**Title and acronym of the project**

MODEXTREME. Agriculture facing extreme climatic events

**Project logo**

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**Thematic area**

Land Use-Farm

**Funding Programme**

FP7-KBBE

**Implementation period**

2013-2016

**Coordinator**

Institut National de la Recherche Agronomique (FR)

**Countries involved**

Italy, Spain, Switzerland, Denmark, United Kingdom, Portugal, Greece, France, Ukraine, Brazil, Argentina, South Africa, China, United States

**Source of information (link)**

<http://modextreme.org/>

**Project overview**

The continuous supply of services provided by agricultural systems is increasingly threatened by climate change in association with an estimated increase in the frequency of extreme weather events such as droughts, heat waves or heavy precipitation events.

MODEXTREME has the overarching goal to help the European and non-European agriculture face extreme climatic events by improving the capability of biophysical models simulating vegetation responses to integrate climatic variability and extremes.

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**Results**

Identify and integrate into simulation models, the responses of main crop and grassland systems to environmental conditions associated with extreme climatic events; improve yield monitoring and forecasting systems via multiple observational constraints to be assimilated into process-based models across different climate conditions; estimate possible trajectories of agricultural productivity in the short to medium time horizons and associated uncertainties; build a consistent, multi-domain data repository for use in studying climate variability and extreme events relevant for agricultural production; develop generically reusable software units that implement libraries of models. This will allow (i)extending the vegetation response, as implemented in existing modelling solutions, to weather extremes, (ii) extending the multi-model platform for plant growth and development simulations of the European Commission Joint Research Centre; prototype alternate versions of the workflows for agricultural production monitoring and scenario analysis both using new modelling solutions composed in the project, and by focusing on extreme events.