WATERPROTECT: innovative tools enabling drinking water protection in rural and urban environments

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1. Introduction

- Agriculture is the biggest source of pesticides and nitrate pollution in European fresh waters
- WATERPROTECT will contribute to effective uptake and realisation of management practices and mitigation measures to protect drinking water resources

2. Methodology

- Create a **multi-actor participatory framework** enabling actors to monitor, finance and effectively implement management practices and measures for the protection of water sources
- **Seven case studies** involving multiple actors in implementing good practices (land management, farming, product stewardship, point source pollution prevention) to ensure safe drinking water supply
- Wide **range** of pedo-climatic conditions, types of farming systems, legal frameworks, larger and smaller water collection areas across the EU

	BE	IE	PL	DK	IT	ES	RO
Land use	mixed urb/rur	rural	rural	rural	mixed urb/rur	mixed urb/rur	rural
Farming system	field crops	grass & field crops	field crops	field crops	vineyard	minor fruit & veg	Ext. grass/ subsistence
Size	small ~40 km²	small ~10 km²	interm ~60 km²	interm ~27 km²	small to large	interm ~120 km²	small ~20 km²
Drinking water	SW	GW private & public	SW	GW public	GW private	SW& GW private	GW private
Pollutant	pest	Nitrate pest	nitrate	nitrate	nitrate pest	pest nitrate	nitrate
Irrigation	no	no	yes	no	yes	yes	yes

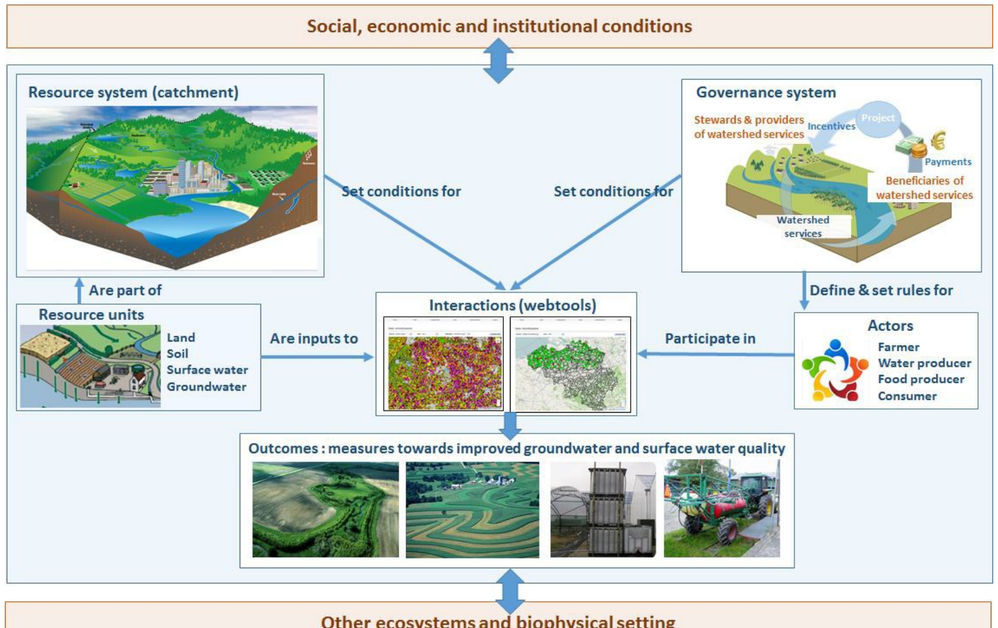

Fig. 1: Overview of the general concept and methodology.

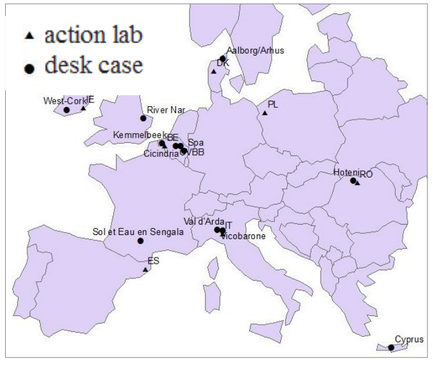

Fig. 2: Actors in action labs centred around implementing mitigation actions (inner circles) and local stakeholders (outer circle) (left) and location of 7 action labs and 12 example cases across EU (right).

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3. Expected outcomes

WATERPROTECT will:

1. develop **innovative water governance models** investigating alternative pathways from focusing on the 'costs of water treatment' to **'rewarding water quality delivering farming systems'**
2. develop **participatory monitoring strategies to** evaluate baseline conditions, identify pollution pathways and design appropriate measures

Fig. 3: High frequency monitoring of water quality (N-NO3, TP, TRP, EC and Turbidity) (left) and high frequency monitoring for discharge and pesticide concentration (right).

3. evaluate **multiple mitigation methods** at multiple farms at the catchment scale in order to design farming systems integrating the most cost-efficient set of measures with a maximum impact on improving drinking water quality

Fig. 4: Biofilter for the treatment of spray remnant water on the farm (left) and grass buffer strips to reduce runoff and erosion of pesticides (right).

4. develop building blocks for an **interactive collaborative tool** to visualize monitoring results, landscape information, risk areas, and scenarios of implementation of mitigation measures

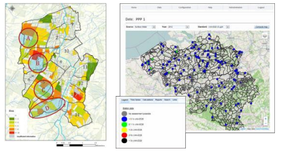

Fig. 5: Screenshot of Waterprotect_BE and risk map.

In a comparative case study approach the results from the action labs will be upscaled to EU-level to provide policy support.

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