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&

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**Interreg**   
EUROPEAN UNION  
**2 Seas Mers Zeeën**  
**PROWATER**

European Regional Development Fund

**Protecting and restoring raw water sources  
through actions at the landscape scale**

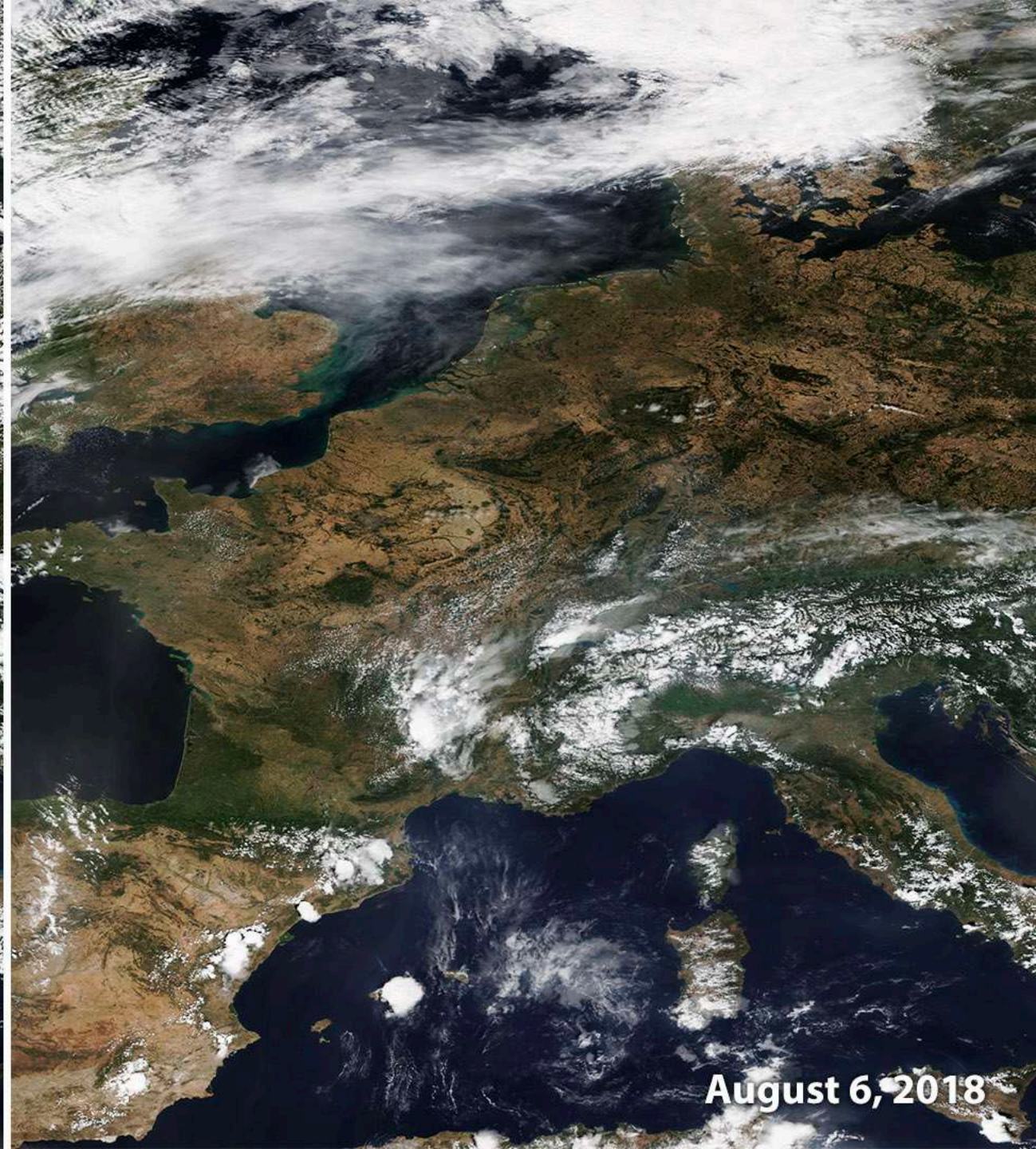
5th of March 2019 - Canterbury

The summer of 2018...



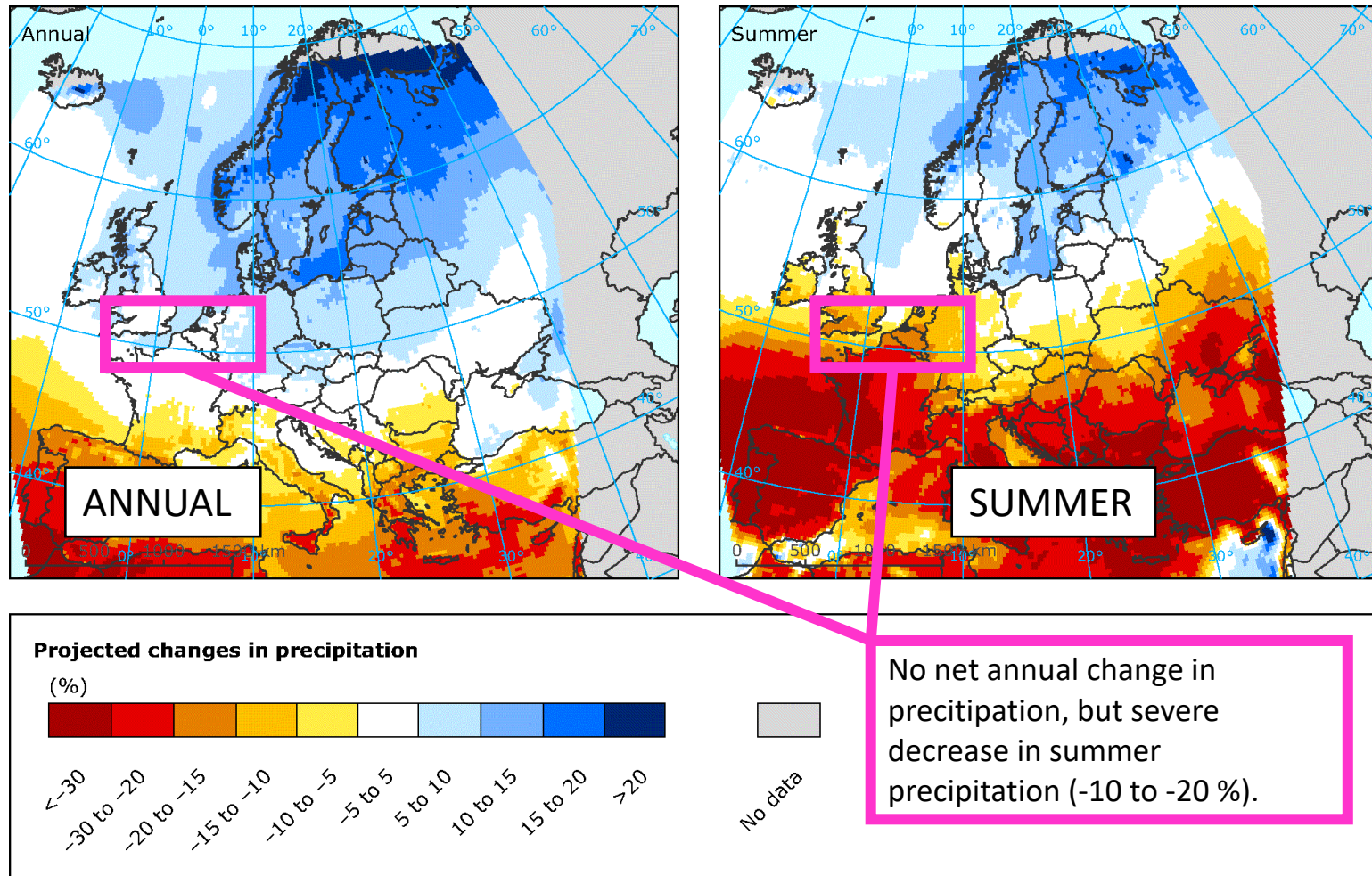
NOAA Environmental Visualization Laboratory

