



Urban Regional Research Ecology

JRC COP cities plenary meeting

28 april

Prof.dr. Caroline Nevejan

University & City of Amsterdam



RESILIO Final report

A roof journey

Urban Innovation Action

AMSTERDAM 2018 - 2022



BRING YOUR ROOF TO LIFE WITH SMART BLUE-GREEN ROOFS!

With the RESILIO project, 10,000 m² of smart blue green roofs are being realized in Amsterdam.
We need more blue-green roofs, because:



WHAT
A blue-green roof stores rainwater underneath the layer of plants. By using a smart valve, this water is retained during dry periods, and discharged when it starts raining.



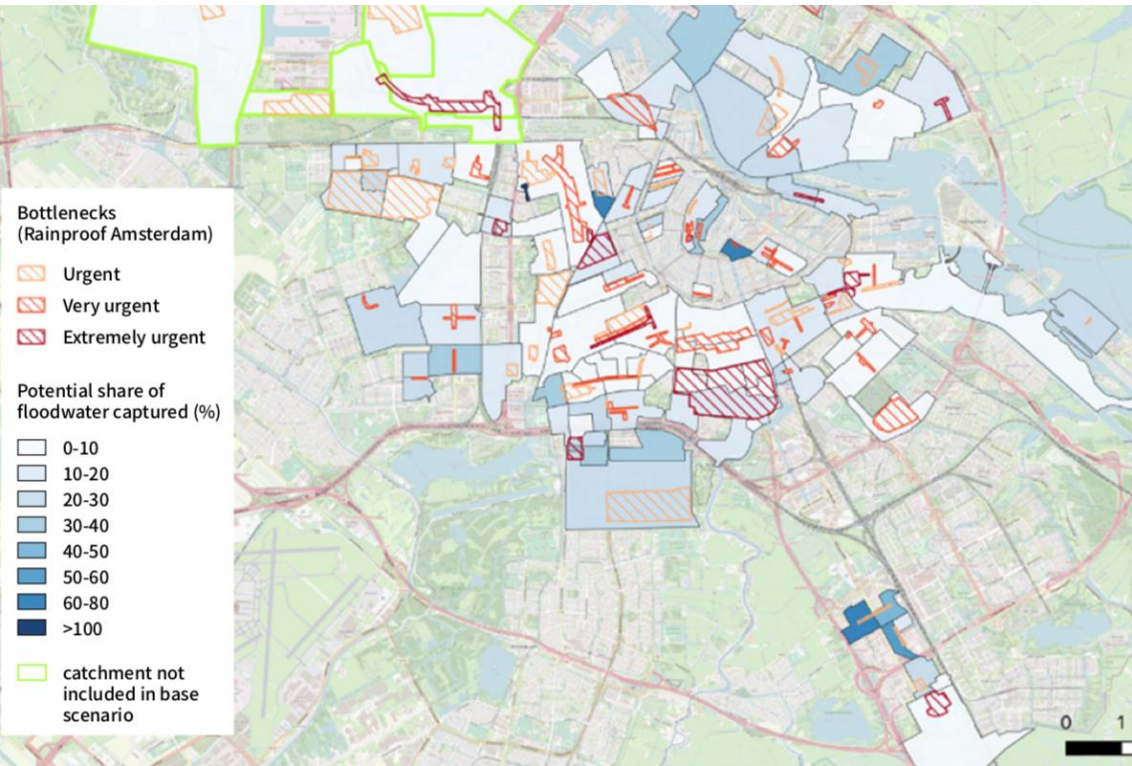
FOR WHOM
The blue-green roofs are being realized on social housing properties. Private homeowners from all over Amsterdam can participate as well.

