Interdisziplinäre Zusammenarbeit im EU-Projekt Blue Transition

Interreg North Sea

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Blue Transition

Priority 3.0 Climate resilience, pollution and biodiversity

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Projektleitung Blue Transition

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BLUE TRANSITION – HOW TO MAKE MY REGION CLIMATE RESILIENT

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DER KLIMAWANDEL IN VERBINDUNG MIT DER NUTZUNG UND VERÄNDERUNG DER LANDSCHAFTEN DURCH DEN MENSCHEN ERHÖHT DEN DRUCK AUF DIE GRUNDWASSER- UND BODENRESSOURCEN IN DER NORDSEEREGION

GRUNDWASSER UND BODEN STEHEN IN KOMPLEXER VERBINDUNG ZUEINANDER

EINE SCHNELLE UND SYSTEMISCHE VERÄNDERUNG IST NOTWENDIG

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Blue Transition richtet seine Aktivitäten auf einen systemischen Wechsel durch ein integriertes Wasser und Bodenmanagement aus

Gemeinsame Betrachtung von oft issoliert betrachteten Aktivitäten in Urbanen Räumen, landwirtschaftlichen Flächen und Naturschutzgebieten

Berücksichtigung von Veränderungen in der Landnutzung und politischer Strukturen

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BLUE TRANSITION – HOW TO MAKE MY REGION CLIMATE RESILIENT

24 Partner in 16 Pilotgebieten aus 6 Ländern (Denmark, The Netherlands, Sweden, Belgium, France and Germany) teilen gemeinsame Herausforderungen:

- integrieren von Aktivitäten in landwirtschaftlichen, natürlichen und städtischen Gebieten;
- ermöglichen von kurz- und langfristig Landnutzungsänderungen in Wäldern, landwirtschaftlichen Flächen, Feuchtgebieten, Torfgebieten oder Naturschutzgebieten, um die Grundwasserressourcen zu sichern und zu verbessern;

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		Focus on climate change regarding …			Focus on changes in …		
No	Pilots Short Name	Mitigation (7*)	Adaptation for GW/Soil Management		urban area (5*)	agriculture/ forestry (10*)	nature/ forests/ peatlands (14*)
			Quantity (15*)	Quality (14*)			
BE1	Urbanized Dunes		x	x	x		x
BE2	Meirdam Urban Wetlands	x	x	x	x		x
DK1	Aabenraa/ Bylderup-Bov		x	x	x		x
DK2	Åstrup kær	x	x	x		x	x
DK3	Island Endelave		x	x		x	x
FR1	Guidel Compromise		x	x			x
GE1	Luneplate	x	x	x	x		x
GE2	Geest Adaptation	x	x				x
GE3	Humus		x	x		x	
GE4	Waterfarmers		x			x	x
NL1	Climate Proof Drenthe Aa		x	x		x	x
NL2	Polder Flushing		x	x		x	
NL3	Climate Proof Veenkolonien	x	x	x		x	x
NL4	Freshwaterconservation		x	x		x	x
SE1	Bolmen Brownification	x		x		x	x
SE2	Vomb Trough System	x	x	x	x	x	x

GE1 Luneplate

Climate adapted water management to prevent saltwater intrusion and desiccation of organic loam with the associated CO_2 submission at the Luneplate

The Luneplate in southern Bremerhaven hast been proofed within TOPSOIL to be the most sensitive area of Bremerhaven with respect to saltwater intrusion. In the nature protected area with an organic rich alluvial loam extensive farming takes place. In the northern part an area of economic activities is located.

Recently this will be expanded by a green business park with a climate-neutral approach. This gives the opportunity to join the challenges of climate change for these both areas. The focus will be on water management and the use of excess rainwater (more intense rain events are predicted) to prevent saltwater intrusion. Measures (rainwater infiltration / storage for irrigation) will be simulated in a model and their effects measured by permanent groundwater monitoring wells and geoelectrical methods where possible.

GE2 Geest Adaptation

Effects of peatland renaturation on groundwater system

Our pilot area is located in the northern part of Lower Saxony (Germany), near the cities of Bremerhaven and Bremen.