June 30, 2018



August 6, 2018

# Expected climate change



Source: EU strategy on adaptation to climate change

## PROWATER challenge

Climate change will affect the 2 Seas region similarly, but the **impact of drought** and water scarcity is often neglected. The cross-border project is needed to fill the information gap to policy and the general public, about the need for **long-term drought risk strategies** to address water scarcity and drought risk.



# PROWATER in numbers

- Approved: 24/11/2017
- Starts: 01/09/2018
- Ends: 31/08/2022
- Budget: € 5.526.624
- 60% cofinance by EU (Interreg 2 Seas programme)

# 10 partners



Westcountry Rivers Trust

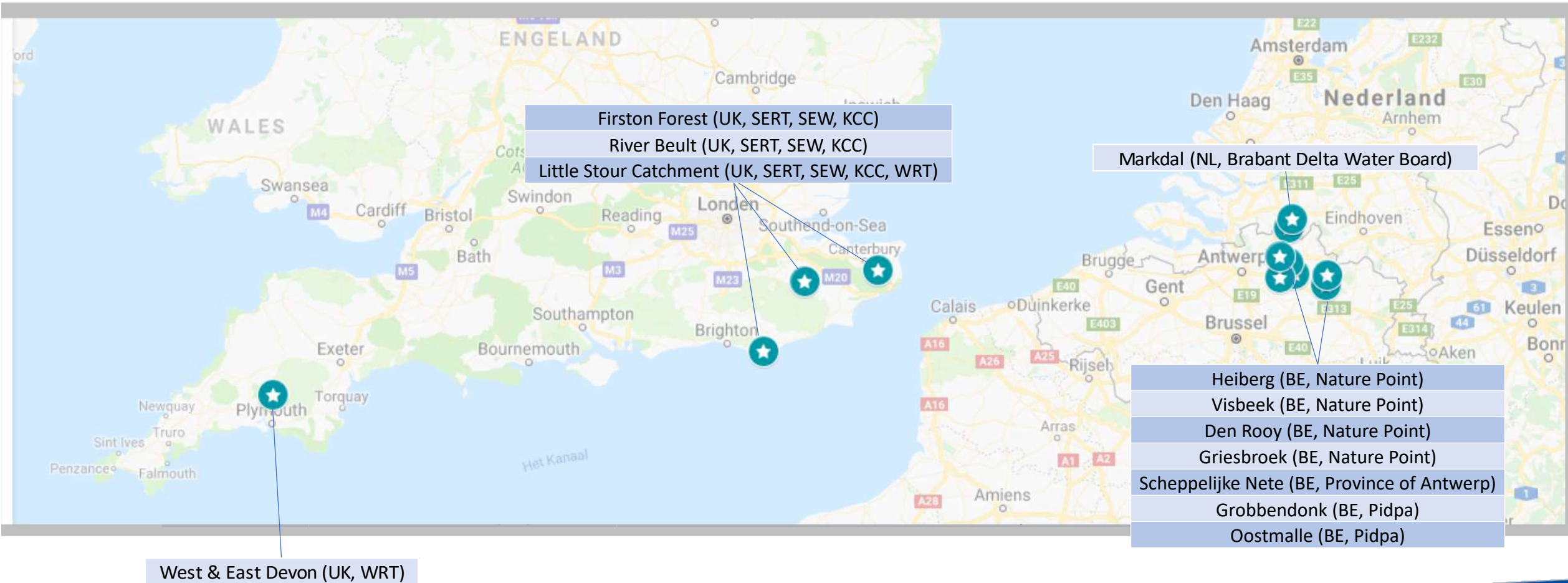


# 25 observers





# 12 demonstration sites



# 12 demonstration sites

## Measures (EbA)

- infiltration restoration through the remediation of soil compaction
- infiltration restoration through forest conversion
- permanent natural water retention
- temporal natural water retention



