

# ENDURE Network of Excellence

## Overview, results and prospects

**Pierre Ricci, coordinator**

**Bologna, 5 novembre 2009**



***Societal expectations for  
safe food and environmentally  
friendly agriculture***



**Area 5.4.6** - Safer and environmentally friendly production methods and technologies and healthier food stuffs.  
**Topic 1** - Reducing the use of plant protection products.

***Crop protection:  
fragmented scientific  
knowledge and R&D  
community***

**EC Contribution**  
**11,2 M €**



**End-users (farmers & advisers)**  
+ industry, policy-makers, society at large...

# The ENDURE consortium



## Research

- INRA - FR

- JKI - DE

- RRES - UK

- CIRAD - FR

- CNR - IT

- AGROS - CH

- WUR (PRI-PPO-LEI) - NL

- IHAR - PL

## Education & R

- SSSUP - IT

- SZIE - HU

- UdL - SP

- AU - DK

## Extension

- DAAS - DK

- ACTA - FR

## Management

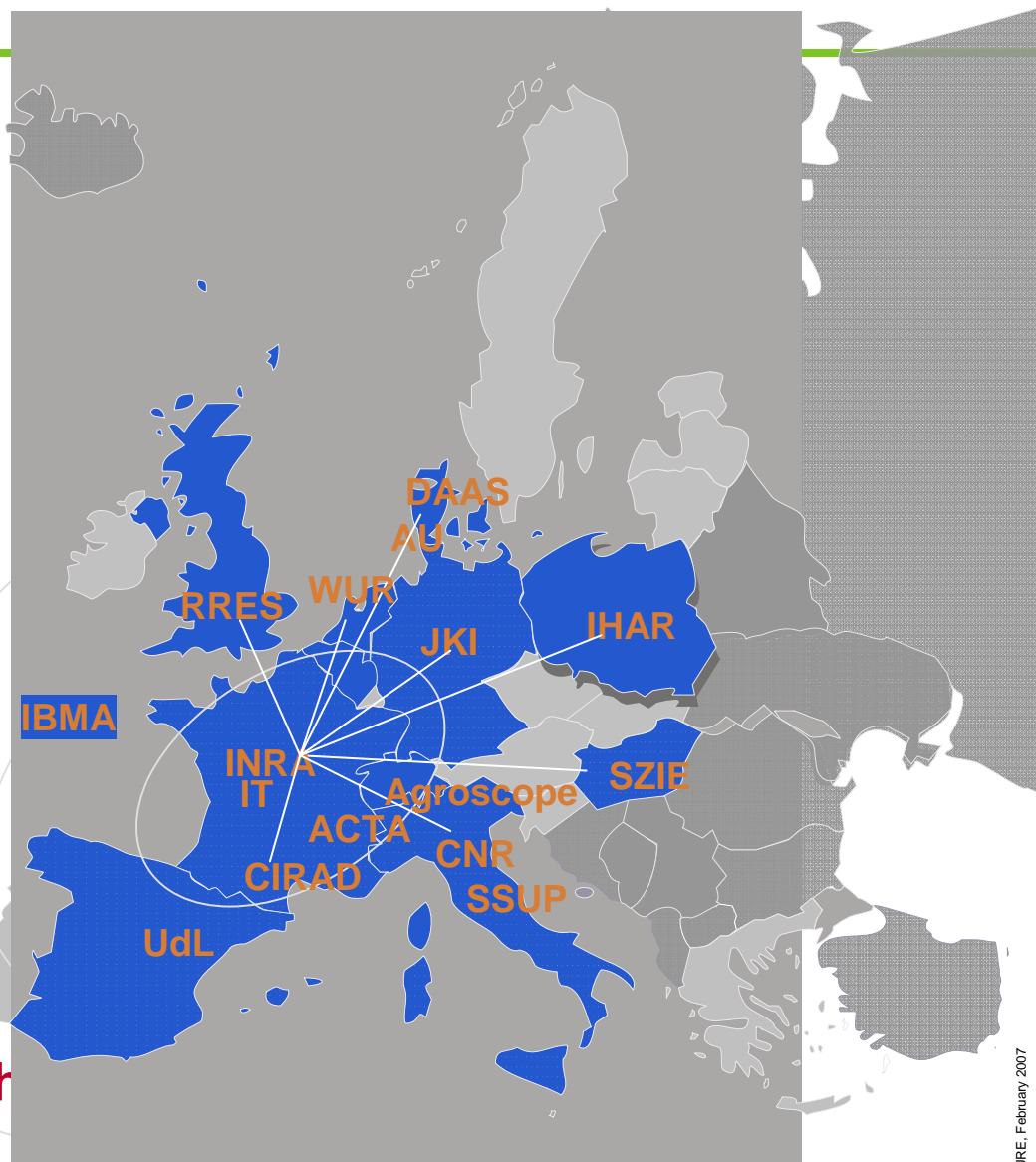
- IT - FR

## Industry

- IBMA - Int.

## In collaboration with

- INCO countries



# 2005: a challenge

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- ❁ **Basic knowledge on crop-pest systems has considerably increased, but with little impact at the field level as yet**
- ❁ **Some farmers are experimenting practical solutions but often lack scientific support**
- ❁ **Uncertainties (climate change, pest invasions, price volatility, policy changes) make things more complex**
- ❁ **Devising innovative solutions require contributions from diverse research areas that need to be pool**

