

NON-WOOD FOREST PRODUCTS ASSESSMENT REPORT OF TURKEY
2020

“Light in Weight Heavy in Value”

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FOREWORD

A Letter of Agreement (LoA) was signed between Food and Agriculture Organization of the United Nations (FAO) and the Chamber of Forest Engineers of Turkey (CFE) for "*Provision of Technical Guidelines on sustainable management of NWFPs and the Status Reports on specific selected products*" on 20 December 2019.

According to this LoA, the Service Provider will undertake the following activities:

1. Identify, select and showcase Non-Wood Forest Products (NWFPs) that have economic impact on rural and national economies and environmental importance in the sense of biodiversity.
2. Review the existing national policies and action plans related to specific NWFPs in Turkey and provide recommendations to strengthen governance.
3. Analyze and map out the selected NWFPs taking into account the potential impact on rural workforce, in particular women and youth.
4. Conduct consultation meetings on the findings of the review with relevant stakeholders (local, national and private) to enhance their inputs.
5. Prepare guidelines on sustainable management, production and marketing of NWFPs in line with international standards and market requirements.
6. Prepare Status Update Reports on the selected NWFPs along with recommendation in the value chain.
7. Consolidate the findings with other ongoing projects in REU or Mediterranean Region.

In this context, a preparatory meeting was held on **15 January 2020** with the presence of relevant people from the General Directorate of Forestry of Turkey (GDF) of the Ministry of Agriculture and Forestry (MAF) and CFE. A working group was established to carry out the necessary studies. This working group selected chestnut, laurel, pine honey, resin and truffle as the NWFPs to work in detail due to their importance of "*economic value, contribution to biodiversity and the potential impact on rural workforce, in particular women and youth*" as stated in the LoA.

After several meetings and examining case studies, this report entitled "NON-WOOD FOREST PRODUCTS ASSESSMENT REPORT OF TURKEY-2020" prepared. It gives general information about the NWFPs in Turkey. It contains 3 main chapters namely i) introduction, ii) collection and use of NWFPs, iii) conclusions and additional sections as annexes and references.

FAO defines NWFPs as "goods derived from forests that are tangible and physical objects of biological origin other than wood". (FAO,2020). For Turkey, "Communiqué on Inventory and Planning of NWFPs and Production and Sales Principles" put into practice in 2016 expresses Turkey's official terminology for NWFPs as "biological and mineral origin products other than wood obtained from forests and trees, and other products exposed during the production of wood such as bark, chip, shrub, root, stump, and cone"

METHODOLOGY

While preparing this report entitled “NON-WOOD FOREST PRODUCTS ASSESSMENT REPORT OF TURKEY 2020” the following issues and case studies have been taken into consideration:

1. Opinions and contributions of CFE, GDF, FAO and relevant NGOs expert,
2. Turkey's current legislation and practices,
3. FAO's web page on non-wood forest products,
4. Other publications on the subject, especially the publication "Non-Wood Forest Products in International Statistical Systems",
5. Web pages of completed or ongoing projects, and publications and reports produced within this framework:
 - a. INCREDIBLE- Innovation Networks of Cork, Resins and Edibles in the Mediterranean Basin Project
 - b. StarTree- A pan-European project to support the sustainable exploitation of forest resources for rural development.

The GDF as a corporate body under the Ministry of Agriculture and Forestry (MAF) is responsible for sustainable forest management activities including NWFPs. GDF has central and regional departments. At the central level it operates with 21 Departments, which one of them is the Department of Non-Wood Forest Products and Services.

The preparation of this report has been done in close cooperation with DNWFPS. All the data collected are approved by this department. The official correspondences with other institutes like Turkish Standards Institution, Ministry of Trade and other have been executed through this department starting from December 2019.

There are different terminologies and definitions used for NWFPs. Considering this current situation, a scheme has been created for this report by İsmail Belen (Senior Agriculture and Forestry Expert, Ministry of Agriculture and Forestry of Turkey) as shown in relevant section. In this scheme NWFPs are divided into four groups according to their origine/sources, product type, usage and sales.

ACKNOWLEDGEMENTS

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ACRONYMS AND ABBREVIATIONS

CFE/OMO	Chamber of Forest Engineers of Turkey
Communiqué of NWFPs	Communiqué on Inventory and Planning of NWFPs and Production and Sales Principles
DBM	Department Business and Marketing of GDF
DNWFPS	Department of Non-Wood Forest Products and Services of GDF
ENDP	Eleventh National Development Plan (2019-2023) of Turkey
EuroStat	European Statistical Office
FAO	Food and Agriculture Organization of the United Nations
FRA 2020	Global Forest Resources Assessment 2020
GDF	General Directorate of Forestry of Turkey
ha	hectare(s)
INCREDIBLE Project	-Innovation Networks of Cork, Resins and Edibles in the Mediterranean Basin Project
KOSGEB	Small and Medium Enterprises Development Organization of Turkey
LOA	Letter of Agreement
MAF	Ministry of Agriculture and Forestry of Turkey
MT	Ministry of Trade of Turkey
NWFP	Non-Wood Forest Product
OWL	Other Wooded Land
StarTree	A pan-European project to support the sustainable exploitation of forest resources for rural development.
TAB	Turkish Association of Beekeepers
TKDK	Agriculture and Rural Development Support Institution
TL	Turkish Lira
TSE	Turkish Standards Institution
TUIK	Turkish Statistical Institute (TurkStat)
UN	United Nations
UNDP	United Nations Development Programme
USD	United States Dollar

EXECUTIVE SUMMARY

In addition to environmental and ecosystem contributions such as conservation of biological diversity, food security, combating climate change, sustainable water and land management, ecosystem services, forests are also home to economically important products.

The forest and tree products are classified as wood products, non-wood products and forest services. FAO defines non-wood forest products (NWFPs) as “goods derived from forests that are tangible and physical objects of biological origin other than wood” (FAO,2020a). NWFPs provide food, income, and nutritional diversity for an estimated one in five people around the world, notably women, children, landless farmers and others in vulnerable situations. (FAO, 2018).

NWFPs have also attracted considerable global interest in recent years due to the increasing recognition of their contribution to environmental objectives, including the conservation of biological diversity. Like many other countries Turkey gives great importance to NWFPs by making the necessary legislative and administrative arrangements. Article 45 of the Constitution includes the provision of *“increasing the vegetative and animal production, evaluating the vegetal and animal products and taking the necessary measures for the real values to be obtained by the producer (Anonymous, 2020a).* In many articles of the Forest Law No. 6831, there are issues regarding the evaluation of forest products and non-wood forest products.

As one of the reflections of the importance given to the subject by Turkey, **the Department of Non-Wood Products and Services (DNWFPS)** was established as the central unit of the GDF in 2011. The DNWFPS is responsible to determine, carry out or make works related to the inventory, value assessment, diagnosis, promotion, planning, mapping, project design, production and marketing of NWFPs and forest ecosystem services. (Anonymous, 2018).

This report titled "NWFPs ASSESSMENT REPORT OF TURKEY" has been prepared in close cooperation with DNWFPS. The aim of the report is to assess the NWFPs exist in Turkey and managed by the GDF. In this context, issues such as NWFPs definition, official list, inventory, collection, sale, economic value and contribution to the national economy were examined.

Globally, the reported value of NWFPs was about USD 7.71 billion in 2015, with plant products accounting for 80 percent of this value. The single-largest product group, by value, was edible plants (37 percent of the total value), followed by ornamental plants (22 percent), wild meat (9 percent), other plant products (8 percent), honey and beeswax (7 percent), medicinal and aromatic plants (5 percent), raw material for handicrafts, utensils and construction (4 percent), raw material for colorants (3 percent), exudates (3 percent), other (1 percent) (FAO,2020) Note: Numbers may not sum to the totals indicated and percentages may not tally to 100 due to rounding.

NWFPs play an important role in Turkey's rural and national economy. As of the end of 2019, an inventory study was conducted for 250 different taxa reaching 2 022 607 hectares (ha) areas in state-owned forests. "Utilization Plans" of these NWFPs were prepared for a total of 1.7 million ha. (DNWFPS, 2019)

The total amount of marketed NWFPs in Turkey for 2019 was calculated about **880 million USD.**

NWFPs are mainly found in state-owned forests. The main collectors of NWFPs are "forest villagers" who live in forests and on the edge of villages. As stated in Article 170 of the Constitution and other

relevant legislation, forest villagers have priority in collecting, processing and selling these NWFPs. As of 2019, the income generated by forest villagers from the sale of NWFPs was **123 million USD**.

The revenue generated by the GDF (which is responsible for managing forests on behalf of the state) from selling licenses for collecting, from these products is **2.2 million USD in 2019**.

NWFPs are also important for rural economy and daily life of Turkey. The number of forest villagers working in wood production is around 150 000 people. **The number of forest villagers working in the collection of NWFPs is around 25 000 people.**

However, the NWFPs sector makes an economic contribution directly or indirectly to approximately 500 000 people in Turkey. This number includes the people working in the field for collection, working in drying processes, working in the process of making the product or semi-finished products, packer, end seller-retailer, exporter etc.

1. CHAPTER 1: INTRODUCTION

1.1. General Information on Turkey's Forests and Forestry

Turkey's forests are an extremely important asset: they provide multiple environmental services including watershed protection and erosion control, raw material for the sector including a world scale wood panels and furniture industry, a rich and diverse source of non-wood forest products, employment in rural areas but especially in forest villages, and fuelwood for large numbers of rural dwellers who have limited access to conventional energy sources.

Table 1 shows the country area, population, forest area and growing stock of Turkey. (GDF, 2020). As seen in this Table, FAO and national institutions give different number for Turkey's forests. This is due to the difference between national forest definition and the definition used by FAO. Turkey's Forest Law describes the forest as "naturally grown or artificially grown tree and shrub communities are considered forests with the areas what the trees occupy". According to this definition, the areas defined as other wooded lands (OWL) by FAO also fall into the forest area of Turkey. This is an important issue for NWFPs, because OWLs are more favorable environments for NWFPs comparing with high forests. The majority of the NWFPs are found in forests, principally along the coast line with canopy cover less than 11 percent (degraded forest) (World Bank, 2017). Figure 1 shows the distribution of forests in Turkey. (GDF, 2012)

Table 1. Turkey's Land, Population and Forests

Indicator	Unit of measure	Amount
Country area (FAO,2016)	ha	78 535 000
Forest area by FAO (FAO,2016)	ha	11 715 000
Forest area by national definitions (GDF,2020) ¹	ha	22 740 297
Private forest area	ha	18 000 (0.080% of total forest)
Growing stock (2019)	m3	1 679 356 210
Annual increment (2019)	m3	47 200 000
Industrial wood in the rough production-2019	m3	22 113 248
Annual fuel wood production-2019	Stere ² /m3	5 589 798 stere/3 912 858 m3
Country population (TURKSTAT, 2020)	Person	83 154 997
Forest villages subject to Forest Act (GDF, 2018b)	Number	22 712
Forest villagers ³ subject to Forest Act	Person	7 013 712

¹ Includes other wooded land with less than 10 % canopy cover, such as maquis, shrublands, degraded forestlands, etc.

² Stere: Volume of stacked wood, actual wood volume is equal to 0.7 m3.

³ The term "forest villagers" is a specific term used in Turkey. Turkey's rural inhabitants can be classified into two groups, namely forest villagers and other villagers. Forest villagers are also divided based on the location of the villages: located inside forests or those near/adjointing forests. They are also classified on the basis of whether or not production is performed in forests within village boundaries, under Articles 31 and 32 of the Forest Law No. 6831. This classification also plays a determining role in terms of the products generated from forests and subsidies provided (World Bank, 2017).

Figure 1. Distribution of Turkey's Forests



The Forestry sector has been guided by many policy instruments namely;

- Forest Law no 6831 that ratified in 1956,
- the Eleventh Development Plan (2019-2023),
- the National Forestry Program (2004-2023),
- the Strategic Plan of the Ministry of Agriculture and Forestry (2019- 2023) and,
- the GDF's Strategic Plan (2017-2021).

1.2. Definition Used by FAO and Turkey for NWFPs

FAO classifies the forest and tree products as wood products, non-wood products and forest services and defines NWFPs as “goods derived from forests that are tangible and physical objects of biological origin other than wood”. (FAO,2020) For FRA 2020, NWFPs were classified as either plant-based or animal-based. Plant-based products include food, fodder, raw material for medicine and aromatic products, raw material for colorants and dyes, raw material for handicrafts, utensils and construction, ornamental plants, exudates, and other plant products. Animal-based products comprised wild meat, honey and beeswax, hides, skins and trophies, living animals, raw material for medicine, raw material for colorants, other edible products and other non-edible products.