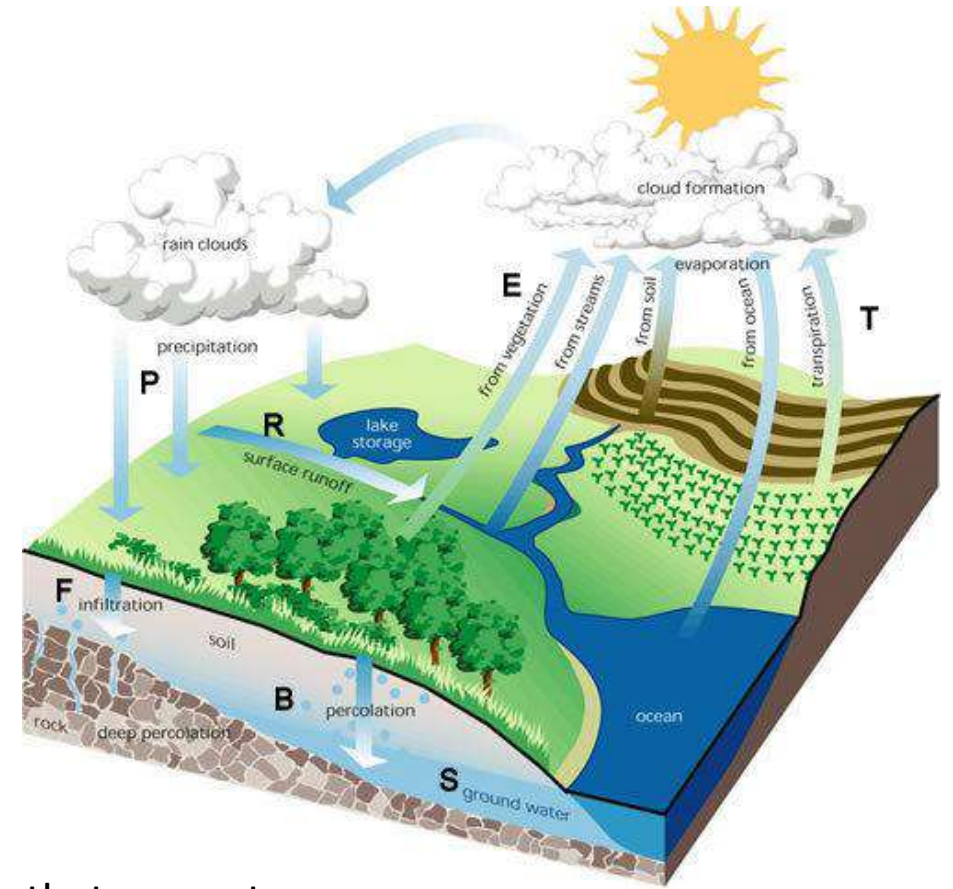
# Concept

Make better use of the precipitation surplus during the winter season to offset the shortages in the summer water balance!

## CLIMATE CHANGE

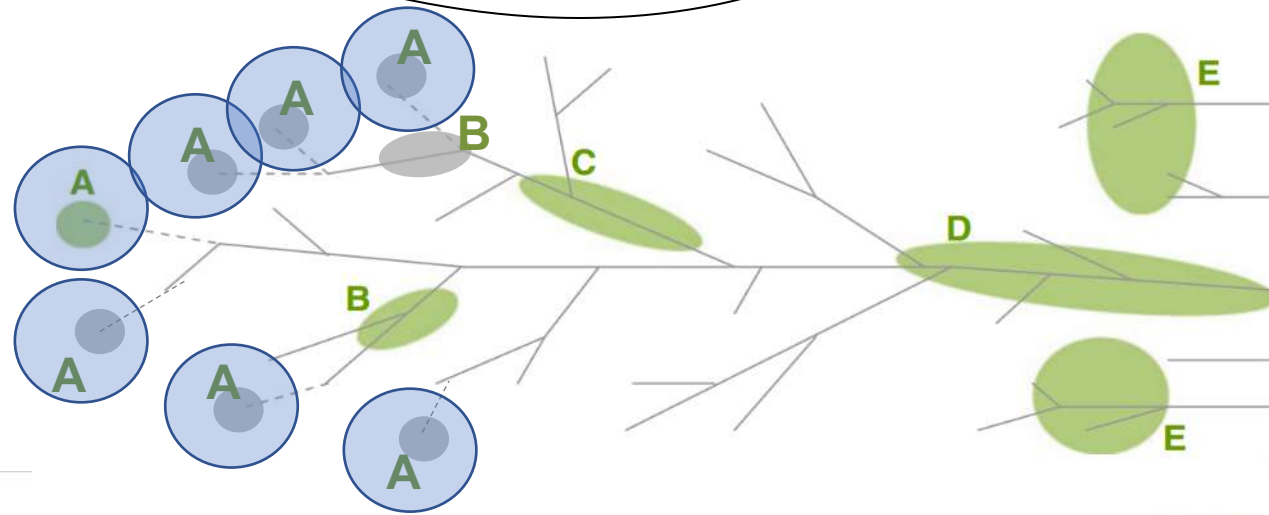
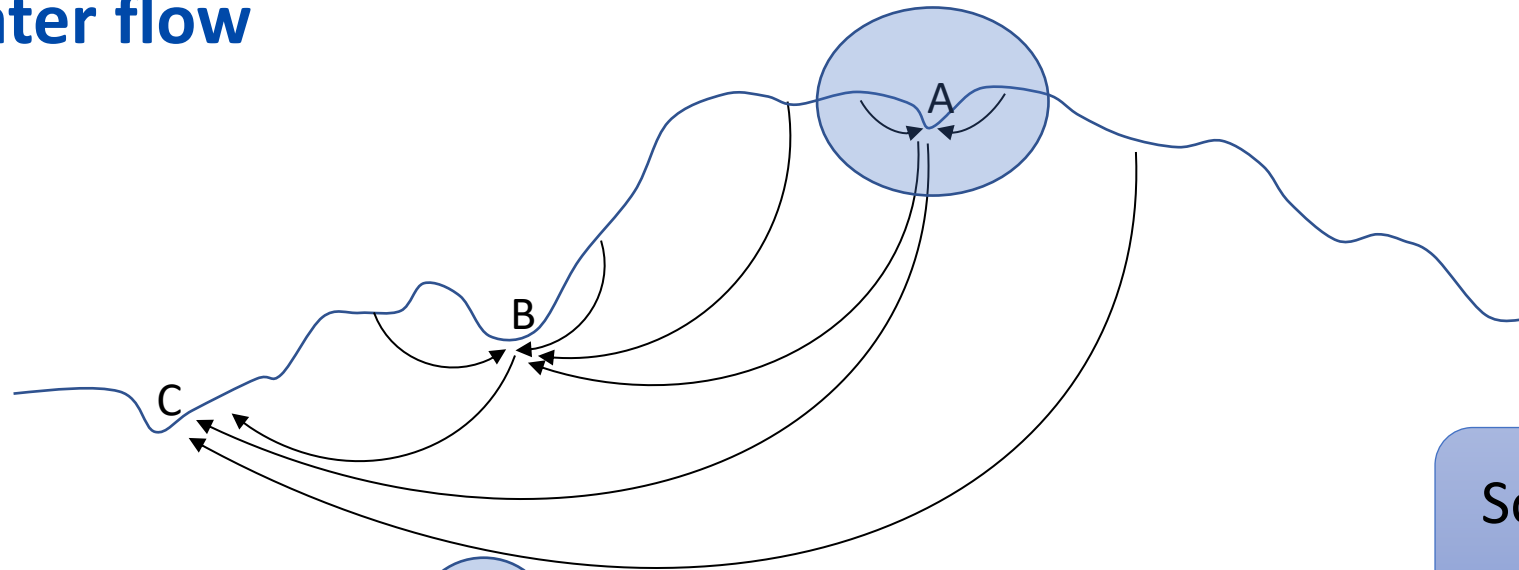
**SUMMER PRECIPITATION**  
- 9 % -42 %

