

An illustration of a globe with a green-to-blue gradient. On the globe, there are stylized icons representing a sustainable cycle: a factory with smoke on the left, a family walking in a forest in the center, a hiker on the right, and a deer at the bottom right. A large, light green circular arrow with three segments encircles the globe. The sky is light blue with white clouds.

EUROPEAN STATE FORESTS BOOST THE BIOECONOMY

EUSTAFOR's 32 members (state forest organizations managing state forests) represent around one third of the EU forest area. They are committed to sustainable forest management and work with the existing forest certification schemes. The total harvest of EUSTAFOR members is approximately 130 million m³ of round timber per annum and together they employ more than 100 000 individuals.

Acknowledgement of EUSTAFOR's Bioeconomy Working Group:

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PRESIDENT'S STATEMENT



I hope that when our children will look back at this era they will be amazed. Amazed at the progress we have achieved in moving the world forward through a smarter and more efficient use and reuse of available resources, in particular the renewable and natural resource from European forests.

What you sow is what you reap! This old proverb guides the everyday work of our foresters. The little seedlings we plant today will grow into mature trees to be used in multiple products and for services that I cannot even imagine.

EUSTAFOR strongly believes that the products and services provided by our members' forests will make a crucial contribution towards a European green bio-based society. As guardians of state-owned natural resources, healthy, resistant, multifunctional and sustainably managed forests are the greatest asset we can pass on to future generations. Our mission is to provide European society with an entire range of ecosystem services such as biodiversity, clean water to drink, clear air to breathe, beautiful landscapes and recreational infrastructures in addition to employment opportunities for rural populations and raw material for downstream industries.

Speaking for 30 European state forest management organizations - members of EUSTAFOR - I know well that no size fits all forests. European forests are extremely diverse, as are the challenges they face and the conditions they grow in. But EUSTAFOR's members share a common ambition to contribute to the fight against global warming and provide European citizens with a better way of life.

This booklet is a short guide on how European state forests can play a significant part in developing both a greener, smarter, more efficient and inclusive European bioeconomy and a bio-based circular economy, using our available resources responsibly and efficiently for the sake of current and future generations.

A handwritten signature in blue ink, reading 'Per-Olof Wedin'.

Per-Olof Wedin
President of EUSTAFOR

WHAT DO WE MEAN BY “BIOECONOMY” AND “CIRCULAR ECONOMY”?

The **bioeconomy** refers to economic activities that use renewable biological resources from both land and sea for the production of goods, services, food and energy.¹

In a **circular economy** the value of goods and resources is maintained for as long as possible, the reuse and recycling of material is encouraged, and waste is decreased in order to create a “sustainable, low carbon, resource efficient and competitive economy.”²

The use of sustainable biomass enables these two concepts to interconnect into a **bio-based circular economy** by providing renewable materials, services and products that can be used, reused and recycled up until their end of life when they can be turned into energy.

The “Bioeconomy Strategy” and the “Circular Economy Package” (launched in 2012 and 2015 respectively) are part of the long-term goals set out in the European Union’s roadmap to develop a competitive, resource efficient and low-carbon economy by 2050. It is within this context that the European State Forest Association (EUSTAFOR) is publishing its own views on the important role that European state forests can play in enabling Europe to reduce its carbon footprint, adapting to a more sustainable and resilient economic model while at the same time boosting economic growth and competitiveness by harnessing the vast potential of bio-based products from forestry and agriculture.

EUSTAFOR'S VISION

Bioeconomy is the next economic development and is of central importance in combating climate change and safeguarding ecosystem resilience. It recognizes the full value of ecosystem services, promotes economic development and creates new jobs, especially in rural and remote areas of Europe.

Building a bioeconomy will require a systemic change from non-renewable resources to renewables. The bioeconomy uses clean technologies, resource efficiency and innovation to decrease dependency on fossil raw materials and fuels.

Forests and forest products function as a cornerstone of the bioeconomy, providing a carefully monitored source of raw materials while at the same time boosting competitiveness, enabling a circular economy and developing a low-carbon economy.

European State Forest Management Organizations (SFMOs) are dynamic and capable entities, entrusted by European governments to effectively manage

public forest ecosystems. SFMOs in Europe, united within EUSTAFOR, perceive themselves as key enablers of the current and future bioeconomy, using their experience in sustainable and multifunctional forest management practices to provide a wide array of products and services.

