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The logo for INRAE, consisting of the letters 'INRAE' in a blue, sans-serif font.

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A decorative graphic on the left side of the slide, consisting of a dark blue arrow pointing right, with several thin, light blue lines extending upwards and outwards from its base.

Understanding the achievement of EU water policy objectives in agricultural landscapes : insights from the Institutional Design Principles and Integrated Landscape Management approaches

Laurence Amblard & Carsten Mann

IASC 2021 Water Commons Virtual Conference

May 19th-21th , 2021

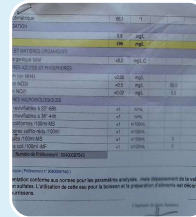
Introduction

- Diffuse pollution from agriculture (nitrates, pesticides)
 - A major threat to the quality of surface and ground waters in the European Union and French contexts
 - Multiple environmental, economic and social impacts



Impact on ecosystems and biodiversity

- Eutrophication



Human health risk

- Regulatory standards for nitrate and pesticide rates (EU Drinking Water Directive)



Extra-costs of drinking water production

- Water treatments, resource substitution/blending



Introduction

- EU Water Framework Directive (WFD) (2000)

- Objective of good status for all water bodies in Europe
- Protection of water bodies used for drinking water production

- “Grenelle” policy in France (2009)

- Identification of 1000 priority water catchments
- Definition and implementation of action programs targeting diffuse pollution
 - Cooperation between water suppliers and agricultural stakeholders (farm organizations, farmers)



Introduction

- “Grenelle” policy in France (2009)
 - Only half of the priority catchments covered by an action program in 2019 (MTE, 2020)
 - No significant improvement in water quality

What are the drivers and barriers to collective action for the achievement of EU water policy objectives in agricultural landscapes ?

Conceptual framework

- Institutional Design Principles (IDP) (Ostrom, 1990; Cox et al., 2010)
 - Shared commonalities of enduring governance systems for collective action involving users of common-pool resources

1A • Clearly defined boundaries - resource system

1B • Clearly defined boundaries - users

2A • Congruence between rules and local conditions

2B • Proportional equivalence of benefits and costs

3 • Collective-choice arrangements

4A • Monitoring users

4B • Monitoring the resource

5 • Graduated sanctions

6 • Conflict-resolution mechanisms

7 • Minimal recognition of rights to organize

8 • Nested enterprises

Conceptual framework

- Integrated Landscape Management (ILM) principles (Sayer et al., 2013; Mann et al., 2018)
 - Characteristics of management approaches leading to policy solutions to land-use conflicts at the landscape level

1

- Common landscape concern/problem understanding

2

- Multiple land-use objectives

3

- Multiple stakeholders (private/public; sectors)

4

- Multiple scales

5

- Transparency

6

- Clarity of rights and responsibilities assigned to the process

7

- Occurrence of adaptive management and learning

8

- Participatory monitoring and capacity-building activities

Conceptual framework

■ Integrated Landscape Management (ILM) principles

- No identification of conditions for the success of cooperation
- The recognition of the multiple and conflicting values and interests regarding land use/natural resource management

■ Institutional Design Principles (IDP)

- The characteristics of governance systems leading to successful collective action
- Initially developed in the case of homogeneous groups of users holding similar values/interests



