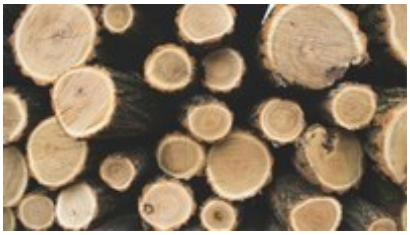
Natural capital

# Forest utilisation



| Indicator | EU indicator past trend | Selected objective to be met by 2020 | Indicative outlook of the EU meeting the selected objective by 2020 |
|---|---|---|---|
| Forest: growing stock, increment and fellings |  | Forest management is sustainable — 7th EAP (focus solely on forest utilisation) |  |

Since 1990, EU forests overall have been harvested at a lower rate than they have grown (at around 60 – 70 %), indicating sustainable forest management in relation to the forest utilisation rate. Despite expected increased harvesting of forests, the overall forest utilisation is expected to remain sustainable up to 2020

The Seventh Environment Action Programme (7th EAP) includes an objective that forests be managed sustainably. One aspect of sustainability is the sustainable use of forest resources. The utilisation rate of forests describes how much of the forest has been harvested in relation to its increase in growing stock. More explicitly, this indicator expresses the ratio between the felling of trees and the annual increment (in terms of forest volume on forest land available for wood supply). This ratio is commonly used as a proxy for the sustainable production and use of forest resources. Forest utilisation rates below 100 % indicate that the amount of timber taken out of the forest is in balance with what is left within the forest. Since 1990, the utilisation rate has remained around 60 – 70 % for the EU. It is likely that the utilisation rate will increase in the coming years because of increased harvesting of forests to meet increased demands for wood and because of the older age-class structure of forests in Europe. Nevertheless, it is not expected that the average utilisation rate of forests will increase above 100 %.

For further information on the scoreboard methodology please see Box I.1 in the EEA Environmental indicator report 2016

# Setting the Scene

The 7th EAP sets out to ensure that 'forest management is sustainable' by 2020 (EU, 2013). Sustainable forest management means 'using forests and forest land in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems' (EC, 2013). Forests are essential natural resources hosting a major part of the biodiversity in Europe. Forests also sequester and store carbon, filter water and provide recreational opportunities. This briefing focuses on one aspect of sustainable forest management, namely forest resources, in terms of how the forest utilisation rate affects the forest growing stock. This is used as a measure of the sustainability of the production and use of forest resources and thus the pressure from society and human demand for wood. The utilisation rate does not reflect the structures and processes necessary to maintain biodiversity and the various forest ecosystem services.

# Policy targets and progress

The environmental acquis does not include a specific target addressing sustainable forest management and the EU does not have a common forest policy. Forest sustainability and environmental issues are, nevertheless, embedded in almost all the nature and environmental policies of the EU. The EU Forest Strategy (EC, 2013) aims to coordinate these forest-related policies and to identify the key principles that are needed to ensure the sustainability and multifunctionality of forests in Europe. The strategy will be reviewed in 2018 in order to assess progress in its implementation.

Figure 1 shows that the forest utilisation rate (the ratio between the felling of trees and their annual growth) for the EU has remained relatively constant during the period examined (1990–2010). On average, the indicator stayed well below 100 %, varying between 60 % and 68 % (Forest Europe, 2015; EEA, 2016).

## Figure 1. Forest utilisation rate, EU


**NOTE:** The indicator covers only the following 22 countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom

**Data sources:** Forest Resources Assessment. Forests in the ECE region: Trends and challenges in achieving the global objectives on forests, United Nations, Geneva

The forest utilisation rate reflects the development of felling as well as the development of annual increment. Both components of the indicator have increased over the period examined (Forest Europe, 2015; EEA, 2016). The demand for wood has been increasing. The forest area in the EU has increased by 13 million ha since 1990 (8 %). The growing stock has also expanded by 7.4 million $m^3$ (38 %) over the period examined. This increase in growing stock is not only linked to the increase in forest area but also to a number of other reasons across the EU, in particular increased growth rates, low levels of harvesting and increased focus on multifunctional use of forests (ecosystem services from forests).

The expected trend in the EU is an overall increased use of renewable materials and energy as well as the use of forests to provide other ecosystem services. This may mean use of more wood extracted from forests in the EU. Views on the use of wood as renewable biomass are under revision, as the carbon neutrality as well as the resource efficiency of such a use of wood have been questioned. The forest area is expected to remain stable or slightly increase. The growing stock is also expected to stay relatively stable overall, but with regional differences. The expected trend by 2020 may be a slight short- to medium-term increase in the forest utilisation

rate indicator to meet increased demands and due to the maturing age structure of forests in Europe. Overall, despite expected increased harvesting of forests, overall forest utilisation is expected to remain less than 100 %, so it is considered sustainable.