Through careful stewardship, European state forests contribute to safeguarding sustainability and serve as predictable partners in the long-term business strategies of forest-based value chains. In addition to delivering a whole range of bio-based raw materials, European state forests protect and promote vital ecosystem services, promote green employment and social inclusion, resulting in rural development and combating poverty, while at the same time increasing the social values of our woodlands for the benefit of all citizens in Europe.

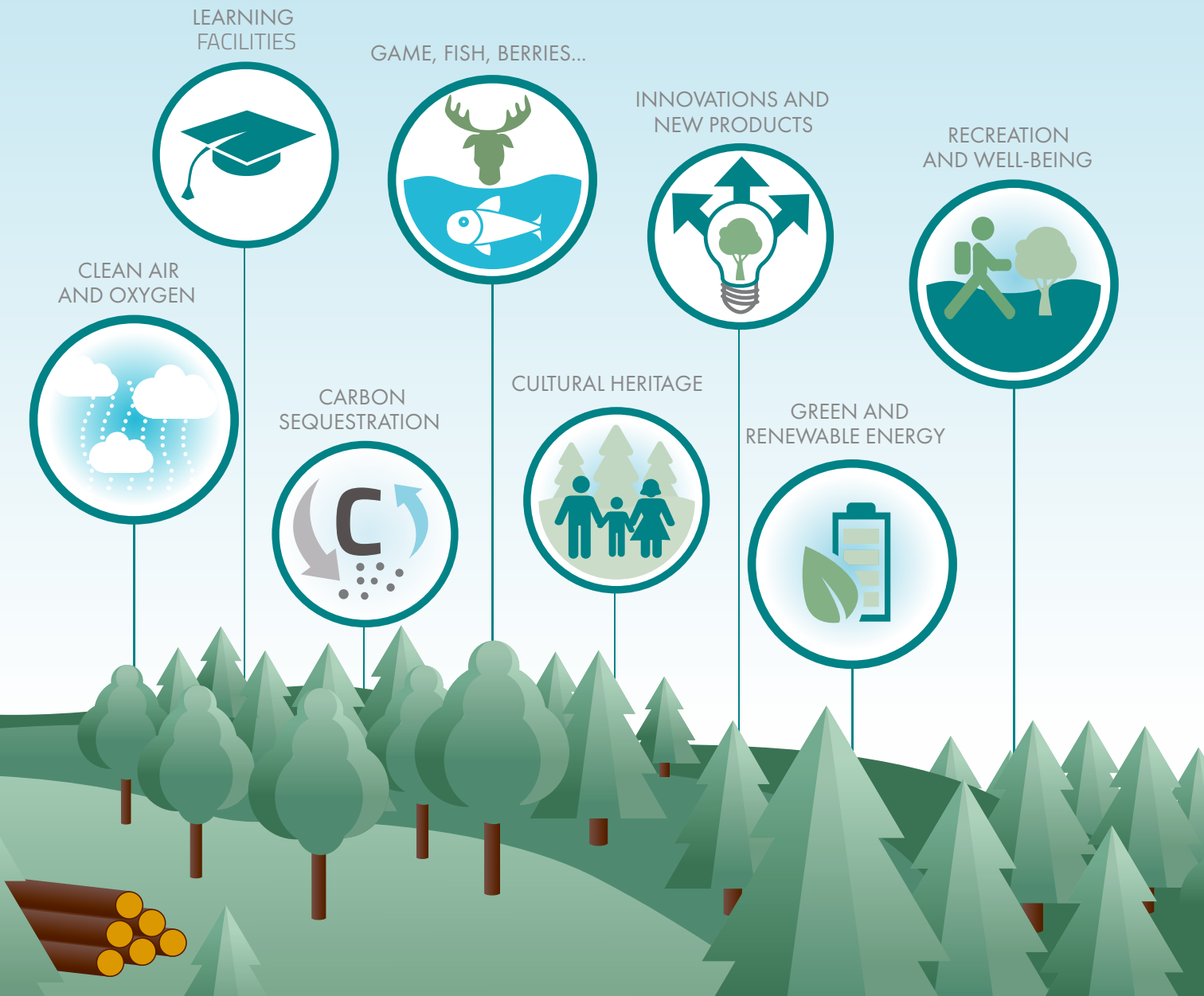


FORESTS PROVIDE MORE THAN JUST BIOMASS

A forest life cycle starts with seeds, which grow into trees that provide different products and functions. Trees, together with other forest plants and animals, form dynamic forest ecosystems which, as a whole, provide and deliver ecosystem services.



