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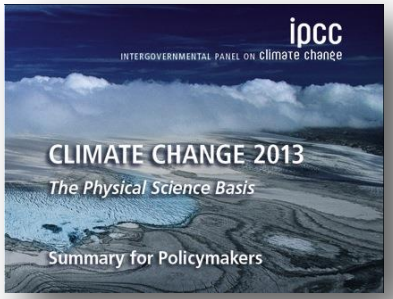
Conclusion – Perspectives from the INRA metaprogramme on Adaptation of Agriculture and Forests to Climate Change (AAFCC)

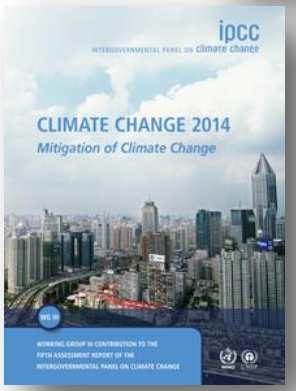
Thierry CAQUET, Director of the metaprogramme

Adaptation to CC as a 'new' paradigm

Statements:

- Proven impacts of CC (phenology, yields, ...)
- Alarming predictions (extremes, variability, ...)
- Mitigation alone will not be sufficient
- Adaptation is essential





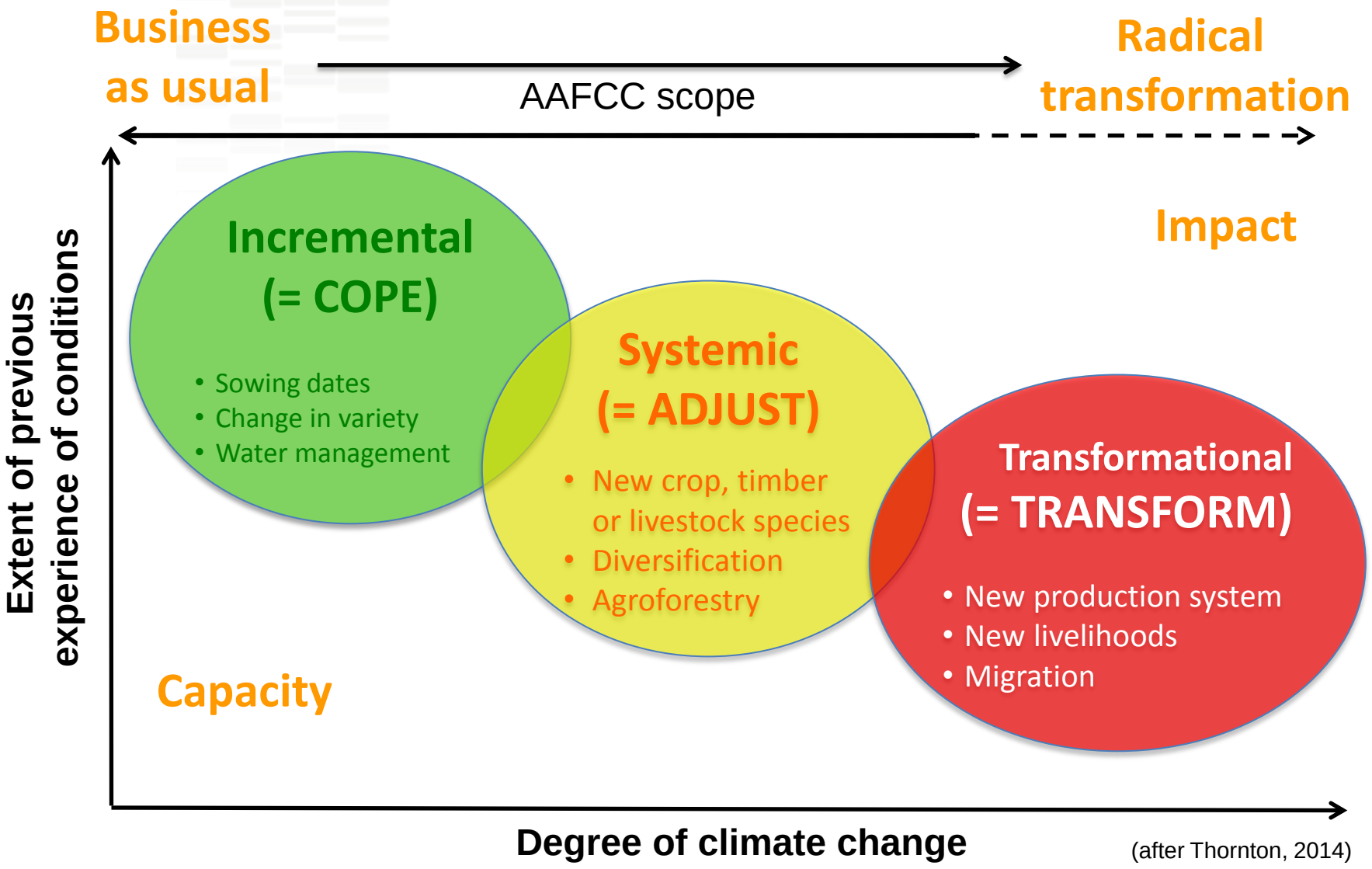
Strong needs for action in:

