

Water & Agriculture in Belgium

adapting to too much and too little water

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ELI & Unesco IHP
October 18th, 2023

ILVO

ILVO



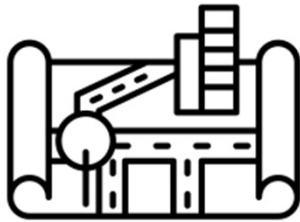
© Illustratie: Wendy Panders – Het Grote Waterboek

Water scarcity in Belgium?



Climate change

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Soil sealing

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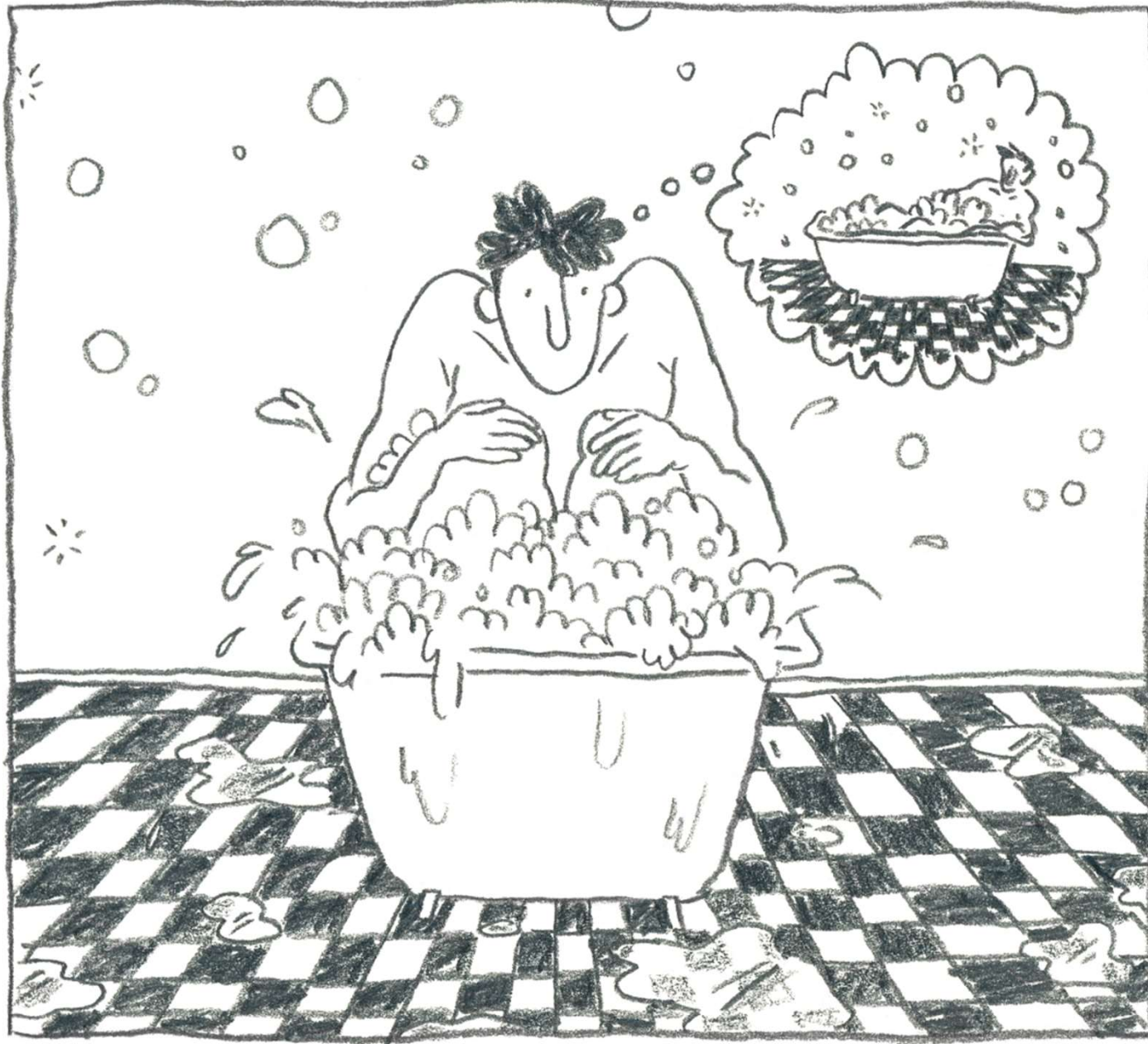