Via groundwater modelling we will simulate how different MAR (Managed Aquifer Recharge) measures effect the fresh-saline groundwater interface and test if it is possible to push the interface back to greater depth. A huge benefit would be the preservation of fresh water

GE3 HUMUS

Humus oriented organic farm management to foster climate change adapted soil management in Northwestern Germany

Humus in soil is crucial for soil fertility, to fix nutrients in the root zone and for storing carbon dioxide. Climate change with rising temperatures threatens current C stocks. The aim of this pilot is to investigate climate change adapted soil management options to foster humus-build up in arable soils currently poor in humus in Northwestern Germany, comparing conventional and organic farming.

This pilot focusses on improving climate change adapted soil management, i.e. fostering water storage capacity and improving water quality. We analyze processes in the humus/organic carbon content in soil to better understand impacts of crop rotation and humus on soil productivity and nutrient fixation, and to provide climate

Location of study area in Lower saxony, Germany.

GE4 WaterFarmers

Focus on

- Changes in Urban Areas
- **Changes in Agricultural Areas**
- Changes in Natural Areas

Dealing with

- **Water balance**
- **Water quality**
- Land-Use

Securing groundwater supply for field irrigatio in the country of Uelzen

The WaterFarmers project is taking place in Uelzen, a district in Lower Saxony. The district Uelzen is part of Lüneburgs Heathlands and located in the north german Geest-Landscape. This landscape is characterized by the climatic transition zone between sub-maritime and subcontinental climatic influences, marked by a climatic water balance surplus in the winter months and a negative climatic water balance in the main growing season. Figure 1 shows the project area and the relevant water bodies. This circumstance explains why the majority of the landscape is a field irrigation area and why this has been organized in associations with communal facilities for roughly six decades. Figure 2 shows a section of the full-surface irrigation option and how it is developed using irrigation wells. Climate change is intensifying the climatic characteristics mentioned above on average over the years. In order to be able to counteract the climatic water balance deficit in the growing season, which is increasing on average over the years, agriculture in Uelzen is dependent on an expansion of groundwater extraction for field irrigation. A widespread increase in groundwater extraction as a climate change adaptation measure in field irrigation agriculture is already leading to local conflicts with regard to the objective of the EU Water-Framework-Directive and the protection of groundwater-dependent terrestrial ecosystems. This particular climate change driven conflict situation forces all local actors in particular the DFU, to solve practical problems and concerns that arise from the use of groundwater for field irrigation by its members (farmers) through applied research outside of universities. The aim is to develop practical measures and to evaluate and test their technical feasibility so that a sustainable balance between nature conservation and groundwater extraction can be found for the coming decades. The measures developed must be legally assessed and agreed with the local authorities.

The aim is to ensure that the region's agronomic advantages remain usable in the future, to give irrigated agriculture a future perspective in the face of climate change and at the same time to keep the landscape water balance and the associated ecosystems climate-resilient.

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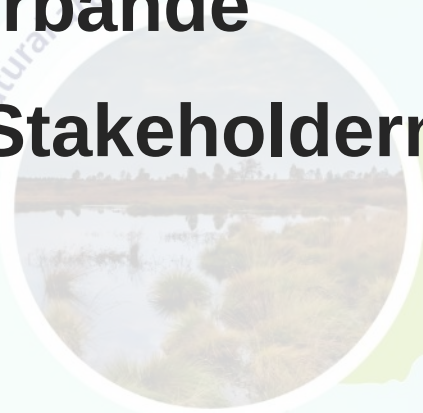
Breites (vollständiges) Spektrum von Akteuren

- Gemeinden und Landkreise
- Behörden (geologische Dienste)
- Wissenschaft
- Wasserversorger
- Verbände

und Stakeholdern



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Summer School

	TOPIC / Approach	Participants	When (Approx)
Sweden (LU, SGU)	"Water from Source to Tap ensuring the health of water bodies. Why is this important?"	About 20 international students	2-3 days in Spring 2025, linked to partner meeting
Germany (GDfB)	"A Mini Blue Transition"- morning with input, afternoon with practical field work, excursions and modelling exercise. All BT issues (data, modelling, governance/strategy) are present.	About 30 local students	One week in Spring 2025
The Netherlands (Hunze en Aas /PD)	NL1/ Drenth'sche Aa: "Maintaining Crops/ Improving Land Use Practices". NL3/ Veenkolonien, similar but with Wageningen University Students	About 3*5 Dutch students learning and young professionals	Parallel learning process, started early 2024, until end of 2024
Denmark (AU)	Geophysics: applied field methods, link to BT via pilot (same methods)	10-24 international students enrolled in AU	8-12th April 2024 (5 days)

Blue Transition Award

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BlueTransition Award - Connecting Water, Soil, and Climate for a Resilient Future

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Informationen
Aktivitäten
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...