The production of biomass is, therefore, only one part of a complex and sometimes conflicting set of demands on forests. The sustainable multifunctional management practices to which EUSTAFOR's members adhere include numerous services for the well-being of society at large in addition to providing forest biomass for the European bioeconomy. The capacity to adapt and maintain ecosystem and societal functions will play a more dominant role in the future. The objective and comparative evaluation of ecosystem services and non-wood products (e.g. food and game, clean water, climate mitigation, soil quality, recreation, etc.) provided by forestry to society should be better recognized and fully valued.



FORESTS ARE PRODUCTIVE WHEN MANAGED SUSTAINABLY

The better we manage our forests the better they grow. Sustainable forest management³ always replaces harvested trees by new seeds or seedlings, thus ensuring continuous forest cover on a landscape level as well as a steady yield of biomass and other services.

Over the last decades European forests in the EU-28 have been steadily growing in terms of their size and productivity and currently almost 38 percent of the EU-28 is covered by forests.⁴ From 1990 to 2015, the forest area of the EU-28 grew from 148 million hectares to 161 million hectares, resulting in an average annual increase of 0,5 million hectares during this period.⁵

Even more impressive is the potential for increasing biomass supply in the future. According to FOREST EUROPE, the total forest growing stock was 26 526 million m³ in 2015, with an average annual increase of

284,3 million m³ between 1990 and 2015 (equivalent to 1,31%). Since the average felling rate from 1990 to 2015 has remained at around only 60-65 % of the annual growth, the productive potential of European forests remains underutilized even though the annual forest harvest has increased over time.

Additional biomass can also be mobilized in the form of forest residues (branches, tops, low diameter timber) which are always present when thinning, harvesting and processing. Forest residues should not be over-harvested due to ecological reasons, such as the balance of the nutrient cycle of forest soils. However, harvesting residues currently remain unused not for ecological reasons, but because there is no market for them. Expanding the demand for forest residues would make more efficient use of the renewable resources delivered by forests.

CERTIFIED FOREST AREA MANAGED BY MEMBERS

Members of EUSTAFOR have a long tradition of sustainable forest management that is well grounded in national legislation and strict governance systems. Their forest management practices are based on long-term forest management plans which encompass high environmental standards. In addition, the great majority of European state forests are certified to at least one forest management certification standard.

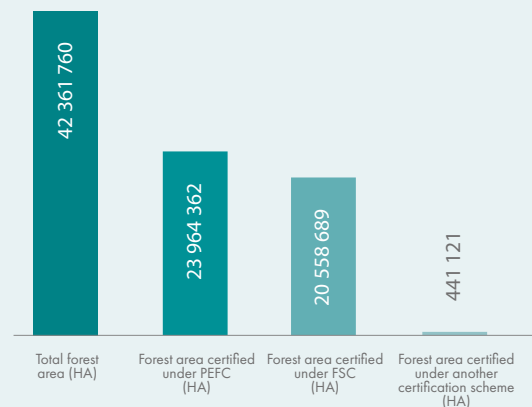


Figure 1.
Source: EUSTAFOR Member Database 2017.

MITIGATE CLIMATE CHANGE THROUGH THE NATURAL CYCLE OF “GREEN” CARBON

Growing trees take up CO₂ from the air through the process of photosynthesis, storing the carbon in their woody structure and releasing the oxygen back into the atmosphere. As a tree matures, its rate of growth slows down, as does its capacity to sequester carbon, which in turn impacts a forest's capacity to act as a carbon sink. If a forest is left unmanaged, dead trees will decay and release carbon into the atmosphere. Some wood needs to be allowed to decay in order to provide nutrients for soil and maintain biodiverse habitats. But it makes good ecological and economic sense to control the amount of biomass that is left to rot (returning carbon directly to the atmosphere) and the amount that could be put to better use in the form of raw materials for the bio-based circular economy.

