ADAPTING FORESTS TO CLIMATE CHANGE

19-20 NOVEMBER 2019 · TOULOUSE - FRANCE

SYMPOSIUM

METHODS · TOOLS · PROJECTS

🌐 FOREST-CLIMATE-CHANGE-SYMPOSIUM.EU

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LIFE CORNER		
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2	RAPHAËL BEC	Forest management procedures adapted to global change in Haut-Languedoc: The FORECCAsT network of test sites
3	JULIANE CASQUET	Raising awareness among forestry and wood professionals, local elected representatives and the general public about the adaptation of forest to climate change: The input of the FORECCAsT project
4	BAPTISTE ALGAYER*	Confronting the Available Water Capacity concept with forest soils: The Haut-Languedoc case study
5	THOMAS BRUSTEN	Vulnerability and management of a forest habitat under climate change: The case of the "Atlantic acidophilous beech forests with *Ilex*" (HCI 9120) in the Haut-Languedoc Regional Nature Park (France)
6	IRANTZU PRIMICIA	Towards an adaptive forest management to climate change in Navarre
7	PETROS KAKOUROS	Adapting forest management to climate change in Greece: The LIFE+ project AdaptFor
8	DEBAIVE NICOLAS	Networking opportunities to adapt natural forest monitoring and management to the challenges of climate change in Europe
9	LIDIA GUITART	Technical and economical evaluation of climate change adaptation silviculture in mixed forests in sub-humid Mediterranean conditions
10	ANDREA CUTINI*	Sustainable forest management of coppice forests in a climate change perspective: Suggestions from the LIFE FutureForCoppiceS project
11	TJASA BALOH	Raising awareness among stakeholders about the adaptation of forests to climate change: LIFE for European Forest Genetic Monitoring System (LIFEGENMON) communication and dissemination activities
12	ROK DAMJANIC	Phenological observations of common beech (*Fagus sylvatica* L.) within the LIFEGENMON project and as part of forest genetic monitoring in Slovenia
13	NATALIJA DOVC	Alternative sampling design for forest genetic monitoring in the LIFEGENMON project
14	ERMIONI MALLIAROU	Application of forest genetic monitoring for two species in Greece in the frame of the LIFEGENMON project
15	UGO CHIAVETTA	Phenological monitoring to support sustainable Mediterranean beech planning for a resilient forest: Life AForClimate project
16	UGO CHIAVETTA	A new approach for an adaptive forest management planning to improve resilience of beech forests in relation to climate change : The LIFE AForClimate project
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17	SANDRINE BRETEAU-AMORES	Species mixture vs. age mixture: How to conciliate wood production and carbon sequestration objectives under drought and windstorm risks in forest
18	SANDRINE BRETEAU-AMORES	Are mixtures a good option to reduce drought-induced risk of forest decline? Carbon accounting and economic approach
19	JOÃO CARVALHO	The contribution of close to nature silviculture to the climate change adaptation in the Mediterranean region
20	TIMOTHEE FOUQUERAY	Foster Forest, a participative serious game to s(t)imulate adaptation to climate changes in forest management

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22	**MARC PEAUCELLE**	FoliArduino: A low-cost autonomous device for long-term tree phenology monitoring
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32	**VALDA GUDYNAITE-FRANCKEVICIENE***	Plasticity and genetic variation of different poplar hybrids and clones under effect of severe stressors - Simulated frost, drought, increased UV-B, warm winter
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46	**BRUNO FADY**	Using common gardens to adapt forests to climate change: The French Genetic Network of Forest tree Experiments (GEN4X)

*This person will not be present during the 19th of November

#16 A new approach for an adaptive forest management planning to improve resilience of beech forests in relation to climate change : The LIFE AForClimate project

Authors: Ugo CHIAVETTA[1], Fabrizio D'APRILE[1], Maria Cristina MONTEVERDI[1], Gianluigi MAZZA[1], Manuela PLUTINO[1], Roberta PROIETTI[1], Marcello MIOZZO[2], Stefano BRACCIOTTI[2], Vittorio GARFI[3], Marco MARCHETTI[3,4], Serena ANTONUCCI[2,4], Giovanni SANTOPUOLI[2,4], Donato Salvatore LA MELA VECA[5], Sebastiano SFERLAZZA[5], Federico MAETZKE[5], Tommaso LA MANTIA[5], Paolo MORI[6], Luigi TORREGGIANI[6], Stefano MANNI[7], Maria RONCONI[7], Nicolina DEL BIANCO[8], Luisa MARRA[9]

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Climate change may affect the thermo-pluviometric regimes, changing the essential eco-physiological processes in forest ecosystem, so putting at risk the adaptability, resilience and so the productivity these systems. Forest biomass, resilience, and carbon sequestration may be damaged unless forest planning and management implement the relationships between climate variability and trends of tree growth. Hence, it becomes important developing a sustainable forest planning and management to conserve the biodiversity and productivity of forests. Different studies showed how climate variability can play a relevant role in forest planning and management within a climate change scenario. Assessing the effects of different climatic variables and how these can influence the capacity to respond of forests, becomes fundamental to develop an adaptive forest planning, resilient to environment pressures. Currently 'traditional' methods of planning and management of forests do not consider the influence of climate variability on forest growth rate over time. This can have a significant effect on forest biomass production, resilience and carbon sequestration, highlighting the need for a dynamic approach that considers the close relationships between the main climatic variables and forest growth trend.

AForClimate project (Adaption of FORest management to CLIMATE variability: an ecological approach - LIFE15 CCA/IT/000089) aims to provide concrete solutions to achieve adequate forest planning in the ongoing adaptation to climate change. The objective of the project is to manage forests in order to preserve their resilience, promote their natural renewal and distribute the wood mass harvested over periods with climatic conditions favourable to growth. Knowing the response of plants to climate variability and monitoring constantly variables such as temperature and rainfall it is possible to intervene only in phases of "high reactivity" of the forest, where it can better respond to stress caused by cutting. On this basis, the AForClimate wants to spread an innovative and dynamic methodology of forest planning and management, designed to guarantee a better forest adaptation to climate change in place. The project considers beech forests given their economic importance in Europe. About 15 million hectares of beech forests grow in central and southern Europe, from sea level up to 1,800 m altitude. The project feasibility will be demonstrated in three Italian regions (Molise, Sicily, and Tuscany) thanks to the support of three territorial partners responsible for management in their respective areas of competence: Molise Region, Sicily Region, and Mountain Union of the Mugello Municipalities. The expected results from the project are (i) develop a detailed forecasting model for forest management that takes into account climate variability over time; (ii) build a monitoring scheme to assess, at the end of the project, the impacts of the management approach in terms of forest growth and regeneration; (iii) adapt forest management to climate change; (iv) elaborate a prototype of Decision Support System to plan forest management in a climate change scenario