

“Farmers with trees”

Dialogue with Mark Shepard



AGROFORESTRY
VLAANDEREN

Dylan Feyaerts & Willem Van Colen

15 oktober 2024

Program

- 10 min** Goal of the session and Flemish context of agroforestry and water use
- 5 min** AFaktive project
- 5 min** Explanation of the discussion and division of groups
- 30 min** Discussion
- 10 min** Wrap-up

Need for new knowledge

**Agroforestry to optimise water use
in agriculture**

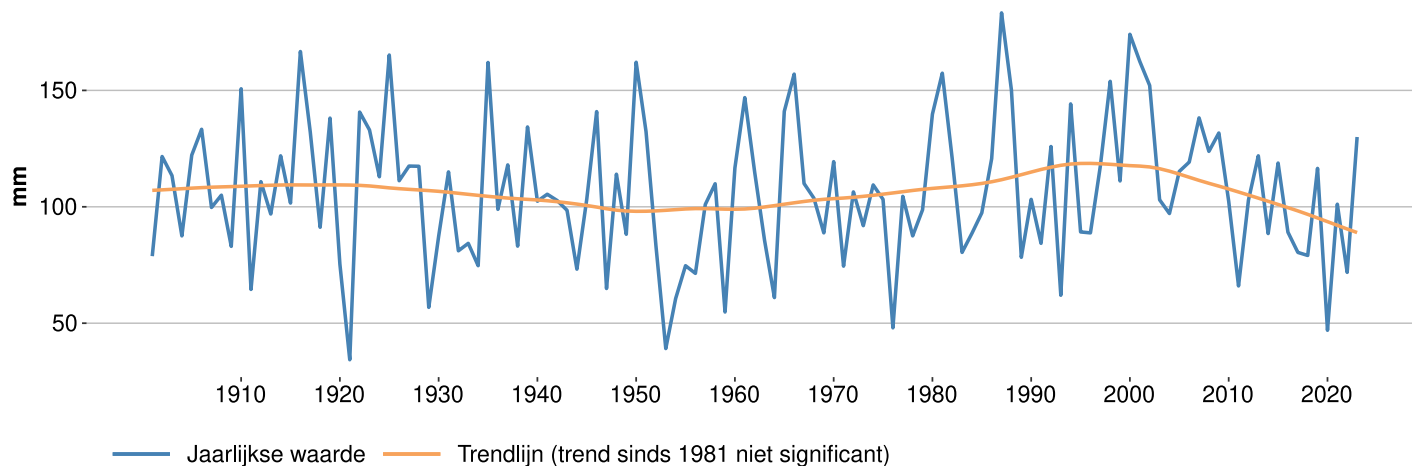
How do water issues arise for farmers?

1. Due to climate change
2. Due to more direct human interference

Is it drier?



Minimale waarde van de neerslag geregistreerd tijdens 90 opeenvolgende dagen te Ukkel van 1901 tot 2023

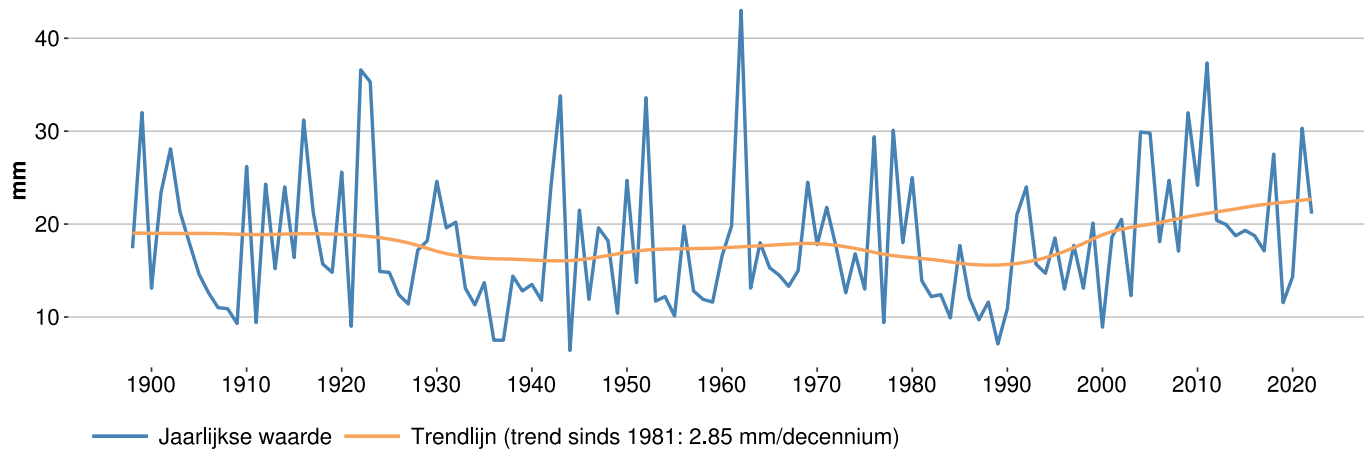


Since the 2000's the minimum amount of precipitation over a period of three months than ever. This is an indicator for a bigger occurrence of drought in the 20th century. This means farmers experience drought more often.

