MINISTRY
OF AGRICULTURE
AND RURAL DEVELOPMENT
OF THE SLOVAK REPUBLIC

SOIL – THE CARBON AND WATER BANK OF LANDSCAPE

New concept for land protection which aims at improving the status and quality of water and soil, increasing resistance and supporting climate stability, biodiversity and carbon neutrality.
Comprehensive solution by creating a support system for the maintenance and recovery of crucial ecosystem services of soil and landscape structures through three implementation instruments:

- **Climate Fund for Soil**
New financial and support instrument
- **SOIL Information and Monitoring System**
Efficient sharing of information on soil health, soil management and its utilization
- **Carbon and Water Bank Certification System**
System for the involvement of landowners and land users in sustainable forest and agricultural methods contributing to capturing carbon from the atmosphere in the soil and increasing its water-holding capacity

CLIMATE CHANGE

Climate change pertains to everyone and our entire planet. What are the consequences of climate change and the long-term reduction of the water-holding capacity of soil and landscape structures?

soil erosion and desertification

reduction of groundwater resources

torrential rains and floods

increase in average temperatures

droughts and wildfires

Did you know that rainwater and healthy soil play key role in adapting to climate change?

We can support the maintenance and improvement of soil and landscape ecosystem services in the context of climate change by implementing soil adaptation and management measures along with the integrated utilization of rainwater.

THE IMPACT OF SOIL AND LAND USE ON CLIMATE CHANGE

Torrential rains fall on land which is dried out and sealed due to long-term droughts; as a result, the soil cannot absorb much of the rainwater. A significant portion drains off unused.
Thus, the land fails to acquire sufficient moisture to help it to overcome the following drier period, and organic matter content and biological activity are decreased in it which further reduces its water holding capacity and increases the tendency toward erosion.
Within urbanised territory, a large portion of rainwater is drained by sewer systems. Soil erosion contributes to forest desiccation, and the long-term reduction of the water holding capacity of soil and landscape structures decreases groundwater resources, which also has a negative impact on smaller crop yields and the levels of underground water tables. It ultimately affects the country's food self-sufficiency.

WHY IS SOIL IMPORTANT?

Soil is a limited and precious natural resource with nation-wide importance. It is also susceptible to rapid degradation. That is also why its protection is of national interest.
Soil is important for us from the perspective of agriculture, environmental quality, protection of climate and everyday life.

Production and ecosystem services of land:

- **food production and carbon capture**
- **retaining, filtering and transforming nutrients and water, support of biodiversity**
- **cooling by vegetation**

Soil is the greatest water reservoir in a country and helps to fight against drought. Therefore, it is necessary to:

- **reverse land degradation and ensure its anti-erosion protection**
- **improve rainwater utilization and increase the water holding capacity of soil**
- **increase organic material content in soil and land coverage by vegetation**

MAINTAINING THE PRODUCTION CAPACITY AND HEALTH OF THE SOIL = **FOOD, ENVIRONMENTAL AND ENERGY SECURITY**

LAND AND RAINWATER MANAGEMENT

Integrated rainwater management within cadastral territories of municipalities, forests, fields and developed areas of cities and municipalities aims at enhancing the water holding capacity of soil and landscape structures and mitigating the negative impacts of climate change.

Means for achieving this goal:

- **Liquidation or repair of old forest roads and tracks, anti-erosion protection and water-holding elements in forests, building barriers in torrents and ravines.**
- **Application of land-protective methods on agricultural land through cover crops, crop alternation, wetlands, no-till methods and techniques, agroforestry, organic fertilization, contour cultivation and setting aside 5 to 10 % of areas for landscape, water-holding and anti-erosion elements.**
- **Within developed areas, eliminating the soil sealing and supporting proposals of sustainable solutions for municipal wastewater treatment, use of rainwater and biowaste utilization.**

Achieving carbon neutrality in the land use sector (LULUCF) by 2035 requires a fundamental change in land cultivation and soil management methods and improving the landscape structures.

INTEGRATED LOCAL LAND AND WATER PLANNING = **THE BASIS FOR SUSTAINABLE RAINWATER AND LAND UTILIZATION**

WHAT ARE WE PREPARING?

The Ministry of Agriculture and Rural Development of the Slovak Republic is elaborating the Concept for Assessing and Funding the Ecosystem Services of Soil and Landscapes.
The Concept aims at protecting and restoring the production capacity of soil for food and biomass production by increasing its water holding capacity and organic material content.

We are creating the NEXUS knowledge database, which:

- **is the core of the Agricultural Knowledge and Innovation System (AKIS)**
- **identifies relations, links and context of the systems:**
  water – soil – vegetation – climate – food – energy
- **improves the quality of guidance and develops innovations**

WAYS TO SECURE THE PLANS

System of appraisal and provision of payments for the recovery and maintenance of soil and landscape ecosystem services to local communities, landowners and land users will be ensured by:

CLIMATE FUNDS FOR SOIL → More sources of income, more areas of support, payment system

INFORMATION AND MONITORING SYSTEM – SOIL → Registration, monitoring, assessment of impacts, soil status and land use change

CARBON AND WATER BANK → Certification system, possibility to open and manage account in a bank

If you are a land owner, land administrator or land user, you will be able to open an account in the Carbon and Water Bank. This certification system will register the soil, landscape structures and make payments for the area with the aim of supporting sustainable soil management.

The Ministry of Agriculture and Rural Development of the Slovak Republic is proposing a system solution which is a crucial innovation of agricultural policy with national and international impact.

Soil recovery and soil carbon protection methods:

- **Fit for 55 (elimination of emissions from soil and land use)**
- **Carbon farming (natural CO_2 removals)**
- **Regenerative agriculture**
- **Landscaping and sustainable landscape management**
- **Development of non-farming activities and ecosystem services**