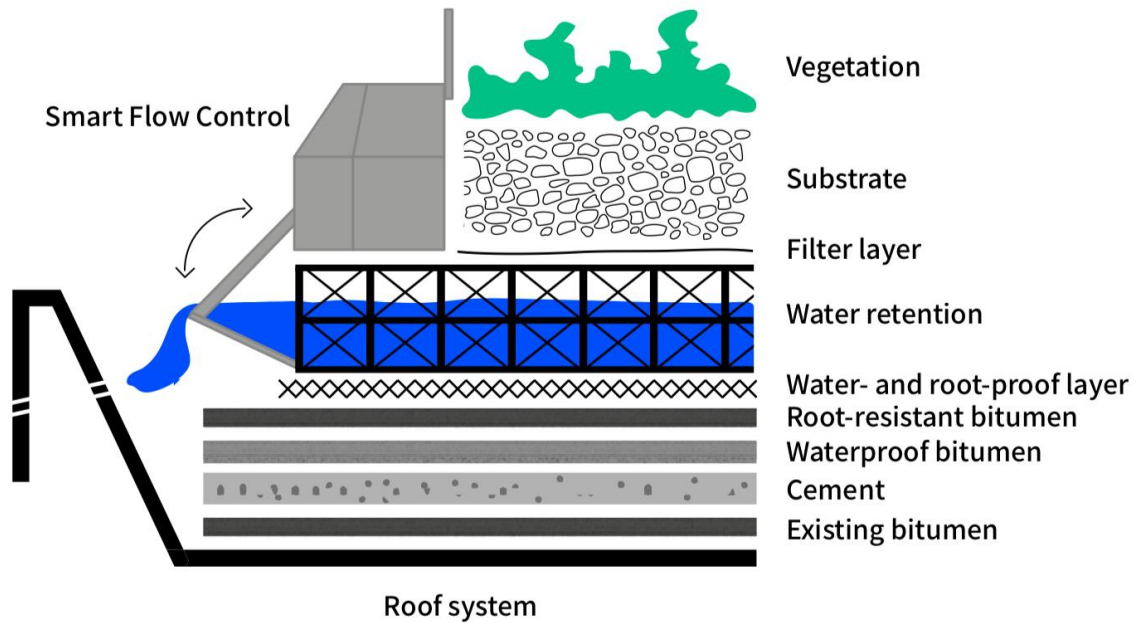


WHERE
The blue-green roofs are located in Kattenburg, Oosterpark, Indische Buurt, Slotemeer and Rivierenbuurt, or in your own neighbourhood!



HOW TO JOIN
To join or for more information, please explore the possibilities and grant scheme on www.resilio.amsterdam.