Forest managers are able to regulate the harvesting and regeneration of forests by using appropriate silvicultural techniques, boosting the carbon sequestration rate of forests while maintaining the many other social, cultural, economic and environmental services they are expected to provide.

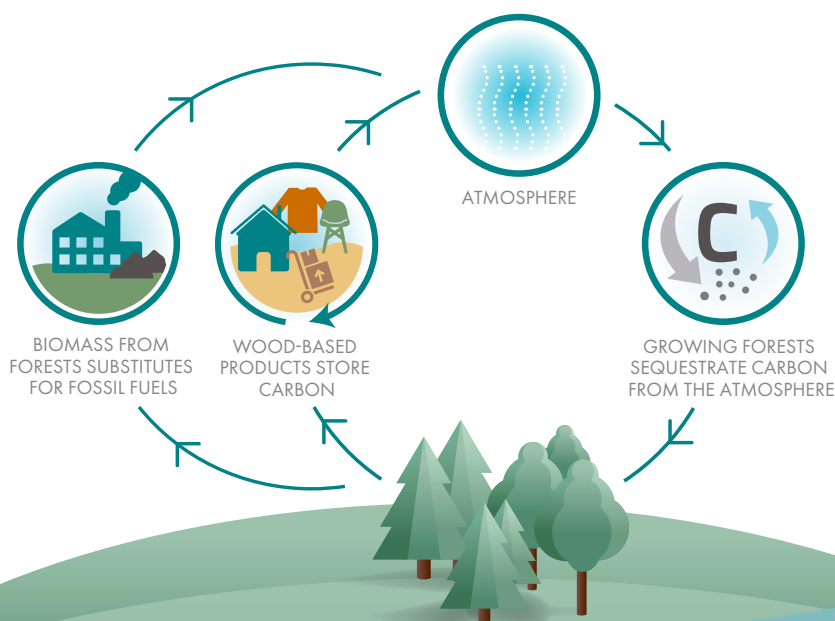
It is estimated that EU forests and the forest sector currently contribute with an overall climate change mitigation impact that amounts to about 13% of total EU emissions. This includes the carbon sink function mentioned above, as well as the carbon store function of wood-based products and

the use of biomass to substitute for fossil-based raw materials and products.⁶

Harvested timber continues to act as a carbon store, deferring the return of carbon to its natural cycle. Wood in construction is, therefore, one of the most simple and cost-effective approaches towards minimizing carbon emissions.

Using wood-based energy carriers (liquid, gas, wood chips or pellets) originating from sustainably managed forests is climate smart compared to the use of fossil energy. Through substitution, forest-based products can reduce the use of fossil and other non-renewable feedstocks. Contrary to fossil fuels, the use of renewable biomass does not result in extra carbon being released into the atmosphere.

The EU's climate and energy policies need to recognize the forest sector's total positive contribution to mitigating climate change.

