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WEF NEXUS POLICY COORDINATION AND POLICY INSTRUMENTS GERMAN CASE STUDY



Urbanization

Population growth

Climate change

**Endangered
WEF
securities**

Rhein-Main area:
Frankfurt
Darmstadt
Wiesbaden

The background features several overlapping circles in shades of orange, yellow, green, and blue. Some circles contain images: a terraced field, a river, a dam, and banana plants.

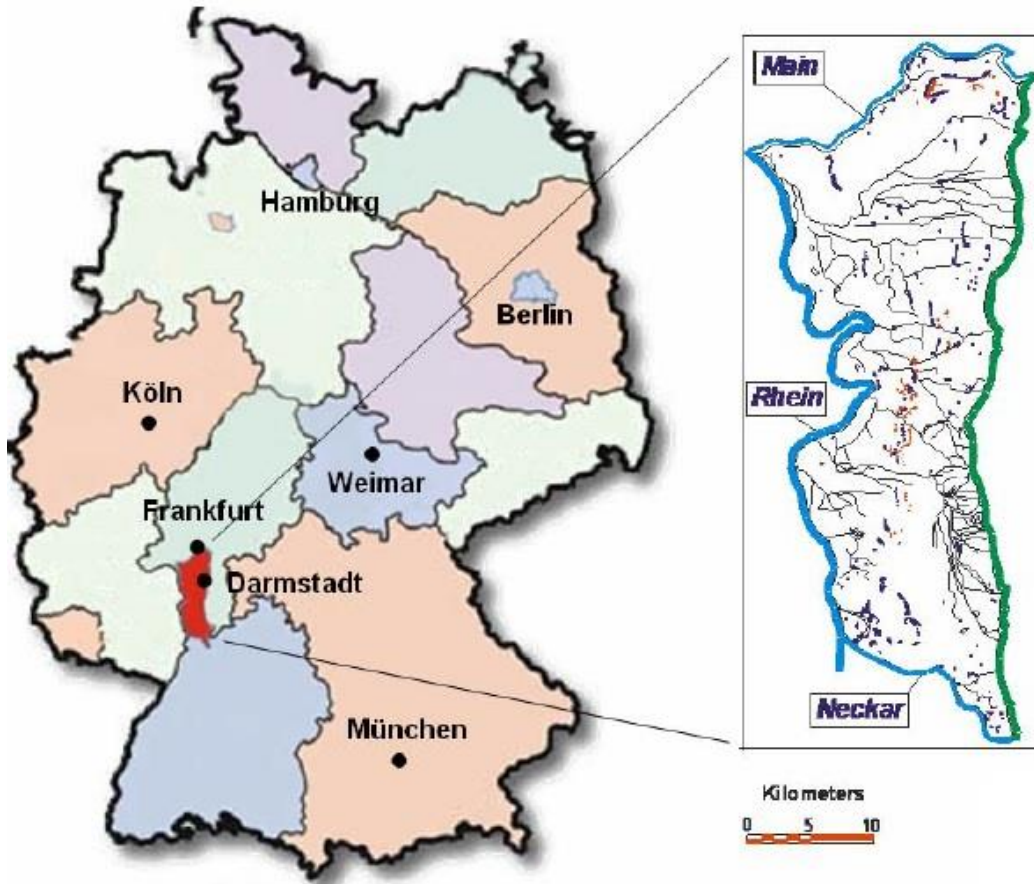
THE NEXUS FRAMEWORK IN GERMANY

Approaches to policy coordination

CASE STUDY: GROUNDWATER MANAGEMENT IN THE HESSIAN RIED



The Hessian Ried



Location of the Hessian Ried



Dried out landscape



Settlement cracking

Challenging context: Competition over Resources

User Conflicts

- Have derived from:
 - Alteration of natural landscapes to cultivated landscapes
 - Pollution inputs from agriculture
 - Intensive exploitation of groundwater resources that requires more energy as groundwater levels decrease
- **Conflicts occur in both dry and wet years**, and have led to the following:
 - **Dry years** - forest dieback, more intensive energy consumption for water pumping, failures in agricultural irrigation, settlement cracking in buildings
 - **Wet years** - flooding, inability to properly cleanse the sewer system



