is increasingly covered by taller and larger trees. The increase in NTFPs is caused by 1) natural forest growth and regenerating and 2) climate changes in recent years giving more precipitation and fewer droughts.

The livestock population has decreased significantly over the past five years, especially pigs after the spread of swine flu. HHs used to let pigs roam freely in the forest and completely rely on the forest for food. After depopulation of the pig herds, the forest started to restore at a higher speed. The forest area is expanding although the regeneration process favors low quality trees and shrubs.

**Importance Of NTFPs To HH Economics.** Virtually all NTFPs are collected by HHs for self-consumption. Since the village is remote and isolated from the municipal center, HHs are highly dependent on NTFPs. In the absence of public services, supermarket or pharmacy, NTFPs are highly valuable.

HHs make juices, jams and confiture from berries. Plums are used to prepare sauces. Fruit is mostly dried and preserved for winter use. Extra fruit is used to make distilled spirits, mainly fruit brandy. The latter is a traditional drink prepared from different fruits.

Similar to Shakhvetila, mushrooms and nuts are the most valuable NTFPs collected for non-personal use (*i.e.*, for sale). There are number of abandoned villages in the area which were abandoned over the past 50 years. Although the villages are part of the forest fund, they nevertheless have historic cultivated resources such as walnut, hazelnut, apple, plum and berries. There are informal rules about the exploitation of those resources. HHs in the village know their ancestors’ former properties and utilize only those resources. Each HH collects ten to 15 bags of walnuts each year. Each bag holds approximately 30 kg of unshelled walnut that yields about 15 kg of shelled walnuts. The average price received is 20 to 23 GEL/kg, giving an income of 3 000 to 5 000 GEL/yr.

Hazelnuts are collected in smaller quantities, about four to five bags per HH. Each bag holds approximately 45 kg of unshelled hazelnuts that yields about 18 kg of shelled hazelnuts. The average price received is five GEL/kg, giving an income of 360 to 450 GEL/yr.

Mushrooms are widely collected for self-consumption. Only a couple of HHs collect mushrooms for sale, with the maximum amount collected being one MT. The average selling

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35 Inserted by author to see if others read the text.
36 It must be stressed that this income is from a non-typical NTFP. Generally, the walnuts only exist in the forest only because they were planted domestically 50 or so years ago. The lifetime of a walnut tree is easily more than 100 years.
price is 1,00 GEL/kg, giving an income of 1 000 GEL/yr for those few HHs that collect mushrooms for sale.

HHs mostly sell NTFPs (not used for self-consumption) to wholesalers and very rarely to end-users. Wholesalers drive to the village and buy nuts straight from HHs. Sometimes HHs take NTFPs to wholesale markets in Tbilisi where they can sell at more favorable prices, though at higher cost due to transportation to Tbilisi.

There has been some demand for medicinal plants. Representatives of pharmaceutical companies expressed willingness to purchase linden tree flowers for 6,00 GEL/kg. FGD participants said that this is a very low price compared to the labor that is needed to collect one kg of product. Another request was thyme, to be collected with its roots. The price offered was 5,00 GEL/kg. FGD participants said that this, also, is a very low price compared to the labor that is needed to collect one kg of product. The FGD participants also worry about damage that may come from the collection method (pulling plant with its root from the soil).

Village residents are mostly middle-aged and older. All are engaged in the collection process regardless of age. Collection is not organized; HHs independently make decision to gather NTFPs.

FGD participants are members of a new cooperative that will specialize in NTFP collection. The cooperative has received grant financing through the cooperatives development program implemented by the Rural Communities Development Agency (RCDA). The cooperative has 15 members from Sharakhevi and Magharoskari villages. The grant will be used to set up a small drying facility in Sharakhevi. The cooperative plans to collect and process all types of NTFPs that are available in the forest and are demanded on the market. Their plans in this regard (i.e., what and for sale to whom) are not yet well developed.

Similar collection methods are used for NTFPs as in Shakhvetila, described previously. Walnut are shaken from trees using long wood sticks; the walnuts fall to the ground. As a result, small branches are broken and buds are damaged. Medicinal plants are picked manually, taking stems, stalks and leaves only. Plant roots are rarely pulled from the soil as specific knowledge about their use is vanishing.

Agricultural activity represents about 60 percent of HH annual income. NTFPs and beekeeping represent 35 and 5 percent respectively.

**Commercial Aspects Of NTFPs.** Commercial entities specializing on NTFP processing do not operate in the area. The nearest processing units are in Tbilisi and Gori. Although the area is rich in NTFPs, there are no formal collection centers established. Wholesalers travel around the area and buy collected product at the point of purchase. This process is not organized or planned ahead.

There are other cooperatives in Mtskheta-Mtianeti region also specializing in NTFPs. A cooperative established in Mtskheta municipality already harvested rosehips for two years and dries them in its own facility. The cooperative relies on its members and does not purchase from outsiders.

**Environmental Damage.** According to the local forester, there are some environmental changes in the forest ecosystem. Trees are withering on rocky slopes of the forest and the
number of affected trees is increasing. Climate changes such as early fall and late spring frosts negatively affects the harvest.

Soil erosion is increasing; the causes are not clear. The general condition of the forest is degrading. Weedy plants are increasing and gradually dominating certain areas in the forest.

HHs do not attribute these problems to NTFP collection. Our limited and qualitative observations suggest this opinion is correct.

**Barriers To Increased NTFP Collection.** There are number of barriers to increased NTFP utilization faced by HHs. The major obstacle is the road infrastructure and transportation. There is no public transport available in the village and HHs have to walk five km to the main road. Only one HH owns a car that is shared by villagers for a fee. If the NTFP volume is large (more than a couple hundred kg at the very maximum) and cannot be transported by a small car, then HHs have to hire a large truck, which increases the cost of transportation.

Wholesalers visit the village but not frequently. The offered price in some cases is so low that HHs prefer to delay the sale and incur additional cost of transportation to sell at more favorable prices in a market. However, in most cases they cannot do this because of their small quantities. Generally, FGD participants said they have difficulty breaking even on NTFPs due to their small quantities. The labor spent on collection is usually not seen as a cost by HHs.

Alternative activities are also quite limited. The territory is not sufficient to engage in large-scale agriculture and livestock activities. Therefore, villagers seek maximize their income through diversifying their work. Under current schemes, there is no need to give up one particular activity in order to engage more in NTFPs. Those activities do not necessarily conflict with each other timewise.

**Forest Grazing.** Each family has eight to ten cows with maximum of 15 cows by one family. The local species of cows are small in size and mainly milking cows. The cows graze forest territory since there are no meadows around the village. Individual HHs have small size grasslands, which are used to produce hay in small quantities. There is no modern, barn-based farming of livestock.

The village is completely covered by forest. The pastures are couple kilometers away from the village and cows are fully dependent on the forest. The grazing is not supervised. Each family sends cows to the forest during the day. Wild animals are huge threat and there had been cases of preying.

Cows do not migrate to summer or winter pastures due to the distances involved. They stay in the village all year round. Except for forest grazing, families have to feed the cows for five months during the year. The dependency on the forest in terms of food is very high. Half of the livestock would need to be given up in case there is not access to the forest.

In the past, large size pig farming was quite common in the village. Unlike cows, pigs were fully fed in the forest and some families even had animal dwellings in the forest. Due to animal disease, pig farming was completely ceased resulting in huge financial loss. Some of the participants had lost one hundred pigs overnight due to disease. In case this threat is overcome, HHs would continue pig farming, which may be more altering for the forest in terms of grazing.
HHs do not attribute any environmental damage to forest grazing.

**TARGET AREA – DMANISI**

**Advance Team Meeting**

The ATM was on November 16, 2015 with the local forester. He gave a general overview of villages located close to forest areas where HHs are engaged in NTFP collection. Given the geographic conditions, the area is not very rich in NTFPs compared to other target locations. NTFPs include medlar, cornel, sweetbrier, crab-apple, barberries, hawthorn and buckthorn though all in small quantities. There are mushrooms, mainly growing in replanted coniferous forests.

The main agricultural activity is crop harvesting and livestock breeding with average number of 15 cattle per HH. There is one example of (domestic) raspberry farming in the municipality on half a hectare territory. The collection of NTFPs are mainly for self-consumption; a relatively small portion is sold at the local Sunday market. There is also one HH that collects, dries and sells medicinal plants to pharmaceutical companies. Due to confidentiality we were unable to collect further information in that regards. Honey production (domesticated hives in forest areas) is also a traditional activity with seasonal migration in neighboring municipalities.

The second meeting was held with the municipal administration to introduce Project and upcoming activities. A Local Agent was identified to handle logistical arrangements for the FGD.

The specific village for the FGDs was agreed to be Gomareti.

**Focus Group Execution**

The FGD was in Gomareti village. There were ten participants, comprising three women and seven men. The FGD was held at the local administrative building. Participants were mostly villagers engaged in NTFP collection and livestock breeding. The FGD lasted an hour and 15 minutes while an additional two hours was spent on individual interviews at the village center.

**Demographics And Description Of Local Forests**

**Demographics.** The Gomareti community is located in the Khrami river gorge on the Gomareti plateau at 1 200 to 1 500 m. The community includes four villages: Gomareti, Kakliani, Mamula and Ktsia. The most populated village is Gomareti (1 380 m) with 970 people. There are about 1 200 people in the entire Gomareti community. The population of the community in about 1990 was 1 570 people in 535 HHs. Citizens have migrated to the center of the municipality – Dmanisi.

The major agricultural activities of the Gomareti community are livestock breeding and cereal and vegetable growing. Fruits and nuts are grown, primarily for self-consumption. About 50 HHs keep bees.

The number of cattle in the Gomareti community is 4 000; poultry – 2 800; pigs – 800; sheep and goats – 2 000 and bee hives – 220.
**Flora.** There are four major types of vegetation in the locality. Mountain steppes and secondary meadows are common habitats of local pasturelands. Riparian forest fragments are distributed along the river Krami. Foothills and mountains are covered by oak and beech forests. There are also replanted forests of black pine (*Pinus nigra*) dating from the Soviet period (1970s). The major sources of NTFPs are foothill forests and black pine forests which have a spot-like distribution pattern in the region. Villages are surrounded by meadows. The nearest forest is located three kilometers from the villages.

Common habitats of mountain steppe and secondary meadows are:


- Secondary meadows of deforested foothill are dominated by Bluestem (*Bothriochloa ischaemum*) and fescue (*Festuca sulcata*) (*Festuceta-Bothriochloëta*) which forms communities with several herbaceous compositions.

Common herbaceous species that can be found in such kind of habitats are: *Bromus japonicus*, *Carex bordzilowskii*, *Dactylis glomerata*, *Festuca sulcata*, *Glycyrrhiza glabra*, *Medicago caerulea*, *Phleum pheoides*, *Stipa capillata*, *Trifolium arvense*, *Trisetum pratense*, *Stipa lessingiana*, *Bothriochloa ischaemum*, *Stipa capillata*, *Festuca sulcata*, *Stipa pulcherrima*, *Koeleria macrantha*, *Phleum pheoides*, *Cleistogenes bulgarica*, *Medicago coerulea*, *Astragalus brachycarpus*, *Inula germanica*, *Stachys iberica*, *Galium verum*, *Thalictrum minus*, *Leontodon asperrimus*, *Filipendula vulgaris*, *Thymus tiflisiensis*, *Potentilla recta*, *Picris strigosa*, *Veronica multifida*, *Pimpinella aromatic*, *Bilacunaria microcarpa*, *Tragopogon pusillus*, *Seseli grandivittatum*, *Campanula hohenackeri*, *Cephalaria media*, *Crucianella angustifolia*, *Xeranthemum squarrosum*, *Trigonella spicata*, *Bromus japonicas* and *Linus nodiflorum*.

Riparian forests are formed by black aspen (*Populus nigra*), white leaf aspen (*Populus hybrida*), elm (*Ulmus minor*) and white willow (*Salix alba*).

Bushes include hawthorn (*Crataegus monogyna*), cornelius (*Cornus mas*), blackberry (*Rubus spp.*), privet (*Ligustrum vulgare*), lianas ivy (*Hedera helix*), smilax (*Smilax excelsa*), silk-vine (*Periploca graeca*), *Clematis* (*Clematis vitalba*) and wild grape (*Vitis silvestris subsp. vinifera*). Herbaceous plants of the forest understory are red clover (*Trifolium pratense*), white clover (*T. repens*) and cock's foot (*Dactylis glomerata*).

Artificial black pine forest spots are monodominant. In most cases, the understory is absent in such forests. These forests have been planted as a wind breaks. Black pine forests are also important for soil fixing. The edges of black pine forests are dominated by blackberry (*Rubus caucasicus*, *R. tomentosus*, *R. piceetorum*) and wild roses (*Rosa canina*, *R. spinosissima*).

The most common foothill and middle mountain forest habitats are:

- Beech forests with woodruff cover (*Asperulo-Fagetum*)
- Beech forest with blackberry (*Rubus hirtus*) cover (*Fageta rubosa*)
Georgian oak forest with herbal cover (Quercetum iberici herbosa) with herbal species Campanula rapunculoides, Carex bushiorum, Clinopodium vulgare, Dactylis glomerata, Polygonatum glaberrimum and Veronica peduncularis.


**Focus Group Discussion Results**

**Availability of NTFPs.** The Gomareti village is located four kilometers from the forest. HHs are aware of various NTFPs that are available in their forest.

Edible plants mentioned by FGD participants include:

- Black currant
- Raspberry
- Blueberry
- Blackberry
- Cornel
- Sloe
- Barberry
- Crab-apple
- Wild pear
- Hazelnut
- Beech
- Acorn
- Mushrooms (several types)
- Wild asparagus
- Leek
- Walnut trees (in abandoned settlements)

All these NTFPs were widely available and used twenty years ago. However, their fading importance in everyday consumption has caused local knowledge about their use to disappear.

Among medicinal plants, FGD participants named wild mint, elder, thyme, origanum vulgare, valerian and nit weed (Hypericum gentianoides).

There are artificial spruce-grove forests planted during Soviet times. These forests create favorable conditions for mushrooms. There are number of different mushroom species growing in the area: champignons (agaricus arvensis), Lactarius deliciosus and Tricholoma portentosum.

The overall quantity of NTFPs has decreased for the past ten years. Climate change has reduced the NTFP harvest; late frosts during spring damages the buds and fruit. The forest
territory is not expanding. The general forest condition has not changed if not deteriorated over the past couple years.

**Importance Of NTFPs To HH Economics.** Despite the diversity of NTFPs, HHs actually use only about half of the resources available. Except for couple of products, the majority of NTFPs are collected only for self-consumption. HHs make jams, confiture and juices using fruits and berries. Traditional fortified drink is also prepared using crab-apples, elder or medlar.

Non-personal use of NTFPs include walnuts which are collected by ten percent of HHs. Each year those HHs collect between 200 to 500 kg of unshelled walnuts depending. Unshelled walnuts are mainly sold in Tbilisi with an average price of 5,00 GEL/kg, giving an income of 1,000 to 2,500 GEL/yr.

Blueberries are also collected in large quantities and sold mainly at the local market in the municipality center. Customers are mostly wholesalers since it is a demanded product in large markets. Families engaged in this activity, collect approximately 50 kg of blueberry per season. The price is 2,00 GEL/kg, giving an income of 100 GEL/yr.