**WINTER PRECIPITATION**  
- 2 % tot +35 %



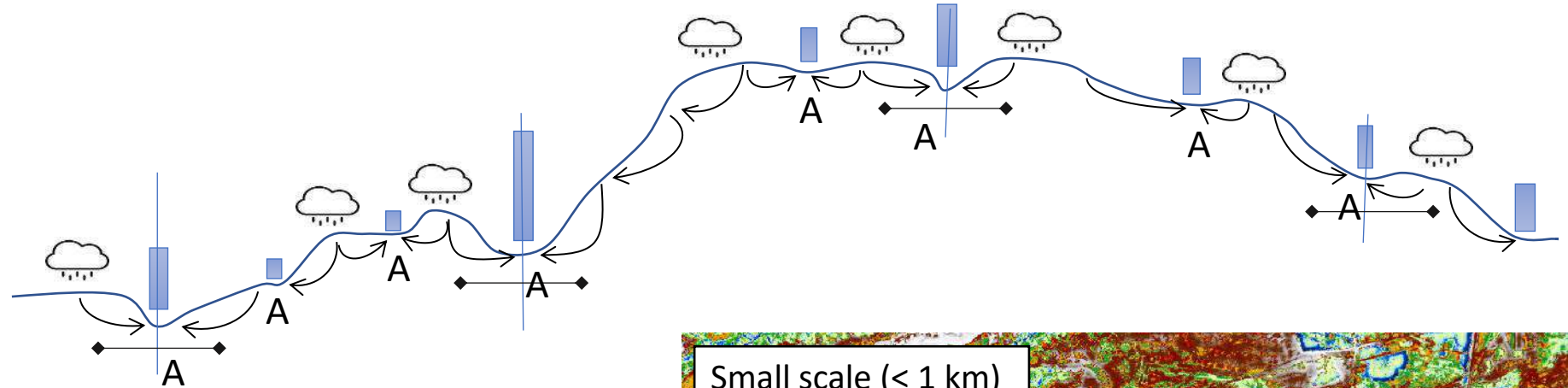
Landscape scale actions that promote infiltration and retention in headwater catchments

# Groundwater flow



Source-oriented approach

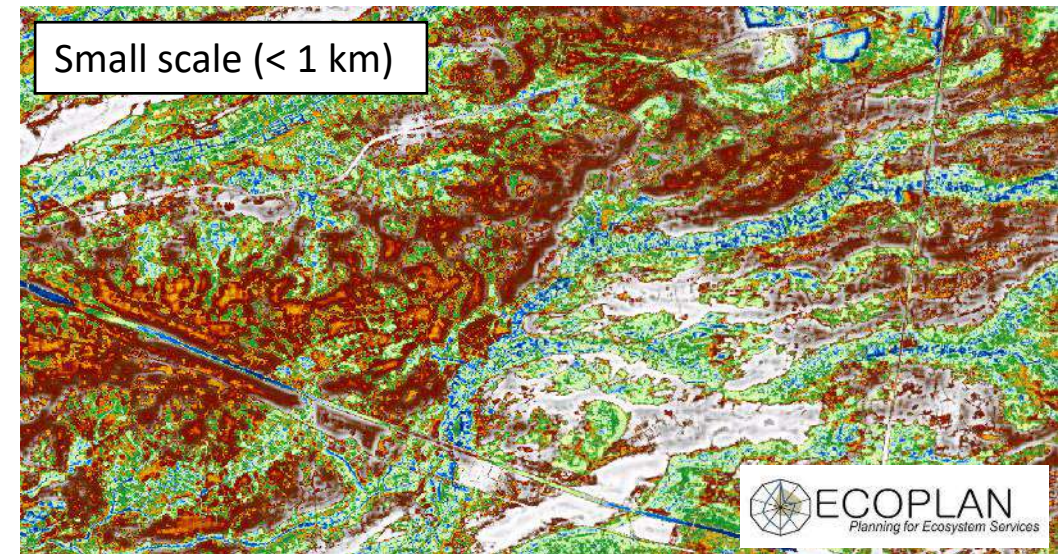
## Relative position in the landscape at local scale level(250 – 1000 m)



Local depressions in the landscape, where the water accumulates after a wet period.

### Green-blue zones

- Quick reaction of water levels on precipitation surplus
- Wet during spring
- Water slowly pulls away in the growing season



