WEF NEXUS
POLICY COORDINATION AND
POLICY INSTRUMENTS
GERMAN CASE STUDY
Introduction to the WEF Nexus

- Urbanization
- Population growth
- Climate change

Endangered WEF securities

Rhein-Main area:
Frankfurt
Darmstadt
Wiesbaden
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

Rueppel & Gutzke, 2004

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

Wells for drinking water

Infiltration

Rhine River

Groundwater

Odenwald Forest

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/hmuelv/abschlussbericht_vom_april_2015.pdf
Multi-sectoral representation in the Round Table

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

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<th>Regional public administration</th>
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<td>Regional councils</td>
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<td>Cities and communities</td>
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(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
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

- Join institutions (ministries, agencies, etc.)
- Build joint committees and informal working groups
- Strengthen interfaces within a given institution
- Establish science-based policy
- Engage other institutions with regional competence
- Introduce legislation and norms that stipulate a Nexus approach
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