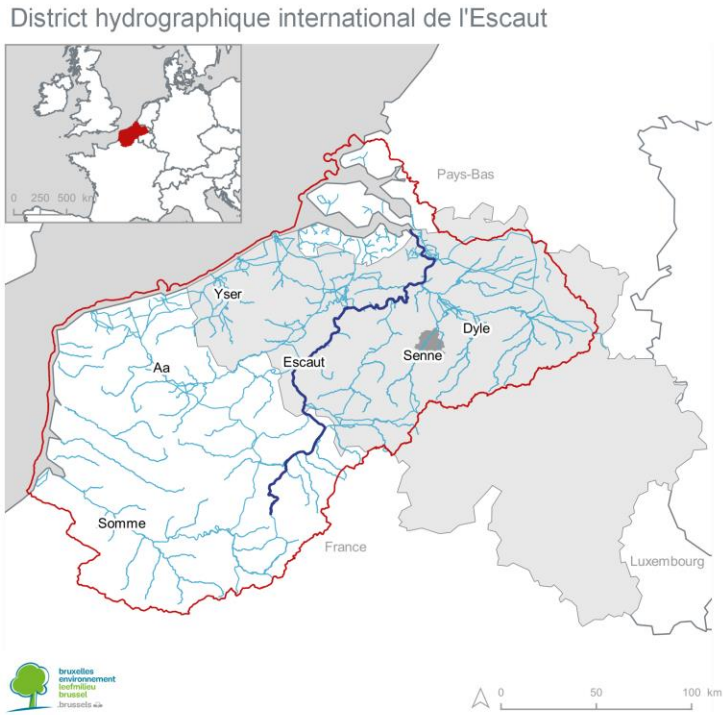
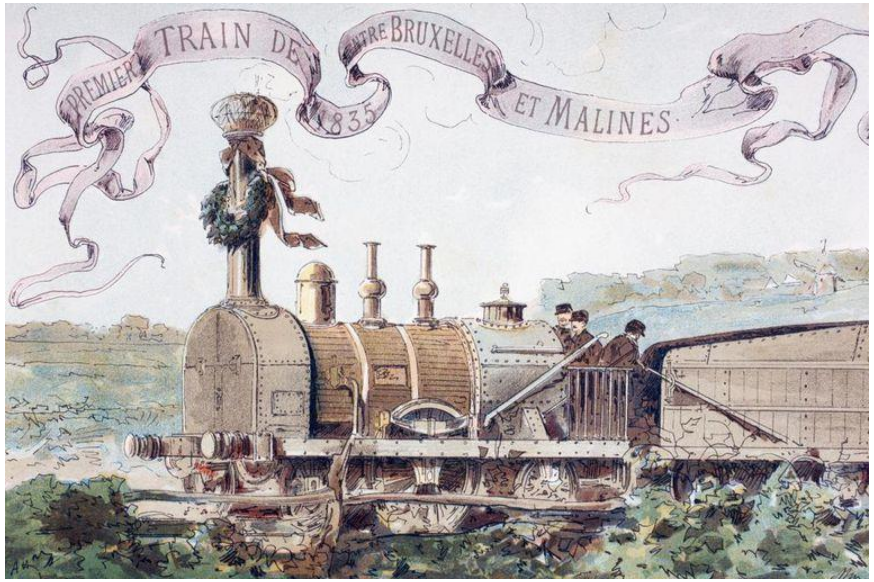
Is climate change adaptation all about water?

International conference | 25-26 April 2023 | Brussels

Implementation of nature-based solutions and construction of an urban resilience : 2 approaches in Belgian cities

Side-by-side presentation of **2 cities** that are 30 km distant from each other, in the same River basin district and which face the **same challenges** and that developed their **own approach** to make their territory more resilient to climate change

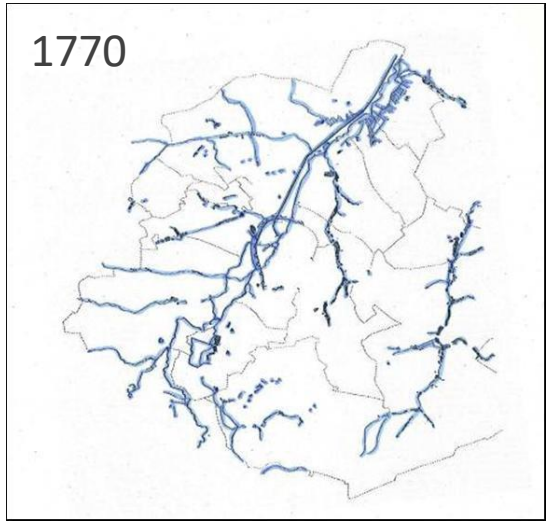


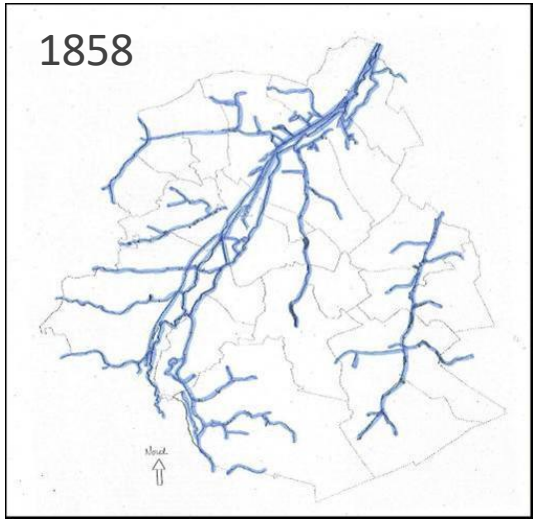


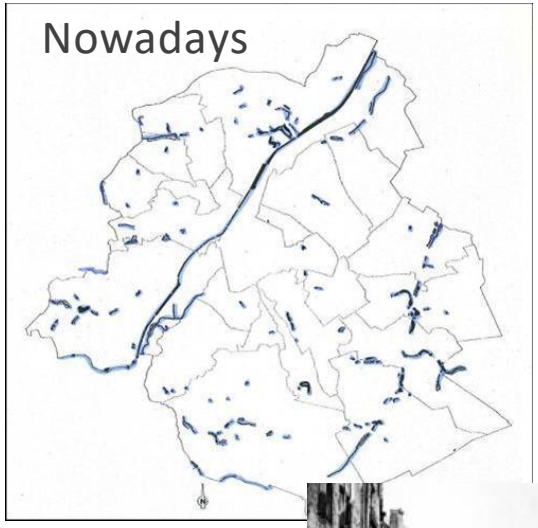
MECHELEN

Implementation of nature-based solutions and construction of an urban resilience : 2 approaches in Belgian cities

Context:







Capital of Belgium and the EU
1.2 million habitants on 162km²
19 municipalities
Regional level

Findings:

- draining of ponds and wetlands
- converting rivers into open sewers and then vaulting them
- fragmented hydrographic network
- significant and constant soil sealing