For Turkey, “Communiqué No. 302 on Inventory and Planning of NWFPs and Production and Sales Principles (Communiqué of NWFPs)”, which was put into practice in 2016, is the most comprehensive and directing legislation on NWFPs. (GDF, 2016)

The Communiqué of NWFPs is a very comprehensive and useful example and could be used as a guideline for other countries.

Having 116 pages including its annexes, this Communiqué of NWFPs has been divided to 9 parts as shown below.

- Part 1: Purpose, Scope, Basis and Definitions
- Part 2: Inventory and Planning of Non-Wood Forest Products
- Part 3: Production Procedures and Principles of Non-Wood Forest Products
- Part 4: Sales Procedures and Principles of Non-Wood Forest Products
- Part 5: Programming of Production and Sales of Non-Wood Forest Products
- Part 6: Production and Sales Techniques of Some Non-Wood Forest Products
- Part 7: Principles of Collection of Production Residues and Plant Materials Harmful to the Forest
- Part 8: Repealed Provisions, Enforcement of this Communiqué -Circular
- Part 9: Attachments-Annexes of the Communiqué

The Communiqué of NWFPs expresses Turkey’s official terminology for NWFPs used in this report as shown at **Text Box 1**

Text Box 1. Official Definition of NWFPs in Turkey

Non-Wood Forest Product (NWFP): It refers to biological and mineral origin products other than wood obtained from forests and trees, and other products exposed during the production of wood such as bark, chip, shrub, root, stump, and cone.

1.3. Classification of NWFPs in Turkey

Communiqué of NWFPs of the GDF classifies the NWFPs as shown in **Table 2** based on their forms.

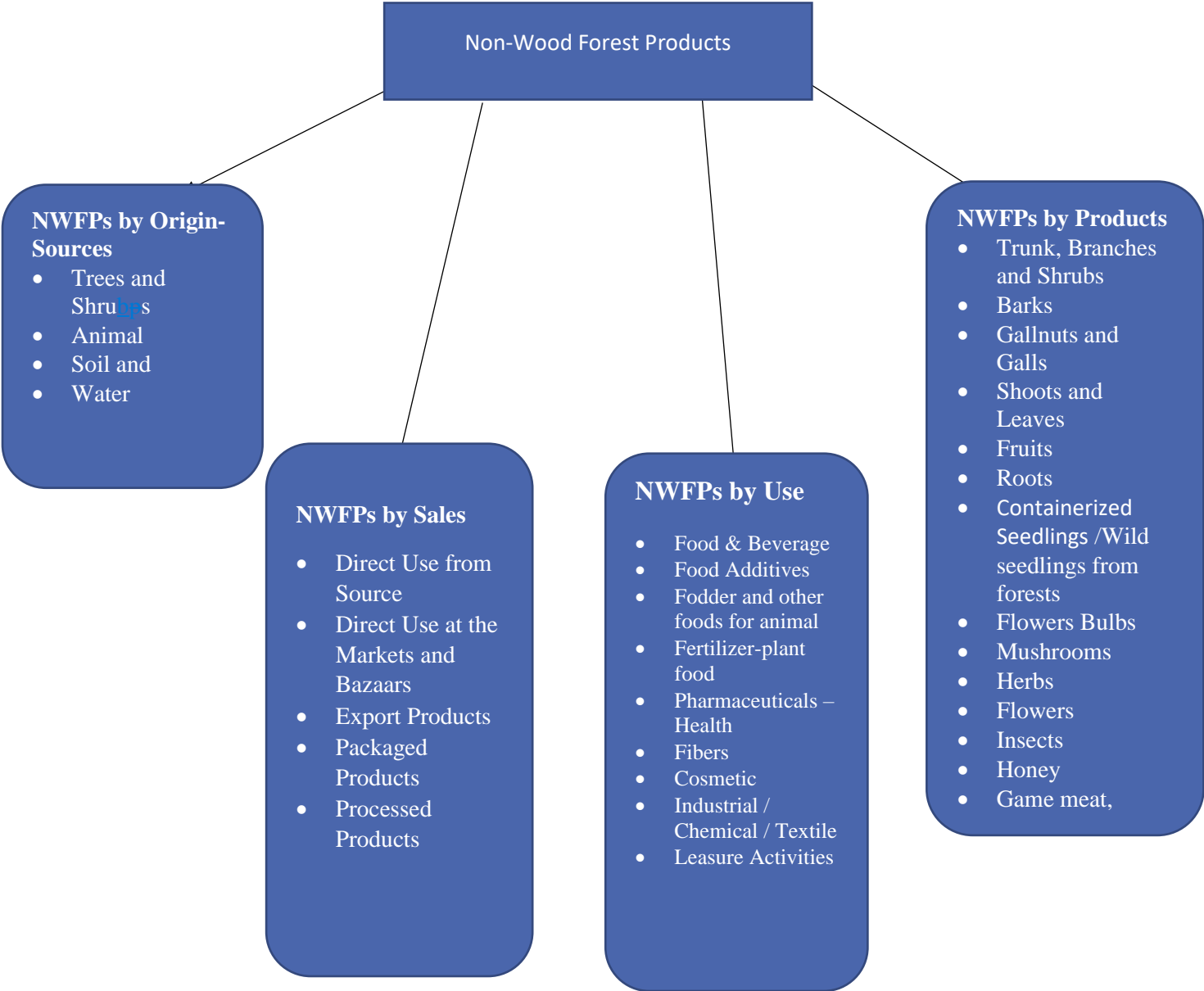
Table 2. Classification of NWFPs in Turkey based on their forms

No	Groups	Species examples that can be included in these groups
1	Trees	Stone pine, linden, carob, wild pear etc.
2	Shrubs and Bushes	Bay-Laurel, boxwood, rosehip, bilberry etc.
3	Herbs	Sage, thyme, rosemary, chamomile, mint etc.
4	Geophytes	Salep, cyclamen, snowdrop etc.
5	Algae-Lichens	Bryophytes, Usnea barbata, lichens etc.
6	Mushrooms	Porcini (bear mushroom), common morel, truffles
7	Other NWFPs	Forest humus, harvesting residues, pine roots etc

This classification has been made mainly for inventory purposes. There have been some missing NWFPs in this system, especially for animal productions like game meat, bat manure, as well as the others like drinking water bottled in forest, decorative ornamental stones.

In order to better understand the subject, the scheme shown in **Figure 2** has been developed within the scope of this report. Accordingly, NWFPs are dealt under four main titles according to their origin-sources, final product shapes, intended uses and sales patterns.

Figure 2 Scheme of NWFPs developed for this report⁴



⁴ Created by İsmail Belen (Senior Agriculture and Forestry Expert, MAF, Turkey)

1.4. NWFPs categories in GDF's 2020 List

As stated in the relevant sections, GDF is the main producer and seller of NWFPs in Turkey. At the beginning of each year, the list of the NWFPs and their prices for collection from state-owned forests are determined for the forest villagers. The list of the NWFPs and their grouping determined for 2020 are as follows. (DNWFPS, 2020)

This list gives an idea of NWFPs obtained from forests in Turkey. According to this list, NWFPs of Turkey are divided into 13 groups as shown below:

1. Stems, Branches and Shrubs
2. Containerized plants/wild forest seedlings
3. Barks
4. Balsamic Oils
5. Roots
6. Shoots and Leaves
7. Fruits
8. Herbs
9. Flowers
10. Flowers bulbs
11. Gallnuts and Galls
12. Mushrooms
13. Other NWFPs (Other Herbal and Animal Products)

At the following tables a detailed information was given for 13 groups by their English and Latin names if available.

1.4.1. Trunk, Branches and Shrubs

Table 3. Trunk, Branches and Shrubs

Turkish name of the product	English name of the product	Latin Name (if available)
Çıra	Kindling wood	+
Süpürge Çalısı	Broom	<i>Cytisus scoparius</i>
Kamış	Giant Reed	<i>Arundo donax</i>
Diğer Gövde ve Dallar	Other Stems and Branches	+
Diğer Çalılar	Other Shrubs	+
Delice (Yabani Zeytin)	Delice (Wild Olive)	<i>Olea europaea</i>
İbrelî ağaç fidanı	Coniferous tree sapling	+
Yapraklı ağaç fidanı	Broadleaf tree sapling	+

Picture 1. Larch tree that has been cut improperly to produce kindling



1.4.2. Wild Seedling from Forest

Table 4. Wild seedlings from forest

Turkish name of the product	English name of the product	Latin Name (if available)
Karaçam (1-3 m boyunda)	Black pine seedlings (1-3m/ 3-5 m/larger than 5 m)	<i>Pinus nigra</i>
Fıstıkçamı (1-3 m boyunda)	Stone pine (1-3m/ 3-5 m/larger than 5 m)	<i>Pinus pinea</i>
Meşe türleri (1-3 m boyunda)	Oak species (1-3m/ 3-5 m/larger than 5 m)	<i>Oak spp.</i>
İhlamur (1-3 m boyunda)	Linden (1-3m/ 3-5 m/larger than 5 m)	<i>Tilia spp.</i>
Diğer Ağaç Türleri (1-3 m boyunda)	Other Tree Species (1-3m/ 3-5m/ larger than 5 m)	+
Çalimsı türler	Bushy species	+

1.4.3. Barks

Table 5. Barks

Turkish name of the product	English name of the product	Latin name (if available)
Buhur	Incense	Obtained from <i>Liquidambar orientalis</i>

Meşe Kabuğu	Oak bark	Obtained from <i>Quercus ssp.</i>
İbrelî Ağaç Kabuğu	Coniferous bark	+
Yapraklı Ağaç Kabuğu	Broadleaf tree bark	+
Ağaçcik Kabukları	Shrub bark	+

1.4.4. Balsamic Oils

Table 6. Balsamic Oils

Turkish name of the product	English name of the product	Latin Name (if available)
Sığla Yağı	Oriental sweetgum oil	<i>Obtained from Liquidambar orientalis</i>
Reçine	Resin	<i>Obtained mainly from Pinus spp.</i>
Sakız (Çam-Ladin)	Gum (pine - oriental spruce)	<i>Pinus spp. – Picea orientalis</i>
Kitre Sakızı	Astragalus gum	<i>Obtained from Astragalus gummifer</i>
Damla Sakızı	Mastic gum	<i>Pistacia lentiscus</i>
Kenger Sakızı	Kenger gum	<i>Gundelia tournefortii</i>
Diğer Yağlar	Other oils	+

Picture 2. Oriental sweetgum oil production from *Liquidambar orientalis*



1.4.5. Roots

Table 7. Roots

Turkish name of the product	English name of the product	Latin Name (if available)
Meyan Kökü	Licorice root	<i>Glycyrrhiza glabra</i>
Çıralı Çam Kökü	Kindling Pine root	<i>Pinus spp.</i>

Okaliptus Kökü	Eucalyptus root	<i>Eucalyptus camaldulensis</i>
Erika-Funda Kökü	Erica root	<i>Erica arborea</i>
Censiyan Kökü	Gentian root	<i>Gentiana lutea</i>
Adamotu Kökü	Autumn mandrake root	<i>Mandragora autumnalis</i>
Çöven Kökü	Soaproot - Radix Gypsophilae	<i>Gypsophila</i> spp.
Tavşanmemesi Kökü	Butcher's broom root	<i>Ruscus aculeatus</i>
Erkekeğreli Otu Kökü	Male fern root	<i>Dryopteris filix-mas</i>
Kediotu Kökü	Valerian root	<i>Valeriana officinalis</i>
Güzelavrat Otu Kökü	Belladonna Root-	<i>Atropa belladonna</i>
Isırgan Otu Kökü	Stinging nettle root	<i>Urtica dioica</i>
Havaciva Kökü	Alkanet root	<i>Alkanna tinctoria</i>
Diğer Kökler	Other roots	