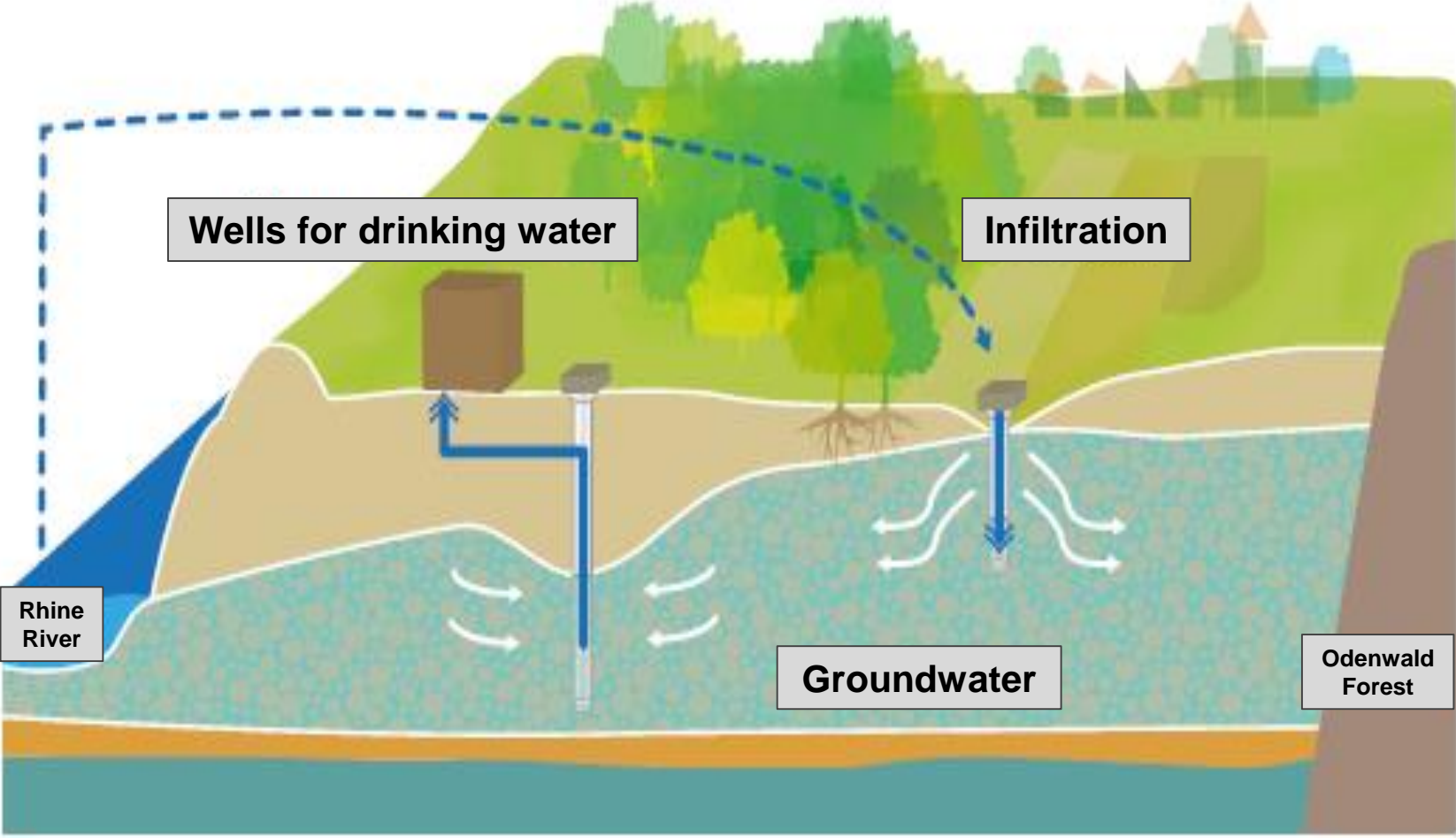
Combination of technical measures and policy planning instruments: **Groundwater Management**

- Groundwater extraction from Hessian Ried provides a significant contribution to the water supply of the Frankfurt Rhine-Main metropolitan region
- Use of water infiltration to ensure sufficient irrigation for agriculture and the raising of the groundwater level in dry years
- The Hessian Ried Groundwater Management Plan
 - Targeted groundwater levels are defined and an action plan is developed

Combination of technical measures and policy enforcement: **Monitoring and Enforcing Groundwater Rules**

- Groundwater protection zones
- A process exists to apply for a groundwater extraction permit
 - Examined whether natural resources will be impaired
 - Binding standards exist for water management planning
- Groundwater extractions and infiltration are managed by the water associations. This adherence is controlled by the responsible water authorities

Technical measures: Groundwater Management



Heiland, Weiner, & Nemüller, 2017

Successful results

Measured groundwater levels at a station in the Hessian Ried



Rueppel & Gutzke, 2004

Multi-sectoral meetings: Round Table




- A round table works on improving the groundwater situation
 - The primary objective of the round table discussion was to achieve a sustainable improvement of forest conditions in the Hessian Ried
- The round table operates under a neutral moderation process
- A carefully arranged round table under recognised and neutral management creates trust and enables viable compromises



Round Table Workshop: Picture Source:
https://umwelt.hessen.de/sites/default/files/media/hmu-elv/abschlussbericht_vom_april_2015.pdf

