LAND USE *for* NET ZERO >>> HUB

Soils and Flooding Workshop

MONDAY 17 NOVEMBER 14:00-16:00

WHERE: Online (Zoom meeting link)

EVENT DESCRIPTION

Flooding poses an increasing challenge across the UK, exacerbated by climate change and land management practices. Soils play a crucial but often overlooked role in flood resilience and water regulation. Improved soil management can reduce surface runoff, enhance water retention, and minimise erosion, yet decision-makers often lack the necessary scientific insights to incorporate soil management considerations and nature-based solutions (NBS) into flood adaptation strategies.

AGENDA

14:00	**Welcome and Introduction**
14:10	**Perspectives from the expert panel** 1. **Prof. David Robinson, UK Centre for Ecology and Hydrology (UKCEH)** - Establishing context and evidence for the role of soils in Natural Flood Management (NFM). 2. **Dr. Richard Smith, Environment Agency** - Illustrations of soil compaction and erosion causing localised flooding. 3. **Prof. John Boardman, University of Oxford** - Runoff and erosion risks in arable systems. 4. **Dr Alejandro Dusaillant, UKCEH** - Soil-based Nature-Based Solutions: How Regenerative Agriculture Practices monitoring evidence shows potential for flood risk reduction.
15:00	**Guided Discussion and Questions** • How do soil type, soil properties and soil management influence susceptibility to flooding? • What are the strategies (including nature-based solutions) that can help reduce or mitigate flooding and flood risk? • In what areas could government help, in terms of policy or funding, and where might it look to do this most effectively? • Are there policy or research gaps that need to be filled? • How strong and/or useful are links between policymakers and private sector stakeholders – such as water companies etc. with respect to flood / flood risk? • How do we build evidence to support investment in soil-based solutions? • Are there any decision support tools or early warning systems that can help alleviate flood risk?
15:50	**Closing comments**

ANNEX 1 – SPEAKERS

Ellen Fay, Founder and Co-Executive Director, Sustainable Soils Alliance

Prof. Pete Smith, Soils and Global Change, University of Aberdeen

EXPERT PANEL

Prof. David Robinson, Soil Scientist, UK Centre for Ecology and Hydrology

Establishing context and evidence for the role of soils in Natural Flood Management (NFM)

There is strong evidence indicating that careful soil management can minimize local runoff and muddy outwash; however, as the scale grows and storms become more severe, the influence of soils in NFM becomes increasingly ambiguous.

Dr Richard Smith, Technical Specialist, Environment Agency

An illustration of soil compaction and erosion in the SW causing localised flooding.

How extensive is soil compaction and erosion: is it a UK problem? Richard will present a short case study illustrating the issues, teasing out the effect of rainfall and the ability of the soil to accept rainfall. The case study explores the solutions used to recover soil structure, and measures used to reduce risk of flooding in the long term.

Prof. John Boardman, Environmental Change Institute, University of Oxford

Runoff and erosion risks in arable systems.

John will use his work in East and West Sussex over the last 45 years to explore the vulnerability of certain areas to erosion and flooding, off-site damage by muddy runoff strongly related to connectivity, farmers response to targeted advice, and monitoring of mitigation responses.

Dr Alejandro Dussaillant, Hyrdology, Nature-Based Solutions, UK Centre for Ecology and Hydrology

Soil-based Nature-Based Solutions: Regenerative Agriculture Practices monitoring evidence shows potential for flood risk reduction.

Alejandro will discuss how soil-based nature-based solutions, specifically monitoring evidence in regenerative agriculture practices, shows promise on improving soil water holding capacity, infiltration and percolation, exhibiting potential for flood risk reduction at least for small to medium events.

ABOUT LUNZ HUB:

The Land Use for Net Zero (LUNZ) Hub is a consortium of 34 organisations that aims to provide the UK government and devolved administrations with the rapid evidence they need to develop policies that will drive the land use transformation required to achieve Net Zero and other environmental and social targets by 2050.

Partners include experts from research, farming and industry, working across issues including green finance, renewable energy, planning, soil health, afforestation and water management. LUNZ will play a pivotal role in supporting policymaker decision making and helping to communicate more widely the critical importance of land as a carbon sink or source.

The LUNZ Hub is funded for £6.25 million over 40 months, starting 1 November 2023. The Hub is co-funded by UKRI, the Department for the Environment, Food and Rural Affairs (on behalf of England and Wales), the Department for Energy Security and Net Zero, the Department for Science, Innovation and Technology, and the Scottish Government. It has been co-designed with Defra and the Welsh and Scottish governments. The LUNZ Hub is supported by seven UKRI research councils: Arts and Humanities Research Council (AHRC), Biotechnology and Biological Sciences Research Council (BBSR), Engineering and Physical Sciences Research Council (EPSRC), Economic and Social Research Council (ESRC), Medical Research Council (MRC), Natural Environment Research Council (NERC), Science and Technology Facilities Council (STFC).