Valérie Persoons
Project & Communications Manager PROWATER
Departement Omgeving

&

Jan Staes
Researcher – University of Antwerp
Department of Biology
Protecting and restoring raw water sources through actions at the landscape scale

5th of March 2019 - Canterbury
The summer of 2018...
No net annual change in precipitation, but severe decrease in summer precipitation (-10 to -20%).

Source: EU strategy on adaptation to climate change
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
25 observers
12 demonstration sites

- Firston Forest (UK, SERT, SEW, KCC)
- River Beult (UK, SERT, SEW, KCC)
- Little Stour Catchment (UK, SERT, SEW, KCC, WRT)
- Markdal (NL, Brabant Delta Water Board)
- Heiberg (BE, Nature Point)
- Visbeek (BE, Nature Point)
- Den Rooy (BE, Nature Point)
- Griesbroek (BE, Nature Point)
- Scheppelijke Nete (BE, Province of Antwerp)
- Grobbendonk (BE, Pidpa)
- Oostmalle (BE, Pidpa)
- Grobbendonk (BE, Pidpa)
- West & East Devon (UK, WRT)
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
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

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

Natural water retention measures

Natural water retention measures involve landscape, soil, and aquifer management, to store water and enhance 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:

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

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

Land managed for agricultural production

Payments for multi-service provision: land use change

- Water quantity regulation
- Water quality regulation
- Other Ecosystem Services

measurable benefits

Private profits

Maximum theoretical payment – based on overall value to society

Minimum required payment to cover profit forgone

Strategic dimension of strengthening groundwater replenishment

- Drought damage agriculture
- The social importance of groundwater as a strategic reserve
- Impact drought on biodiversity

From conflict to cooperation?

Investing in upstream blue networks

= 

Investing in resilient downstream blue networks

Recycling groundwater taxes back into the ecosystems that supply the water?
WP1 Policy context for PES (PEbA) financing model

WP2 Tools for spatial analysis & quantification EbA-ESD

WP3 Implement tools & PES (PEbA) on demonstration sites

WP4 Practical examples and investments (demonstration sites)

WP6 Communication & Dissemination

A SWOT analysis for EbA-PES
Policy recommendations

Suitability maps
Quantification

Vision on climate challenge
Vision on EbA-PES
Policy recommendations

Assessment PES-model
Demonstration EbA

Comm. water – climate
Comm. EbA - PES
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:

www.pro-water.eu

valerie.persoons@vlaanderen.be
or
jan.staes@uantwerpen.be