Multi-sectoral representation in the Round Table

Round Table Hessian Ried:
 Participating stakeholders,
 Moderation: Dr. Bernd Kummer,

Regional public administration	
Ministry of environment	4
Ministry for economy	1
Interest groups	
Forestry	1
Water suppliers	3
Environmental groups	2
Agricultural associations	2
Action groups against structural damages	2
Municipalities	
Regional councils	3
Cities and communities	6

(Kummer 2015)



Multi-sectoral Cooperation: Challenges Encountered

- Costly process in terms of time and money for deliberations and negotiations
- Sustainability of round tables and other problem-based participation configurations
- Lack of political will to implement the recommendations elaborated by the Round Table
- The interdisciplinary and cross-sectoral complexity of the subject → the need to consider different aspects in identification of the solutions: environmental, technical, legal and financial aspects

Case Study Challenges: Conflicts between Sectors

- Different interests of the forestry sector, communities and agriculture:
 - the need to increase the groundwater level for the forest vs the risk of waterlogging for agriculture and settlement areas
- Different interests of the forestry and nature conservation associations:
 - economic aspects and stable forest vs biodiversity protection



Participation in the Round Table: Why Stakeholders Cooperate

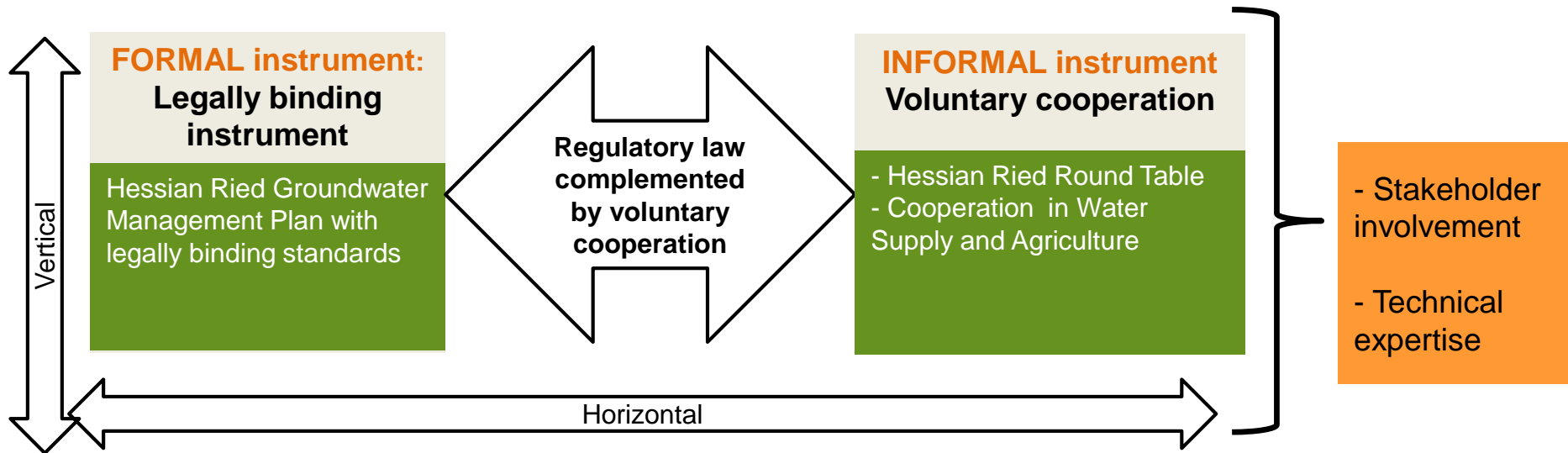
- Strong complexity and interconnections between agriculture, forestry, groundwater and human settlements. Any decision in one sector directly affects the others
- Based on previous experience, the actors know that they have to cooperate, otherwise decisions and changes can create negative impacts on their sector
- Solutions can be better implemented through dialogue



Multi-sectoral cooperation: Cooperation between Water Supply and Agriculture

- Voluntary cooperation used to confront the increasing nitrate pollution
 - This includes cooperation with relevant specialists
 - Consultation of farmers is also guaranteed
 - Declining nitrate levels in the water demonstrated its success
- The EU Water Framework Directive established a fundamental paradigm shift
 - Threshold values are no longer exclusively formulated with regards to the drinking water quality
 - Values are based off a comprehensive approach in protecting groundwater assets and interests

Solutions: Nexus Relevant Instruments



Advantages deriving from the **connection of regulative instruments with voluntary informal cooperation** practices:

- A regulative instrument is made available with binding standards for water management planning
- The voluntary cooperation forms provide an instrument which ensures that interest of all actors and sectors as well as regions are represented