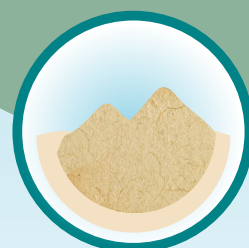


INCREASE THE COMPETITIVENESS OF THE FOREST SECTOR

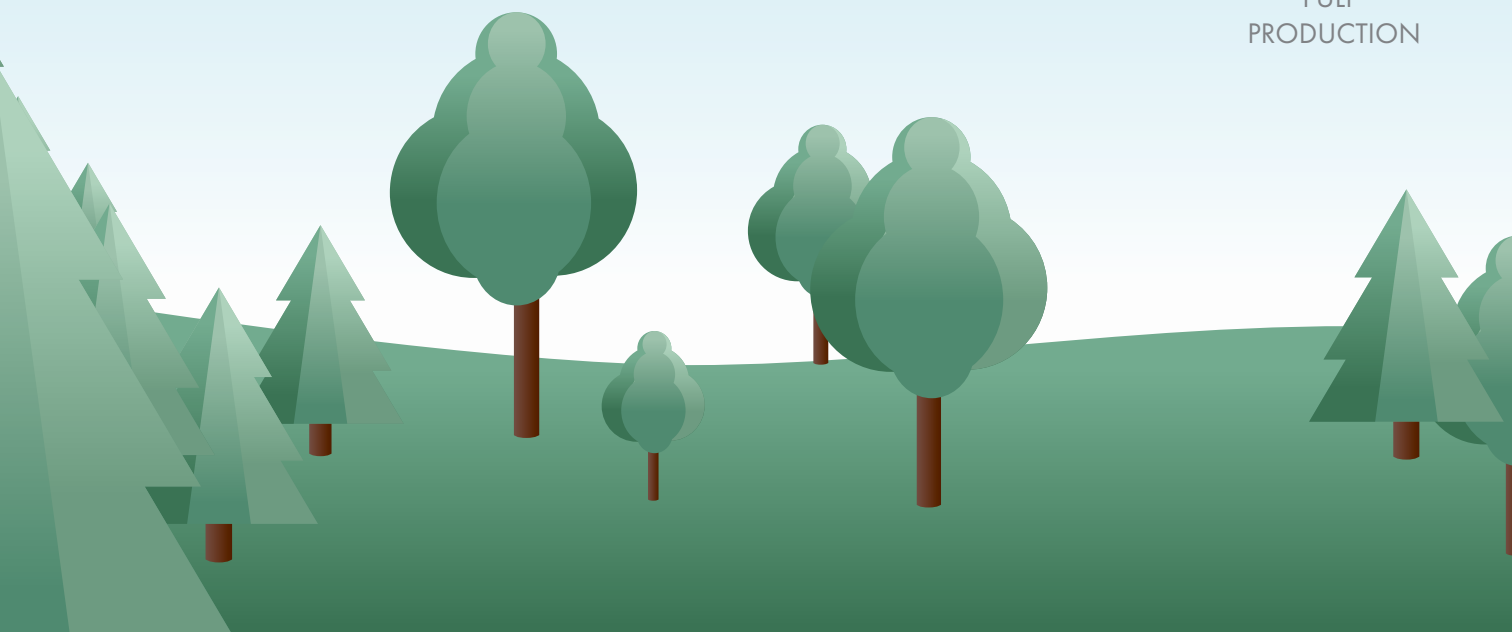
EU policies should aim to improve the flow of materials and residues within and between different industries and users in order to allow for a more efficient use of available biomass resources, thereby contributing to “closing the loop” of product lifecycles and reaching the targets for the reduction of waste set out in the EU’s Circular Economy Package.

