

Summary for Policy Makers

■ Forest
■ Other land



***The State of Europe's Forests 2011** report provides a comprehensive, up-to-date description of the status and trends of forests and forest management in Europe. The report aims to stimulate sound policy decisions on forests and forest-related issues in Europe by providing objective and harmonized data for FOREST EUROPE's Signatories. This Summary for Policy Makers presents a compact and comprehensive overview of status and trends, as well as challenges and opportunities for forests, forest policy and forest management in Europe.*

The report is structured according to the Pan-European Criteria and Indicators for Sustainable Forest Management. For the first time, the report also contains an assessment of progress towards sustainable forest management, derived from a new, experimental method. The report further identifies four future challenges and opportunities for forest policy and forest management in Europe.

Forest Resources and their Contribution to Global Carbon Cycles

Forests cover almost half of Europe's land surface and forest area continues to increase

There are 1.02 billion hectares of forest in Europe, which amount to 25 percent of the world total. Over the last 20 years, the forest area has expanded in all European regions and has gained 0.8 million hectares each year. Over the same period, the total growing stock of forests in Europe has increased by 8.6 billion cubic metres, an equivalent to the total combined growing stock of France, Germany and Poland. Growing stock has increased faster than area, which means that average standing volume of wood per hectare in Europe has increased.

European forests sequester increasing amounts of carbon in tree biomass

Between 2005 and 2010, about 870 million tonnes of CO₂ have been removed annually from the atmosphere by photosynthesis and tree biomass growth in European countries. This corresponds to about 10 percent of the greenhouse gas emissions in 2008 of these countries.

Forest Ecosystem Health and Vitality

Sulphur deposition has decreased over the last decade

Mean annual sulphur inputs decreased by 30 percent between 1998 and 2007, with significant reductions measured on half of the observed plots. For nitrogen compounds there is no clear trend in measured deposition.

In many parts of Europe, there is a tendency to acidification and eutrophication of soils

The development of pH and base saturation of soils did not show a uniform pattern within Europe. However, increased pH and base saturation were found in acid forest soils.

About a fifth of all trees are damaged or dead

Crown defoliation is a key factor which indicates the health condition of a tree. The rate of defoliation of most tree species varied moderately during the last decade, and the level is still alarming. Roughly 20 percent of all trees which were assessed in 2009 showed a mean defoliation of 25 percent or more and were thus classified as damaged or dead.

Eleven million hectares or 1 percent of Europe's forests are affected by forest damage, most frequently caused by insects and diseases

Insects and diseases are the damaging agents, which are most frequently observed in European forests - followed by wildlife and grazing. However, the level of damage is often not recorded. One percent of the European forest area is affected by one or more damaging agents (6 percent for Europe without the Russian Federation). Damage due to storms, wind and snow was mainly observed in Central-West, Central-East, North and South-West Europe, while damage due to forest fires has mainly been reported for the Russian Federation, South-West and South-East Europe.

Productive Functions of Forests

Fellings are well below increment

In almost all countries, the net annual increment is higher than the annual fellings. In the European region, approximately 40 percent of the increment is utilized. In the Russian Federation the felling rate has decreased from 41 percent in 1990 and stabilized around 20 percent since 2000. In Europe without the Russian Federation, the felling rate increased from 58 percent in 1990 to 62 percent in 2010.

Europe remains one of the largest producers of roundwood in the world

In 2010, more than 578 million cubic metres of roundwood were produced. The overall value of marketed roundwood is still increasing and reached EUR 21.1 billion¹ in 2010. Europe's forests continue to be one of the main roundwood producers in the world. The demand for wood fuel is increasing at a high rate in many European countries.

Non-wood goods can be an important source of local income

The importance of non-wood goods differs between countries, thus a comprehensive view on all types of these goods across Europe is difficult to obtain. However, the reported data clearly shows that non-wood goods can be an important source of local income. The total reported value of marketed non-wood goods amounts to EUR 2.7 billion and has almost tripled since the 2007 assessment - although some of the increase may be due to improved reporting. In 2010, Christmas trees, fruits and berries, and cork were the most important non-wood income sources. The value of marketed non-wood goods represented 15 percent of the value of marketed roundwood in countries that reported both values.