Is it wetter?

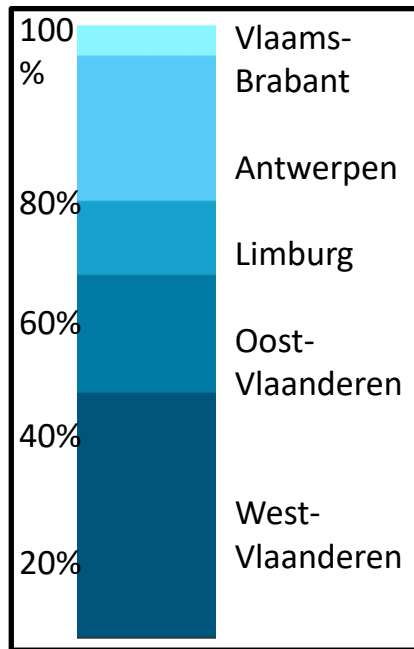


Jaarlijkse maximale neerslaghoeveelheid gevallen in een uur te Ukkel van 1898 tot 2022



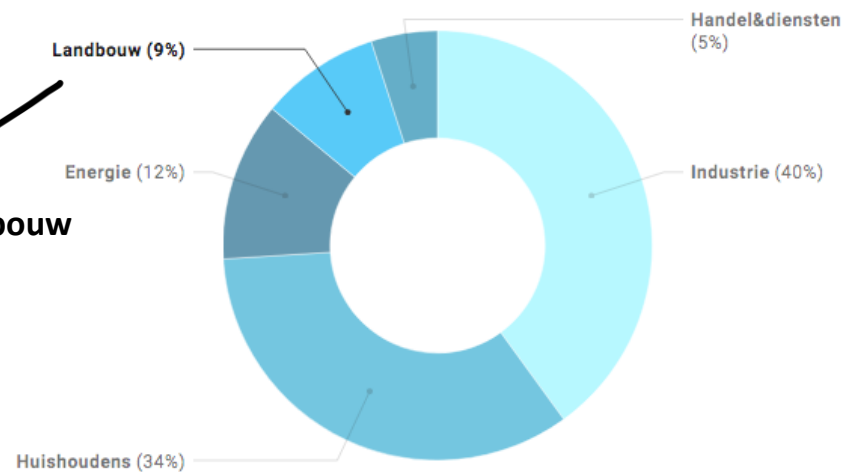
Since 1995 de maximum amount of precipitation that can fall within 1 hour increases structurally. Showers of rain do become more extreme.

Agriculture is not the biggest water user. It is a very big user of groundwater tough.

