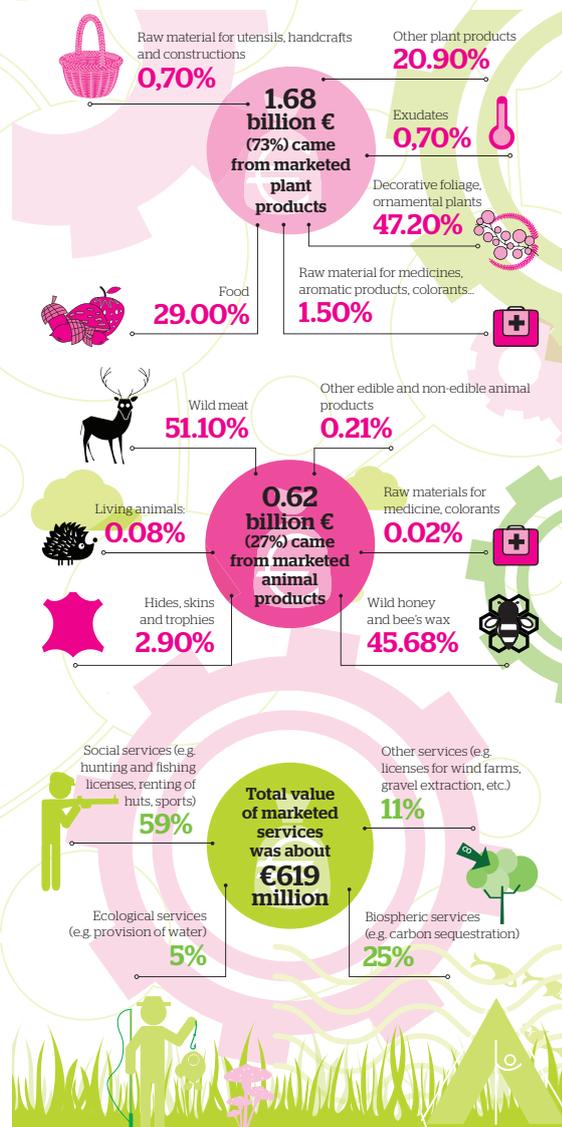
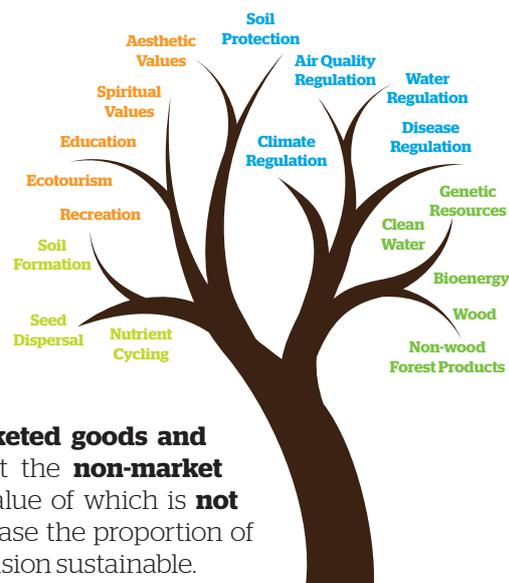


Incorporating the value of forest ecosystem services into a green economy

Forests are important ecosystems delivering multiple benefits for the society in the form of goods and services such as wood, food, clean water, energy, protection from floods and soil erosion, regulation of climate cycles, recreation and cultural values. These benefits are known as forest ecosystem services.

Forest ecosystem services play an important role in **human well-being**, make significant **direct** and **indirect contributions to national economies** and contribute to **environmental stability**.

Some of the forest ecosystem services (FES) are the basis of **marketed goods and services** and generate **financial revenues**, while others represent the **non-market side-effects** of forest management i.e. **positive externalities**, the value of which is **not reflected in market transaction**. However, there is an effort to increase the proportion of marketed services and thus improve their quality and make their provision sustainable.



What is the economic value of marketed forest goods and services in the FOREST EUROPE region?

