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West Yorkshire Flood Innovation Programme Accelerator Project Work Package 5 – Opportunity mapping

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

1. Background and rationale

While we may often regard river systems and their catchments as one-way systems – with upstream to downstream flows of water, sediment and pollutants – they are best regarded as two-way systems in the social, cultural and political context. What happens upstream affects those living downstream and so affected populations regularly look upstream to see what may have caused flooding or pollution in their local river; for example, recent flooding in Hebden Bridge being blamed on grouse moor management upstream, and poor water quality in the River Wye being blamed on intensive chicken farms. Whether these links are real or not is the object of scientific study, but from a socio-political perspective they can appear very real to those affected.

It is useful to adapt the concept of a river “thalweg” (German: tal = valley, weg = way) from its physical geography origins, to include the social, cultural and political aspects of the river and the complex picture of actors, scale, responsibilities, concerns and motivations. This enables better understanding of the views and relationships people have with their rivers, land and associated problems of flooding and water quality. Many of these may be regarded as “wicked problems” requiring closer scrutiny of upstream-downstream perspectives, conflicts and solutions that may be achieved through broader recognition of vested interests between the communities and stakeholders involved to identify compromise positions. The well-known DPSIR framework (Driving forces, Pressures, States, Impacts and Responses) can be applied throughout the ‘social thalweg’ (Figure 1) using participatory mapping approaches to capture the ‘rich picture’ of upstream-downstream views.

2. Aim

The aim of this Work Package is to apply the concept of a social thalweg and existing research experience in participatory GIS (PGIS) to develop an element of spatial collaborative working with stakeholders up and down the River Calder catchment.

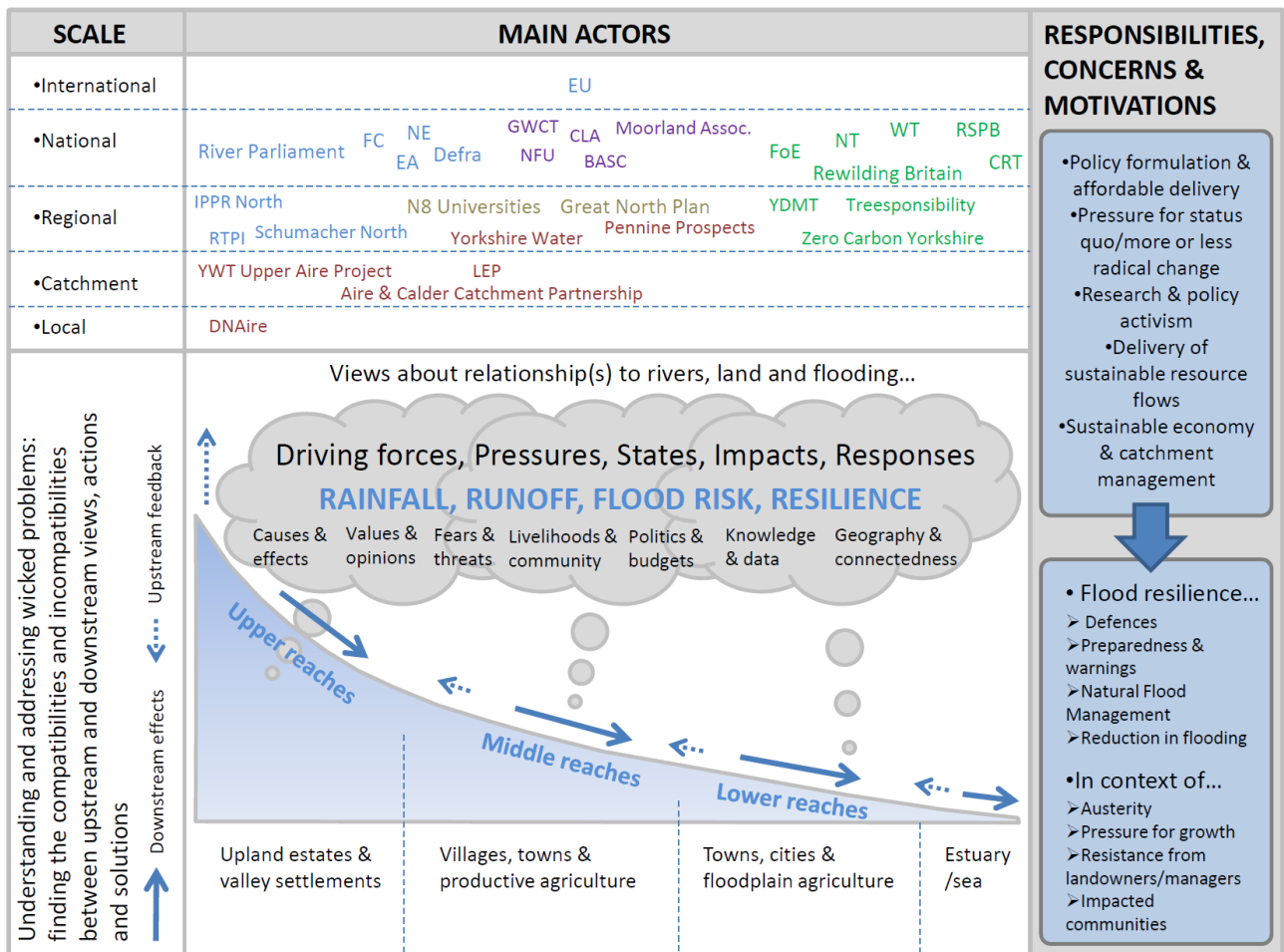


Figure 1 The Social Thalweg

3. Activities

We will undertake the following activities within the Work Package:

- A. We will use the social thalweg model as a conceptual framework for developing and implementing a participatory GIS (PGIS) approach to upstream-downstream stakeholder dialogue.
- B. We will use existing PGIS tools for both online and face-to-face workshops with stakeholders and community representatives from all points along the social thalweg.
- C. Map-Me.org and Paper2GIS tools will be used to facilitate stakeholder input to comment on/validate opportunity mapping with regard to possible actions/interventions throughout the catchment.
- D. These will include evaluation of land use, flood engineering, Nature-based solutions, Natural Flood Management and Sustainable Urban Drainage proposals.
- E. Results will be analysed, and key themes/patterns extracted and integrated with desk-based models for validation/confirmation and to identify commonalities and differences that need further consideration in the planning process.

4. Progress to January 2024 and next steps

Progress:

- a. Design of Map-Me PGIS survey with emphasis on:
 - i. Relative location on social thalweg (upper, middle, lower reach).
 - ii. Understanding local flood issues in regard to upstream sources of flood water and local problems that may exacerbate flooding.
 - iii. Identification of locations for local flood mitigation measures.
 - iv. Understanding possible/likely impacts of climate change over next 2-3 decades.

Next steps:

- b. Development of demonstrator Map-Me survey
 - i. Preliminary talks with local agency/authority staff.
 - ii. Identification of key research questions.
 - iii. Writing of 'spray' (geographical) and 'say' (context/clarification) questions.
 - iv. Programming and testing of survey with local agency/authority staff.
- c. Launch and testing of prototype survey
 - i. Run with local agency/authority staff at three locations (upper, middle, lower reach).
 - ii. Collate and analyse results.
 - iii. Create heatmaps and text/sentiment analysis.

Contact information and useful links:

If you have questions about this project, iCASP or the WYFLIP, please contact us.



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