…and the consequences thereof

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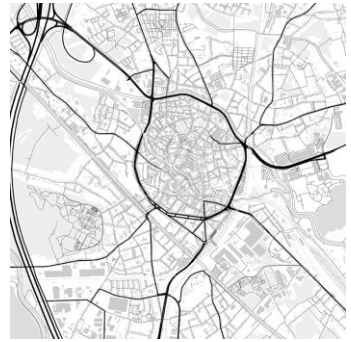
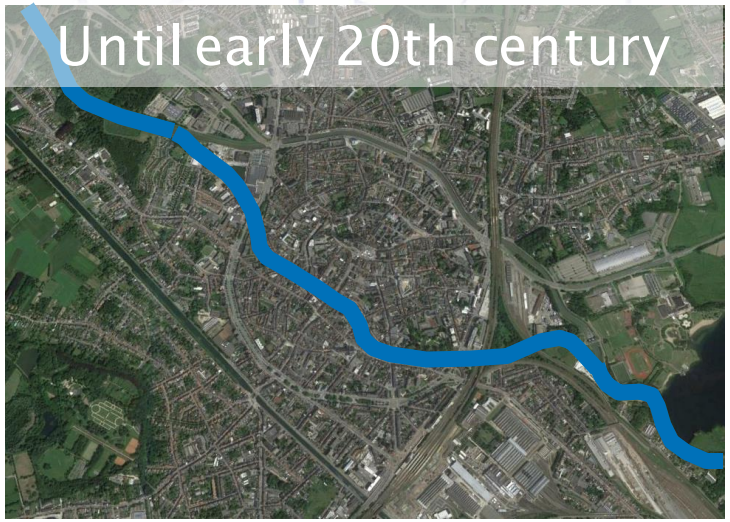
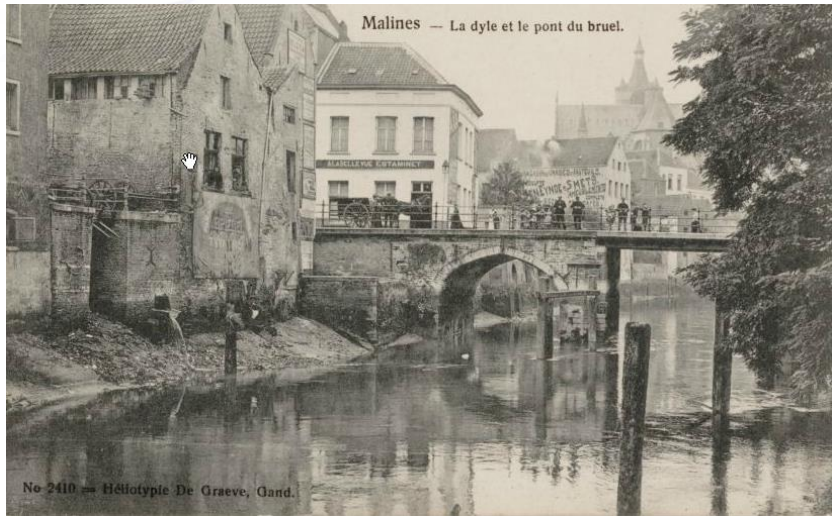
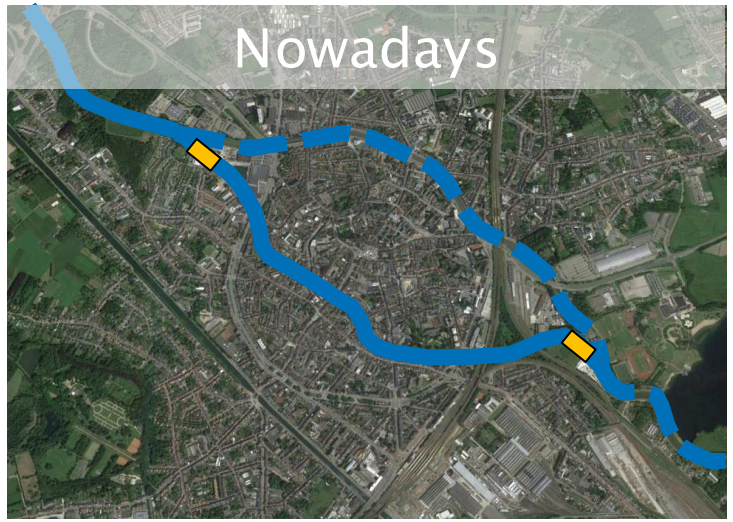
Implementation of nature-based solutions and construction of an urban resilience : 2 approaches in Belgian cities

- Medium sized city
- 88.000 inhabitants
- Historic city center
- Tidal river in the center → tidal river around the city