# Ecosystem Based Adaptation

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ENVIRONMENT

European Commission > Environment > Living with climate change in Europe

## Natural water retention measures



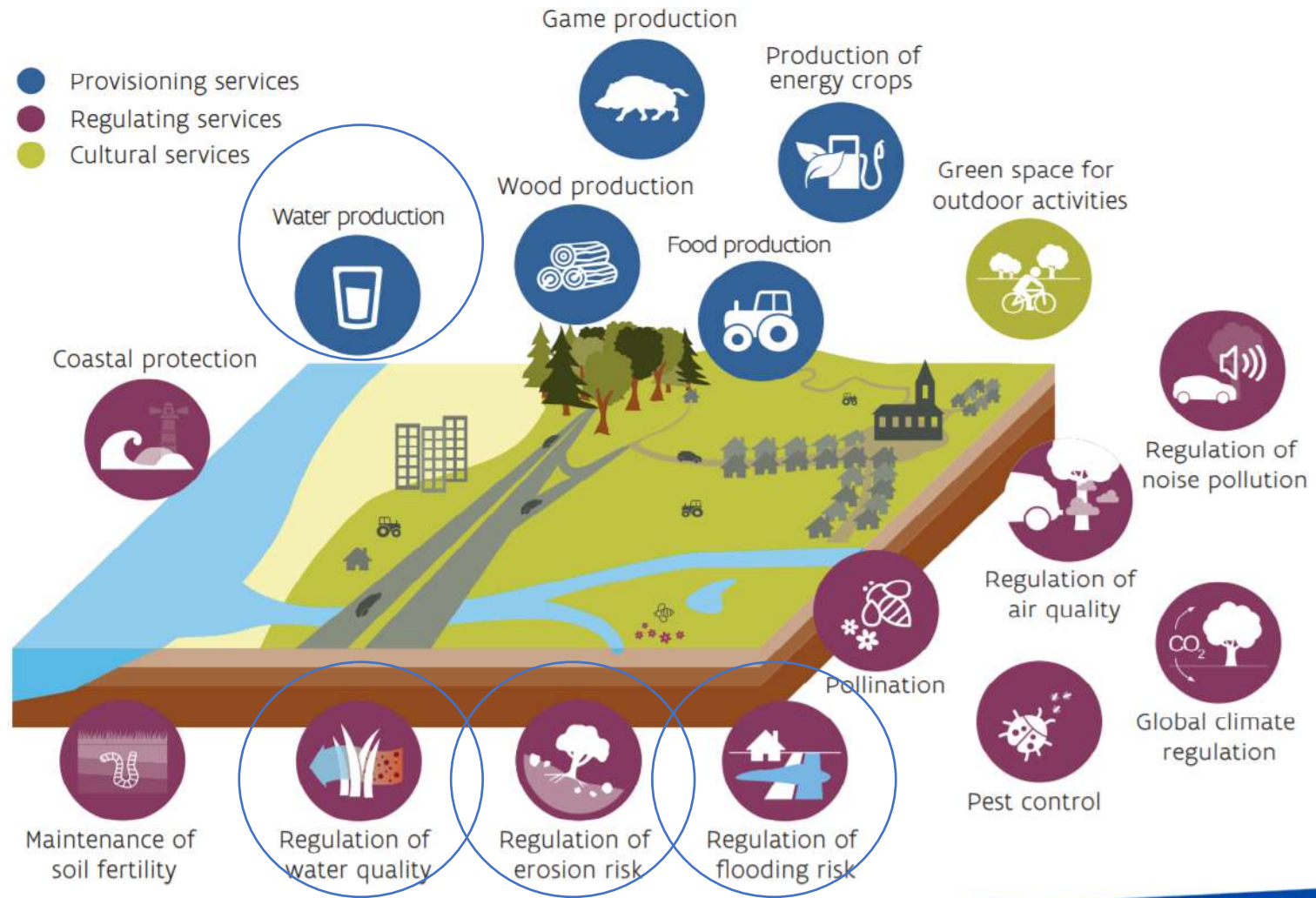
Natural water retention measures are measures that aim to increase retention and infiltration at the landscape level by restoring ecosystems and enhancing natural processes. They support biodiversity conservation and the flow and transport of water so as to smooth peaks and moderate extreme events (floods, droughts, desertification, salination). They reduce vulnerability of water resources to CC and other anthropogenic pressures. They are relevant both in rural and urban areas. Examples of NWMR include:

Measures that aim to increase retention and infiltration at the landscape level by restoring ecosystems and enhancing natural processes.

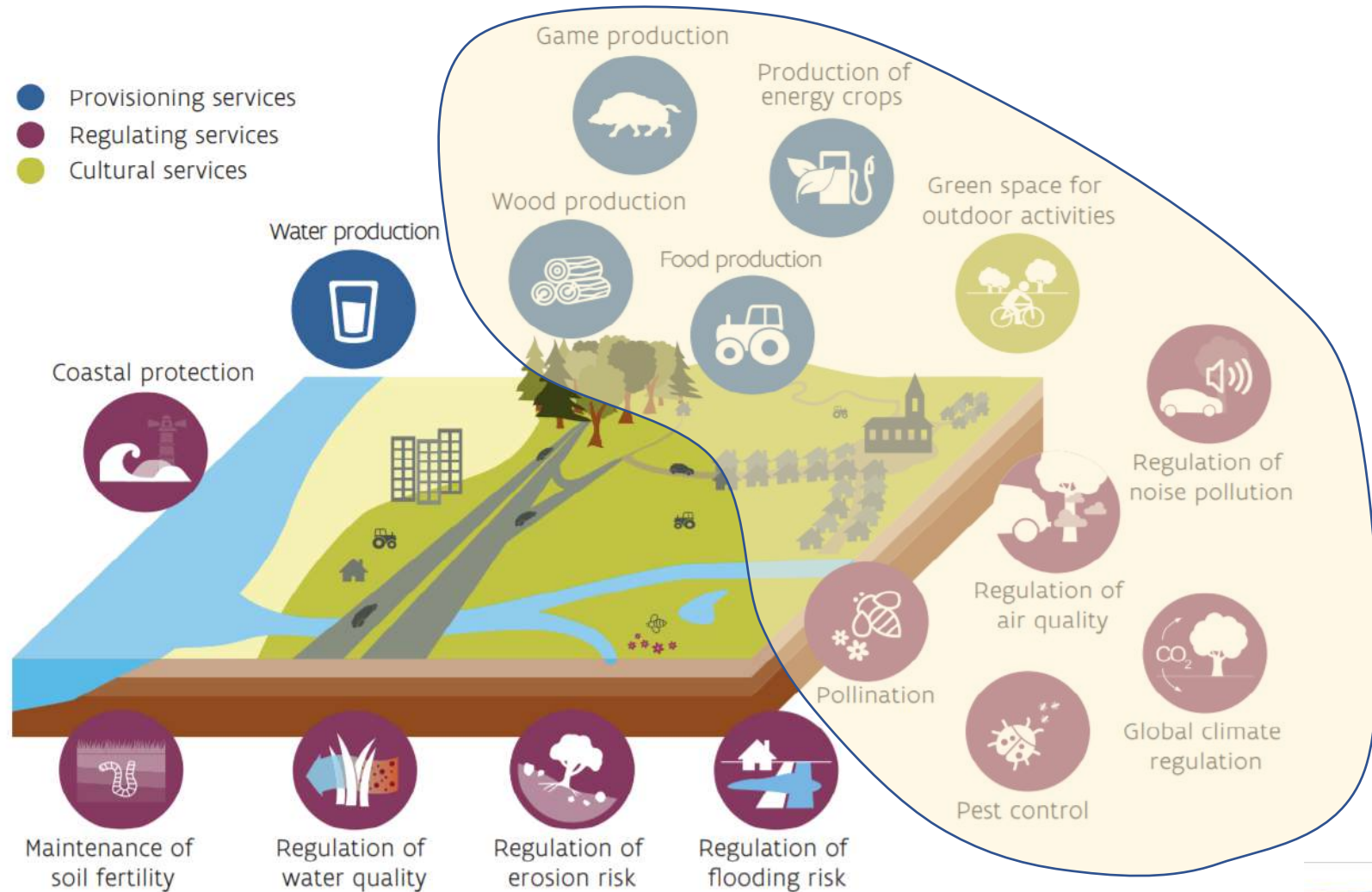
storage potential of water courses and using nature to regulate the