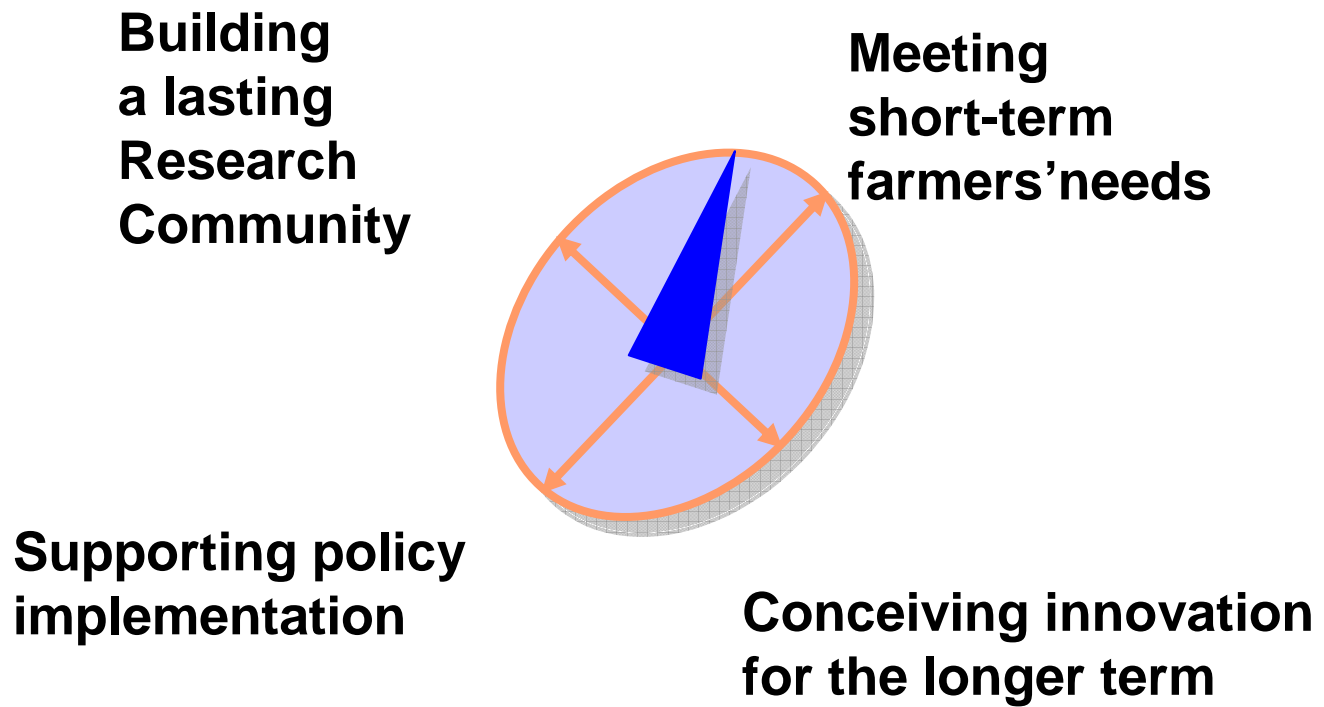
***How to overcome a certain lack of motivation?***

# 2009 : a turning point and a sense of urgency



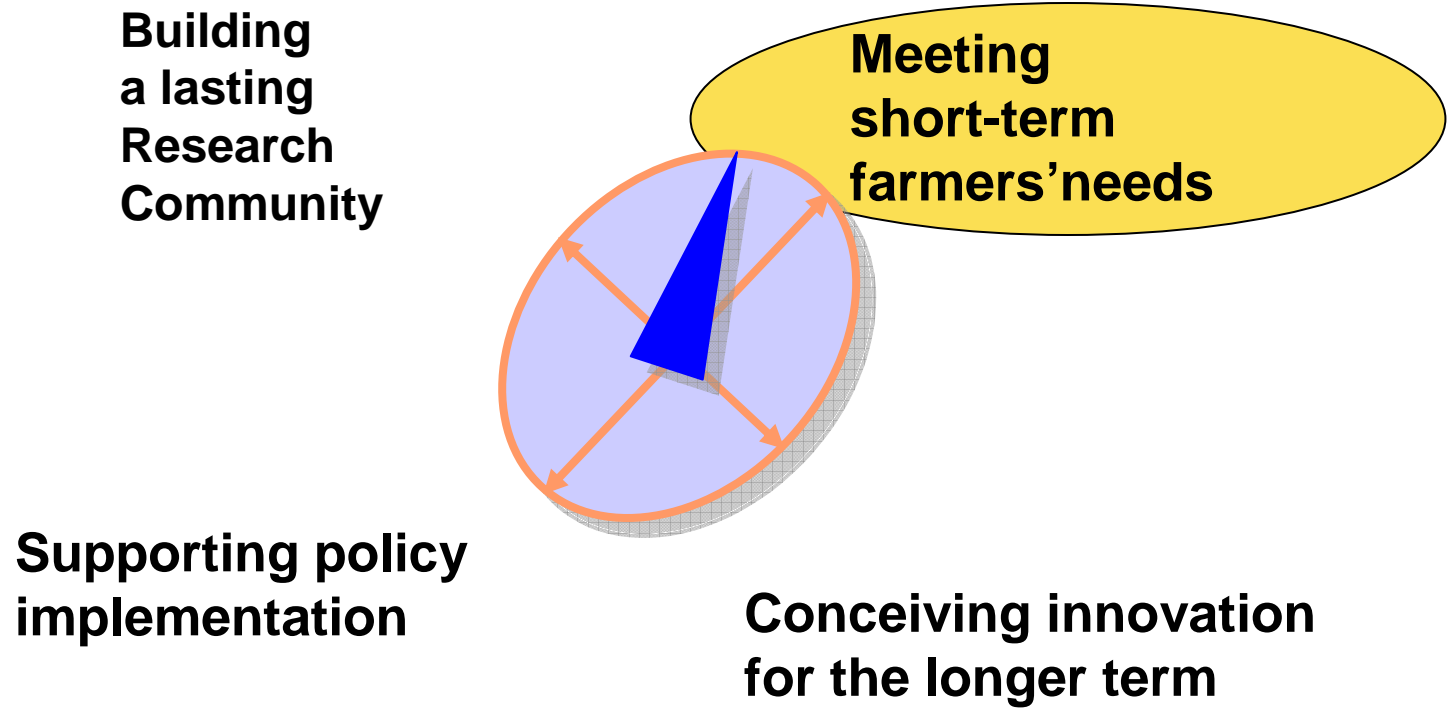
- ❁ **Concerns on environmental and human health impacts of pesticides**
  - *More restrictive policies : the pesticide package*
  - *a goal to shift whole EU agriculture to IPM*
- ❁ **Stronger demand to agriculture to ensure food security**
  - *New approaches to crop protection should not impact competitiveness*
- ❁ **Need for new and more diversified solutions**
  - *going beyond technical adjustments*
  - *Proposing new robust strategies and cropping systems*
  - *Calling for increased engagement of research into innovation*

# 4 major goals





# What do we have in store ?



**Taking advantage of the transnational dimension of ENDURE**



# Case studies



## Compared analysis of specific problems in several EU countries

- Current situation
- Available solutions
- Shortcomings
- Knowledge gaps, needs for research

