**

Non-Wood Forest Products Assessment Report of Turkey

2020

“Light in Weight Heavy in Value”

13 May 2021

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# FOREWORD

A Letter of Agreement (LoA) was signed between the 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 an 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 the 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 recommendations 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 the 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:
	1. INCREDIBLE- Innovation Networks of Cork, Resins, and Edibles in the Mediterranean Basin Project
	2. 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, one of which 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 the Turkish Standards Institution, Ministry of Trade, and others 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 the relevant section. In this scheme, NWFPs are divided into four groups according to their origin/sources, product type, usage, and sales.

# ACKNOWLEDGEMENTS

This report was prepared by the team of CFE consultants working in close collaboration with respective institutions and local stakeholders. The team is grateful for the contributions and support provided by the FAO under the LoA. The team also acknowledges the cooperation of the General Directorate of Forestry, particularly Department of Non-Wood Forest Products and Services (DNWFPS) staff that provided information and contributed with feedback to the report.

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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 Wooeded 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 Programe

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 asses 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.

# CHAPTER 1: INTRODUCTION

## 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 distrubution 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]](#footnote-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 fFuel wood production-2019 | Stere[[2]](#footnote-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]](#footnote-3) subject to Forest Act | Person | 7 013 712 |

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).

## 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.  |

## 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](https://en.wikipedia.org/wiki/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 report[[4]](#footnote-4)

Non-Wood Forest Products

**NWFPs by Origin-Sources**

* Trees and Shrubs
* Animal
* Soil and
* Water

**NWFPs by Products**

* Trunk, Branches and Shrubs
* Barks
* Gallnuts and Galls
* Shoots and Leaves
* Fruits
* Roots
* Containerized Seedlings /Wild seedlings from forests
* Flowers Bulbs
* Mushrooms
* Herbs
* Flowers
* Insects
* Honey
* Game meat,
* Other Herbal and Animal Products

**NWFPs by Use**

* Food & Beverage
* Food Additives
* Fodder and other foods for animal
* Fertilizer-plant food
* Pharmaceuticals – Health
* Fibers
* Cosmetic
* Industrial / Chemical / Textile
* Leasure Activities

**NWFPs by Sales**

* Direct Use from Source
* Direct Use at the Markets and Bazaars
* Export Products
* Packaged Products
* Processed Products

## 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. Containarized 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.

### 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 | *Cytisus scoparius* |
| Kamış | Giant Reed | *Arundo donax* |
| Diğer Gövde ve Dallar | Other Stems and Branches | + |
| Diğer Çalılar | Other Shrubs | + |
| Delice (Yabani Zeytin) | Delice (Wild Olive) | *Olea europaea* |
| İbreli ağaç fidanı | Coniferous tree sapling | + |
| Yapraklı ağaç fidanı | Broadleaf tree sapling | + |

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



### 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) | *Pinus nigra* |
| Fıstıkçamı (1-3 m boyunda) | Stone pine (1-3m/ 3-5 m/larger than 5 m) | *Pinus pinea* |
| Meşe türleri (1-3 m boyunda) | Oak species (1-3m/ 3-5 m/larger than 5 m) | *Oak* spp. |
| Ihlamur (1-3 m boyunda) | Linden (1-3m/ 3-5 m/larger than 5 m) | *Tilia* spp. |
| Diğer Ağaç Türleri (1-3 m boyunda) | Other Tree Species (1-3m/ 3-5m/ larger than 5 m) | + |
| Çalımsı türler | Bushy species | + |

Barks

Table 5. Barks

|  |  |  |
| --- | --- | --- |
| Turkish name of the product | English name of the product | Latin name (if available) |
| Buhur | Incense | Obtained from *Liquidambar orientalis* |
| Meşe Kabuğu | Oak bark | Obtained from *Quercus ssp.*  |
| İbreli Ağaç Kabuğu | Coniferous bark | + |
| Yaprakli Ağaç Kabuğu | Broadleaf tree bark | + |
| Ağaçcik Kabuklari | Shrub bark | + |