Due to its geographic locations, there are favorable conditions for berries, especially raspberries and blackberries. Two local farmers in Dmanisi started domestic farming of these berries and planted cultivated spices on 0.5 ha. The demand is so high that farmers sell directly from the field. Such success story increases interest and motivation among others to engage in similar activities according to FGD participants.

The collection process is unorganized. Men and women go to forest and collect NTFPs individually. Men mostly collect mushrooms and nuts while women pick berries and fruit. As FGD participants said, HHs prefer to go out to the forest and independently collect NTFPs to avoid competition with their neighbors. The forest is four kilometers distance from the village and collected NTFPs have to be carried back home. Therefore, mostly young and middle-aged HH members go out to the forest for collection.

Livestock breeding and crop production make almost 90 percent of local HH income. The remaining 10 percent is equally distributed between NTFPs and other activities.

**Commercial Aspects Of NTFPs.** There are no commercial entities operating in area. With limited resources available, wholesalers are not interested to travel and purchase NTFPs in the village. HHs take the collected product to local markets in the municipality center or in Tbilisi.

HHs mainly sell to end-users at local markets. If large quantities available, then wholesalers are interested and will buy directly from HHs. For example, local farmers in village Gantiadi sell harvested domesticated raspberry from the fields to wholesalers and supermarket chains from Tbilisi.

**Environmental Damage.** Similar to other Target locations, Gomareti village faces deterioration in overall forest quality. Due to its geographic location and climate zone, the natural forest territory is small and its regeneration process is quite low. The expansion of forest is mostly in the form of weedy plants, shrubs and bushes.

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37 Again, note this is from domestically grown products, not NTFPs *per se.*
38 Again, this is a domesticated product.
HHs do not attribute these problems to NTFP collection. Our limited and qualitative observations suggest this opinion is correct.

**Barriers to Increased NTFP Collection.** NTFPs are an incremental part of HH income. Existing NTFP resources are sufficient for personal use. Commercial feasibility is rather limited. The area is remote from the municipal center and other territories. Road infrastructure is very poor and transportation is very costly compared to the value of the NTFPs. The collected amount is too small to be taken to larger markets. Demand within the municipality is low which determines the low price.

Given those circumstances, scale is small. It would be very difficult to reach a scale that would make the activity more attractive for larger number of HHs.

Other alternative activities are more profitable compared to NTFPs. Livestock and crop production is certainly more valuable for HHs. Besides, NTFPs are not a stable source of income, which is an important factor according to FGD participants.

**Forest Grazing.** Livestock is the key source of income for local population. Average number of cows owned by HH is five to six. The maximum amount is 100 cows owned by only two families. Pig population has also decreased severely. Currently only 20 percent of families have one or two pigs. The same number of sheep are owned by families with only two exceptions; each family has a herd of 2,000 sheep. Livestock is usually supervised by shepherds. Couple neighbors collectively hire shepherd and pay him monthly 6,00 GEL per cow.

Livestock uses local meadows for grazing. Currently those meadows are state-owned and access is not limited. However, the privatization process has started and HHs are now restricted to those areas. Hence the available area for grazing is decreasing which would result in less cows.

The forest area is remote from the village livestock has limited access to the forest; therefore, the damage to forest ecosystem is limited.

**TARGET AREA – AKHMETA**

**Advance Team Meeting**

The ATM was on November 17, 2015. Municipal authorities and trustees from the villages attended the meeting and introduced the general situation in the area. NTFP collection is a traditional activity for HHs as the villages are mainly located in mountainous areas with small agricultural land available. NTFP collection was very active during Soviet times, with reportedly 15 million units of canned products produced each year.\(^{39}\)

HHs collect all types of NTFPs for self-consumption and sell mostly mushrooms in local markets or in nearby municipalities. Beekeeping has a large share in traditional activities. There are also two cooperatives specialized in honey production. With limited resources available, the local population diversifies its activities in crop cultivation, livestock breeding and NTFP collection.

\(^{39}\) The exact nature of the production was not clear.
The Team met with local NFA staff. They also confirmed HHs active engaged in NTFP utilization, however the exploited quantities are rather small. This is because HHs do not collect large quantities as they have limited access to markets and buyers.

A Local Agent was identified to handle logistical details for the FGD.

The specific village for the FGDs was agreed to be Shakhvetila.

**Focus Group Execution**

The FGD was conducted in Shakhvetila village, in the garden of the local trustee office. There were 12 participants, including eight women and four men. The composition of the FGD was the following: representative of local authority and middle and older age group members of the village. The FGD lasted an hour and 45 minutes and was finished at 1530. The next part of the day was dedicated individual interviews at the village center. There were ten individual interviews.

**Demographics And Description Of Local Forests**

**Demographics.** The community center of the Ilto river gorge is Ilto village at an altitude of 680 m. The community includes six villages: Bughaani, Vedzebi, Naduknari, Saube, Chachkhriaala, Chartali. The highest village is Bughaani (1 060 m). The villages are located on the forest edge.

The most populated village is Shakhvetila with 113 people; there are fewer than 40 people in each of the other villages. In total, the Ilto gorge community has 130 HHs with a population of 300 people. In the 1990s the population was about 700 in 280 HHs.

Ilto gorge includes four villages abandoned since the 1960s. One village was on the border of Babaneuri national park established in 1950 and the Ilto managed reserve established in 2003. The other villages were located in high mountains and people migrated from them into lowlands.

The major agricultural activity in Ilto community is livestock breeding. Horticultural activity includes fruit growing. Vegetable growing is less common and is done for domestic use of harvested products. Beekeeping is major activity for 30 percent of HHs. The total number of cattle in the Ilto gorge is 2 100; poultry – 800; pigs – 130; sheep and goats – 850; bee hives – 250.

If the number of cows is divided by HHs then there are 16 cows per HH.

**Flora.** Local flora is extremely diverse. It includes rare natural habitats formed by tertiary relic species such as: Zelkova (Zelkova carpinifolia) and common yew (Taxus bacata). These species and local habitats are protected in the Babaneuli national park which borders this gorge from the south-west.

The Ilto gorge is covered by broad-leafed deciduous forest which is dominated by beech (Fagus orientalis). In the forests of Ilto gorge are also distributed chestnut (Castanea sativa), Caucasian wing-nut (Pterocarya fraxinifolia) pedunculate oak (Quercus robu = Q. pedunculiflora) and Bladdernut (Staphylea colchica).
Understory of local forests includes Colchic relic species such as: *Rhododendron luteum*, *Buxus colchica*, *Ilex colchica*, *Laurocerasus officinalis*, and *Daphne pontica*. This type of floristic composition is not typical for the forests of the eastern part of Georgia and links forests of Ilto river gorge to the forests distributed in the west Georgia or Colchic relic forests.

Oak and oak hornbeam forests (*Quercus iberica*, *Carpinus orientalis*, *C. betulus*) are distributed in the south-eastern part of the gorge. Vegetation in this territory is affected by dry climate and partly is formed by floristic components of semi-dry habitats such as Christ’s thorn (*Paliurus spina-christi*), endemic species of willow-leaved pear group – Demetri’s pear (*Pyrus demetrii*) and saw-edge leafed pear (*P. oxyprion*), cotoneaster (*Cotoneaster nummularia*), common dogwood (*Swida australis*), smoke tree (*Cotinus coggygria*) and buckthorn (*Rhamnus pallasii*).

Small fragments of riparian forest form vegetation on Ilto riverbanks. Common species in such forests are pedunculate oak (*Q. robur*), wing-nut (*Pterocarya fraxinifolia*), white aspen (*Populus alba*), oleaster (*Elaeagnus angustifolia*) and tamarisk (*Tamarix ramosissima, T. hohenackeri*).

Common floral habitats in Ilto gorge are:

- Beech forest with yew (*Taxus baccata*), holly and ivy (*Hedera pastuchovii*) understory (*Fageta taxceto-ilicitosa-hederosa*) and beech forests with woodruff cover (*Asperulo-Fagetum*)
- Beech forest with the holly understory and mountain fescue (*Festuca drymeja*) cover (*Fageta festucoso-ilicitosa*)
- Oak-hornbeam forest (*Quercetum-Carpinion betulii*)
- Hornbeam forest with fescue cover (*C. betulus - Festuca drymeja*)
- Chestnut forest with herbal cover
- Zelkova and oriental hornbeam forest (*Zelkova carpinifolia – Carpinus orientalis*)

**Major Species.** Major species include the following: *Acer campestre, Buxus colchica, Carpinus betulus, C. orientalis*, *Castanea sativa, Elaeagnus angustifolia*, *Fagus orientalis, Fraxinus excelsior, Juglans regia, Malus orientalis, Quercus iberica, Q. robur, Taxus baccata, Tilia begoniifolia, Populus alba, Prunus divaricata, Prunus avium (Cerasus avium), Pterocarya fraxinifolia, Pyrus caucasica, Zelkova carpinifolia, Berberis vulgaris, Cornus mas, Corylus avellana, C. iberica, Crataegus pentagyna, Daphne pontica, Ilex colchica, Laurocerasus officinalis, Paliurus spina-christi, Rhododendron luteum, Rosa canina, Rubus caucasicus, R. hirtus, R. iadeus, Staphylea colchica, Swida australis, Euonymus verrucosa, Vaccinium arctostaphylos, Viburnum opulus, Hedera pastuchovii, Asperula odorata, Astragalus brachycarpus, Brachypodium sylvaticum, Clinopodium vulgare, Campanula rapunculoides, Cirsium obvalatum, Dactylis glomerata, Festuca drymeja, Hedera helix, Lapsana grandiflora, Geranium palustre, Juncus effusus, Paris incompleta, Polygonatum orientale, Salvia nemorosa, S. glutinosa, Sambucus ebulus, Veronica peduncularis and Viola odorata.*
Focus Group Discussion Results

Availability Of NTFPs. HHs are well aware of NTFPs available in adjacent forests. FGD participants listed some of the plants that are available in local forest.

Edible and non-edible plants mentioned by FGD participants include:

- Wild Asparagus
- Elder
- Wild Mint
- Smilax
- Wild garlic (*Allium ursinum*)
- Bladdernut
- Capparis spinose
- Chequer tree (Sorbus terminalis)
- Madler
- Wild strawberry
- Wild raspberry
- Wild blackberry
- Sorb
- Cornel
- Plums
- Whitethorn
- Rosehip
- Wild crab-apple
- Absinth
- Walnut
- Hazelnut
- Mushrooms of various type

A few medicinal plants were also mentioned: elder, *Origanum vulgare L.*, cranberry, liquorish roots, linden tree and wild mint.

Decorative plants typical for the area include madder, cumin and thyme.

Wild honey in the forest is extremely rare while bee-keeping (domestic hives in the forest) is a traditional activity.

HHs generally are not aware about the possible wider use of forest bio mass, such as leaf litter. Individual HHs may extract ten kg or so of bio mass from the forest each year to fertilize the garden or use for flower beds.

According to FGD participants, there has been no significant change in NTFP availability in the local forest in the recent and distant past. The high level of outward migration over the past few decades would naturally decrease the quantity of NTFPs collected, a possible reason availability appears to be unchanged. There are a few cases of walnut trees withering, but residents do not know the cause. The lifespan for a walnut tree is about 80 years, so the withering walnut trees may simply be due to age.

There is some afforestation, mainly in the form of small bushes and shrubs on the margins of meadows.

Importance Of NTFPs To HH Economics. FGD participants collect most NTFPs for personal use. The villages are remote from the municipal center. There is no supermarket in the gorge and public transport is available only twice a week. Therefore, the population is dependent on food they produce through agricultural activity and the NTFPs they collect in the forest. Among the widely consumed products are mushrooms, walnut, blackberry, cornel,
rosehip, medlar and hawthorn. Mushrooms and walnuts are in greatest demand for non-self-consumptions.

The walnut is exploited the most by local HHs. It is collected in the territory of the State Forest Fund but very possibly not from a wild tree. There are number of abandoned villages with cultivated trees what are no longer being taken care of and gradually are becoming part of the forest. Walnut is a traditional and widely used ingredient in local cuisine therefore the demand is high. HHs start collecting green, un-ripened walnut fruit in late spring. The fruit is processed to make confiture. The selling price of 100 processed walnuts is 8,00 GEL. For domestic purposes, HHs consume around 500 to 700 walnuts each year. Approximately ten percent of villagers sell from 1 500 to 2 000 walnuts each year. They are mostly sold in local markets. Walnuts are also sold as ripened product with or without shell. The prices for unshelled walnut is 6,00 GEL/kg while the shelled walnut is sold for 15,00 GEL/kg. This is the price received by HHs who are primary collectors.

There are mainly two types of mushroom consumed by HHs. Mushrooms are peculiar and risky products; they require specific knowledge. There are only two people in the village who regularly collect mushrooms and other villagers trust them. Mushrooms grow in felled trees. Frequent collectors are well familiar with specific locations and are able to collect 30 to 50 kg per trip while other villagers may spend an entire day and collect only five kilos. There are two or three HHs that collect 500 to 800 kg of mushrooms each year. The maximum amount of mushroom collected by one HH in one season was one MT. Self-consumption volume per HH does not exceed 10 to 15 kg per year. There is no practice to dry or pickle mushrooms; they are consumed immediately. The selling price at local markets ranges from 0,70 to 1,50 GEL/kg with an average selling price of 0,80 GEL/kg.

The key motivators to collect above mentioned products in large quantities are identified buyers (i.e., specific known individuals) and favorable prices.

Among other consumed and or collected products are capparis spinose and wild plums. Around 10 percent of HHs collect 150 to 200 kilos of each product annually for sale at local markets.

Collection methods vary by NTFP. Walnuts are shaken or struck off trees using long wood sticks; the walnuts fall to the ground where they are collected. In this process, small branches are broken and buds are damaged. A similar method is used while harvesting capparis spinose, damaging outside branches and twigs. Mushrooms are pulled manually by the root with little material left in the ground. Berries are collected manually by picking individual fruits from the bush.

Villagers individually make decisions on what to collect and when. The practice is not organized. However, two or three neighbor may choose to collectively go to the forest. Young HH members are engaged in NTFP collection, both males and females. Women mostly collect berries, plums and medicinal plants while men collect nuts, mushroom and other products which require physical strength.

The share of agricultural activity in total HH annual income is about 80 percent. The share of NTFPs and beekeeping in total income are about 15 and 5 percent respectively.

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41 Here and elsewhere, these are late 2015 prices.
Commercial Aspects Of NTFPs. There are no commercial entities operating in Akhmeta municipality. Participants could not recall such entities even in the region. All NTFPs collected for commercial purposes are sold fresh. There is no processing or drying at the local level. HHs usually take the collected product on Sunday to a market in Akhmeta. Some of them travel to Telavi as it is larger city with more demand and higher prices, although with greater costs for transport. This happens only in case the family owns the car or shares the car with their neighbors.

Infrequent sales (i.e., once-a-week) and product perishability means that many short-lived NTFPs (e.g., mushrooms) are left in the forest.

Individual HHs sell NTFPs in small quantities at the local market. The customers are usually end users of the product. Relatively large quantities are sold to wholesalers or merchants who themselves resell to processors or larger wholesalers.