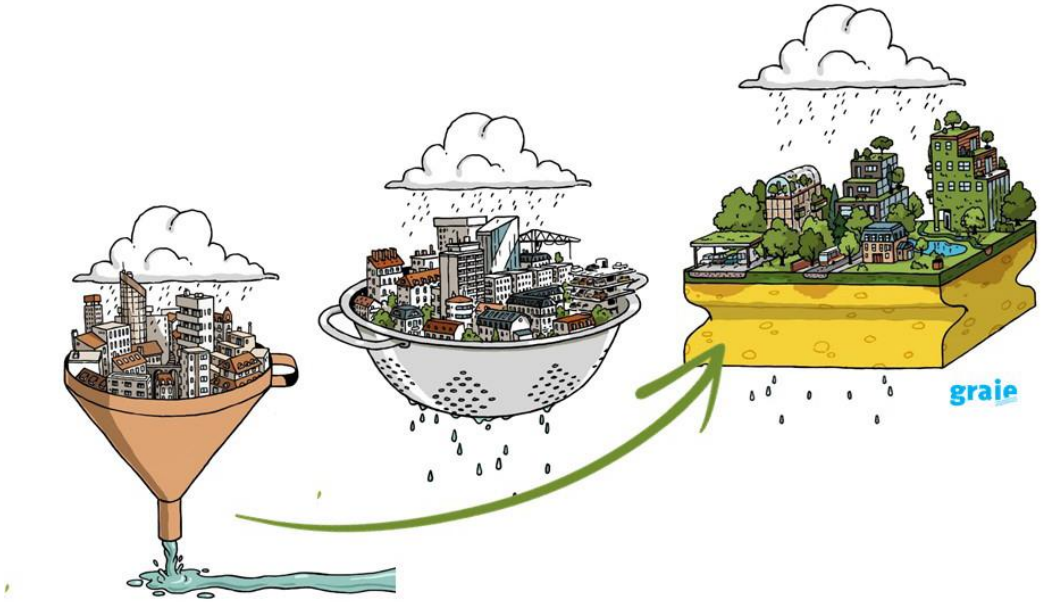


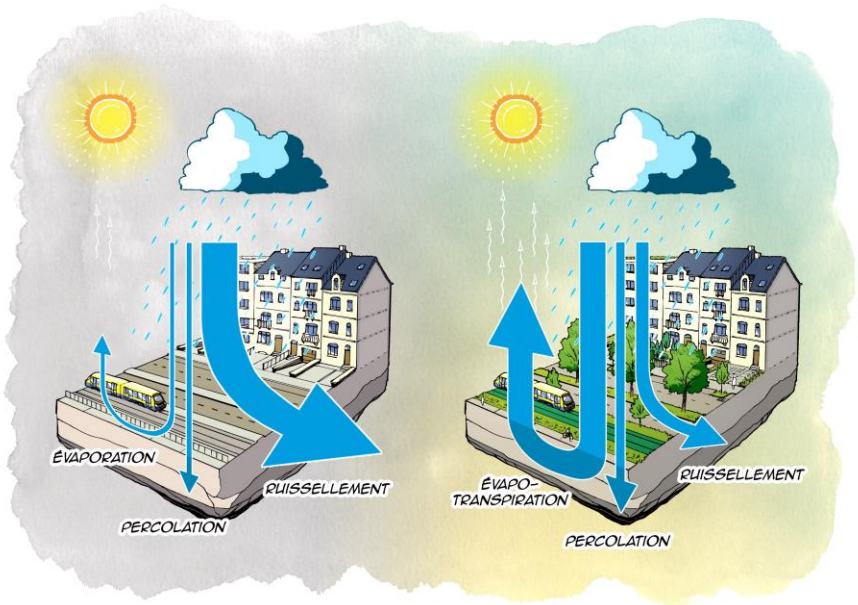






1. What's our approach and how did we get here?





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1. What's our approach and how did we get here?

Implementation of NBS by the **city**:

Implementation and SUPPORT of NBS by the **inhabitants**:

2. What do we do?

The « integrated Rainwater management » strategy

be water
be.brussels

OPÉRATION RÉ-CRÉATION

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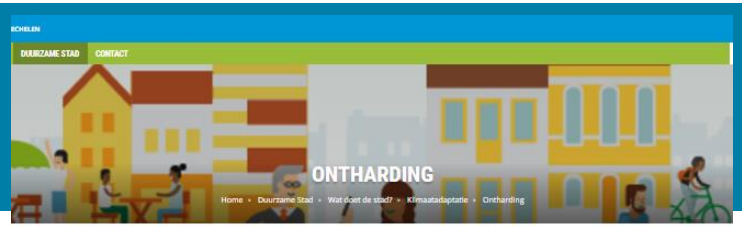


2. What do we do?

Vandaag bestaat 16 % van alle oppervlakte in Vlaanderen uit verharde ondergrond. Dat maakt ons een van de meest verharde gebieden van Europa met flink wat nadelen: een groter risico op overstromingen, warmere steden en dorpen en een verlies aan biodiversiteit.

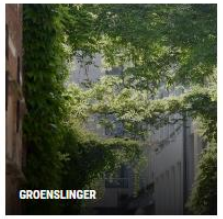
Waar je verharding wegneemt, krijg je:

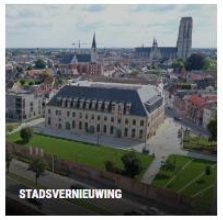
→ Minder wateroverlast omdat de bodem als een soort spons het water opneemt.
→ Gezondere lucht omdat wegen plaats maken voor groen.
→ Koelere steden omdat de bodem minder warmte opneemt en afgeeft.
→ Meer ruimte voor natuur, biodiversiteit en voedselproductie.
→ Een groenere omgeving waar we allemaal gelukkiger van worden.

Bij de heraanleg van het openbaar domein bekijken we steeds wat we kunnen ontharden. Sommige projecten gaan verder dan anderen.

Ook jij kan helpen. Leg bijvoorbeeld een tegeltuintje aan, ga aan de slag in een samentuin, of koop een boom of haag via de samenaankoop Boom zoekt grond.

Wil je meer informatie en inspiratie? Bekijk de infosessie Volharden in het Ontharden van Klimaan (18.1.2022).





1. Make it fun
2. Make them understand WHY
3. Make it easy (& cheap(er))

Most of all: Listen & open the conversation

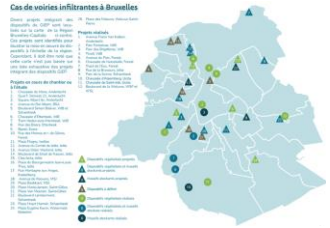
3. Which challenges or difficulties did we have to face so far?

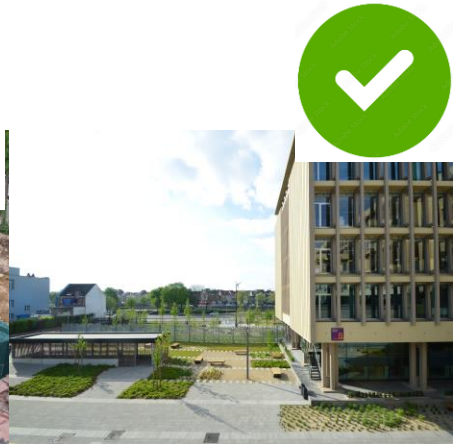
- Multiple actors on regional and municipal levels :
  - Fear of change, (in the maintenance of new facilities / of pollution in soil and groundwater)
  - Not always talking the same language (landscapes >< pipes)
  - With opposed objectives

- Lack of an appropriate legal framework :
  - Attempt to impose NbS into urban planning and in individual acts and permits of building, renovating and maintaining
  - Private and public spaces

- Challenge to come with examples on the field that works

urban.brussels
be.exemplary





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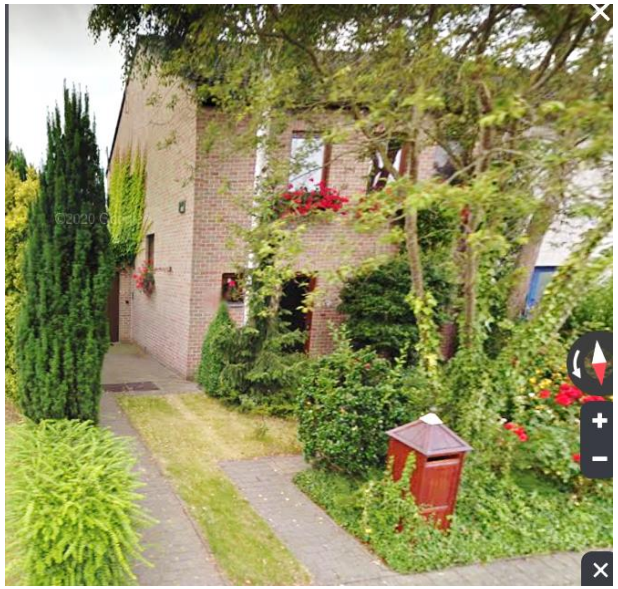
3. Which challenges or difficulties did we have to face so far?



2009

2022

1. Main objections:

- Giving up parking spaces
- ‘Dirt’ (leaves) on the road and sidewalk

2. Other challenges:

- ‘Preaching to the choir’
- Low income vs high income

4. Lessons learnt and perspectives for the future?

- Separative networks are not convincing
- Need to work within the existing infrastructures of the city
- Experience abroad must be recognized, valorised and not always be challenged/questioned
- Necessity to involve all regional and city agencies from the beginning
- City is changing, climate is changing : need of an innovative and adaptative planning

4. Lessons learnt and perspectives for the future?

1. Find the “What’s in it for me?”

2. Keep going & trying

3. It might take a crisis

Is climate change adaptation all about water?

