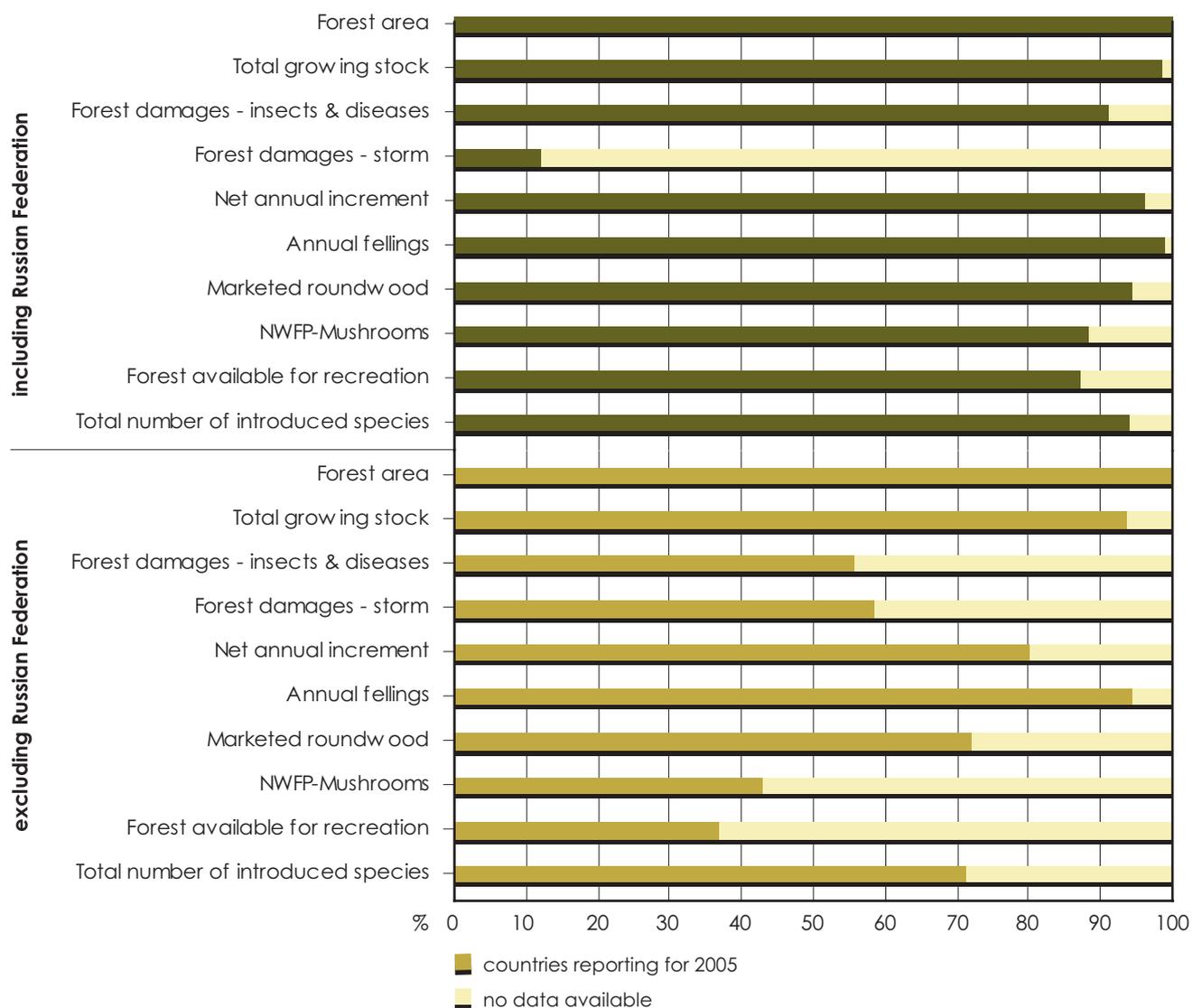


(NWFP) mushrooms and the recreational services. A higher degree of forest area covered was found for forest damages caused by storm.