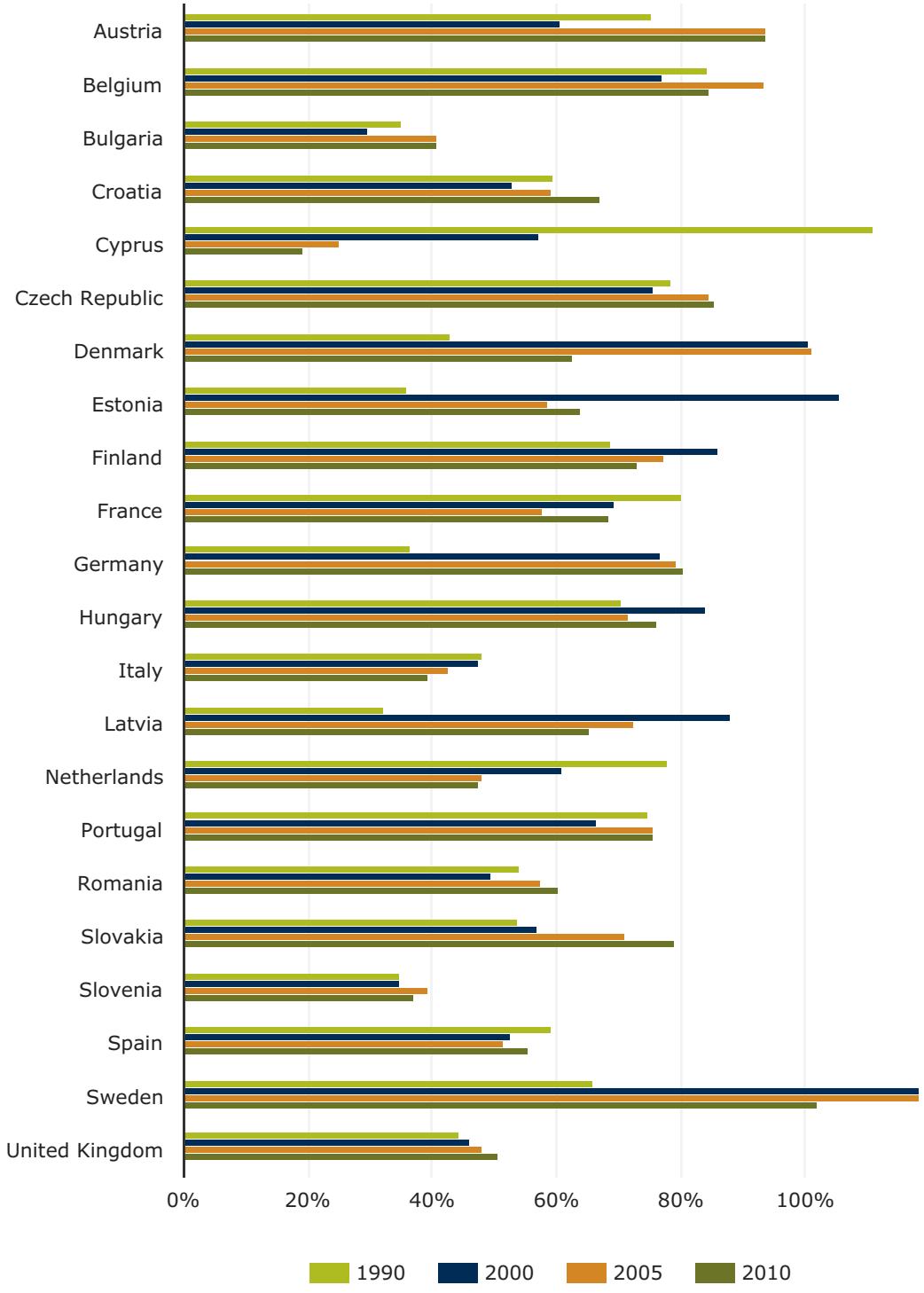
# Country level information

Twenty-two EU countries reported on their forest utilisation rates in the 1990–2010 period (Forest Europe, 2015). The information underpinning this indicator has not been updated since 2010. In most countries that reported their forest utilisation rate, it remained below 100 % for the 1990–2010 period (Figure 2).

Forest utilisation rates vary widely across the countries and over time, from 25 % to more than 100 %. Some countries have experienced severe storms in recent decades, which caused large natural losses as well as reductions in increment. This partly explains some of the high utilisation rates of some countries.