Elaborate drainage network

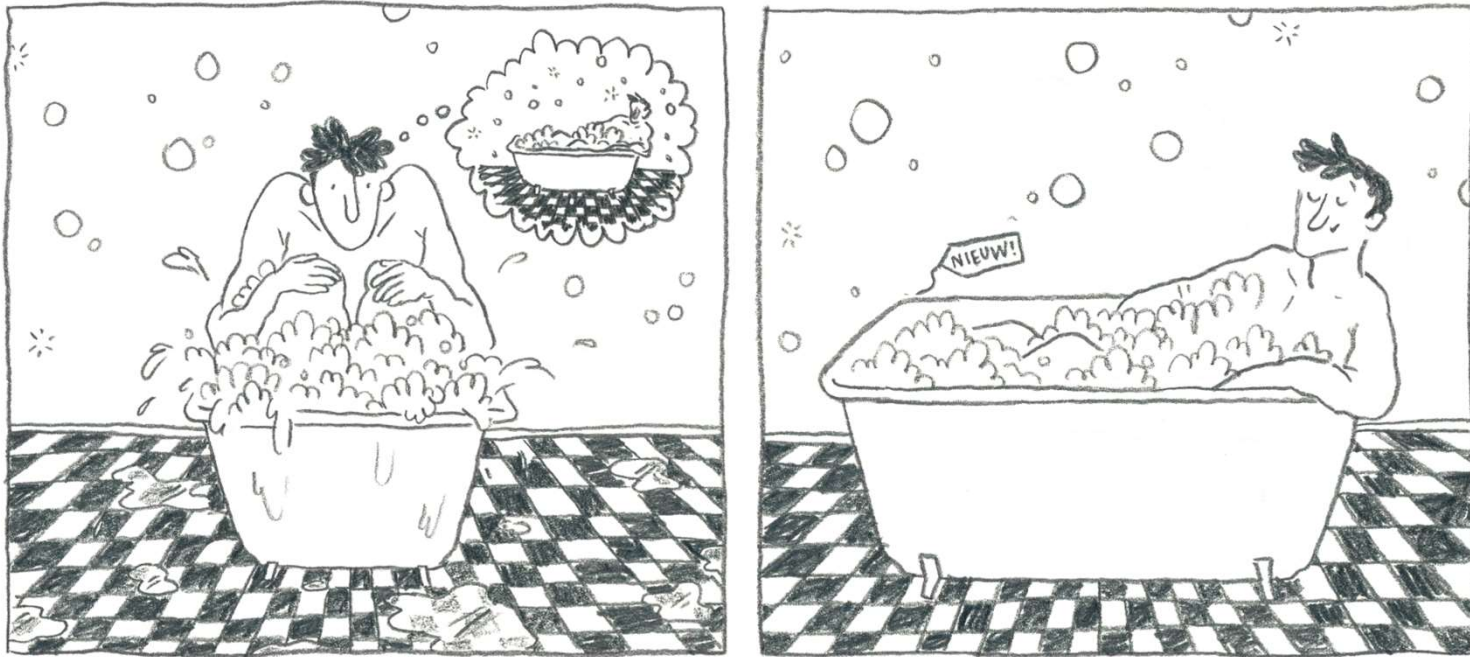
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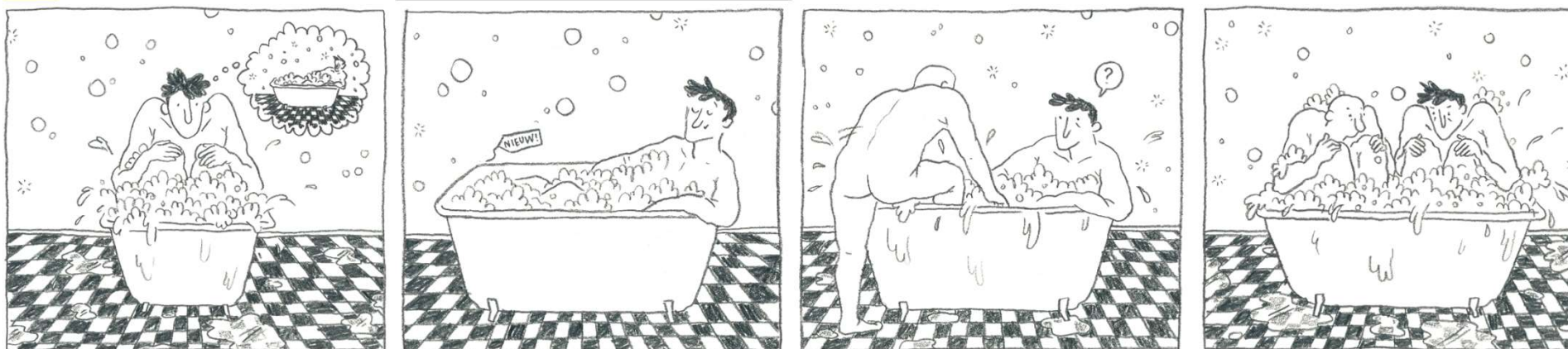
High population density



