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

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

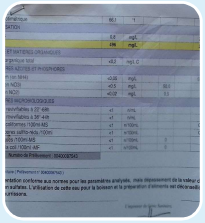
May 19th-21th , 2021

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

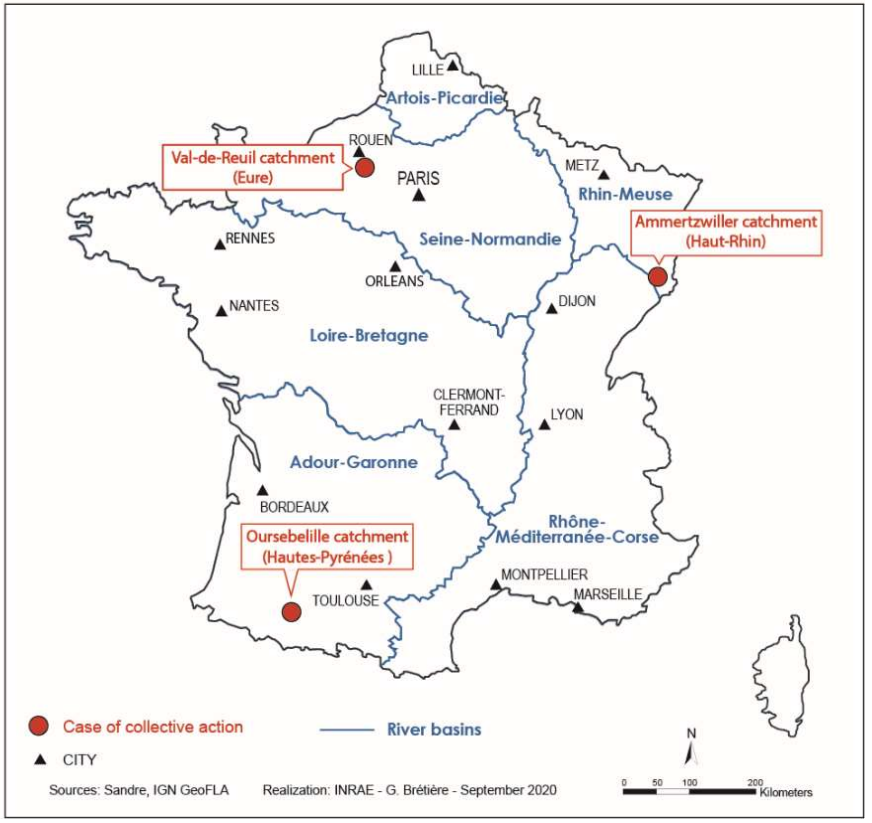
- Integrated Landscape Management (ILM) principles
  - No identification of conditions for the success of cooperation
  - The recognition of the multiple and conflicting values and interests regarding land use/natural resource management
- Institutional Design Principles (IDP)
  - The characteristics 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 – Agricutural 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

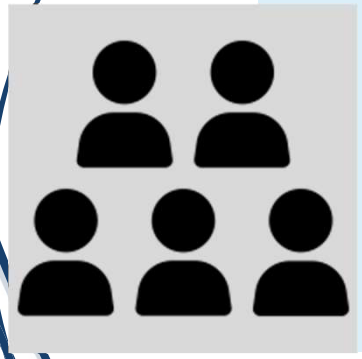
  - In two cases, different perceptions of stakeholders (water suppliers vs. farmers) regarding the water quality problem
    - Oursbellile : agricultural versus non-agricultural source of pollution
    - Val-de-Reuil : the maintenance of good water quality as an issue

- Clearly defined boundaries

  - Uncertainty regarding the boundaries of the drinking water catchment (Oursbellile)
    - Low predictability of resource dynamics/lack of knowledge

Results

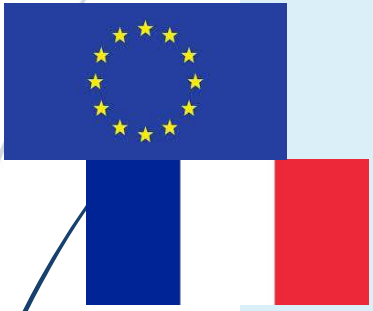
- Multiple land-use objectives
  - In all cases, integration of multiple land-use objectives
    - Maintenance of agricultural incomes (Oursbellile)
    - Development of sustainable energy production (Ammertzwiller)
    - Creation of local food supply chains (Val-de-Reuil)



- 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 (Ammertzwiller, Oursbellile versus Val-de-Reuil)

- Conflict-resolution mechanisms

  - Collective-choice forums (steering commitees) (Oursbellile)
  - Trust/social capital (Ammertzwiller)

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

Laurence Amblard
laurence.amblard@inrae.fr

Carsten Mann
carsten.mann@hnee.de

This work was supported by the Office Français de la Biodiversité (OFB)