• **The overall value of roundwood reached around 18.2 billion €**

Europe's forests are still one of the main sources of roundwood in the world. In the last reporting period, **407 million m³ of roundwood** were produced in Europe, while the overall value of roundwood removals amounts to **18,237 million €**. Roundwood production provides income for forest owners, managers and employees, serves as a source of material for the timber industry generating the added-value, and contributes to the economy, especially in rural areas.

• **The total value of marketed non-wood goods is almost 2.3 billion €**

Temperate and boreal forests are a traditional source of not only wood but also many other products. In many cases **non-wood goods** can represent an important **source of income** and **employment**, especially **for the local economies in marginal rural areas**. The value of forest products other than wood is being rediscovered on account of both their price dynamics and the increased demand associated with tourism and recreation.

• **The total value of other marketed forest ecosystem services is around 619 million €**

Even though data on marketed services are very limited, it is clear that they represent a non-negligible income for forest owners. As can be seen in the Figure, the **biospheric** and **social services** predominate in reported data.

Source of data: State of Europe's Forests 2015

One of preconditions for a successful incorporation of FES into the socio-economic system is to estimate the full value of FES across Europe, with possible subsequent economic valuation

Key facts about valuation of FES

- A significant part of **FES**, especially the provision of wood & non-wood products, is **traded on markets** and their **value is defined by the market prices**
- It is often incorrectly assumed that market price of a good or service measures its economic value. However, the **market price** only tells us the **minimum amount** that people who buy the good or service **are willing to pay** for it
- A major challenge, the delivery of FES has to cope with, is that **majority of the services** provided are **not traded in markets**, which makes it difficult to directly observe their values. These FES are **supplied** to either the society or specific groups of users **for free or at a price** which is **far below the production costs of equivalent goods and services**
- In valuation of FES of a non-market nature, **alternative (non-market price) approaches** are applied, however, there is **enormous share of subjective factors**, which cannot be easily eliminated

Toolbox with FES valuation approaches to the pan-European region was developed by FOREST EUROPE Expert Group. The toolbox includes the different approaches for the two types of valuation methods (**Preference based valuation methods and Cost based methods**), a short description of each of them, its suitability for the service to be valued and a list of pros and cons of its implementation.

...no method fit for all valuation

Means to facilitate implementation of valuation of FES in the pan-European region

- At a strategic and policy level, **National Forest Programmes** can use FES valuation to create comparable and strategic frameworks that can be used to develop mechanisms to put such values in to practice e.g. through market-based instruments
- In the past few years, **Market-Based Instruments** (MBIs) have been recognised as important policy mechanisms for achievement of the environment-protection goals. **Payments for ecosystem services** (PES) are identified as a key MBIs and represent opportunities for implementation in the forestry sector with the aim of support the provision of both marketed and non-marketed FES including biodiversity protection
- Also other MBIs has been seen across the globe such as **direct markets, tradable permits, reverse auctions, eco-labelling and green bonds**

According to **FOREST EUROPE strategy**, as specified in the **European Forests 2020 Decision** adopted at the 6th FOREST EUROPE Ministerial Conference in 2011 in Oslo, is to achieve by 2020 that *"the full value of forest ecosystem services across Europe will be estimated with a view to using common valuation approaches, and that values are increasingly reflected in relevant national policies and market-based instruments such as payments for ecosystem services"*

In accordance with the **European Forests 2020 Decision** and **the Madrid Ministerial Resolution 1**, FOREST EUROPE will continue in the forthcoming period (2016-2020) by analysing different approaches to valuation of and payments for FES existing in the pan-European region, thus seeking to develop a draft **common methodologies for the valuation of FES**. A **web-based portal** will be established to serve as a **platform for knowledge and information exchange** as well as sharing best practices in which PES present a useful tool for transition to a green economy.

Source of data: FOREST EUROPE, 2014: FOREST EUROPE Expert Group and Workshop on valuation of forest ecosystem services. Final Report