© Illustratie: Katrien Tanghe



**Increase the amount of water
available to farmers**



Reduce water demand

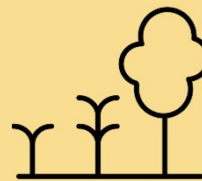
Reduce water demand



Select climate-robust crops



Use water efficiently



Experiment with alternative cropping systems

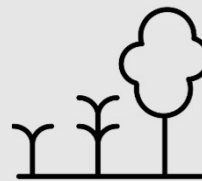
Reduce water demand



Select climate-robust crops



Use water efficiently



Experiment with alternative cropping systems

Efficient water use



Higher efficiency = less water use ?



POLICY FORUM

WATER

The paradox of irrigation efficiency

Higher efficiency rarely reduces water consumption

By **R. Q. Grafton**^{1,2}, **J. Williams**¹, **C. J. Perry**³, **F. Molle**⁴, **C. Ringler**⁵, **P. Steduto**⁶, **B. Udall**⁷, **S. A. Wheeler**⁸, **Y. Wang**⁹, **D. Garrick**¹⁰, **R. G. Allen**¹¹

Reconciling higher freshwater demands with finite freshwater resources remains one of the great policy dilemmas. Given that crop irrigation constitutes 70% of global water extractions, which contributes up to 40% of globally available calories (I), governments often support increases in

increased IE rarely delivers the presumed public-good benefits of increased water availability. Decision-makers typically have not known or understood the importance of basin-scale water accounting or of the behavioral responses of irrigators to subsidies to increase IE. We show that to mitigate global water scarcity, increases in IE must be accompanied by robust water accounting and measurements, a cap on extractions, an assessment of uncertainties, the valuation of trade-offs, and a better understanding of the incentives and behavior of irrigators.

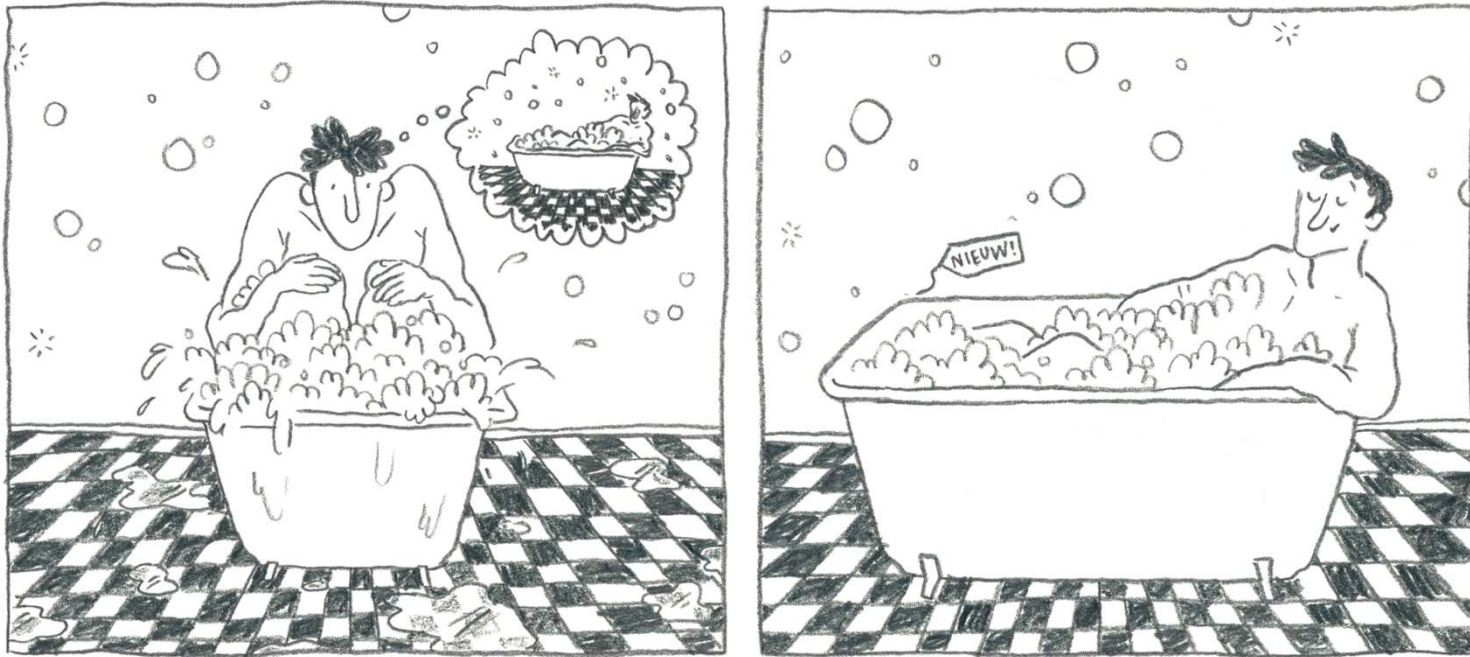
stored for irrigation. governments specializing advanced: as sprinklers or their goal is to insure that this will: from irrigation to environment, with increasing agricultural. But water saving does not reduce watershed or basin crops are rarely