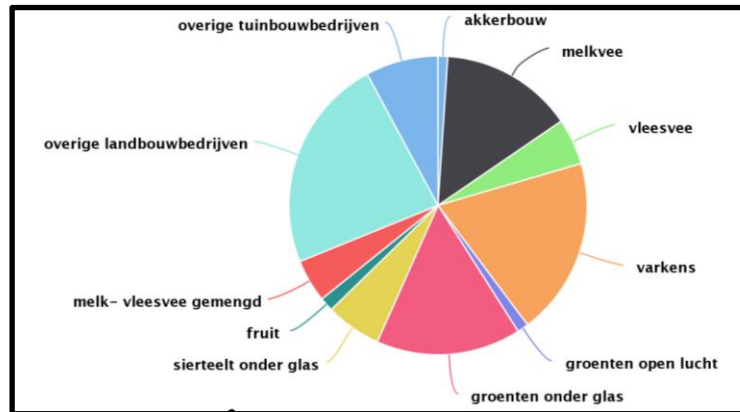


Data: MIRA, 2016

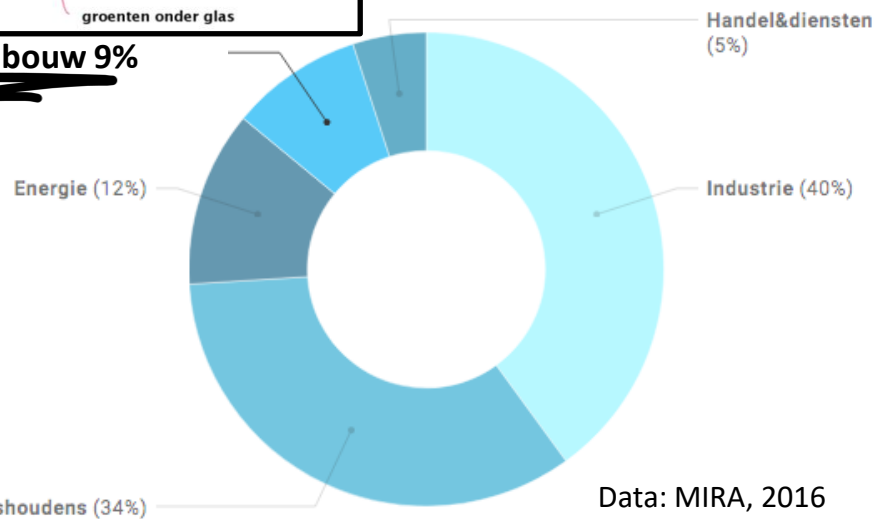
**Landbouw
9%**



Livestock and vegetable farming have the biggest water usage



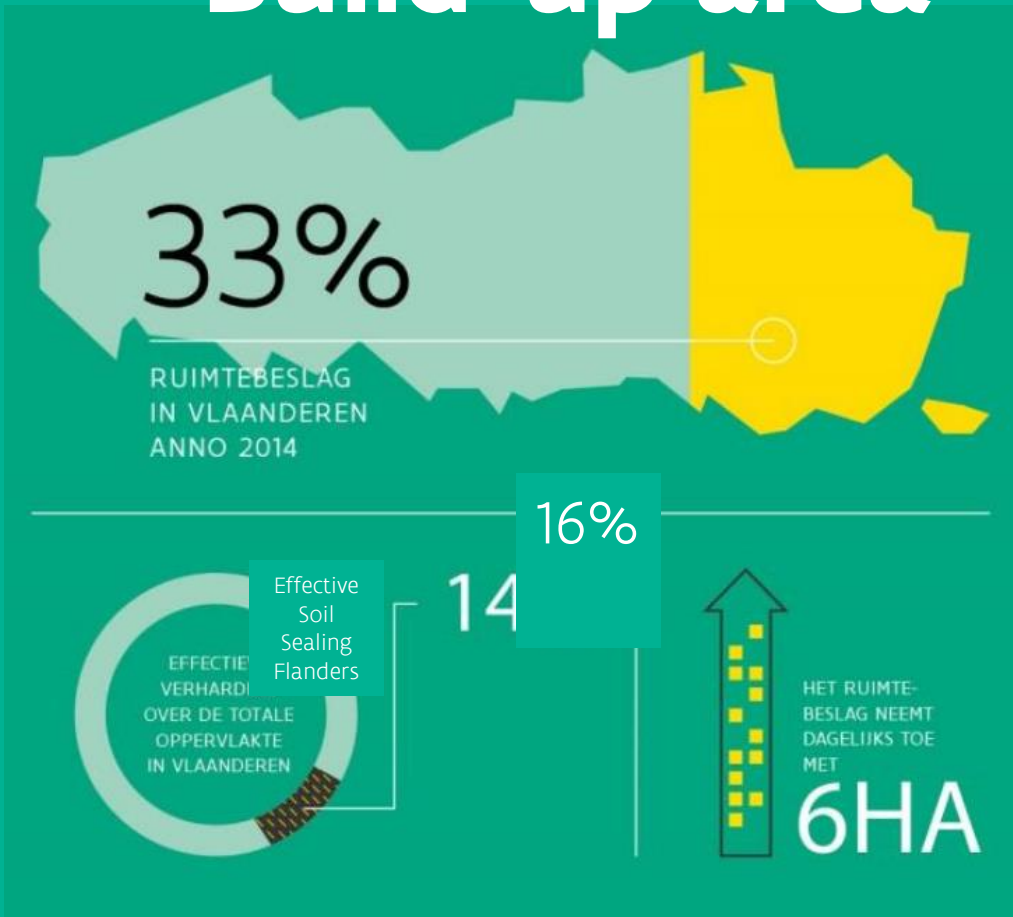
Landbouw 9%



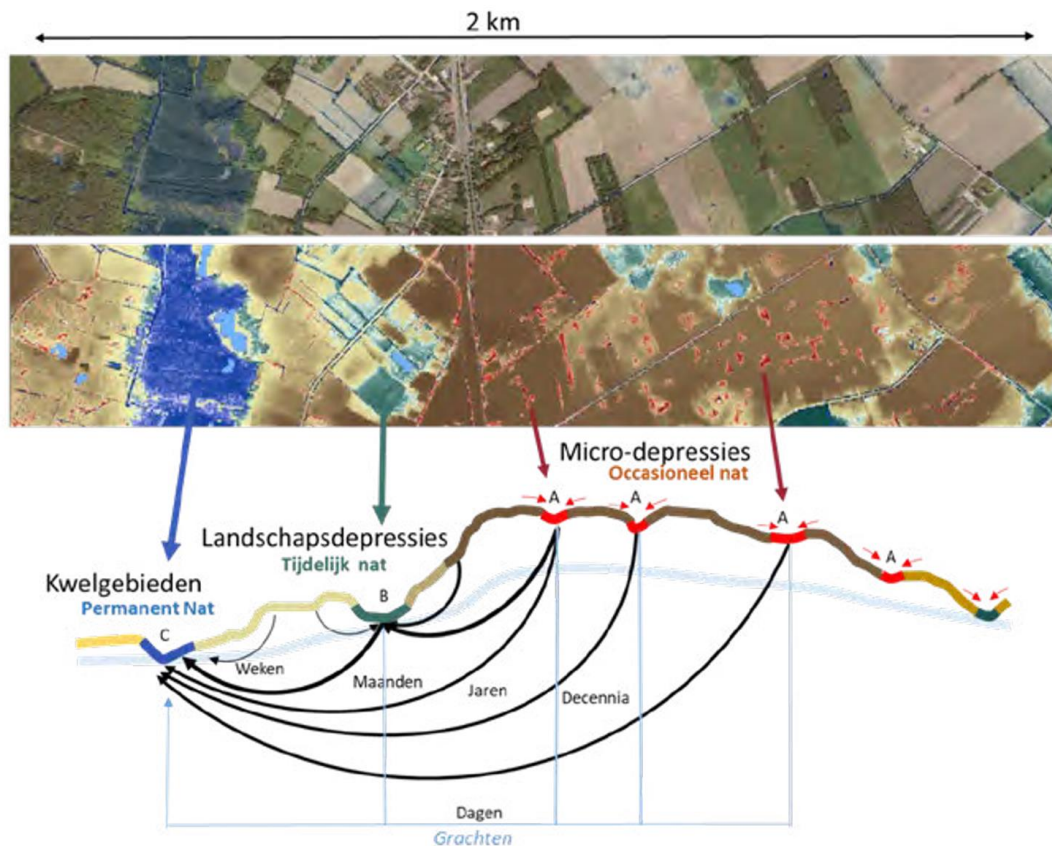
Data: MIRA, 2016

Build-up area

Pavement and soil compaction reduce the water availability, because water cannot penetrate in the soil to recharge the ground water aquifers. Because of this water flow faster towards sewers , canals and streams.



