

COST Action “LAND4FLOOD - Natural Flood Retention on Private Land”: turning the traditional perspective of flood risk management on land upside-down

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Floods are among the most frequent and destructive natural hazards worldwide. Climate change impacts on the hydrological cycle and especially land use change and urban development in floodplains are expected to further increase river flood damage. Traditional approaches in flood protection, which rely on “grey” infrastructure solutions (i.e. dikes and levees) to defend against floods, are no longer suitable to cope with these flood risk dynamics. Although they make socio-economic activities possible by protecting vulnerable areas (up to specific design levels) and providing land for future development they disconnect floodplains from river channels and contribute to the accumulation of damage potential in protected areas (“dike dilemma”).

Land use intensification and the limits of defense-oriented approaches point to the need for new approaches to better cope with increasing flood risk by accommodating water on land and adapting land uses. There are generally three options of providing land for flood risk management:

1. retain water in the hinterland before it reaches the streams and rivers (“Natural Water Retention Measures”);
2. temporarily store the peak of a flood wave (“Flood Storage”);
3. adapt urban areas so they may be inundated without major damage (“Resilient Cities”).

While the technical and hydrological concepts are relatively well known, the main challenge is to get these options implemented on private land. In current flood risk management landowners and users are usually regarded as recipients and not as key stakeholders in the policy implementation processes. A landowners’ perspective is still in its infancy and land governance for flood risk management is lacking – in practice and in academia. This gap is addressed by the COST Action “LAND4FLOOD” (CA16209). It reverses the traditional perspective to explore how – often privately owned – land can be made available for flood risk management. LAND4FLOOD brings together multiple stakeholders and various disciplines to investigate:

- Which synergies can be identified between different land uses and the provision of flood storage and ecosystem services?
- How can the knowledge base about advantages and potentials of flood retention measures be strengthened and their importance communicated to different actors at the local, regional and catchment levels?
- How can land owners be encouraged to adapt land uses and land management strategies which allow for increased water retention capacity?

To address these questions, there is need (i) to thoroughly understand the technical and hydrological functions of land; (ii) to explore the socio-economic relation between flood retention and land and (iii) to investigate i.a. legal, economic, planning and communicative instruments to mobilize land for floods. These three perspectives are deployed in LAND4FLOOD through working groups which collaborate on these issues not only in the hinterland of rivers, but also for flood storage along the streams and for the flood-resilient cities. By putting the issue of land up-front and turning the traditional perspective on land upside-down, this LAND4FLOOD aims to contribute towards better addressing this pertinent societal issue in flood risk management.