



**CLEAN WATER AND SANITATION** – Ensure availability and sustainable management of water and sanitation for all

**LIFE ON LAND** - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

**PERSON RESPONSIBLE:** Jörg Luster and Thomas Keller

## DESCRIPTION

Land degradation results in impaired soil functions and related ecosystem services, such as maintaining biodiversity, providing food and wood, controlling flooding, and purifying water. In order to help to reverse this trend, we want to answer the questions how soil functions can be improved and maintained sustainably, how they are affected by and can be made resilient against disturbances, and how they can be restored if impaired. To this end, we want to bring together scientists, stakeholders and practitioners to present and discuss (i) the latest scientific insights into the biological, chemical and physical processes and their interactions that are the basis of soil functions, (ii) natural and technical options to sustainably manage and restore soil functions, and (iii) approaches how to deal with related economic, political and social implications.

## TOPICS

<b>Scientific topics</b>
Soil biodiversity (assessment, interaction with ecosystem functions)
Water infiltration into and retention by soils
Soil-groundwater and soil-surface water interactions
Application of the ecosystem nutrition concept to different ecosystems
Assessing and monitoring forest soil acidification
Factors determining stability and quality of soil organic matter
Effect of anthropogenic disturbances (Soil compaction, soil tillage) on soil functions
Effect of natural disturbances (drought, windthrow, erosion, flooding, fire, clear-cutting) on soil functions
Recovery of soil functions after disturbance (from compaction, erosion, fire, ...)
Wetland and river floodplain restoration
Peat degradation and peat management
Digital mapping of soil functions
Understanding factors determining soil structure and how they can be managed
<b>Social topics</b>
Dealing with conflicting ecosystem services (e.g. food/wood production vs. biodiversity; flood protection vs. water purification)



<b>Implementation topics</b> ( <i>delineation from technical topics not always clear</i> )
Soil biodiversity (monitoring, prevention of loss, restoration)
Erosion and landslides: monitoring and prevention
Sustainable wood production
Implementing measures to increase water infiltration and retention in land use management
Managing amount and quality of soil organic matter in agriculture and forestry
Managing soils for water resources protection
Physical soil protection in timber harvesting and tillage
Land-use management options to increase the resilience of soil functions to disturbances
Prevention of desertification
Harmonization and use of soil data bases
<b>Economic topics</b>
Economic incentives for sustainable management of soil functions
Valuation of soil functions
<b>Technical topics</b> ( <i>delineation from implementation topics and scientific topics not always clear</i> )
Engineering solutions to stabilize soils
Soil amendments for water purification
Liming and fertilization of forest soils to mitigate acidification and nutrient imbalances, and to restore acidified soils
Soil structure management
Peat restoration
Restoration of compacted soils
Restoration of deserts
Remote sensing of soil properties, functions and degradation
<b>Policy topics</b>
Implications of the EU water framework directive for management of soil functions
Implementation of soil in EU policies directed to biodiversity (habitats directive, EU 6 <sup>th</sup> Environmental Action Programme, Message from Malahide)
Implications of the EU floods directive for management of soil functions
Soil functions in Forest Management and Agricultural Management policy
The Swiss ordinance relating to impacts on the soil as role model (!?)

### Links with other SDG's

SDG 2: non food-production related aspects of sustainable management of agricultural soils

SDG 3: water purification

SDG 11: physical soil protection

SDG 13: climate regulation function of soils (mainly SDG 13); soil organic matter; drought