Knowledge gap 1: unpredictable humans

The dimension of human behavior and decision-making regarding climate adaptation options is poorly understood and often neglected.

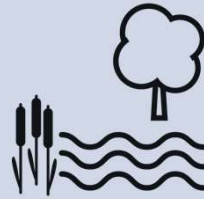


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**Increase the amount of water
available to farmers**

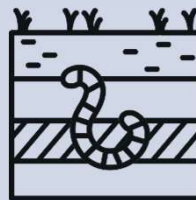
Increase water stocks



More space for water

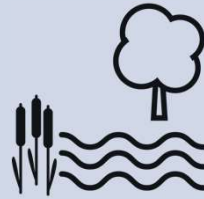


Drain less/smart



Take care of your soil

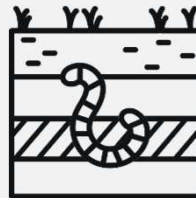
Increase water stocks



More space for water

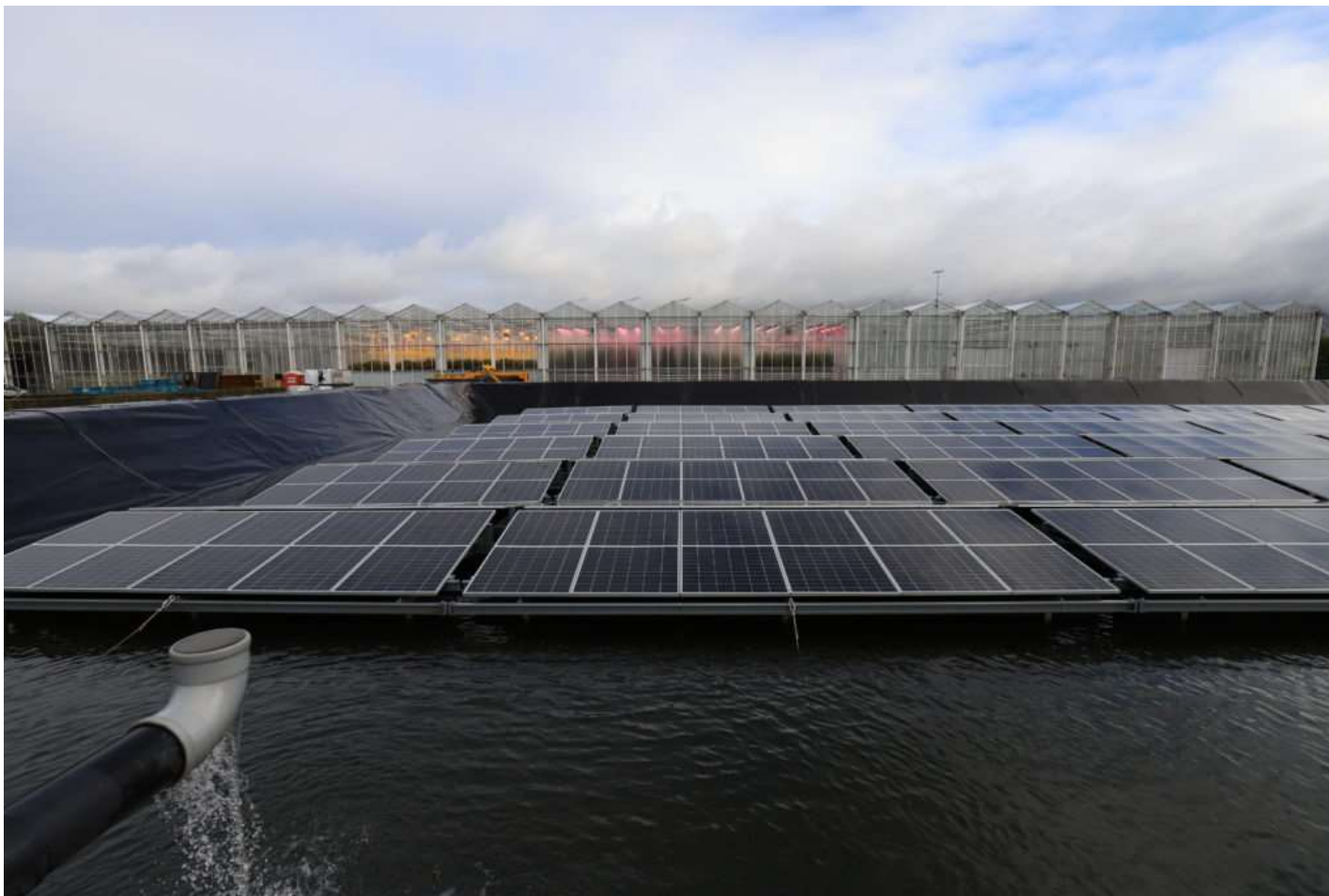


Drain less/smart



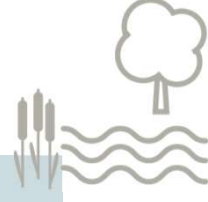
Take care of your soil

Store water in basins?

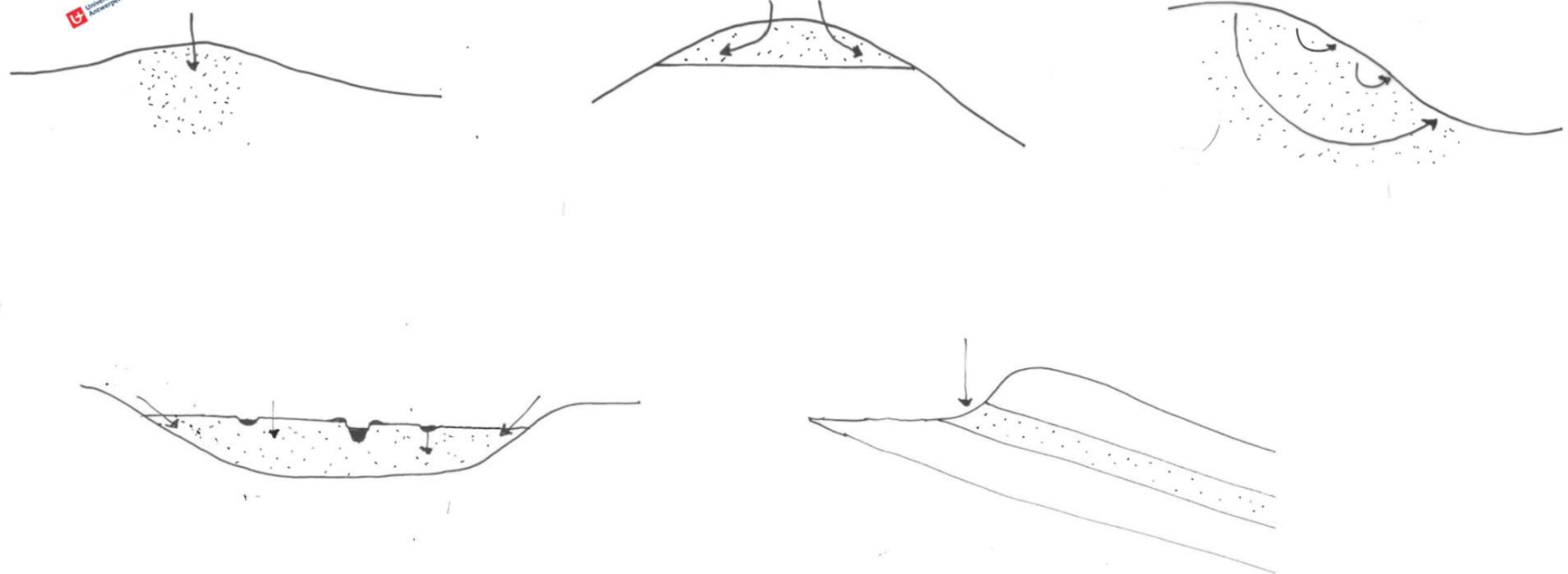
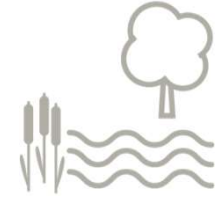


Right to water?





