



# Modelling the impacts of extreme climatic events on agrifood systems

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# Two goals of our time

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## 1. Achieving food security

- To feed 9 billion people by 2050
- Food production to increase by 60% (100% in developing countries)

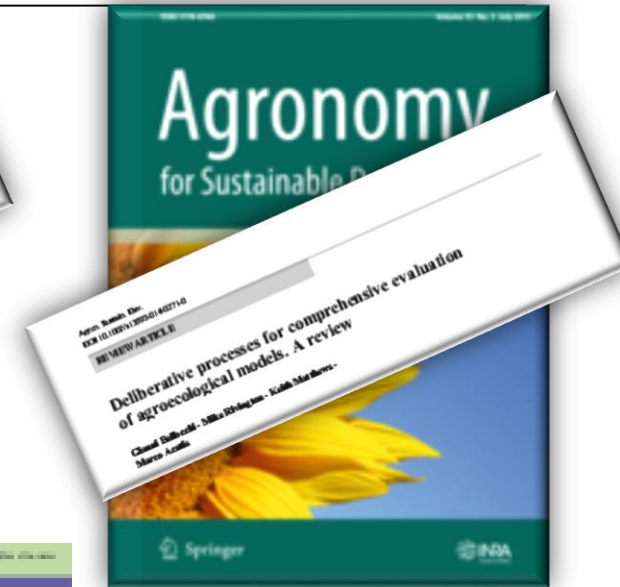
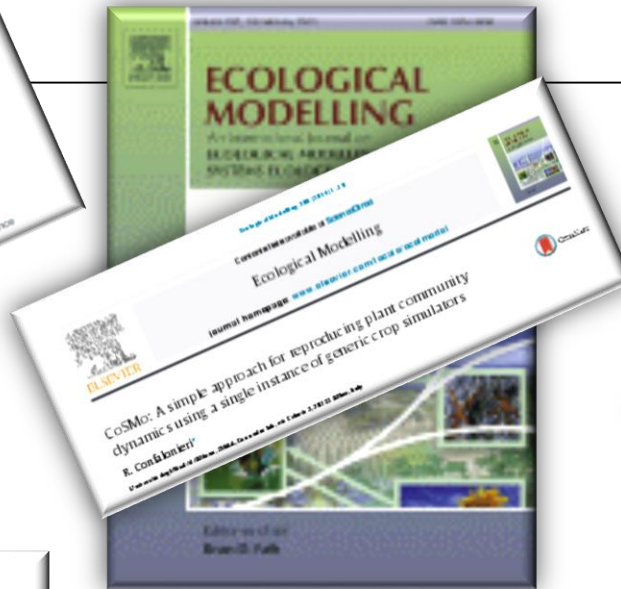
## 2. Facing extreme weather events

- Intensification of extremes
- Agriculture production impacted
- Modelling part of the solution