Nexus Evaluation

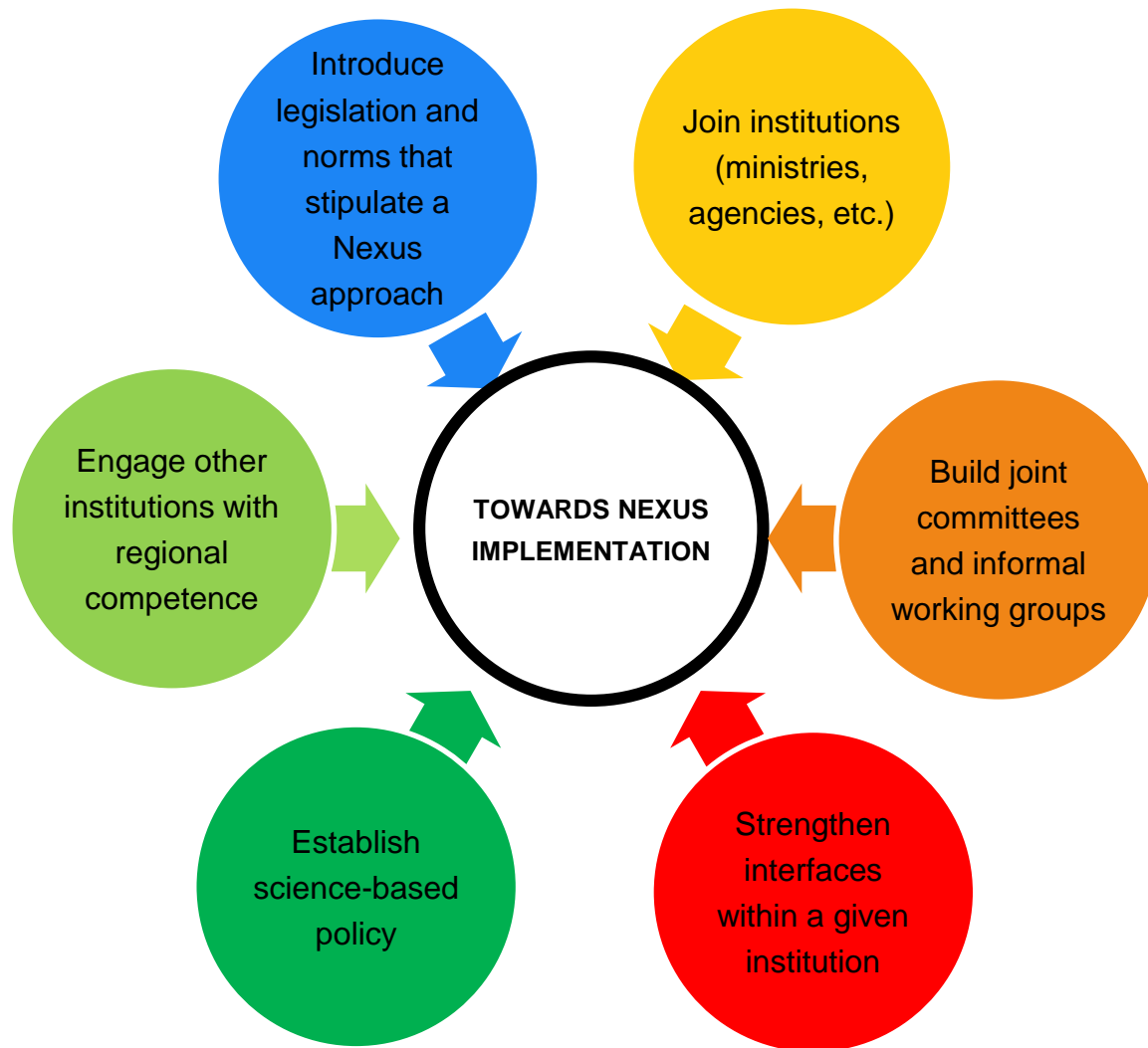
- A trustworthy cooperation between the different user groups is required
- Binding groundwater management plans accomplish planning security for all parties
- The monitoring of groundwater levels and groundwater quality is a vital step
- Voluntary cooperations position the actors to work together
- Configurations that are:
 - Based on specialist knowledge
 - Neutral to special interests
 - Geared to the long-term
- The implementation of policies requires dependable political decisions

How Does Governance Affect the Effectiveness of Nexus Approaches?

- The **comprehensive, intersectoral character** of the WEF-Nexus approach requires intensive **communication and cooperation** between decision makers across the three sectors
- This means that **effective governance instruments** and mechanisms are required to effectively recognise the **interdependencies** between the WEF sectors in decision making processes and to identify integrated policy solutions that **minimise trade-offs and maximise synergies**



Possible measures for Nexus implementation



Questions

Please answer with regard to your country or region

- What were the instruments used to address Nexus issues in this case study?
- In your country, does addressing Nexus concerns typically involve a reactive or proactive approach?
- What lessons learnt from this case study can be transferred to your country?





Thank you for your time



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nexus