Annex figure 2 – C. Completeness of selected reporting variables in percentage of total forest area (including and excluding The Russian Federation)

Data quality

In addition to data completeness, other factors contribute to data quality. These include consistency, compliance with terms and definitions, timeliness, comprehensibility and user satisfaction with the results and information derived from this data. On the national level, data are assessed on the basis of best practices by national statisticians.

The data reported were subject to checking and validation procedures that aimed at a high degree of data completeness and data consistency. All national data underwent plausibility tests by consistency checks⁴¹, plausibility checks⁴², or an analysis of the likely ranges⁴³ provided. Several variables were systematically crosschecked with Forest Resources Assessment (FRA) 2005 figures and other published sources. In cases of doubt the national correspondents were approached and

⁴¹ for instance the sum of the area of mixed, coniferous, and broadleaf forests equals total forest area.

⁴² e.g. biomass-carbon ratios, per ha values.

⁴³ The concept of likely ranges was introduced to specify the range within which the true value of the submitted data is located with high probability. The likely range includes fuzziness due to different error sources such as sampling errors and measurement errors or prediction errors from models.

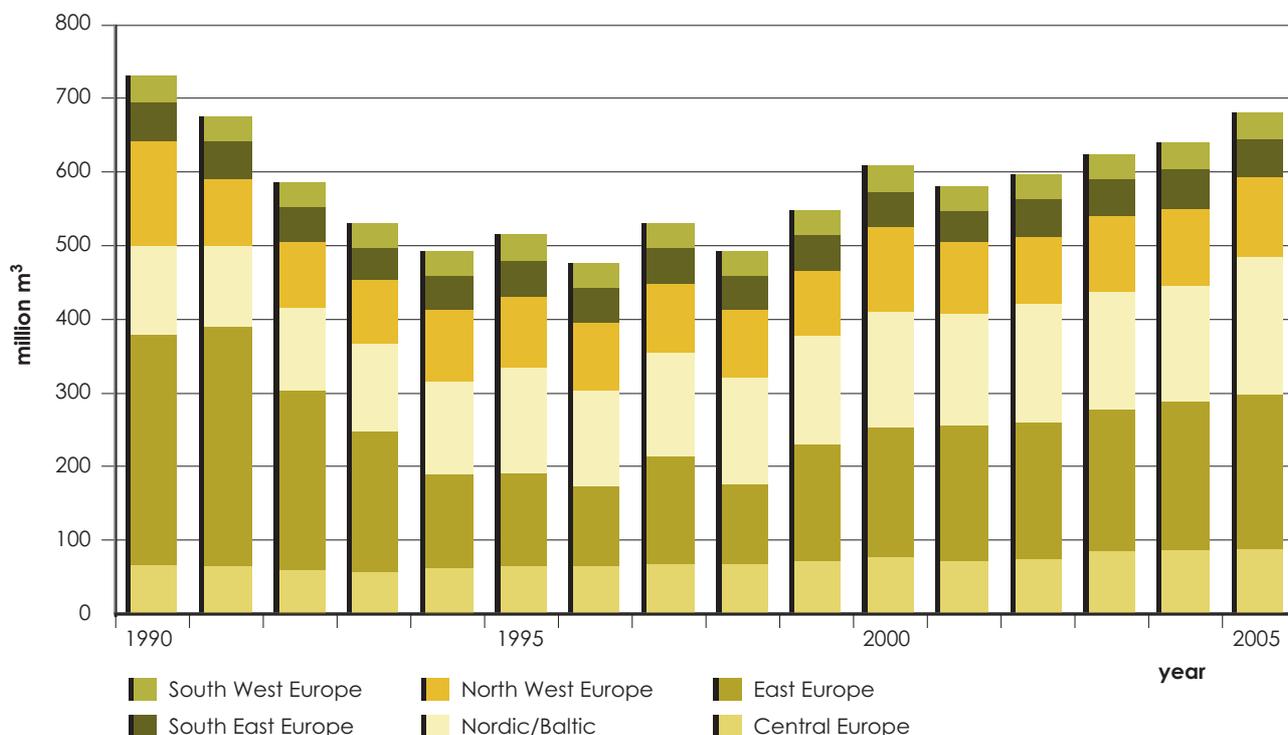


Figure 26. Annual trend of roundwood removals for MCPFE regions (FAOSTAT)