1.4.6. Shoots and Leaves

Table 8. Shoots and Leaves

Turkish name of the product	English name of the product	Latin Name (if available)
Ihlamur Yaprağı	Linden leaf	<i>Tilia</i> spp.
Mersin Sürgünü	Myrtle twig	<i>Myrtus communis</i>
Sumak sürgünü	Sumac twig	<i>Rhus coriaria</i>
Defne Yaprağı (Sürgün)	Laurel leaf (Shoot)	<i>Laurus nobilis</i>
Ceviz yaprağı	Walnut leaf	<i>Juglans regia</i>
Karayemiş Yaprağı	Cherry Laurel leaf	<i>Laurocerasus officinalis</i>
Laden Yaprağı (Sürgün)	Rockrose leaf (Shoot)	<i>Cistus</i> spp.
Okaliptus yaprağı	Eucalyptus leaf	<i>Eucalyptus camaldulensis</i>
Porsuk sürgünü	Yew shoot	<i>Taxus baccata</i>
Yalova Mercanı Yaprağı	Spineless butcher's-broom leaf	<i>Ruscus hypoglossum</i>
Orman Güülü Sürgünü	Rhododendron shoot	<i>Rhododendron</i> spp.
Şimşir Sürgünü	Box tree shoot	<i>Buxus sempervirens</i>
Herden Taze Bitkisi Sürgünü Ölmez Out/Altın otu	Everlasting / immortelle	<i>Helichrysum arenarium</i>
Taflan Sürgünü	cherry laurel shoot	<i>Prunus laurocerasus</i>
Yüksük Otu yaprağı	Foxglove leaf	<i>Digitalis</i> spp.
Kuşdili-Biberiye yaprağı (sürgünlü)	Rosemary leaf (shoot)	<i>Rosmarinus officinalis</i>
Aslan Pençesi (Sürgünlü)	Lady's mantle, Bear's foot, Lion's foot (shoot)	<i>Alchemilla</i> spp.
Diğer Sürgün ve Yapraklar	Other Shoots and Leaves	+

1.4.7. Fruits

Table 9. Fruits

Turkish name of the product	English name of the product	Latin Name (if available)
Böğürtlen	Blackberry	<i>Rubus</i> spp.
Ağaççileği, kocayemiş	Strawberry tree	<i>Arbutus unedo</i>
Yer Çileği	Strawberry	<i>Fragaria</i> sp.
Ayı Üzümü	Blueberry	<i>Vaccinium</i> spp.
Alıç	Hawthorn	<i>Crataegus</i> spp.
Ahlat	Wild pear	<i>Pyrus elaeagnifolia</i>
Sumak	Sumac	<i>Rhus coriaria</i>
Fındık	Hazelnut	<i>Corylus</i> spp.
Ceviz	Walnut	<i>Juglans regia</i>
Defne	Laurel	<i>Laurus nobilis</i>
Harnup	Carob bean	<i>Ceratonia siliqua</i>
Karayemiş	Cherry Laurel	<i>Laurocerasus officinalis</i>
Kestane	Chestnut	<i>Castanea sativa</i>
Kızılcık	Cornelian cherry	<i>Cornus mas</i>
Zeytin	Olive	<i>Olea europaea</i>
Kiraz	Cherry	<i>Prunus</i> spp.
Kuşburnu	Rosehip	<i>Rosa canina</i>
Mersin	Myrtle	<i>Myrtus communis</i>
Menengiç	Turpentine tree	<i>Pistacia terebinthus</i>
Mahlep	Mahaleb cherry	<i>Cerasus mahaleb</i>
Muşmula	Medlar	<i>Mespilus germanica</i>
Fıstıkçamı kozalağı	Stone pine cone	<i>Pinus pinea</i>
Mürver (Çekirdekli)	Elderberry (Pitted)	<i>Sambucus</i> sp.
Kebere, Kapari	Caper	<i>Capparis spinosa</i>
Yabani Elma	Wild-Sour Apple	<i>Malus sylvestris</i>

Yemişen	Common hawthorn	<i>Crataegus monogyna</i>
Üvez	Rowanberry	<i>Sorbus</i> spp.
Ardıç	Juniper	<i>Juniperus</i> spp.
Kartopu	Snowball	<i>Viburnum</i> sp.
Cehri	Buckthorn	<i>Rhamnus</i> spp.
Palamut	Acorn	<i>Quercus ithaburensis</i>
Çitlenbik	Nettle	<i>Celtis</i> sp.
Dut	Mulberry	<i>Morus</i> sp.
Badem	Almond	<i>Prunus amygdalus</i>
Sandal, Çilek Ağacı	Strawberry tree	<i>Arbutus andrachne</i>
Karamuk	Barberry, Corncockle	<i>Berberis</i> spp.
Armut	Pear	<i>Pyrus</i> spp.
Ahududu	Raspberry	<i>Rubus</i> spp.
Mavi Yemiş-Likapa	Blueberry	<i>Vaccinium</i> spp.
Sakız	Gum	<i>Pistacia lentiscus</i>
Her Türlü Tohumlu Kozalak	All Kinds of Seed Cones	
Diğer Meyveler ve Tohumlar	Other Fruits and seeds	

1.4.8. Herbs

Table 10. Herbs

Turkish name of the product	English name of the product	Latin Name (if available)
Çakşır Otu	Chakshir, Giant Fennel	<i>Ferula</i> sp.
Eğrelti Otu	Fern	<i>Dryopteris filix-mas</i>
Geven	Astragalus	<i>Astragalus</i> spp.
Hardal	Mustard	<i>Brassica</i> spp.
Kekik	Thyme	<i>Origanum</i> spp., <i>Thymus</i> spp., <i>Satureja</i> spp., <i>Thymbra</i> spp.
Kimyon	Cumin	<i>Cuminum cyminum</i>

Kına Otu	Henna	<i>Lawsonia inermis</i>
Kendir Otu	Hemp	<i>Cannabis sativa</i>
Kuzu Kulağı	Sorrel	<i>Rumex spp.</i>
Nane	Spearmint	<i>Mentha spp.</i>
Pelin Otu	Wormwood	<i>Artemisia sp.</i>
Oğul Otu	Lemon balm	<i>Melissa officinalis</i>
Ada çayı	Sage	<i>Salvia spp.</i>
Kedi Otu	Valerian	<i>Valeriana officinalis</i>
Censiyan Kökü	Gentian Root	<i>Gentiana lutea</i>
Hatmi Çiçeği	Marshmallow	<i>Althaea officinalis</i>
Hayıt	Chaste	<i>Vitex agnus castus</i>
Güzel Avrat Otu Kökü	Belladonna Root	<i>Atropa belladonna</i>
Mercan Köşk	Coral Pavilion	<i>Origanum vulgare</i>
Rezene	Fennel	<i>Foeniculum vulgare</i>
Sığır Kuyruğu	Common mullein	<i>Verbascum spp.</i>
Isırgan Otu	Stinging nettle	<i>Urtica dioica</i>
Zahter	Zahter	<i>Thymbra spicata</i>
Çiriş	Summer asphodel	<i>Asphodelus aestivus</i>
Diğer Otlar	Other Herbs	+
Her Türlü Saz Bitkisi	All Kinds of Sedge Plants	+

1.4.9. Flowers

Table 11. Flowers

Turkish name of the product	English name of the product	Latin Name (if available)
Ahlat	Wild pear	<i>Pyrus elaeagnifolia</i>
Alıç	Hawthorn	<i>Crataegus spp.</i>
Ballıbaba	Dead nettle	<i>Lamium spp.</i>

Ihlamur (yapraklı)	Linden (leafy)	<i>Tilia</i> spp.
Ihlamur (tomurcuk)	Linden (bud)	<i>Tilia</i> spp.
Kantaron	Centaury	<i>Hypericum</i> spp.
Menekşe	Violet	<i>Viola</i> spp.
Safran	Saffron	<i>Crocus sativus</i>
Saçsalkım	Eremopoa	<i>Eremopoa capillaris</i>
Şerbetçi Otu	Hops	<i>Humulus lupulus</i>
Zakkum	Oleander	<i>Nerium oleander</i>
Orman Gülü	Rhododendron	Rhododendron spp.
Papatya	Daisy	<i>Matricaria chamomilla</i>
Lavanta	Lavender	<i>Lavandula hybrida</i>
Hayıt	Chaste	<i>Vitex agnus castus</i>
Mürver	Elderberry	<i>Sambucus</i> spp.
Sarısolmaz çiçek (Kantaron)	Centaury	<i>Hypericum</i> spp.
Sığır Kuyruğu	Common mullein	<i>Verbascum</i> spp.
Kebere, Kapari	Caper	<i>Capparis spinosa</i>
Diğer Çiçekler	Other Flowers	

1.4.10. Flowers Bulbs

Table 12. Flower Bulbs

Turkish name of the product	English name of the product	Latin Name (if available)
Nergis	Daffodil	<i>Naricusus</i> spp.
Kardelen	Snowdrop	<i>Galanthus elwesii</i>
Kraltacı	Imperial Crown	<i>Fritillaria</i> spp.
Sıklamen	Cyclamen	<i>Cyclamen</i> spp.
Yoğurt Çiçeği	Windflower	<i>Anemone blanda</i>
Sarı kokulu kar çiçeği	Yellow fragrant snow flower	<i>Eranthis hyemalis</i>

Yılan Bıçağı	Snake Knife	<i>Arum italicum</i>
Göl Soğanı	Lake Onion	<i>Leocojum aestivum</i>
Ada Soğanı	Island Onion	<i>Urginea maritima</i>
Deve Tabanı	Camel Base	<i>Geranium tuberosum</i>
Diğer Soğanlar	Other Onions	

1.4.11. Gallnuts and Galls

Table 13. Gallnuts and Galls

Turkish name of the product	English name of the product	Latin Name (if available)
Meşe Mazısı	Oak gall	Gall on <i>Quercus infectoria</i>
Her Çeşit Mazı ve Ur	All kinds of gall and tumor	

1.4.12. Mushrooms

Table 14. Mushrooms

Turkish name of the product	English name of the product	Latin Name (if available)
Trüf Mantarı	Truffle Mushroom	<i>Tuber</i> spp.
Domalan Mantarları	Truffles Mushrooms	<i>Terfezia</i> spp.
Sedir Mantarı	Cedar Mushroom	<i>Tricholoma anatolicum</i>
Kuzu Göbeği Mantarı	Lamb Belly Mushroom	<i>Morchella conica</i> ,
Tavuk ayağı mantarı	Yellow mushroom	<i>Cantharellus cibarius</i>
Ayı Mantarı	Penny bun mushroom	<i>Boletus edulis</i>
Cüce Kız Mantarı	Chanterelle	<i>Cantharellus</i> spp.
Yenilebilen diğer Tabii Mantarlar	Other Edible Mushrooms	+

Picture 3. *Morchella esculenta* commonly known as common morel



1.4.13. Other NWFPs

Table 15. Other NWFPs

Turkish name of the product	English name of the product	Latin Name (if available)
Likenler	Lichens	
Yosunlar	Algae	
Her Çeşit Boş Kozalak	All Kinds of Empty Cones	
Yabani Bal ve Diğer Ürünler	Wild Honey and Other Products	
Polen Tozu	Pollen Powder	
Humuslu Toprak	Humus Soil	
Turba Toprağı	Peat Soil	
Taş ve Kum	Ornamental Stone and Sand	
Yarasa Gübresi	Bat Guano	
Her Çeşit Hayvan Artığı	All Kinds of Animal Wastes	
Her Çeşit Bitki Artığı	All Kinds of Plant Waste	

1.5. Official statistics of NWFPs in Turkey

As of the end of 2019, an inventory study was conducted for 250 different taxa. Planning has been done for a total of 1.7 million ha of these species and taxa. Also "Utilization Plans" of these NWFPs were prepared. (DNWFPS, 2019)

The whole list of this inventory has been attached in the Annexes section at the end of this report. According to this inventory the first top 10 NWFPs with regard to their areas are shown at Table 16.

Table 16. The first 10 NWFPs of Turkey with regard to their areas

No	Turkish name of the product	English name of the product	Latin Name of the product	Area-ha
1	Defne	Bay tree	<i>Laurus nobilis</i>	180 400
2	Kuşburnu	Dog rose	<i>Rosa canina</i>	97 195
3	Bilyalı kekik	Greek oregano	<i>Origanum onites</i>	86 358
4	Kestane	Chestnut	<i>Castanea sativa</i>	74 897
5	Laden	Pink rock-rose	<i>Cistus creticus</i>	68 621
6	Karağan/Defne yapraklı laden	Leaf cistus	<i>Cistus laurifolius</i>	66 368
7	Şalba/Adaçayı	Sage	<i>Salvia tomentosa</i>	62 627
8	Fıstık çamı	Stone pine	<i>Pinus pinea</i>	61 310
9	Alıç	Oriental hawthorn	<i>Crataegus orientalis</i>	54 441
10	Toka kekik/yayla kekiği	Turkish plateau oregano	<i>Origanum minutiflorum</i>	46 591

There are serious difficulties in keeping the "production statistics" of NWFPs. However, production statistics are prepared and published by GDF in accordance with EuroStat "Statistical classification of products by activity-CPA") standards. In this context, the latest and current forestry statistics of GDF were published on June 29, 2020.

