RURAL PACT

Participatory, science-based programme for water and land management in rural Slovakia

Prosperous

Resilient

SUMMARY

The 'Green restoration programme for the Košice region of Slovakia: landscape and watershed recovery 2021 -2030' was developed by the Košice self-governing region (KSK) between 2018 and 2021. The aim is to combat water scarcity, soil degradation, and climate change impacts in Slovakia's rural areas.

The programme focuses on water retention and sustainable land management, involving stakeholders from public authorities, NGOs, and private businesses. Six 'water councils' were set up to drive multi-sector collaboration, analyse water retention needs by using innovative methodologies, and create a comprehensive regional action plan.

©Michal Kravčík, Nature-based solution on Tahanovce Bioklimatic gardens in Košice region

CONTEXT

The Košice self-governing region (KSK), covering an area of 6 754 km², is home to four historical regions (Spiš, Gemer, Abov and Zemplín) and approximately 782 000 residents. Nearly 90% of the area covers agricultural land and forests where a significant economic activity is dominated by intensive farming, commercial logging, and industrial operations such as steel production, all contributing to carbon emissions.

Practices such as monoculture farming and widespread land drainage have degraded the region's soil and exacerbated water scarcity. Every year, hundreds of millions of cubic metres of rainwater run off the land without being utilised, thus increasing risks of floods, droughts, and declining water reserves.

Such dynamics affect agricultural productivity, reduce groundwater levels, and diminish wood production in commercially used forests. Furthermore, the eastern part of the region has experienced over 10% decline in precipitation, amplifying these challenges.

OBJECTIVES

The programme consists in developing and implementing a comprehensive plan to:

- increase water retention capacity across forest, agricultural, and urban landscapes;
- promote ecosystem-based approaches in order to manage water and soil resources sustainably;
- reduce flood risks in order to enhance soil fertility and restore groundwater levels;
- foster collaboration among stakeholders in order to drive innovative and practical solutions.

Themes: Climate, nature and environment , soil health, land use, forestry, agriculture & food

Country: Slovakia

Organisations:

- Košice self-governing region (KSK), public authority
- Regional Development Support Agency (ARR) National Rural Network
- People and Water, NGO
- Water Holistic s.r.o., private business

Start & end date: 10/2018 – 12/2030

Budget: EUR 100 000

Funding sources: Kosice regional resources

Website: www.waterholistic.com/wp-content/uploads/2021/05/KSK-EN.pdf

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ACTIVITIES, KEY ACTORS, AND TIMELINE

The initiative began with a proposal by the region's Chamber of Deputies to develop a Green Restoration Programme. This process involved **extensive stakeholder engagement** and the establishment of six 'water councils' bringing together over 120 representatives of local governments, farmers, forest managers, water managers, experts, entrepreneurs, and civic organisations.

Their primary role was to facilitate multi-sector communication, analyse the current situation, and propose actionable solutions.

Using the SIM4NEXUS methodology – a **decision-support tool** that integrates water, land, energy, food, and climate systems to evaluate policy decisions – an expert team quantified the economic, environmental, and social benefits of the proposed solutions. The analysis focused on enhancing soil fertility, increasing water resources, improving biodiversity, mitigating local floods and droughts, and protecting territories from natural disasters. Specific **targets** were defined for each municipality, ensuring tailored plans for all local administrative units in the region.

The methodology also guided **the identification of nature-based solutions** (NBS) designed to enhance rainwater retention and soil health. These solutions were calibrated to manage extreme rainfall events effectively, restoring ecosystem balance and resilience.

The plan's preparation involved a series of **roundtables, workshops** coordinated by the 'water councils', and **regional conferences** with the participation of international partners. During this process, experts collaborated with the EU-funded scientific research project Land4Climate which focuses on innovative land management strategies to address climate challenges.

The comprehensive programme was finalised in December 2020 and approved by the Košice Regional Parliament in February 2021 – this provided a **strategic framework for addressing the region's water and land management challenges** until 2030.

Implementation is **monitored through progress reports** submitted to the regional parliament annually. Each year, the regional parliament also approves the budget and activities of the plan, based on political decisions and the budgetary capacity of the Košice region.

RESULTS

- Detailed **water retention and land management plans** were developed for all 441 municipalities in the region, outlining proposed solutions for ecosystem-based rainwater retention and land restoration. These plans included specific nature-based solutions (NBS) such as soil restoration, anti-erosion measures, and flood prevention systems.
- The programme highlights the potential to **increase the region's water retention** capacity by 60 million m^3 annually, enabling **cyclical re-use** and improving **groundwater reserves**, projected to yield over 11 000 litres per second.
- The programme anticipates **long-term outcomes, including improved soil fertility, enhanced agricultural productivity, temperature reductions** of up to 0.77°C, and **CO_2 sequestration** of approximately 6.8 million tonnes annually.
- The programme projects the **creation of over 3 000 jobs** by 2030, coupled with **enhanced biodiversity and ecological connectivity**.
- The **estimated investment** is EUR 408 million, expected to be repayable within six years of full implementation.

SUCCESS FACTORS/LESSONS LEARNT

- The initiative highlights the importance of **leveraging scientific data, engaging stakeholders effectively, and developing tailored solutions** aligned with local conditions to ensure sustainability and long-term impact.
- The establishment of multi-stakeholder 'water councils' ensured a **participatory decision-making approach**, fostering trust and ownership among local governments, farmers, and civic actors.
- The SIM4NEXUS methodology provided **precise and credible data** to quantify the benefits of proposed interventions, improving the robustness of the plan.
- Collaboration with the Land4Climate initiative brought cutting-edge **scientific insights**, further strengthening the plan's basis in environmental research.
- The project's framework is **adaptable and scalable**, making it a valuable model for regions facing similar climate and environmental challenges across Europe.