Indicator 3.3. Non-wood goods

Value and quantity of marketed non-wood goods from forest and other wooded land

Situation

Throughout the world, forests provide not only woody materials, but also a large variety of non-wood products. In many countries outside Europe, non-wood forest products (NWFPs) are one of the main sources of subsistence for rural populations. A substantial amount of non-wood goods is harvested for self-consumption and does not enter markets. This proportion of non-wood goods is not considered in this report, as indicator 3.4 covers only marketed NWFPs. It excludes non-wood goods harvested for self-consumption (subsistence) and other forms of uses without any market transaction.

In the available datasets, the main NWFPs are identified as follows: Christmas trees, mushrooms and truffles, fruits, game products, snails, ornamental plants, honey, cork, medicinal or colorant products, seeds of forest tree species, and litter racking for cattle breeding.

NWFPs therefore often have an important economic value with regard to forest economics and sustainable forest management; however, it must be considered that, depending on national laws, the income of, for example, berry-picking, might belong to the berry picker and not necessarily to the forest owner. Data on the quantity and value of marketed NWFPs were provided by 32 countries, despite the fact that comprehensive data are limited in most countries. At best, some countries collect data on the most important products or have data on commercial production or exports. Most of the remaining MCPFE countries are from East or South East Europe with strong rural traditions in which NWFPs are of important use. Some countries with very large forest area and/or with well-known traditions in NWFP consumption (e.g. mushrooms in France, cork in Portugal) only responded to a part of the enquiry. Since NWFPs are not considered economically important in many countries, and due to the difficulties and costs of collecting reliable data, many countries do not collect and report on them.

For many NWFPs, personal use accounts for the largest share of use; other uses include products such as Christmas trees and cork. At the same time, it can be seen from the values of NWFP that they can be an important source of income; the reported total amount of NWFP value almost reaches EUR 870 million for the MCPFE region, which is definitely an underestimation of the real value due to the poor response rates. Even where production data are available, estimates are seldom based on recurring inventories. This kind of survey cannot incorporate the value chain of the product, which is vastly more important than the absolute quantity of each product.