It should be stressed that medium- or short-term exceedance of the forest utilisation rate does not necessarily mean that the use of forest resources is unsustainable, as it may reflect harvesting of mature stands or severe storms, for example. From a sustainable forest management perspective, it is the long-term utilisation rate of forests that should stay below 100 %.

## Figure 2. Forest utilisation rates




**Note:**
Only the 22 EU countries with complete time series for the 1990-2010 period are included.

**Data sources:** Forest Resources Assessment. UNECE - FAO Forest resources assessment

# Outlook beyond 2020

The outlook for the forest utilisation rate indicator will depend on the demand for biomass as a renewable energy source (UNECE and FAO, 2011). Biomass demand is expected to increase beyond 2020 as part of the EU's efforts to transition to a low-carbon economy by 2050 (EC, 2011) and in line with the 7th EAP's 2050 low-carbon economy vision. An increased demand for biomass could increase the demand for wood and with this the utilisation rate unless the annual increment also increases (Berndes et al., 2016).

However, some stakeholders consider that the use of wood directly from the forest for renewable energy may not be resource efficient (Berndes et al., 2016). Forest industries are concerned about whether or not the demand for other forest products and resources can be met. Nevertheless, the majority of wood biomass comes from residue feedstocks in a cascading use of wood. The use of wood is likely to be even more resource efficient if considered as a component of a circular economy. Such resource efficiency might also have an impact on the amount of harvested wood needed to meet society's needs for timber and fuel (Berndes et al., 2016).

Climate change is also a factor that will affect the composition and distribution of current forest resources. Desertification is expected to spread in the south of Europe while forest cover is projected to increase with higher altitudes and latitudes. The resulting impact of climate change on forest utilisation rates has not been explored.

Overall, the expected outlook is an increased forest utilisation rate; however, it is not expected to increase beyond 100 % in the long term.

# About the indicator

The forest utilisation rate is the ratio between the annual volume felled and the volume of annual growth in the stock of living trees. The ratio is used widely to assess the current and future availability of wood. A ratio below 100 % indicates that the growing stock, the timber reserve, is stable. In the long term, the volume felled must not exceed the volume of growth. However, the indicator needs cautious interpretation, as it depends directly on the volume of annual growth. Average annual increment is calculated as the increase in growing stock volume over a year. An increase in growing stock results from maturing forests and an increase in forest area. The correct assessment of the volume of growing stock in Europe should be based on additional information on diameter class distribution, which is not available at European level.

The forest utilisation rate indicator only partly describes sustainable forest management. The indicator indirectly relates to an increased stock of carbon in forest biomass, which is a service provided by forests that mitigates climate change. The indicator has no link to biodiversity or forest condition, as it does not indicate whether or not biodiversity and other services are protected or maintained. Aspects of forest biodiversity are included in the EU protected species briefing (AIRS_PO1.7, 2016),[1] the EU protected habitats briefing (AIRS_PO1.8, 2016)[2] and the Common birds and butterflies briefing (AIRS_PO1.6, 2016).[3]

# Footnotes and references

Berndes, G., Abt, B., Asikainen, A., Dale, V., Egnell, G., Lindner, M., Marelli, L., Pingoud, K. and Yeh, S., 2016,Forest biomass, carbon neutrality and climate change mitigation, From Science to Policy 3, European Forest Institute, Joensuu Finland.

EC, 2011, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the regions 'Energy Roadmap 2050' (COM(2011)885 final).

EC, 2013, Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions 'A new EU Forest Strategy: For forests and the forest-based sector' (http://eur-lex.europa.eu/resource.html?uri=cellar:21b27c38-21fb-11e3-8d1c-01aa75ed71a1.0022.01/DOC_1&format=PDF), accessed on 8 November 2016.

EEA, 2016, European forest ecosystems – State and trends, EEA Report No 5/2016, European Environment Agency (http://www.eea.europa.eu/publications/european-forest-ecosystems), accessed on 8 November 2016.

EU, 2013, Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet', Annex A, paragraph 28g (OJ L 354, 28.12.2013, p. 171–200).

Forest Europe, 2015, State of Europe's forests 2015, Ministerial Conference on Protection of Forests in Europe, FOREST EUROPE, Liaison Madrid 312 p.

UNECE and FAO, 2011,The European Forest Sector Outlook Study II (EFSOS II): 2010–2030, United Nations Publications, New York and Geneva.

### AIRS briefings

1. AIRS_PO1.7, 2016, EU protected species
2. AIRS_PO1.8, 2016, EU protected habitats
3. AIRS_PO1.6, 2016, Common birds and butterflies

> Environmental indicator report 2016 – In support to the monitoring of the 7th Environment Action Programme, EEA report No30/2016, European Environment Agency