

REFORM Meta analyses - What is it about?

In the 2010 FP7 call for a research project on hydromorphology and ecological objectives of the WFD, the European Commission explicitly requested to make use of existing knowledge and expertise. REFORM has addressed this explicitly in its first and cross-cutting work package. The main aim is to make the state-of-the-art knowledge on hydromorphology, the interaction with ecology and wider environmental aspects timely available to support river basin managers while preparing the next round of River Basin Management Plans (RBMPs). The results will be made available through regular deliverables, but also through the REFORM Wiki. Early 2013 REFORM will organise an interactive stakeholder workshop to support science-policy and science-practice interfacing on hydromorphological degradation and restoration of rivers. The compilation of the existing knowledge in work package 1 will form the basis to discuss the scientific foundation and applicability and further ambitions of REFORM. This start of REFORM will support all subsequent tasks within the project by compiling and providing information on existing knowledge.

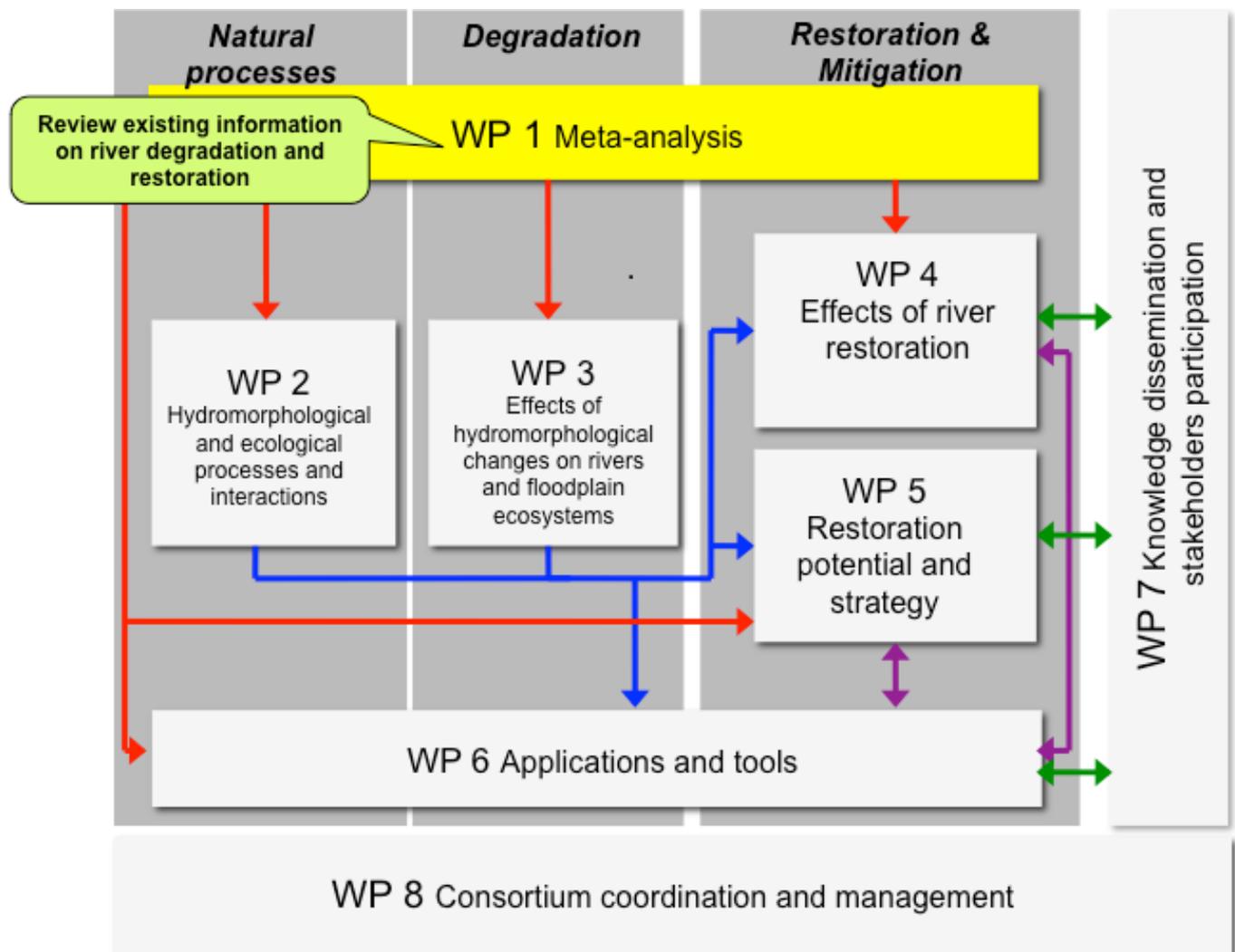


Figure Cross-cutting work package 1 synthesizes existing knowledge and expertise on hydromorphological degradation and restoration of rivers. The majority of its output is available early 2013

In more detail we will critically evaluate and analyse existing data (published and unpublished) on:

1. the linkages between river morphology and their underlying hydro-physics, hydromorphological and ecological variables and processes
2. the effects of hydromorphological restoration on these variables and processes
3. the socio-economic drivers and gains of hydromorphological alterations
4. the socio-economic constraints for, costs and benefits of hydromorphological restoration.

This review will allow to analyse:

1. the biotic responses to environmental degradation
2. the effects of multiple pressures on various temporal and spatial scales
3. the first RBMPs on a European scale to identify knowledge gaps, develop and sharpen hypotheses

To meet these objectives, work package 1 is broken down into six tasks:

In task 1.1 we review and analyse the **existing hydromorphological survey methods** comparably to a similar analysis of the biotic assessment methods already performed within the EU project WISER. We hypothesise that existing survey methods are mainly focussed on the site and reach scales and do not sufficiently cover process-based characteristics. Based on the relevant bottlenecks for biota we will identify suggestions for additional metrics and variables will be developed (scheduled to be available by October 2012).

In task 1.2 we review and analyse the **effects of pressures on hydromorphological variables and processes** based on a typology of pressures developed within the IWRM-NET project FORECASTER. The main objective is identifying the most eco-hydromorphological relevant impacts across spatial and temporal scales (April 2013).

In task 1.3 we review the **linkages of a set of core hydromorphological variables and variables describing ecological status and functioning**. Response variables will include ecological status as measured by biological quality elements (fish, invertebrates, macrophytes, diatoms) and a set of functional parameters (self purification capacity, aquatic-terrestrial interactions, functional traits) and will be classified according to major physical processes, effect size and response time. We hypothesize that species tolerance thresholds are more relevant for addressing existing limitations for biota compared to habitat preferences (April 2013).

In task 1.4 we analyse the **first RBMPs and Programmes of Measures in regard to eco-hydromorphology**. It is a highly applied task to immediately provide knowledge for the drafting of the second RBMPs and Programmes of Measures. Gaps in knowledge and application of restoration measures will be identified and potential ecological improvements and drawbacks predicted (April 2013).

In task 1.5 we review and analyse the socio-economic drivers and effects of hydromorphological degradation and restoration, in particular focusing on the **costs of hydromorphological degradation and on the definition and development of cost typologies**. This task further compiles metadata of existing cost information on hydromorphological degradation (October 2013).

In task 1.6 we will manage the meta-data produced within REFORM. This task will provide data to the other work packages of REFORM. The **meta-database** will help making the project results publicly available and providing a knowledge tool for all kinds of stakeholders, especially water managers.

For further information:

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