



**INRAE**



## ESAF SEMINAR: Science-based policy advice

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and Public Policy Support







Motives and challenges for engaging in science-based policy advice in a public research institute

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1. **INRAE in a nutshell**
2. **Motives for engaging in science-based policy**
  - Enlightening the public debate
  - Technical support for the implementation of public policies
  - Innovative approach for policy support





> January 1st 2020, INRAE is launched



French National Research Institute for  
Agriculture, Food & Environment





# > INRAE 2030, Strategic priorities for the next ten years

## 5 Scientific orientations

### OS 1

Responding to environmental issues and **managing associated risks**

### OS 2

Accelerating **agroecological and food transitions**, taking into account economic and social issues

### OS 3

A bioeconomy based on a **sober and circular use of resources**

### OS 4

Promoting an approach **one global health**

### OS 5

Mobilizing data science and **digital technologies for transitions**

## 3 General policy orientations

### GPO 1

Putting science, innovation and expertise at the heart of our relationship with society to **strengthen our culture of impact**

### GPO 2

To be a committed player in university sites in France and a leader in European and international partnerships

### GPO 3

The Social and Environmental Responsibility strategy: a collective priority



<https://www.inrae.fr/inrae2030>



## > From challenges to solutions: a great responsibility for research

### ***The Earth system under global change***

*Climate change, biodiversity erosion, environmental degradation (soil, air, water), pollution, depletion of fossil resources, malnutrition, etc., and population growth in urban areas.*





## > Expertise and support for public policies in synergy with research activities

**Proactively**  
identify new  
issues and  
expectations  
of society

**Enlighten**  
public debate  
and decision

**Develop**  
**partnerships**  
with public  
policy actors  
at all scales

To be a  
**reference**  
**institute** with  
a vision at  
international,  
European and  
national level

Fully assume  
its role of  
expertise and  
public policies  
support **in**  
**synergy** with  
science and  
innovation

**Integrate scientific knowledge at the service of  
expertise and public policy support**



# ➤ Expertise and policy support: INRAE's main activities

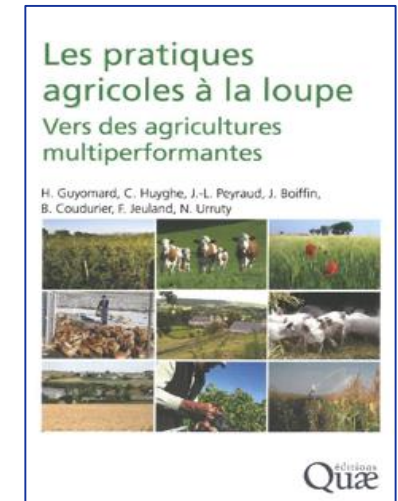
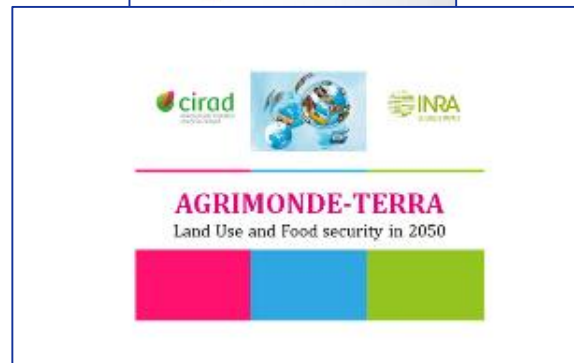
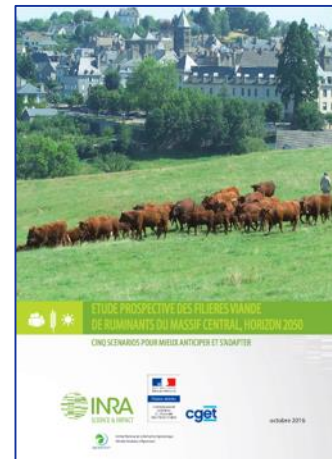
Scientific assessments

Foresight studies

Advanced studies and evaluations

Scientific and technical support for the implementation of public policies

(Knowledge platform, methods, indicators, normalisation, expertise)



