



# Reducing pesticide dependence: a matter of transitions within the agrofood system as a whole

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FOOD  
QUALITY  
AND  
SAFETY



Integrated Pest Management in Europe

Paris, November 2010



*Input supply*



**Input producers**

**Input suppliers**



**Policy makers**



*Public policy*

**Farmers**



**Community-based actors**

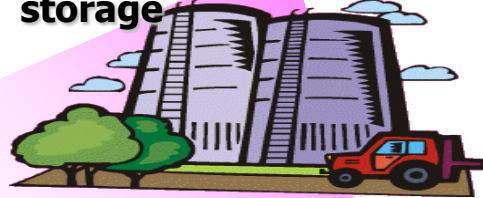


*Civil society*

**Consumers, Citizens**



**Wholesale, storage**



*Food supply*



**Retailers**



**Researchers, Extensionists**

*Knowledge*

**Advisers, Trainers**



**FOOD QUALITY AND SAFETY**



**Integrated Pest Management in Europe**  
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- The paradigm of intensification: a path-dependency analysis
- Current lock-in effects at farm scale
- Lock-in effects in the advisory and research sectors
- Lock-in effects at the market level
- The possible role of civil society
- Obstacles and opportunities for robust transitions

## 1. The paradigm of intensification: a path-dependency analysis

### The modernisation period

First insecticides and growth regulators

First fungicides  
First systemic herbicides

### The intensification turn

From curative to systematic treatments

Changes in practices : early fertilization, early and dense sowing

Adapted equipment

First resistances to fungicides

First productive multi resistant varieties

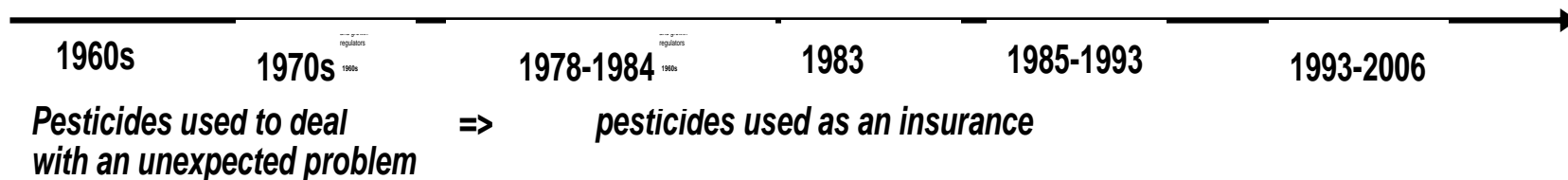
First studies on low input strategies

### The period of questioning

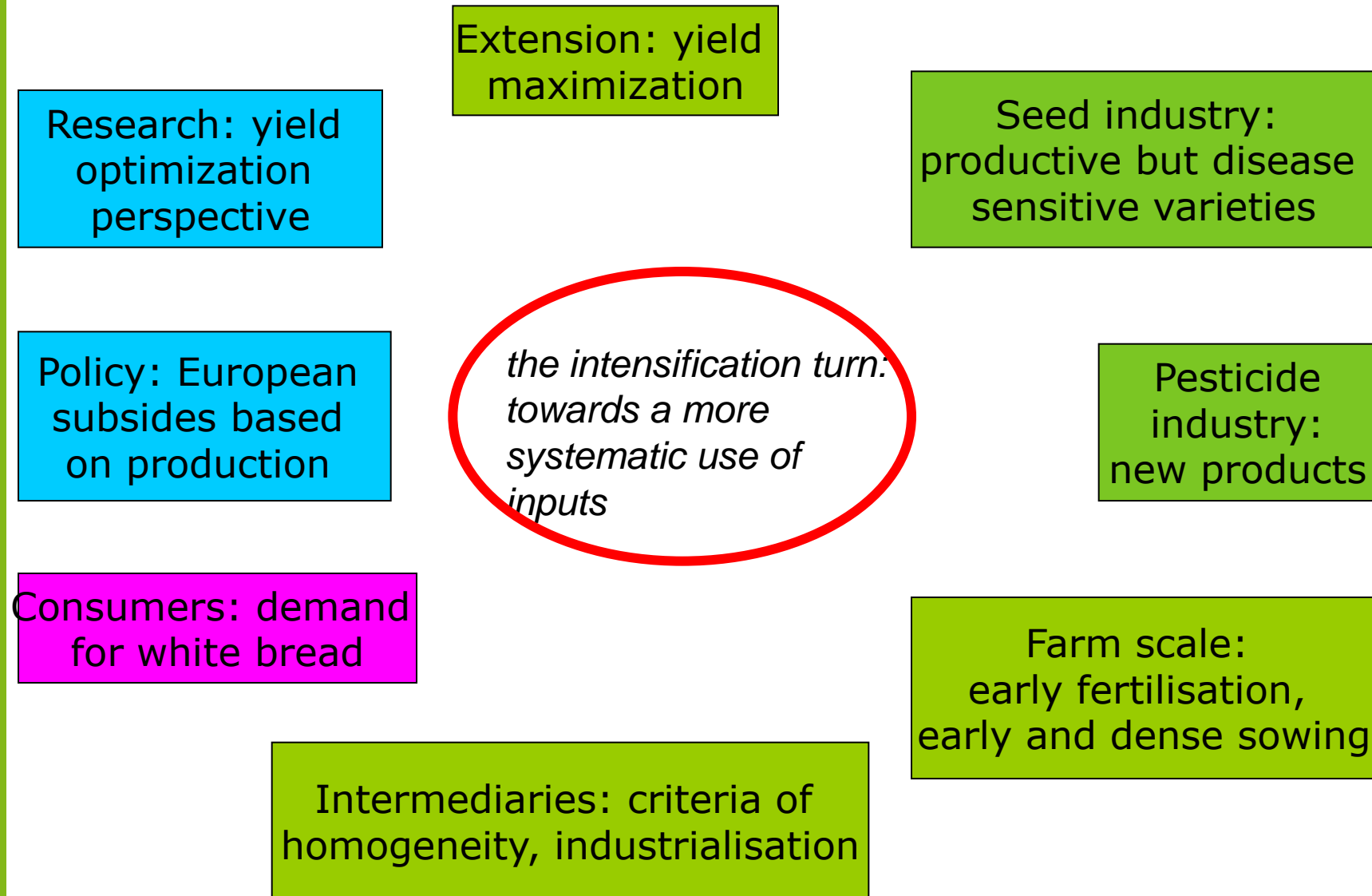
Period of low prices  
Agro-environmental measures