### 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 | *Obtained from Liquidambar orientalis* |
| Reçine | Resin | *Obtained mainly from Pinus* spp. |
| Sakız (Çam-Ladin) | Gum (pine - oriental spruce) | *Pinus* spp. – *Picea orientalis* |
| Kitre Sakızı | Astragalus gum | *Obtained from Astragalus gummifer*  |
| Damla Sakızı | Mastic gum  | *Pistacia lentiscus* |
| Kenger Sakızı | Kenger gum | *Gundelia tournefortii* |
| Diğer Yağlar | Other oils | + |

Picture 2. Oriental sweetgum oil production from Liquidambar orientalis



### Roots

Table 7. Roots

|  |  |  |
| --- | --- | --- |
| Turkish name of the product | English name of the product | Latin Name (if available) |
| Meyan Kökü | Licorice root | *Glycyrrhiza glabra* |
| Çıralı Çam Kökü | Kindling Pine root | *Pinus* spp. |
| Okaliptus Kökü | Eucalyptus root | *Eucalyptus camaldulensis* |
| Erika-Funda Kökü | Erica root | *Erica arborea* |
| Censiyan Kökü | Gentian root | *Gentiana lutea* |
| Adamotu Kökü | Autumn mandrake root | *Mandragora autumnalis* |
| Çöven Kökü | Soaproot - Radix Gypsophilae | *Gypsophila* spp. |
| Tavşanmemesi Kökü | Butcher's broom root | *Ruscus aculeatus* |
| Erkekeğrelti Otu Kökü | Male fern root | *Dryopteris filix-mas* |
| Kediotu Kökü | Valerian root | *Valeriana officinalis* |
| Güzelavrat Otu Kökü | Belladonna Root- | *Atropa belladonna* |
| Isırgan Otu Kökü | Stinging nettle root | *Urtica dioica* |
| Havaciva Kökü | Alkanet root | *Alkanna tinctoria* |
| Diğer Kökler | Other roots |  |

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

### Fruits

Table 9. Fruits

|  |  |  |
| --- | --- | --- |
| Turkish name of the product | English name of the product | Latin Name (if available) |
| Böğürtlen | Blackberry | *Rubus* spp. |
| Ağaççileği, kocayemiş | Strawberry tree | *Arbutus unedo* |
| Yer Çileği | Strawberry | *Fragaria s*p. |
| Ayı Üzümü | Blueberry | *Vaccinium* spp. |
| Alıç | Hawthorn | *Crataegus* spp. |
| Ahlat | Wild pear | *Pyrus elaeagnifolia* |
| Sumak  | Sumac | *Rhus coriaria* |
| Fındık | Hazelnut | *Corylus* spp. |
| Ceviz  | Walnut | *Juglans regia* |
| Defne  | Laurel | *Laurus nobilis* |
| Harnup | Carob bean | *Ceratonia siliqua* |
| Karayemiş | Cherry Laurel  | *Laurocerasus officinalis* |
| Kestane | Chestnut | *Castenea sativa* |
| Kızılcık | Cornelian cherry | *Cornus mas* |
| Zeytin | Olive | *Olea europaea* |
| Kiraz | Cherry | *Prunus* spp. |
| Kuşburnu | Rosehip | *Rosa* *canina* |
| Mersin | Myrtle | *Myrtus communis* |
| Menengiç | Turpentine tree | *Pistacia terebinthus* |
| Mahlep | Mahaleb cherry | *Cerasus mahalep* |
| Muşmula | Medlar | *Mespilus germanica* |
| Fıstıkçamı kozalağı | Stone pine cone | *Pinus pinea* |
| Mürver (Çekirdekli) | Elderberry (Pitted) | *Sambucus* sp. |
| Kebere, Kapari | Caper | *Capparis spinosa* |
| Yabani Elma | Wild-Sour Apple | *Malus sylvestris* |
| Yemişen | Common hawthorn | *Crataegus monogyna* |
| Üvez | Rowanberry | *Sorbus* spp. |
| Ardıç | Juniper | *Juniperus* spp. |
| Kartopu | Snowball | *Viburnum* sp. |
| Cehri | Buckthorn | *Rhamnus* spp. |
| Palamut  | Acorn  | *Quercus ithaburensis* |
| Çitlenbik | Nettle | *Celtis* sp. |
| Dut | Mulberry | *Morus* sp. |
| Badem | Almond | *Prunus amygdalus* |
| Sandal, Çilek Ağacı | Strawberry tree | *Arbutus andrachne* |
| Karamuk | Barberry, Corncockle | *Berberis* spp. |
| Armut | Pear | *Pyrus* spp. |
| Ahududu | Raspberry | *Rubus* spp. |
| Mavi Yemiş-Likapa | Blueberry  | *Vaccinium* spp. |
| Sakız | Gum | Pistacia lentiscus |
| Her Türlü Tohumlu Kozalak | All Kinds of Seed Cones |  |
| Diğer Meyveler ve Tohumlar | Other Fruits and seeds |  |