## Messages to advisors

## A basis for further investigation

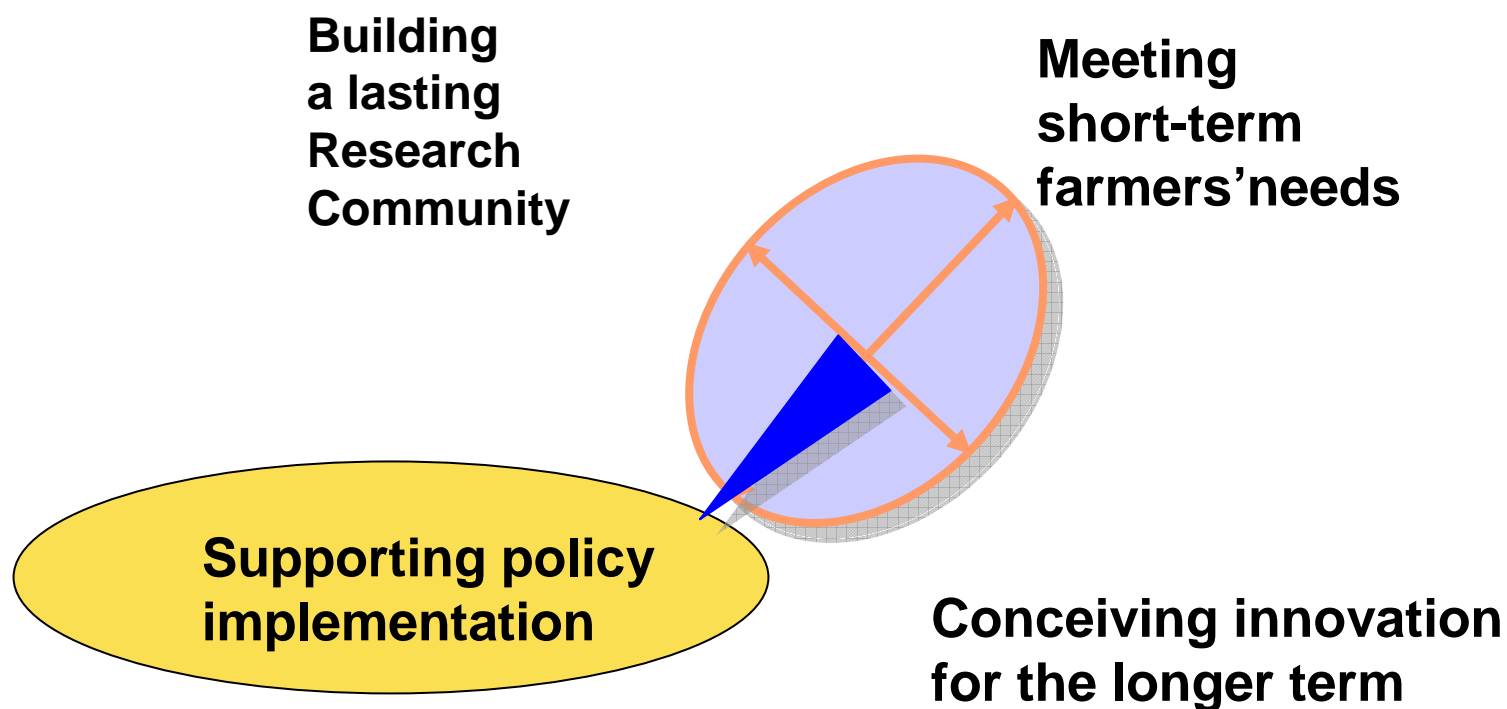
*See presentation  
by Per Kudsk*

## Case studies:

- ✓Wheat diseases
- ✓Potato blights
- ✓Integrated weed management
- ✓Pomefruit pests and diseases
- ✓Tomato whiteflies and transmitted viruses
- ✓Maize
- ✓Field vegetables
- ✓Banana
- ✓Grapevine



# How to promote IPM at EU and MS levels ?

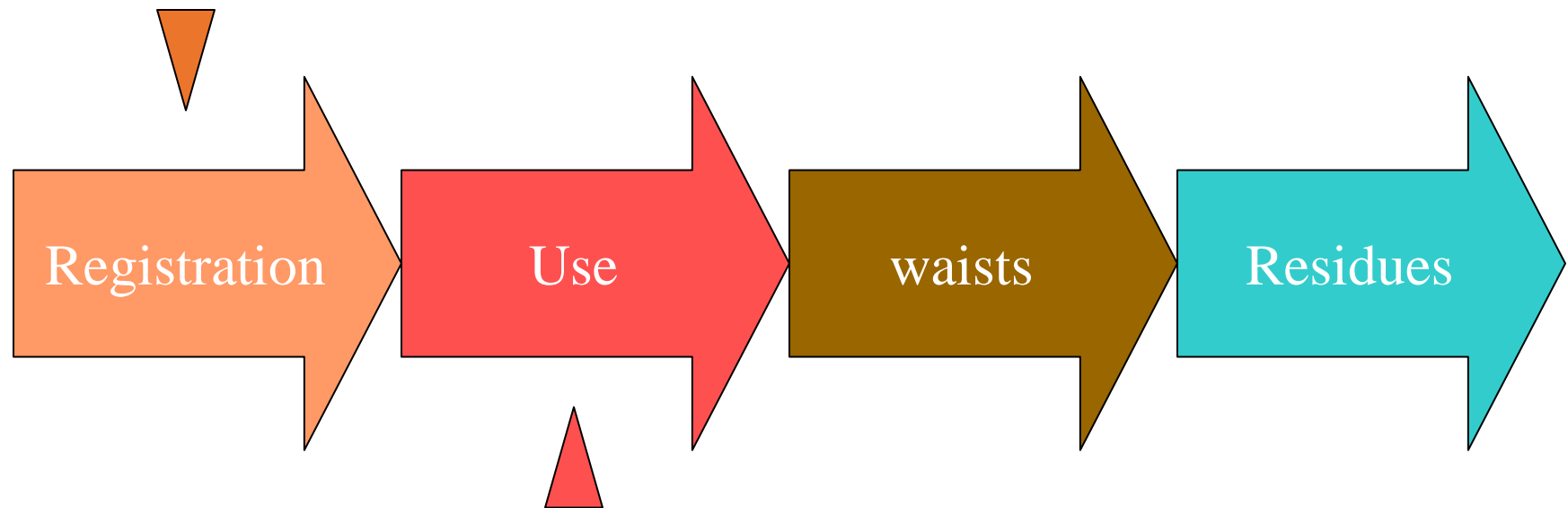


**Gaining recognition of ENDURE as a reference point in Europe**

# The EU « pesticide package» (adopted on 24/09/09)



Regulation on the placing of plant protection products on the market (replaces 91/414)



Framework Directive on the sustainable use of pesticides

→ National Action Plans

→ IPM principles adopted before 2014

# Conditions facilitatrices de la protection intégrée (IPM)



European policy seminar sponsored by the French Presidency of the Council of the European Union

**SUSTAINABLE AGRICULTURE AND PESTICIDES:  
What is at stake? What are the options?**

PARIS

25 - 26 Novembre 2008

with scientific support from  
the European network of excellence



*See presentation  
by Marco Barzman*



EUROPEAN COMMISSION  
DIRECTORATE-GENERAL  
ENVIRONMENT  
Directorate B - Protecting the Natural Environment  
ENV.B.3 - Biotechnology, Pesticides and Health

## Implementation of IPM principles Guidance to Member States

# A common practical and dynamic vision of IPM

C. Ohmart, California



“IPM is a sustainable approach to managing pests by combining biological, cultural and chemical tools in a way that minimizes economic, environmental and health risks.”