- Research
- Transfer & Innovation
- Organisational and institutional changes
- Development of human and social capital

COP21 2015

=> Rationale for the creation of the INRA metaprogramme on Adaptation of Agriculture and Forests to Climate Change in 2011

Many roads (and reasons) to adapt



(after Thornton, 2014)

The four pillars of AAFCC strategy

1. Promoting multidisciplinarity

Promoting multidisciplinarity

- **Life sciences**: genetics, agronomy, ecophysiology, ecology, …
- **Earth and planetary sciences**: hydrology, climatology, Earth observation, …
- **Mathematics/Informatics**: modelling, statistics, "Big Data", …
- **Social and Human Sciences**: economy, sociology, politics, pedagogy, …

The four pillars of AAFCC strategy

1. Promoting multidisciplinarity
2. Targeting innovation

Targeting innovation

- **Water management**: purification, desalination, irrigation, water reuse, …
- **Agricultural technologies**: sensors, UAV, embedded softwares, machinery, …
- **Information and communication technologies**: weather forecast, climate monitoring, GSM diffusion, …
- **Infrastructures**: civil engineering, livestock buildings, …
- **Agrifood industry**: conservation, processing of agricultural products
- **Agricultural consulting**: decision-support tools, climate services

Supporting Climate Services for agriculture

- EU definition: "*Transforming climate-related data and other information into* ***customised products*** *such as* ***projections***, ***trends***, ***economic analysis***, ***advice*** *on best practices,* ***development*** *and* ***evaluation of solutions***, *and any other climate-related service liable to benefit that may be of use for the society. These services include data, information and knowledge that* ***support adaptation***, ***mitigation and disaster risk management***".
- On H2020 and JPI-Climate roadmaps
- Project for France: to develop a portfolio of services for agricultural and forestry systems and territories.
- Accessible via the Internet
- Based on ensemble modelling for simulation of impact and testing of adaptation options

The four pillars of AAFCC strategy

1. Promoting multidisciplinarity
2. Supporting innovation
3. Fostering international cooperation

Fostering international cooperation

- Direct funding of projects and networks

- Co-funding of ERA-Nets

- Contributing to international projects
- Involvement into international events

The four pillars of AAFCC strategy

1. Promoting multidisciplinarity
2. Supporting innovation
3. Fostering international cooperation
4. Fostering dialogue with stakeholders