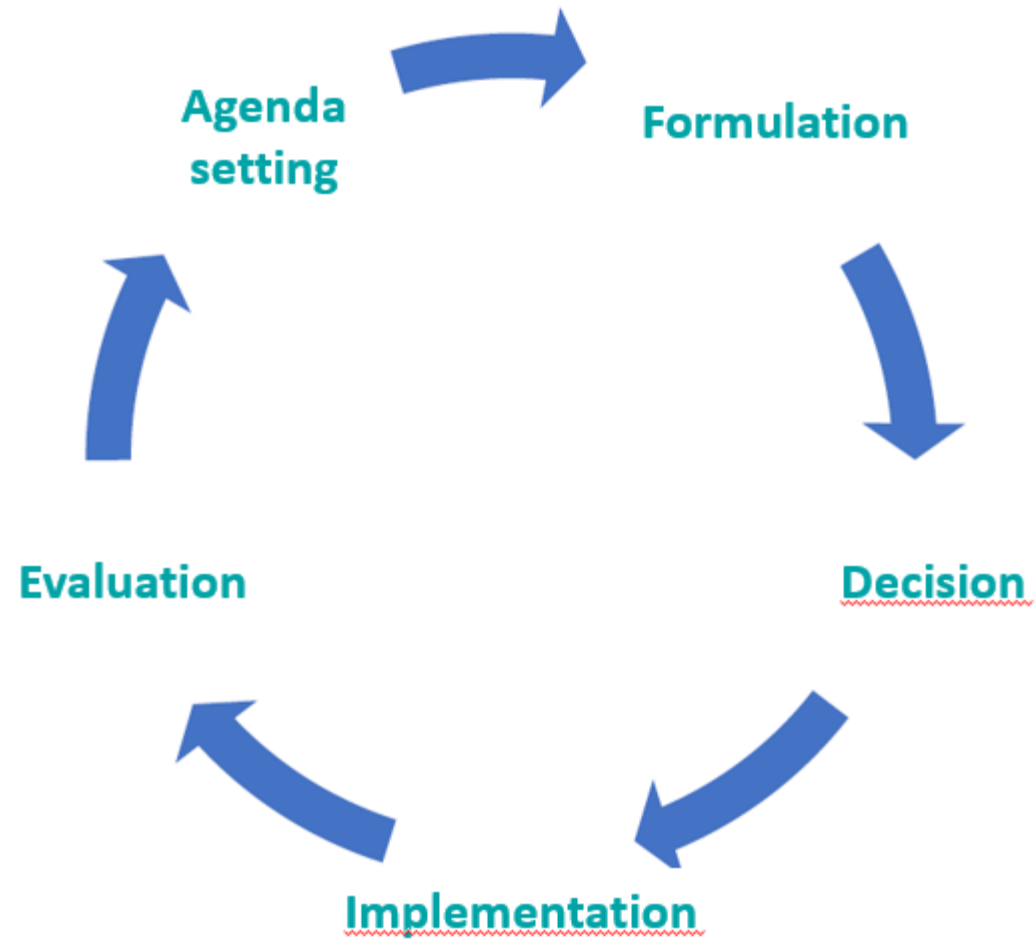
Plateforme ESA

Epidémiologie santé animale  
Centre de ressources

INRAE



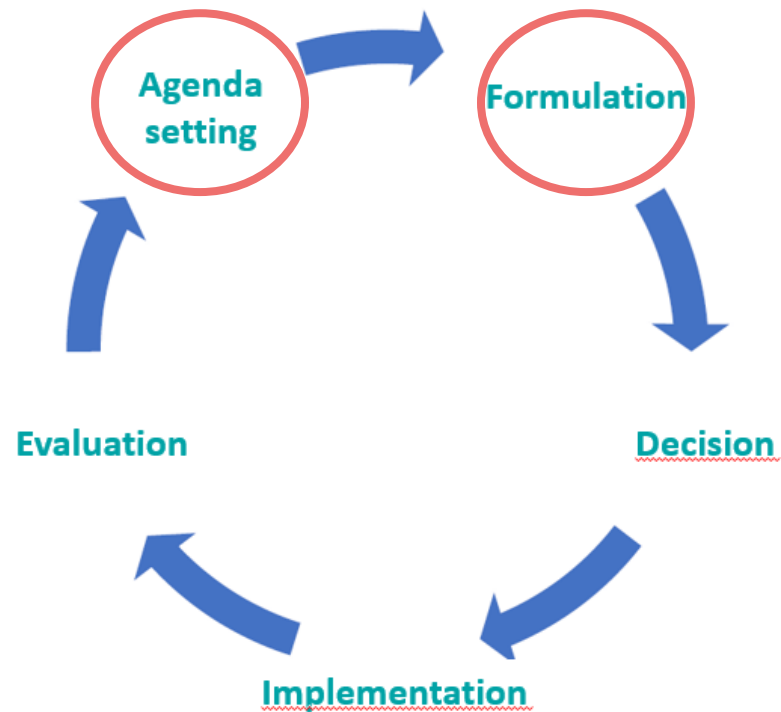
## > Public policy cycle





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Enlightening the public debate





## > Enlightening the public debate

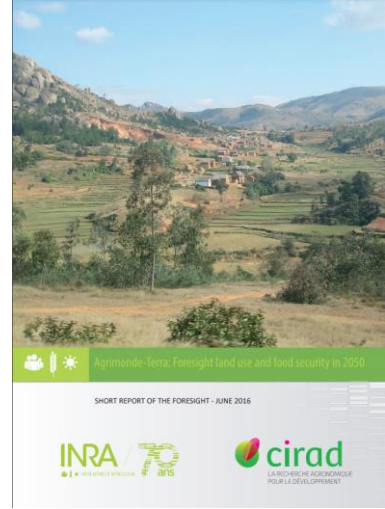
### 1. Foresight study "AgrimondeTerra - Land use and food security in 2050"

- Coordinated by INRAE & CIRAD (French agricultural research organization for development in the South and the French overseas regions) - published in July 2020
- A set of scenarios to explore **possible futures for global food systems and provide new fuel for the debate** on land use and food security
- That will **fuel the debate and help decision-makers** and the scientific community pinpoint new research questions to facilitate the building of healthier, more sustainable food systems.

### 2. Foresight study "Pathways to chemical pesticide-free agriculture in Europe in 2050"

- Linked to the European Alliance "Towards Chemical Pesticide free Agriculture"
- To **develop scenarios of chemical pesticide-free agriculture** in the European union in 2050, answering two questions:

1. What could be the different forms of a chemical pesticide-free agriculture in Europe in 2050? What impacts on land use, production, trade and biodiversity?
2. What could be the different pathways towards these different forms of chemical pesticide-free agriculture?