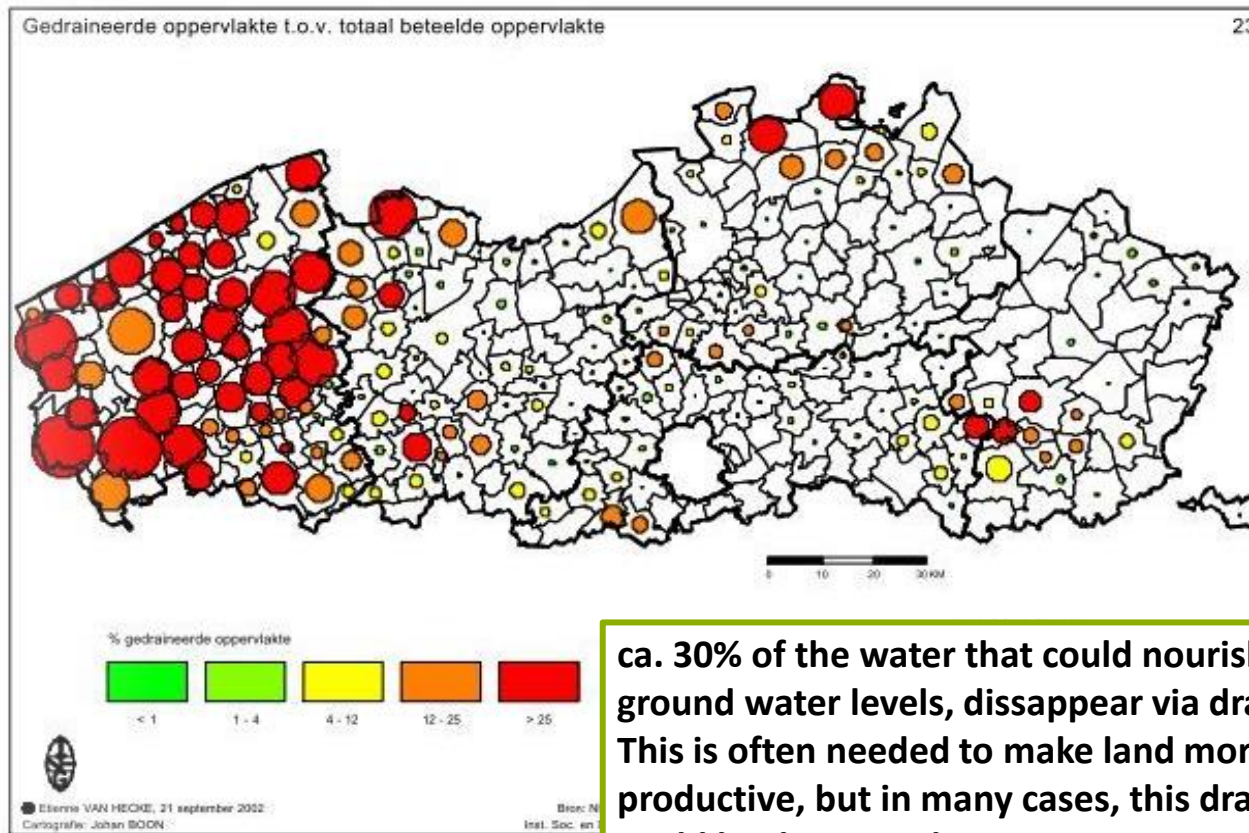
Drainage



Water that normally would be underground for weeks, months or decads before it would seep to the surface, is drained via canals. Because of this, the water cannot replenish the ground water aquifers.

Smart, more dynamic drainage systems can help to make labour on land more predictable in spring or periods of intense rain.

Drainage



ca. 30% of the water that could nourish ground water levels, disappear via drainage. This is often needed to make land more productive, but in many cases, this drainage could be done much smarter.

Water stress – a complex story



Climate change

+

Pavement / built-up area

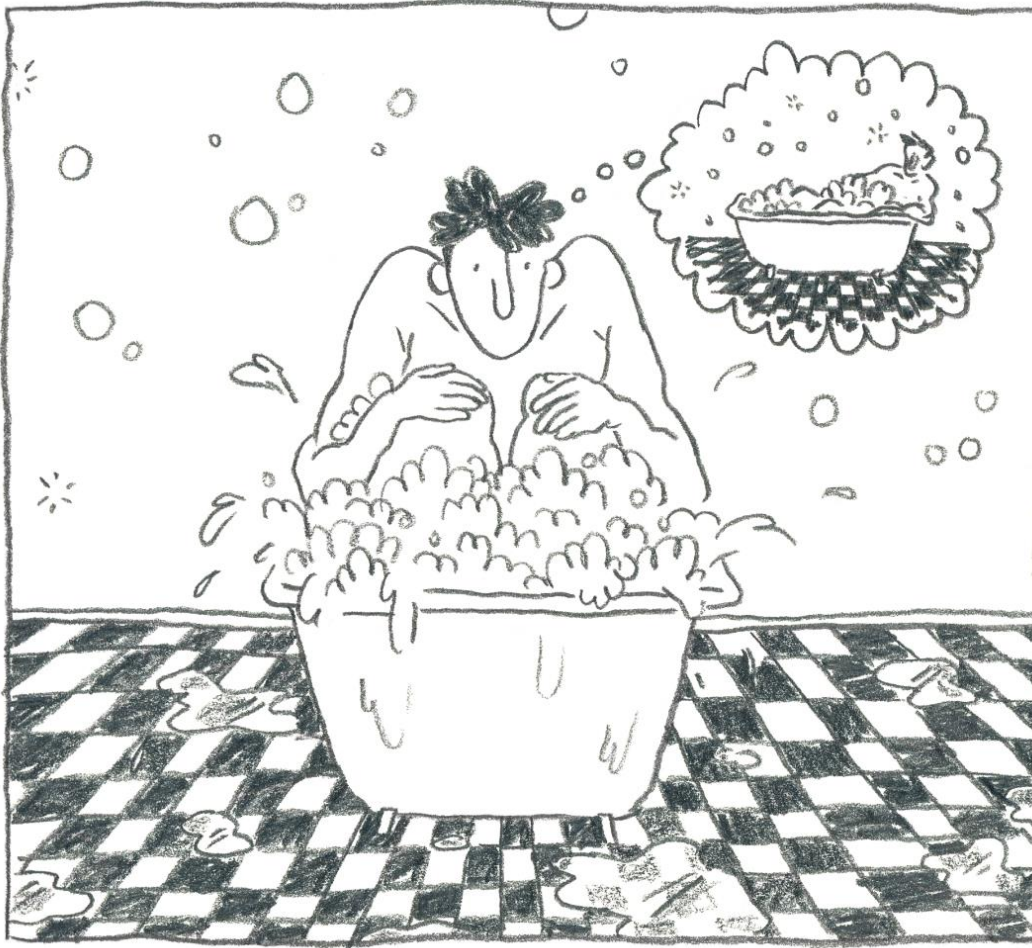
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A lot of drainage