### Herbs

Table 10. Herbs

|  |  |  |
| --- | --- | --- |
| Turkish name of the product | English name of the product | Latin Name (if available) |
| Çakşır Otu | Chakshir, Giant Fennel | *Ferula* sp. |
| Eğrelti Otu | Fern | *Dryopteris filix-mas* |
| Geven | Astragalus | *Astragalus* spp. |
| Hardal | Mustard | *Brassica* spp. |
| Kekik | Thyme | *Origanum* spp., *Thymus* spp., *Satureja* spp., *Thymbra spp.* |
| Kimyon | Cumin | *Cuminum cyminum* |
| Kına Otu | Henna | *Lawsonia inermis* |
| Kendir Otu | Hemp | *Cannabis sativa* |
| Kuzu Kulağı | Sorrel | *Rumex* spp. |
| Nane | Spearmint | *Mentha* spp. |
| Pelin Otu | Wormwood  | *Artemisia* sp. |
| Oğul Otu | Lemon balm | *Melissa officinalis* |
| Ada çayı | Sage | *Salvia* spp. |
| Kedi Otu  | Valerian | *Valeriana officinalis* |
| Censiyan Kökü | Gentian Root | *Gentiana lutea* |
| Hatmi Çiçeği | Marshmallow | *Althaea officinalis* |
| Hayıt | Chaste  | *Vitex agnus castus* |
| Güzel Avrat Otu Kökü | Belladonna Root | *Atropa belladonna* |
| Mercan Köşk | Coral Pavilion | *Origanum vulgare* |
| Rezene | Fennel | *Foeniculum vulgare* |
| Sığır Kuyruğu | Common mullein | *Verbascum* spp. |
| Isırgan Otu | Stinging nettle | *Urtica dioica* |
| Zahter | Zahter | *Thymbra spicata* |
| Çiriş | Summer asphodel  | *Asphodelus aestivus* |
| Diğer Otlar | Other Herbs | + |
| Her Türlü Saz Bitkisi | All Kinds of Sedge Plants | + |

### Flowers

Table 11. Flowers

|  |  |  |
| --- | --- | --- |
| Turkish name of the product | English name of the product | Latin Name (if available) |
| Ahlat | Wild pear | Pyrus elaeagnifolia |
| Alıç | Hawthorn | *Crataegus* spp. |
| Ballıbaba | Dead nettle | *Lamium* spp. |
| Ihlamur (yapraklı) | Linden (leafy) | *Tilia* spp. |
| Ihlamur (tomurcuk) | Linden (bud) | *Tilia* spp. |
| Kantaron | Centaury | *Hypericum* spp. |
| Menekşe | Violet | *Viola* spp. |
| Safran | Saffron | *Crocus sativus* |
| Saçsalkım  | Eremopoa | *Eremopoa capillaris*  |
| Şerbetçi Otu | Hops  | *Humulus lupulus* |
| Zakkum | Oleander | *Nerium oleander* |
| Orman Gülü  | Rhododendron | Rhododendron spp. |
| Papatya | Daisy | *Matricaria chamomilla* |
| Lavanta | Lavender | *Lavandula hybrida* |
| Hayıt | Chaste | *Vitex agnus castus* |
| Mürver  | Elderberry | *Sambucus* spp. |
| Sarısolmaz çiçek (Kantaron) | Centaury | *Hypericum* spp. |
| Sığır Kuyruğu | Common mullein  | Verbascum spp. |
| Kebere, Kapari | Caper  | *Capparis spinosa* |
| Diğer Çiçekler | Other Flowers |  |