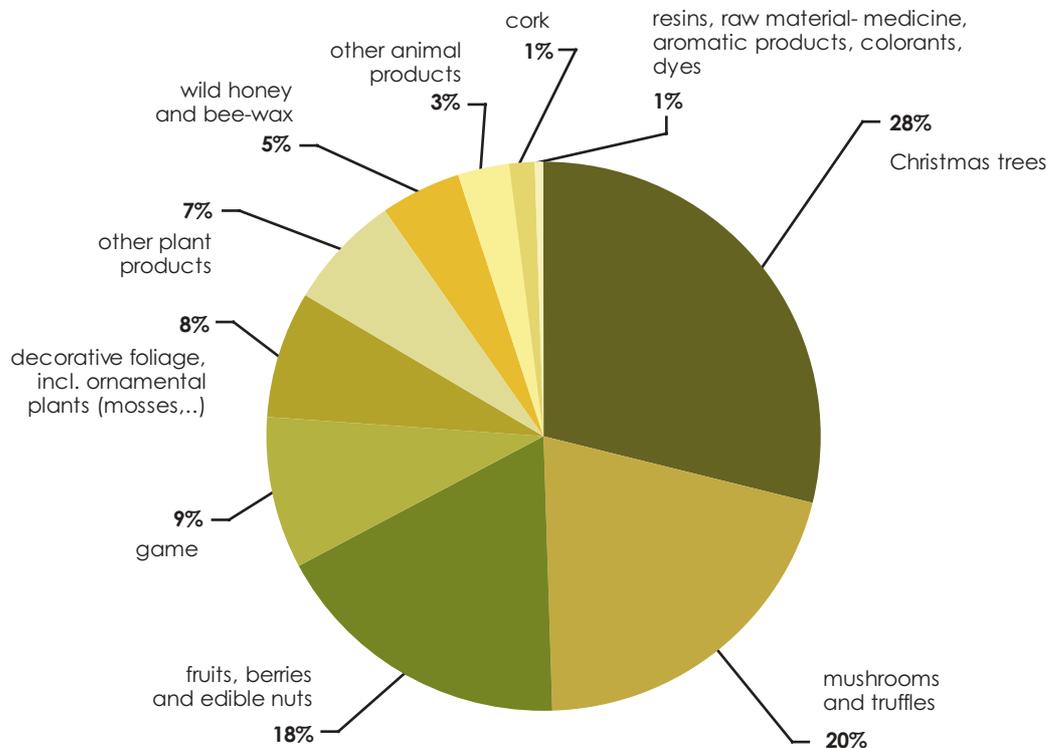


Figure 27. Marketed non-wood forest products (NWFPs) from forest and other wooded land in Europe. Share of total value in countries (based on available data)

A huge difference between some NWFPs in the value chain should be noted. For example, as soon as harvesting occurs, Christmas trees need no successive preparation before sales. On the contrary, after harvesting, cork needs further industrial processing to transfer it into a marketed product. These examples demonstrate the differences between the value generated from raw materials and the entire product chain.

Trends:1990–2000 and 2000–05

NWFPs can be measured in different ways, such as weight, volume and/or monetary value. In order to provide comparability between products and years, all figures reported on trends are based on monetary value (Figure 27). Christmas trees, mushrooms and fruits are the NWFPs with the highest value. Christmas trees account for almost 30 percent of the total reported value of non-wood forest products and are considered at the limit of actual forest production. Twenty-two countries, mainly in northern, eastern and central Europe, report data on Christmas tree production and its value. Christmas tree production mainly includes fir, spruce and pine trees from Christmas tree plantations as well as the harvest of individual trees from other forest areas. In many countries, Christmas tree plantations are not included as part of the forest area, but are classified as agricultural land. From the value point of view, the main producers of Christmas trees from forests are Denmark and the United Kingdom. It should be noted that many other countries have an important

production, from the volume point of view, but a low total value due to the poor unit value in the country. All countries report a stable or increasing total value; for all MCPFE reporting countries combined, reported data show a stable overall change rate of 4.8 percent for the entire 1990–2005 period.

Mushrooms and truffles were reported by 21 countries, which accounts for 20 percent of the total value. This category covers a wide variety of species. The most popular mushrooms are chanterelles, boletus, matsutake and morels; products from mushroom farms are excluded. Many countries responded that a large part of mushrooms harvest is carried out for personal consumption and available to the public at no charge. Moreover, harvests fluctuate annually because mushrooms are sensitive to climatic variations. Among responding countries, Bulgaria is the top mushroom producer in terms of quantity, but due to a higher value per tonne, Serbia and Italy are the top producers in terms of value. The positive role of mycorrhizal mushrooms in the functioning and productivity of forest ecosystems has been known for many decades. Continued research on the production of mycorrhizal mushrooms (*boletus*, *saffron milk cap*, etc.) and on the optimization of forest management should eventually strike a balance between timber production and edible mushroom production. The latter could provide extra income for forest owners in certain regions, provided that the problem of unauthorized picking can be solved locally. For mushrooms and to a greater extent, truffles, a large part of the market is totally unknown, in terms of both quantity and value.

Quantitative estimates for fruits and berries were reported by 19 countries. This category accounts for 18 percent of the total value. Similarly to the mushroom and truffle harvest, many countries reported that the main use of this resource is self-consumption. Species such as bilberry, lingoberry, cranberry, blueberries, ashberries, juniper berries and strawberries were specified. Even in this case, price per tonne of material varies according to country.