Environmental Damage. The FGD participants outlined general negative impact on forest due to uncontrolled timber utilization for the past 25 years. HHs have to travel 30 kilometers further into the forest to get firewood and timber.

Given the current NTFP consumption volumes, participants do not think there is significant damage created on particular species. The most evident change noticed by local is the overall quality of NTFPs is decreasing. It is mostly expressed in the size of fruit. For example, the average size of a walnut has shrunk over the past couple years.

Due to general deterioration of the forests, soil emaciation is quite evident, not only in deep forest but outward perimeters as well. Weedy plants and shrubs are increasing mainly in forest adjacent territories. Bushes and low quality trees are expanding at a fast pace covering meadows around the village.

HHs are quite well aware of these negative trends and impact they have on the forests, though they do not attribute these problems to NTFP collection. Our limited and qualitative observations suggest this opinion is correct.

Barriers To Increased NTFP Collection. FGD participants mentioned monetary and non-monetary barriers to increasing NTFP collection. Among the monetary barriers, the key obstacles are having a known buyer and unfavorable prices.

There are also non-monetary barriers that prevent increased collection of NTFPs. The general lack of transportation from the HH to a market is an essential obstacle. The amount of product that can be transported by bus is limited. It is very rare for wholesalers or other buyers to travel up to the gorge and purchase directly from HHs. Even if that happens, the selling price is very low as compared to the one received in the market.\(^{42}\)

Due to high degree of perishability, NTFPs cannot be stored for a long time; they need to be sold within two or three days after collection. Absence of special technologies makes it impossible to preserve the collected resources in marketable conditions. The perishability also precludes accumulating a critical quantity that would motivate a wholesaler to visit the village, or that would allow to save more on a trip to a larger market.

\(^{42}\) HHs face a stark choice: 1) sell in the village at quite low prices or 2) transport the product to a market where prices are higher but also where transport costs per unit sold can be significant.
The opportunity cost of labor used to collect NTFPs is a barrier as well. NTFPs collection requires significant time and energy. The alternative use of this time and energy is often simply more profitable (e.g., livestock, gardening). NTFPs (not for self-consumption) are perceived as merely an additional, marginal HH income. Given the periodic nature of NTFP collection, there is a certain level of NTFP collection that does not require giving up other, more profitably, activities.

**Forest Grazing.** Livestock breeding is one of the main activity together with small-size crop farming. Each HH owns three or four cows and some chickens. Pigs, sheep and goats are kept by fewer than ten percent of HHs. There is no modern, barn-based farming of livestock; HHs use traditional open-grazing methods.

Pastures and grasslands around the village are not sufficiently large. HHs collect hay in the grasslands, although the grasslands are gradually being covered with bushes and shrubs. Animals mostly graze the territory around the village, adjacent to forest territory and in meadows. A portion of the territory belongs to the forest fund, although there are no limitations imposed on its use.

It is a common practice of organized grazing in Eastern Georgia. Villagers take shifts and supervise animals during the day. About half of the livestock migrates to summer pastures for five months from May until mid-September. The migration reduces pressure on local grazed areas during the summer. Livestock is completely dependent on grazing during the summer however additional hay is given during the winter for five months. The cost of feeding one cow annually is approximately 600 GEL. In order to break-even, at least two cows are needed: price received for one cow compensates the cost of feeding. In case of no access to the forest for grazing, the total cost of owning a cow would increase to 2 000 GEL and HHs would have to give up roughly half of their cows.

FGD participants did not perceive grazing as necessarily having a negative effect on the environment and specifically on the forest. The logic behind this thinking is the following: cows do not enter forests deep inside, they only graze outward area, therefore the negative impact on the forest is limited.

**INDIVIDUAL INTERVIEWS**

Individual interviews were used to confirm comments made in FGDs. There were no substantive issues raised in individual interviews that were not already discussed in the FGDs.

**Use of NTFPs**

Although a variety of NTFPs are collected by HHs, only small number of them have economic importance to HHs for sale. NTFPs sold HHs include nuts (i.e., walnut, hazelnut, chestnut), berries (i.e., blueberry, blackberry, raspberry), bladdernut flower and mushrooms (i.e., Caesar's mushroom, Chanterelle, Meadow mushrooms and Scaly Tooth). These NTFPs that are collected for self-consumption by almost every HH among the people interviewed.\(^{43}\)

This means forest type is not a determining factor in which NTFPs are collected and sold by HHs; all are collected for self-consumption but few are collected for commercial purposes.

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\(^{43}\) This is not surprising as the profile of the individual interviewee was a collector of NTFPs.
Whether a particular NTFP is collected for sale depends on its general availability, density (quantity per unit area), distance from the home and ability to use simple collection methods.

**Economic Importance Of NTFPs**

HHs that collect and sell NTFPs receive from 130 to 2 000 GEL per year from buyers, with an average of 700 GEL per year. 700 GEL per year equates to less than 60 GEL per month (about 28 USD at May 2016 exchange rates). Although the NTFPs are collected manually, in most cases from five to ten percent of cash received is spent on 1) transport to the market or NTFP collection center and 2) on the market place fee if the resource is sold in an agrarian market.

Medicinal herbs, salad plants and mushrooms as well as wild fruits collected for domestic use have only a small impact on HH economics. The limited importance of NTFPs is caused by 1) lack of specific knowledge about specific NTFPs (i.e., recognition of the plant, knowledge about how it could be used and its value), 2) demographic structure of households (i.e., age of HH members and their ability to collect NTFPs) and 3) availability of more profitable uses of time (e.g., domestically grown plants). In competition to NTFPs are other traditional agricultural activities of HHs, such are livestock breeding and beekeeping; these activities are more trusted to be effective for support of the HH.

Commercial demand for NTFPs such as fir cones and snowdrop and cyclamen bulbs varies according the climatic character of the season, which defines the value and amount of the resource. In recent years, snowdrop and cyclamen bulbs are not heavily collected because these resources are usually sold outside of the country and international demand seems to have fallen.

To the end, only small numbers of HHs are involved in collection of cones and bulbs because it requires good physical abilities and time to reach and collect these products. Fir cones are sold for 1,70 to 2,00 GEL/kg to collection centers. Additional processing is done and then the cones are sold to foreign buyers. The price for snowdrop and cyclamen bulbs varied from 1,00 to 3,20 GEL/kg on the foreign markets. However, in the past two years the export of bulbs was stopped because of disappearing demand.

**Migration**

Migration of the local population is a common problem. Intensity of migration was higher in the Soviet period when people in Georgia were internally exiled and in the early 1990s when the social and political situation worsened in the country. Unfavorable social conditions stimulate migration including absence of melioration system, bad quality of roads and deficiency in water, electricity and natural gas supply.

**Effect on Village Economic Conditions**

Individuals interviewed confirmed that improving the market demand on the NTFPs or making these products more economically attractive for HHs is not enough to improve the economic conditions in the Target locations. Said differently, improving the profitability of NTFPs will of course benefit HHs in the Target locations, but the degree of improvement will not remove the reasons for outward migration.
## ANNEX II – PREVALENCE OF NTFPS

Information about the prevalence of NTFPs is given in the following chart. The list was created from FGD discussions and individual interviews. The list includes common NTFPs collected or available in the middle mountain and lowland areas of Georgia. The focus was on (only) the middle mountain and lowland areas because the objective of Project was to assess the role of NTFPs in HH economics, which necessarily requires the presence of both forests and HHs.

Explanatory notes on the chart are shown after the chart.

For each species, the chart shows the common and scientific names; whether the NTFP was collected in the present, past or both; the portion of the plant that is valuable for NTFP purposes; how the plant is used, either for market (economic) purposes or for domestic (self-consumption) purposes; the vulnerability of the plant to damage when it is collected for NTFP purposes (either safe or risky) and where the plant exists in Georgia.

### 8. Prevalence Of NTFPs In Georgia And Their Vulnerability To Damage From Collection

| COMMON NAME | SCIENTIFIC NAME | WHEN COLLECTED | VALUABLE PORTION OF PLANT | USE (M: MARKET; D: DOMESTIC) | VULNERABILITY TO DAMAGE (S: SAFE, RG: IN RISK GROUP ALONG WITH CAUCASUS RED LIST CATEGORY) | DISTRIBUTION: W: WEST GEORGIA; E: EAST GEORGIA |
|-------------|----------------|----------------|---------------------------|-----------------------------|--------------------------------------------------------------------------------|-------------------------------------------------
<p>| ALMOND (NATURALIZED) | Prunus armeniaca = Armeniaca vulgaris | Present, Past | fruit | M - fruit D - fruit, jam | S | E |
| BLACK WALNUT | Juglans nigra | Present, Past | nut | M &amp; D - nut | S | W |
| CAUCASIAN WILD PEAR | Pyrus caucasica | Present, Past | fruit | M &amp; D - fruit, schnapps | S | W, E |
| CORNEL | Cornus mas | Present, Past | fruit | M - fruit D - fruit, jam, schnapps | S | W, E |
| CHESTNUT | Castanea sativa | Present, Past | nut | M &amp; D - nut | RG | W, E |
| FIG (NATURALIZED) | Ficus carica | Present, Past | fruit | M - fruit D - fruit, jam | S | W, E |
| FIR | Abies nordmanniana | Present, Past | cone | M - seed, confiture D - confiture | S | W |
| GEORGIAN HAZELNUT | Corylus iberica | Present, Past | nut | M &amp; D - nut | RG (rare, status DD) | E |
| HAWTHORN | Crataegus spp. | Present, Past | fruit | M – fruit D - fruit, jam, schnapps | S | W, E |
| HAZELNUT | Corylus avellana | Present, Past | nut | M &amp; D - nut | S | W, E |
| LIME | Tilia begoniifolia | Present, Past | Flower | M - flower D - tea | S | W, E |</p>
<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>WHEN COLLECTED</th>
<th>VALUABLE PORTION OF PLANT</th>
<th>USE (M: MARKET; D: DOMESTIC)</th>
<th>VULNERABILITY TO DAMAGE (S: SAFE, RG: IN RISK GROUP ALONG WITH CAUCASUS RED LIST CATEGORY)</th>
<th>DISTRIBUTION: W: WEST GEORGIA; E: EAST GEORGIA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDLAR</td>
<td>Mespilus germanica</td>
<td>Present, Past</td>
<td>fruit</td>
<td>M - fruit D - fruit, jam</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>PLUM</td>
<td>Prunus divaricata</td>
<td>Present, Past</td>
<td>fruit</td>
<td>M &amp; D - fruit, schnapps, sauce</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>SPRUCE</td>
<td>Picea orientalis</td>
<td>Present, Past</td>
<td>Resin</td>
<td>M &amp; D - gum</td>
<td>RG (LC)</td>
<td>W</td>
</tr>
<tr>
<td>WALNUT</td>
<td>Juglans regia</td>
<td>Present, Past</td>
<td>nut</td>
<td>M &amp; D - nut, confiture</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>WILD (BITTER) ALMOND</td>
<td>Prunus dulcis = Amygdalus communis</td>
<td>Past</td>
<td>nut</td>
<td>D - medicinal</td>
<td>S</td>
<td>E</td>
</tr>
<tr>
<td>WILD APPLE</td>
<td>Malus orientalis</td>
<td>Present, Past</td>
<td>fruit</td>
<td>M &amp; D - fruit, schnapps</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>WILD CHERRY</td>
<td>Prunus avium = Cerasus avium</td>
<td>Present, Past</td>
<td>fruit</td>
<td>D - jam, schnapps</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>WILD PERSIMMON</td>
<td>Diospyros lotus</td>
<td>Present, Past</td>
<td>fruit</td>
<td>M – fruit D - fruit, jam</td>
<td>S</td>
<td>W</td>
</tr>
</tbody>
</table>

**SHRUBS, SEMI-SHRUBS AND LIANAS**

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>WHEN COLLECTED</th>
<th>VALUABLE PORTION OF PLANT</th>
<th>USE (M: MARKET; D: DOMESTIC)</th>
<th>VULNERABILITY TO DAMAGE (S: SAFE, RG: IN RISK GROUP ALONG WITH CAUCASUS RED LIST CATEGORY)</th>
<th>DISTRIBUTION: W: WEST GEORGIA; E: EAST GEORGIA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLACKTHORN</td>
<td>Prunus spinosa</td>
<td>Present, Past</td>
<td>Fruit</td>
<td>D - fruit, jam, juice</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>BARBERRY</td>
<td>Berberis vulgaris</td>
<td>Present, Past</td>
<td>Fruit, leaves</td>
<td>M - fruit (spice), D - spice, salad (leaves)</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>BAY LAUREL (NATURALIZED)</td>
<td>Laurus Nobilis</td>
<td>Present, Past</td>
<td>Leaves, seeds</td>
<td>M &amp; D - spice</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>BILBERRY</td>
<td>Vaccinium myrtillus</td>
<td>Present, Past</td>
<td>Berries</td>
<td>M - berries D - juice, jam, marmalade</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>BLACKBERRY</td>
<td>Rubus spp.</td>
<td>Present, Past</td>
<td>Berries</td>
<td>M – berries D - juice, wine, jam, sauce, marmalade</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>BLADDERNUT (EUROPEAN)</td>
<td>Staphylea pinnata</td>
<td>Present, Past</td>
<td>Flower</td>
<td>M &amp; D - pickled</td>
<td>S</td>
<td>E</td>
</tr>
<tr>
<td>BLUEBERRY</td>
<td>Vaccinium uliginosum</td>
<td>Present, Past</td>
<td>Berries, leaves</td>
<td>M – berries D - juice, jam, marmalade, tea</td>
<td>Re</td>
<td>W, E</td>
</tr>
<tr>
<td>BUTCHER'S BROOM</td>
<td>Ruscus colchicus = hypophyllum</td>
<td>Present</td>
<td>Branches / whole plant body</td>
<td>M - ornamental, component of wreaths</td>
<td>RG (NE)</td>
<td>W</td>
</tr>
<tr>
<td>COMMON NAME</td>
<td>SCIENTIFIC NAME</td>
<td>WHEN COLLECTED</td>
<td>VALUABLE PORTION OF PLANT</td>
<td>USE (M: MARKET; D: DOMESTIC)</td>
<td>VULNERABILITY TO DAMAGE (S: SAFE, RG: IN RISK GROUP ALONG WITH CAUCASUS RED LIST CATEGORY)</td>
<td>DISTRIBUTION: W: WEST GEORGIA; E: EAST GEORGIA</td>
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<td>-------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td><strong>CHERRY LAUREL</strong></td>
<td><em>Prunus laurocerasus</em> =<em>Laurocerasus officinalis</em></td>
<td>Past</td>
<td>Fruit</td>
<td>M - fruit, medicinal</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td><strong>COLCHIS BLADDENN UT</strong></td>
<td><em>Staphylea colchica</em></td>
<td>Present, Past</td>
<td>Flower</td>
<td>M &amp; D - pickled</td>
<td>RG (VU)</td>
<td>W, E</td>
</tr>
<tr>
<td><strong>COLCHIS BOXWOOD</strong></td>
<td><em>Buxus colchica</em></td>
<td>Present, Past</td>
<td>Branches</td>
<td>Church, traditional (Easter rite)</td>
<td>RG</td>
<td>W, E</td>
</tr>
<tr>
<td><strong>CURRANT</strong></td>
<td><em>Ribes alpinum</em></td>
<td>Present, Past</td>
<td>Berries</td>
<td>D - juice, jam, marmalade</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td><strong>DANEWORT</strong></td>
<td><em>Sambucus ebulus</em></td>
<td>Present, Past</td>
<td>Fruit</td>
<td>D - medicinal, schnapps</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td><strong>GEORGIAN BARBERRY</strong></td>
<td><em>Berberis iberica</em></td>
<td>Present, Past</td>
<td>Fruit</td>
<td>M - fruit (spice), D - spice, juice</td>
<td>S</td>
<td>E</td>
</tr>
<tr>
<td><strong>GUILDER-ROSE</strong></td>
<td><em>Viburnum opulus</em></td>
<td>Present, Past</td>
<td>Fruit</td>
<td>M - fruit (medicinal) D - juice,</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td><strong>POMEGRANATE</strong></td>
<td><em>Punica granatum</em></td>
<td>Present, Past</td>
<td>Fruit</td>
<td>D - juice, sauce</td>
<td>S</td>
<td>E</td>
</tr>
<tr>
<td><strong>RASPBERRY</strong></td>
<td><em>Rubus idaeus</em></td>
<td>Present, Past</td>
<td>Berries</td>
<td>M – berries D - juice, jam, marmalade</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td><strong>SMILAX, PRICKLY-IVY</strong></td>
<td><em>Smilax excelsa</em></td>
<td>Present, Past</td>
<td>Young leaves</td>
<td>D - salad</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td><strong>WILD ROSES</strong></td>
<td><em>Rosa spp.</em></td>
<td>Present, Past</td>
<td>Fruit, Flower</td>
<td>M – rosehips D - juice, rose flower marmalade</td>
<td>S</td>
<td>W, E</td>
</tr>
</tbody>
</table>

