
Meet me at the
DISCO

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Zwolle

Regio: North Sea Region (NSR)

Priority 1	Robust and smart economies in the North Sea Region
1.1	Developing and enhancing research and innovation capacities and the uptake of advanced technologies

Capaciteit van steden en regio's vergroten om innovaties (digital solutions) te ontwikkelen en implementeren met als doel het versnellen van klimaatadaptatie.

Gedachtegang:

Transformeren van de stad:

- Bewustwording, draagvlak, actie (politiek, profs en bewoners)
- Lange termijn planning / beleid (adaptatiepaden) / keuzes
- Benutten van ingrepen / investerin
  (projecten, beheer, etc)
- Monitoren voortgang, bijsturen

Gedachtegang:

- Digital solutions: data -> informatie -> simulaties -> visualisaties
- Tbv: besluitvorming, participatie, draagvlak
- Werelden van “KA” en “Digitaal” bij elkaar brengen, capaciteit om digital solutions in te zetten vergroten.
- Samen met stakeholders ontwikkelen / implementeren / demonstreren

-> Kennisoverdracht / opschalen

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Work Packages

1. Inventarisatie digital solutions, assessment, use
2. Pilots
3. Opschalen, ecosysteem, netwerk van netwerken

Pilot Zwolle

Digital Twin toepassing voor gezamenlijk ontwerp leefstraten (ontwerpers, beheer en inwoners)

Consortium

NL: Zwolle (**lead**), UTwente, ?

DE: OOWV, Jade University, University of Oldenburg

DK: Vejle, VIA University

BE: Mechelen, VMM, KU Leuven

SE: Malmö, Malmö University, Sweden Water Research

Data verzamelen / informatie

- VMM: klimaatportaal (2D GIS / integrale info (online “maptable”)
- Malmo: citizen science
- OOWV: SMART Water management (incl. weather forecast)

Simulatie en visualisatie

- Zwolle + Velje: ontwerpen met bewoners / beheer in digital twin
- Mechelen: participatie / voice of nature in AR
- OOWV: digital twin for intelligent storm water retention

Universiteiten / hogescholen:

- Jade: use cases, digital cave
- VIA: XR technieken (icm digital cave Jade?)
- UTwente: assessment, snijvlak gebruiker / techniek, o.a. inclusiviteit

Planning:

1. Expression of Interest

   First step, 17 Apr -**30 Jun ‘23**

   Decisions: 26 October 2023

2. Full proposal

   From Oct ‘23 – **Jan ’24**

   Decisions: May 2024

3. Start project medio 2024

RAINBOW-Cycles

ImpRove climAte resilience in cIties and regioNs By restOring Water cycles

DISCO

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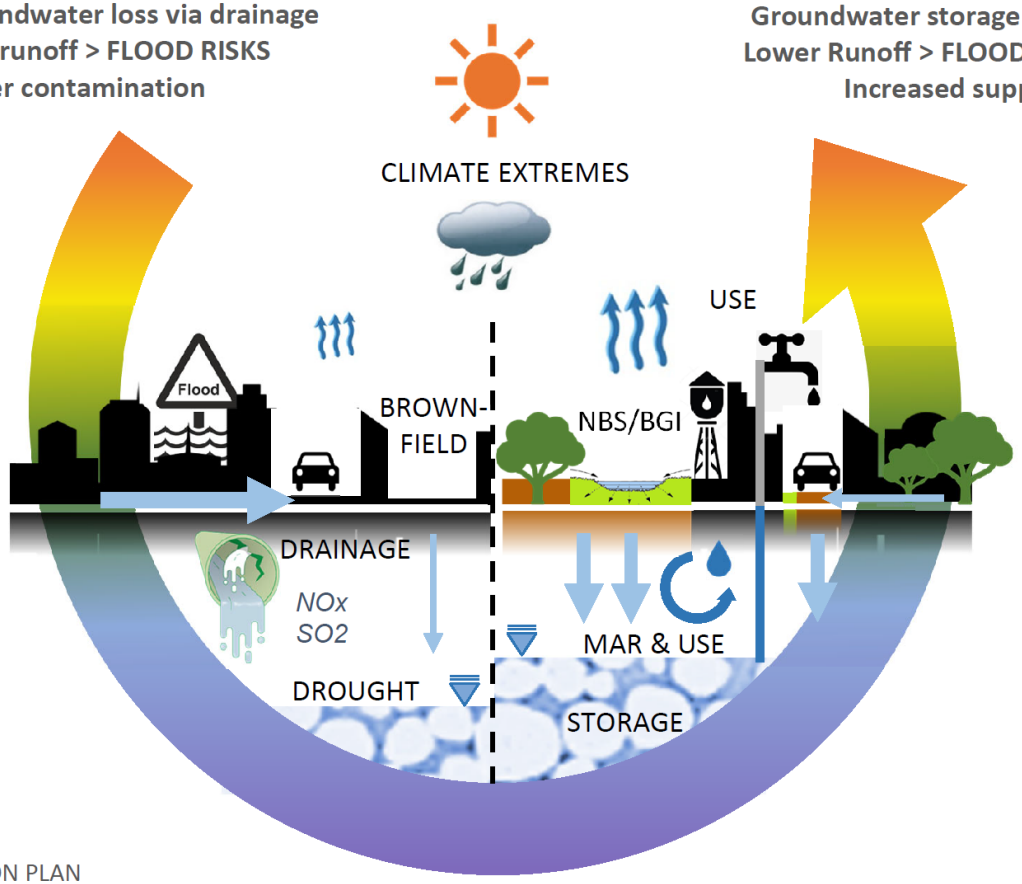
Regio: North West Europe (NWE)