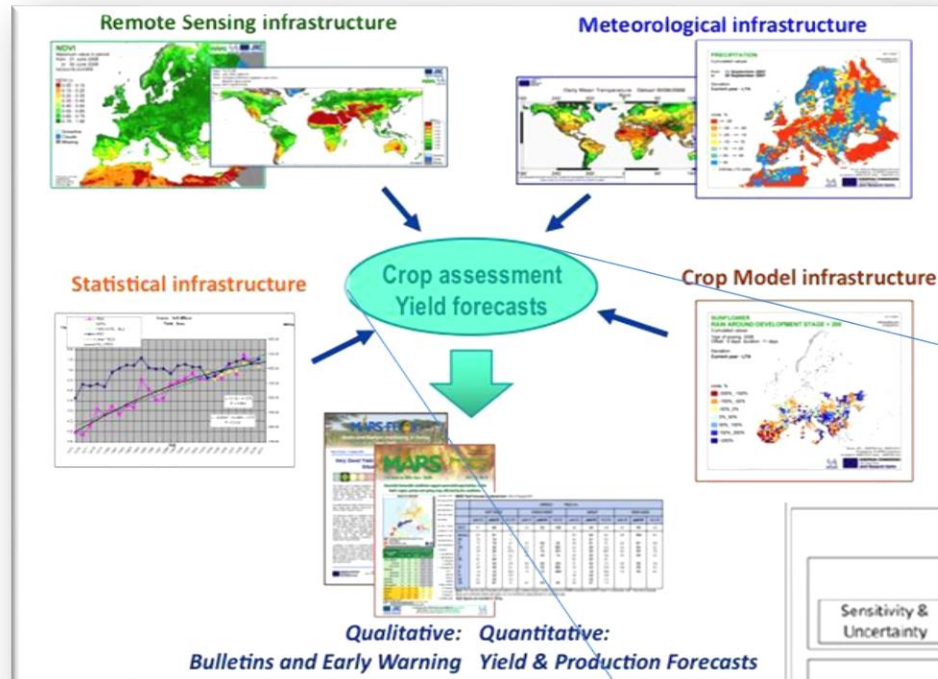




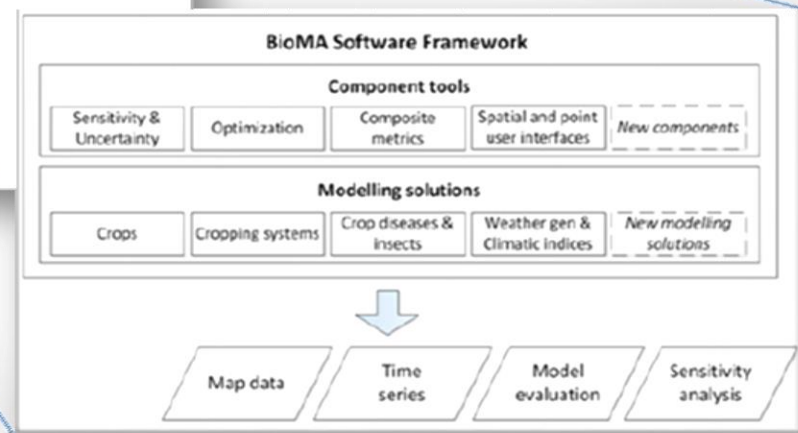
# Publications



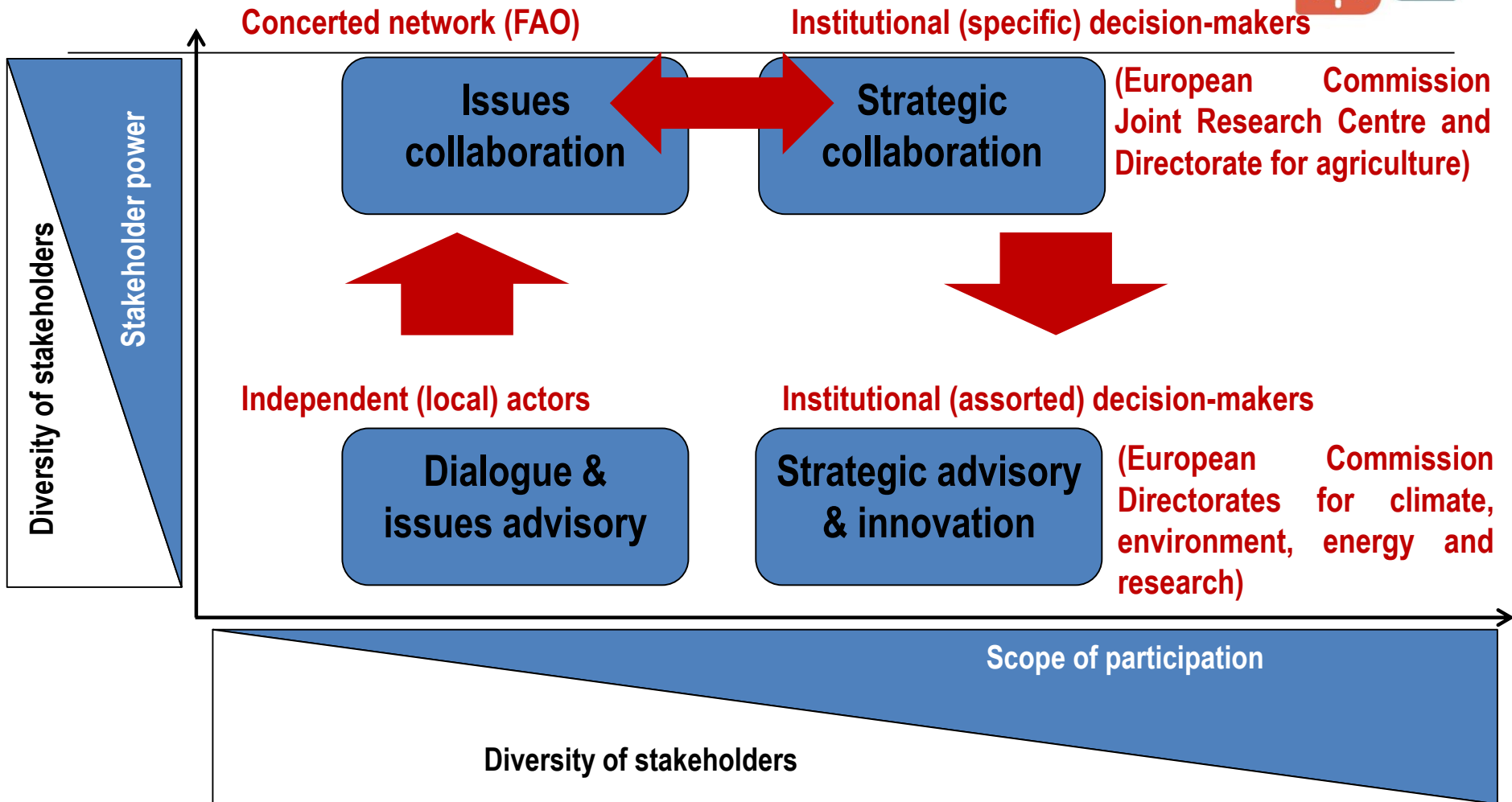
# JRC-MARS agricultural yield forecasting with the platform BioMA