No IPM

*IPM as a continuum*

Ultimate IPM

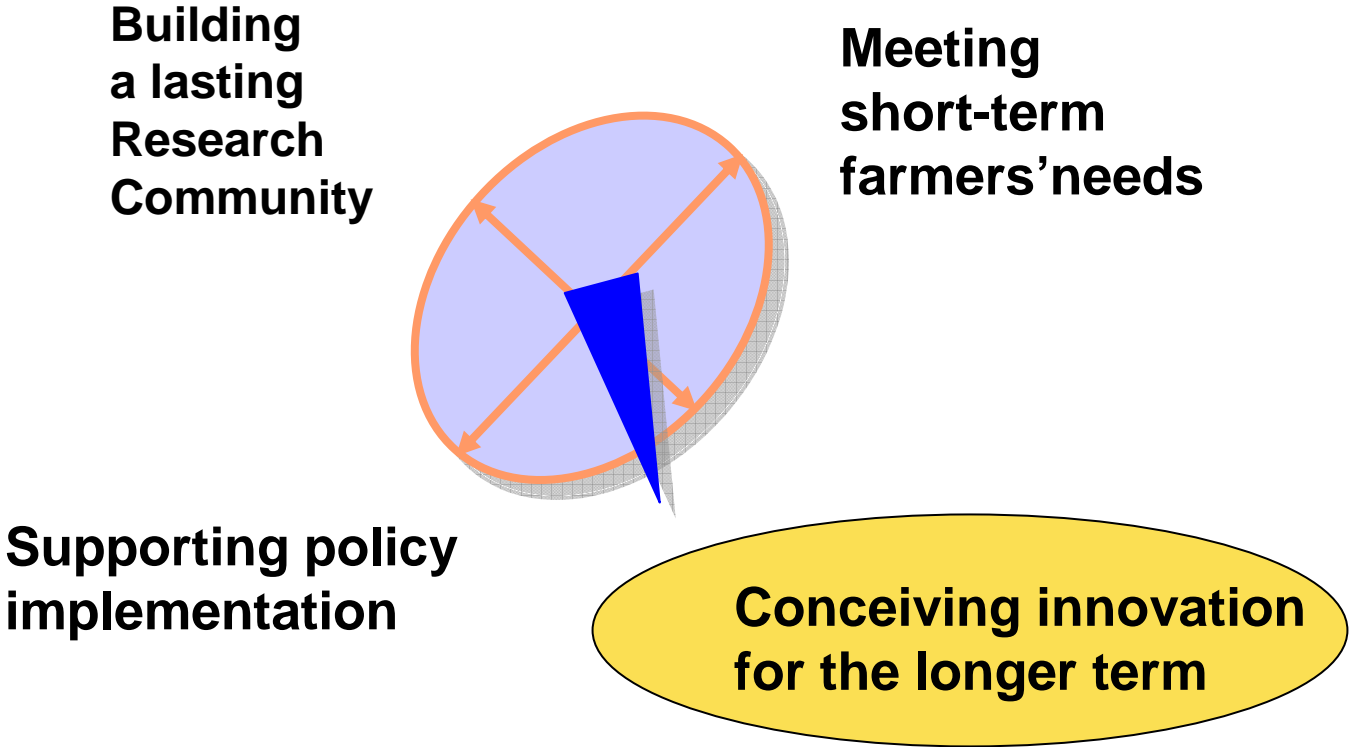


Ultimate IPM system is one where no inputs are required because pests kept below their economic thresholds due to cultural and/or biological controls