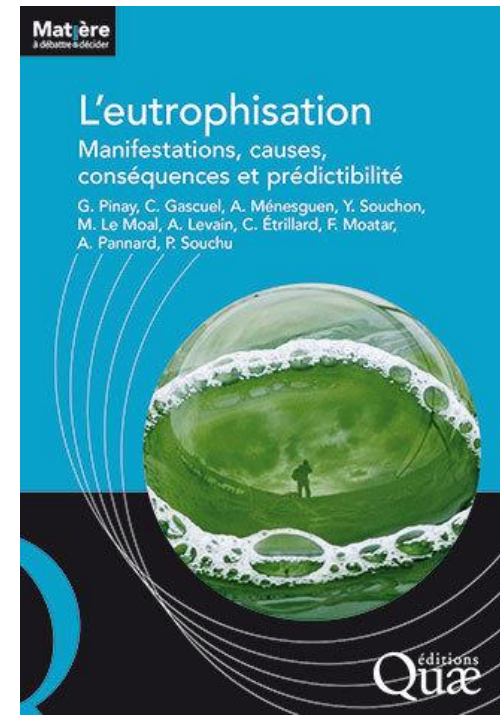




## > Enlightening the public debate

### 3. Collective scientific expertise - "Eutrophication: Appearances, causes, consequences and predictability"

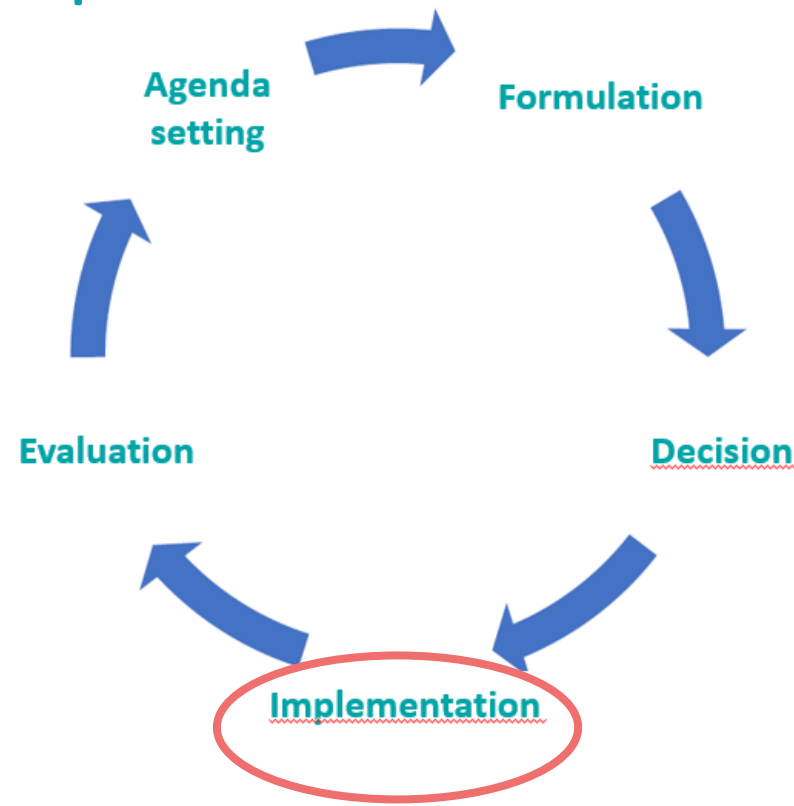
- Coordinated by CNRS, INRAE, IFREMER
- Launched **at the request of the French Government** (Ministries of Agriculture, Environment) (2018)
- **Sets out the available scientific knowledge** on this phenomenon; **identifies existing levers for action** to monitor and combat eutrophication
- Eutrophication has a major disruptive effect on aquatic ecosystems and an impact on assets and associated services, human health and economic activities







## Technical support for the implementation of public policies



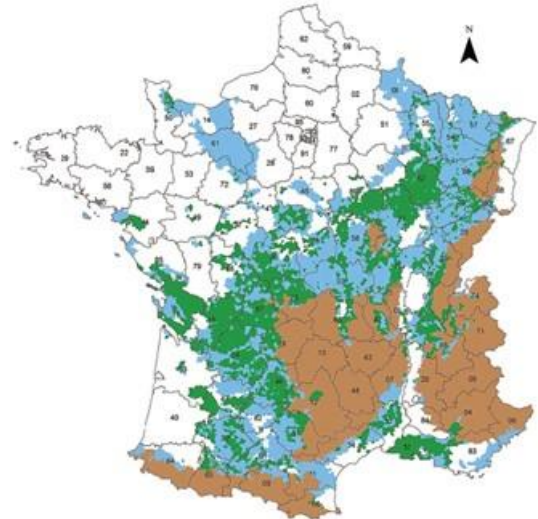


# ➤ Technical support for the implementation of public policies

## 1. A Service Unit for Soil Mapping and Surveillance: INRAE InfoSol Unit

- Coordination of soil survey and soil monitoring for France
- Responsible for the National Soil Information System
- Increase access to soil data and support public policies
- Research on digital soil mapping, soil inventories and monitoring

### *Soil sampling and description for survey and monitoring*

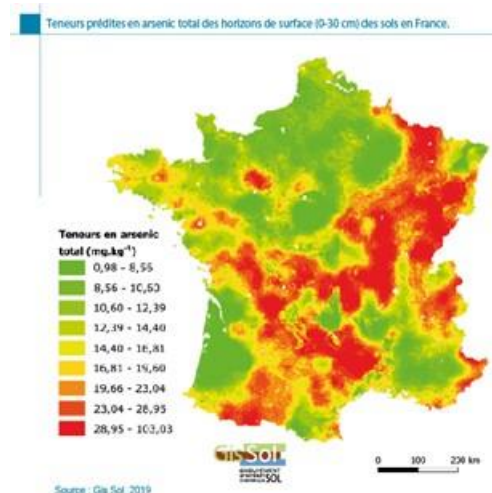


### *Map of Less Favored Areas developed for EU CAP policy*

### *Main soils available on the national portal*



### *Geostatistics for soil mapping*



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## > Technical support for the implementation of public policies