1. **Sustainable Forestry Practices:** e.g. CCF, riparian forests, afforestation
2. **Sustainable Agriculture Practices:** e.g. buffer strips, crop practices, grasslands, terracing, green cover

# Key focus is the restoration of water regulation services

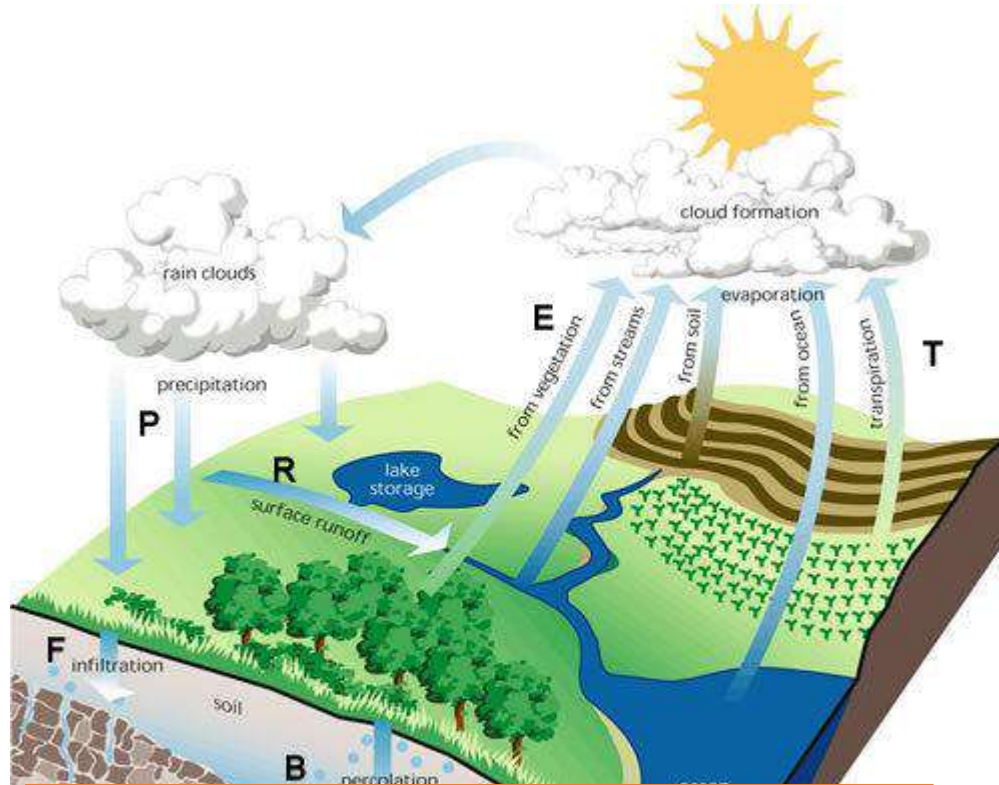


# But also other ecosystem services are enhanced by these restoration measures





# Leverage for implementation of measures



Use surplus on winter water balance to to offset shortages in the summer water balance!

## Implementation?

- Reward land-owners for enhancing water infiltration & retention capacity
- Develop a rewarding scheme & climate adaptation fund

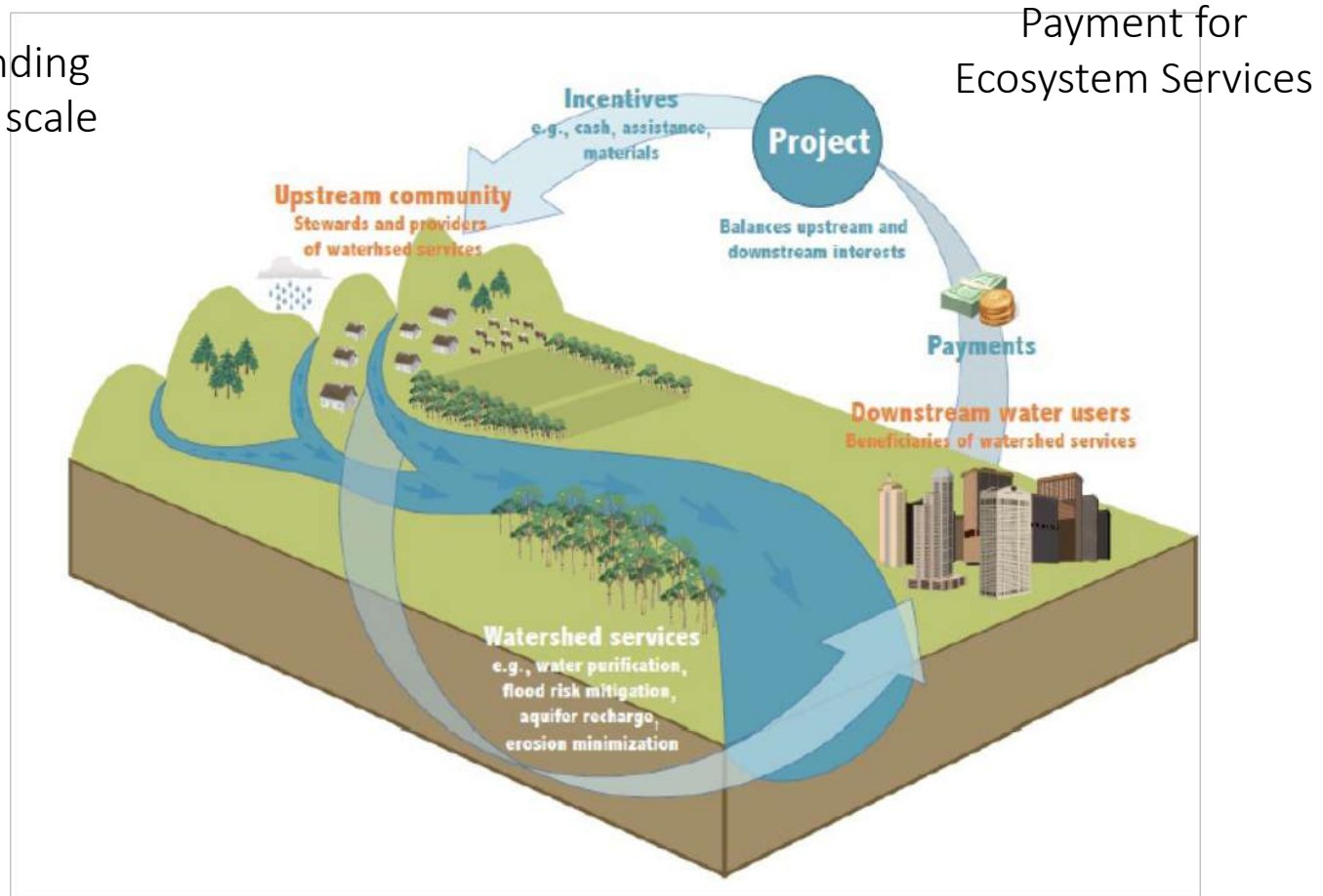
To elaborate this, we build on the experiences of Upstream Thinking