### Flowers Bulbs

Table 12. Flower Bulbs

|  |  |  |
| --- | --- | --- |
| Turkish name of the product | English name of the product | Latin Name (if available) |
| Nergis | Daffodil | *Naricusus* spp. |
| Kardelen | Snowdrop | *Galanthus elwesii* |
| Kraltacı | Imperial Crown | *Fritillaria spp.*  |
| Sıklamen | Cyclamen | *Cyclamen* spp. |
| Yoğurt Çiçeği  | Windflower | *Anemone blanda* |
| Sarı kokulu kar çiçeği  | Yellow fragrant snow flower  | *Eranthis hyemalis* |
| Yılan Bıçağı  | Snake Knife  | *Arum italicum* |
| Göl Soğanı  | Lake Onion  | *Leocojum aestivum* |
| Ada Soğanı | Island Onion | *Urginea maritima* |
| Deve Tabanı | Camel Base  | *Geranium tuberosum* |
| Diğer Soğanlar | Other Onions |  |

### 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 *Quercus infectoria* |
| Her Çeşit Mazı ve Ur | All kinds of gall and tumor |  |

### Mushrooms

Table 14. Mushrooms

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

Picture 3. Morchella esculenta commonly known as common morel



### 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 |  |

## 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 | *Laurus nobilis* | 180 400 |
| 2 | Kuşburnu | Dog rose | *Rosa canina*  | 97 195 |
| 3 | Bilyalı kekik | Greek oregano | *Origanum onites* | 86 358 |
| 4 | Kestane | Chestnut | *Castanea sativa* | 74 897 |
| 5 | Laden | Pink rock-rose | *Cistus creticus* | 68 621 |
| 6 | Karağan/Defne yapraklı laden | Leaf cistus | *Cistus laurifolius* | 66 368 |
| 7 | Şalba/Adaçayı | Sage | *Salvia tomentosa* | 62 627 |
| 8 | Fıstık çamı | Stone pine | *Pinus pinea* | 61 310 |
| 9 | Alıç | Oriental hawthorn | *Crataegus orientalis* | 54 441 |
| 10 | Toka kekik/yayla kekiği | Turkish plateau oregano | *Origanum minutiflorum* | 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

## 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.

## 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 beneftis 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 | *Laurus nobilis* |  264 084 507  | 180 400 |
| 2 | Chestnut | *Castanea sativa* |  176 056 338  | 74 897 |
| 3 | Thyme | *Origanum onites* |  140 845 070  | 86 358 |
| 4 | Pine nut | *Pinus pinea* |  88 028 169  | 61 310 |
| 5 | Mushrooms | *+* |  35 211 268  | + |
| 6 | Salvia  | *Salvia fruticosa Mill.* |  21 126 761  | 11 874 |
| 7 | Carob bean | *Ceratonia siliqua* |  5 281 690  | 13 203 |
| 8 | Rosemary leaf (shoot) | *Salvia rosmarinus / Rosmarinus officinalis* |  4 401 408  | 6 107 |
| 9 | Tilia | *Tilia platyphyllos/* *tomentosa*  |  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 NWPFs 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 | *Laurus nobilis*  | 13 600 |  38 234 826  |
| 2 | *Castanea sativa* | 14 225 |  35 837 736  |
| 3 | *Origanum onites* | 16 830 |  57 247 281  |
| 4 | *Pinus pinea* | 516 |  26 946 250  |
| 5 | Mushrooms | 1 716 |  12 843 337  |
| 6 | *Salvia fruticosa* | 2 317 |  8 680 563  |
| 7 | *Ceratonia siliqua* | 953 |  1 131 485  |
| 8 | *Salvia rosmarinus*/ *Rosmarinus officinalis* | 592 |  1 716 307  |
| 9 | *Tilia platyphyllos subsp. platyphyllos* and *Tilia tomentosa Moench* | 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 Eagean 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 promosing 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.

## 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 NWFPsis 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 (Ministery 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 averageof 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 offresh-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.

# 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 *“communiques”* 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 stakeholrdes including prvite sector and NGOs and published at the Official Gazette. Or a “Presidential Decree" preparation may also be considered.

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1. Includes other wooded land with less than 10 % canopy cover, such as maquis, shrublands, degraded forestlands, etc. [↑](#footnote-ref-1)
2. Stere: Volume of stacked wood, actuall wood volume is equal to 0.7 m3. [↑](#footnote-ref-2)
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/adjoining 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). [↑](#footnote-ref-3)
4. Developed by İsmail Belen (Senior Agriculture and Forestry Expert) [↑](#footnote-ref-4)