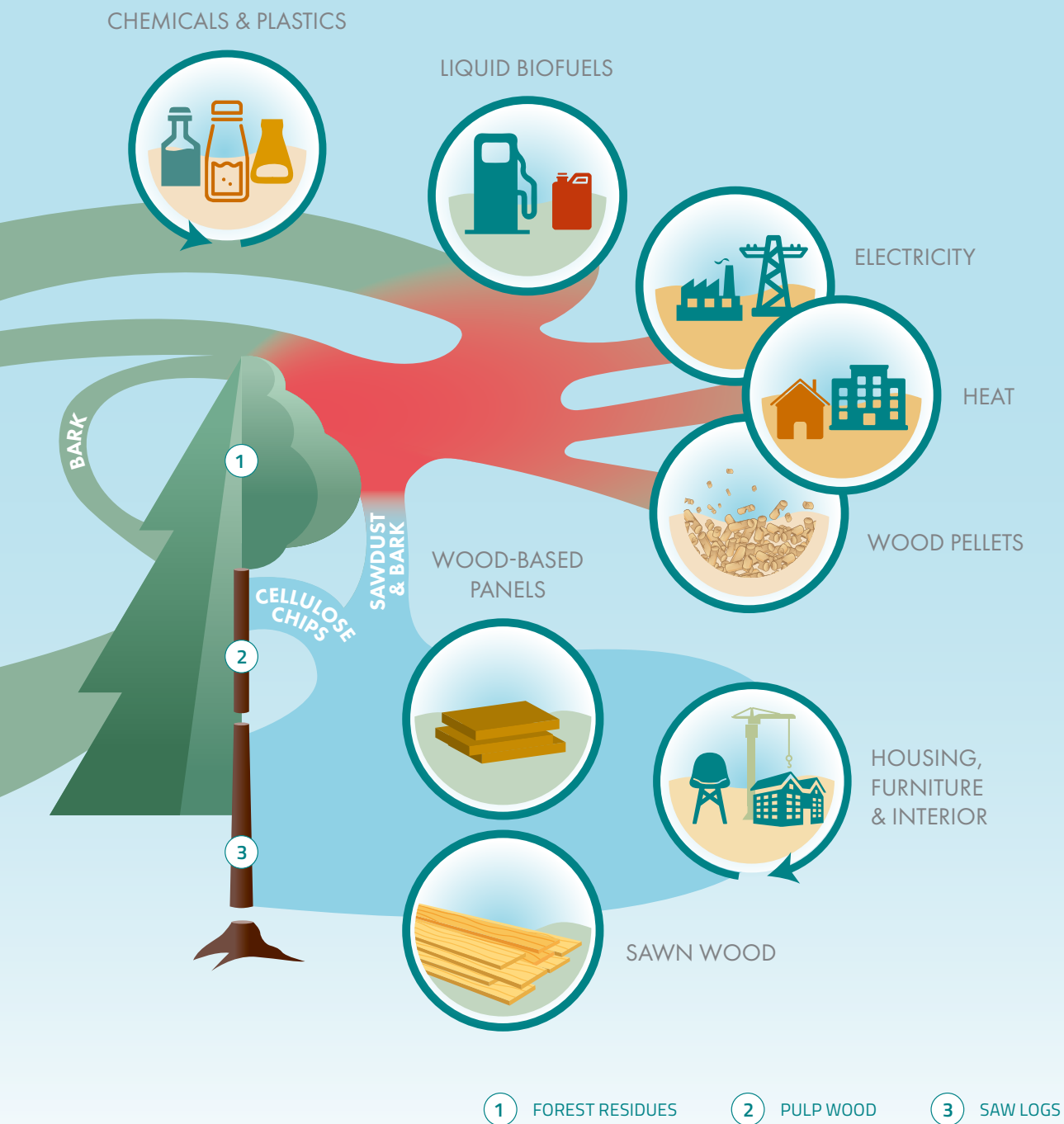
The EU is currently discussing the possibility of regulating biomass markets by enforcing a cascading use of biomass, but compulsory rules that limit market access or impose a cap on the use of biomass in certain industry sectors risk reducing the competitiveness of the whole sector and might well hinder technological advances. EUSTAFOR therefore is not in favor of imposing any binding rules to regulate the biomass market.

PULP & PAPER
PRODUCTS



PULP
PRODUCTION





The resource efficient use of forest biomass in the forest-based industry

THE FOREST-BASED SECTOR HAS A HUGE POTENTIAL FOR INNOVATION AND GROWTH

Each harvested tree can supply a wide range of materials and products, such as wood for construction, veneer, floors, furniture, paper, textiles, boards, fruit, seeds, fibers, chemicals and energy. Many of these products can be used, reused and recycled.

Forest-based products are already recycled to a large extent. Still, pieces of wood and wood-based fibers cannot be recycled indefinitely. At one point they become too small or lacking in homogeneity, so markets will always require fresh supplies of wood. Many wood products also contain other materials such as glue, preservatives, varnishes, nails, plastics and dirt, making them harder to reuse and recycle. Product design and recycling technologies therefore need to be improved in order to better support the re-use and recycling of renewable materials.

Innovative technologies together with new products (such as new types of construction materials, textiles, nanomaterials, advanced packaging and biofuels) have a great potential to expand the range of end uses of forest biomass. These can be implemented both by the further development of traditional wood-based industries as well as by creating new value chains.

European state forests actively serve as reliable partners for research and innovation in the forest-based sector. Establishing new synergies within the traditional biomass processing industry as well as providing renewable raw materials to new or previously fossil-based processes – turning one industry’s by-product into another industry’s raw material – will create new value chains, economic growth and jobs.

FORESTS ALREADY BOOST THE EU’S ECONOMIC GROWTH

Forests already make a significant contribution to the economic growth of the EU.

Woody biomass from forests and residues is the largest source of renewables in Europe. In 2010 the overall contribution of the forest sector to the GDP was 0,9 percent.⁷ As shown in table 1, the overall value of marketed products and services is high. These can still be increased substantially in the coming years.