This is unrealistic because farms are ecologically unbalanced systems



# How to move forward?



**Taking advantage of the multidisciplinary dimension of ENDURE**

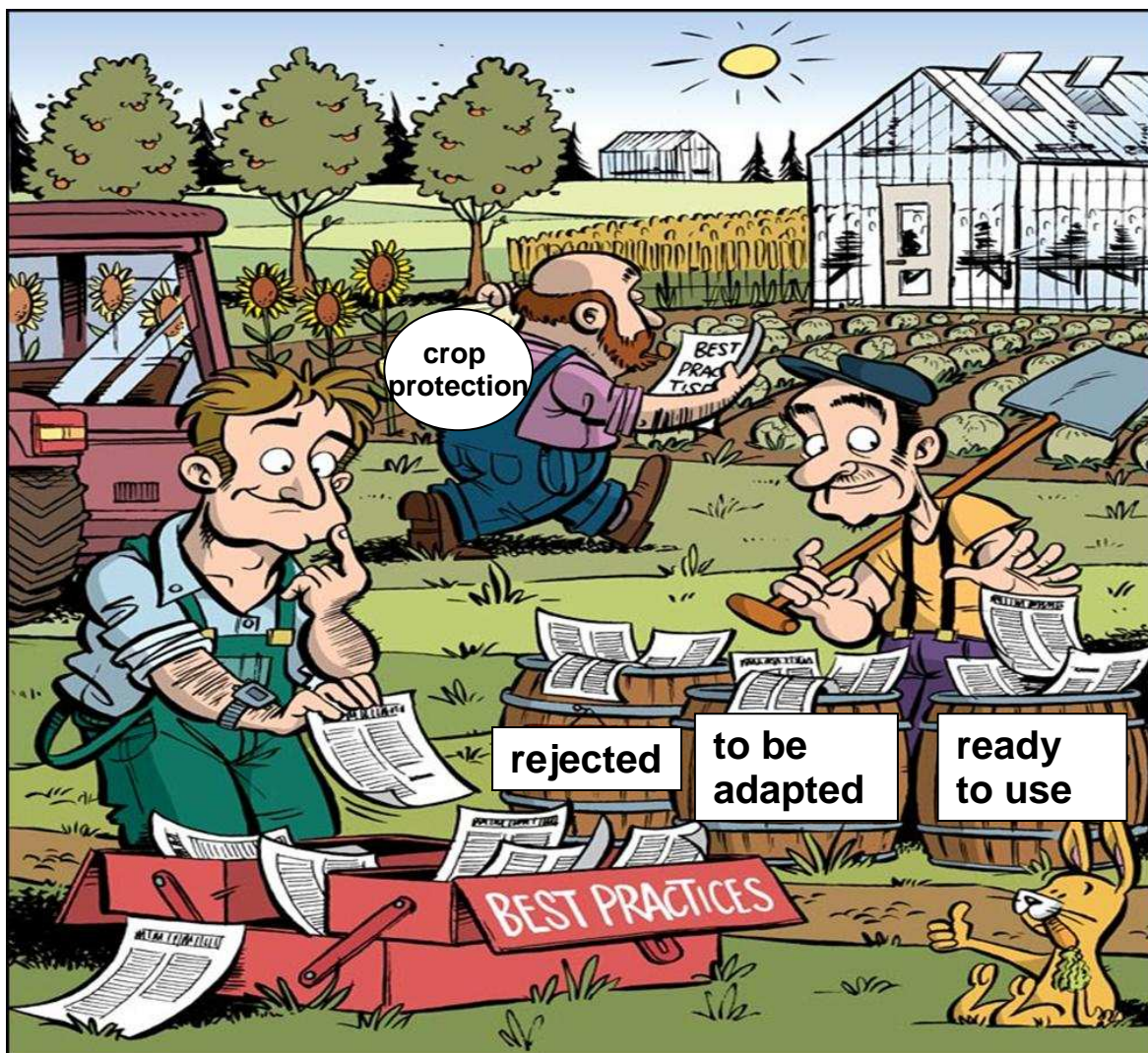




FOOD QUALITY AND SAFETY

## Knowledge development

Source: Farming with future



Share,  
adapt  
and combine  
existing tools  
in the IPM toolbox

Promote a  
participatory approach

Disseminate:  
ENDURE Information  
Centre

See presentation  
by Silke Daachbrodt-  
Saaydeh

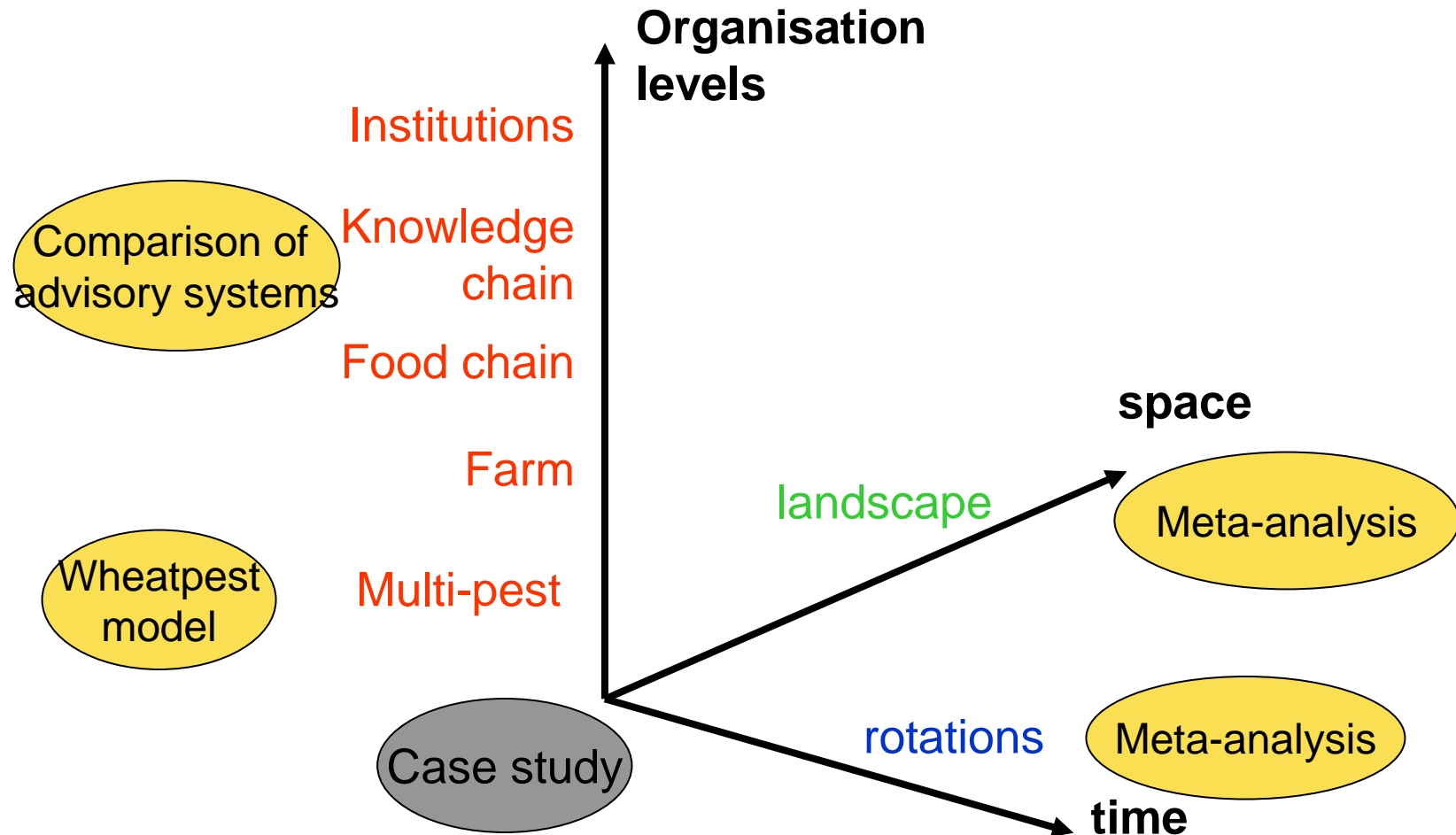
# Research for improving individual IPM tools