The information shown in Table 4 refers to NWFPs produced from government owned forests under GDF control. Products produced from agricultural areas and trees other than forests are not included in these figures. On the other hand, NWFPs produced from state-owned forests are not fully registered. It is easier to register the products that are traded and the products that require "certificate of origin" for trade.

According to these official statistics, approximately 6 thousand tons of chestnut and 33 thousand tons of unprocessed bay leaves were produced in 2019.

2. CHAPTER 2: COLLECTION AND USE OF NWFPs IN TURKEY

2.1. NWFP as a sustainable and valuable product

Detailed explanations have been given in respective sections about the non-wood forest products, their terminology, classification and statistics.

In Turkey, almost all of the forests belong to the State. Moreover, all the forests are managed with "Forest Management Plans" which means allow to implement "sustainable forest management". On the other hand, most of the forests are rejuvenated by natural ways with nature-based silvicultural techniques. It means in general term; the soil of the forests is clean and does not contain chemical residues. This is also good for organic food.

This situation provides quite good advantages to NWFPs. They can also be considered as an important source of "Medicinal and Aromatic Plants".

Dealing with the production and harvesting of NWFPs is relatively accepted as "feminine business" although supporting statistical data or studies are missing. Comparing to wood harvesting, it needs less physical power and activity but the results are more fruitful with regard to financial benefits. It is also a climate friendly activity as collection does not cause pollution and no chemicals are used in production. It has also advantages on rural development. It can be said that dealing with NWFPs is a kind of "light in weight but heavy in value" activity.

2.2. Economic benefits of NWFPs on national and rural economy

NWFPs play an important role in Turkey's rural and national economy. In Turkey, there are many non-wood forest products (NWFPs) that are being produced and sold domestically or exported. However, there are also many NWFPs that are not being properly produced; a number of potential NWFPs that could be produced; and others that are being imported from foreign countries. NWFPs have an important share in Turkey's foreign trade of forest products, especially in exports. The share of NWFPs is about 98 percent of the total forest products exports in Turkey. (KARAYILMAZLAR, S. 2005), In this section economic benefits of NWFPs on rural and national economy have been assessed based on the information provided by DNWFPs (DNWFPs, 2020) and cover only NWFPs collected from state-owned forests. Data on crops produced from agricultural lands or privately owned lands are not included.

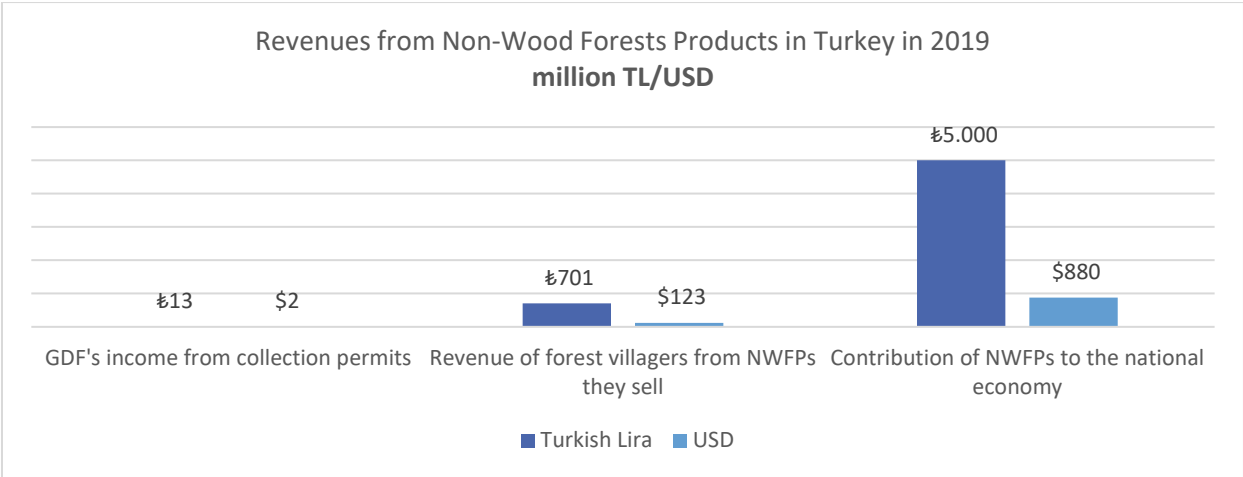
The entry of NWFPs into the economy begins with purchasing the "collection permission" for NWFPs in state forests. These "collection permits" are generally given to "forest villagers" at very affordable prices and can be purchased from GDF. If the forest villagers are not willing to collect these products, then GDF can open bid for public.

Forest villagers sell the collected products to intermediaries or wholesalers. Eventually NWFPs reach the "end consumer". NWFPs are also an important export product.

As shown in Figure 3, the total amount of marketed NWFPs in Turkey was about 5 billion Turkish Liras (TL) in 2019. This amount corresponds to 880 million USD. (*Note: According to the average dollar rate in 2019 by the Central Bank of the Republic of Turkey which was 5,68 TL.*) Total revenue of GDF was 2.2 million USD just for giving the permissions. Total revenue for forest villagers was USD 123 million, and total market is 880 million USD. The difference (approximately 700 million USD) goes to the processing and retail industry.

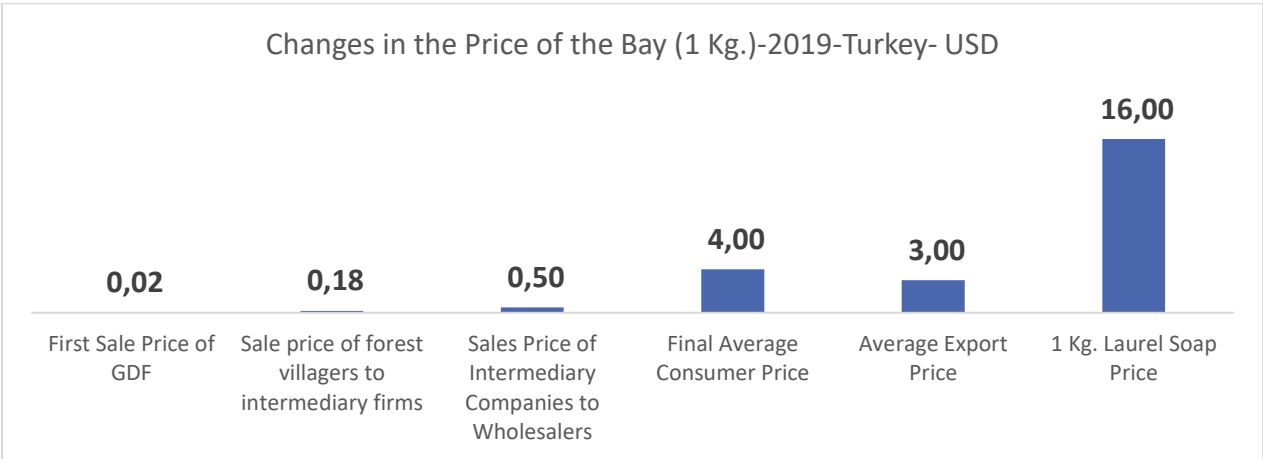
NWFPs are mainly found in state-owned forests. The main collectors of NWFPs are "forest villagers" who live in forests and on the edge of villages. As stated in Article 170 of the Constitution and other relevant legislation, forest villagers have priority in collecting, processing and selling these NWFPs. As of 2019, the income generated by forest villagers from the sale of NWFPs was 701 million TL or 123 million USD. The revenue generated by the GDF from selling licenses for collecting, which is responsible for managing forests on behalf of the state, from these products is 12.6 million TL, in other words, 2.2 million USD.

Figure 3. Revenues from Non-Wood Forests Products in Turkey in 2019



There is a big difference between the price of NWFPs in the forest/or at the hand of forest villagers and the price they reach the end consumer. As shown in Figure 4, the retail price of one kg of laurel sold to intermediaries by forest villagers was 4 USD. In other words, 22-fold price increase has been observed. In a study conducted in 2000, it was found that 1 kg of raw chestnuts were sold for an average of 1.5 USD, roasted chestnuts were sold for 6 USD, and chestnut sugar was sold for an average of 20 USD. (BELEN, İ. 2001)

Figure 4. Changes in the price of the bay (1 Kg)-2019-Turkey- USD



Although there is significant development in some of the products, only 20 percent of NWFPs receive any form of processing or added value in Turkey. Turkey’s rich floral diversity is still largely untapped.

Herbs and spices classified as NWFPs are widely available, particularly in the cosmetics, medicine, food, dye and chemical industries.

Informal consumption makes it difficult to determine the economic dimension of NWFPs. In a study conducted in 2000, it was determined that 12 percent of chestnut's annual consumption was informal. (BELEN, İ. 2001)

In addition to the direct economic contributions of non-wood forest products, there are also "ecosystem values" and contributions. However, "ecosystem services" and "contributions" of non-wood forest products are not fully known and evaluated. As shown in Figure 5, the recent World Bank assessment of non-wood forest ecosystem services estimated the value of NWFPs for **Turkey as USD 2.3** per hectare per year, compared with an average for Europe of USD 20.7 indicating a significant potential for growth in the future. (World Bank, 2017)

As stated in many sources, including the FRA 2020, it is really difficult to compile the exact statistics that everyone agreed on NWFPs. The hectare value here is a value calculated by the World Bank. On the other hand, according to GDF's own official statistics, as of 2019, the income generated by forest villagers from the sale of NWFPs was 123 million USD. The revenue generated by the GDF from selling licenses for collecting was 2.2 million USD.

As shown in Figure 3, the total amount of marketed NWFPs in Turkey was about 880 million USD. (Note: According to the average dollar rate in 2019 by the Central Bank of the Republic of Turkey which was 5,68 TL.)

Figure 5. Estimated value of NWFPs in Turkey and Europe

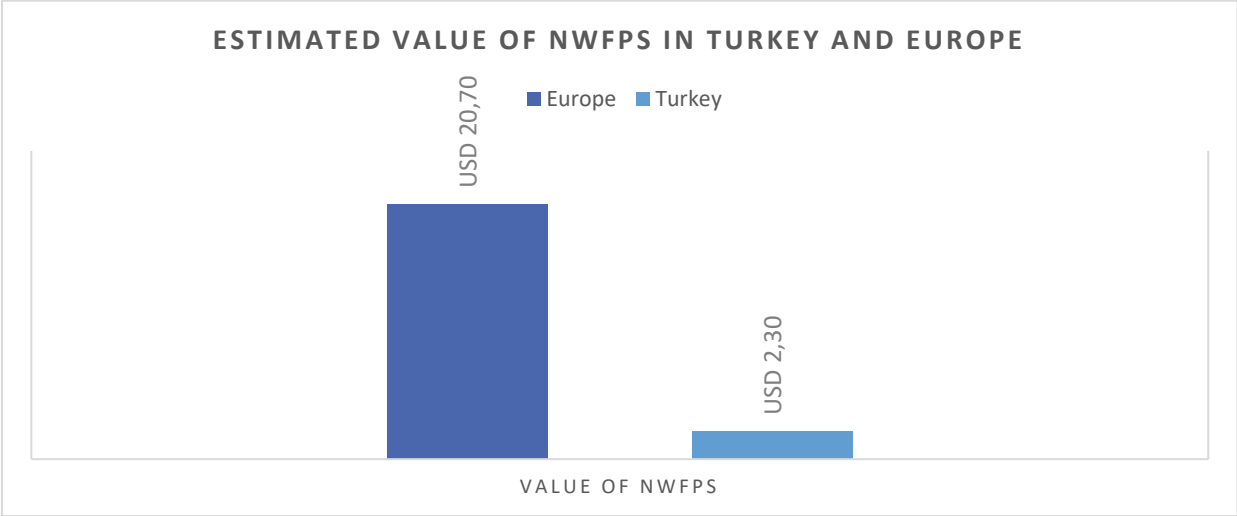


Table 17. Top 10 NWFPs with their total values in 2019

No	English Name	Latin Name	Contribution to national economy-USD	Area
1	Bay tree	<i>Laurus nobilis</i>	264 084 507	180 400
2	Chestnut	<i>Castanea sativa</i>	176 056 338	74 897
3	Thyme	<i>Origanum onites</i>	140 845 070	86 358
4	Pine nut	<i>Pinus pinea</i>	88 028 169	61 310
5	Mushrooms	+	35 211 268	+
6	Salvia	<i>Salvia fruticosa</i> Mill.	21 126 761	11 874
7	Carob bean	<i>Ceratonia siliqua</i>	5 281 690	13 203
8	Rosemary leaf (shoot)	<i>Salvia rosmarinus</i> / <i>Rosmarinus officinalis</i>	4 401 408	6 107
9	Tilia	<i>Tilia platyphyllos</i> / <i>tomentosa</i>	4 401 408	19 231
10	Mulberry-Blackberry		1 760 563	+
	Total		741 197 182	