Estimated number of employees in the forest-based sector:	at least 3 million individuals
The overall value of marketed round wood:	more than EUR 18 000 million and still increasing
Total reported value for marketed forest services:	around EUR 723 million
Total value of reported marketed non-wood forest goods:	almost EUR 2,3 million

Table 1: Pan-European continent (without Russia) as of 2010. Source: FOREST EUROPE, “State of Europe’s Forests 2015.”

TOGETHER WE CAN MAKE A GREENER FUTURE

European forests range from Mediterranean mixed oak and coniferous forests, to Central European mixed forests with a large variety and high volumes of soft and hardwood trees, to coastal forests of the Atlantic and finally the vast forests of Northern Europe. In the face of such diversity, European state forest owners and managers have gained considerable experience and broad practical know-how. They continuously strive to improve their forest management, strengthen collaboration among each other and within the forest-based sector and are committed to contributing to the EU climate and economic targets, boosting innovation and growth by providing more resource-efficient and climate-smart products and services. Because of their ability to make significant contributions towards a greener low-carbon economy, it is important for European

state forest owners and managers to be included in the development of the EU's climate and energy policies.

Multifunctional and sustainable forestry as practiced by the members of EUSTAFOR not only provides solutions for today challenges: Through the actions we take today, we can ensure that future generations will continue to benefit from the natural resources we leave behind us.

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- 1 | European Commission, Directorate-General for Research and Innovation, "Innovating for Sustainable Growth: A Bioeconomy for Europe," (© European Union, 2012).
 - 2 | European Commission, "Closing the loop – An EU action plan for the Circular Economy," (COM(2015) 614 final, 2/12/2015).
 - 3 | FOREST EUROPE defines sustainable management as "the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, 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." FOREST EUROPE, "RESOLUTION H1 – General Guidelines for the Sustainable Management of Forests in Europe," (Second Ministerial Conference on the Protection of Forests in Europe, 16-17/6/1993, Helsinki, Finland).
 - 4 | The numbers provided in this section are based on the report "State of Europe's Forests 2015" by FOREST EUROPE.
 - 5 | Eurostat, "Agriculture, forestry and fishery statistics – 2015 Edition."
 - 6 | Gert-Jan Nabuurs et al., "A new role for forests and the forest sector in the EU post-2020 climate targets," (From Science to Policy 2. European Forest Institute, 2015), p. 3.
 - 7 | FOREST EUROPE, "State of Europe's Forests 2015."



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EUSTAFOR - A RELIABLE POLICY PARTNER IN EUROPE

EUSTAFOR's members - European State Forest Management Organizations (SFMOs) - are dynamic and capably managed entities. They are entrusted by European governments to effectively manage public forest ecosystems - one of Europe's greatest natural resources - for the benefit of society at large.

Europe's SFMOs are responsible for the stewardship of approximately one third of the European Union's forests. Thousands of state forest professionals act as an interface between the resource owners (states or governments) and Europe's citizens, forest-based industries and stakeholders.

EUSTAFOR provides practical and comprehensive feedback from its members to the EU's decisional bodies and participates in policy development processes at both international and regional level, acting as a capable partner in dialogues with European governments, EU institutions and other stakeholders of the forest-based sector.

State forests can make key contributions to strategic policymaking in order to promote both the bioeconomy and the circular economy within the European Union's roadmap to develop a competitive, resource efficient and low-carbon economy by 2050. Europe's forests have an important role to play to ensure that the objectives of the European Union are achieved in the context of the continued sustainable development of Europe's forests, our common natural resource.

EUSTAFOR FOREST FACTS

- » Total land area managed ~ 50 million ha (~ 30% of EU forests)
- » Total forest area managed ~ 42 million ha (not including French overseas departments)
- » Protected and protective forests ~ 14 million ha
- » Designated Natura 2000 areas ~ 8 million ha
- » Annual increment ~ 200 million m³
- » Annual harvest ~ 130 million m³
- » Number of employees ~ 100 000 (experts in fields such as biomass production, provision and logistics, long-term planning, sustainability issues, communication with stakeholders and education of generations to come)



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