INFORMATION ON MACRO LEVEL

INFORMATION ON MICRO LEVEL

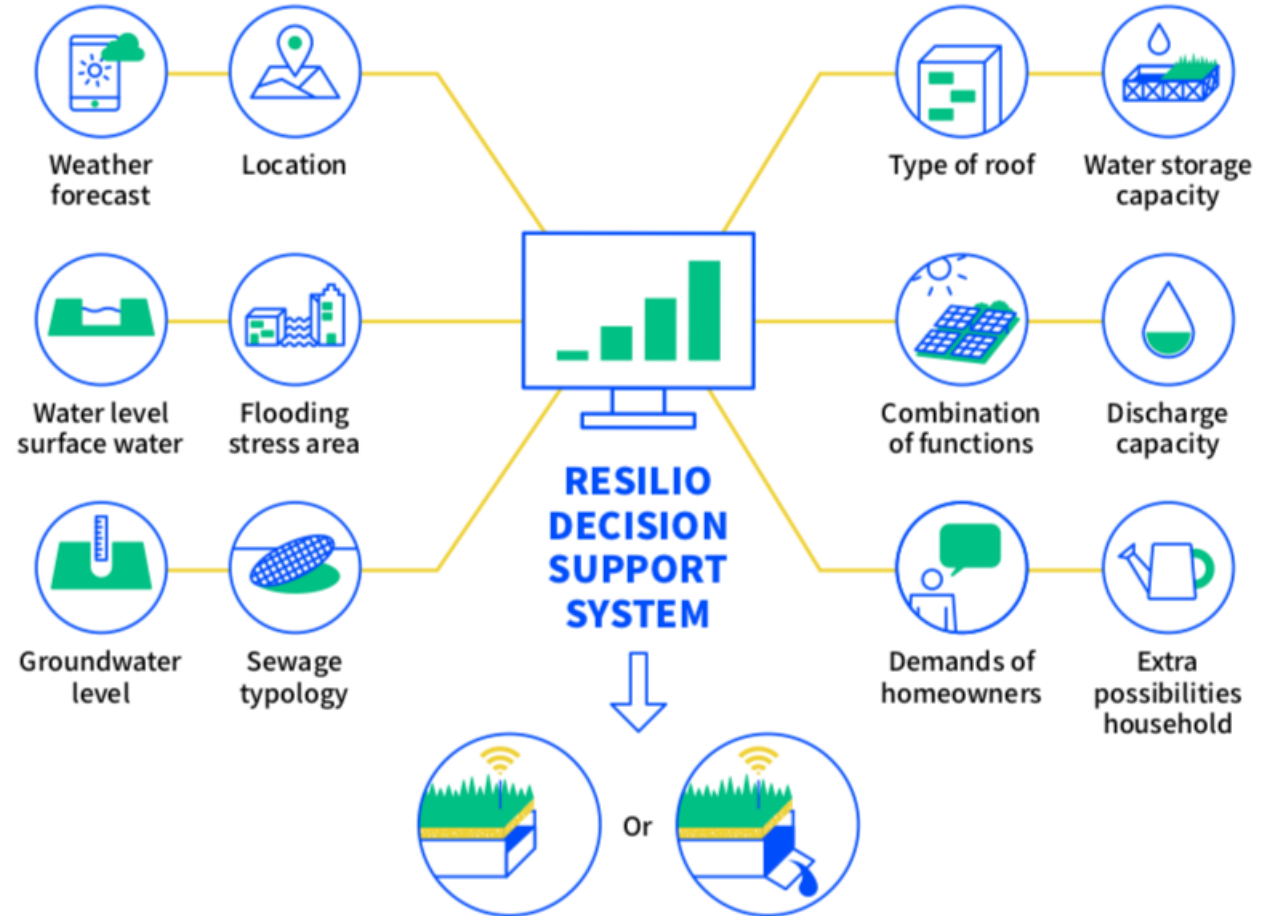


Figure 14: RESILIO Decision Support System (DSS): How does it work?

