

REFORM - Mixed species forest management. *Lowering risk, increasing resilience*

CONTEXT

Forests are increasingly exposed to climate-driven biotic and abiotic disturbances. Climate change could thus jeopardize forests' capacity to deliver critical ecosystem services. There is therefore an urgent need to adapt forest management so as to promote and improve forest resilience at different spatial and temporal scales. Mixed forests are considered as one of the main options for adapting to and reducing risks of climate change. Higher tree species diversity is expected to provide higher productivity, temporal stability, resistance and resilience to disturbances and a more diverse portfolio of ecosystem services.

MAIN OBJECTIVES

This project primarily aims at increasing knowledge about the resistance and resilience of mixed forests to climate driven disturbances and providing the necessary information to improve the sustainable management of mixed forests in the context of climate change. In order to achieve this goal the main objectives are:

- determine the role of mixing species on reducing the vulnerability of forest stands to biotic and abiotic disturbances
- identify the management regimes to improve the resilience of mixed forests
- adapt growth models to simulate mixed forest dynamics under different climate scenarios
- analyse the effect of risk resilient forest management alternatives on the provision of ecosystem services (ES) in mixed forests at different spatio-temporal scales
- transfer the project results to stakeholders and policy makers.

MAIN ACTIVITIES

The main activities to achieve the REFORM aims are the following:

- comparison of pure vs. mixed stands vulnerability to multiple hazards through quantitative estimates of resistance and resilience; and analysis the stand features that reduce vulnerability
- analysis the effect of stand structure and thinning treatments on resilience; define risk resilient silvicultural guidelines; and implement risk resilient silvicultural alternatives in forest simulators
- estimate ES provision based on experimental data from stands with different levels of stand heterogeneity; and simulate the effect of risk resilient silvicultural alternatives on ES provision at different spatio-temporal scales
- create an Open Access Simulation Hub Service platform and organize regional workshops and training activities for communication with forest managers and policy makers and for the exploitation of results.



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