Land for Flood Retention and Resilience:

How can access to private land be included in future flood risk management?

COST Action LAND4FLOOD (CA 16209)

FLOODS NEED LAND!

Almost every large flood event of past decades has been followed by calls for more flood retention. Although this has led to considerable efforts in flood risk management, use of land for implementation of risk reduction measures is still limited. Effective and efficient land management for flood retention and resilience is needed!

Climate change is likely to increase the frequency and magnitude of flooding events. While flood damage occurs on both public and private land, it is on private land that providing space for flood risk management is more difficult. Dikes can only provide limited protection and flooding can also be expected in areas that were not flooded in the past. Preparing cities and landscapes for more frequent and intense flood events is essential. Storing the water in retention areas and preparing cities to be flooded without major damage are both options to respond to increasing flood risk.

WHERE TO PUT THE WATER?

But where can we put the abundance of flood water? The water cycle offers three options:

(A) in the hinterland, before the water reaches rivers;
(B) upstream of cities in flood polders (flood storage);
(C) or in resilient cities (better design cities to withstand damages from floods).

The technical and hydrological conditions for these options are relatively well known, but these measures need access to more land - which is often privately owned. Obtaining private land uses for public needs is complicated, time-consuming and expensive. Mobilising private land for flood retention and resilience means coordinating different actors and institutions not just in water management but also including landowners in flood risk management plans.

A key question for flood retention and resilience is how private land can be used to retain or store water to create more resilient urban environments. This requires understanding of the hydrological effects, instruments of land policy, property rights, stakeholder involvement, land economics and governance. Future flood risk management still needs hydraulic engineering, but it also goes far beyond this discipline, as the solutions will often require negotiation and incentivising landowners to permit access to their land.

PRIORITISE LAND IN FLOOD RISK MANAGEMENT

Land management is often addressed as a secondary matter in flood prevention and reduction policies, but should be given more attention. Land is a *crucial* factor in how societies cope with changing flood risk, so policies must begin with land management to improve flood prevention and flood resilience. A central need for flood retention and resilience is to turn the traditional perspective upside down and prioritise land management.

COLLECTIVE EXPERTISE ON LAND FOR FLOODS

LAND4FLOOD is a network that gathers expertise on how to make use of land for flood risk management. LAND4FLOOD involves stakeholders, practitioners and academics from more than 30 countries across Europe and beyond who collaborate to explore how to make land more available for flood risk management with the aim to better prepare society for increasing flood risks and their consequences. This is an interdisciplinary and international endeavour. LAND4FLOOD collects, exchanges, and seeks to combine academic knowledge with practical experience. It is an open network – we reach out to both additional stakeholders and academics to join us in this work.

Get involved! Check out **land4flood.eu** and contact your national LAND4FLOOD contact point: ##########

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