Use the landscape potential



Climate adaptation is not only about drought!

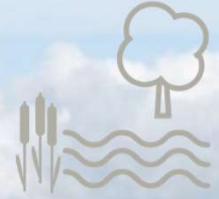


Photo: polders Westkust

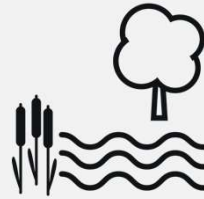
Knowledge gap 2: nature-based solutions

Detect and activate synergies between the natural (water) system and human activities.

‘nature-based solutions’



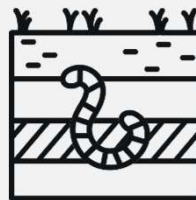
Increase water stocks



More space for water

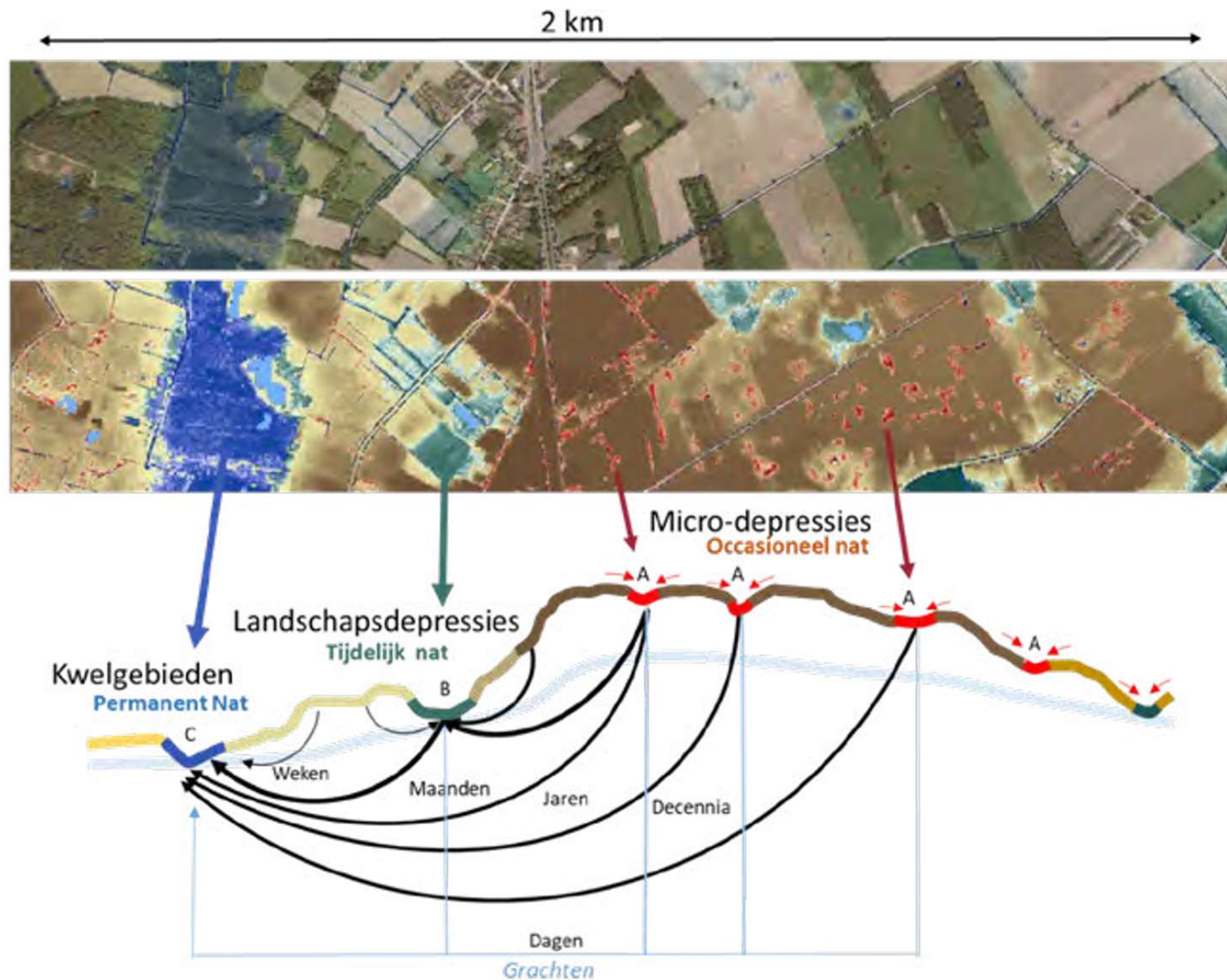


Drain less/smart

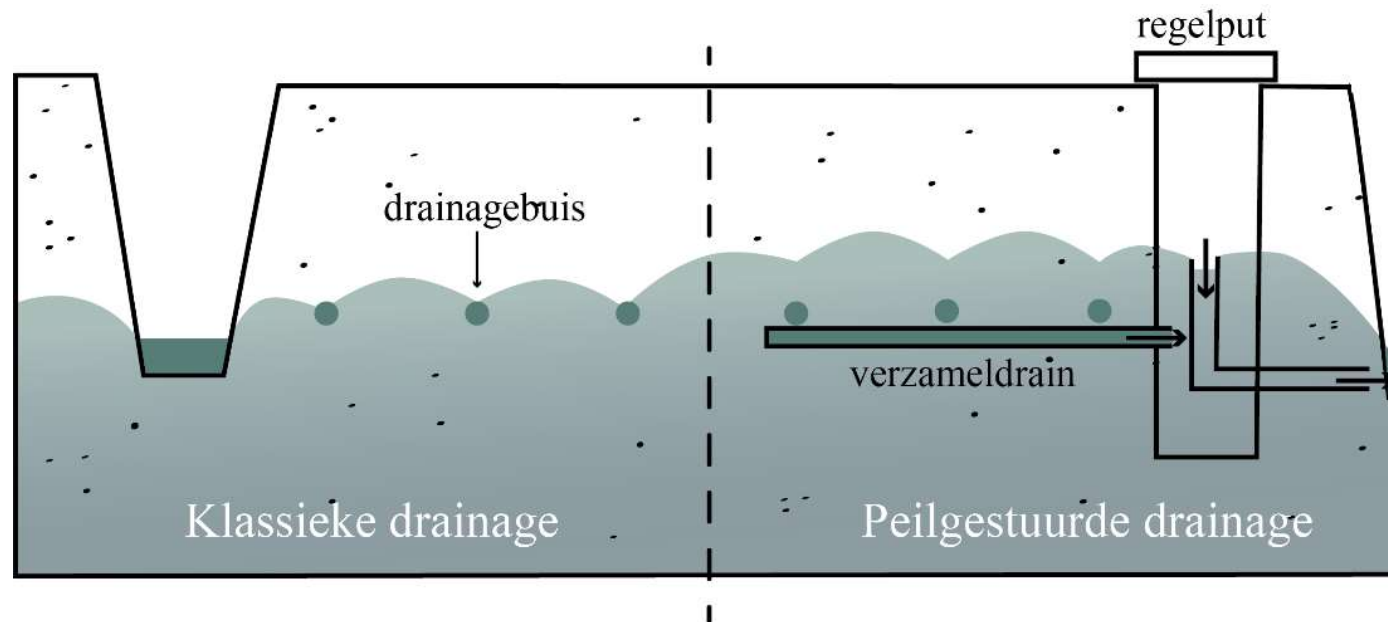


Take care of your soil

Why drainage is heavily debated...



Climate adaptive-drainage



Farmer weirs



Knowledge gap 3: bridge scales

How to predict the effect of a single measure on the surface and groundwater system in which it is embedded.