International conference | 25-26 April 2023 | Brussels

Cities Alliance
Cities Without Slums

Hosted by UNOPS

Women-led Adaptation in Cities

Promoting inclusive and gender-sensitive water access and governance

©Mustafa Olgun

Water scarcity and gender inequality in cities

Due to their social role, women are disproportionately affected by water scarcity

- **The burden of collecting water falls to** women in 80 percent of households that lack direct access to a water source. Women and girls are more vulnerable to gender-based violence while collecting water.
- **The discriminatory laws** surrounding ownership and land rights impact women and girls' ability to access water.
- Their wellbeing, education and development opportunities are especially affected by water stress - **time poverty, menstrual hygiene management, childcare, household management.**

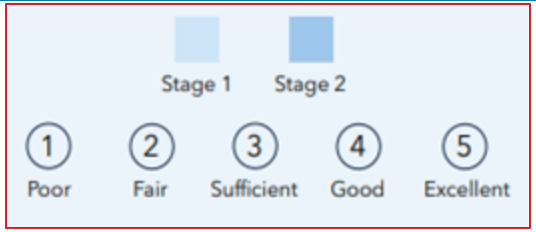
Many climate and water management actions and responses are developed without the meaningful participation, knowledge, and leadership of women

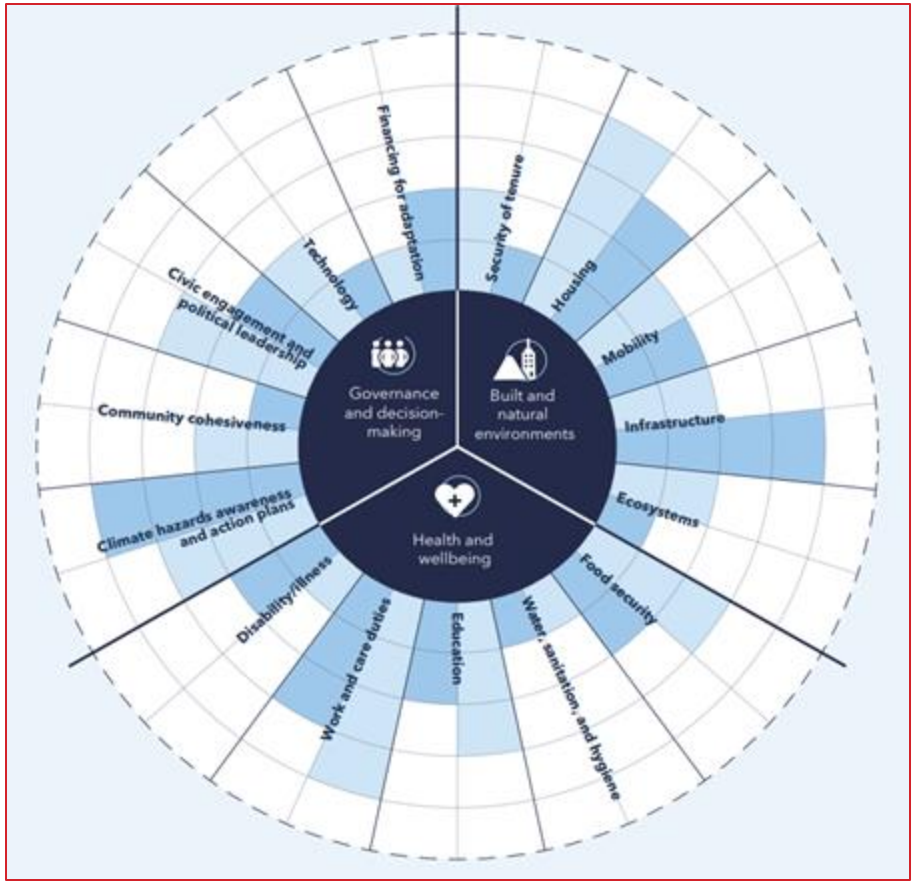
- Lack of sex-disaggregated data.
- Insufficient municipal capacity.
- Male-dominated sector.

The Her4Climate Tool
Scope of the tool

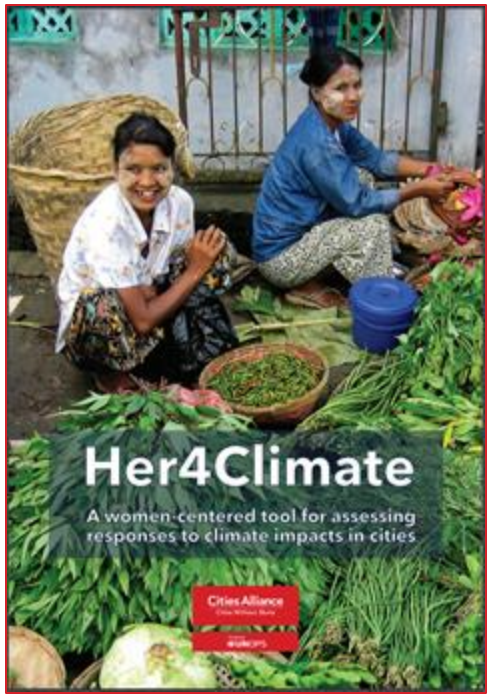
1. Understanding women's exposure and their capacity to respond to climate change in urban areas, including the identification of key climate impacts that require action, and the level of climate adaptability in the future.

1. Promoting women's participation, leadership, and empowerment, in the design and management of climate adaptation initiatives (i.e., strategies, policies, action plans, interventions).



