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Irrigated Agriculture and Environmental Sustainability - A Governance Perspective

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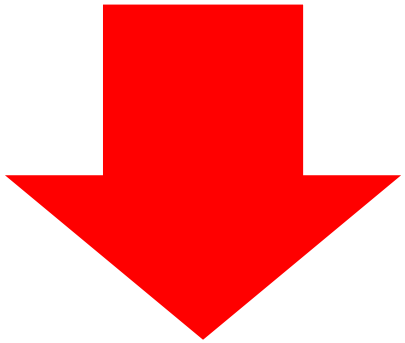
Irrigated Agriculture and the Environment



Environmental sustainability

- Water scarcity
- Water and soil pollution
- Soil salinization

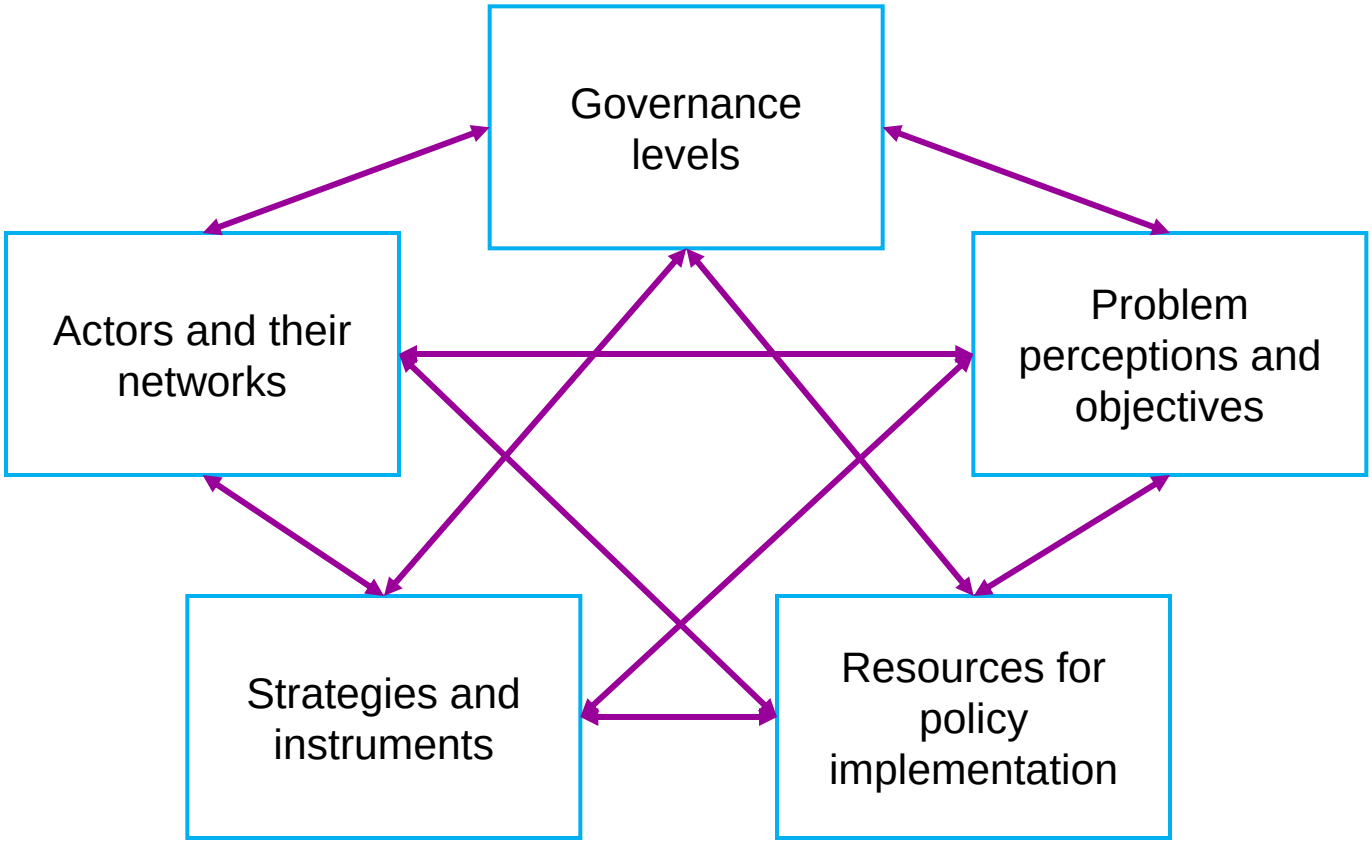
Socio-economic goals

- Food security
- Poverty reduction
- Rural development

Multiplicities in environmental governance

Policy sectors	Institutions	Actors	Scales
• Environment • Water • Land use • Agriculture • …	• Operational • Collective-choice • Constitutional	• Governmental • Societal • Professional • Private	• Spatial • Temporal