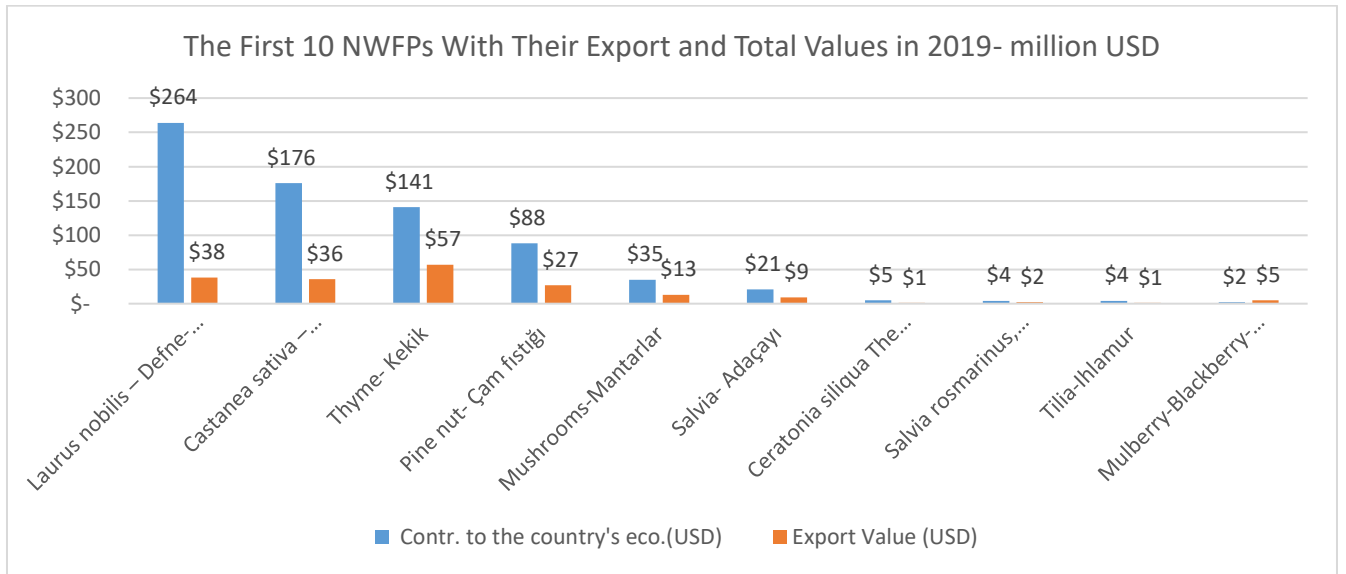
As shown in Table 18, export quantity and value of most NWFPs are relatively high and Turkey is one of the main producers of some NWFPs, such as laural leaf. Laural, chestnut and thyme production and export has already significantly increased in recent years (Korkmaz and Duman 2019).

Table 18. Top 10 most exported NWFPs

No	Latin Name of the NWFP	Export Quantity (Ton)	Export Value-USD
1	<i>Laurus nobilis</i>	13 600	38 234 826
2	<i>Castanea sativa</i>	14 225	35 837 736
3	<i>Origanum onites</i>	16 830	57 247 281
4	<i>Pinus pinea</i>	516	26 946 250
5	Mushrooms	1 716	12 843 337
6	<i>Salvia fruticosa</i>	2 317	8 680 563
7	<i>Ceratonia siliqua</i>	953	1 131 485

8	<i>Salvia rosmarinus/ Rosmarinus officinalis</i>	592	1 716 307
9	<i>Tilia platyphyllos subsp. platyphyllos</i> and <i>Tilia tomentosa Moench</i>	107	1 100 870
10	Mulberry-Blackberry-	1415	5 190 832
	Total	52 271	188 929 487

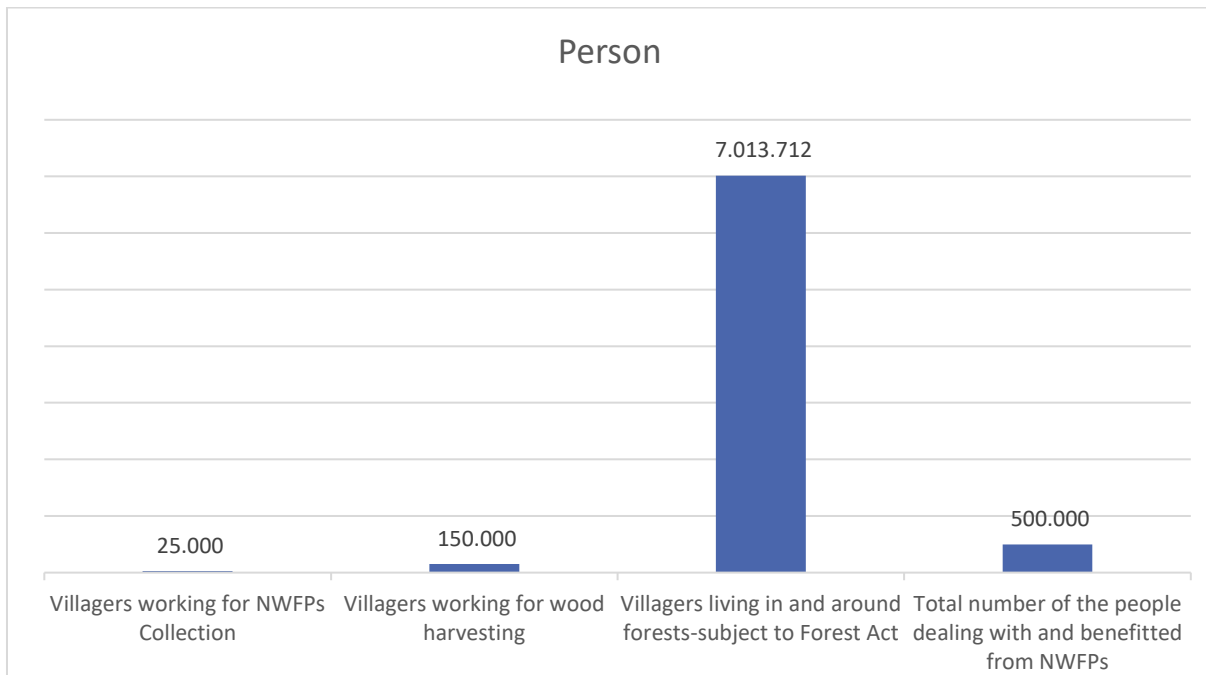
Figure 6. The Top 10 NWFPs with their export and total values in 2019- million USD



As shown in Figure 7, NWFPs are also important for rural economy and daily life. The number of forest villagers working in wood production is around 150 000 people. The number of forest villagers working in the collection of NWFPs is around 25 000 people.

However, the NWFPs sector makes an economic contribution directly or indirectly to approximately 500 000 people in Turkey. This number includes the people working in the field for collection, working in drying processes, working in the process of making the product or semi-finished products, packer, end seller-retailer, exporter etc.

Figure 7. Contribution of NWFPs to rural employment



As stated in the foreword chestnut, laurel, pine honey, resin and truffle were selected as the NWFPs to work in detail due to their importance of "economic value, contribution to biodiversity and the potential impact on rural workforce, in particular women and youth" as envisaged in the LoA.

Chestnut (*Castanea sativa* Mill.) tree is one of the species found naturally in Turkey's forests. On the other hand, it is also cultured in agricultural lands specifically at the Egean part of Turkey. However, in this report, only the activities carried out in the state-owned forests were evaluated. Accordingly, there are 74 897 hectares of chestnut forest. As a NWFP, chestnut's contribution to the national economy has been calculated, according to OGM, totaling \$ 176 million. According to a study by Ismail Belen, the contribution of chestnut to the national economy in 2001 was calculated as 116 million USD in total.

Economically, the most revenue-earned NWFP is **Laurel-bay tree** (*Laurus nobilis* L.). There are 180 400 hectares laurel tree in Turkey, according to the inventory results in 2019. It contributed \$ 264 million to the national economy.

Pine honey, a very unique non-wood forest product, is a different type of honeydew honey produced from honeydew secreted by the insect *Marchalina hellenica* (Gennadius) which is restricted to *Pinus brutia* Ten and *Pinus halepensis* Miller. This type of honey is produced only in Greece and Turkey. Honeydew honey was regarded as insect excrement by consumers. The Aegean Region has a distinct importance as the most preferred area by migratory beekeepers because of its climatic conditions, rich nectar sources, and pine honey production areas. Approximately 92 percent of the world pine honey production is carried out in this region, and the remaining 8 % is supplied from Greece. Today; the Kusadasi Dilek Peninsula, Milas, Bodrum, Marmaris, Datca, Fethiye and primarily the Mugla province are the most important pine honey production areas in Turkey. The fact that about 50 % of the country's beekeepers in pine honey production operated here shows the importance of this particular

region, which corresponds to nearly 4 % of the total world colony population. (BELEN, I, 2015) Recently FAO and the European Bank for Reconstruction and Development (EBRD) have been working with Turkey's pine honey industry to strengthen the sector – making it more efficient, sustainable and inclusive – and to increase this special honey's recognition worldwide. (FAO,2020)

Resin is a chemical composition that is not used by the plant after being secreted. Species belonging to the genera Pinus, Larix, Pseudotsuga and Picea have normal resin channels. The trade volume of resin and its derivatives in Turkey is around 600 million USD. The raw resin (natural) need of Turkey country is around 2,000-2,500 tons.

While raw resin is converted into 100% industrial products in developed countries such as the USA, it is evaluated in domestic consumption; In countries such as China, Brazil, Argentina, India and Indonesia, it is converted into industrial products at the rate of 40-100%. These rates show that resin products have an indispensable industrial value.

While developing countries such as Brazil, Indonesia and China are in the first place in resin production in the world, Turkey is in the first place in terms of forest presence of *P. brutia* and *P. pinaster* suitable for resin production in the world, unfortunately, there is no commercial resin production in our country and the country is an importer for resin.

Truffle is one the most expensive and promising NWFPs of Turkey. According to the economists' estimates, truffle mushrooms, which will create a trade volume of 6 billion dollars annually in the next 20 years, now provide 45% of France, 35% of Spain, 20% of Italy and other countries. Due to its natural distribution in a very limited geography and its small amount, its price varies between 200 and 3,500 Euros, depending on its quality.

2.3. The role of women and youth in utilization of NWFPs in Turkey

As in many other countries, in Turkey, the number of the men who are working with "wood harvesting" are more than women. However, this is the opposite with NWFPs. The number of women working in the collection, processing and marketing of NWFPs is higher than men (Toksoy et al. 2010, Korkmaz ve Alkan 2015).

Although it is not possible to make a general and formal classification, wood production can be defined as "male work", and NWFPs production can be defined as "family business with women and children".

Employment of women and young people also vary depending on the type of non-wood forest product and location of employment. As industrialization and mass production increase, family engagement, women and youth employment decreases.

Employment of women and youth in activities carried out in rural areas and forest villages is higher than those in cities and towns. The share of women in the total labor force in Turkey was 30.7 percent as of 2013 (Ministry of Family, Labor and Social Services, 2013).

Below a few examples are listed on the importance of NWFPs in income generation for rural people.

- Mushrooms collected by children and women from forests in the Black Sea Region are sold by those who collect them at the roadside.

- *Russula delica* is one of the mushrooms that grow naturally in moist forests where beech trees predominate. With 2019 prices, 1 kg of mushrooms were sold for an average of USD 3. These mushrooms are usually collected by women and young people, even by children. One person could be able to collect about 10 kg of natural mushrooms in one day. A person can collect this mushroom for an average of 20 working days in a year, mainly in June or a few days in autumn in rainy seasons. The factors that determine the number of days and the number of mushrooms that can be collected daily are the climate and land conditions in mushroom picking. No restrictions are imposed by GDF. Accordingly, a woman or young person can earn up to 600 USD from this mushroom in a year (20 days * 10 kg. * 3 USD). 600 USD is really a good income in rural areas
- Another example could be *Morchella esculenta*, which is commonly known as common morel or morel. Morel mushroom is found in many regions, especially cedar and red pine forests and is collected by forest villagers. It appears in big amounts, especially in the first three years after forest fires. The average sale price of fresh-wet mushroom is 200 TL / kg (35 USD). The price of dried morel mushrooms is around USD 700/kg. An average of 10 kg of fresh mushrooms is equal to 1 kg of dried mushrooms.