### 2. Surveillance Platforms on Epidemiology (since 2018)



#### Epidemiological Surveillance Platform **on the Food Chain**

- Study the biological and chemical risks that can contaminate foodstuff and may endanger human health



#### Epidemiological Surveillance Platform **on Animal Health**

- Study the determinants of health events in order to develop adapted surveillance systems/measures and to improve disease control (ESV mobilised in successive health crisis)



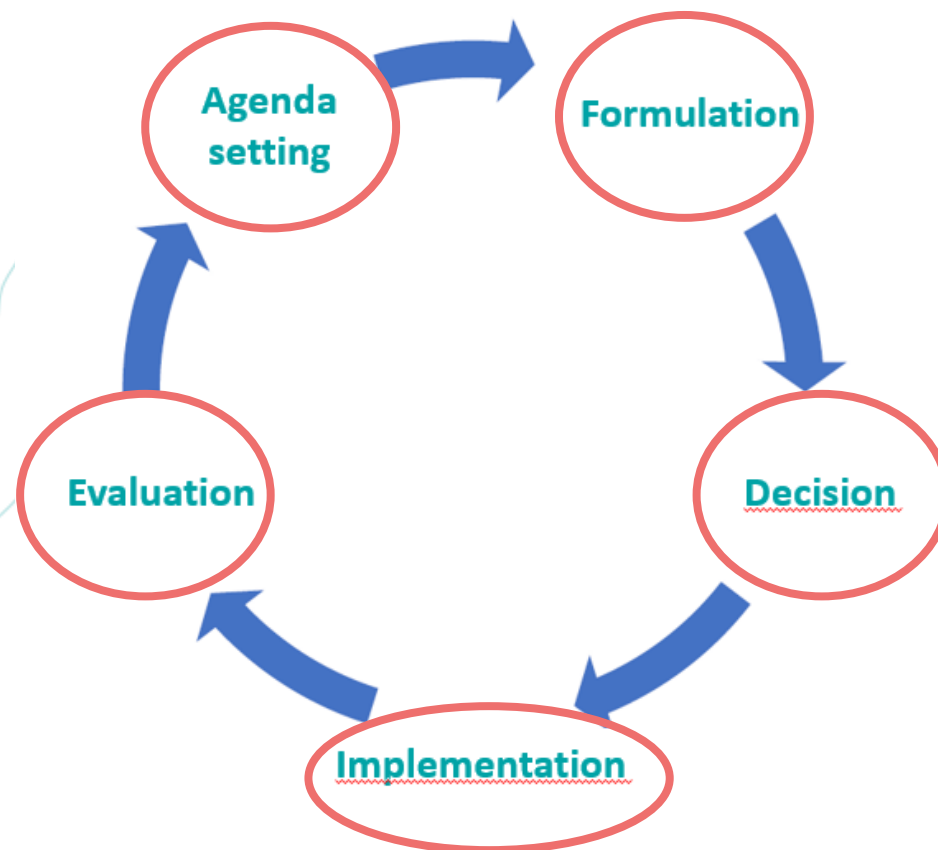
#### Epidemiological Surveillance Platform **on Plant Health**

- Study to improve surveillance and prevention plans and anticipate phytosanitary risks that can have an impact on plants and non-intentional farming practice that have an impact on the environment