Begeisterung!

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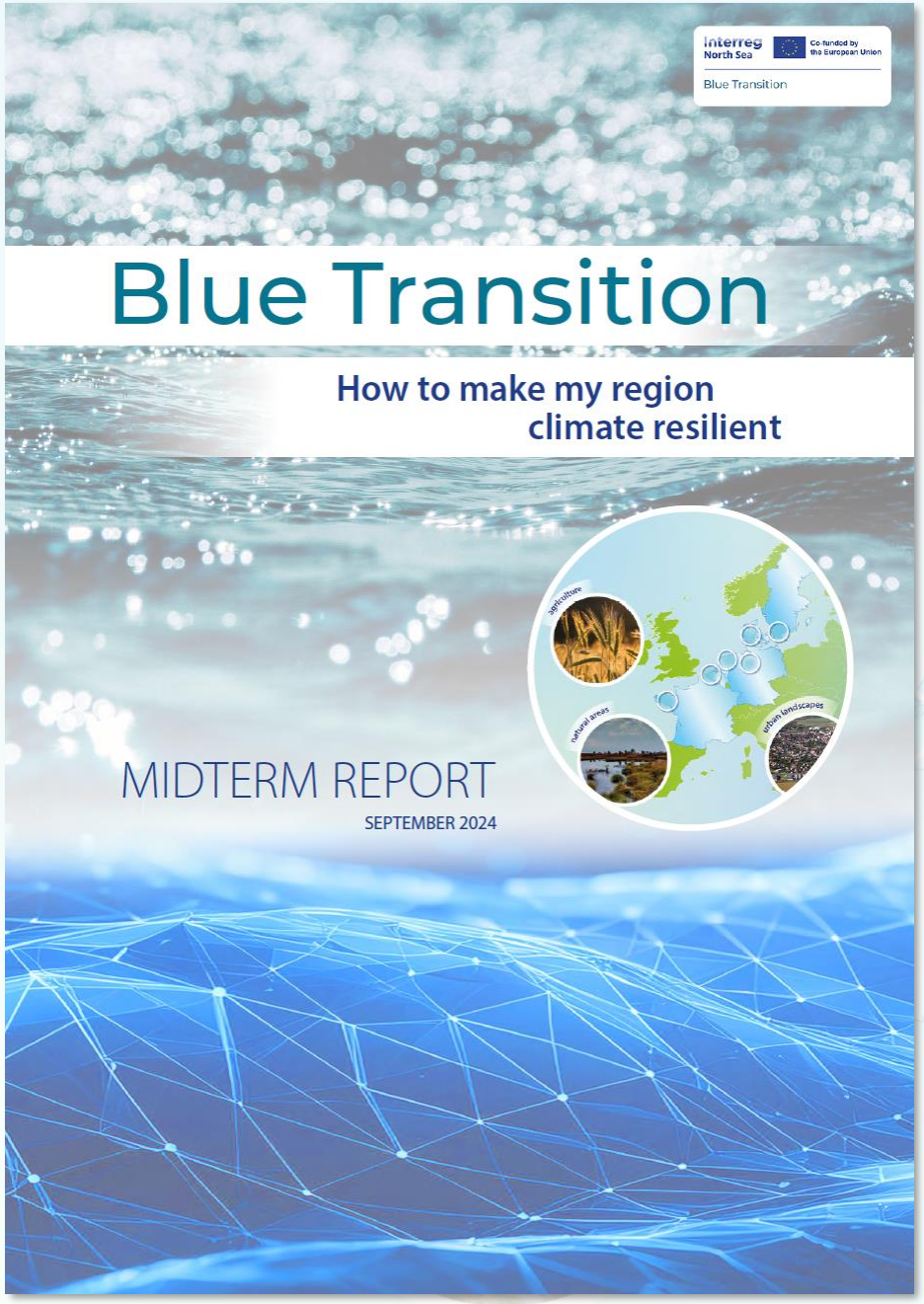

Foreword

Content