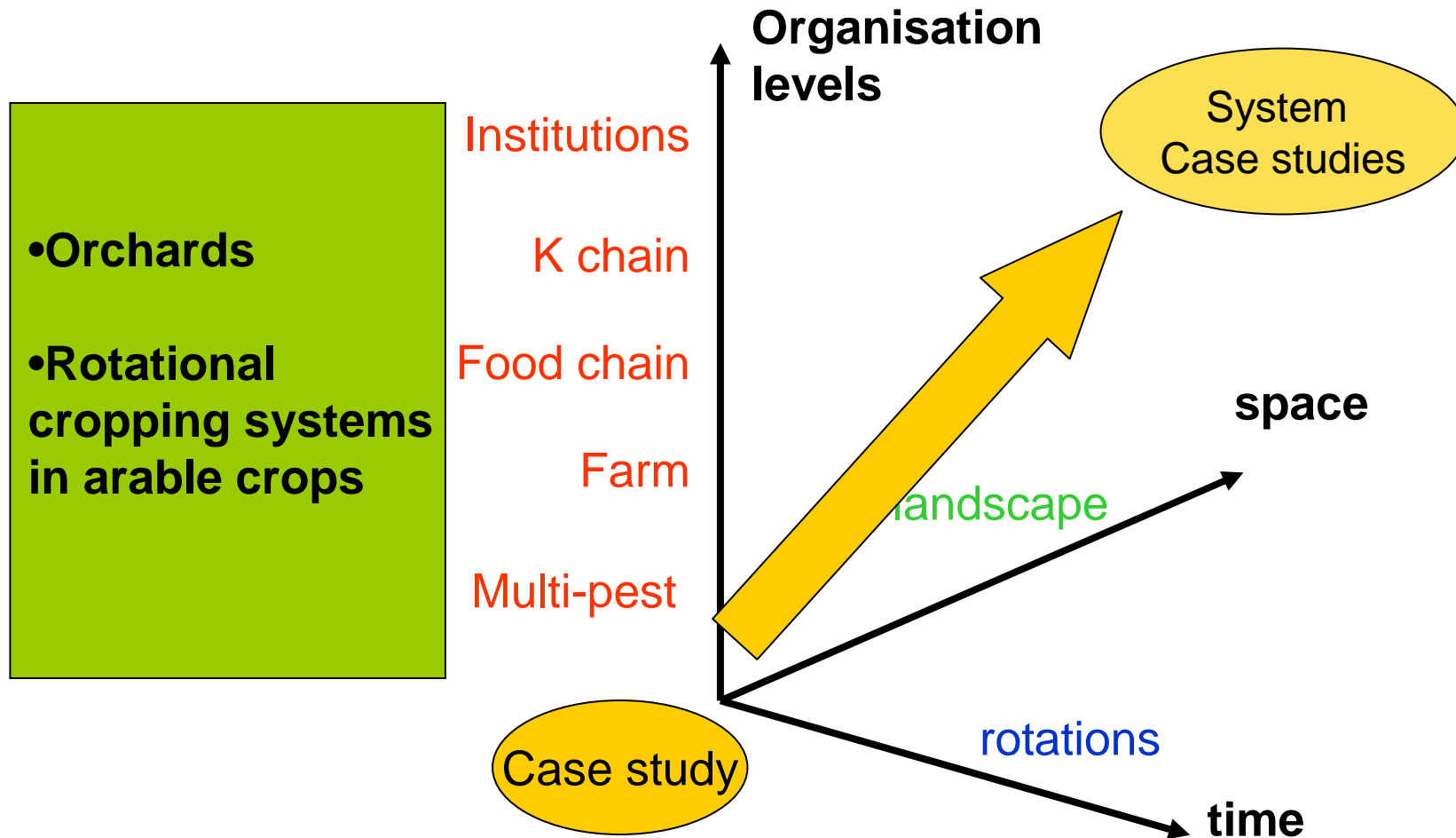
- 🌸 **Progress in some innovative technologies**
  - Precision spraying
  - Pest detection/identification methods
  - DSS improvements (54 analyzed and compared)
- 🌸 **Strategies for durable use of resistance genes**
  - Conception of genotypes
  - deployment of varieties  
(modelling + experimentation)
- 🌸 **Factors of success for the use of the beneficials**
- 🌸 **New tools for monitoring weeds**
  - database of ecological and physiological traits
  - new generic tool for modeling weed biology