There is no doubt that **research applications** in crop modelling will continue, but for such applications to sustain long-term interest **policy applications** need to be developed and applied



# Stakeholder platform







RECHERCHE ■ 120 secondes pour présenter le résultat d'études menées par l'Inra de Clermont-Theix-Lyon

# De la listeria au bien-être des vaches

Le centre de Clermont-Theix-Lyon a présenté hier, par les éditoriaux de l'Inra, les résultats d'études menées en 2013.

Cette réunion a également permis à Jean-Philippe Couderc, président du centre, d'annoncer quatre événements marquants. Longue concentration nous à bien le Centre et quarante ans de recherche française que la Chine s'inscrit à l'élaboration des ministères via les recherches de l'Inra.



INRA. Des chercheurs de Clermont-Theix-Lyon ont travaillé au bien-être des vaches d'élevage en la polyculture d'élevage.



Le Centre présente ses résultats de recherche en 120 secondes



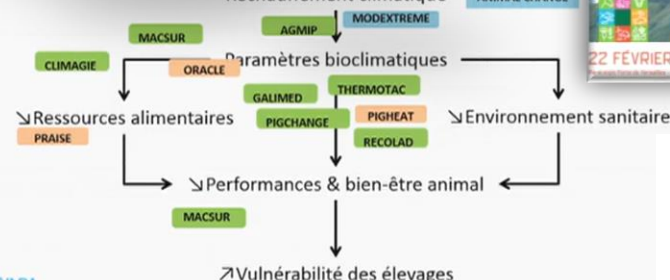
Brasil e França aperfeiçoam tecnologia para simular sistemas pastoris



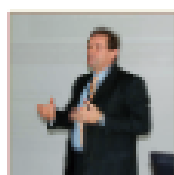
Uma equipe técnica da Embrapa Informática Agropecuária vem realizando testes com processamento em grid, sobre uma estrutura de computação em nuvem, para simulação de cenários futuros em um prazo de até trinta anos. O objetivo é estabelecer uma infraestrutura tecnológica para execução do PaSim, por meio de uma série de dados de clima, solo, vegetação etc., em um ambiente de nuvem. A tropicalização do modelo é importante porque os modelos de processos biológicos atuais não estão adaptados às regiões tropicais do mundo, que