3. CHAPTER 3: CONCLUSION

In this report a general evaluation has been made of the NWFPs found in Turkey's state-owned forests. It is clear that they are very important for ecological, biological and economical aspects.

As of the end of 2019, an inventory study was conducted for 250 different species and taxon of NWFPs for a total of 1.7 million ha area. Also, "NWFPs Utilization Plans" were prepared. Currently there are 1 953 utilization plans arranged on the basis of operating schemes belonging to 250 different NWFPs.

According to the official figures of the GDF the total market value of NWFPs in Turkey is about 880 million USD. The main collectors of NWFPs are "forest villagers" who live in forests and on the edge of villages. As of 2019, the income generated by forest villagers from the sale of NWFPs was 123 million USD. The revenue generated by the GDF, which is responsible for managing forests on behalf of the state, from these products was 2.2 million USD.

The total number of forest villagers (cca. 7 million) and forest villagers working in the sector helps to understand the the contribution of NWFPs to rural employment.

As of 2019, the number of forest villagers working in wood production was around 150 000 people. The number of forest villagers working directly in the collection of NWFPs was around 25 000. However, the NWFP sector makes an economic contribution directly or indirectly to approximately 500 000 people working in the fields of collection, drying processes, making the semi-finished and end products, or working as packers, end sellers, exporters etc.)

There are about 500 private companies in Turkey dealing with the collection, drying, processing, packaging, and selling of NWFPs both in Turkey and selling for export.

However, Turkey has not yet fully exploited the potential for cultivated forms of NWFPs or undertaken management of these resources at an intensity practiced in some countries. A recent (World Bank, 2017) assessment of non-wood forest ecosystem services estimated the value of NWFPs for Turkey as

USD 2.3 per hectare per year, compared with an average of USD 20.7 for Europe indicating a significant potential for growth in the future.

Taking into consideration the importance of NWFPs economically, socially and ecologically, it has been assessed that all the stakeholders including the Ministries (Ministry of Trade, Ministry of Industry, Ministry of Agriculture and Forests together with all institutes, Ministry of Treasury and Finance, Ministry of Health) should work together and prepare a "Road Map" in order to better use the advantages of NWFPs and to solve the problems.

Turkey's national policies and legislations have several references to NWFPs. There are several Legislations of GDF published at Turkey's Official Gazette and secondary legislations namely "communiqués" in order to regulate and coordinate the field activities. The Constitution itself and the Eleventh Development Plan has several items and reference to NWFPs. However, even in the "Regulations" prepared by the GDF, there is no common definition and classification for NWFPs.

Based on this report the issue of NWFPs concerns not only the GDF but also other General Directorates and Ministries.

The issue of NWFPs should be regulated not only by a "notification as Communiqué of NWFPs" prepared and implemented by the GDF, but at least by a regulation prepared with other stakeholders including private sector and NGOs and published at the Official Gazette. Or a "Presidential Decree" preparation may also be considered.

ANNEXES

Annex 1. NWFPs inventories at the end of 2019

Table 19 NWFPs inventories at the end of 2019

No	Botanical-Scientific Name (Species/Taxon)	Family	Local Name	Distribution Area-ha	Utilization Amount-kg
1	<i>Acantholimon acerosum</i> (Willd.) Boiss.	<i>Plumbaginaceae</i>	Pişikkeveni	5.207	779.755
2	<i>Achillea millefolium</i> L.	<i>Asteraceae</i>	Civanperçemi	404	21.487
3	<i>Agaricus campestris</i> L.	<i>Agaricaceae</i>	Çayır mantarı	382	16.252
4	<i>Agaricus sylvicola</i> (Vittad.) Peck	<i>Agaricaceae</i>	Odun Mantarı	234	9.308
5	<i>Ajuga reptans</i> L.	<i>Lamiaceae</i>	Meryemsaçı	179	76.746
6	<i>Alcea biennis</i> Winterl	<i>Malvaceae</i>	Fatmaanagülü	141	1.039
7	<i>Alcea striata</i> subsp. <i>rufescens</i> (Boiss.) Cullen	<i>Malvaceae</i>	Kaya hatmisi	149	1.235
8	<i>Alchemilla compactilis</i> Juz.	<i>Rosaceae</i>	Aslan pençesi	157	65.685
9	<i>Alchemilla sintenisii</i> Rothm.	<i>Rosaceae</i>	Su pençesi	21.261	4.278.275
10	<i>Alkanna tinctoria</i> (L.) Tausch subsp. <i>glandulosa</i> Hub.-Mor.	<i>Boraginaceae</i>	Yağlı havaciva	2.161	24.307
11	<i>Amanita caesarea</i>		İmparator mantarı	3.624	33.365
12	<i>Amblystegium serpens</i> (Hedw.) Schimp. var. <i>serpens</i>	<i>Amblystegiaceae</i>	Üsüm-Yosun	1.439	4.240.863
13	<i>Amygdalus arabica</i> Oliv.	<i>Rosaceae</i>	Arap bademi	2.073	70.032
14	<i>Amygdalus communis</i> L.	<i>Rosaceae</i>	Badem	2.983	659.922
15	<i>Anacamptis pyramidalis</i> (L.) Rich.	<i>Orchidaceae</i>	Sivrisalep	287	Protection Targets
16	<i>Anemone blanda</i> Schott & Kotschy	<i>Ranunculaceae</i>	Dağlâlesi	1.072	3.082
17	<i>Anthemis cretica</i> subsp. <i>carpatica</i> (Willd.) Grierson	<i>Asteraceae</i>	Dağ papatyası	319	125.799
18	<i>Anthemis macrotis</i> (Rech.f.) Oberpr. & Vogt	<i>Asteraceae</i>	Mayıs papatyası	564	50.811

19	<i>Arbutus andrachne</i> L.	<i>Ericaceae</i>	Sandal ağacı	26.407	11.065.874
20	<i>Arbutus unedo</i> L.	<i>Ericaceae</i>	Kocayemiş	20.151	12.974.296
21	<i>Arum italicum</i> Mill.	<i>Araceae</i>	Domuz lahanası	3.204	26.432
22	<i>Astragalus adustus</i> Bunge	<i>Fabaceae</i>	İsli geven	4.740	35.253
23	<i>Astragalus aleppicus</i> Boiss.	<i>Fabaceae</i>	Halep geveni	2.034	Protection Targets
24	<i>Astragalus angustifolius</i> subsp. <i>angustifolius</i> Lam.	<i>Fabaceae</i>	Keçi geveni	2.381	125.484
25	<i>Astragalus glycyphylloides</i> DC.	<i>Fabaceae</i>	Tatlı geven	396	76.057
26	<i>Astragalus glycyphyllos</i> L.	<i>Fabaceae</i>	Dev geven	900	4.254
27	<i>Astragalus gummifer</i> Labill.	<i>Fabaceae</i>	Sakızlı geven	2.260	Protection Targets
28	<i>Bellis perennis</i> L.	<i>Asteraceae</i>	Koyungözü	234	20.689
29	<i>Berberis crataegina</i>		Karamuk	3.711	73.617
30	<i>Berberis vulgaris</i> L.	<i>Berberidaceae</i>	Kızılkaramuk	2.067	998.589
31	<i>Bilacunaria microcarpa</i> (M.Bieb.) Pimenov & V.N.Tikhom.	<i>Apiaceae</i>	Sarunotu	7.132	218.012
32	<i>Boletus edulis</i> Bull.	<i>Boletaceae</i>	Çörek mantarı	26.963	1.304.919
33	<i>Brachythecium velutinum</i> (Hedwig) Ignatov & Huttunen var. <i>velutinum</i>	<i>Brachytheciaceae</i>	Kadifeli (Yosun)	133	13.674
34	<i>Brachythecium albicans</i> (Hedwig) Schimper	<i>Brachytheciaceae</i>	Akösümlük	776	137.500
35	<i>Brachythecium rivulare</i> Schimp.	<i>Brachytheciaceae</i>	Islak ösümlük	423	116.678
36	<i>Bryonia aspera</i> Stev. ex Ledeb.	<i>Cucurbitaceae</i>	Şeytan şalgamı	5.246	477.945
37	<i>Buxus sempervirens</i> subsp. <i>sempervirens</i> L.	<i>Buxaceae</i>	Şimşir	5.045	1.246.019
38	<i>Calluna vulgaris</i> (L.) Hull.	<i>Ericaceae</i>	Süpürge çalısı	6.376	22.530.039
39	<i>Cantharellus cibarius</i> Fr.	<i>Cantharellaceae</i>	(Tavuk) Yumurta mantarı	835	6.538

40	<i>Capparis sicula</i> subsp. <i>sicula</i> Veill.	<i>Capparaceae</i>	Delikarpuzu	1.212	5.178
41	<i>Capparis spinosa</i> L.	<i>Capparaceae</i>	Kebere	6.259	804.806
42	<i>Carduus nutans</i> subsp. <i>nutans</i> L.	<i>Asteraceae</i>	Eşekdikeni	229	142
43	<i>Castanea sativa</i> Mill.	<i>Fagaceae</i>	Kestane	74.897	24.187.572
44	<i>Celtis australis</i> subsp. <i>australis</i> L.	<i>Cannabaceae</i>	Çitlenbik	4.892	1.002.373
45	<i>Cephalanthera damasonium</i> (Mill.) Druce	<i>Orchidaceae</i>	Ormankuşçuğu	421	Protection Targets
46	<i>Cerasus avium</i> (L.) Moench	<i>Rosaceae</i>	Kiraz	6.385	334.950
47	<i>Cerasus mahaleb</i> var. <i>mahaleb</i> (L.) Mill.	<i>Rosaceae</i>	Mahlep	329	2.633
48	<i>Cerasus vulgaris</i> Mill.	<i>Rosaceae</i>	Vişne	1.698	255.461
49	<i>Ceratonia siliqua</i> L.	<i>Fabaceae</i>	Keçiboynuzu-Harnup	13.203	2.927.531
50	<i>Cistus creticus</i> L.	<i>Cistaceae</i>	Laden	68.621	38.672.443
51	<i>Cistus laurifolius</i> L.	<i>Cistaceae</i>	Karağan	66.368	22.489.379
52	<i>Cistus parviflorus</i> L.	<i>Cistaceae</i>	Domuz karağanı	1.094	358.717
53	<i>Cistus salviifolius</i> L.	<i>Cistaceae</i>	Kartli	7.478	2.779.955
54	<i>Colchicum speciosum</i> Steven	<i>Colchicaceae</i>	Şepart	3.544	307.500
55	<i>Colchicum triphyllum</i> Kunze	<i>Colchicaceae</i>	Öksüzali	2.443	233.661
56	<i>Cornus mas</i> L.	<i>Cornaceae</i>	Kızılcık	20.138	3.449.111
57	<i>Corylus avellana</i> var. <i>avellana</i> L.	<i>Betulaceae</i>	Fındık	15.342	18.994.973
58	<i>Cotinus coggygria</i> Scop.	<i>Anacardiaceae</i>	Boyacı sumacı	11.771	784.304
59	<i>Crataegus azarolus</i> var. <i>azarolus</i> L.	<i>Rosaceae</i>	Müzmüldek	1.830	34.804
60	<i>Crataegus monogyna</i> var. <i>monogyna</i> Jacq.	<i>Rosaceae</i>	Yemişen	3.509	167.734

