

LACCAVE project Adaptation to climate change in viticulture and oenology



▲ Collaboration between researchers and wine growers for the adaptation of vineyards to climate change (here near Banyuls, France).
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The LACCAVE project aims to study the impacts of climate change on vines and wine and potential adaptation strategies for French wine regions. It is based on a systemic representation for the analysis of the wine sector in order to analyse both the impacts of climate change (advanced harvest dates, exacerbated water stress, wines with more alcohol and less acidity, etc.) and the diversity of levers for potential adaptation. This analysis is performed at several levels (plant, plot, farm, regional and wine sector) while focusing specifically on regional levels where climate impacts differ and adaptation strategies may be coordinated.

Coordinated by UMR Innovation in Montpellier and Écophysiologie et génomique fonctionnelle de la vigne in Bordeaux (EGFV – INRA, Bordeaux University, Bordeaux Sciences Agro), this project brings together 21 INRA research units, 8 of which are located in Montpellier. Many initiatives are under way: review of knowledge on climate change on a vineyard scale; studies on the physiological and genetic basis of vine responses to climate change parameters; analysis of innovations that could contribute to adaptation and conditions for their implementation on local scales; studies on the costs of adaptation to climate change impacts and on consumer willingness to pay for wines that reflect these costs, etc. These initiatives feed a foresight study, conducted in collaboration with FranceAgrimer that investigates adaptation strategies for different French wine regions.

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 $\textbf{For further information::} www.accaf.inra.fr/Actions-et-Projets/adaptation_productions_vegetales/LACCAVE/$

Changes in agricultural and agrifood practices and innovations

The joint research unit Innovation and Development in Agriculture and the Agrifoods Sector (UMR Innovation – INRA, CIRAD, Montpellier SupAgro) conducts multidisciplinary research in France and abroad on agricultural and agrifood innovation processes to address agroecological transition and climate change adaptation issues.

This research concerns all processes related to adaptation initiatives, ranging from the analysis of stakeholders' motivations and aims regarding innovation, to concrete measures to implement the changes, and the development effects induced by these changes. The studies are focused mainly on changes in practices and innovations 'in the making'—they are potential levers for adaptation to climate change in the future. This work specifically stresses the role of research and the importance of building the capacities of farmers to cope with these issues.

The unit has expertise in agronomy and social science, with perennial crops (vines, cocoa, coffee, lavender, *etc.*) and annual cropping systems (rice, cereals, cotton, *etc.*) as topics of study.

The research may focus on current practices while taking climate variability into account, or on the need to mitigate the impacts of climate change (effects on crop yields and product quality). The unit thus directly contributes to different foresight studies on the adaptation of agriculture to climate change.

Co-design of climate-smart farming systems

Research on climate-smart agriculture aims to investigate institutional changes (new support services, novel arrangements between stakeholders, etc.), innovative practices (use of agroclimatic information, precision irrigation, etc.) or long-promoted agroecological practices (use of compost, crop associations, etc.), while assessing them according to food security, adaptation and GHG mitigation criteria. These studies are carried out by UMR Innovation in collaboration with CIAT (International Center for Tropical Agriculture, Colombia) in different countries (Burkina Faso, Colombia, France) and include participative approaches involving farmers. They aim is to co-design innovative strategies while simulating their short- and long-term effects according to climate-smart agriculture criteria.

These simulations are combined with on farm experiments that facilitate farmers' appropriation of available solutions and their implementation methods.

This research contributes to the development of new farmer decision support tools. They help train public and private extension services on current short- and long-term uncertainties, and assessment of possible future scenarios via simulation tools.

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