Marketed services are an important source of income for a number of forest owners

Marketed services can be a source of significant income for private and public landowners. Social services, including hunting licences, are one of the most important traditional services. The total value of marketed services, reported by relatively few countries, is almost EUR 818 million and has remained more or less stable since 2007.

Most forests in Europe have a management plan

Management plans and their equivalents are key tools for sustainable forest management. Most of the forest area in Europe is covered by a forest management plan or its equivalent.

Biological Diversity in Forest Ecosystems

The area of protected forests is expanding in Europe

Protected forests are important to maintain and enhance biodiversity, as well as to conserve landscapes and provide recreation opportunities. The area of protected forests in Europe has increased by around half a million hectares annually over the last 10 years due to policies to improve biodiversity. In Europe without the Russian Federation, about 10 percent of forests are protected

¹ Based on data from 33 countries representing more than 90 percent of the FOREST EUROPE area.

with the main objective to conserve biodiversity and about 9 percent with the main objective to protect landscape - together, these account for a total area of 39 million hectares. The Russian Federation has 17 million hectares of protected forest. The strictness of and measures for protection varies considerably among countries.

Forest management practices increasingly promote the conservation and sustainable use of biodiversity

Forest management practice has changed towards greater integration of biodiversity aspects. For instance, deadwood components and important vulnerable small biotopes are kept in forests managed for wood production. There is an increasing use of natural regeneration and mixed tree species stands. In several countries, long-term monitoring of threatened forest species has indicated that adoption of new forest management measures has reduced the decline of threatened species.

The majority of European forest landscapes have been influenced by humans

About 70 percent of Europe's forests are classified as semi-natural, as a result of many centuries of human influence. Long historical use of wood, high population density, fragmented forest landscapes and forest ownership structure, with many small private forest holdings, have been driving factors. Undisturbed forest amounts to 26 percent and is located primarily in remote and inaccessible areas in eastern and northern Europe, and in the Russian Federation. Plantations cover 4 percent of the forest area and are located mainly in Central-West Europe. The assessment of forest landscape pattern indicates that expanding forest area, by natural succession or restoration, does not necessarily enhance forest connectivity.

Genetic diversity helps forests adapt to a changing climate

Forest genetic resources are an important component of sustainable forest management. Genetic diversity will help to ensure that forest trees survive, adapt and evolve in the light of changing climate. Almost all European countries have established networks of stands or large forest areas to conserve forest genetic diversity.

Protective Functions in Forest Management

There is growing awareness of the importance of forest management for protection of water, soil and infrastructure

More than 20 percent of Europe's forests are reported to fulfil protective functions for soil, water and other ecosystem services, as well as to protect infrastructure and managed natural resources. The importance of protective forests is clearly recognized, especially in mountainous areas. Management restrictions for protective forests vary among regions depending on local geological and ecosystem conditions.

Socio-Economic Functions and Conditions

Outside the Russian Federation, 50 percent of forests are in private ownership

All forests in the Russian Federation are publicly owned - they represent 80 percent of the forest area in the FOREST

EUROPE region. Outside the Russian Federation, ownership is distributed equally between private and public, with considerable variation between countries. The proportion of private forests and numbers of private forest holdings have increased over the last 20 years, mainly because of privatization and restitution processes in a number of countries.

Potential for further mechanization vary substantially between regions

Around 4 million people work in the European forest sector, including wood processing and pulp and paper industries. The general trend is a decrease in occupation, but there are substantial differences between regions, which reflect the mechanization level and the potential for increased productivity. As the forestry workforce is ageing, the recruitment of new workers to the sector is a challenge. Forest work still reports a very high accident rate, and relatively few improvements were identified over the past decade.

