



**HAL**  
open science

## **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

### **► To cite this version:**

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.. IASC Water Commons Virtual Conference, May 2021, Clermont-Ferrand, France. <hal-03421602>

**HAL Id: hal-03421602**

**<https://hal.inrae.fr/hal-03421602v1>**

Submitted on 9 Nov 2021

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



HAL Authorization

INRAE



Eberswalde University  
for Sustainable  
Development

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 19<sup>th</sup>-21<sup>th</sup> , 2021

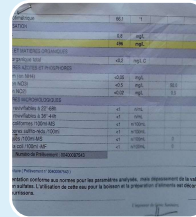
# Introduction

- 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



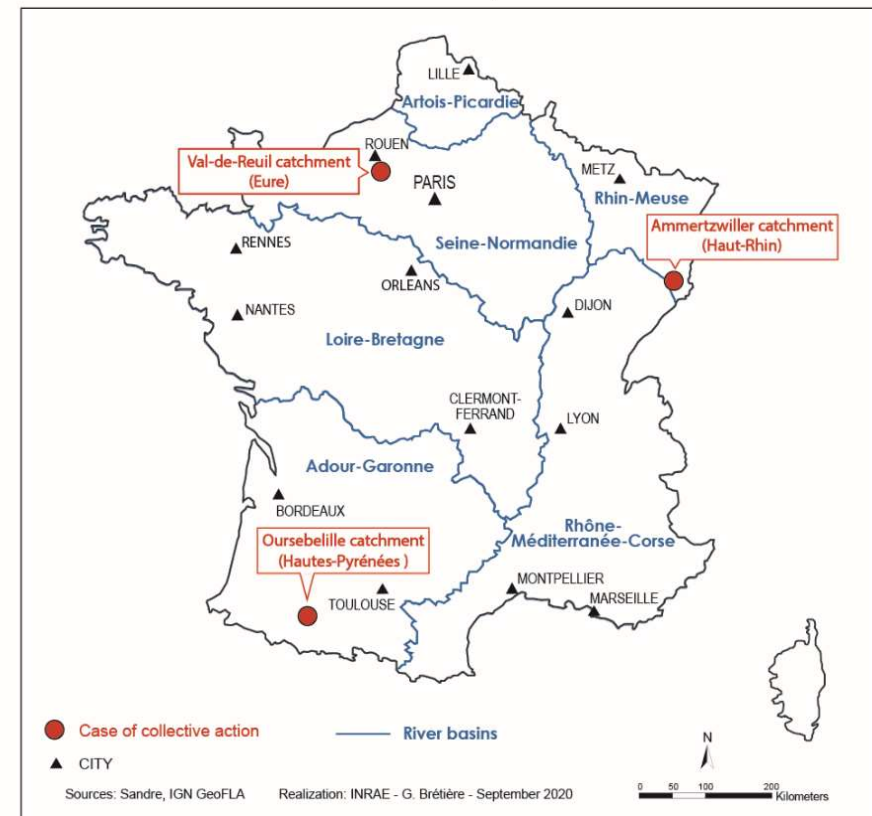


# Conceptual framework

- 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

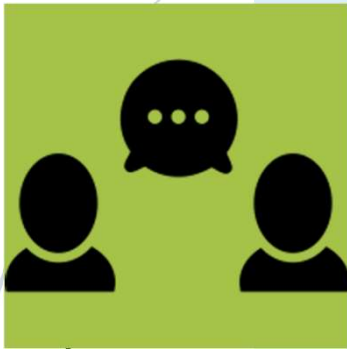
	<b>Ammertzviller</b>	<b>Oursbellile</b>	<b>Val de Reuil</b>
<b>Water resource</b>			
Type of pollution	Nitrates/pesticides	Nitrates	-
Level of contamination	High	High	Good water quality
<b>Agriculture</b>			
Catchment area	363 ha	396 ha	127 ha
Agricultural area	64,5 %	82 %	86,6 %
Number of farms	30	19	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

	<b>Ammertzviller</b>	<b>Oursbellile</b>	<b>Val de Reuil</b>
<b>Governance</b>			
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
<b>Outcomes</b>			
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

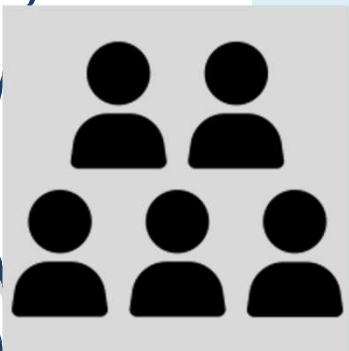
- Maintenance of agricultural incomes (Oursbellile)
- Development of sustainable energy production (Ammertzwiller)
- Creation of local food supply chains (Val-de-Reuil)



- Multiple stakeholders/scales

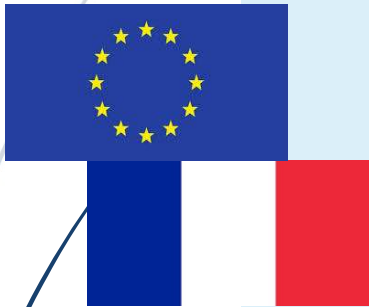
- In all cases, involvement of public/private actors from different sectors at different scales (local, departmental, regional, water basin)

- 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



Laurence Amblard  
laurence.amblard@inrae.fr



Carsten Mann  
carsten.mann@hnee.de

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