## Innovative approach for public policy support





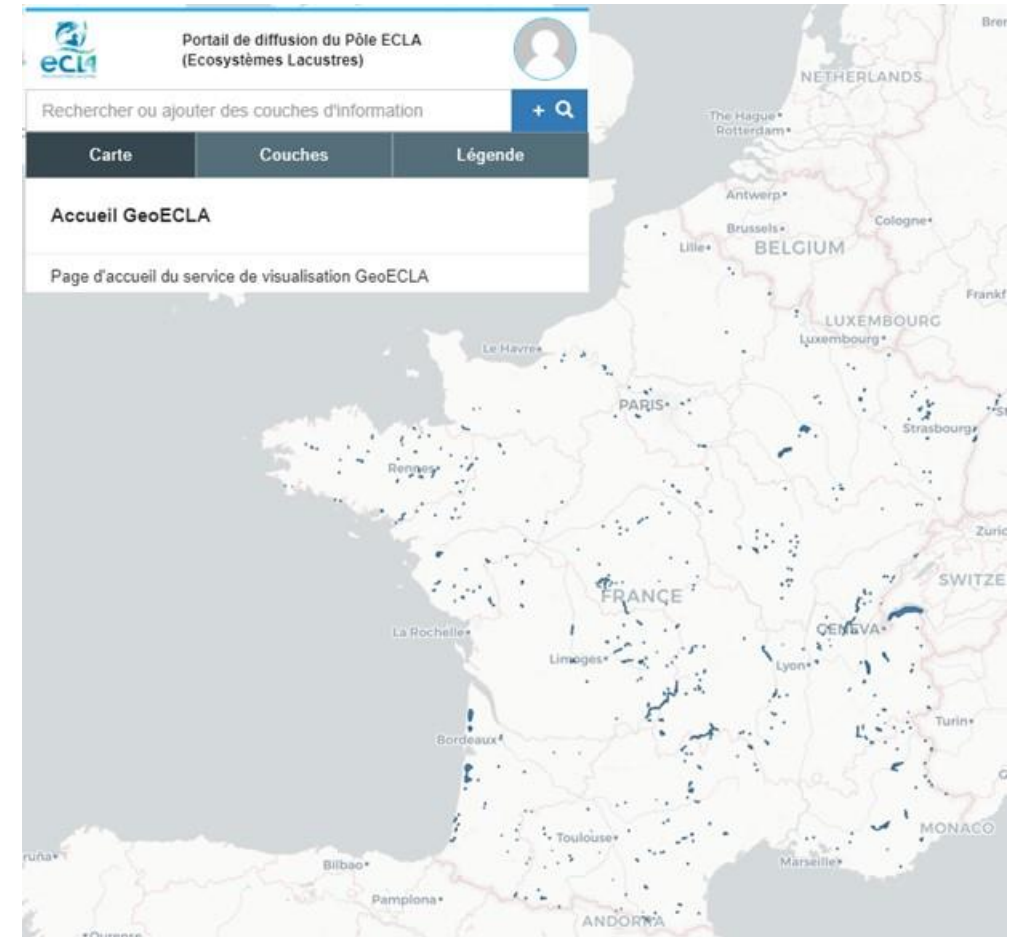
## > Innovative approach

### 1. Support for the implementation of public policies: The example of the Water Framework Directive

- A “Lake Ecosystems Cluster” (ECLA)

With scientists from OFB (French Agency for Biodiversity) & INRAE

- Created to support the implementation of the Water Framework Directive (WFD)
- To develop knowledge, methods and tools to meet the challenges of water resources and aquatic environments preservation, biodiversity restauration and agroecological transition





## > Innovative approach

### 2. Serious games: Coupling Innovative tools for sharing change in socio-environmental systems (CoOPLAaGE)

INRAE developed an **integrated set of participatory methods, tools and protocols designed to support all stakeholders' groups**, from citizens to policy makers, in discussing and engaging really into change strategies in socio-environmental systems.

5 main tools:

- **PrePar**: Preparing design of the decision process
- **Wat-A-Game**: modeling and role-playing-games
- **Just-A-Grid**: Discussing justice principles
- **Cooplan**: Building action plans
- **Encore-Me**: Evaluating impacts



& an **international network** of changemakers launched at COP22 to strengthen local communities' capacity to address climate change.



## > Innovative approach



### 3. Participatory research and policy support: A partnership to prevent infectious diseases transmitted by ticks

- Since 2016 INRAE coordinates "CiTIQUE": a **multi-partner and participatory research programme**
- With associations; agencies; universities and citizens alongside researchers
- Collect data for research to produce knowledge on ticks and infectious diseases (location of bites and pathogens according to the environment, the meteorology and seasons)
- To better evaluate, model risks and prevent infectious diseases transmitted by ticks

*+ a partnership with the National Forest Office to raise awareness amongst its staff exposed to the risks of being bitten and establish a prevention strategy*



## > Remaining challenges

- Stakeholders and the public should be more involved within the scientific process (through open science and participatory approaches), notably at the local scale (tackling with integrated challenges, and using interdisciplinarity)
- Societal challenges and SDGs should foster more reactive research, able to produce solutions, transitions even transformations, along with high level science
- We should find the way to communicate with the uncertainty, and even diverging views, related to the scientific evidence and the policy options







Thank you for your attention

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