While some economic functions are decreasing in importance, other functions are gaining ground

The forest sector, including wood processing and pulp and paper industries, contributes on average 1 percent of GDP (gross domestic product). However, during the last few years, most regions have shown an increase in net value added and net entrepreneurial income of forestry enterprises. The importance and recognition of other forest services, as source of energy, recreation and cultural and spiritual values, are increasing. Rising energy prices and political initiatives to promote the use of wood for energy have increased the value of small timber assortments.

Overall Policies, Institutions and Instruments for Sustainable Forest Management

National forest programmes are increasingly developed and applied

National Forest Programmes are the most widely applied approach by countries to develop sound forest policy frameworks. They are usually based on and elaborated through participatory processes. In many countries, national forest programmes contribute to consistent and broadly supported policies and strategies for putting sustainable forest management into practice. However, particular effort is needed to keep such processes relevant for key stakeholders and flexible, to effectively respond to emerging issues, and keep related costs low. While national forest programme principles are more widely followed than before, there is a need to strengthen substantive participation and the link to overall national development goals and forest-related sectors.

Institutional and legal frameworks adapt to changing societal needs and priorities

Countries in Europe continue to adapt their institutional and legal frameworks to new roles and requirements in the wake of changing societal priorities. Timely and adequate changes are necessary to address current

challenges effectively. Moreover, more proactive and strategic decisions and alignments will be necessary in order to seize emerging opportunities and to contribute to fostering a green economy.

Policies, Institutions and Instruments by Policy Area

National forest policies are affected by and respond to multiple policy challenges

During the last years, forests and forest management have received increasing political attention. Most European countries are pursuing active and target-oriented policies in a number of forest-related policy areas. Critical issues currently in focus are:

- Forests and climate change, and development of adequate adaptation and mitigation measures;
- Increased use and mobilization of wood resources, particularly with respect to renewable energy targets;
- Improvement of biodiversity, through increased nature conservation and improved integrated forest management;
- Promotion and improved marketing of non-wood goods and forest ecosystem services, such as protective functions, biodiversity and land integrity;
- Economic viability of the forest sector and its contribution to rural development and a green economy.

Most national forest-related policies are increasingly influenced by international processes and other sectoral policies on energy, climate change, agriculture and biodiversity

The need for cross-sectoral approaches and innovation in the forest sector and policy development and implementation is widely acknowledged. This is a response to the growing multiple requirements placed on forests by society and global markets, and is reflected in the concept of sustainable forest management. In continuing to develop and implement national policies towards sustainable forest management and multiple-use of forests, countries have highlighted the need for improved forest

information and monitoring. This applies particularly to policies on forest health and vitality, forest biodiversity and the valuation of non-wood goods and ecosystem services.

Changes in national policy objectives are related mainly to biodiversity, the production and use of wood, carbon balance and land use and forest area

New or amended objectives are often complemented by specific target-oriented regulations or by amendments to existing regular legal frameworks - like forest laws or the National Forest Programmes. Institutional reforms have mainly affected policy areas like climate change and carbon as well as research, training and education.

Changes in objectives and instruments have occurred in most policy areas in more than half the reporting countries since the FOREST EUROPE Ministerial Conference in 2007

Changes since 2007 reflect the current dynamics and challenges in forest policy development. Most countries have, or are developing, general objectives and adequate policy instruments for the forest sector. However, there is still a need for improved coordination and coherence among multiple policies which affect the forest and wood sector as well as for the formulation of more target-oriented objectives.

Sustainability of Forest Management in Europe A new and experimental method to assess progress towards sustainable forest management

In addition to describing the status and trends for the quantitative and qualitative indicators, the State of Europe's Forests 2011 report assesses progress towards sustainable forest management in Europe. For this purpose, a new, experimental method has been used. For each indicator, the official data supplied by countries were assessed on a scale from one (🌲) to five (🌲🌲🌲🌲🌲) trees², using objective and transparent parameters and thresholds. These results were combined to provide assessments at the level of six country groups, and have been accompanied by detailed comments to put the situation in context. Despite shortcomings, the results appear sufficiently robust to be used for giving a broad picture of developments at the country group level. The

Table A: Assessment by country group and criterion, quantitative and qualitative indicators