# Research for designing less vulnerable systems

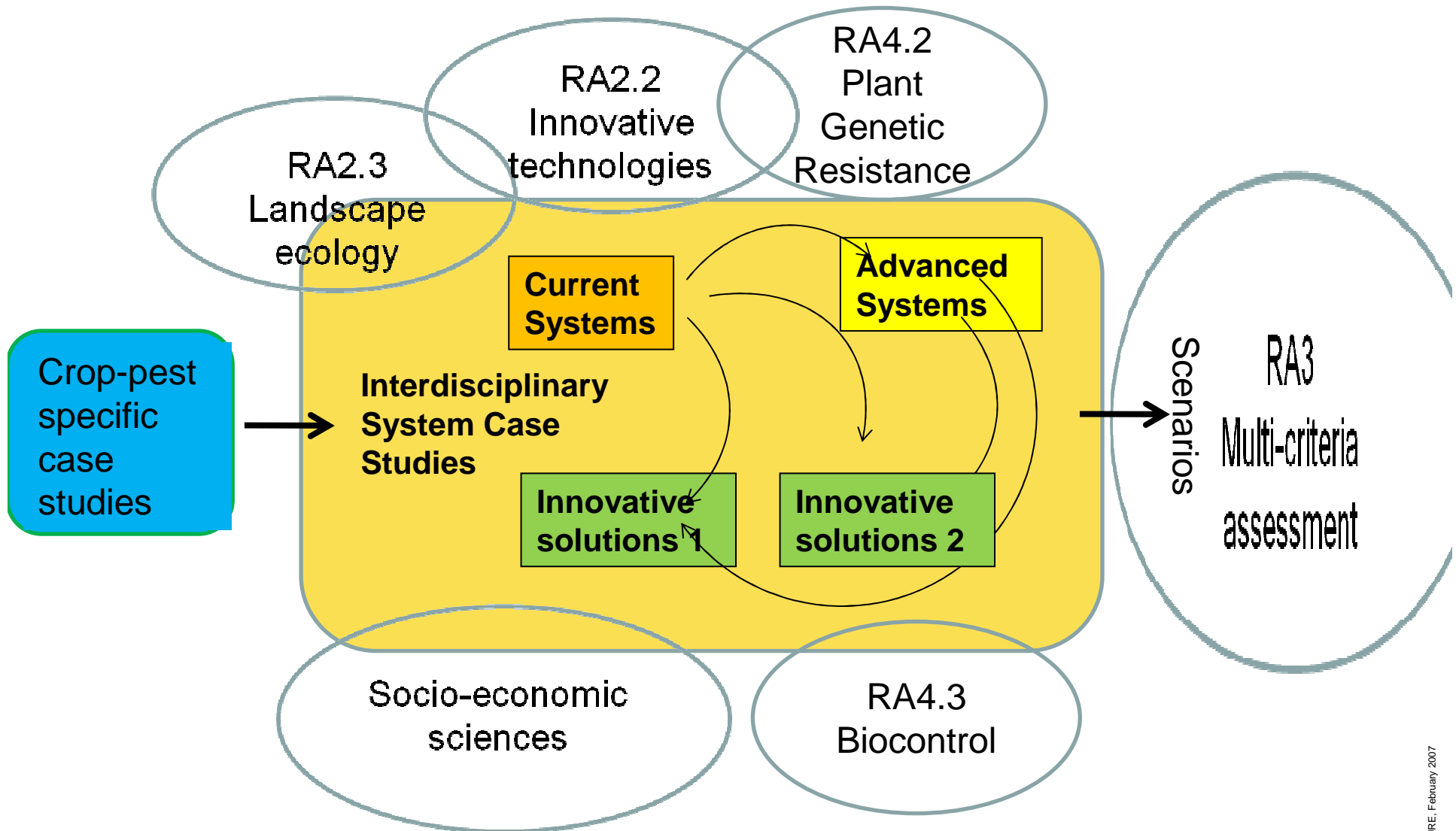


# Promotion of an holistic approach

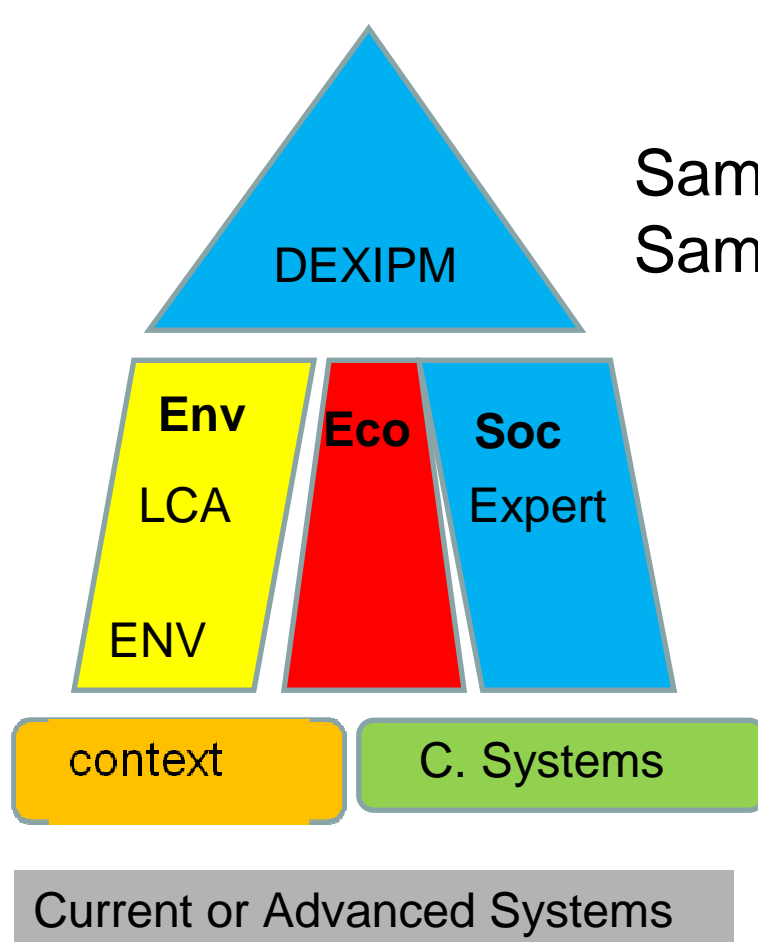


*Involves a large range of disciplines*

# System case studies as a converging point

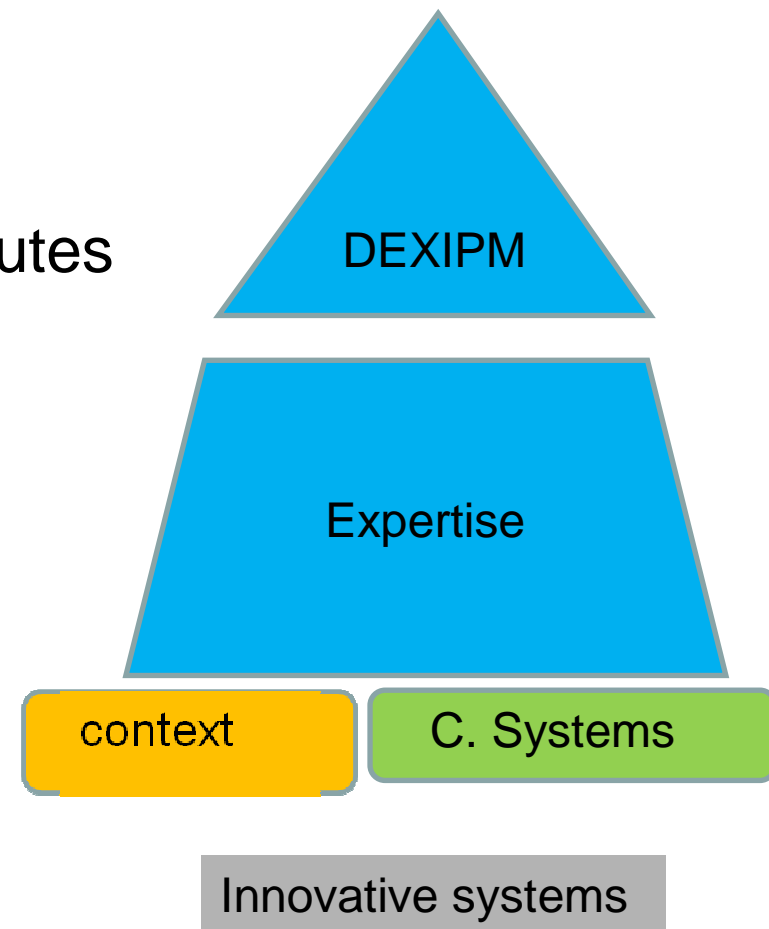


# Multi-Criteria Assessment



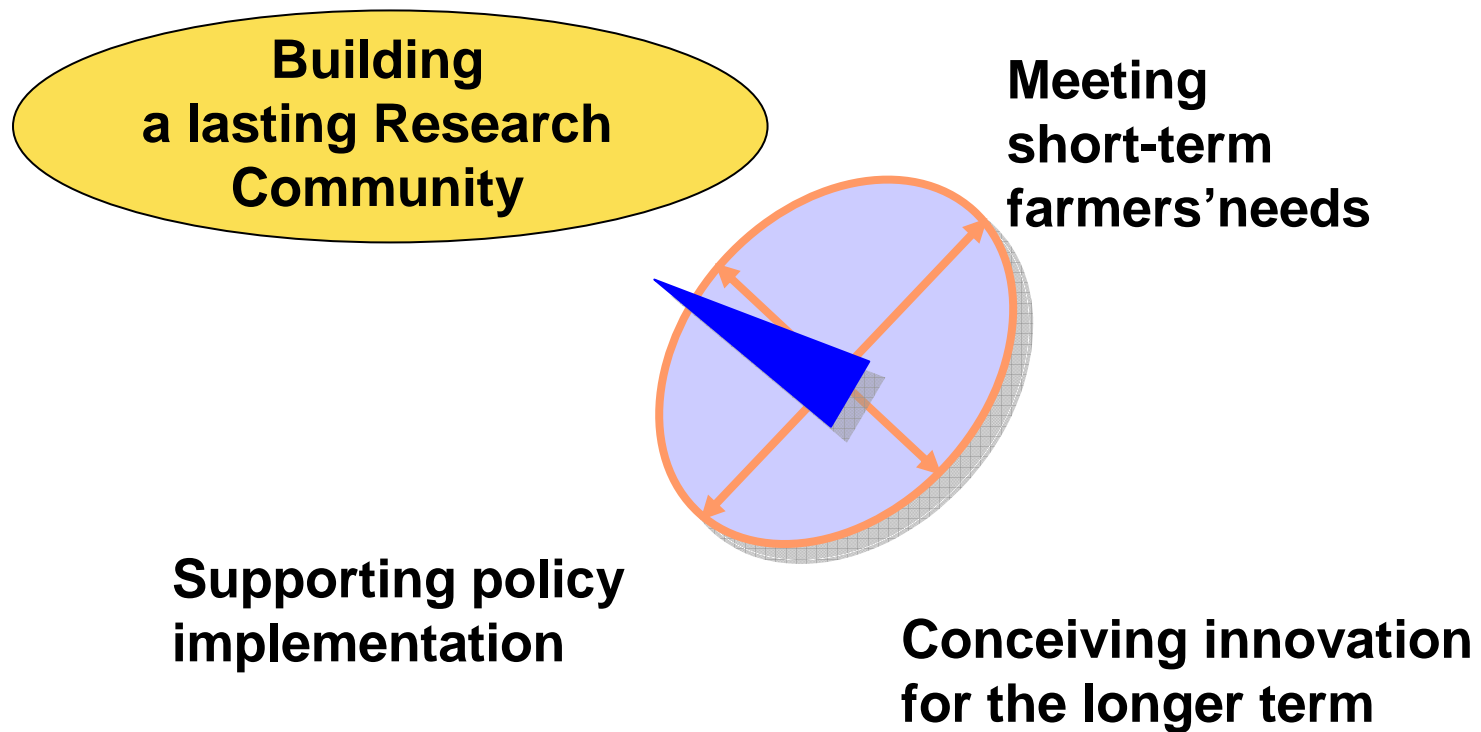
**System case studies**

Same tree  
Same attributes



*See presentation  
by Per Kudsk*

# How to create and perpetuate synergies and impetus at the EU level ?



**Involving the ENDURE partners in durable support**

# Tools for the research community



## 🌸 **Mobility scheme** (*See presentation by Maurizio Sattin*)

- 20 scientists involved in 2008
- More in 2009

## 🌸 **Summer schools** (*See presentation by Paolo Barberi*)

- Biodiversity in 2007
- Modelling in 2009

## 🌸 **Virtual Lab** (*See presentation by Silke Daachbrodt-Saaydeh*)

A collection of free-access tools for supporting IPM-related research