**HERBACEOUS PLANTS**

<p>| ASPARAGUS | Asparagus spp. | Present, Past | Fresh plant body | D - salad | S | W, E |
| ASS'S FOOT | <em>Tussilago farfara</em> | Present, Past | Leaves | M &amp; D - medicinal | S | W, E |
| BLUE SNOWDROP | <em>Scilla spp.</em> | Present, Past | Flower | M - ornamental | S | W |
| BUTTERBURY | <em>Petasites albus</em> | Present | Leaves | D - medicinal | S | W |
| CAUCASIAN WINTER ROSE | <em>Helleborus caucasicus</em> | Present, Past | Flowers | M - ornamental | RG (DD) | W, E |
| CERINTHE | <em>Cerinthe minor</em> | Present | Flowers | D - medicinal | S | W |
| COLCHIC CROCUS | <em>Colchicum woronowii</em> | Present, Past | Flower | M - ornamental | RG (EN) | W |</p>
<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>WHEN COLLECTED</th>
<th>VALUABLE PORTION OF PLANT</th>
<th>USE (M: MARKET; D: DOMESTIC)</th>
<th>VULNERABILITY TO DAMAGE (S: SAFE, RG: IN RISK GROUP ALONG WITH CAUCASUS RED LIST CATEGORY)</th>
<th>DISTRIBUTION: W: WEST GEORGIA; E: EAST GEORGIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMON MAMMARY OR DYER’S MAMDER</td>
<td>Rubia tinctorum</td>
<td>Present, Past</td>
<td>Roots</td>
<td>Church, traditional (Easter rite, source of dye for red eggs)</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>COMMON MALLOW</td>
<td>Malva neglecta</td>
<td>Present, Past</td>
<td>Fresh leaves</td>
<td>D - salad</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>COMMON PURSLENE</td>
<td>Portulaca oleracea</td>
<td>Present, Past</td>
<td>Fresh leaves</td>
<td>D - salad</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>CREEPING WOOD SORREL</td>
<td>Oxalis corniculata</td>
<td>Present, Past</td>
<td>Young leaves</td>
<td>D - spice, salad</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>CROCUS</td>
<td>Crocus puelchellus= C. speciosus</td>
<td>Present, Past</td>
<td>Flower</td>
<td>M - ornamental</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>CYCLAMEN</td>
<td>Cyclamen colchicum, C. vernum, Cyclamen spp.</td>
<td>Present (flowers) Past (bulbs)</td>
<td>Bulb, flower</td>
<td>M - as seed (ornamental plant), medicinal; ornamental - local market</td>
<td>RG (VU)</td>
<td>W</td>
</tr>
<tr>
<td>DAISY</td>
<td>Pyrethrum corymbosum, P. roseum</td>
<td>Present, Past</td>
<td>Flowers</td>
<td>M &amp; D - medicinal</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>GROUNDSEL</td>
<td>Senecio platyphylloides</td>
<td>Past</td>
<td>Leaves, roots / whole plant body</td>
<td>M - medicinal</td>
<td>RG</td>
<td>W</td>
</tr>
<tr>
<td>KNAPEWED</td>
<td>Centaurea depressa</td>
<td>Present, Past</td>
<td>Young shoot and leaves</td>
<td>D - salad</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>LIQUORICE</td>
<td>Glycyrrhiza glabra</td>
<td>Present</td>
<td>Roots</td>
<td>M - medicinal</td>
<td>RG</td>
<td>E</td>
</tr>
<tr>
<td>MARSH MINT</td>
<td>Mentha aquatica</td>
<td>Present, Past</td>
<td>Fresh leaves</td>
<td>D - spice</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>MINT</td>
<td>Mentha arvensis</td>
<td>Present, Past</td>
<td>Fresh leaves</td>
<td>D - spice, salad</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>NETTLE</td>
<td>Urtica dioica</td>
<td>Present, Past</td>
<td>Whole plant body</td>
<td>D - salad</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>ORIENTAL BORAGE</td>
<td>Trachystemon orientalis</td>
<td>Present, Past</td>
<td>Young shoot and leaves</td>
<td>D - salad</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>PRIMROSE</td>
<td>Primula macrocalyx, Primula spp.</td>
<td>Present (flowers) Past (roots)</td>
<td>Roots</td>
<td>M - medicinal, ornamental - local market</td>
<td>RG</td>
<td>W, E</td>
</tr>
<tr>
<td>SICKLEWEED</td>
<td>Falcaria vulgaris</td>
<td>Present, Past</td>
<td>Young leaves and shoots</td>
<td>D - salad</td>
<td>S</td>
<td>E</td>
</tr>
<tr>
<td>COMMON NAME</td>
<td>SCIENTIFIC NAME</td>
<td>WHEN COLLECTED</td>
<td>VALUABLE PORTION OF PLANT</td>
<td>USE (M: MARKET; D: DOMESTIC)</td>
<td>VULNERABILITY TO DAMAGE (S: SAFE, RG: IN RISK GROUP ALONG WITH CAUCASUS RED LIST CATEGORY)</td>
<td>DISTRIBUTION: W: WEST GEORGIA; E: EAST GEORGIA</td>
</tr>
<tr>
<td>-------------------</td>
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<td>------------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>SNOWDROP</td>
<td>Galanthus woronowii</td>
<td>Present, Past</td>
<td>Bulb, flower</td>
<td>M - as seed (ornamental plant), medicinal; ornamental - local market</td>
<td>RG (VU)</td>
<td>W</td>
</tr>
<tr>
<td>ST. JOHN’S WORT</td>
<td>Hypericum perforatum</td>
<td>Present, Past</td>
<td>Flowers / whole plant body</td>
<td>D - medicinal</td>
<td>RG</td>
<td>W, E</td>
</tr>
<tr>
<td>SWEET PEAS</td>
<td>Lathyrus roseus</td>
<td>Present, Past</td>
<td>Beans</td>
<td>D - salad</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>THYME</td>
<td>Thymus spp.</td>
<td>Present, Past</td>
<td>Leaves</td>
<td>D - tea</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>VIOLET</td>
<td>Viola odorata</td>
<td>Present, Past</td>
<td>Flowers</td>
<td>D - jam, marmalade</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>VALERIAN</td>
<td>Valeriana officinalis</td>
<td>Present, Past</td>
<td>Roots</td>
<td>M &amp; D - medicinal</td>
<td>RG</td>
<td>W, E</td>
</tr>
<tr>
<td>WARTY CABBAGE</td>
<td>Bunias orientalis</td>
<td>Present, Past</td>
<td>Young shoots</td>
<td>D - salad</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>WILD GARLIC</td>
<td>Allium ursinum</td>
<td>Present, Past</td>
<td>Bulb and young leaves</td>
<td>D - salad</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>WILD LEEKS</td>
<td>Allium spp.</td>
<td>Present, Past</td>
<td>Bulb and young leaves</td>
<td>D - spice, salad</td>
<td>S</td>
<td>W</td>
</tr>
<tr>
<td>WILD OREGANO</td>
<td>Origanum vulgare</td>
<td>Present, Past</td>
<td>Flowers, leaves</td>
<td>D - spice, tea</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>WILD STRAWBERRY</td>
<td>Fragaria vesca</td>
<td>Present, Past</td>
<td>Berries</td>
<td>D - fresh berries, jam, marmalade</td>
<td>S</td>
<td>W, E</td>
</tr>
<tr>
<td>YELLOW MILFOIL</td>
<td>Achillea biebersteinii</td>
<td>Past</td>
<td>Flowers / whole plant body</td>
<td>M - medicinal</td>
<td>RG</td>
<td>W</td>
</tr>
<tr>
<td>ZIZIPHORA URTSI</td>
<td>Ziziphora clinopodioides</td>
<td>Present, Past</td>
<td>Leaves</td>
<td>D - spice, tea</td>
<td>S</td>
<td>E</td>
</tr>
</tbody>
</table>

**MUSHROOMS**

<table>
<thead>
<tr>
<th>COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>WHEN COLLECTED</th>
<th>VALUABLE PORTION OF PLANT</th>
<th>USE (M: MARKET; D: DOMESTIC)</th>
<th>VULNERABILITY TO DAMAGE (S: SAFE, RG: IN RISK GROUP ALONG WITH CAUCASUS RED LIST CATEGORY)</th>
<th>DISTRIBUTION: W: WEST GEORGIA; E: EAST GEORGIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAESAR’S MUSHROOM</td>
<td>Amanita caesarea</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh</td>
<td>No data</td>
<td>W</td>
</tr>
<tr>
<td>CHANTELLLE</td>
<td>Cantharellus cibarius</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>CHARBONNIER</td>
<td>Tricholoma portentosum</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>CHARCOAL BURNER</td>
<td>Russula cyanoxantha</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>COMMON MOREL</td>
<td>Morchella spp.</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>EMETIC RUSSULA</td>
<td>Russula emetica</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>COMMON NAME</td>
<td>SCIENTIFIC NAME</td>
<td>WHEN COLLECTED</td>
<td>VALUABLE PORTION OF PLANT</td>
<td>USE (M: MARKET; D: DOMESTIC)</td>
<td>VULNERABILITY TO DAMAGE (S: SAFE, RG: IN RISK GROUP ALONG WITH CAUCASUS RED LIST CATEGORY)</td>
<td>DISTRIBUTION: W: WEST GEORGIA; E: EAST GEORGIA</td>
</tr>
<tr>
<td>------------------------</td>
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<td>-----------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>GREEN-CRACKING RUSSELLA</td>
<td>Russula virensens</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>HONEY MUSHROOM</td>
<td>Armillaria mellea</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>MEADOW MUSHROOMS</td>
<td>Agaricus spp.</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>MILK WHITE BRITTLEGILL</td>
<td>Russula delica</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>PARASOL MUSHROOM</td>
<td>Macrolepiota procera</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>PEPPERY MILKCAP</td>
<td>Lactarius piperatus</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>PINE BOLETE</td>
<td>Boletus edulis</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>Saffron milk cap</td>
<td>Lactarius deliciosus</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>SCALY TOOTH</td>
<td>Sarcodon imbricatus</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
<tr>
<td>WEEPING BOLETE</td>
<td>Suillus granulatus</td>
<td>Present, Past</td>
<td>Cap</td>
<td>M- fresh D - salad, soup</td>
<td>No data</td>
<td>W, E</td>
</tr>
</tbody>
</table>

Source:

Notes On Prevalence Of NTFP Species

Resources defined as safe (S) in the list of the prevalent species are plants that do not receive life-threatening damage when their products are collected. In most cases these are widespread plants or the collected parts are easily reproduced in the forest each season.

There is not enough scientific data to assess the vulnerability of mushrooms to damage from collection. According to information received from HHs, the quantity of mushrooms varies greatly from year to year. When the harvest is large, even those mushrooms that usually sell at a high price (e.g., 7.00 to 10 GEL/kg for Caesar's mushroom and Chanterelle) are sold cheaper.

The list does not include all edible mushrooms. HHs do not have knowledge to distinguish edible from similar but dangerous mushrooms. As a result, HHs do not collect all edible mushrooms even when they are close to village; HHs collect only those mushrooms, which are trusted to be not poisonous.

The species noted as being in a risk group (RG) are rare in the country. Cyclamen and snowdrop are already protected by CITES conventions. Colchic crocus is an endangered red list species. Georgian hazelnut is rare species in eastern Georgia. Information about the
distribution and population structure is not enough yet to evaluate vulnerability statuses. The recent status of Georgian hazelnut in the Caucasus red list is ‘Data deficient’ (DD).

Resources in the list have been defined as a risk group (RG) species for two reasons. First, Colchis boxwood and chestnut are infected by a bacterial disease called fire blight which kills these plants in the wild. Although the dynamic of the population and the threat caused by the decease is not yet studied, however it can be concluded that in case of intensification of the rate of collection of the resources from these species might cause the threat to worsen.

The second reason for placing species in a risk group (RG) is poor recoverability of the plant after collection. Thus, plants that are valuable for the root (or that are collected including the root when that is most convenient to the collector) were placed in this category. Besides, the populations of these species are decreasing in number there is also the other threat connected to habitat structure. Replacement of the individuals of species which are dominant in the in the community might cause intrusion of the invasive plants in the plant community and destruct the habitat. One of such species is Liquorice (Glycyrrhiza glabra) which is one of the dominant species in steppe vegetation communities of Georgia.

One more species which was placed in risk group (RG) is blueberry (Vaccinium uliginosum). Interviewed HHs admitted that amount of the individuals and resource of blueberry has decreased because of forest grazing and natural afforestation of the peripheral areas of the forest. There is no scientific evidence which could support this observation yet but this information is important be taken into consideration.

Habitat destruct ion by forest cutting and forest grazing are the factors that have significantly reduced the population of wild grape (Vitis siliestris subsp. vinifera) which is naturally distributed in Georgia. Resource of this species are no longer collected because wild grape becomes more and more rare. Wild grape is one of the most important plant species to be protected on the territory of Georgia because this is the first place on the earth where grapes were domesticated. Populations of this species remain in river gorges of the lower mountain belt forests of west Georgia. In the eastern part of the country wild grape grows in the riparian forests which were strongly impacted by anthropogenic factors during long period of history in the country and now exist in the form of small fragments. Forest grazing can be considered as a major factor, which has damaged populations of wild grapes in the recent period.