Réchauffement climatique

ANIMAL CHANGE



modextreme



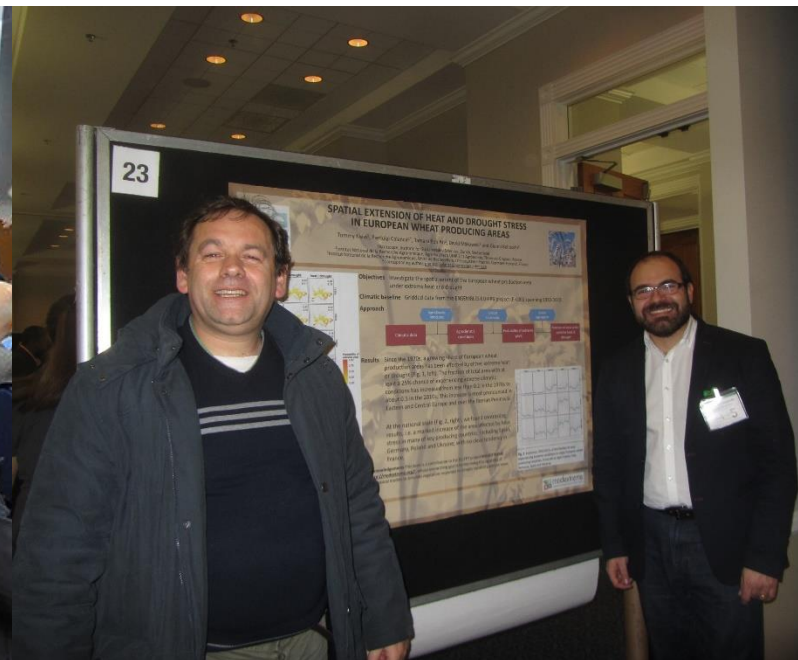
Gianluca Ricci

MODEXTREME : MODElling vegetation response to EXTREME events

Nouvelles de nos Recherches



AgMIP 5th Global  
Workshop,  
Gainesville FL, USA,  
25<sup>th</sup> to 28<sup>th</sup> of  
February 2015



Climate-Smart  
Global Science  
Conference,  
Montpellier, France,  
16<sup>th</sup> to 18<sup>th</sup> of March,  
2015



### Some feedbacks from Poster Session L2.2 (3mn)

- Managing climate induced risks and adaptation in the agriculture sector; a case of Punjab province Pakistan  
Abid Muhammad
- Gauging the effects of extreme climate events on European crop yields  
Ben-Ari Tamara
- Use of regional climate model output for modelling the effects of future extremes in agriculture  
Christensen Ole
- Analyses of extreme weather events and its impact to agriculture smallholders in Gandaki River Basin of Nepal Himalaya  
Dahal Piyush
- Participatory climate risk management at short-term and seasonal scales – examples from South Asia  
Nidumolu Uday





# First science workshop



## 5th International Symposium for Farming Systems Design



SEPTEMBER  
7-10, 2015  
—  
MONTPELLIER  
France

Modelling the impact of extreme climatic events in agriculture

# Third and fourth science workshops



ESA14

EDINBURGH  
SEPTEMBER 5 - 9, 2016

The overall theme gives a broad focus on ecosystem service delivery from agricultural landscapes (especially food, conservation, water quality) and allows separate specific focussed threads to be developed for parallel sessions.





#### Public Project Newsletter

MODEXTREME has circulated in July 2015 the first Public Project Newsletter, titled "MODEXTREME: Let us introduce ourselves!"

[View more...](#)



#### First Science Workshop

The first Science Workshop of MODEXTREME will take place in Montpellier (France), in the frame of the 6th International Symposium for Farming Systems Design.

[Read more...](#)



#### Second Annual Meeting

The second Annual MODEXTREME meeting will be held on November 6th, 2015, in Rome, Italy.

[Read more...](#)



#### Training on BioMA platform

Preceding the Second Annual meeting in Rome, a training on BioMA platform.

[Read more...](#)

## AGRICULTURE FACING EXTREME CLIMATIC EVENTS

Improve the capacity of agro-ecological models simulating vegetation responses to integrate climatic variability and extremes

#### SCIENCE BRIEFS



Replacing (climate change threatened) maize systems with giant reed



Coordination of hydraulic controls in plants for predicting genetic variability



High-resolution, bias-corrected climate change projections



Flag

The project consortium consists of 12 centres from Europe, Asia, North and South America, and Africa, and is led by INRA, France. Work is organized in 7 workpackages.



#### Upcoming Events

- **MODEXTREME First Science Workshop**, Sep 10th, 2015
- **Compositional Solutions Workshop**, Sep 10th, 2015
- **Training on BioMA platform**, Nov 2nd, 2015
- **MODEXTREME Second Science Workshop**, Nov 2nd, 2015

#### Subscribe to our Newsletter

First name

Last name

Email

#### External events

- **The 6th International Symposium for Farming Systems Design**, September 6th, 2015
- **2nd International Conference on Stress-Proof Security**, October 10th, 2015
- **6th European Conference of the International Environmental Modelling and Software Society**, July 9th, 2016

#### Links

Private area (partners only)

#### Supported by



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<http://modextreme.org>



## Acknowledgement

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