A project that includes a payment scheme to improve water quality

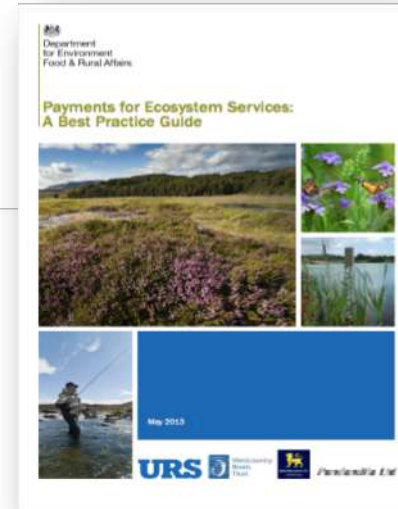
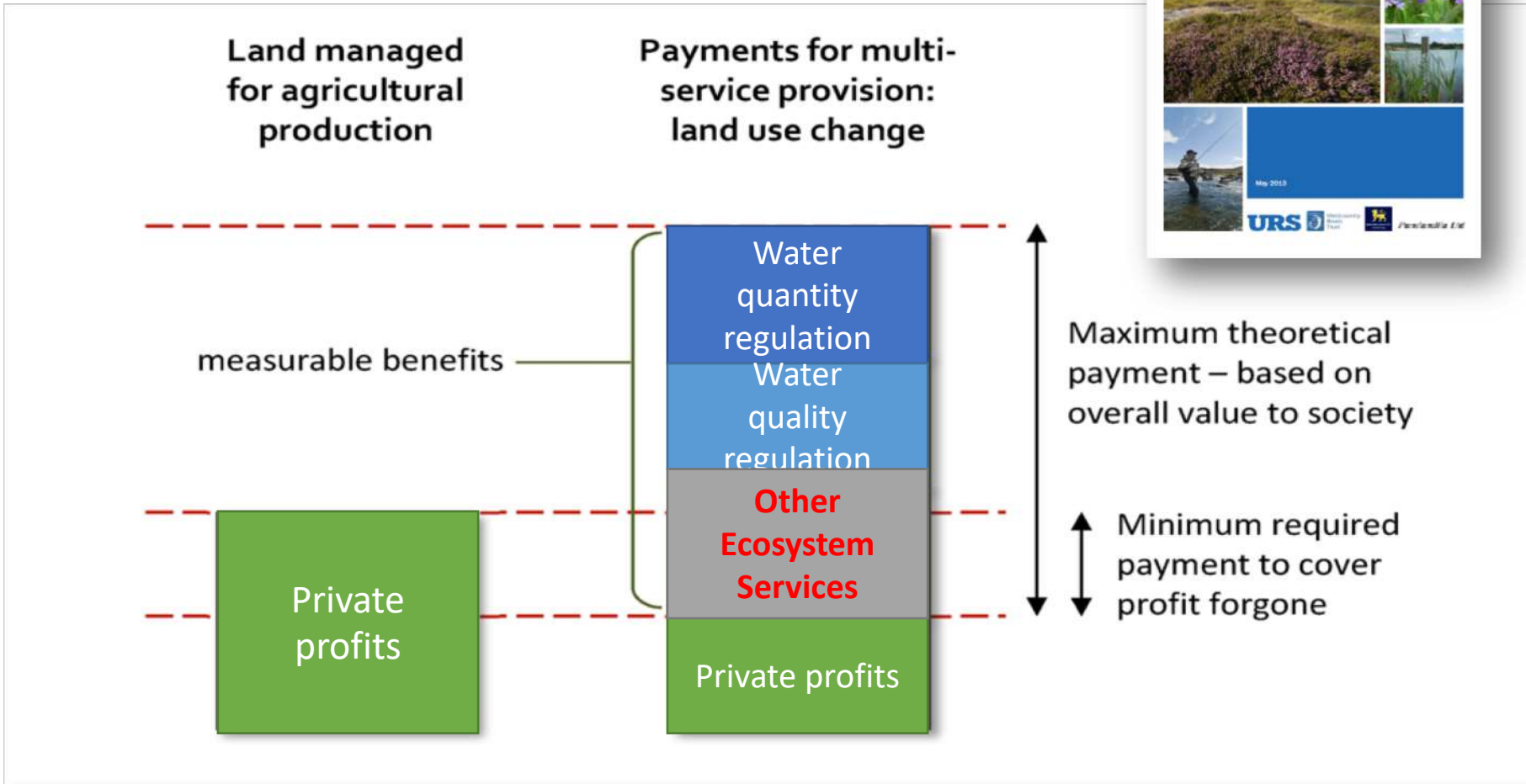