Conceptual Model of Governance



Cross-Sectoral Alignment

Environmental governance

→ **(Environmental) policy integration**

Water / land management

→ **Integrated water / land management**

“Cross-sectoral alignment”
Definition “the relative positioning of multiple policy sectors that is conducive to sustainable governance of natural resources”
Analysis Difficulties and opportunities regarding cross-sectoral alignment
Assessment The degree of cross-sectoral alignment

Assessment Criteria and Indicators

Criteria	Indicators of a high degree of alignment
Representation of the actors	• Each actor group organised at all governance levels • Well-defined participatory mechanisms for non-governmental actors • No dominant actor that shapes the discourse
Boundaries of the issue	• Comprehensive and shared data sources across all policy sectors • Elaboration of the cross-sectoral issue at all governance levels
Priority of development dimensions	• Multi-dimensional development approach across all policy sectors • Resource-based monitoring and evaluation incorporated into policy-making
Working procedures	• Coordinated instruments for multi-sectoral policy problems • Intersectoral bodies with resources • Science-policy and science-public interfaces

Methodology

- **A case study of irrigated agriculture in Turkey**
  - Multiple policy sectors as the embedded analysis units
  - Data sources for each policy sector
    - Documents on policy planning, implementation and evaluation
    - Semi-structured interviews with the representatives of actors

- **Assessment of alignment**
  - Key theoretical concepts as the predetermined codes
  - Additional codes based on document analysis and interviews
  - Data organised and examined to analyse the relationships among the empirical repercussions of the concepts
  - Degree of alignment assessed with criteria and indicators based on the organised findings

Case Study: Irrigated agriculture in Turkey

Water and Land Resources and Agricultural Production

- Arid and semi-arid regions
- Relying on agricultural production in rural areas
- Agricultural sector as the big water user (75% of total)
- Fragmented agricultural land (70% smallholders)

Major Policy Interventions and Legislation

- Security discourses: Water, food and energy
- Participatory irrigation management since 1990s
- Laws and regulations towards adapting to the EU *acquis*
- Environment yet to appear in water and agricultural sectors

Representation of the Actors

Actor / Level	Ministry of Agriculture	Ministry of Water	Ministry of Environment	NGOs	Water user organisations
National	✓	✓	✓	✓	✓
Regional (multiple provinces)	✗	✓ (DSI)	✗	✗	✗
Provincial	✓	✓	✓	✓	✗
Local (village, township)	✓	✗	✗	✗	✓

Boundaries of the Issue

Data sources across sectors

- No comprehensive and reliable data
  - × Ineffective monitoring and evaluation
- Changes in organisational structure and division of responsibility
  - × Gaps in data generation and collection

Governance levels

- Lack of multi-level problem handling
  - × Centralistic structure of the Ministry of Agriculture
  - × No regional or national approach by the Ministry of Environment
- Issues in downscaling and upscaling
  - × No segregation of national targets
  - × No aggregation of local practices and problems

Priority of Development Dimensions

Policy sector	Objectives	Priority
Water	• Develop water resources for irrigated agriculture (and for hydroelectricity) • Increase the role of private actors in irrigation management	Economic
Agricultural and rural development	• Increase agricultural production • Improve welfare in rural areas	Economic and social
Land use	• Develop soil resources for irrigated agriculture • Protect agricultural land from misuse	Economic and environment
Environment	• Protect water and soil resources from pollution and degradation	Environment

Working Procedures

Coordination of multi-sectoral instruments

- Diffusion of water-saving irrigation technology
- Progress of investments in extending irrigated agriculture
- Protection of water and soil quality

The authority and resources of intersectoral bodies

- Example: Land Protection Councils – “public benefit”

Science-policy and science-public interfaces

- Multidisciplinarity, interdisciplinarity and transdisciplinarity
  - (Technical) agricultural research centres
  - Training and extension for farmers

Conclusions

- Negative impacts of irrigated agriculture on water and soil
  - Threat on environmental sustainability
  - Multi-sector, multi-actor and multi-level nature
  - → The integration of multiplicities is needed for sustainability
- Social and political contexts of developing countries call for "light" approaches that reflect on governance-related challenges
  - A governance perspective: "Cross-sectoral alignment"
- Key challenges to cross-sectoral alignment
  - Giving voice to less powerful actors (WUOs and NGOs)
  - Capability to substitute between environmental and non-environmental priorities
  - Collaboration between different levels and actors

Thank you!