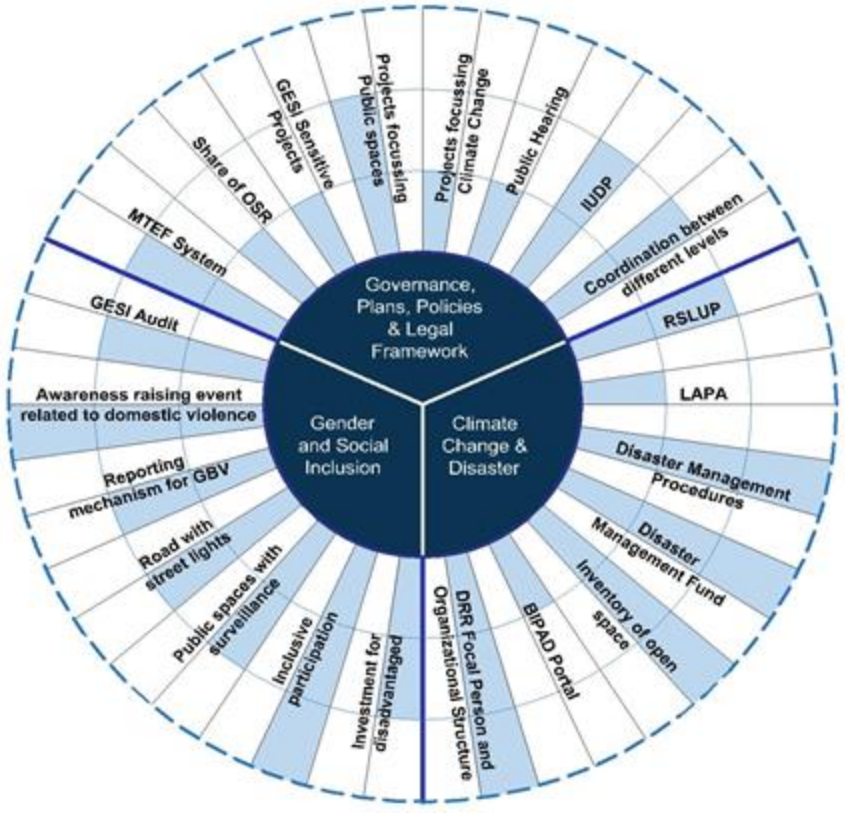


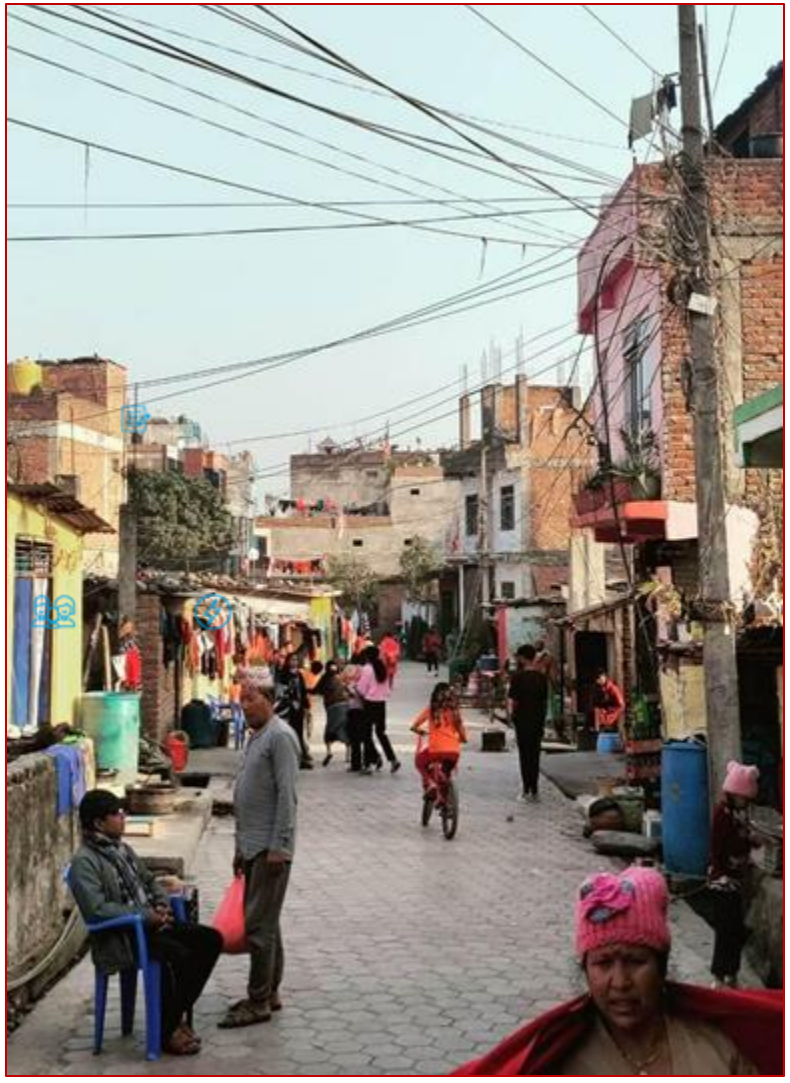
- **3 dimensions**
- **15 indicators**
- **2 stages**



Cities For Women: Inclusive and Climate Resilient urbanization in Nepal

Example: Chandragiri Municipality profile





LIBERIA

Women Empowerment through Water

134
women involved throughout the process

80,000
women are benefitting from the broader water project

CONSTRUCTION OF WATER KIOSKS:

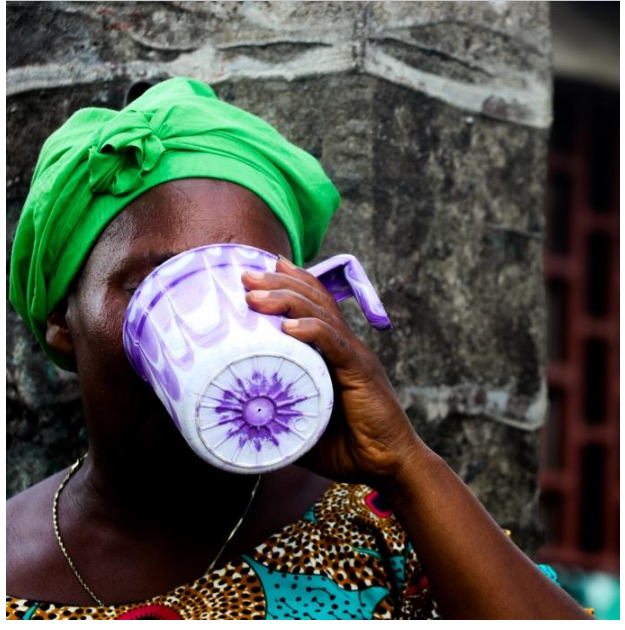
- Individual Survey on Women Experiences in the City of **Monrovia**
- City for Women Laboratory to engage women in identifying priorities for planning recommendation for the **City Development Strategy**

- Construction of **10 water kiosks** managed by women which have been trained

Participatory Local Action Research

- **WEC Survey** and **gender audit** in three informal communities (Doe Community, Clara Town, and Soko Town) in collaboration with FOLUPS – October to December 2020

- Published **report "How Women Experience The City"** in 2022



Is climate change adaptation all about water?

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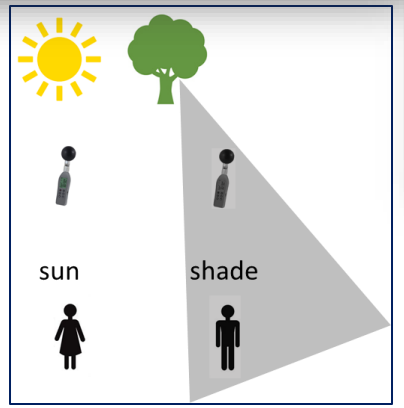
Can citizen science promote climate action?