# Upstream thinking

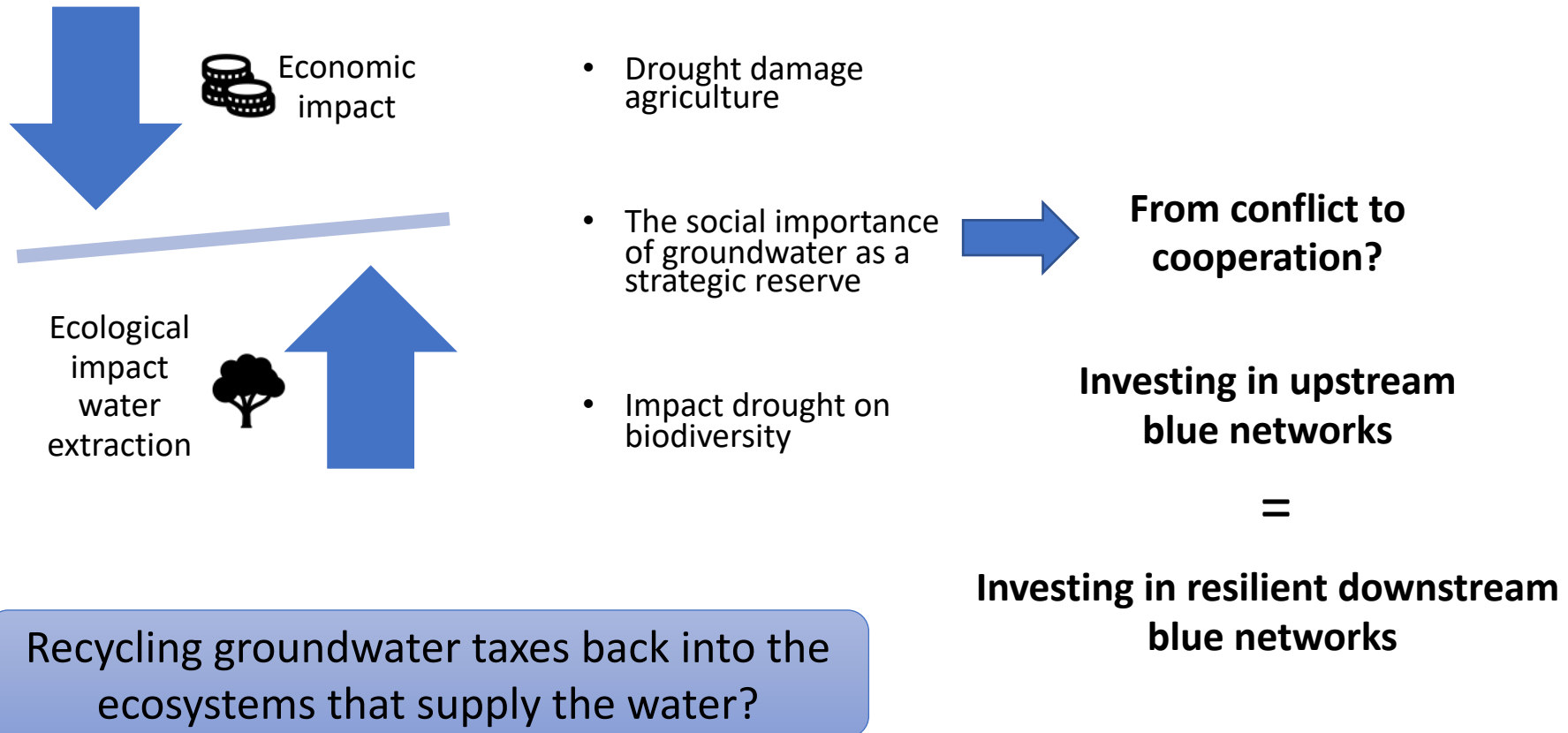
Investigating novel funding mechanisms for small scale adaptation measures on private land

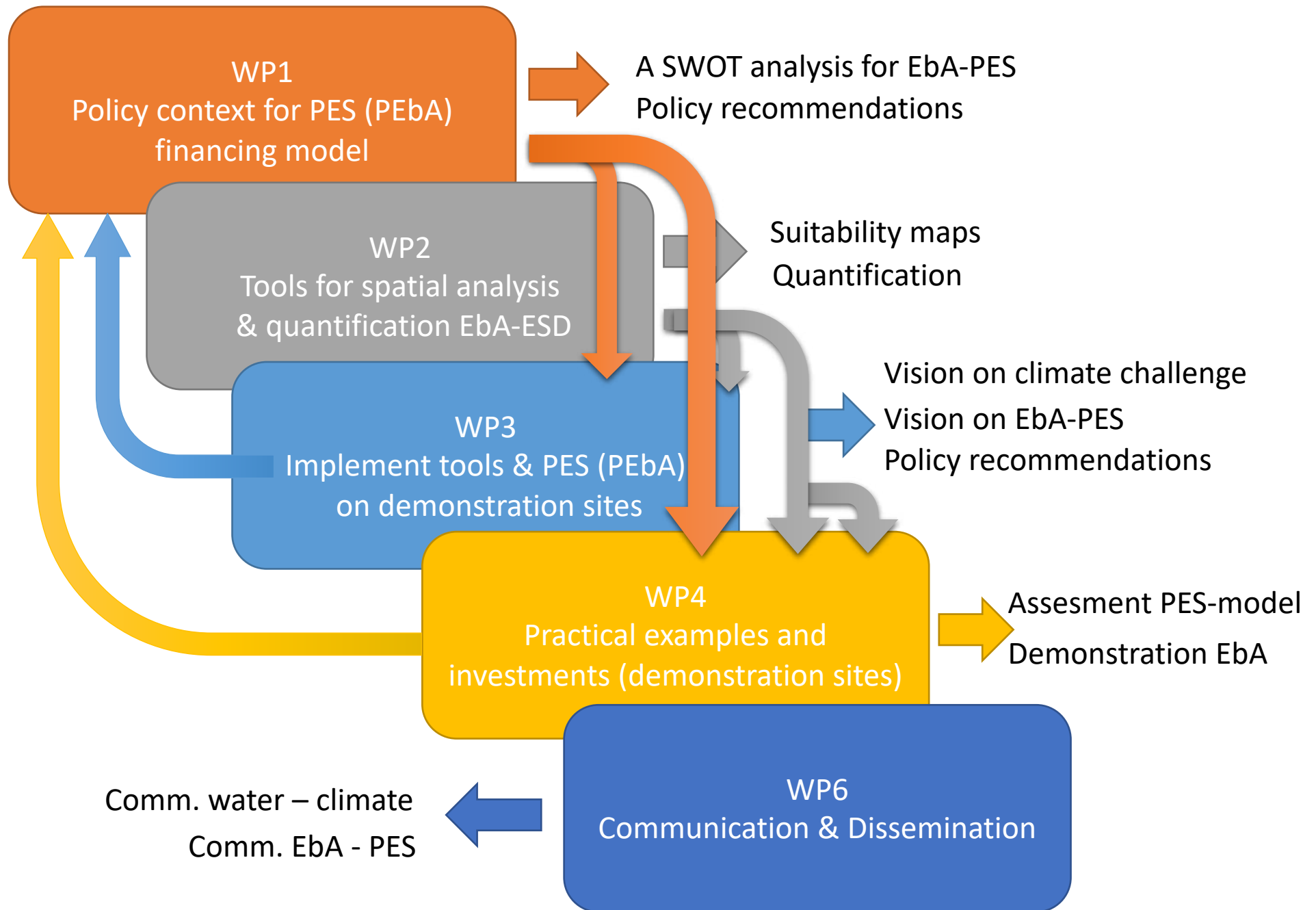


# Upstream thinking



# Strategic dimension of strengthening groundwater replenishment





## PROWATER results

- Realize climate adaptation by restoring the water storage of the landscape via '**ecosystem-based adaptation measures**'.
- Identify the benefits of the measures and develop a **financing model**
- Finally, the project aims to **close the information gap** by developing a vision to tackle water scarcity and drought risks in the longer term.

**More information:**

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