	Forest resources and global carbon stock	Health and vitality	Productive functions	Biodiversity	Protective functions	Socio-economic functions	Overall policies, institutions and instruments for sustainable forest management	Policies, institutions and instruments by policy area
Russian Federation	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲🌲
North Europe	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲🌲
Central-West Europe	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲🌲	🌲🌲🌲	🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲🌲
Central-East Europe	🌲🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲	🌲🌲🌲	🌲🌲🌲
South-West Europe	🌲🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲🌲	🌲🌲
South-East Europe	🌲🌲🌲	🌲🌲	🌲🌲	🌲🌲	🌲🌲🌲	🌲🌲	🌲🌲🌲	🌲🌲🌲

² When no data are available for an indicator, the assessment is 🌲, as there is no evidence to support any other ranking. Furthermore, it could be said that management decisions based on insufficient information are not really sustainable.

data and method are not yet suitable to assess individual countries, or to provide a single overall assessment for sustainability.

The assessment aims to give policy and decision makers as well as the general public a clear overview of complex issues. This should facilitate balanced strategic and operational decision-making, as well as communication and dialogue with the general public and other relevant sectors. It is also hoped that this new approach will encourage further improvements in assessing the sustainability of forest management.

For most country groups and indicators, the assessment shows a balanced and generally satisfactory situation

Almost all the assessments at the level of criteria and country groups are satisfactory, at the levels 🌳🌳🌳 and 🌳🌳🌳🌳. There is no evidence of systematic imbalance at the European level – such as systematically prioritizing production over biodiversity or *vice versa*. However, there are a number of challenges and areas of concern which are indicated by 🌳🌳 at the level of particular indicators and country groups.

Where the assessment is less satisfactory (🌳🌳), the main causes are weak data. For quantitative indicators, other concerns include decline of forest area (in a very small number of countries); nitrogen depositions exceeding critical limits; soil condition; fragmentation and reduced forest connectivity; low value of marketed wood and non-wood goods and services; low levels of occupational safety and health for the forest workforce; and declining employment in the sector.

Forest sector policies, institutions and instruments in Europe are stable and adapted. The main areas of concern for the qualitative indicators are the economic instruments to support sustainable forest management and whether policies and institutions are sufficiently strategic in their approach and integrated with other sectors.

Russian Federation – the Russian forest has enormous economic and biodiversity significance even at the global scale, but problems of monitoring prevail

The Russian forest resource is the largest in the world, with a much higher share of forest untouched by man than any other European country. Most of the area west of the Urals is managed in a relatively intensive way, but to the east there is a huge expanse of remote forest with difficult and expensive access. The process of transition is on-going, but all forests will remain in public ownership, with arrangements for long-term leases. A new Forest Code was approved in 2006 after intense discussion. There is concern about illegal logging in some parts of the Russian Federation, as well as about vulnerability of the boreal forest ecosystem to climate change (fires and melting of permafrost).

Areas of concern identified by the State of Europe's Forests 2011 report are the decline in area of other wooded land; possible decrease in carbon stock; low value of marketed roundwood compared to volume of resource; low per hectare values for marketed non-wood goods and

services; relatively small percentage of protected forest and of area managed for gene conservation; low revenue and government expenditure per hectare; and low share of wood used for energy.

North Europe – the forest sector is mostly privately-owned, well organized, and focused on wood production, with a strong commitment to achieving environmental objectives

In most of North Europe, the boreal forest is at the centre of the landscape. There is an intensive use of the resource and a sophisticated and well-resourced institutional structure. Forest-related questions have a high policy importance in the region.

Areas of concern identified are the large area at risk from eutrophication; the Carbon/Nitrogen ratio in forest soil approaching warning level in two countries; and the low percentage of forest protected for biodiversity in some countries.

Central-West Europe – forest-related issues are not central to these countries' economy or society, although populations have tended to react strongly to threats to their forests

Central-West Europe contains many densely populated and highly prosperous urban countries, although there are significant rural and mountainous areas, which is where most of the forests are. Forest institutions are stable and well-resourced, even if they lack political weight relative to other parts of society, which can mobilize more financial and human resources.