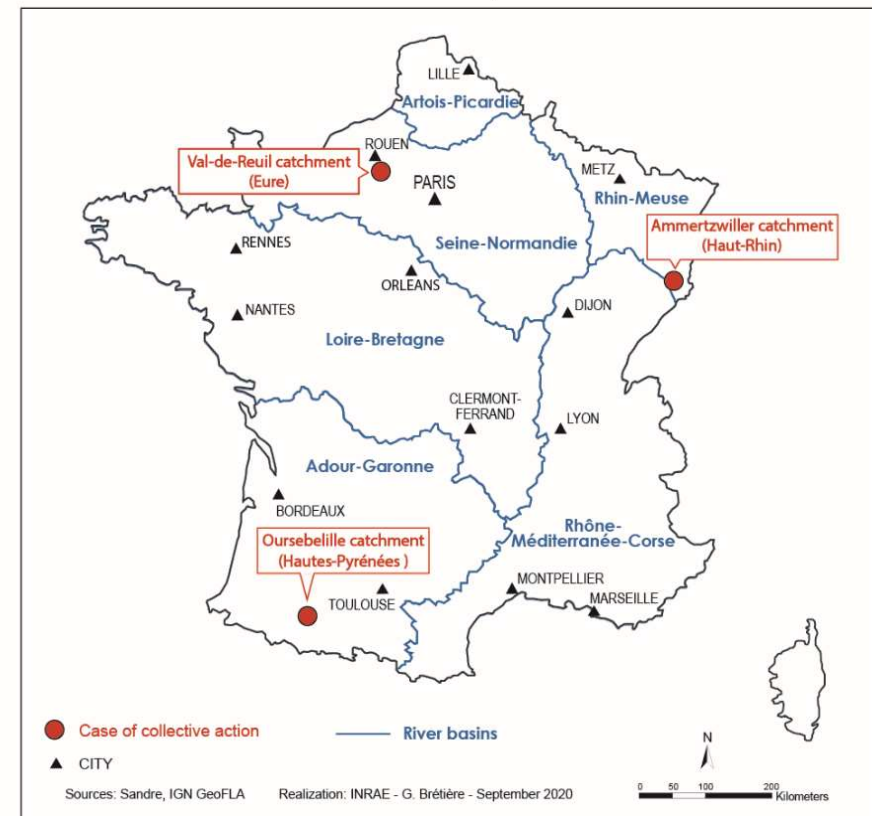


Conceptual framework

- 1 • Common landscape concern/problem understanding
- 2 • Clearly defined boundaries (resource/users)
- 3 • Multiple land-use objectives
- 4 • Multiple stakeholders (private/public; sectors)
- 5 • Multiple scales/nested enterprises
- 6 • Collective-choice arrangements/transparency
- 7 • Clarity of rights and responsibilities assigned to the process
- 8 • Congruence between rules and local conditions
- 9 • Proportional equivalence of benefits and costs
- 10 • Occurrence of adaptive management and learning/monitoring the resource
- 11 • Participatory monitoring and capacity-building activities/monitoring users
- 12 • Graduated sanctions
- 13 • Conflict-resolution mechanisms
- 14 • Recognition of rights to organize

Methodology

- A comparative case analysis
 - Three cases of collective action for drinking water catchment protection
- Data collection
 - Semi-structured interviews with local stakeholders involved in cooperation (18)
 - Water suppliers, farm organizations, public agencies, farmers
 - Review of documentary analysis



Methodology

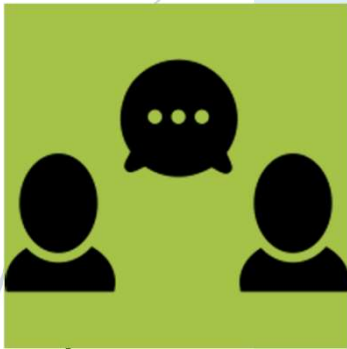
	Ammertzviller	Oursbellile	Val de Reuil
Water resource			
Type of pollution	Nitrates/pesticides	Nitrates	-
Level of contamination	High	High	Good water quality
Agriculture			
Catchment area	363 ha	396 ha	127 ha
Agricultural area	64,5 %	82 %	86,6 %
Number of farms	30	19	7
Farming systems	Field crops	Field crops	Field crops
Arable crops (% agricultural area)	Corn: 59% Cereals: 35%	Corn: 88% Cereals: 21%	Cereals: 91%
Grassland (% agricultural area)	6%	3%	9%