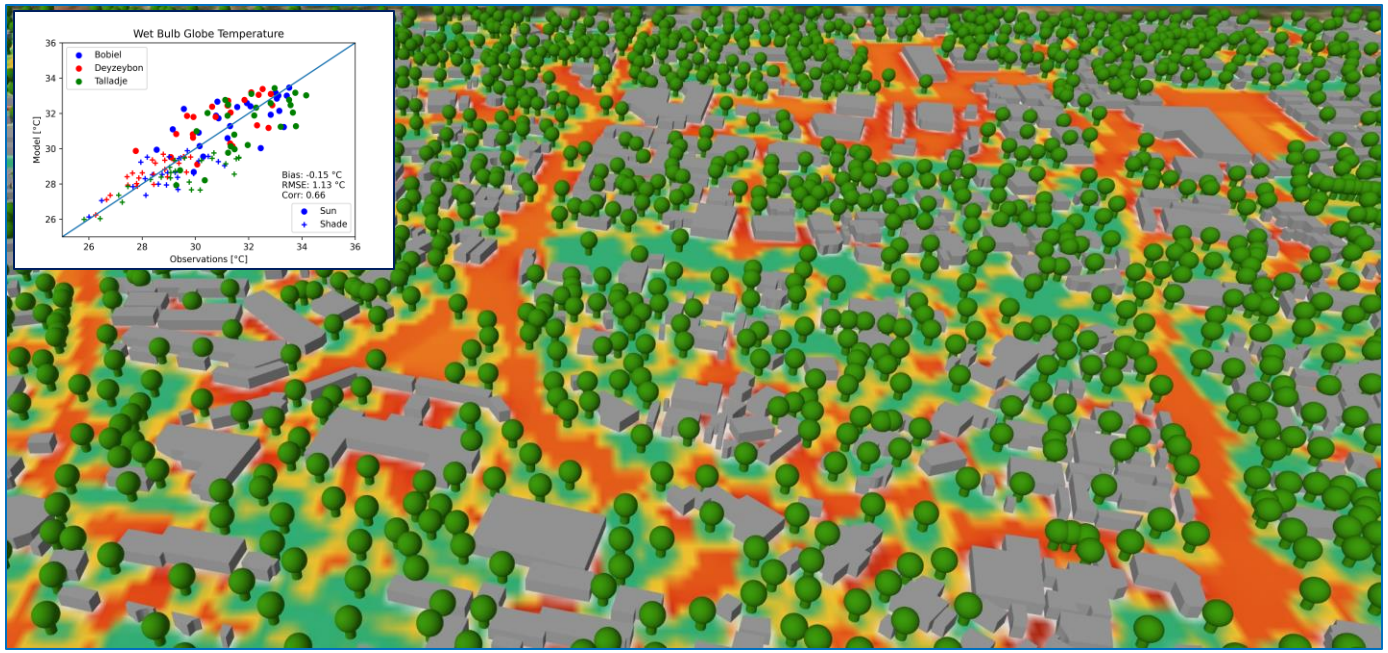
NIAMEY



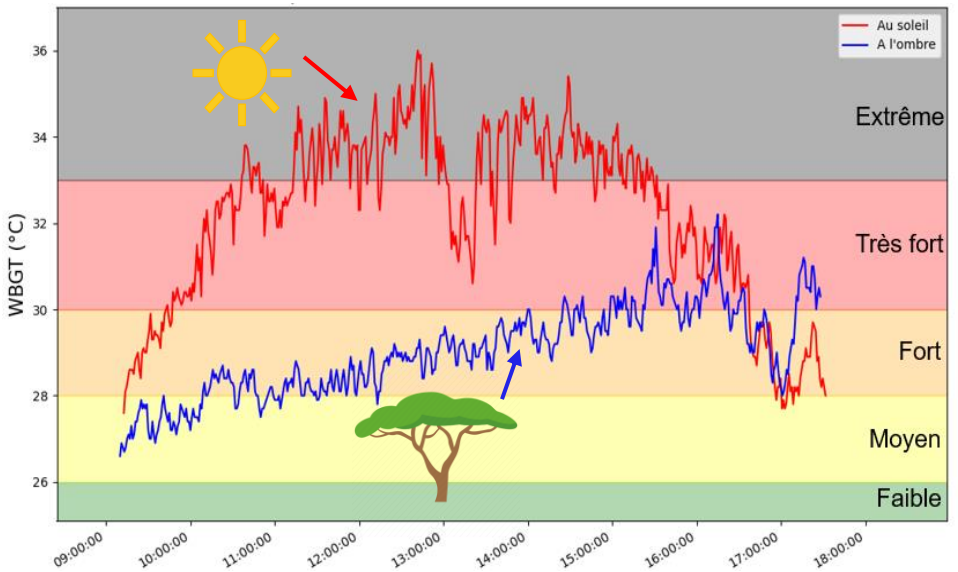
JOHANNESBURG

Valuable scientific data

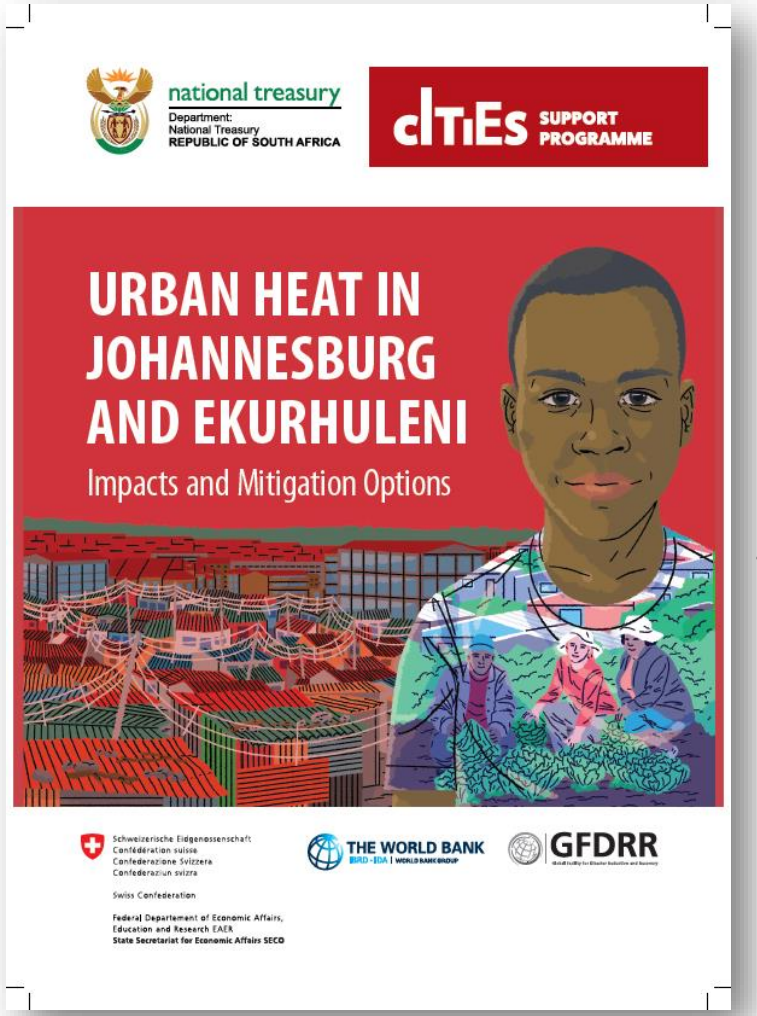
… for model validation



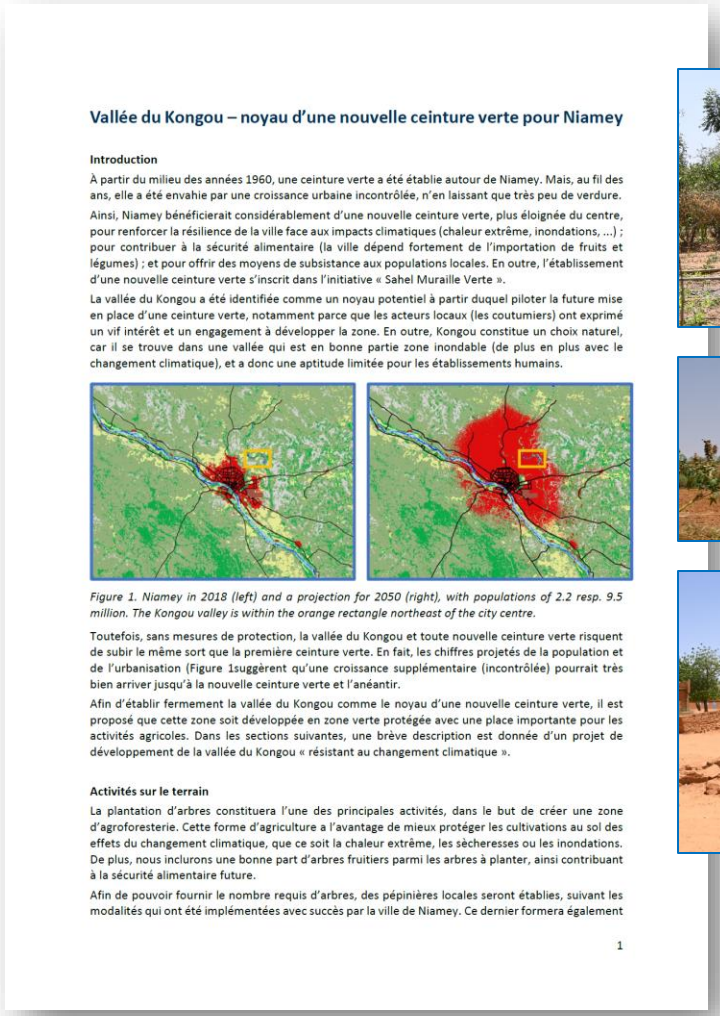
… and as compelling evidence by itself



Evidence that cannot be ignored



"This report is a crucial policy informant as it provides scientific data and a clear policy directive on urban heat impacts in the City. The adaptation measures laid out in this report will be implemented to build climate resilience and reduce the impacts of heat."



Vallée du Kongou – noyau d'une nouvelle ceinture verte pour Niamey

Introduction

À partir du milieu des années 1960, une ceinture verte a été établie autour de Niamey. Mais, au fil des ans, elle a été envahie par une croissance urbaine incontrôlée, n'en laissant que très peu de verdure.

Ainsi, Niamey bénéficierait considérablement d'une nouvelle ceinture verte, plus éloignée du centre, pour renforcer la résilience de la ville face aux impacts climatiques (chaleur extrême, inondations, ...) ; pour contribuer à la sécurité alimentaire (la ville dépend fortement de l'importation de fruits et légumes) ; et pour offrir des moyens de subsistance aux populations locales. En outre, l'établissement d'une nouvelle ceinture verte s'inscrit dans l'initiative « Sahel Muraille Verte ».

La vallée du Kongou a été identifiée comme un noyau potentiel à partir duquel piloter la future mise en place d'une ceinture verte, notamment parce que les acteurs locaux (les coutumiers) ont exprimé un vif intérêt et un engagement à développer la zone. En outre, Kongou constitue un choix naturel, car il se trouve dans une vallée qui est en bonne partie zone inondable (de plus en plus avec le changement climatique), et a donc une aptitude limitée pour les établissements humains.

Figure 1. Niamey in 2018 (left) and a projection for 2050 (right), with populations of 2.2 resp. 9.5 million. The Kongou valley is within the orange rectangle northeast of the city centre.