Works on low input strategies and rustic varieties

Development of good agricultural practices schemes

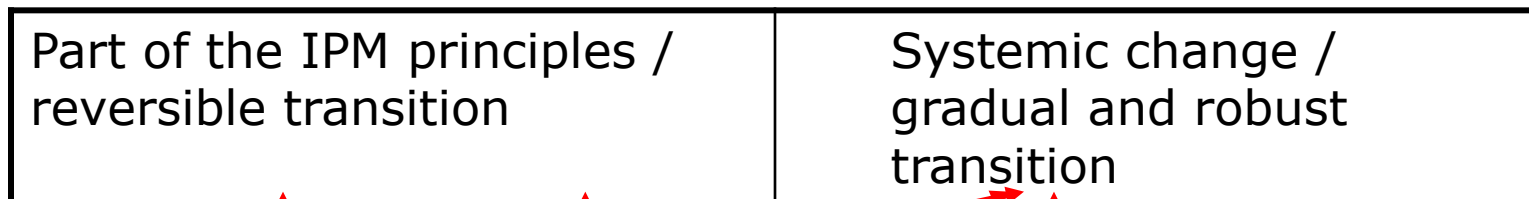


## The paradigm of intensification: a path-dependency analysis



## 2. Current lock-in effects at farm scale

- Sociological analysis of farmers' trajectories -> 2 types of transitions :



- ESR grid  
Efficiency - Substitution - Redesign

- Role of progressiveness (how to assess and support it?) and collective dynamics

### 3. Lock-in effects in the advisory and research sectors

- Reduction in public involvement
  - > advisory systems are more market-led
  - > advisors are more likely to be risk adverse and not to promote alternative strategies
- However, more positive attitudes towards low-input practices
- Advisory systems and part of research favour the improvement of current techniques (eg., precision agriculture), more radical changes in agricultural systems are less tackled

### 4. Lock-in effects at the market level

- Retailers' quality schemes are gaining importance since 1995
  - But they are mostly devoted to products traceability and safety (good agricultural practices and record keeping)
  - They are seen as a precondition to gain market access
- Few include IPM principles and environmental aspects
  - Some impose thresholds for pesticide use or the use of biological control
  - The collective organisation of farmers for marketing purpose might facilitate technical changes
- More generally quality criteria (size, homogeneity, visual aspect) are a major bottleneck to pesticide reduction... and consumers' potential acceptance of irregularities is not explored



## 5. The possible role of civil society

- the construction of the impact of agriculture on the environment and health as a public issue
- Analysis of public debates in France and the NL
  - Concerns about environmental impact -> health impact (-> changes in regulations)
  - Opposition between reduction of impact / of use (cf NAP debates)
- The difficulty to legitimate IPM
  - Most civil society's spokesmen think in terms of zero-pesticide rather than low input

## 6. Conclusion: Obstacles and opportunities for robust transitions

- Changes in crop protection practices involve a large socio-technical system
  - Not only a matter of change at farm level
  - Need to consider market conditions, governance of research and extension, public debates
  - Analysis of the interdependencies and coordination
- The main conditions for significant changes:
  - Collective dynamics and progressiveness in farmers transitions
  - Translation of changes into marketing strategies (or coherence)
  - Involvement of research and extension
  - Voluntarist public policies and involvement of civil society