Methodology

	Ammertzviller	Oursbellile	Val de Reuil
Governance			
Main stakeholders involved	Public water supplier- Agricultural Chamber- Farmers	Public/private water suppliers – Agricultural Chamber-Regional Development Agency	Metropolitan water service department – Organic farming associations - Farmers
Operational rules (contracts)	EU AES Supply contracts	EU AES	Environmental land leases
Measures	Reduction in input use Low-input energy crop	Reduction in input use	Organic farming
Outcomes			
Farm participation	16/30	7/19	4/7
Area covered	34 %	18 %	87 %
Water quality trend	Improvement	No improvement	Maintenance of good quality

Results

- Common landscape concern/problem understanding



- In two cases, different perceptions of stakeholders (water suppliers vs. farmers) regarding the water quality problem

- Oursbellile : agricultural versus non-agricultural source of pollution
- Val-de-Reuil : the maintenance of good water quality as an issue

- Clearly defined boundaries



- Uncertainty regarding the boundaries of the drinking water catchment (Oursbellile)

- Low predictability of resource dynamics/lack of knowledge

Results

■ Multiple land-use objectives

■ In all cases, integration of multiple land-use objectives

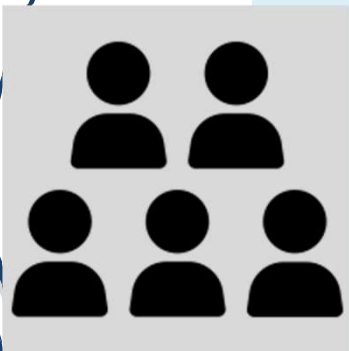
- Maintenance of agricultural incomes (Oursbellile)
- Development of sustainable energy production (Ammertzwiller)
- Creation of local food supply chains (Val-de-Reuil)



■ Multiple stakeholders/scales

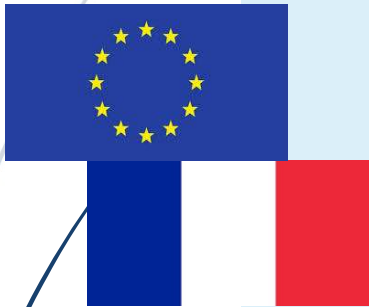
■ In all cases, involvement of public/private actors from different sectors at different scales (local, departmental, regional, water basin)

- Trade-off resource pooling/transaction costs



Results

- Recognition of rights to organize
 - Autonomy of local stakeholders
 - EU agri-environmental policy tools and their implementation in France
 - ✓ Measures and financial compensations pre-defined at the national and regional levels
 - Impact on proportional equivalence between benefits and costs/congruence between rules and local conditions



Results

- Collective-choice arrangements/transparency

- A positive effect of farmers' participation to the decision-making process

Clarity of rights and responsibilities

- The role of the formal basis of cooperation (Ammertzwiler, Oursbellile versus Val-de-Reuil)

- Conflict-resolution mechanisms

- Collective-choice forums (steering committees) (Oursbellile)
- Trust/social capital (Ammertzwiler)



Results

- Occurrence of adaptive management/monitoring the resource
 - The adaptation of actions/long-term involvement of farmers

Participatory monitoring-capacity building activities/monitoring the users

- Technical advice and follow up of farming practices
- Formal monitoring/sanctioning systems (EU AES; organic label)





Conclusion

- ILM/IDP as a frame for understanding collective action for drinking water management in agricultural landscapes
- Interdependency of principles in their effect on collective action
- Effect of principles contingent upon other variables
 - The characteristics of the water resource (predictability of the resource dynamics)
 - Actors (perception of the problem, knowledge, trust and social capital)
 - Policy context (EU and French rural development policy)



Conclusion

- The factors influencing the implementation of EU water policy at the landscape level

- Interactions between variables at the local, national and EU levels
- Role played by the materiality and the representations of ecosystems
- Hybrid modes of governance combining regulatory and participatory instruments

Thanks for your attention



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