Spruce is not a Red List species, however the method used to extract the NTFP product from this species might become additional threat factor of declining the number of its population in case of intensification of the resource use. The major product that is extracted from spruce trees is its resin. It is used to produce chewing gum. Resin is mostly extracted from dying trees and in some cases HHs (mostly the children) are scratching the bark of healthy spruce trees to make them produce resin which weakens the tree and can cause death. Except for wood, young spruce trees are cut and sold as Christmas trees which is an additional impact on the spruce population in the middle mountain areas of the western part of the country.
ANNEX III - SUSTAINABILITY OF NON-TIMBER FOREST RESOURCES

This Annex overviews the sustainable approaches to NTFP use by analyzing international standards. The presented methods can be used as guidelines for ensuring proper sustainable practices are used. The current sustainability challenges are discussed in Georgia with risk analysis for selected NTFPs, which are most prevalent.

SITUATION IN GEORGIA

NTFP Collection And Use

According to FAO, the global value of non-wood forest products (NWFP), or non-timber forest products, of plant and animal origin was estimated as 20,6 billion USD in 2010.\textsuperscript{44} This is likely a substantial underestimate as NWFPs are rarely captured in national statistics, in a recent International Trade Centre study, the export of plant-based NWFPs from China was estimated at over 1,3 million MT, with a reported customs value of over 5 billion USD. The great majority of plants in use and trade are wild-collected.

Project did not find evidence of compelling unsustainable harvesting and trade of NTFPs that may have an impact on the Georgian economy or HH livelihoods. Given the current utilization rate, there are no significant threats anticipated to local habitats of NTFP use. There are only three NTFPs currently regulated by international and local regulations such as The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The CITES is usually the major or sometimes the only legal instrument addressing the legality of harvest and trade. Another international standard addressing sustainability of NTFPs is the FairWild Standard which was developed by TRAFFIC, IUCN, WWF and other organizations to provide a reliable tool to verify the sustainability of wild-harvesting and sustainable and equitable trade practices.

Our research did not reveal significant trends of environmental damage caused by collection of NTFPs. Although these resources are used for self-consumption as well as for sale, the current intensity of NTFP use is low in Georgia.

According to their importance for HHs, NTFPs resources can be divided into two groups:

- **Alterable NTFPs** - wild edible plants and spices which can be substituted by cultivated crops in case of any restriction of their collection
- **Unalterable NTFPs** – medicinal plants, dye producing plants and plants of symbolic importance.

Change or replacement of local natural habitats is the major environmental damages that can be caused by extensive use of NTFPs. A major risk of habitat change concerns the use of annual or perennial plants that have a short life cycle. These groups of plants include a majority of the medicinal and dye producing plants where the whole plant body, roots, taps and bulbs are useful as an NTFP. Removal of such plant species changes local habitats and includes the risk of distribution of weeds, especially if the removed plant species is dominant in the habitat and forms a community in the meadows or forest understory.

\textsuperscript{44} FAO, 2015. Global Forest Resource Assessment 2015: How are the world’s forests changing? FAO, Rome.
The major threat to the environment caused by NTFP use by HHs is habitat disturbance. It will sharpen in case of intensification of the collection of NTFPs and might transform into factors of species extinction in several localities, genetic erosion and weed distribution.

**Forest Grazing**

Several botanical researches performed in Georgia on the impact of grazing on the environment revealed that *regulated grazing supports plant diversity*. Domestic animals spread seeds of several plant species. They produce manure and tread the seeds into the ground, which is important factor for seed fertilization and species distribution.

On the other hand, overgrazing and extensive use of mountain pastures causes a contrary effect and damages plant diversity. It causes replacement of species from their habitats and reduces root diversity, which is the most important factor in soil fixation. Numerous trails for cattle accumulate water and cause landslides. Both decline of plant diversity and increase of animal paths are the major cause of soil erosion.

Extensive use of pastures and overgrazing cannot be discussed as a threat factor to NTFPs in Georgia. In the last 30 years the number of livestock has decreased significantly. As a result, natural afforestation has intensified all over the country. Afforestation (forests expanding into meadows) is itself a problem. Although grazing cannot be discussed as a supporting factor of extinction of NTFP producing species, it stays as one of the major factors of habitat disturbance.

**Implications Of Expanded Collection**

However, in case one might consider the implementation of sustainable collection practice in Georgia, there are number of ways to do so. Among the international best practices, we recommend to use adaptive management planning approach by FairWild.org. The approach is presented in detail in the following section.

**IMPLEMENTATION OF SUSTAINABLE WILD-COLLECTION PRACTICES**

Full implementation of sustainable wild-collection practices requires an adaptive management approach. Such an approach includes a number of pre-requisites that are important to take into an account when designing intervention strategies, including resource assessment, species and area management plans, documented sustainable collection practices, cost calculation along the supply chain, traceability of goods and finances and documented fair trading practices.

The following chart shows the adaptive management approach schematically. Given Georgia’s situation, and in particular what was found in the Target locations in FGDs, individual interviews and visits to the forest, at this time emphasis should be placed on the first box in the following chart: Resource Assessment.
Of the above pre-requisites, species and area management plans provides the compilation of information necessary to make conclusions about the sustainability of harvesting methods and quantities, design of the appropriate harvesting methods and monitoring process. As described in the FairWild Guidance Manual for Establishing Species and Area Management Plans for Low Risk Plant Species,

“To successfully manage the resource, the objectives (in terms of productivity and regeneration) need to be clearly set and management practices defined (e.g., through a set of collection instructions that give guidance on methods and limits to collection).”

An adaptive management planning, illustrated above, encompasses all elements of the species and area management cycle.

**Resource Assessment for Sustainable NTFP Management in Georgia**

With the major objective of Project to determine the environmental sustainability of the current wild-harvesting practices, the focus of the following methodology description is on the resource assessment step of the adaptive management process.

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Resource assessment in each situation may involve a different starting wild-collection point. Starting points may include three situations; examples are shown in parentheses:

- Target species and collection area have already been identified and commercial wild-collection exists (wild berries is Keda, fir seeds in Ambrolauri)
- Target species is already identified but is not yet collected at the commercial levels (crab-apple in Dusheti)
- Target species is not identified yet (medicinal herbs nearly everywhere).

Under each of these situations, the main issues to be addressed should be identified. This may include:

- Estimating whether the demand may exceed the supply (first situation); determine whether the current harvesting and trade is sustainable and what changes, if any, are needed
- Defining whether sustainable wild-collection is possible for the target species and what resource management controls and efforts are needed (second situation)
- Identifying species for which wild collection in commercial quantities may be sustainable (third situation).

Results from the FGDs and individual interviews gives a more precise picture of the starting point. Depending on the location, all three situations are present in Georgia; examples are given in parentheses after each of the three situations listed previously.

Resource assessment comprises major steps as shown schematically in the following chart. The assessment needs to be specific to the area where the plant is collected and the procedure needs to be repeated if there are several distinct collection areas.

10. Resource Assessment Framework

Source: FairWild.org

Each of the major steps is described further in the following Sub-Sections.

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Situation Analysis

Full situation analysis addresses ecological, as well as relevant social, legal, economic and broader environmental factors. Correct identification of target plant species is vital importance at this stage and all further steps are based on the correct identification with its accepted scientific name. Minimum information available include:

- A correct local, trade and scientific name of target species confirmed through an herbarium voucher specimen
- A fact sheet or plant monograph available for each target plant
- The protection status of the target plant needs to be known.

A key part of the situation analysis is to understand the risk of unsustainable harvesting. Within the FairWild certification process, risk analysis is conducted as a desk review, and includes the following factors. An initial situation analysis for NTFPs found in Project is shown in the next Sub-Section

<table>
<thead>
<tr>
<th>CONDITION Or FACTOR</th>
<th>LOW RISK (LOW REQUIREMENTS OF INFORMATION, EXPERTISE, TIME AND COST)</th>
<th>MEDIUM RISK (MODERATE REQUIREMENTS OF INFORMATION, EXPERTISE, TIME AND COST)</th>
<th>HIGH RISK (HIGH REQUIREMENTS OF INFORMATION, EXPERTISE, TIME AND COST)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONSERVATION STATUS</strong></td>
<td>■ Not threatened (assessed)</td>
<td>■ Unknown (not assessed)</td>
<td>■ Threatened (assessed)</td>
</tr>
<tr>
<td><strong>(LOCAL, NATIONAL, GLOBAL)</strong></td>
<td>■ Populations and resource quality stable (not declining)</td>
<td>■ Populations and resource quality not known to be declining</td>
<td>■ Populations, resource quality declining</td>
</tr>
<tr>
<td><strong>PLANT PART COLLECTED</strong></td>
<td>■ Leaves, flowers, fruit of perennials</td>
<td>■ Exudates (sap, resin)</td>
<td>■ Plant destroyed through collection</td>
</tr>
<tr>
<td><strong>GEOGRAPHIC DISTRIBUTION</strong></td>
<td>■ Internationally widespread</td>
<td>■ Regionally restricted</td>
<td>■ Locally restricted</td>
</tr>
<tr>
<td><strong>LOCAL POPULATION SIZE</strong></td>
<td>■ Often large, spread homogeneously</td>
<td>■ Medium to large</td>
<td>■ Everywhere small</td>
</tr>
<tr>
<td><strong>HABITAT SPECIFICITY</strong></td>
<td>■ Adapted to various habitat types</td>
<td>■ Adapted to few habitat types</td>
<td>■ Specific to one habitat type</td>
</tr>
<tr>
<td><strong>REGENERATION</strong></td>
<td>■ Fast growing</td>
<td>■ Species growing at medium rate</td>
<td>■ Slow growing</td>
</tr>
<tr>
<td><strong>REPRODUCTION</strong></td>
<td>■ Easy resprouting</td>
<td>■ Partly resprouting</td>
<td>■ Not resprouting</td>
</tr>
<tr>
<td><strong>THREAT CAUSES</strong></td>
<td>■ Asexual; wind pollinated; many viable seeds; abiotic dispersal</td>
<td>■ Sexual; pollinators common; seed dispersers common</td>
<td>■ Dioecious; monocarpic; specific disperser; few viable seeds</td>
</tr>
<tr>
<td><strong>TREED TIMES</strong></td>
<td>■ None known or likely to exist</td>
<td>■ Single threat</td>
<td>■ Multiple threats or severe habitat loss</td>
</tr>
<tr>
<td><strong>Destructive collection practice</strong></td>
<td>■ Reforestation</td>
<td>■ требуется, Vel substacion conventions</td>
<td>■ Destructive collection practice</td>
</tr>
</tbody>
</table>

Based on the analysis, target plants are assessed as Low, Medium or High risk, which provides an estimation of requirements and rigor of information, expertise, time and cost for the development of the sustainable collection management system.

**Resource Inventory**

A resource inventory provides insight into how much of the target species is present within the collection area; the inventory can cover several species at one time. An inventory is needed to complete the question about local target plant population size. Fieldwork is necessary to respond to the major question of the inventory: how much biomass of target plant species are present within the collection area. Depending on the risk category of species, the rigor of the fieldwork will be different.

The inventory will provide data on whether the target species occur all over the collection area or only in certain places, in which percentage of the collection area the target plant occur and how much of the plant occurs in the suitable habitats on average. The resource inventory requires for the collection area and the sampling points to be defined, after which total and harvestable biomass of the target plant estimated.

**Yield And Regeneration Studies**

Yield and regeneration studies estimate the quantity of the target plant that can be harvested each season without damaging the long-term sustainability of species and the regeneration rate of harvested target plant populations or harvested plant individuals or plant parts. A combination of fieldwork (e.g., comparing historical harvesting data with collectors’ interviews regarding the harvested amounts) and desk studies to review scientific understanding of the species’ biology and regeneration capacity is required to complete this step.

**Assessment Of Harvest Impacts**

Assessment of harvest impacts provides detailed information about the impacts of current harvest methods and procedure on the target plant population and the ecosystem and habitats of collection area. The assessment allows the identification of other factors that may influence target populations and their regeneration. Harvest impacts are assessed in the field and in most cases can only be assessed after several years of collection. The assessment requires the establishment of the observation/sampling points, defined in an appropriately justified method, monitored at regular intervals for the signs of changes and impacts of harvesting and other factors on the target species population, as well as other plant and animal species that occur in the area.
Assessments are detailed and cover one species (though several assessments could be done at the same time). For Project, the Team did not do detailed assessments.

**Periodic Monitoring And Harvest Adjustments**

This step provides input into the determination of potential adjustments to the method, frequency or intensity of harvesting. Monitoring provides information on whether management is successful in sustaining harvest quantity and quality and whether the target plant maintains baseline yields and regeneration levels.

When adjustments are needed, they should address the issue of changes to the current method, frequency and intensity of harvesting in order to maintain or restore adequate conditions for sustainable wild collection.

**SITUATION ANALYSIS IN TARGET AREAS**

Based on fieldwork results, a starting resource risk assessment exercise was done to identify any unsustainable harvesting. Considering the current collection protocols (parts collected, preferred age or size-class, methods, frequency and intensity) and importance of species for local communities, plant populations were defined. Some additional criteria such as history of land use and management (e.g., wild plant collection, forestry, grazing), ownership and resource tenure of area were applied as well.

Results are shown in the following chart. The list of plants includes most prevalent NTFP producing species and their close relative vulnerable species (in case of *Corylus* spp.; *Cyclamen* Spp.; *Rosa* spp.; *Rubus* spp.) which are distributed in the forest edges or in the same habitat where the major NTFP producing species of the same group occurs and produce almost the similar product to that which is collected from the major one.

Red list statuses for the listed species are conformed according to the most recent version of the Georgian Red List. Species characteristics required for proper risk application have been checked in *The Flora of Georgia*. The risk assessment is also based on the information collected during FGDs, individual interviews and forest visits.

