European Commission

Climate change adaptation critical to forest fire risk reduction

Forests and climate change

Forests and trees serve multiple purposes: they provide a wide range of goods and ecosystem services to society, help in the fight against climate change by removing CO2 from the atmosphere as they absorb the equivalent of nearly 10% of total EU greenhouse gas emissions each year. Their effects on temperature, water purification and regulation mean they also play a crucial role in adaptation to climate change by limiting locally the effects of heat waves, but also of floods and droughts through their water retention capacity. Forests are also large biodiversity reservoirs and a source of protection against natural disasters, enhancing resilience to climate change and extreme weather events.

Yet forests are under pressure from climate change. Extreme weather conditions such as extended heat waves, drought, and strong winds can be expected to affect many of Europe's forests more frequently and more severely as a consequence of climate change.[1] These projected climate changes are predicted to increase the length and severity of the fire season, the area at risk and the probability of large fires, possibly enhancing desertification. "Forest ecosystems and their services are affected by range shifts of tree species towards higher altitudes and latitudes, by increases in forest fire risk, in particular in southern Europe, and by an increased incidence of forest insect pests. Climate change is likely to exacerbate the problem of invasive species in Europe."[2]

Land use decisions and natural resources management also play a role in mitigating or exacerbating forest fire risk and severity. Attention to forest health and resilience needs to be enhanced, for instance by supporting forest adaptation to climate change: avoiding highly fire-prone forests by e.g. turning artificial plantations and simplified forest ecosystems into more natural, diversified and resilient forests which allow natural species to grow, promoting natural mixed or broad-leaved forests; adopting sylvicultural practices that improve the structure, composition and functionality of forests (e.g. thinning practices to reduce biomass and deadwood and thereby vulnerability). More complex and diversified forest make them more resilient to natural disturbances like forest fires.

[1] EU (2017). *Forest Fires in Europe, Middle East and North Africa 2016*. Publications Office of the European Union, 2017.

[2] EEA (2017). *Climate change, impacts and vulnerability in Europe 2016 – An indicator-based report*. European Environment Agency. Report. No 1/2017.

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The EU Strategy on Adaptation to Climate Change

The EU Strategy on Adaptation to Climate Change promotes integration of climate adaptation needs into key vulnerable sectors. It contributes to forest fire prevention by helping bridge the knowledge gap and supporting research modelling on the impacts of climate change on forests[3] and providing suitable adaptation options. It further supports demonstration, pilot or best practice projects through LIFE[4] and the Natural Capital Financing Facility[5], as well as European Structural and Investment Funds (notably the agricultural and cohesion instruments) through their climate objectives and related actions.

The LIFE programme

The LIFE Programme helps develop knowledge and transferable best practices that help EU forests adapt to climate change to safeguard their multifunctional benefits. This includes working on prevention of forest fires, developing forest monitoring systems and forest management tools. In addition, the Natural Capital Financing Facility (the LIFE pilot financial instrument implemented by the EIB) funds biodiversity and climate change adaptation projects.

For instance, the project LIFE ADAPTATE 2017-2021 will help Portuguese municipalities (as well as Latvian and Spanish ones) to elaborate a common methodology for the development of sustainable energy and climate action plans. Among others, the project aims to pilot climate adaptation actions to increase resilience to forest fires. The project LIFE MixForChange aims to contribute to the adaptation to climate change of European mixed sub-humid Mediterranean forests by increasing their resilience, ensuring their conservation and enhancing their productive, environmental and social functions.

CLIMATE-ADAPT – The Knowledge and information platform on adaptation to climate change

The European Climate Adaptation Platform (Climate-ADAPT) aims to support Europe in adapting to climate change. It is an initiative of the European Commission and EEA to help users access and share information on:

- Expected climate change in Europe
- Current and future vulnerability of regions and sectors
- National and transnational adaptation strategies
- Adaptation case studies and potential adaptation options
- Tools that support adaptation planning

It contains, i.a. up-to-date resources on forestry[6], including on the policy framework and the knowledge base.

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[3] Peseta III research reports – forthcoming. The objective of the JRC PESETA project (Projection of Economic impacts of climate change in Sectors of the European Union based on bottom-up Analysis) is to make a consistent multi-sectoral assessment of the impacts of climate change in Europe for the 2071-2100 time horizon.

[4] http://ec.europa.eu/environment/life/index.htm

[5] http://www.eib.org/products/blending/ncff/index.htm

[6] http://climate-adapt.eea.europa.eu/eu-adaptation-policy/sector-policies/forestry