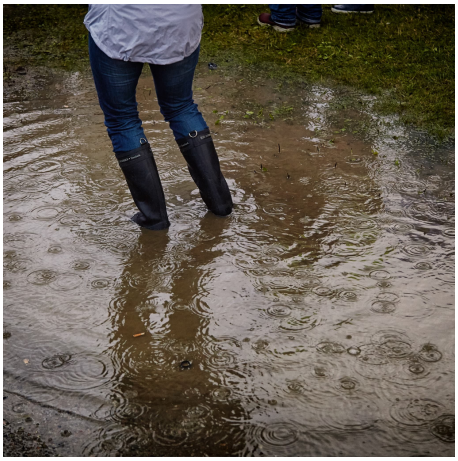
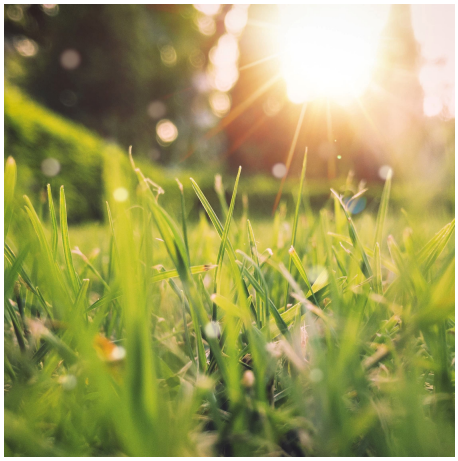
TOPSOIL EVALUATION REPORT

Resilient soil and water resources, understanding the water beneath your feet





TOPSOIL

Interreg
North Sea Region
European Regional Development Fund

EUROPEAN UNION

SIX YEARS TRANSNATIONAL COOPERATION – WHAT DID WE ACHIEVE?

Over the past six years, more than twenty authorities from the local to the national level as well as research institutes, water providers, environmental and agricultural organisations in the North Sea Region have worked to improve the resilience of soil and water resources in times of climate change.
This report presents a short evaluation of the project.

TOPSOIL achieved a lot:

- Over 100 organizations developed, tested and adapted 44 innovative solutions for resilient soil and (ground)water resources in 16 pilot areas and five countries – that, in a nutshell, is TOPSOIL's response to climate change.

- Our activities directly impacted water quality and quantity in the pilot areas – demonstrating an 11% improvement in the last 18 months alone. For the entire project period, the results are even more impressive:

    - Measures such as locally-adapted managed aquifer recharge have shown a 13% improvement in **water quantity**, with an expected 40% improvement after project completion when the measures applied in the modelled scenarios take effect.

    - Measures to improve **water quality** (i.e. salinization, nutrient concentration and other substances) resulted in an improvement of more than 40%. When modelling the effects of specific measures in times of climate change, all pilot projects showed the potential for an additional 17% improvement in water quality.

- Many of our pilot projects involved agricultural stakeholders, including many small and large farms, and informed them about the measures being tested. The Topsoil project has often been instrumental in bridging the gap between science and (among others) agricultural stakeholders.

- TOPSOIL partners share their results: This was done not only through at least 15 peer-reviewed scientific publications but also through a large number of non-technical publications and events, including 28 videos and broadcasts as well as a policy day, a policy PR week and and many more reports and press releases. All of them can be found on our webpage.

How did we do it?

We lived our projects and learned from them. In addition to the tangible results and impressive numbers, TOPSOIL has also been an important example of transnational cooperation and network building. A total of 23 transnational meetings were held. We always asked for feedback and tried to improve. Partners emphasized that they benefited from the opportunity to meet, learn from and share their experiences with colleagues – both from their own and from other NSR countries. More time for in-depth discussion was asked for- and partners even organized additional workshops on topics such as groundwater friendly maize cultivation or use of climate scenarios in policy support.

Our partners from Denmark, The Netherlands, Belgium, the United Kingdom, and Germany applied in their pilots five identical steps:

- **Stakeholders were consulted** and participated to varying degrees in the development of groundwater management solutions. The close linkage of scientific knowledge development with stakeholder involvement in the governance context has been a key factor in TOPSOIL's success and is reflected in the large number of pilots adopted. A Stakeholder Synthesis summarizes the lessons learned.

- The partners **developed and tested new technical tools** to generate much needed data. By serving as peer reviewers, they helped each other improve results and strategies - and build capacity for several farmers.

- TOPSOIL **developed conceptual models and simulated climate change impact to address local challenges**. The integration of hydro(geo)logy and geophysics provided the necessary deeper understanding of subsurface structure and ongoing processes in several areas affected by climate change (salinization, draught, flooding). The results clearly showed the impact of climate change and the need to adapt to it.

- A targeted and decentralized implementation of the **Transnational Board Approach** and joining the clusters of many Interreg, European or national projects created opportunities for synergies and transfer. Partners implemented a learning approach for new ways of managing through a **Transnational Governance Team**. More than 14 workshops compared solutions for groundwater flooding, nitrated leaching, salinization, soil governance or scenario planning to help local partners solve their challenges, e.g. by using specific TOPSOIL roadmaps for groundwater flooding and nutrient management.

- Major efforts were made to developed new management plans for the 16 pilot projects (cf. the Final TOPSOIL Report) and to capitalize the results beyond the projects as well as to inspire organizations outside the project. The tTEM development not only led to the creation of a company, but also resulted in a transnational generation of new and cost-efficient digital underground data areas (for an overview see Capitalization Report).

Conclusion

The Final TOPSOIL report contains a total of 12 recommendations for improving climate change adaptation in soil and (ground)water management. We will not repeat them here, but recommend that you consult the report. The same applies to the recommendations for increasing the practical relevance of a project with stakeholder involvement, which you can find in the Stakeholder Synthesis.

TOPSOIL has shown that you can be big, diverse, successful and have fun at the same time. New land use practices, scientific innovations, lots of testing and learning have vastly improved our understanding of the top 30 m below our feet! As a transnational endeavour this has contributed greatly to the original idea of Interreg: to bring regions together and make Europe more relevant in joint efforts to adapt to climate change.

However, **there is still much to be done: We need more integration on both spatial and temporal scales, and we need more transition in soil and water management for a resilient North Sea Region**! And, of course, we hope to continue our good work with a new project spanning from France to Sweden.