Toutefois, sans mesures de protection, la vallée du Kongou et toute nouvelle ceinture verte risquent de subir le même sort que la première ceinture verte. En fait, les chiffres projetés de la population et de l'urbanisation (Figure 1suggèrent qu'une croissance supplémentaire (incontrôlée) pourrait très bien arriver jusqu'à la nouvelle ceinture verte et l'anéantir.

Afin d'établir fermement la vallée du Kongou comme le noyau d'une nouvelle ceinture verte, il est proposé que cette zone soit développée en zone verte protégée avec une place importante pour les activités agricoles. Dans les sections suivantes, une brève description est donnée d'un projet de développement de la vallée du Kongou « résistant au changement climatique ».

Activités sur le terrain

La plantation d'arbres constituera l'une des principales activités, dans le but de créer une zone d'agroforesterie. Cette forme d'agriculture a l'avantage de mieux protéger les cultivations au sol des effets du changement climatique, que ce soit la chaleur extrême, les sècheresses ou les inondations. De plus, nous inclurons une bonne part d'arbres fruitiers parmi les arbres à planter, ainsi contribuant à la sécurité alimentaire future.

Afin de pouvoir fournir le nombre requis d'arbres, des pépinières locales seront établies, suivant les modalités qui ont été implémentées avec succès par la ville de Niamey. Ce dernier formera également

1

Insightful for community participants

"…so that we can bring the idea of climate change to a way more personal scale."

Mwetu Memela, Planact, South Africa

Citizen science can also help the involved communities claim their rights (e.g., more urban green)

But… Involving the most vulnerable remains a challenge

Is climate change adaptation all about water?

International conference | 25-26 April 2023 | Brussels

Who are WE?

- **Recognized voice and promoter of water-related innovation, research, and technology development in Europe**
- **Mission:**
  - Improve **coordination and collaboration** in the water ecosystem in the EU and beyond;
  - Enhance **performance and competitiveness** of the water ecosystem;
  - Contribute to solving **global water challenges** through RTD&I.

- **Water Europe Strategy:**
  - **Purpose-driven Multi-stakeholder** association representing the entire range of actors in the innovative water ecosystem
  - **Value-based** organisation: Water Vision