Few countries noted a decline in the traditional collection of mushrooms and berries. Some countries indicated stable or increasing demand, particularly close to urban areas. Collected data show a stable change rate for fruit harvest (5 percent) for the entire 1990–2005 period, while mushroom harvests increased from 0.2 percent for the 1990–2000 period to 4.6 percent for the 2000–05 period. Harvest of mushrooms and berries appears to be dominated by personal use. In some European countries, its collection is often identified for subsistence purposes.

It should be noted that these three categories alone, Christmas trees, mushrooms and fruits, represent 67 percent of the total value of marketed NWFPs, totalling EUR 583 million for the MCPFE reporting countries combined.

Game and other NWFPs are also an important source of income for some countries. Game comprises all hunted birds and mammals, such as partridge, pheasant, hare, deer, wild boar and chamois. The figures presented include game whose habitat is forest-related or – dependent; excluded are products produced on game farms.

Data on game harvest, meat, hides and their value were reported by 21 countries. In some countries, the commercial sale of game meat is an important economic activity. Among the reported value of non-wood products, game made up 9 percent of the total value for all responding MCPFE countries. Game meat accounts for 59 percent of the total game value (EUR 77 million). Hides represent 26 percent of the total game value. For the entire 1990–2005 period, both game meat and harvest show a decline, -2.7 percent and -6.4 percent, respectively, while hides show an increase of 2.1 percent for the same period. This negative trend can be explained by current commercial constraints and regulations that were introduced some years ago and increased the utilization by self-consumption.



Data on decorative foliage were provided by 14 countries. The data include information on decorative evergreen branches and boughs, willows, mosses, lichens, leaves, flowers and pine cones. Ornamental branches are usually taken during thinning operations and during intermediate and final cutting. As more wood is produced from special plantations, the supply is increasing with a stable change rate of 4.7 percent for the entire 1990–2005 period.

Data on cork production were reported by 18 countries. Cork oaks for professional cork production grow only in the Mediterranean region. Portugal – the main producer – unfortunately did not provide data, so the overall marketed value is seriously underestimated. The value of cork harvested is difficult to evaluate because average prices estimated on the basis of expert opinion integrate a broad range of qualities and situations. Cork oak stand management policies have long been focused on different aspects of fire prevention. In recent years, local stakeholders have expressed an interest in enhancing these policies by including a gradual return to production. Different experiments have enabled the different stakeholders to determine the conditions required for a return to production: the presence of a real production potential for cork of marketable quality; minimal facilities for access and fire protection; motivation of owners; and official control over the choice of lots and monitoring of harvests. The recent rise in the price of cork due to world shortages could provide a new and interesting opportunity for owners.

Honey production was mentioned by 15 countries, but is certainly largely underestimated. Some of them reported that the full potential of honey from forest and other wooded land is not being exploited. This production can fluctuate substantially as a result of weather conditions and can sometimes even be nil, especially for fir honey.

Data on medicinal plants were reported by seven countries. Collecting medicinal plants for traditional remedies remains an important use in some regions. Collection for personal use appears to be the dominant use of these plants, but it seems that commercial exploitation is growing in response to growing markets.

Indicator 3.4. Services

Value of marketed services on forest and other wooded land

General situation and trends

Marketed services have been gaining more and more importance in recent years. Marketed services reported are forest-dependent or mainly forest-related, but are not necessarily marketed by forest owners (e.g. eco-tourism). Forest-related means that forests constitute an essential element of the service marketed. Some categories of services can be distinguished.

Marketed recreational services include hunting or fishing licences, renting of huts and houses, as well as forest-based leisure, sports and outdoor activities and educational services that are not free of charge to consumers (e.g. the public and schools). Recreational services not exchanged via market transactions are not reported.

Marketed environmental services include services related to MCPFE Indicator 4.6 (*in situ* or *ex situ* gene conservation of genetic resources) as well as MCPFE Indicator 4.9 (protected forest area), e.g. nature protection on a voluntary contractual basis with compensation or other payments from private or public bodies. This includes NATURA 2000 sites. This class also includes carbon sequestration-related afforestation projects in the context of the Kyoto Protocol.