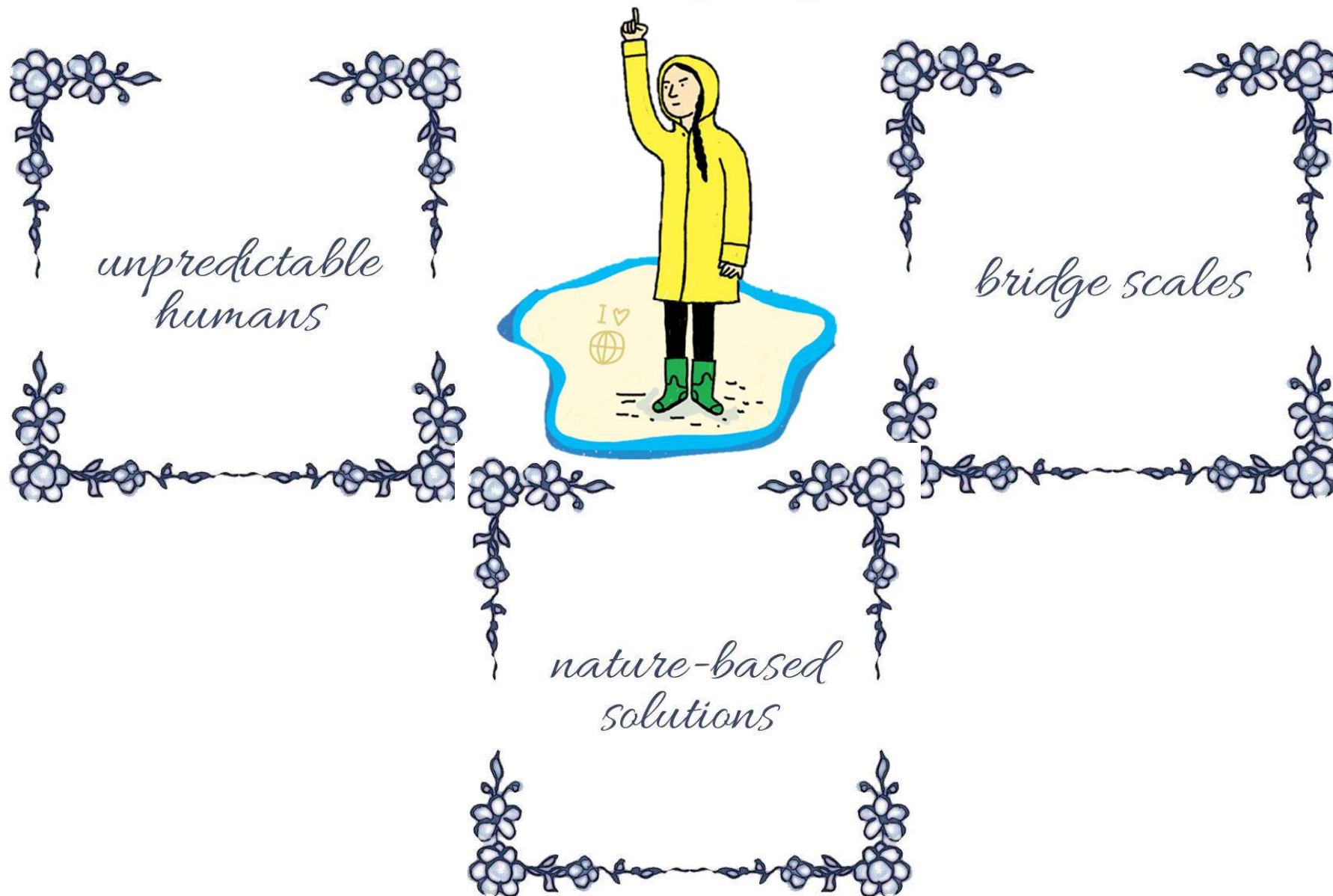
What is the cumulative effect of these measures at the landscape scale?

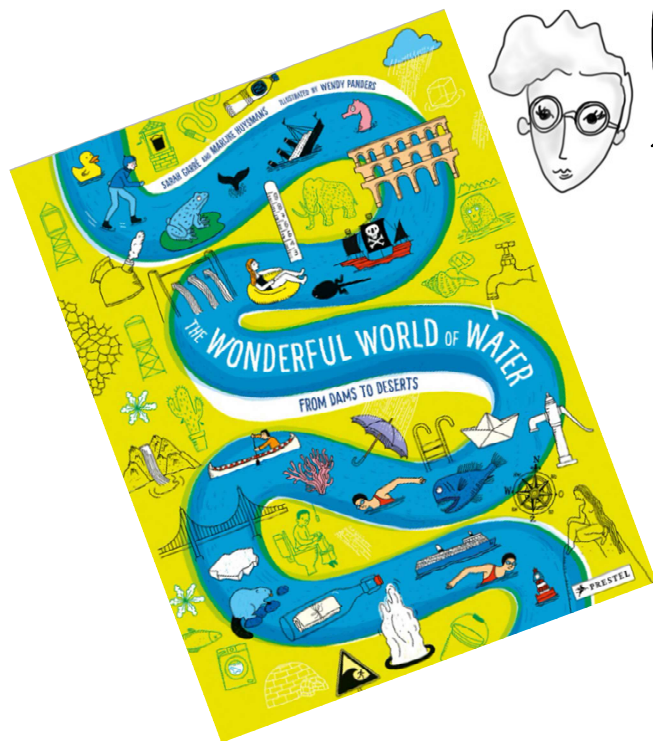
Back to knowledge gap 1

How come to collective management decisions respecting the common interest of all water users?



Knowledge gaps





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