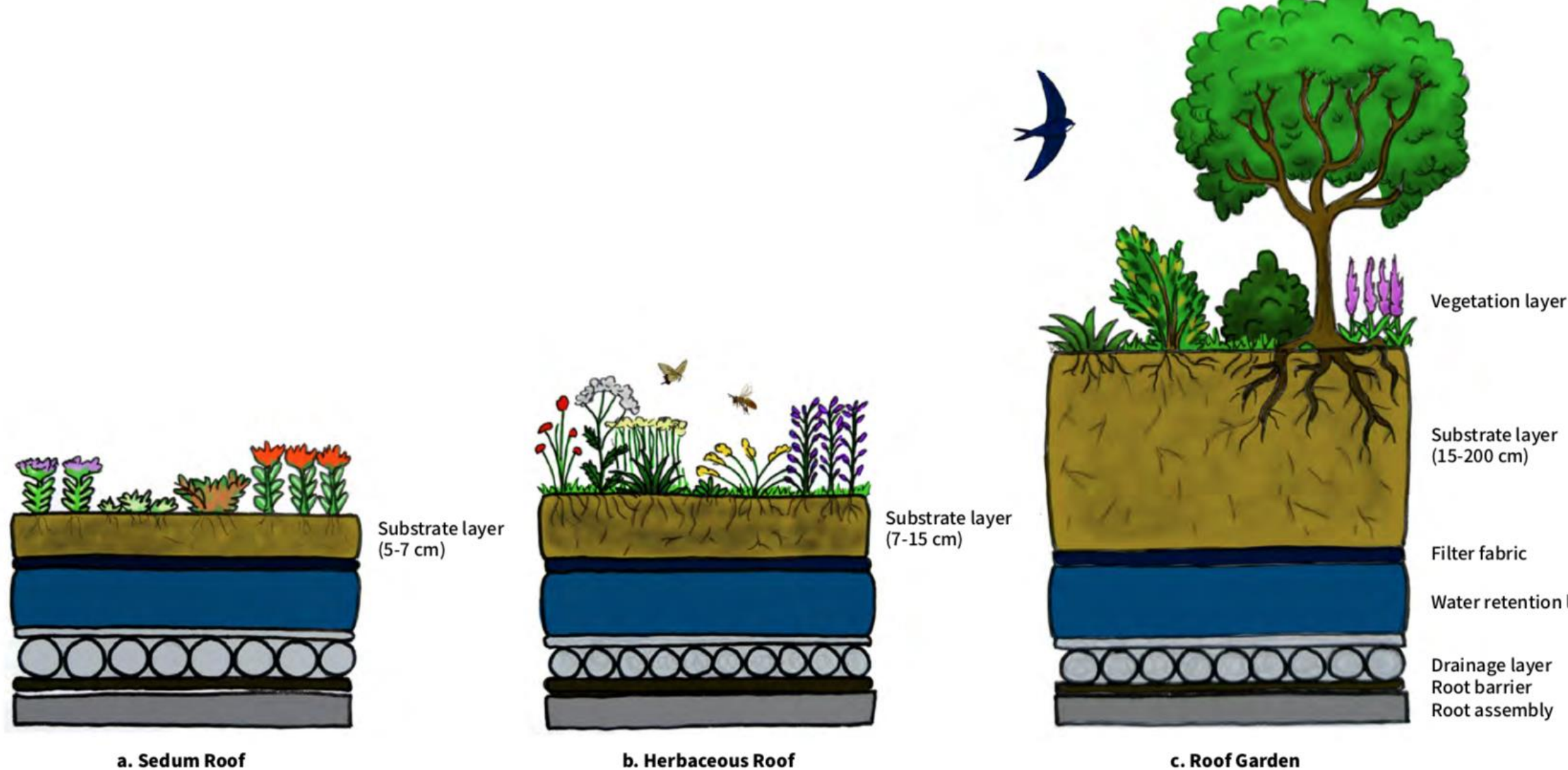


Figure 19: Example cross sections showing the different layers of three types of green roofs:

a. Sedum roofs have a vegetation layer with the succulent plant sedum and mosses. These roofs require only a shallow substrate as sedum can withstand long periods of drought and exposure to sun.

b. Herbaceous roofs usually have a combination of mosses, sedum, and many species of herbs which require a more constant amount of water and a deeper substrate.

c. Roof gardens have a deep substrate depth, starting at 15 cm. They can host shrubs and even small trees. They are often multifunctional, meaning that they can also be used for recreational purposes and to locate solar panels.



3. CONCEPTUALISING PATHWAYS FOR CHANGE



4. TACKLING TECHNICAL ISSUES: RESILIO WATERPLATFORM



5. DOING RESEARCH

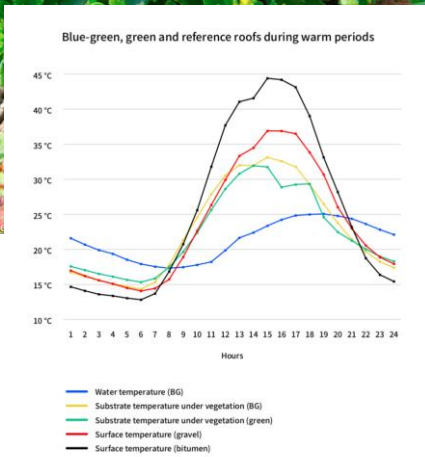


Figure 38. Hourly averages of measured temperatures (°C) during the three warm periods (4-16 June, 18-27 July, 6-10 September 2011) for the research locations in Amsterdam's Oosterparkbuurt