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<table>
<thead>
<tr>
<th>SPECIE</th>
<th>COMMON NAME</th>
<th>RED LIST STATUS</th>
<th>CONSERVATION STATUS (LOCAL, NATIONAL, GLOBAL)</th>
<th>PLANT PART COLLECTED</th>
<th>GEOGRAPHIC DISTRIBUTION</th>
<th>LOCAL POPULATION SIZE</th>
<th>HABITAT SPECIFICITY</th>
<th>REGENERATION</th>
<th>REPRODUCTION</th>
<th>THREAT CAUSES</th>
<th>SCALE AND TREND OF USE AND TRADE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abies nordmanniana (Steven) Spach</td>
<td>Fir</td>
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<td>1</td>
<td>Fir cones are mostly collected only in one place of Georgia – in Racha region (western part of Georgia). Impact of resource collection is low on species abundance and distribution.</td>
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<tr>
<td>Berberis iberica Sweet</td>
<td>Georgian barberry</td>
<td>NE</td>
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<td>3</td>
<td>2</td>
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<td>2</td>
<td>In contrast to Berberis vulgaris L. (barberry) which is widespread species in Georgia and Caucasus only the fruits of B. iberica is valuable as a resource. Populations of B. iberica are extremely small and appear in the riparian forest fragments of the eastern part of Georgia. This type of forests has been under heavy pressure of human factors such are forest cut and grazing. Collection rate is not known.</td>
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<td>Castanea sativa Mill.</td>
<td>Chestnut</td>
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<td>Threat is caused by fire blight, which destructs populations of chestnut all over southern Caucasus</td>
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<td>Galanthus woronowii Losinsk.</td>
<td>Georgian snowdrop</td>
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<td>Threats caused by resource collection: habitat disturbance and anthropogenic decline of the number of individuals</td>
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<td>Threats caused by resource collection: habitat disturbance and anthropogenic decline of the number of individuals</td>
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<td>JUGLANDS REGIA L.</td>
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<td>Walnut was included in the older version of the red list of Georgia. The reason of it is paleo-botanical data which says that walnut was distributed in local forests in the tertiary geological period. It has been excluded from the most recent version of the red list of Georgia as natural forests of the walnut cannot be found in the country. Species takes insignificant damage after resource collection.</td>
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<td>RUBIA TINCTORUM L.</td>
<td>Common madder; dyer's madder</td>
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<td>RUSCUS COLCHICUS P.F. YEO</td>
<td>Butcher's Broom</td>
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<tr>
<td>STAPHYLEA COLCHICA STEVE</td>
<td>Bladernut, Capers</td>
<td>VU A2c; B1ab (iii)+ 2ab(ii)</td>
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<tr>
<td>Corylus spp.</td>
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<tr>
<td>Corylus avellana L.</td>
<td>Common hazelnut</td>
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<td>Wild hazelnuts have several uses in Georgia. Prevalent resources that they produce are nuts and branches (shoot). Branches are commonly used in production of Georgian traditional Christmas tree called “Chicilaki”. According to local believe the shaved tree resembles the famous beard of St. Basil the Great, who is thought to visit people during Christmas similar to the Santa Claus tradition. Hazelnut shoots are also used for making garden fences and fixators (pegs) for several garden crops. C. avellana which is the most widespread species in Georgian forests should have bigger share in the resource production however there is no trust that the other rare species of hazelnut are safe from the attacks of resource users.</td>
</tr>
<tr>
<td>Corylus colchica Albov.</td>
<td>Colchic hazelnut</td>
<td>VU B2ab(ii)</td>
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<td>Corylus avellana var. pontica (K.K och) H.J.P.Win KL.</td>
<td>Imeretian hazelnut</td>
<td>DD</td>
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<td>Cyclamen spp.</td>
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<tr>
<td>Cyclamen colchicum (Albov) Correvo n</td>
<td>Colchicum cyclamen</td>
<td>VU D2</td>
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<td>Regeneration</td>
<td>Reproduction</td>
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<td>Scale and Trend of Use and Trade</td>
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<tr>
<td><strong>Cyclamen coum s. ubsp. Caucasicum (K. Koch) O. Schwarz</strong></td>
<td>Georgiasian cyclamen</td>
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<td><strong>Rosa spp.</strong></td>
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<tr>
<td><strong>Rosa canina L.</strong></td>
<td>Wild rose</td>
<td>-</td>
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<tr>
<td><strong>Rosa galushkoi Demurova</strong></td>
<td>&quot;----&quot;</td>
<td>VU B1ab(iii)</td>
<td>3</td>
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<tr>
<td><strong>Rosa hirtissima Lonacz.</strong></td>
<td>&quot;----&quot;</td>
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<td><strong>Rosa kozlowskii Chrasha n.</strong></td>
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<td><strong>Rosa pulverulenta M. Bieber</strong></td>
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<td><strong>Rubus spp.</strong></td>
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<td>RUBUS CAUCASICUS Focke</td>
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<td>Schaeff.</td>
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<td>AMANITA CAESAREA (SCOP.) PERS.</td>
<td>Caesar's mushroom</td>
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<td>ARMILLARIA MELLEA (VAHL) P.KUMM.</td>
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<tr>
<td>Boletus edulis Bull.</td>
<td>Pine bolete</td>
<td>- 2 3 1 1 2 2 1 1 1</td>
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<tr>
<td>Cantharellus cibarius Fr.</td>
<td>Chantarelle</td>
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<td>Lactarius deliciuosus (L. EX FR.) S.F.GRAY</td>
<td>Saffron milk cap</td>
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<td>Macrole piota procera (scop.) Singer</td>
<td>Parasol mushroom</td>
<td>- 2 3 1 1 2 2 1 1 1</td>
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<tr>
<td>Russula delica Fr.</td>
<td>Milk White Brittle</td>
<td>- 2 3 1 2 2 2 1 1 1</td>
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<tr>
<td>SPECIE</td>
<td>COMMON NAME</td>
<td>RED LIST STATUS</td>
<td>CONSERVATION STATUS (LOCAL, NATIONAL, GLOBAL)</td>
<td>PLANT PART COLLECTED</td>
<td>GEOGRAPHIC DISTRIBUTION</td>
<td>LOCAL POPULATION SIZE</td>
<td>HABITAT SPECIFICITY</td>
<td>REGENERATION</td>
<td>REPRODUCTION</td>
<td>THREAT CAUSES</td>
<td>SCALE AND TRENDS OF USE AND TRADE</td>
<td>COMMENTS</td>
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</tbody>
</table>
ANNEX IV – LIST OF PARTICIPANTS

ADVANCE TEAM MEETINGS

Kakheti Region, Akhmeta Municipality

Tamaz Tshitelauri – Head of Sakrebulo, Akhmeta Municipality
Ramaz Bagakashvili – Elected Member of Sakrebulo, Akhmeta Municipality
Gogi Otiashvili - Elected Member of Sakrebulo, Akhmeta Municipality
Davit Shashiashvili - Main Specialist of Ministry Of Agriculture Information Consulting Center, Akhmeta Municipality
Giorgi Udzilaure - Elected Member of Sakrebulo, Akhmeta Municipality
Davit (Zurab) Murtazashvili – Head of Tushetian Shepherds Association, Akhmeta Municipality
Nodari Beriashvili – Head of Forestry Unit, Akhmeta Municipality
Badur Gamtkitsulashvili – Forester, Akhmeta Municipality

Mtskheta Mtianeti Region, Mtskheta Municipality

Koba Arabuli – First Deputy Governor, Mtskheta-Mtianeti Region
Shalva Givishvili – Regional Administration, Project Coordination Department, Mtskheta-Mtianeti Region
Zurab Sekhniashvili – Head of Ministry of Agriculture Information Consulting Center, Dusheti Municipality
Avtandl Mumladze – Deputy Head of Ministry of Agriculture Information Consulting Center, Dusheti Municipality
Khvicha Baiashvili – Main Specialist of Ministry of Agriculture Information Consulting Center, Dusheti Municipality
Rostom Gamisonia – Head of Rural Communities Development Agency
Kakhaber Mtsituri – Head of Forestry Department, Mtskehta-Mtianeti Region
Ketevan Gurgenishvili – Lawyer of Forestry Department, Mtskehta-Mtianeti Region
Natela Mamaladze – Senior specialist of Forestry Department, Mtskehta-Mtianeti Region
Nino Khizanishvili – Administrative Specialist of Forestry Department, Mtskehta-Mtianeti Region
Nato Tsiklauri – Analyst of Forestry Department, Mtskehta-Mtianeti Region
Imereti Region, Kharagauli Municipality
Koba Lursmanashvili – Gamgebeli, Kharagauli Municipality
Paata Gogoladze – Deputy Gamgebeli, Kharagauli Municipality
Vladimer Manjavidze – Chief of Forestry Unit, Kharagauli Municipality
Vaja Machavariani - Chief Specialist at Ministry Of Agriculture Information Consulting Center, Kharagauli Municipality
Murman Arjevanidze – Advisor of Gamgebeli, Kharagauli Municipality

Racha-Lechkhumi-Kvemo Svaneti Region, Ambrolauri Municipality
Teimuraz Abutidze – Chief of Forestry Unit, Ambrolauri Municipality
Giorgi Darakhvelidze – Specialist of Forestry Unit, Ambrolauri Municipality
Maia Fruidze – Operations Manager, “Geoflowers” Ltd
Beso Gotsiridze - Specialist at Ministry of Agriculture Information Consulting Center, Ambrolauri Municipality
Ana Kanteladze – Chief Specialist at Ministry of Agriculture Information Consulting Center, Ambrolauri Municipality

Adjara Region, Keda Municipality
Guram beridze – First Deputy Gamgebeli, Keda Municipality
Mamuka Fartenadze – Deputy Gamgebeli, Keda Municipality
Merab Takidze – Head of Financial Department, Keda Municipality
Sofio Khabazi – Local Press
Temur Papunodze - Chief of Forestry Unit, Keda Municipality

Kvemo Kartli, Dmanisi Municipality
Emzar Samniadze – Chief Specialist at Forestry Unit, Dmanisi Municipality
Gogi Baqradze – Gamgebeli, Dmanisi Municipality
Leri Beruashvili – Head of Sakrebul, Dmanisi Municipality
Giorgi Menteshashvili – Chief Specialist at Ministry of Agriculture Information Consulting Center, Dmanisi Municipality
Giorgi Razmadze - Specialist at Ministry of Agriculture Information Consulting Center, Dmanisi Municipality
FOCUS GROUP DISCUSSIONS

Akhmeta Municipality, Ilto Gorge, Village Shakhvetila and Chartala
Albert Gedekhauri            Ekaterine Noniashvili
Levan Udzilauri              Nunu Razikashvili
Aniko Udzilauri              Nunu Alasania
Neli Tedeshvili              Eldar Udzilauri
Zhuzhuna Ashadze             Eter Takaishvili
Rusudan Gelkhauri            Zurab Dzegligashvili

Dusheti Municipality, Village Sharakhevi
Lia Bodzashvili              Nino Sisauri
Levan Nadirashvili           Rusudan Gelashvili
Nodar Nadirashvili           Tamaz Likhokeli
Davit Shevardashvili         Tina Bodzashvili
Lela Tsiklauri               Valiko Bodzashvili
Lela Likhokeli               Rusiko Bodzashvili
Otar Bodzashvili

Kharagauli Municipality, Villages Gedasamania, Khunevi and Khidari
Davit Bliadze                Nodar Gabiridze
Ana Ghanjashvili            Liana Manjavidze
Nino Sebiskveradze           Nino Beradze
Guram Chaduneli

Ambrolauri Municipality, Village Namanevi
Ramaz Dvali                 Nargiza Chelidze
Iza Tophadze                Kakhaber Urtmelidze
Sulkhan Buadze              Lamara Chanturidze
Davit Buadze                Murman Dvali
Liana Chelidze              Guram Natmelidze
Keda Municipality, Village Dologani, Oktomberi, Koromkheti, Tshinkadzeebi

Resan Chkhikvadze          Zaur Chkhikvadze
Temur Varshanidze          Guram Chkhikvadze
Aslan Makharadze           Valerian Gogitidze
Badri Antadze              Zurab Jortmenadze
Andro Osanadze             Shota Shakaradze

Dmanisi Municipality, Village Gomareti

Tamaz Mchedlidze            Hamlet Beridze
Merab Makhniashvili         Nodar Beridze
Giorgi Menteshashvili      Giorgi Devrishvili
Ushang Zvalidze             Vano Mchedlidze
Mzia Dautashvili           Tamar Zvalidze
ANNEX V – FOCUS GROUP DISCUSSION GUIDE

INTRODUCTION – 30 MIN

Thank you for participating in the focus group discussion on behalf of TBSC and World Bank. The team members will be introduced to participants.

The conversation will be recorded however it will not be shared outside of our team. The purpose of the recording is to ensure that we do not misunderstand or misinterpret anything. The tape will be destroyed as soon as we finish the analysis.

The meeting is facilitated under the World Bank project. The World Bank wishes to understand how HHs use NTFPs and their importance to HH income by asking and talking to a number of individual HHs all over the country. The important aspect is to learn about your opinion and practice in regards to NTFPs (not so much how your neighbors do).

According to our project definition, NTFPs are any type of wild products that can be collected in the forest except timber and firewood. The NTFPs include berries, mushrooms, leaves, plants, medicinal plants, seeds, roots. For the project purpose, fishing and hunting is excluded, however we will talk about forest grazing as well.

The outcome of the project will be to recommend specific interventions (projects, sets of various actions) to increase the benefits of NTFPs to individual HHs. World Bank or others may or may not implement those recommendations; this is outside of our control. Any policy changes that are needed for the intervention will be recommended as well.

The project studies NTFPs and HH dependency on them. Commercial aspects of NTFPs such as collection for processing companies, are outside of the project scope and they are only analyzed to the extent that HHs supply the product to commercial entities.

The participants will be asked to introduced themselves. The moderator will explain that the meeting will last approximately 2.5-3 hours. The participants are expected to engage in the discussion, express their opinion and argue in an amenable manner.
DISCUSSION – 120 MIN

There are seven key research questions, which will be discussed during the focus group. The tables for each section are the final results of the discussion. A set of questions will be asked to the participants by the moderator to extract the needed information for the table and facilitate the discussion. For each key research question, the method is elaborated.

What NTFPs are available collected and how? What are trends in quantities available and collected? (45 min)

1.1 The moderator will ask the participants to name all the NTFPs that are available in their forest and create a list of all NTFP on a white board. The NTFPs will be grouped in four main categories.

For each NTFP, topographic map will be presented of a large scale to circle the areas where NTFPs are grown and collected.

1.2 After listing the NTFP categories, the moderator will ask about the trends of available products: how it has changed for the past five/ten/twenty years. Each group will be discussed separately. The change may be expressed in quantities available or ease of access. Those two criteria will be discussed for each group.

1.3-1.4 The moderator will lead discussion to reveal the main reasons for change. The participants will be asked what they think are the main reasons for NTFPs to decline or increase. The tentative reasons listed in the table is the guide for the moderator to ensure that all possible reasons are mentioned and discussed. The moderator will ask participants to rank identified causes by importance. Each group of NTFPs will be discussed separately.
1.2 **How has availability of the NTFPs (various groups mentioned above) changed over the past 5 years?**

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Convenience/ease of access</th>
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</table>

1.3 **If the availability of the NTFPs out in the forest has declined, what are the reasons? Please rank the most important reasons, max. 3**

| 1.3.1 Reduced forest area due to (specify) | 1.4.1 Less collection by villagers |
| 1.3.2 Increased use of NTFP due to more collection by villagers | 1.4.2 Less collection by outsiders (non-villagers) |
| 1.3.3 Increased use of NTFP due to more collection by others (not villagers) | 1.4.3 Reduced use from large-scale commercial users/projects |
| 1.3.4 Restrictions on use by central or state government (e.g., for forest conservation) | 1.4.4 Changes in forest management (for the better) |
| 1.3.5 Local restrictions on forest use (e.g., community rules) | 1.4.5 Climatic changes, e.g., more rainfall |
| 1.3.6 Climatic changes, e.g., drought and less rainfall | 1.4.6 Tree planting |
| 1.3.7 Poor harvesting practices | 1.4.7 More illegal access of protected areas |
| 1.3.8 Other (to specify) | 1.4.8 Improved access rights to product |

1.4 **If the availability of the NTFPs in this category has increased, what are the reasons? Please rank the most important reasons, max. 3**

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Convenience/ease of access</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

102
What is the importance of NTFPs to HH economics (i.e., own consumption, private sales, commercial sales)? What are the trends in the importance to HH economics? (20 min)

2.1 The moderator will ask the participants to underline NTFPs which are collected by HHs for either self-consumption or sale. From the list created earlier, the specific NTFP categories will be marked.