+

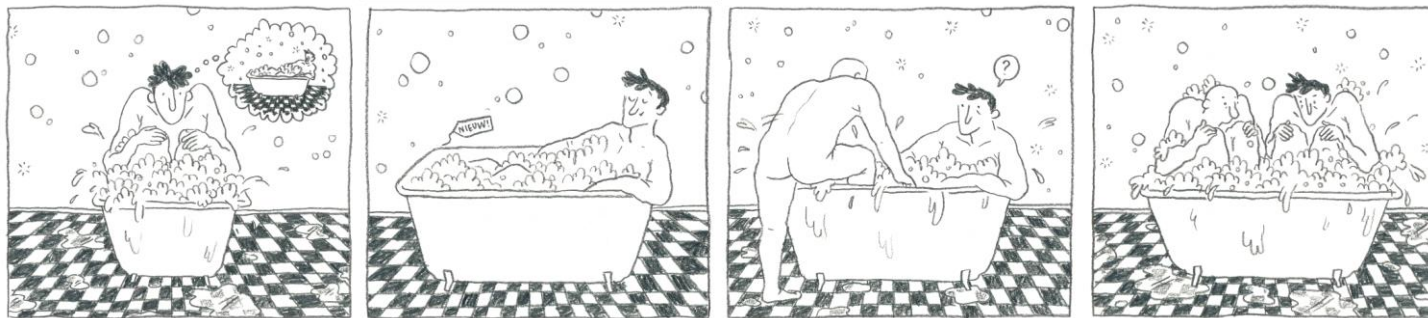
High demand for water because of high population density.

© Illustratie: Katrien Tanghe



At certain moments of the year our bath tub seems to become to small, whil it might overflow at other times.

Increase the supply



Reduce the demand

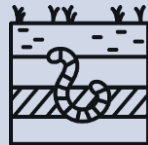
Options to increase the offer



Give space to water



Invest in smart drainage



Take care of your soil

Options to reduce the water demand



Choose for climate-proof crops



Be efficient with water



Consider alternative cropping systems



LIFE-AFaktive

*Agroforestry as a Key to improve
Water Management &
Adaptation to Extreme Weather Events*