Areas of concern identified are the high percentage of land area at risk of eutrophication from nitrogen deposition; the Carbon/Nitrogen ratio near warning level for soil imbalances in some countries; problems with landscape pattern and fragmentation, negative net entrepreneurial revenues in a few countries; negligible share of wood in total energy supply in a few countries; and the small share of the total workforce engaged in the forest sector.

Central-East Europe – the transition process has been a challenge to forest institutions, but in many countries these institutions have retained their basis

The countries in Central-East Europe were all centrally planned 25 years ago, but many have now been transformed and are increasingly prosperous. Five countries in this group are now members of the European Union. Ecologically the country group is heterogeneous, running from the Alps to the Caucasus and the Volga basin.

Areas of concern identified are the decline in forest cover in one country; the fact that the entire land area of the region is at risk of eutrophication from nitrogen deposition; the Carbon/Nitrogen ratio near warning level for soil imbalance in one country; high defoliation level in one country; generally low per hectare values for marketed non-wood goods and services; the small share of the total workforce engaged in the forest sector; low levels of wood consumption; and the low reported share of wood in total energy supply.

South-West Europe – some intensive management, but many forests suffer from fire, nitrogen deposition, changes in landscape pattern and rural depopulation

In South-West Europe, most countries have a distinctively Mediterranean forest on much, but not all, of their territory. Despite the threats, some areas are managed intensively, sometimes with introduced species. There are serious information gaps.

Areas of concern identified are the high percentage of land at risk of eutrophication due to nitrogen input; significant fire damage; high fragmentation; and negative trends for forest landscape pattern in some countries.

South-East Europe – diverse forestry situations, many with weak information systems

Most of the countries in South-East Europe have rather large rural populations and low per capita income by European standards. Some have new institutions which emerged after the conflicts in the former Yugoslavia. Fire is an issue throughout the region. In one country, the forest itself is under severe pressure from overgrazing and over-cutting (mostly for fuel) by the rural population. It appears that, in many areas, the forests are not intensively managed and not well protected for biodiversity – but information is very weak, so this cannot be verified. Due to the lack of adequate information provided, and possibly also because the relevant forest-sector information does not exist at the national level, it is not possible to say with any objectivity whether or not forest management is sustainable.

Areas of concern identified are one country with steeply falling forest cover and growing stock; nearly all land area of the region at risk of eutrophication due to nitrogen deposition; significant fire damage; fellings greater than net annual increment in one country; rather low per hectare values for marketed non-wood goods; several countries with a high share of single species stands; low share of forest protected for conservation of

biodiversity in many countries; and low levels of wood consumption.

Future Challenges and Opportunities for Forest Policy in Europe

On the basis of the information provided for the State of Europe's Forests 2011, four major challenges and opportunities for forest policy in Europe have been identified.

The forest sector is playing a major role in **climate change** mitigation through carbon sequestration and substitution of non-renewable energy and materials. At the same time it must adapt to a changing climate, which requires significant investment. The challenge is thus to find and deliver the optimum balance among the various forest functions in the context of changing climate and societal needs.

Ambitious targets for renewable energy throughout Europe have resulted in more use of **wood for energy**, and there are clear signals that this trend will continue. The challenge is not only to mobilize more wood to meet the targets but also to reconcile this mobilization with the other dimensions of sustainable forest management.

It appears that there has been strong progress in the **conservation of forest biodiversity**, although there are still significant monitoring and measurement problems. The challenge is to reconcile measures for biodiversity conservation with the more intensive forest management likely to be necessary to meet the expected higher demands for wood, including for renewable energy.

The European forest sector already displays many of the characteristics of a **green economy** and has the potential to play a major, even exemplary, role in the emerging green economy – notably by promoting sustainable production and consumption patterns, green building, green jobs in the sector, and the supply of renewable energy, as well as developing payment for ecosystem services. The challenge is to achieve this potential by strongly developing the “green” features of the forest sector.