Resilio is an example of City Science addressing an Urban Challenge

7. IMPLEMENTATION STRATEGY: PROCUREMENT AND GRANT SCHEME



8. BEING PRESENT IN THE NEIGHBOURHOOD

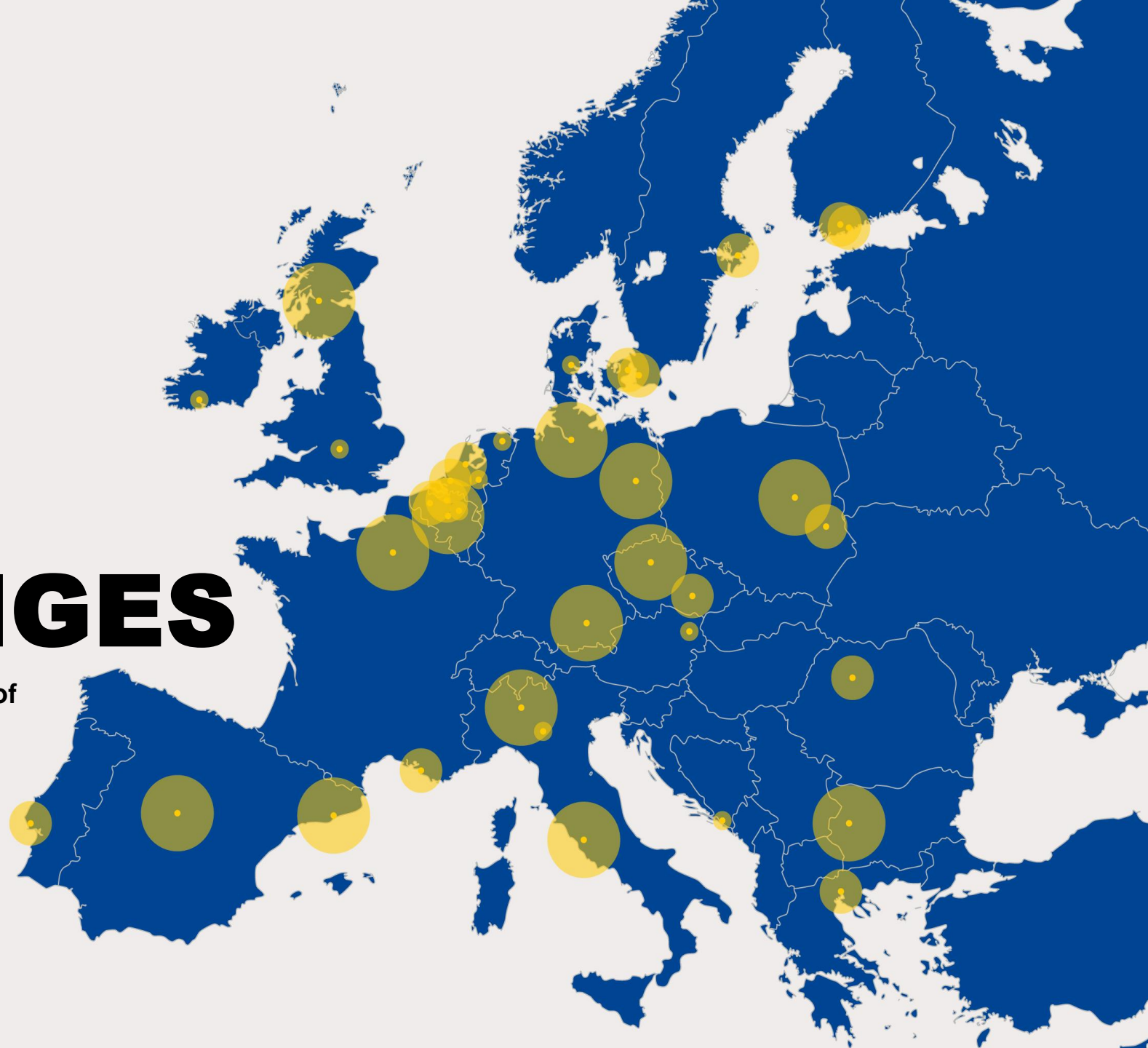




City Science Initiative, 2021

CITY SCIENCE FOR URBAN CHALLENGES

Pilot assessment and future potential of
the City Science Initiative
2019 – 2020





European Commission DG's

JRC

DG Research & Innovation

DG REGIO

DG CLIMA

DG CNECT

DG ENER

DG ENV

DG GROW

DG MOVE

EASME

The screenshot shows the Safari browser window displaying the website ec.europa.eu. The page title is "City Science Initiative | JRC Science Hub Communities". The main content area features a blue header with the European Commission logo and the text "JRC SCIENCE HUB COMMUNITIES The European Commission's science and knowledge service". Below the header is a navigation menu with links: "About Us", "Research", "Knowledge", "Working With Us", "Procurement", "News & Events", and "Our Communities". The main content area is titled "City Science Initiative" and includes a "Login Into ECAS" button and a "Request group membership" button. A large banner image shows a stylized cityscape with the text "CITIES THE CITY SCIENCE INITIATIVE". Below the banner is a "Welcome to the City Science Initiative" section with a paragraph of text and a call to action: "Are you a researcher interested in bridging the science-policy gap? CONTACT US!". A sidebar on the left contains a "City Science Initiative" menu with links: "Home", "About", "Workshops", "News", "Useful Links", "CSI Themes", "Library", "LinkedIn group", "CSI on ResearchGate", and "Newsletter".