Priority 2:	Smart climate and environmental resilience for NWE territories
2.4:	Promoting climate change adaptation and disaster risk prevention, resilience, taking into account eco-system based approaches

Benutten / herstellen water(cycle)systeem / sponswerking ondergrond

DISTURBED WATER CYCLES
Low infiltration due to urbanisation
Limited evapotranspiration
Groundwater loss via drainage
High runoff > FLOOD RISKS
Water contamination

RESTORED WATER CYCLES
Increased managed infiltration/recharge
Higher evapotranspiration
Groundwater storage ↑
Lower Runoff > FLOOD↓
Increased supply



ACTION PLAN

- Transforming urban (public) space and increase infiltration using **Nature-Based Solutions (NBS)/Blue-Green Infrastructure (BGI)** and **managed aquifer recharge (MAR)**
- Manage **implementation of NBS/BGI in challenging contexts** such as stability of deepened structures, pollution (brown-field) and land-use conflicts
- **Reduce loss** of **groundwater** via leakage into/from sewage pipes and use it
- **Increase groundwater storage** to assure geotechnical stability and **water supply** during drought periods
- **Progress** towards restored water cycles

PILOT ACTIONS

Demonstrate wide range of **infiltration solutions** in diverse contexts

Develop **unified framework** with specific **indicators** for **monitoring and managing progress** towards restored water cycles

STRATEGIES towards the sponge city for a climate resilient water management

TRAININGS for stakeholders

Zwolle

Gedachtegang:

- Klimaatverandering zet beschikbaarheid zoet water onder druk
- Nieuwe stratgieen en oplossingen voor vasthouden, aanvullen zoet water voorraad
- -> Ontwikkelen, delen, opschalen

RAINBOW

Zwolle

Consortium:

DE: Gemeente Stuttgart (**lead**), Universiteit Stuttgart, TU Dortmund

FR: BRGM (geologisch onderzoek)

BE: Gemeente Brussel, VU Brussel, VMM

NL: RWS, Zwolle / Deltares (Royal Eijkelkamp? RIVUS?)

WP 1: unified framework for conceptual modelling and a set of key indicators for local and regional systems and processes for groundwater recharge and restoration

Zwolle / Deltares: meetstrategie

Monitoring Strategy – **‘exploration of monitoring needs and scenarios at regional scale’**	**Extreme water scarcity scenarios and mitigation strategies, e.g. sponge strategy. A better understanding of groundwater and soil system's sensitivities / tipping points/ key indicators for monitoring and modelling.**

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Zwolle

WP 2: pilots solutions to restore the water cycle, both nature-based solutions and blue-green infrastructure

Zwolle / Deltares

Monitoring Strategy – **'implementation and testing at neighbourhood scale'**	**Development of pilot solutions – local implementation and testing of monitoring strategy – Zwolle infiltration and groundwater recharge case.**

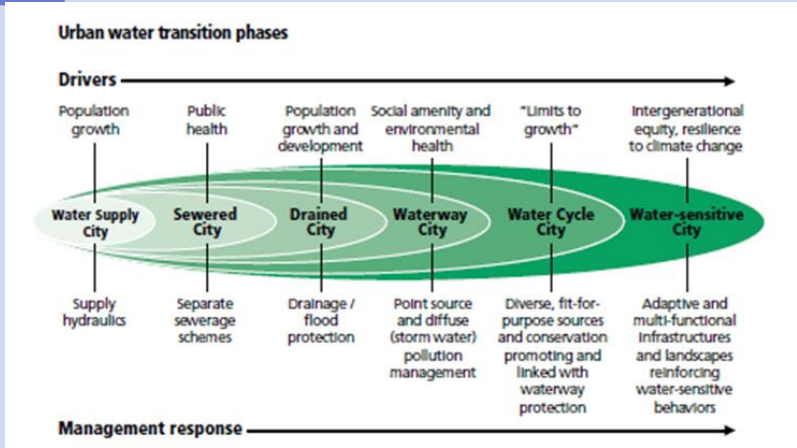
RAINBOW

Zwolle

WP 3: climate adaption plans and strategies for resilient and sustainable water management

Zwolle / Deltares

Zwolle water cycle city action plan – **'sponge strategy development at city scale'**	**Building on the Zwolle Adaptation Strategy (ZAS, 2019) and Interreg NSR CATCH-project (2017-2022) the city of Zwolle wants to develop a sponge strategy for closing the water loop. Goal is to achieve dynamic water resource management in Zwolle for achieving self-sufficiency in availability of fresh water in the (near) future.**



Planning:

1. STEP 1: 9 feb 2023
2. Decision april 2023: afgewezen

Doorstart?