<table>
<thead>
<tr>
<th>1. PLANTS FOR FOOD (BERRIES, WILD FRUIT, NUTS, CHESTNUT, MUSHROOMS, SPICES)</th>
<th>2. MEDICAL PLANTS</th>
<th>3. DECORATIVE PLANTS AND DYES (E.G. MADDER)</th>
<th>4. OTHERS (PINE-CONE, FOREST BIOMASS FOR ANIMAL FOOD OR HEATING)</th>
<th>HONEY PRODUCTION</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

2.2 Of all NTFPs that are collected, what products are sold as private business or to processing companies. A private business includes selling the collected product by a member of HH outside of the house, on the road, Sunday market, to wholesaler, etc. Selling to commercial entities entails transferring the product to ultimate end-user processor or collection center established by/for processor.

<table>
<thead>
<tr>
<th>2.2 HOW MUCH NTFP IS COLLECTED ANNUALLY FOR SELF-CONSUMPTION AND/OR SELLING? (FOR FAMILY, FOR</th>
<th>Collected Plant/product name</th>
<th>Volume collected annually (kg)</th>
<th>Processed By HHs</th>
<th>Sold As Private Business</th>
<th>Sold To Commercial Entities Or Collection Centers</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
2.3 The moderator will ask to explain what happens to the NTFP after it is taken out of the forest for selling purpose. If selling the collected NTFP as a private business, what is the most common practice? Looking at the value chain of NTFPs, from collecting to ultimate retail end user, who are other parties that are involved in the chain:

2.4 The participants will be asked to describe how the collected NTFPs are usually taken out of the forest?

2.5 The moderator will ask the demographics of HH members who typically collect NTFPs.

2.6 The moderator will ask the participants to describe the collection practice in terms of organizations. Do HHs collectively go out to the forest or independently? Describe the organized practice: neighbors get together and decide to collected certain type of NTFP, in the form of cooperatives.

2.7 The moderator will ask what is the general opinion of cooperatives among HHs? What is the population’s knowledge in terms of cooperatives? How HHs perceive the cooperatives; whether they think it has tangible benefits? Are there already established cooperatives and how they are working?

<table>
<thead>
<tr>
<th>2.3 HOW ARE NTFPs MOSTLY SOLD AS PRIVATE BUSINESS?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sold in the street/in front of house</td>
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<tr>
<td>Sold to local market</td>
</tr>
<tr>
<td>Sold to wholesaler</td>
</tr>
<tr>
<td>Other: ________</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>2.4 HOW THE COLLECTED PRODUCTS ARE TAKEN OUT OF THE FOREST:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manually</td>
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<tr>
<td>Using animals</td>
</tr>
</tbody>
</table>
2.5 Who collects NTFP in the forest?

- Elder male member
- Elder female member
- Young male member
- Young female member
- Children

2.6 Is the collection process organized?

- Unorganized
- Organized by independent HH/individuals
- Cooperatives

2.7 Opinion about cooperatives


2.8 The moderator will ask if there is a practice to collect wild honey in the forest. Separate questions will be asked for domestic honey production in regards to NTFPs. Is honey production traditional activity by HHs? What is the average number of bee hives owned by HHs? Do HHs usually take bee hives to the forest to increase the production/yield? Of total honey production, how much do you think is contributed by using forest and meadows?

2.8.1 Does anyone collect wild honey?
2.8.2 Do you take bee hives to the forest?
2.8.3 Of total honey production, how much do you think is contributed by using forest and meadows?

2.9 The moderator will ask the participants to describe the collection methods of NTFPs. The discussion will be indirectly stimulated to reveal any environmental damage caused by the use of NTFPs. The tentative list of collection method is provided in the table below. For each NTFP that is collected, the moderator will make inquiries for specific products which might be potentially damaged by excessive use.

2.9 Describe what collection methods are used for each product type

<table>
<thead>
<tr>
<th>1. Plants for food (berries, wild fruit, nuts, chestnut, mushrooms, spices)</th>
<th>2. Medical plants</th>
<th>3. Decorative plants and dyes (e.g. madder)</th>
<th>4. Others (pine-cone, forest biomass for animal food or heating)</th>
<th>5. Honey Productions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picking only fruit manually</td>
<td>Picked stem/stalk/leaves only</td>
<td>Picked stem/stalk/leaves only</td>
<td>Cutting branches</td>
<td>Taking bee hives to the forest area</td>
</tr>
<tr>
<td>Cutting branches and twigs</td>
<td>Pulling roots</td>
<td>Pulling roots</td>
<td>Other</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Transporting hives</td>
<td></td>
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</tbody>
</table>
2.10 What is the share of agricultural product and NTFP in total HH annual income? HHs will be asked to make a comparison among agricultural production, NTFP use and honey production and try to define shares in their total annual income.

2.11 The moderator will ask the key factors influencing the HH decision to collect NTFPs.

2.12 The moderator will ask whether HHs plan to start cultivating any NTFPs, such as berries.

| 2.10 What is the share of agricultural product and NTFP in total HH annual income? |
|---------------------------------|---------------------------------|---------------------------------|
| Portion of agricultural resource___% |
| Portion of NTFP___% |
| Portion of honey___% |

<table>
<thead>
<tr>
<th>2.11 What are the key reasons to collect NTFP?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identified buyer</td>
</tr>
<tr>
<td>Favorable price</td>
</tr>
<tr>
<td>It has been a traditional activity</td>
</tr>
<tr>
<td>Poor other alternatives, no other livelihood activities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.12 Is there any plan for cultivation of non-timber resources?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultivation is happening now</td>
</tr>
<tr>
<td>Cultivation is planned for future</td>
</tr>
<tr>
<td>Cultivation isn't planned</td>
</tr>
</tbody>
</table>

5.5.1. What are the commercial aspects (if any) of NTFPs collection? What are the trends in commercial exploitation? (10 min)

This section will outline the commercial aspects of NTFP collection in the area.

3.1 The moderator will ask if there are any commercial entities operating in the area which process NTFPs.

3.2 Are there collection centers for such processors. Is the product transported in other region/municipality?

3.3 Participants will be asked to describe the value chain, at best of their knowledge of NTFPs that is used for commercial purposes:
3.4 How the NTFP use has changed over the past couple years for commercial purpose: increased or decreased.

Participants will be asked to name what they think are the reasons for the change.

3.5 From the HHs perspective, what participants think are the problems or disadvantages for the processor to operate in there are.

<table>
<thead>
<tr>
<th>3.1 How many commercial entities are operating NTFP for commercial purpose in your region?</th>
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</table>

<table>
<thead>
<tr>
<th>3.2 Is there processing of NTFP happening in region? Is it transported to other regions/municipalities for processing/selling?</th>
</tr>
</thead>
<tbody>
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<td>•</td>
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</table>

<table>
<thead>
<tr>
<th>3.3 How are NTFPs mostly sold to commercial entities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sold directly to domestic processor</td>
</tr>
<tr>
<td>• Sold directly to foreign processor</td>
</tr>
<tr>
<td>• Sold to collection centers</td>
</tr>
<tr>
<td>• Other: ________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.4 What changes have happened during past period regarding collection of NTFP for commercial means?</th>
</tr>
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<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>3.5 Are there any problems/disadvantages of the processor operating in the area</th>
</tr>
</thead>
<tbody>
<tr>
<td>• NTFP quantity has declined</td>
</tr>
<tr>
<td>• We can't collect enough for our consumption as others are getting there early</td>
</tr>
</tbody>
</table>

Excluding grazing, what types of environmental damage is created by NTFPs collection? What are the trends in environmental damage? (10 min)

When talking about environmental damage, the Moderator will make sure that we don’t include timber and firewood in the discussion. The participants will have to think about the topics in relations to NTFPs.
4.1 The moderator will ask the participants if they have experienced or noticed significant changes in the forest eco-system for the past decades. The change should be discussed separately as the participants will have different opinion and knowledge based on their age and experience.

4.2 The participants will be asked what they think are the main causes for the change.

### 4.1 While in the forest, have you noticed any change in forest eco-system or any particular species?

- Soil erosion, emaciation
- Impact on forest general condition
- Impact on species: weedy plants are increasing
- Other impact (specify)__________________

<table>
<thead>
<tr>
<th>4.1.1. If above mentioned changes has been identified, how has it evolved over past 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity of particular product has declined/increased by X% over past 5 years</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>4.1.2. If above mentioned changes has been identified, how has it evolved over past 10 years</th>
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</thead>
<tbody>
<tr>
<td>Quantity of particular product has declined/increased by X% over past 10 years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.1.3. If above mentioned changes has been identified, how has it evolved over past 20 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity of particular product has declined/increased by X% over past 20 years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.2 What do you think are causes of the change?</th>
</tr>
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</tbody>
</table>

### What barriers exist to increased NTFPs collection and increased economic benefit to HHs from NTFPs? How might proposed new regulations affect collection and economic benefits? (10 min)

5.1 The moderator will ask the participants to think about how the current NTFP benefit to HHs can be increased. What HHs think is needed to extract more resources from the forest? The listed causes will be ranked by their importance.

The discussion will be facilitated around four or five selected NTFPs to encourage participants think about specific barriers.
### 5.2 What is the alternative activity you have to stop doing in case NTFP use becomes super profitable?

### 5.1 What are main barriers to increase the income from NTFP use?

<table>
<thead>
<tr>
<th>Monetary Barriers</th>
<th>Please rank the most important reasons, max. 3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfavorable prices compared to ___________</td>
<td>1 2 3</td>
</tr>
<tr>
<td>there are other things I can spend my time off which is more profitable</td>
<td></td>
</tr>
<tr>
<td>Access to finances: safety equipment</td>
<td></td>
</tr>
<tr>
<td>Non-Monetary Barriers</td>
<td></td>
</tr>
<tr>
<td>There is no buyer: commercial or non-commercial</td>
<td></td>
</tr>
<tr>
<td>Transportation of collected resources (availability of transportation)</td>
<td></td>
</tr>
<tr>
<td>Perception of HHs about NTFP use in different forest types: I am not allowed to collect product in protected areas</td>
<td></td>
</tr>
<tr>
<td>Limited rights to NTFP use (licenses, tickets, etc.)</td>
<td></td>
</tr>
<tr>
<td>The alternative cost of NTFP collections such as social benefit or state aid.</td>
<td></td>
</tr>
<tr>
<td>Unsustainable NTFP use: could collect more but we would damage the product</td>
<td></td>
</tr>
<tr>
<td>Availability of equipment/technologies to preserve the collected resource for marketable conditions</td>
<td></td>
</tr>
</tbody>
</table>
HHs take all the available NTFP from the forest, no additional amount can be extracted
Other collectors come and take all our resources
Other__________

5.2 IF ONE NTFP BECOMES VERY PROFITABLE, WHAT IS THE OTHER THING YOU WOULD STOP DOING TO SWITCH TO NTFP

What is the prevalence of and damage to the environment from forest grazing by cattle, sheep, goats and pigs? What are the trends of prevalence and environmental damage? (20 min)

6.1 Please describe the average number of livestock owned by the HHs.

6.2 Please describe how the livestock interacts with the forest with the possible extremes: the livestock is sent regularly to the forest all year round, or forest is not used for grazing at all.

6.3 What is the main reason for the livestock to go to the forest: no available pastures, not enough for the village needs

6.4 Is there organized grazing: shepherds take the livestock and look after them or the livestock goes out to the meadows without any supervision

6.5 Does livestock migrates to summer pastures? Describe the process and duration

6.6 If there were no access to forest, how the cost of feeding livestock would increase?

6.7 What do you see being the result of livestock being in the forest?

<table>
<thead>
<tr>
<th>6.1 AVERAGE NUMBER OF LIVESTOCK OF THE HH</th>
<th>In HH</th>
<th>Total In Village</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow____</td>
<td>Cow____</td>
<td></td>
</tr>
<tr>
<td>Sheep____</td>
<td>Sheep____</td>
<td></td>
</tr>
<tr>
<td>Goat____</td>
<td>Goat____</td>
<td></td>
</tr>
<tr>
<td>Pig____</td>
<td>Pig____</td>
<td></td>
</tr>
<tr>
<td>Horse____</td>
<td>Horse____</td>
<td></td>
</tr>
</tbody>
</table>
### 6.2 How the Livestock Interacts with the Forest

### 6.3 Descriptions of Pastures

<table>
<thead>
<tr>
<th>Total number of pastures</th>
<th>Total number of pastures available to village population for free</th>
<th>Sufficiency of pastures for the livestock</th>
</tr>
</thead>
</table>

### 6.4 Is there organized grazing?

<table>
<thead>
<tr>
<th>There are shepherds who look after livestock</th>
<th>Only partially</th>
<th>There is not organized grazing</th>
</tr>
</thead>
</table>

### 6.5 Do livestock migrate to summer pastures? Describe the process and duration

<table>
<thead>
<tr>
<th>Yes, for couple months (number of months)</th>
<th>Only partially</th>
<th>What portion (number of months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, the livestock uses village territory for grazing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6.6 If there were no access to forest, how the cost of feeding livestock would increase?

Please rank the most important reasons, max. 3.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
</table>

### 6.7 What are negative impacts of grazing? (cows, sheep, pigs)

| 6.7.1 Soil erosion, emaciation | 6.7.2 Impact on other species (damage shoots, sprouts) and reduction of forest regeneration | 6.7.3 Spread of invasion (weedy) species | 6.7.4 Other impact (please indicate) |

How can HH’s be motivated (not coerced) to transition from more to less environmentally damaging NTFP and collection methods? What interventions might be needed to motivate the transitions? (10 min)

The discussion of the last section would be relevant if we identify some practice, which is particularly problematic. Only after that, we can ask the questions how it can be modified and if there would by any willingness to change.
<table>
<thead>
<tr>
<th>7.1 The method that is particularly damaging</th>
<th>Method:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possibilities:</td>
<td>Do less</td>
</tr>
<tr>
<td></td>
<td>Do differently</td>
</tr>
</tbody>
</table>


ANNEX VI – INDIVIDUAL INTERVIEW GUIDE

INTRODUCTION – 5 MIN

Thank you for the meeting. We will ask you a couple questions about NTFPs.

The meeting is facilitated under the World Bank project. The World Bank wishes to understand the way HHs use NTFPs and its importance to HH income by asking/talking number of individual HHs all over the country. The important aspect is to learn about your opinion and practice in regards to NTFPs (not how your neighbors do).

According to our project definition, NTFPs are any type of wild products that can be collected in the forest except timber and firewood. The NTFPs include berries, mushrooms, leaves, plants, medicinal plants, seeds, roots. For the project purpose, fishing and hunting is excluded, however we will talk about forest grazing as well.

The outcome of the project will be to recommend specific interventions (projects, sets of various actions) to increase the benefits of NTFPs to individual HHs. World Bank or others may or may not implement those recommendations; this is outside of our control. Any policy changes that are needed for the intervention will be recommended as well.

