Development of National Land Change Products

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Forest ecosystems in Europe are subject to a wide range of stressors ranging from wildfires and biotic agents, to climate change and shifting demographic trends. Detecting and characterizing change is thus pivotal to guarantee the conservation of ecosystems and of important value chains. However, traditional techniques are unfit to address this need, especially given the increasing labor shortage in the forestry sector.

In the presentation, it will be described how different variables influence forest and tree health, in a deeply interconnected web of stressors. This reality creates a complex environment for the development of change detection products capable of characterizing its cause and extent. User and legal requirements further influence the development of new products, which must often detect change at tree-level. To this end, the deployment of combined solutions using space, airborne, and field actions are described and discussed.

Project FOCUS (Forest Operational monitoring using Copernicus and UAV hyperSpectral data), funded by the European Commission through Horizon 2020, will be used as a representative example of a research and development effort leading to a state-of-the-art operational service. The presentation also addresses pitfalls that commonly discredit space-based solutions and increases resistance to product uptake by end-users.