61	<i>Crataegus orientalis</i> Pall. ex M.Bieb.	<i>Rosaceae</i>	Alıç	54.441	12.514.619
62	<i>Crocus vallicola</i> Herb.	<i>Iridaceae</i>	Hozmancuk	699	Protection Targets
63	<i>Cyclamen cilicium</i> Boiss. & Heldr.	<i>Primulaceae</i>	Şeytankabalağı	10.701	1.385.738
64	<i>Cyclamen coum</i> subsp. <i>coum</i> Mill.	<i>Primulaceae</i>	Yersomunu	4.555	113.287
65	<i>Cyclamen hederifolium</i> Aiton	<i>Primulaceae</i>	Kandilkökü	3.531	102.014
66	<i>Cyclotrichium origanifolium</i> (Labill.) Manden & Scheng.	<i>Lamiaceae</i>	Dağnanesi	366	78.410
67	<i>Cystopteris montana</i> (Lam.) Bernh. ex Desv.	<i>Cystopteridaceae</i>	Dağ eğreltisi	250	1.940
68	<i>Dactylorhiza nieschalkiorum</i> H.Baumann & Künkele	<i>Orchidaceae</i>	Kocadudaklı	127	Protection Targets
69	<i>Dactylorhiza romana</i> subsp. <i>romana</i> (Seb.) Soó	<i>Orchidaceae</i>	Elçik	3.235	Protection Targets
70	<i>Dactylorhiza umbrosa</i> var. <i>umbrosa</i> (Karelin & Kirilow) Nevski	<i>Orchidaceae</i>	Gövdeli salep	595	Protection Targets
71	<i>Dactylorhiza urvilleana</i> subsp. <i>urvilleana</i> (Steudel) Baumann & Künkele	<i>Orchidaceae</i>	Balkaymak	1.452	Protection Targets
72	<i>Dipsacus laciniatus</i> L.	<i>Caprifoliaceae</i>	Fesçitarağı	495	72.906
73	<i>Dorystaechas hastata</i> Boiss. & Heldr. ex Benth.	<i>Lamiaceae</i>	Devrenkekiği	5.258	99.645
74	<i>Drimia maritima</i> (L.) Stearn	<i>Asparagaceae</i>	Kum örümcekotu	267	1.644
75	<i>Dryopteris filix-mas</i> (L.) Schott	<i>Dryopteridaceae</i>	Erkek eğrelti	205	12.291
76	<i>Epilobium angustifolium</i> L.	<i>Onagraceae</i>	Yakıotu	869	148.728
77	<i>Epipactis pontica</i> Taubenheim	<i>Orchidaceae</i>	İncebindallı	189	Protection Targets
78	<i>Eranthis hyemalis</i> (L.) Salisb.	<i>Ranunculaceae</i>	Sarıkokulu	13.952	607.375
79	<i>Eremurus spectabilis</i> M.Bieb.	<i>Xanthorrhoeaceae</i>	Çiriş	9.274	2.919.009
80	<i>Erica arborea</i> L.	<i>Ericaceae</i>	Funda	15.200	9.222.286
81	<i>Erica manipuliflora</i> Salisb.	<i>Ericaceae</i>	Püren	14.523	7.424.319

82	<i>Eucalyptus camaldulensis</i> subsp. <i>camaldulensis</i> Dehnh.	<i>Myrtaceae</i>	Sıtma ağacı	194	5.373.810
83	<i>Euphorbia agraria</i> M.Bieb.	<i>Euphorbiaceae</i>	Sütlengeç	250	35.167
84	<i>Euphorbia valerianifolia</i> Lam.	<i>Euphorbiaceae</i>	Mahsikuştı	301	97.604
85	<i>Ferula szowitziana</i> DC.	<i>Apiaceae</i>	Çakşır	1.885	3.125.105
86	<i>Ficus carica</i> subsp. <i>carica</i> L.	<i>Moraceae</i>	İncir	219	6.896
87	<i>Foeniculum vulgare</i> Mill.	<i>Apiaceae</i>	Rezene	364	86.539
88	<i>Fragaria vesca</i> L.	<i>Rosaceae</i>	Dağ çileği	5.582	3.591.528
89	<i>Fragaria x ananassa</i> (Weston) Duchesne ex Rozier	<i>Rosaceae</i>	Çilek	492	1.151.998
90	<i>Galanthus elwesii</i> var. <i>elwesii</i> Hook.f.	<i>Amaryllidaceae</i>	Kardelen	16.644	122.295
91	<i>Galanthus woronowii</i> Losinsk.	<i>Amaryllidaceae</i>	Akçabardak	3.722	109.976
92	<i>Genista albida</i> Willd.	<i>Fabaceae</i>	Ak borcak	1.960	44.102
93	<i>Gundelia tournefortii</i> var. <i>armata</i> Freyn & Sint.	<i>Asteraceae</i>	Has kenger	3.512	20.027
94	<i>Gypsophila arrostii</i> Guss.	<i>Caryophyllaceae</i>	Çöven	638	170.962
95	<i>Hedera helix</i> L.	<i>Araliaceae</i>	Duvar sarmaşığı	4.519	406.076
96	<i>Hedera helix</i> f. <i>helix</i> L.	<i>Araliaceae</i>	Duvar sarmaşığı	227	81.886
97	<i>Helichrysum armenium</i> subsp. <i>armenium</i> DC.	<i>Asteraceae</i>	Altınotu	447	126.472
98	<i>Helichrysum plicatum</i> subsp. <i>plicatum</i> DC.	<i>Asteraceae</i>	Mantuvar	896	198.867
99	<i>Helleborus orientalis</i> Lam.	<i>Ranunculaceae</i>	Çöpleme	140	12.518
100	<i>Himantoglossum caprinum</i> (M.Bieb.) Spreng.	<i>Orchidaceae</i>	Kayışlı keşkeş	280	Protection Targets
101	<i>Homalothecium sericeum</i> (Hedw.) Schimp.	<i>Brchytheciaceae</i>	Halıcık (Yosun)	13.190	2.965.596
102	<i>Hydnum repandum</i> L.	<i>Hydnaceae</i>	Sığirdili mantarı	465	10.467
103	<i>Hypericum perforatum</i> L.	<i>Hypericaceae</i>	Binbirdelik otu	158	18.208
104	<i>Hypericum perforatum</i> subsp. <i>perforatum</i> L.	<i>Hypericaceae</i>	Kantaron	8.023	6.373.162

105	<i>Hypericum scabrum</i> L.	Hypericaceae	Karahasançayı	238	1.604
106	<i>Hypnum cupressiforme</i> Hedw.	Hypnaceae	Oraklı (Yosun)	2.319	838.366
107	<i>Ilex aquifolium</i> L.	Aquifoliaceae	Çobanpüskülü	120	30.929
108	<i>Inula oculus-christi</i> L.	Asteraceae	Yolotu	391	54.597
109	<i>Juglans regia</i> L.	Jugladaceae	Ceviz	1.451	163.485
110	<i>Juniperus communis</i> var. <i>communis</i> L.	Cupressaceae	Ardıç	8.172	490.260
111	<i>Juniperus drupacea</i> Labill.	Cupressaceae	Andız	10.919	500.559
112	<i>Juniperus excelsa</i> subsp. <i>excelsa</i> M.Bieb.	Cupressaceae	Boz ardıç	38.007	2.214.446
113	<i>Juniperus oxycedrus</i> subsp. <i>oxycedrus</i> L.	Cupressaceae	Katran ardıcı	5.323	73.674
114	<i>Lactarius blennius</i> (Fr.) Fr.	Russulaceae	Dilburan-Acı mantarı	324	123.909
115	<i>Lactarius deliciosus</i> (L.) Gray	Russulaceae	Çintar-Kanlıca mantarı	10.551	698.350
116	<i>Lactarius piperatus</i> (L.: Fr.) Pers.	Russulaceae	Biberli Mantar	1.418	9.496
117	<i>Lactarius salmonicolor</i> R. Heim & Leclair	Russulaceae	Kanlıca mantarı	4.270	120.390
118	<i>Lactarius vellereus</i> (Pers.) Fr.	Russulaceae	Sütlü Mantar	289	3.249
119	<i>Lactarius volemus</i> Fr.	Russulaceae	Tirmit	510	2.230
120	<i>Laurocerasus officinalis</i> M.Roem.	Rosaceae	Karayemiş	7.162	619.383
121	<i>Laurus nobilis</i> L.	Lauraceae	Defne	180.400	230.797.852
122	<i>Lavandula angustifolia</i> subsp. <i>angustifolia</i> Mill.	Lamiaceae	Lavender	317	866.841
123	<i>Lavandula x intermedia</i> Emeric ex Loisel	Lamiaceae	Lavandin	162	9.426
124	<i>Lavandula stoechas</i> subsp. <i>stoechas</i> L.	Lamiaceae	Karabaş	3.308	423.871
125	<i>Leucojum aestivum</i> subsp. <i>aestivum</i> L.	Amaryllidaceae	Gölsoğanı	2.249	1.113.351
126	<i>Liquidambar orientalis</i> Mill.	Altingiaceae	Günlük ağacı	132	5.944
127	<i>Macrolepiota procera</i> (Scop.) Singer var. <i>procera</i>	Agaricaceae	Şemsiye mantarı	235	744

128	<i>Malus pumila</i> Mill.	<i>Rosaceae</i>	Elma	10.087	12.156.235
129	<i>Malus sylvestris</i> subsp. <i>orientalis</i> (Uglitzk.) Browicz	<i>Rosaceae</i>	Ekşi elma	22.147	6.828.397
130	<i>Matricaria chamomilla</i> var. <i>chamomilla</i> L.	<i>Asteraceae</i>	Alman papatyası	380	15.539
131	<i>Mentha pulegium</i>	<i>Lamiaceae</i>	Yarpuz	276	13.544
132	<i>Mespilus germanica</i> L.	<i>Rosaceae</i>	Muşmula	268	5.759
133	<i>Morchella conica</i> Pers.	<i>Morchellaceae</i>	Kuzu göbeği mantarı	4.048	94.149
134	<i>Morchella esculenta</i> (L.) Pers.	<i>Morchellaceae</i>	Kuzu göbeği mantarı	21.461	148.983
135	<i>Muscari caucasicum</i> (Griseb.) Baker	<i>Asparagaceae</i>	Arap sümbülü	462	4.562
136	<i>Myrtus communis</i> subsp. <i>communis</i> L.	<i>Myrtaceae</i>	Mersin	40.396	16.400.959
137	<i>Olea europaea</i> subsp. <i>europaea</i> L.	<i>Oleaceae</i>	Zeytin	6.959	1.089.510
138	<i>Orchis anatolica</i> Boiss.	<i>Orchidaceae</i>	Dildamak	16.934	Protection Targets
139	<i>Orchis laxiflora</i> subsp. <i>laxiflora</i> Lam.	<i>Orchidaceae</i>	Salep sümbülü	181	Protection Targets
140	<i>Orchis mascula</i> subsp. <i>longicalcarata</i> Akhalk., H.Baumann, R.Lorenz, Mosul. & Ruedi Peter	<i>Orchidaceae</i>	Er salebi	6.065	Protection Targets
141	<i>Orchis provincialis</i> Balb. ex Lam. & DC.	<i>Orchidaceae</i>	Katrancık	12.051	Protection Targets
142	<i>Origanum majorana</i>	<i>Lamiaceae</i>	Mercanköşk	20.961	1.167.872
143	<i>Origanum minutiflorum</i>	<i>Lamiaceae</i>	Toka kekik	46.591	3.673.029
144	<i>Origanum onites</i>	<i>Lamiaceae</i>	Bilyalı kekik	86.358	25.247.230
145	<i>Origanum sipyleum</i>	<i>Lamiaceae</i>	Mor mercan	1.290	95.054
146	<i>Origanum syriacum</i>	<i>Lamiaceae</i>	Hababa	469	26.365
147	<i>Ornithogalum sigmoideum</i> Freyn & Sint.	<i>Asparagaceae</i>	Sakarca	2.405	121.125
148	<i>Padus avium</i> subsp. <i>avium</i> Mill.	<i>Rosaceae</i>	Kuş kirazı	1.185	828.407

149	<i>Paeonia mascula</i> subsp. <i>mascula</i> (L.) Mill.	<i>Paeoniaceae</i>	Ayigülü	172	Protection Targets
150	<i>Paliurus spina-christi</i> P. Mill.	<i>Rhamnaceae</i>	Karaçalı	19.853	1.141.051
151	<i>Parmotrema perlatum</i> (Huds.) M. Chois.	<i>Parmeliaceae</i>	Delikli aya	744	37.204
152	<i>Peganum harmala</i> L.	<i>Nitrariaceae</i>	Üzerlik	2.857	48.818
153	<i>Phlomis armeniaca</i> Willd.	<i>Lamiaceae</i>	Boz şavlak	4.321	314.708
154	<i>Pinus pinea</i> L.	<i>Pinaceae</i>	Fıstık çamı	61.310	18.914.753
155	<i>Pistacia khinjuk</i> Stocks	<i>Anacardiaceae</i>	Bittım	1.113	10.015
156	<i>Pistacia lentiscus</i> L.	<i>Anacardiaceae</i>	Sakız ağacı	1.291	3.179.096
157	<i>Pistacia terebinthus</i> L.	<i>Anacardiaceae</i>	Menengiç	31.797	4.570.743
158	<i>Pistacia vera</i> L.	<i>Anacardiaceae</i>	Antep fıstığı	2.338	96.074
159	<i>Inonotus dryadeus</i>	<i>Hymenochaeta ceae</i>	Meşe Kök Mantarı	272	6.701
160	<i>Primula acaulis</i> subsp. <i>acaulis</i> (L.) L.	<i>Primulaceae</i>	Çuhaçiçeği	8.051	370.859
161	<i>Primula veris</i> subsp. <i>macrocalyx</i> (Bunge) Lüdi, Hegi	<i>Primulaceae</i>	Ayrançiçeği	3.811	99.142
162	<i>Primula vulgaris</i> subsp. <i>vulgaris</i> Huds.	<i>Primulaceae</i>	Mart Çiçeği	9.759	779.917
163	<i>Prunus cocomilia</i>	<i>Rosaceae</i>	Dağ eriği	2.234	112.593
164	<i>Prunus divaricata</i>	<i>Rosaceae</i>	Yunus eriği	3.317	95.552
165	<i>Prunus spinosa</i>	<i>Rosaceae</i>	Çakal eriği	1.926	720.743
166	<i>Pseudevernia furfuracea</i> (L.) Zopf.	<i>Parmeliaceae</i>	İtir likeni	16.950	1.231.255
167	<i>Pteridium aquilinum</i> (L.) Kuhn.	<i>Dennstaedtiaceae</i>	Eğrelti	8.778	562.339
168	<i>Pyracantha coccinea</i> M.Roem.	<i>Rosaceae</i>	Ateşdikeni	397	59.484
169	<i>Pyrus communis</i> subsp. <i>communis</i> L.	<i>Rosaceae</i>	Bey armudu	870	435.562
170	<i>Pyrus elaeagnifolia</i> subsp. <i>elaegnifolia</i> Pall.	<i>Rosaceae</i>	Ahlat	28.117	12.422.713