QUESTIONS – 20 MIN

Demographics Of Respondent

<table>
<thead>
<tr>
<th>1.1 Age</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 Gender</td>
<td></td>
</tr>
<tr>
<td>1.3 Education</td>
<td></td>
</tr>
<tr>
<td>1.4 Occupation</td>
<td></td>
</tr>
<tr>
<td>1.5 HH Members</td>
<td>Age</td>
</tr>
<tr>
<td>HH Member 1</td>
<td></td>
</tr>
<tr>
<td>HH Member 2</td>
<td></td>
</tr>
<tr>
<td>HH Member 3</td>
<td></td>
</tr>
<tr>
<td>HH Member 4</td>
<td></td>
</tr>
<tr>
<td>HH Member 5</td>
<td></td>
</tr>
</tbody>
</table>
**HH Economics**

2.1 Please allocate share of NTFPs in total food consumption: what portion of food and vegetables is self-produced, collected in the forest in the form of NTFP, purchased or purchased as NTFP.

2.2 Please define shares of different cash income of his/her family.

2.3 What is the average monthly or annual income of the HH in Georgian Lari

2.4 Please list all the livestock owned by your HH

2.5 What is the total number of agricultural land owned by your HH and share of different types of land?

<table>
<thead>
<tr>
<th>2.1 SHARE OF NTFP IN TOTAL FOOD CONSUMPTION</th>
<th>OWN PRODUCED</th>
<th>NTFP COLLECTED</th>
<th>PURCHASED</th>
<th>NTFP PURCHASED</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRUITS AND VEGETABLES</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>100%</td>
</tr>
<tr>
<td>MEAT, DAIRY, EGGS</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.2 SHARE OF CASH IN TOTAL HH INCOME</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCIAL BENEFITS, STATE AID</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELLING OWN-PRODUCTION</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELLING NTFPS</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAGE FROM OUTSIDE JOBS</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REMITTANCES, MONEY TRANSFERS</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.3 TOTAL MONTHLY/ANNUAL INCOME OF THE HH IN GEL</th>
<th>GEL</th>
</tr>
</thead>
</table>

| 2.4 LIVESTOCK OWNED BY HH (QUANTITY)            | Livestock___ |
|                                               | Sheep and goat___ |
|                                               | Poultry___ |
|                                               | Bee hives___ |

| 2.5 AGRICULTURE LAND OWNED BY HH (HA)          | Total Land___ ha |
|                                               | Out of which:  |
|                                               | Arable land___ ha |
NTFP Use

3.1 For each NTFP which is collected by HH, the following information will be reported:

- The name of the NTFP
- Where it is collected, will be marked on the map
- Total volume collected throughout the year
- Number of days or hours spent on collection by all HH members (in case more than one member collects)
- How the availability of NTFPs has changed over past 5/10/20 years: increased, has not changed or decreased. Ask the respondent what he/she thinks are the possible causes
- Total volume of NTFP that is sold both as private business or to commercial user
- The price per kilo paid to HH
- Is the product sold as fresh or processed
- The comments or any elaboration provided by respondent will be noted in comment section such as possible causes of change in NTFPs; different types of processing of NTFPs such as sorting, drying, juice making, jam making, pickling

3.2 After collecting NTFP, how do you handle the product? What channels are mainly used for selling?

3.3 Please name all the members of your HH who collect NTFPs?

---

50 The difference between collected and sold volume is self-consumption
3.4 Please describe how the collected NTFPs are usually taken out of the forest?

3.5 I there any practice to use wild plants for leafstalk/grafting? Is it used for commercial or personal use?

3.6 Do you currently cultivate or do you plan to start cultivation of NTFP in the future?

<table>
<thead>
<tr>
<th>3.1 Which NTFPs do you collect either for self-consumption, selling as private business or commercial use?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.2 How NTFP is sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling to local market</td>
</tr>
<tr>
<td>Selling to wholesaler/local merchants</td>
</tr>
<tr>
<td>Selling to commercial entity</td>
</tr>
<tr>
<td>Selling to collection center</td>
</tr>
<tr>
<td>Other:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.3 HH Members who collect NTFPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elder male member</td>
</tr>
<tr>
<td>Elder female member</td>
</tr>
<tr>
<td>Young male member</td>
</tr>
<tr>
<td>Young female member</td>
</tr>
<tr>
<td>Children</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.4 How the collected products are taken out of the forest:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manually</td>
</tr>
<tr>
<td>Using animals</td>
</tr>
<tr>
<td>Transportation</td>
</tr>
</tbody>
</table>

| 3.5 Do you use wild plants for leafstalk/grafting? Is it used for commercial or personal use? |
| 3.6 Do you currently cultivate or do you plan to start cultivation of NTFP in the future? |
**Forest Grazing**

4.1 Do you use forest adjacent territory for grazing by all types of livestock (cow/sheep/goat/pig/horse)? Please indicate the relevant option

4.2 Does livestock migrates to summer pastures?

4.3 What benefits do you receive from that? Why do you do it?

4.4 What negative effects do you think grazing has on the forest?

4.5 What do you think is needed to reduce negative effect?

| 4.1 DO YOU USE FOREST ADJACENT TERRITORY FOR GRAZING (COW/SHEEP/GOAT/PIG/HORSE)? | ▪ Yes, livestock is mainly fed in forest
  ▪ Only partially
  ▪ There is no forest grazing |
|---|---|
| 4.2 DOES LIVESTOCK MIGRATES TO SUMMER PASTURES? | ▪ Yes, for couple months _________ (number of months)
  ▪ Only partially _________ (number of months)
  ▪ No, the livestock uses village territory for grazing |
| 4.3 WHAT BENEFITS DO YOU RECEIVE FROM THAT? WHY DO YOU DO IT? |
| 4.4 WHAT NEGATIVE EFFECTS DO YOU THINK GRAZING HAS ON THE FOREST? |
| 4.5 WHAT DO YOU THINK IS NEEDED TO REDUCE NEGATIVE EFFECT? |
ANNEX VII – FAIRWILD STANDARD – PRINCIPLES AND CRITERIA


## SECTION I: WILD COLLECTION AND CONSERVATION REQUIREMENTS

### PRINCIPLE 1. MAINTAINING WILD PLANT RESOURCES

Wild collection of plant resources shall be conducted at a scale and rate and in a manner that maintains populations and species over the long term.

<table>
<thead>
<tr>
<th>1.1</th>
<th>Conservation status of target species</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The conservation status of target species and populations is assessed and regularly reviewed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.2</th>
<th>Knowledge-based collection practices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collection and management practices are based on adequate identification, mapping, inventory, assessment and monitoring of the target species and collection impacts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.3</th>
<th>Sustainability of collection rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The rate (intensity and frequency) of target resource collection does not exceed the target species’ ability to regenerate over the long term.</td>
</tr>
</tbody>
</table>

### PRINCIPLE 2. PREVENTING NEGATIVE ENVIRONMENTAL IMPACTS

Negative impacts caused by collection activities on other wild species, the collection area and neighboring areas shall be prevented.

<table>
<thead>
<tr>
<th>2.1</th>
<th>Sensitive taxa and habitats</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rare, threatened and endangered species and habitats that are likely to be affected by collection and management of the target species are identified and protected.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.2</th>
<th>Habitat (landscape level) management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Management activities supporting wild collection of target species do not adversely affect ecosystem diversity, processes and functions.</td>
</tr>
</tbody>
</table>

## SECTION II: LEGAL AND ETHICAL REQUIREMENTS

### PRINCIPLE 3. COMPLYING WITH LAWS, REGULATIONS AND AGREEMENTS

Collection and management activities shall be carried out under legitimate tenure arrangements and comply with relevant laws, regulations and agreements.

<table>
<thead>
<tr>
<th>3.1</th>
<th>Tenure, management authority and use rights</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collectors and managers have a clear and recognized right and authority to use and manage the target resources.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.2</th>
<th>Laws, regulations and administrative requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collection and management of target resources comply with all international agreements and with national and local laws, regulations and administrative requirements, including those related to protected species and areas.</td>
</tr>
</tbody>
</table>

### PRINCIPLE 4. RESPECTING CUSTOMARY RIGHTS AND BENEFIT-SHARING

Local communities’ and indigenous peoples’ customary rights to use and manage collection areas and wild-collected target resources shall be recognized, respected and protected.

<table>
<thead>
<tr>
<th>4.1</th>
<th>Traditional use and practice, access rights and cultural heritage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local communities and indigenous people with legal or customary tenure or use rights maintain control, to the extent necessary to protect their rights, traditional knowledge or resources, over collection operations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.2</th>
<th>Benefit-sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreements with local communities and indigenous people are based on appropriate and adequate knowledge of target resource tenure, access rights, management requirements and resource value. The agreements ensure a fair and equitable sharing of benefits for all parties involved.</td>
</tr>
</tbody>
</table>
### SECTION III: SOCIAL AND FAIR TRADE REQUIREMENTS

**Principle 5. Promoting Fair Contractual Relationships between Operators and Collectors**

Collectors have the structures and access to information needed to represent their interests and participate in FairWild Premium decisions. There is no discrimination against particular groups as collectors.

- **5.1** Fair contractual relationships
  The economic relation between company and collectors is fair and transparent and allows collectors to be involved in important decisions such as premium use or pricing agreements.

- **5.2** No discrimination against collectors
  There is no discrimination against collectors based on race, color, ethnic origin, religion, sex or political opinion and encouragement of women as registered collectors.

**Principle 6. Limiting Participation of Children in Wild-Collection Activities**

Collection and processing by collectors is done without substantial work contribution of children.

- **6.1** Children and young collectors
  Children are not contracted as collectors. Young collectors never do any hazardous work.

- **6.2** Collectors contracting children for collection work
  Collectors do not contract children as workers to help them in collection or processing.

- **6.3** Children helping their parents in collection
  Children do very limited work in collection and only under supervision.

**Principle 7. Ensuring Benefits for Collectors and their Communities**

Trade intermediaries are minimized, collectors are ensured a fair price for the collected goods, and community social development is supported through means of a FairWild Premium Fund.

- **7.1** Fair pricing and payment of collectors
  Collection operation ensures long-term fair prices are being paid to collectors by requiring transparent cost calculations, involving collectors in pricing decisions, keeping trade chains short and ensuring timely payment of collectors.

- **7.2** FairWild Premium use and administration
  As soon as any FairWild Premium is received, it is administered transparently in a premium fund and decisions on use of the fund are taken in an accountable way by the collectors’ organization, collectors’ representative committee or an assigned mixed stakeholder FairWild premium board.

**Principle 8. Ensuring Fair Working Conditions for all Workers of Wild-Collection Operations**

The collection operation ensures good working conditions for all workers of the wild-collection operation.

- **8.1** Basic labor rights for wild-collection operation staff
  The wild-collection operation respects basic human values and fundamental rights at work of all workers.

- **8.2** Safe work environment for wild-collection operation staff
  A safe and hygienic work environment shall be provided, bearing in mind the prevailing knowledge of the industry and of any specific hazards.

- **8.3** Fair employment conditions for wild-collection operation staff
  The wild-collection operation acts as a socially responsible employer and provides good employment conditions.

### SECTION IV: MANAGEMENT AND BUSINESS REQUIREMENTS


Wild collection of target species shall be based on adaptive, practical, participatory and transparent management practices.

- **9.1** Species / area management plan
  A species / area management plan defines adaptive, practical management processes and good collection practices.

- **9.2** Inventory, assessment and monitoring
  Management of wild collection is supported by adequate and practical resource inventory, assessment and monitoring of collection impacts.
### 9.3 Implementation of sustainable collection measures by collectors

The wild-collection operation ensures that only trained and competent collectors collect the target resources and monitors the effective implementation of the applicable Collection Instructions by the collectors.

### 9.4 Training and capacity building

Resource managers and collectors have adequate skills (training, supervision, experience) to implement the provisions of the management plan and to comply with the requirements of this Standard.

### 9.5 Transparency and participation

Wild-collection activities are carried out in a transparent manner with respect to management planning and implementation, recording and sharing information, and involving stakeholders.

---

**Principle 10. Applying Responsible Business Practices**

Collection of wild resources shall be undertaken to support quality, financial and traceability requirements of the market without sacrificing sustainability of the resource.

<table>
<thead>
<tr>
<th>10.1</th>
<th>Market / buyer specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The sustainable collection and handling of the target resources is managed and planned according to market requirements in order to prevent or minimize the collection of products unlikely to be sold.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.2</th>
<th>Traceability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Storage and handling of the target resources is managed to support traceability from the collection area to sales.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.3</th>
<th>Financial viability and accountable trade relations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mechanisms are encouraged to ensure the financial viability of systems of sustainable wild collection of target resources.</td>
</tr>
</tbody>
</table>

---

**Principle 11. Promoting Buyer Commitment**

The buyer of wild-collected products (e.g. importer) strives for mutually beneficial long-term trade relations with the wild-collection operation based on respect, transparency and support for the supplier in quality aspects.

<table>
<thead>
<tr>
<th>11.1</th>
<th>Mutually beneficial trade relations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The buyer of wild-collected products endeavors to maintain long-term fair trade relations with suppliers, and supports suppliers by means of information, training and favorable trading conditions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11.2</th>
<th>Fair prices and FairWild Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The buyer of wild-collected products pays fair prices and a FairWild Premium to support social development of the collectors’ communities.</td>
</tr>
</tbody>
</table>
About FLEG II (ENPI East) Program

The Forest Law Enforcement and Governance (FLEG) II European Neighbourhood and Partnership Instrument (ENPI) East Countries Program supports participating countries’ forest governance. At the regional level, the Program aims to implement the 2005 St. Petersburg FLEG Ministerial Declaration and support countries to commit to a time-bound action plan; at the national level the Program will review or revise forest sector policies and legal and administrative structures; and improve knowledge of and support for sustainable forest management and good forest governance in the participating countries, and at the sub-national (local) level the Program will test and demonstrate best practices for sustainable forest management and the feasibility of improved forest governance practices at the field-level on a pilot basis. Participating countries include Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russia, and Ukraine. The Program is funded by the European Union.

http://www.enpi-fleg.org

Project Partner

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The World Bank Group is one of the world’s largest sources of knowledge and funding for its 188 member-countries. The organizations that make up the World Bank Group are owned by the governments of member nations, which have the ultimate decision-making power within the organizations on all matters, including policy, financial or membership issues. The World Bank Group comprises five closely associated institutions: the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA), which together form the World Bank; the International Finance Corporation (IFC); the Multilateral Investment Guarantee Agency (MIGA); and the International Centre for Settlement of Investment Disputes (ICSID). Each institution plays a distinct role in the World Bank Group’s mission to end extreme poverty by decreasing the percentage of people living on less than $1.25 a day to no more than 3 percent, and promote shared prosperity by fostering the income growth of the bottom 40 percent for every country. For additional information please visit:

IUCN
IUCN, International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges. IUCN’s work focuses on valuing and conserving nature, ensuring effective and equitable governance of its use, and deploying nature-based solutions to global challenges in climate, food and development. IUCN supports scientific research, manages field projects all over the world, and brings governments, NGOs, the UN and companies together to develop policy, laws and best practice. IUCN is the world’s oldest and largest global environmental organisation, with more than 1,200 government and NGO members and almost 11,000 volunteer experts in some 160 countries. IUCN’s work is supported by over 1,000 staff in 45 offices and hundreds of partners in public, NGO and private sectors around the world.
www.iucn.org

WWF
WWF is one of the world’s largest and most respected independent conservation organizations, with almost 5 million supporters and a global network active in over 100 countries. WWF’s mission is to stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature, by conserving the world’s biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.
www.panda.org