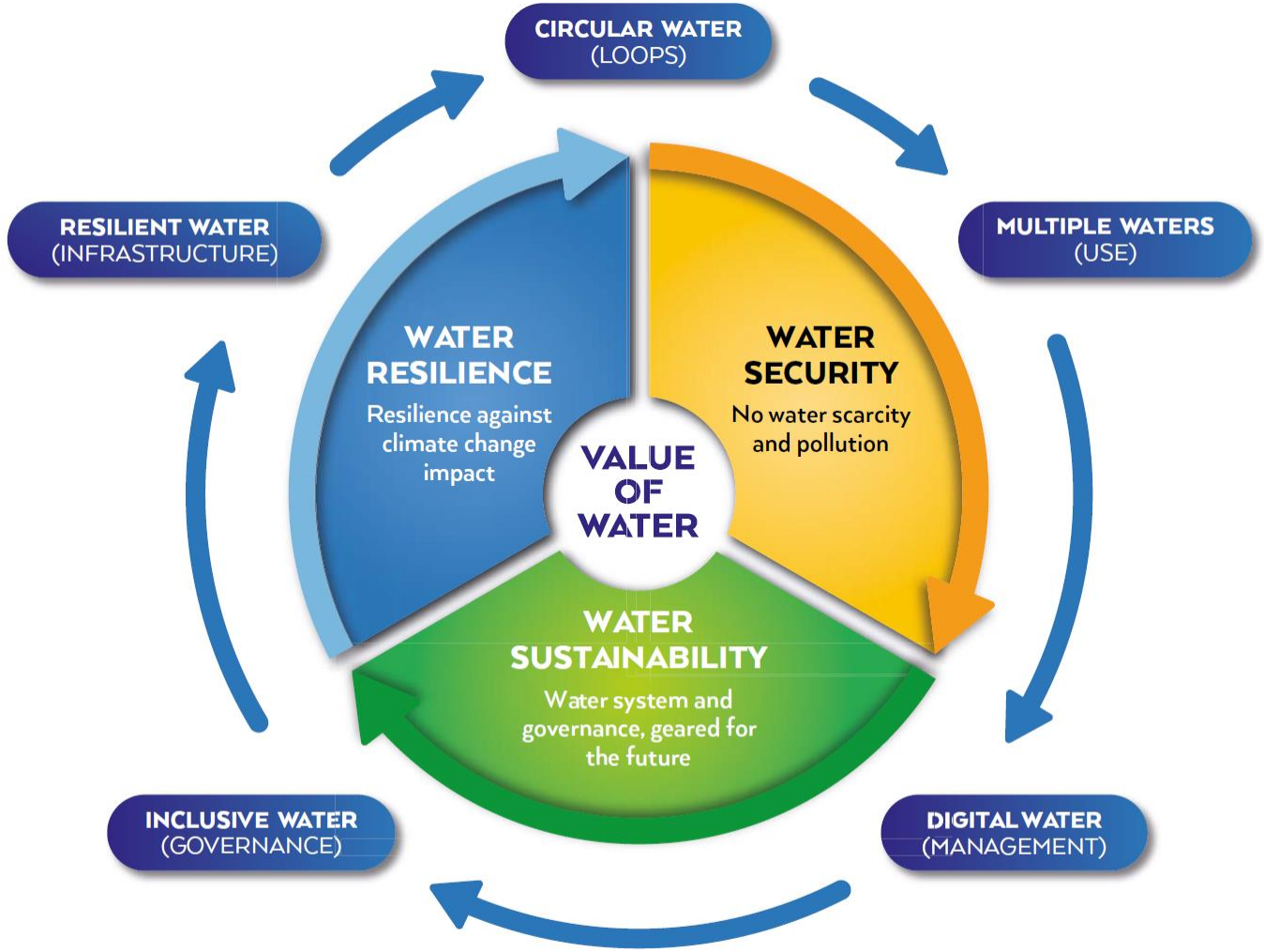
College A: Multinational corporations
College B: Research & Technology developers
College C: Utilities
College D: Suppliers & SMEs
College E: Large water users

College F: Public Authorities
College G: Civil Society Organisations

Water Vision 2023

Water-Smart Society:

- A society in which the **value of water** is recognised and realised to ensure water security, sustainability, and resilience.
- all available water sources are managed so that **water scarcity and pollution** are avoided.
- water and resource loops are largely closed to foster a **circular economy and optimal resource efficiency.**
- the water system is resilient against the **impact of climate and demographic change**.
- all relevant stakeholders are engaged in guaranteeing sustainable **water governance**.



Source: Water Europe

WE in research and innovation projects

Water Europe's support to its members' R&I projects:

- Letter of Support
- Consortium partner
- Subcontractor

Involvement:

Communication & Dissemination

Networking

Policy

Water-oriented Living Labs

75% of participants to successful water-related H2020 consortia are WE members

Completed projects

Water PIPP, WIDEST, SAVING E, ZELDA, REWATCH, SIM4NEXUS, energy water, ZERO BRINE, STOP-IT, afrialliance

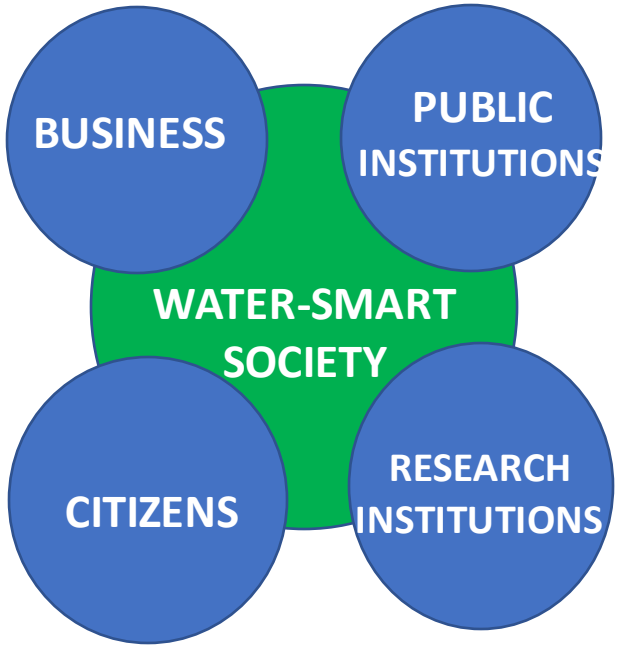
Ongoing projects

RIMA, HYDROUSA, nextGen, aqua3S, SPIRE-SAS, B-WaterSmart, water mining, ULTIMATE, PathoCERT, AquaSPICE, iWAYS, MULTISOURCE, NEXOGENESIS, ARSINOE, TransformAr, Water4All, Hubs4Circularity

Water-Oriented Living Labs for a **Water-Smart Society**

Water-Oriented Living Labs have been defined by Water Europe as follows:

- **real-life** demonstration and implementation instruments
- **bring together** public and private institutions, government, civil society, and academia
- **jointly build structured grounds** to develop, validate, and scale-up innovations
- embrace new **technologies, governance**, **business models**, **innovative policies**



ZINNAE Water-Oriented Living Lab

LINK WITH THE TERRITORY

Regional cluster gathering all key stakeholders in Aragón region.

Close collaboration with policymakers in the region thanks to Zaragoza's headquarters.

Regional public bodies within the cluster members.

DEMONSTRATION OF INNOVATION

Participation in 9+ innovation projects, plus an open test environment

Predictive and preventive management of droughts and floods.

Sustainable management of groundwater and abstraction monitoring.

New solutions against diffuse pollution and many more activities

VARIETY OF STAKEHOLDERS

The whole quadruple helix represented and part of the WOLL:

Academia, industry, **business**, **citizens**, **public administration**, environment, water technology developers and providers, and utilities.

LONG-TERM STRATEGY

Not entirely dependent on one project, but rather a legal member-based entity

Cluster strategy 2022-2025, with a long-term vision for growth beyond that

Multiple long-term solid goals such as Contributing to public policies, Consolidating and attract talent to the sector

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