Willem Van Colen, Inagro



Institute for Applied Material
Flow Management



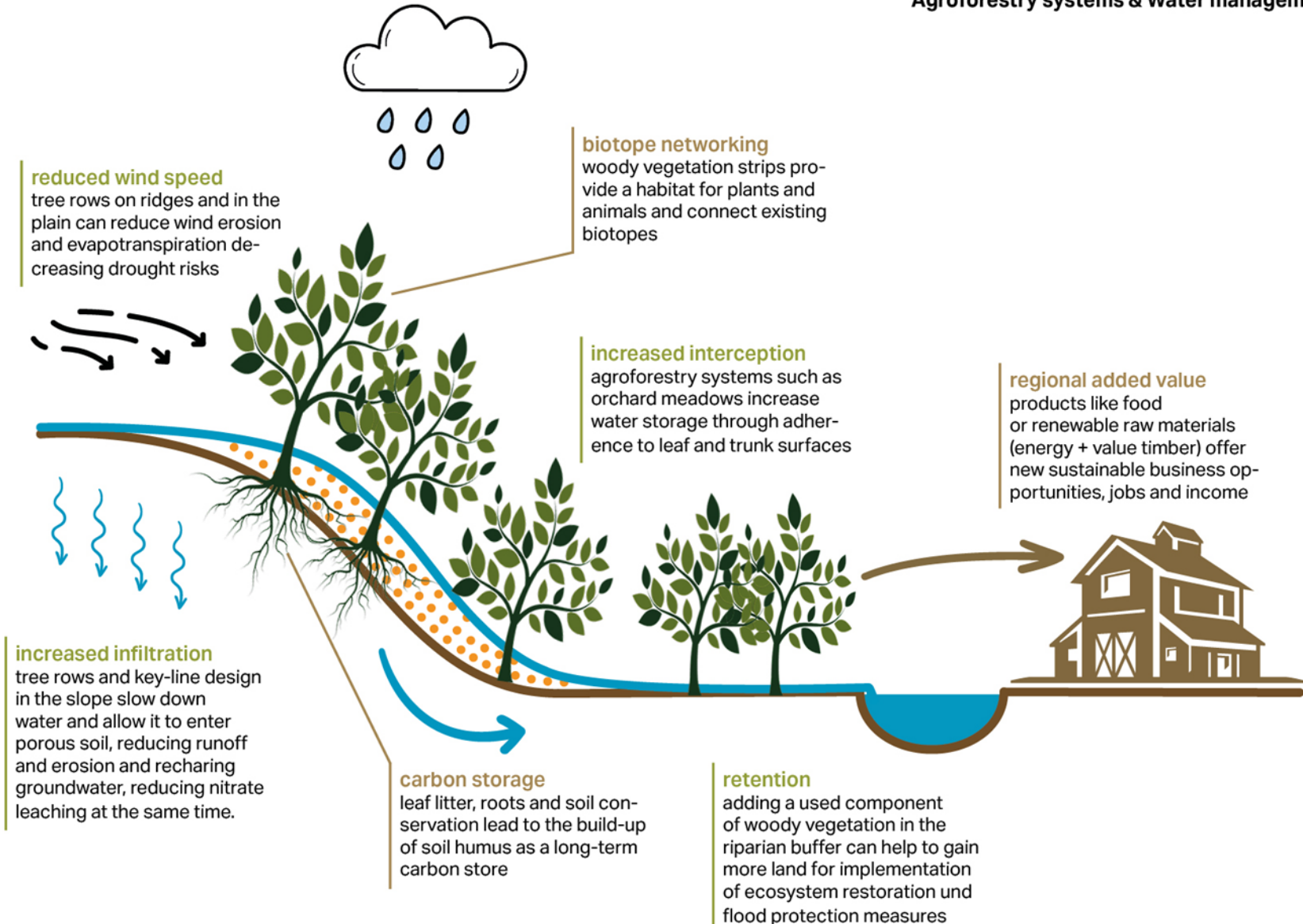
Project overview



Project Title	EU LIFE SAP Climate Adaptation Project “AFaktive – Agroforestry as a Key to improve Water Management & Adaptation to Extreme Weather Events”
EU-Programme	LIFE sub-programme Climate Action SAP- CLIMA
Total Budget	approx. 5.8 Million EUR
EC co-funding	approx. 59,7 %
Project duration	5 years, Oct 2023 – Sep 2028
Countries involved	BE, DE, NL