- 40 collections, 32 data bases, 51 field sites for experimentation,
- Euresist, Wheatpest, Quantipest, Weed Traits Database, Eurowhea

# Communication from the research community



## **International Conferences**

- La Grande Motte (F) Octobre 2008: 280 participants
- Paris December 2010

## **Web-site:**

[www.endure-network.eu](http://www.endure-network.eu)

## **Research Agenda**

- Foresight study Crop Protection in Europe in 2030
- Vision paper to the EC for the FP7 further calls

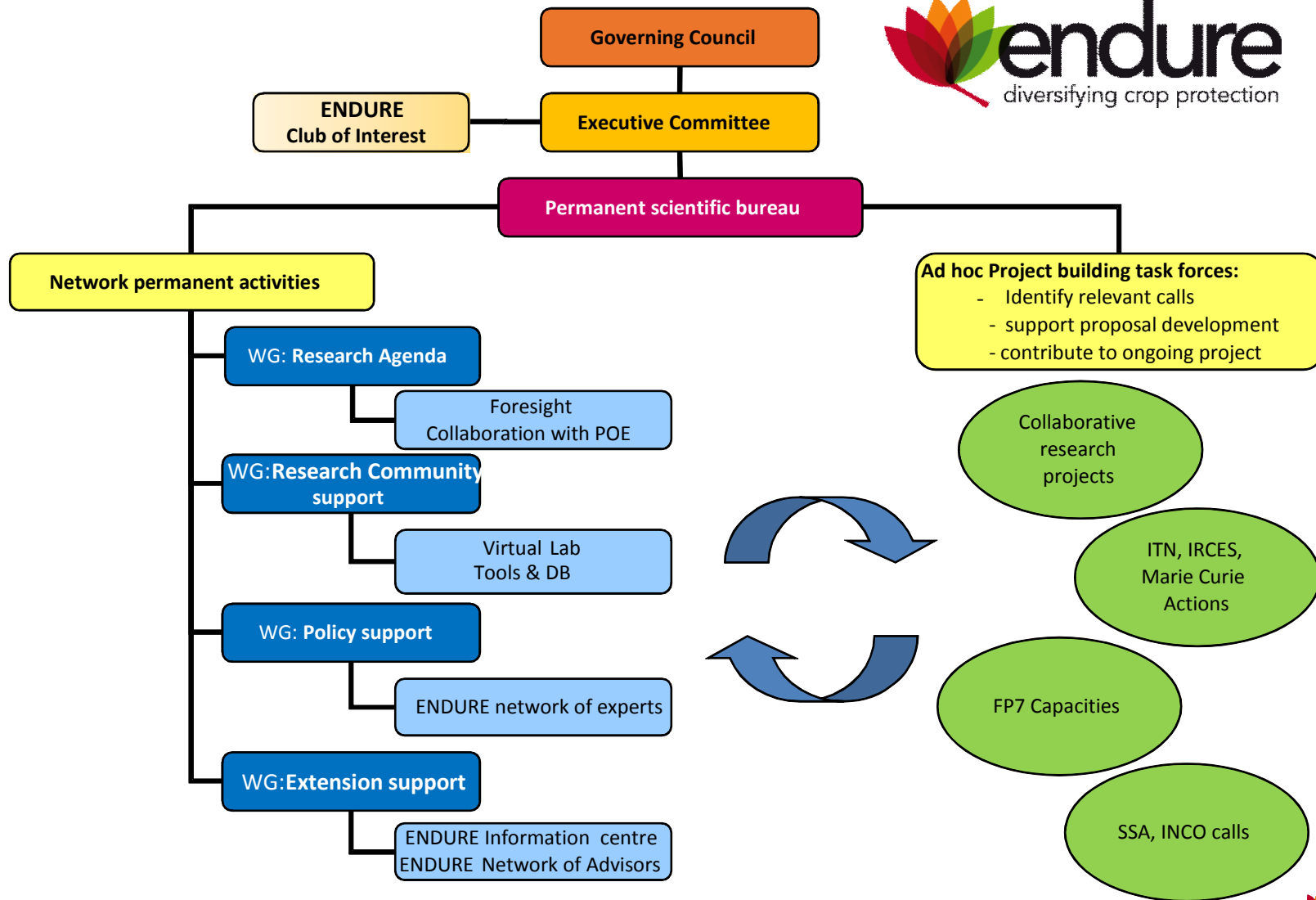


# IPM – IP FP7



- 🌻 **ENDURE message to DG Research (Dec 08)**
- 🌻 **KBBE.2010.1.2-05: Integrated pest management in farming systems of major importance for Europe**
- 🌻 **This will not be ENDURE II**
- 🌻 **This could be an opportunity to further test this systems approach applied to IPM**

# ENDURE European Research Group



FOOD  
QUALITY  
AND  
SAFETY



<http://www.endure-network.eu>

