Resilient landscapes to face catastrophic forest fires

Catastrophic wildfires are here to stay. How we react and adapt will shape the future of our landscapes and our society

Key Messages

■ We should not see forest fires as purely natural catastrophes, but rather as critical challenges in rural and urban development, integrating forestry and land management. Hence, we must better understand and address the root causes of wildfires as complex, evolving environmental, social, and economic interactions that surpass the domains of forestry or civil protection.

■ As global changes unfold, we must substitute reaction-centered approaches for integrated risk management. A strong and efficient infrastructure for firefighting, while essential, is not enough. More emphasis and funding for risk analysis and mitigation is needed, addressing the causes of ignition and catastrophic fire spread, featuring self-protection, prevention wise-recovery and in fostering responsibility among communities and stakeholders.

■ To adapt we need a renewed vision for rural areas and re-imagined rural-urban connections. Creating value from forests and enabling sustainable land management is critical to our capacity to mitigate wildfire risk and broaden fire resilient landscapes and communities.

■ We must close the gap between perceived and real risk to develop appropriate participatory strategies that are widely understood and supported. Better communication, training and public education can help impel a necessary shift in social perception.

Understand the root causes of wildfires

Deep social, economic and environmental drivers fuel the increased frequency and deadly intensity of catastrophic wildfires. Climate change is expanding high risk areas, extending high risk seasons and increasing the potential severity of wildfire in many regions across the globe. Social change leads to rural abandonment and forest expansion while urbanisation patterns extend the urban wildland interface, putting people and infrastructure at risk.

- The fossil-based economy is co-responsible for various global changes that exacerbate the risk of wildfires, such as climate change, rural abandonment, forest expansion and accumulation of biomass across the landscape.

- Most wildfires in Europe are started by people using fire as part of their traditional toolbox for vegetation management, which has not been adapted to a new context where any miscalculation, accident or negligence can lead to catastrophic consequences.

- Efficient suppression policies, which are able to control most wildfires before they reach a meaningful size, further contribute to fuel accumulation, creating a higher risk for large, uncontrolled future fire events.

Be prepared to face extreme fire events

In Europe, a reduced number of fires that escape early suppression efforts are responsible for the majority of wildfire damage and often have life-changing impacts in affected communities. Mitigating these risks requires revisiting current knowledge and risk management procedures.

- As global changes unfold, we must also be prepared to adapt our ways of dealing with wildfires. Research is needed for better prediction of fire behaviour and extreme wildfire vulnerability under a changing climate and in biogeographic regions that face new realities of fire risk.

- The effectiveness of current wildland-urban interface management approaches should be revisited. Improved coordination between institutions is also necessary to foster clear responsibility and stewardship models for local stakeholders and communities. Defined responsibilities, incentives and disincentives are required for risk mitigation across sectors and stakeholders, from landowners to city planners, construction companies and insurers.

- With rising suppression costs, resource mutualisation and the efficiency of suppression activities become increasingly relevant. There is a need to share expensive firefighting equipment across countries, to advance knowledge sharing, cross-training, common risk assessments and planning procedures. To increase efficiency, more emphasis could be placed on documenting and analysing the economics of wildfire suppression and other mitigation options.

Communicate risk and shift perception

Wildfire is a "wicked problem" that has no singular, objectively optimal answer. Risk mitigation strategies and actions must be knowledge-informed and co-designed with active engagement from empowered local communities and other key stakeholders. They must be tested iteratively, bringing policy to the field, and conversely incorporating feedback from the field into adaptive policy design.

- "Zero risk" is not a realistic option: most regions and risk mitigation options have to navigate and decide between various trade-offs. Effective risk mitigation work cannot happen without engaging communities and broader stakeholders in the co-design of approaches and actions. This is a necessary condition to create common visions and shared responsibilities, and to incorporate the ideas, motivations and experiences emerging from communities' historical experiences with wildfires.

- Sustained efforts are needed to bridge the gap between the evolving reality of wildfire risk and the often under-estimated social perception of risk. Understanding the limits of suppression capacities in extreme wildfire events could channel an increased share of the attention and available resources towards more comprehensive mitigation options, helping avoid excessively reactive, ineffective, and overly costly responses.

- Renewed efforts must be placed on reaching the broader, sometimes distant, parts of society. In this respect, the threat to human health through smoke and haze pollution is a major impact of fires and can have the broadest reach in affecting policies and motivation for action.

Scale up transformative change

Direct approaches to increase fire resilience, as outlined above, can arguably be supplemented by broader, indirect and often longer-term approaches focussed on decreasing or reverting rural abandonment, with rural development patterns featuring a deeper transformation of how society treats natural resources and rural space.

- Sustained political action across scales and sectors could play a key role in comprehensively addressing the structural, rural, environmental, and social drivers of wildfires.

- In a context of increased urbanisation, globalisation of the economy and aging populations, Europe should re-imagine its rural areas and consider a new rural policy which integrates agriculture and other sectoral policies, shifting from a catastrophe-focused wildfire suppression to one that strengthens landscape resilience.

- Correspondingly, rural development strategies ought to feature structural change to create sustainable, productive, and profitable rural areas: helping, for example, to reconsider the value of the landscape, enhance infrastructural and digital connectivity and empower rural people to have a louder voice in policy.