Agroforestry and water

Agroforestry systems & Water management



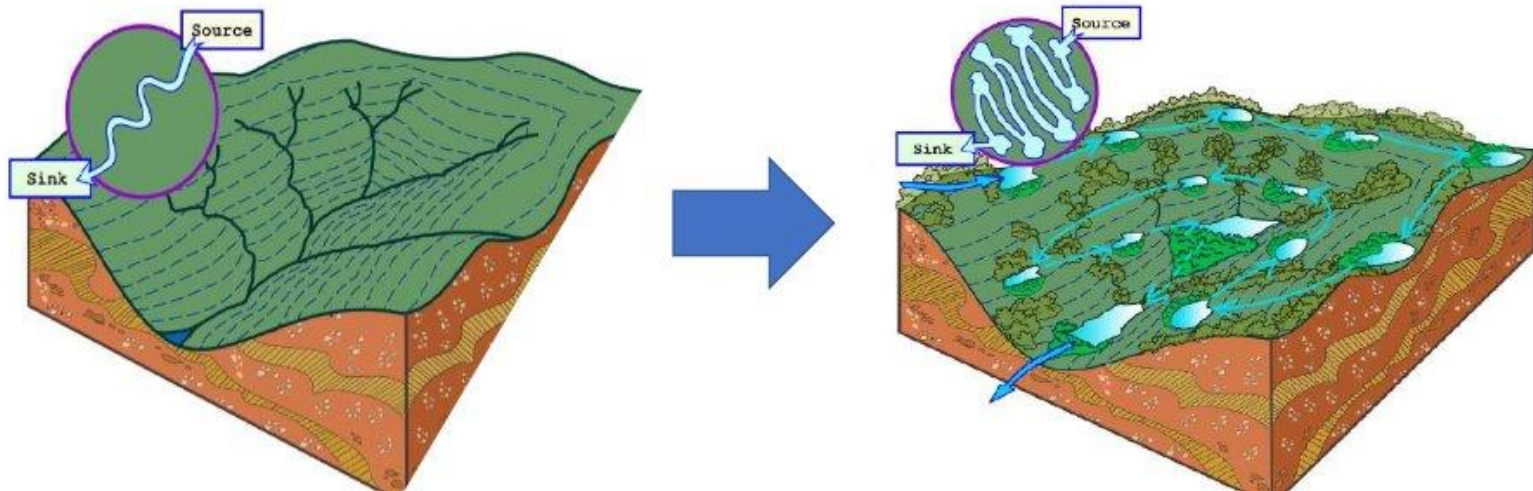
Objective and scope

1. **Quantify** the effects of agroforestry on water management (water retention, drought protection, ground water recharge, erosion and flood protection)
2. **Develop** and test new tools for an integrated planning of AWM (Agroforestry & Water Management) at farm and regional scale.
3. **Implementation** in pilot farms and regions (municipalities)



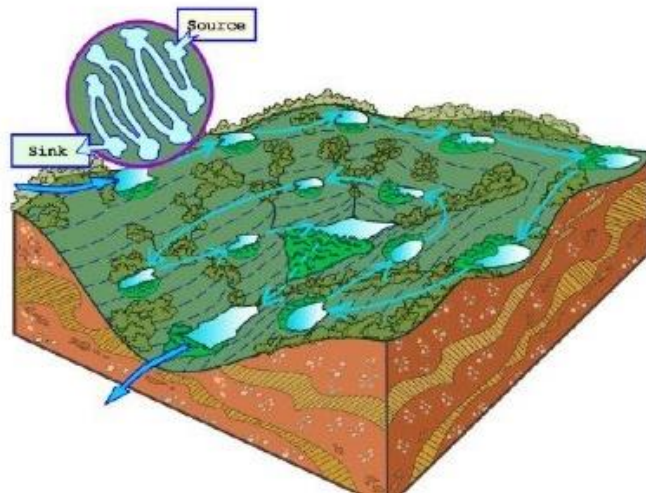
Keyline design & swales

- Keyline design: landscaping and land management technique focusing on efficient use of water by using the natural contours of the landscape
 - Aimed at slowing down, distributing, infiltrating and storage of rainwater at plot level.

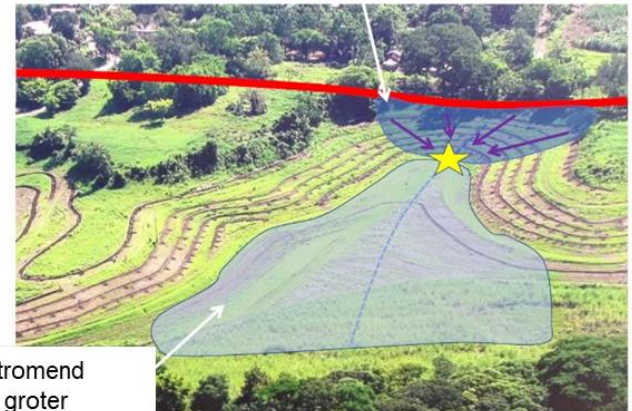


Keyline design & swales

- Keyline design: landscaping and land management technique focusing on efficient use of water by using the natural contours of the landscape
 - Aimed at slowing down, distributing, infiltrating and storage of rainwater at plot level.
 - Keyline is the contour line running through the 'keypoint' -> best location to implement measures
 - When carefully located, trees can be used to optimise water management
- Measures often developed against drought



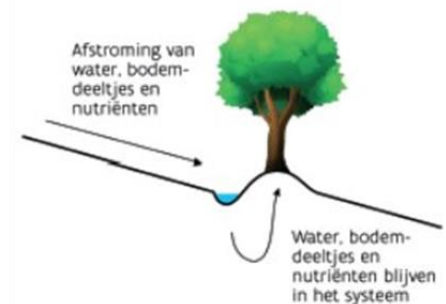
Drainerend gebied waar afstromend water via keypoint passeert: groter volume te verzamelen



Drainerend gebied waar afstromend water via keypoint passeert: groter volume te verzamelen

Keyline design & swales

- 'Contour agroforestry': construction of ditch-ridge structure (swale) following the contour lines + planting trees / perennials on the ridge
- Interception and (temporary) storage of run-off water (and sediment) in the ditch -> even distribution and infiltration -> absorption by the trees



AFaktive



Blijf op de hoogte van AFaktive:

Website: <https://afaktive.stoffstrom.org/en/>

 <https://www.linkedin.com/company/afaktive-life-project>

Website en
nieuwsbrief!



Volg ons op
LinkedIn!



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Bedankt voor jullie insteek!



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AGENTSCHAP
INNOVEREN &
ONDERNEMEN



Vlaanderen
is ondernemen