⇒ Stakeholder Advisory Board launched in 2015

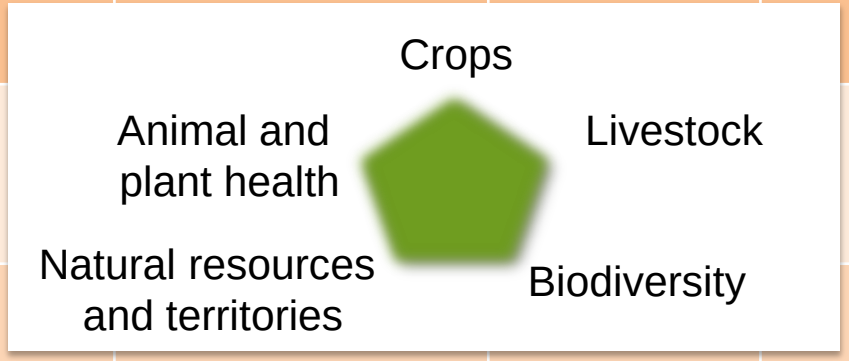
- Ministries, Agencies, Technical institutes, NGO, etc.
- Forum for exchanges
- Identifying needs and offers
- Fostering dissemination

Multiple dimensions of work

Integration ➔Dissemination

Time

	Observation	Experiment & Modelling	Multicriteria assessment	Dissemination & Innovation
Risks and medium-term opportunities				
Regional & sectorial long-term forecast and scenarios				
Long-term adaptation actions				



- 2 calls; 31 funded projects, including **LACCAVE** and **PERPHECLIM**
- Mobilisation of the INRA research community (95 research units, > 300 persons)
- PhD and postdocs fellowships
- Permanent positions
- Scientific activities (workshops, seminars, conferences, …)
- Communication

Communication

Climat : branle-bas à l'Inra

Long terme. Quels seront les impacts du changement climatique sur la vigne à l'horizon 2050 ? Comment y remédier ? Telles sont les questions auxquelles Jean-Marc Touzard, codirecteur du projet Laccave, doit répondre.

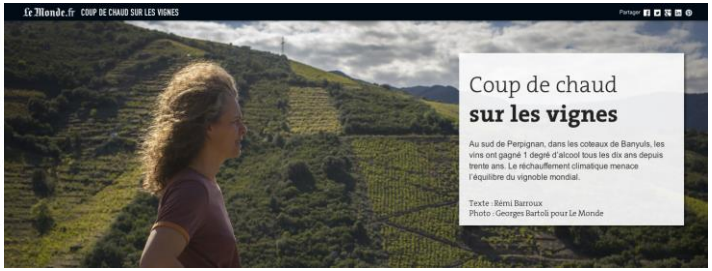
Vins de Bordeaux : quels cépages avec le réchauffement climatique ?

▲ Deux chercheurs de l'Inra, Philippe Darriet et Nathalie Ollat, sur le site de l'École des sciences agronomiques d'ingér Bordeaux/Gradignan, où se déroule le symposium. © GUILLAUME BONNAUD

Comment le réchauffement climatique va changer le vin

MARIE-JOSÉE COUGARD / JOURNALISTE | LE 10/12/2015 À 13:23, MIS À JOUR À 18:29

Dans le bordelais, les étés plus chauds font du bien au Cabernet sauvignon, qu'on avait tendance à cueillir



Food for thought from ClimWine 2016

- *Sustainable grape and wine production in the context of climate change* => still a highly challenging question … not only for research
- Do not forget CC opportunities … but avoid too much optimism
- From impact assessment to adaptation: the current challenge
- No simple or unique solution: time, space … and human factors
- Combining operational (reactive) and strategic (anticipatory) options
- Need for a holistic approach: grape, water, soil, pests, … but not only a matter of biotechnical sciences and models => need for an integrated response across the value chain and including humans (*e.g.*, participatory research)
- Communication and involvement of all stakeholders
- Capacity-building and initial/continuous training and education

Perspectives for AAFCC

- Continuying of AAFCC activities on communication, contributing to training (MOOC ?)
- Linking with other INRA metaprogrammes on *e.g.*, sustainable management of plant/animal health, ecosystem services, …
- Involvement in the "4 per thousand" initiative
- International cooperation: India, Australia, Brazil (?)
- 3rd call for proposals in 2017

Thank you for your attention

http://www.accaf.inra.fr/en