West Yorkshire Flood Innovation Programme Accelerator Project
Work Package 6 – Trade-off analysis

Start date: 1st April 2023 | End Date: 1st March 2025 | Location: Aire catchment

1. Background and rationale

Catchments and their river systems are, by definition, spatial. The interaction between geographical patterns of topography, climate, land use, settlement, infrastructure, etc. will dictate what is and isn't possible regarding policy and management responses to problems of flood, water quality, etc. within a catchment. Policy and management actions often require that trade-offs are established and realised to satisfy multiple demands on land and water throughout a catchment at multiple spatial scales and across multiple stakeholders, often involving conflicting interests. GIS-based Multicriteria Evaluation (MCE) tools can be used to map and better understand where such trade-offs are required.

2. Aims

The aim of this Work Package is to develop a desk-based GIS-MCE demonstration tool for the identification of spatial conflicts in catchment planning and management.

3. Activities

We will undertake the following activities within the Work Package:

A. We will undertake a catchment-wide inventory of relevant spatial datasets including topography, land use, human settlement and infrastructure.
B. We will use these data to derive spatial models of relevant factors and constraints.
C. We will use example weights and priorities derived from WP5 to identify spatial patterns in trade-offs between stakeholder groups and communities in the Aire catchment
D. We will explore the need and demand for web-based decision support tools utilising Web2.0 interfaces and existing research tools (e.g. WEIGHTER).

4. Progress to January 2024 and next steps

Progress:

a. Decisions regarding software (WEIGHTER vs ShinyApps).
b. Decisions regarding spatial focus (Aire above Crown Point Bridge, Leeds).
c. Identify and source required spatial datasets.

Next Steps:

d. Prepare spatial datasets.
e. Load and test ShinyApps tool.
f. Create demonstrator MCE-GIS with focus on:
    i. Identifying tree planting locations in uplands.
    ii. Identifying 'roughing up' of floodplain areas.
g. Test demonstrator tool with local agency/authority staff.

Contact information and useful links:
If you have questions about this project, iCASP or the WYFLIP, please contact us.

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🌐 iCASP Website | WYFLIP webpage | Accelerator project webpage | UK Shared Prosperity Fund

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