171	<i>Pyrus syriaca</i> var. <i>syriaca</i> Boiss.	<i>Rosaceae</i>	Çakal armudu	804	11.567
172	<i>Quercus infectoria</i> subsp. <i>infectoria</i> Oliv.	<i>Fagaceae</i>	Mazı meşesi	1.809	61.362
173	<i>Quercus infectoria</i> subsp. <i>veneris</i> (A.Kern.) Meikle	<i>Fagaceae</i>	Zindiye	2.742	508.151
174	<i>Quercus ithaburensis</i> subsp. <i>ithaburensis</i> Decne.	<i>Fagaceae</i>	Palamut meşesi	18.742	4.513.223
175	<i>Ramaria abietina</i> (Pers.:Fr.) Quélet	<i>Gomphaceae</i>	Yeşil lekeli mercan	292	5.465
176	<i>Ranunculus brutius</i> Ten.	<i>Ranunculaceae</i>	Buldanotu	356	65.115
177	<i>Rheum ribes</i> L.	<i>Polygonaceae</i>	Işgın	5.829	1.676.227
178	<i>Rhododendron ponticum</i> L.	<i>Ericaceae</i>	Orman gülü	1.597	280.096
179	<i>Rhus coriaria</i> L.	<i>Anacardiaceae</i>	Sumak	14.119	1.685.065
180	<i>Rosa canina</i> L.	<i>Rosaceae</i>	Kuşburnu	97.195	7.719.518
181	<i>Rosa spinosissima</i> L.	<i>Rosaceae</i>	Kara kuşburnu	1.596	22.107
182	<i>Rosmarinus officinalis</i> L.	<i>Lamiaceae</i>	Biberiye	6.107	7.910.986
183	<i>Rubus caucasicus</i> Focke	<i>Rosaceae</i>	Zarif böğürtlen	197	16.039
184	<i>Rubus hirtus</i> Waldst. & Kit.	<i>Rosaceae</i>	Tüntürük	6.033	334.733
185	<i>Rubus idaeus</i> L.	<i>Rosaceae</i>	Ahududu	7.392	1.593.621
186	<i>Rubus sanctus</i> Schreb.	<i>Rosaceae</i>	Böğürtlen	14.275	3.904.367
187	<i>Ruscus aculeatus</i> L.	<i>Asparagaceae</i>	Tavşanmemesi	17.458	2.229.161
188	<i>Ruscus hypoglossum</i> L.	<i>Asparagaceae</i>	Atdili	5.831	306.989
189	<i>Russula chloroides</i> (Krombh.) Bres.	<i>Russulaceae</i>	Kayışkiran	250	3.760
190	<i>Russula delica</i> Fr.	<i>Russulaceae</i>	Koçak Mantarı	1.780	469.414
191	<i>Salsola boissieri</i> Botsch.	<i>Amaranthaceae</i>	Boz soda	171	4.094
192	<i>Salvia aramiensis</i> Rech.f.	<i>Lamiaceae</i>	Pohur	2.546	105.794
193	<i>Salvia fruticosa</i> Mill.	<i>Lamiaceae</i>	Adaçayı	11.874	3.739.766
194	<i>Salvia pseudeuphratica</i> Rech.f.	<i>Lamiaceae</i>	Keban adaçayı	559	156.132

195	<i>Salvia sclarea</i> L.	<i>Lamiaceae</i>	Paskulak-Misk ada çayı	375	26.428
196	<i>Salvia tomentosa</i> Mill.	<i>Lamiaceae</i>	Şalba	62.627	3.762.234
197	<i>Sambucus ebulus</i> L.	<i>Adoxaceae</i>	Mürver otu	2.241	116.359
198	<i>Sambucus nigra</i> L.	<i>Adoxaceae</i>	Ağaç mürver	2.178	700.054
199	<i>Sarcodon imbricatus</i> (L.) P. Karst	<i>Bankeraceae</i>	Kirpi mantarı	519	4.759
200	<i>Sarcopoterium spinosum</i> (L.) Spach	<i>Rosaceae</i>	Abdestbozan	268	104.023
201	<i>Satureja cuneifolia</i> Ten.	<i>Lamiaceae</i>	Kayakekiği	7.863	487.113
202	<i>Satureja hortensis</i> L.	<i>Lamiaceae</i>	Çibriska	3.528	360.615
203	<i>Satureja thymbra</i> L.	<i>Lamiaceae</i>	Halilibrahim zahteri	1.918	18.319
204	<i>Scilla bifolia</i> L.	<i>Asparagaceae</i>	Orman sümbülü	501	13.534
205	<i>Scorpiurium circinatum</i> (Brid.) M. Fleisch. & Loeske	<i>Brachytheciaceae</i>	Kıvrık Akrepli (Yosun)	13.195	931.218
206	<i>Sideritis akmanii</i> Aytaç, Ekici & Dönmez	<i>Lamiaceae</i>	Kuyrukçayı	123	93
207	<i>Sideritis congesta</i> P.H.Davis & Hub.-Mor.	<i>Lamiaceae</i>	Başakçayı	5.345	152.910
208	<i>Sideritis libanotica</i> subsp. <i>libanotica</i> Labill.	<i>Lamiaceae</i>	Gevreğen	7.856	274.290
209	<i>Sideritis sipylea</i> Boiss.	<i>Lamiaceae</i>	Sipil çayı	906	6.640
210	<i>Sideritis stricta</i> Boiss. & Heldr.	<i>Lamiaceae</i>	Tilkikuyruğu çayı	340	2.383
211	<i>Sideritis syriaca</i> subsp. <i>nusairiensis</i> (Post) Hub.-Mor.	<i>Lamiaceae</i>	Amanos çayı	11.598	1.260.062
212	<i>Silybum marianum</i> subsp. <i>anatolicum</i> Meriçli	<i>Asteraceae</i>	Ana devedikeni	1.873	52.666
213	<i>Sinapis arvensis</i> L.	<i>Brassicaceae</i>	Hardal	501	81.125
214	<i>Smilax aspera</i> L.	<i>Smilacaceae</i>	Gıcirdikeni	1.653	183.636
215	<i>Sorbus aucuparia</i> L.	<i>Rosaceae</i>	Kuş üvezi	2.211	295.500
216	<i>Sorbus caucasica</i> var. <i>caucasica</i> Zinserl.	<i>Rosaceae</i>	Dilburan	290	120.105
217	<i>Sorbus umbellata</i> Fritsch	<i>Rosaceae</i>	Geyik elması	485	8.139

218	<i>Sparassis crispa</i> Fr.	<i>Sparassidaceae</i>	Karnabahar mantarı	984	11.180
219	<i>Spartium junceum</i> L.	<i>Fabaceae</i>	Katırtırnağı	1.461	107.467
220	<i>Teucrium polium</i> subsp. <i>polium</i> L.	<i>Lamiaceae</i>	Acıyavşan	303	2.904
221	<i>Thymbra capitata</i> (L.) Cav.	<i>Lamiaceae</i>	Acıkekik	4.973	516.166
222	<i>Thymbra spicata</i> subsp. <i>spicata</i> L.	<i>Lamiaceae</i>	Zahter	14.275	8.807.017
223	<i>Thymus cariensis</i> Hub.-Mor. & J alas	<i>Lamiaceae</i>	Çam kekiği	1.342	28.519
224	<i>Thymus cilicicus</i> Boiss. & Balansa	<i>Lamiaceae</i>	Kılçık kekiği	607	36.067
225	<i>Thymus fallax</i> Fisch. & C.A.Mey.	<i>Lamiaceae</i>	Catri	1.032	35.038
226	<i>Thymus kotschyanus</i> subsp. <i>kotschyanus</i> Boiss. & Hohen.	<i>Lamiaceae</i>	Kekik	18.935	4.608.707
227	<i>Thymus leucotrichus</i> subsp. <i>leucotrichus</i> Hal.	<i>Lamiaceae</i>	Dağ kekiği	11.712	542.200
228	<i>Thymus longicaulis</i> subsp. <i>chaubardii</i> (Rchb.f.) J alas	<i>Lamiaceae</i>	Dağ kekiği	33.172	2.052.311
229	<i>Thymus praecox</i> subsp. <i>caucasicus</i> (Willd. ex Ronniger) J alas	<i>Lamiaceae</i>	Kaf kekiği	1.704	108.548
230	<i>Thymus pubescens</i> Boiss. & Kotschy ex Celak.	<i>Lamiaceae</i>	Tüylü kekik	1.454	454.366
231	<i>Thymus sipyleus</i> Boiss.	<i>Lamiaceae</i>	Sipil kekiği	7.731	1.743.586
232	<i>Thymus zygioides</i> Griseb.	<i>Lamiaceae</i>	Bodur kekiği	542	19.033
233	<i>Tilia platyphyllos</i> subsp. <i>platyphyllos</i> Scop.	<i>Malvaceae</i>	Yaz ıhlamuru	1.745	13.414
234	<i>Tilia tomentosa</i> Moench	<i>Malvaceae</i>	Gümüşi ıhlamur	17.756	302.272
235	<i>Tricholoma anatolicum</i> H.H. Doğan & Intini.	<i>Tricholomataceae</i>	sedir mantarı	8.318	255.215
236	<i>Tuber aestivum</i> Vitt.	<i>Tuberaceae</i>	Yaz trüfü	11.432	10.639
237	<i>Tuber borchii</i> Vitt.	<i>Tuberaceae</i>	Trüf mantarı	17.696	5.730
238	<i>Tuber brumale</i> Vitt.	<i>Tuberaceae</i>	Kış trüfü	159	286
239	<i>Tuber uncinatum</i> Vitt.	<i>Tuberaceae</i>	Trüf mantarı	2.728	2.388
240	<i>Tulipa armena</i> var. <i>armena</i> Boiss.	<i>Liliaceae</i>	Hoşlale	277	Protection Targets

241	<i>Vaccinium arctostaphylos</i> L.	<i>Ericaceae</i>	Likarpa	20.399	1.436.379
242	<i>Vaccinium myrtillus</i> L.	<i>Ericaceae</i>	Ayiüzümü	6.845	262.866
243	<i>Vaccinium vitis-idaea</i> L.	<i>Ericaceae</i>	Çalıçilek	182	100.780
244	<i>Valeriana officinalis</i> L.	<i>Caprifoliaceae</i>	Kediotu	400	29.964
245	<i>Veratrum album</i> L.	<i>Melanthiaceae</i>	Dokuzteveli	5.966	457.130
246	<i>Verbascum caudatum</i> Freyn & Bornm.	<i>Scrophulariaceae</i>	Keller sığirkuyruğu	2.780	470.171
247	<i>Vicia cracca</i> subsp. <i>cracca</i> L.	<i>Fabaceae</i>	Kuş fiği	251	28.918
248	<i>Viscum album</i> L.	<i>Santalaceae</i>	Ökse otu	642	14.943
249	<i>Viscum album</i> subsp. <i>austriacum</i> (Wiesb.) Vollman	<i>Santalaceae</i>	Çam güveleği	4.250	350.639
250	<i>Vitex agnus-castus</i> L.	<i>Verbenaceae</i>	Hayıt	3.082	586.209
	Total			2.022.607	660.511.537

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