Stakeholders:

EUROCITIES

100 Resilient Cities

Covenant of Mayors

European Network of Living Labs (ENoLL)

European Regions Research and Innovation Network (ERRIN)

European Union Knowledge Network (EUKN)

UN Global Sustainability Index Institute Foundation (UNGSII)

ICLEI

International Urban Cooperation

JPI Urban Europe

ThinkNature

UNICA: Network of Universities from Capitals of Europe

URBACT



Which challenges for city science do you recognize in your own city or organization?

Challenges:

- Facilitate governance and finance of City Science
- Design learning and communication between science and policy
- Develop the research paradigm for City Science
- Improve data exchange
- Enhance agency of city

Which recommendations would you like to see implemented and why?

Recommendations:

- Improve relevancy of EU research for city challenges
- Translate findings of EU research into applicable solutions; improve integration on local level
- Solve the lack of access to data for fact-based policies
- Improve cooperation between cities, universities and commission



Letter from Mayors

Given the societal urgency to find innovative approaches and solutions to the challenges European citizens will face in the coming years, we believe that there is a need to continue the City Science Initiative as a learning platform for urban research.

We can assure you that our cities stand ready to support the next phase of the CSI.

**Marie-Christine
Lemardeley**
Deputy Mayor
of Paris

Emil Boc
Mayor of
Cluj-Napoca

**Konstantinos
Zervas**
Mayor of
Thessaloniki

Luca Vecchi
Mayor of
Reggio Emilia

Almut Möller
State Secretary
of Hamburg

Femke Halsema
Mayor of
Amsterdam



**Response
European
Commissioners**

To assist us in these efforts, we are heartened to see evidence of the outreach activities of the CSI network as a discussion forum and peer learning processes platform, bringing together different actors in cities' governance arrangements.

Yours sincerely,

Maroš Šefčovič

Vice-President European Commission
Interinstitutional Relations and Foresight

Mariya Gabriel

European Commissioner
Innovation, Research, Culture,
Education and Youth

Elisa Ferreira

European Commissioner
Cohesion and Reforms



Hashim Sarkis

Values for Survival

Pandemic Lockdown 2020- 2021:
exploring, realizing, analyzing, making

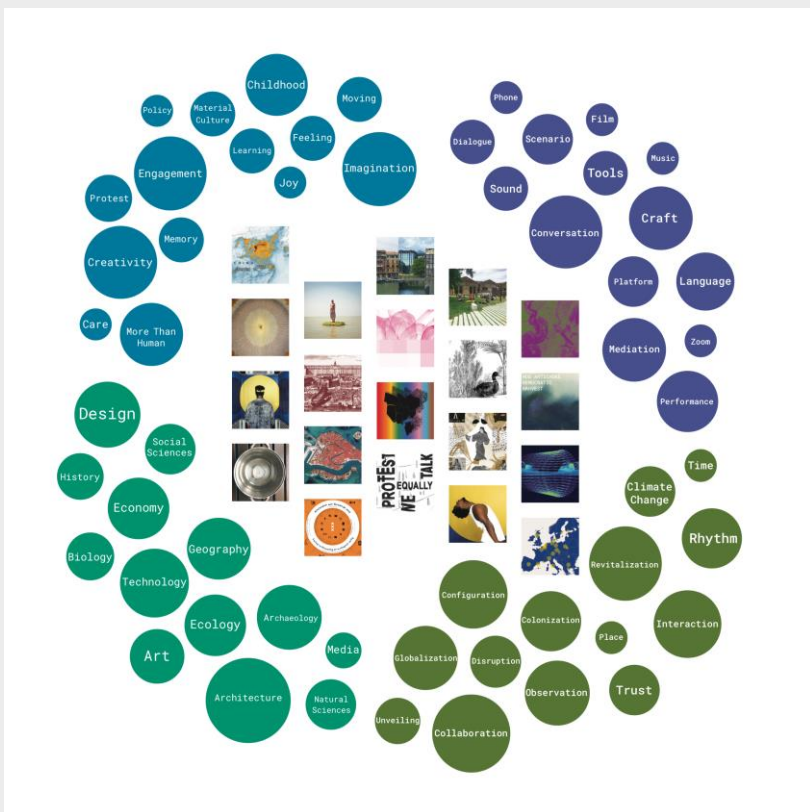


<https://openresearch.amsterdam/en/page/52688/values-for-survival>



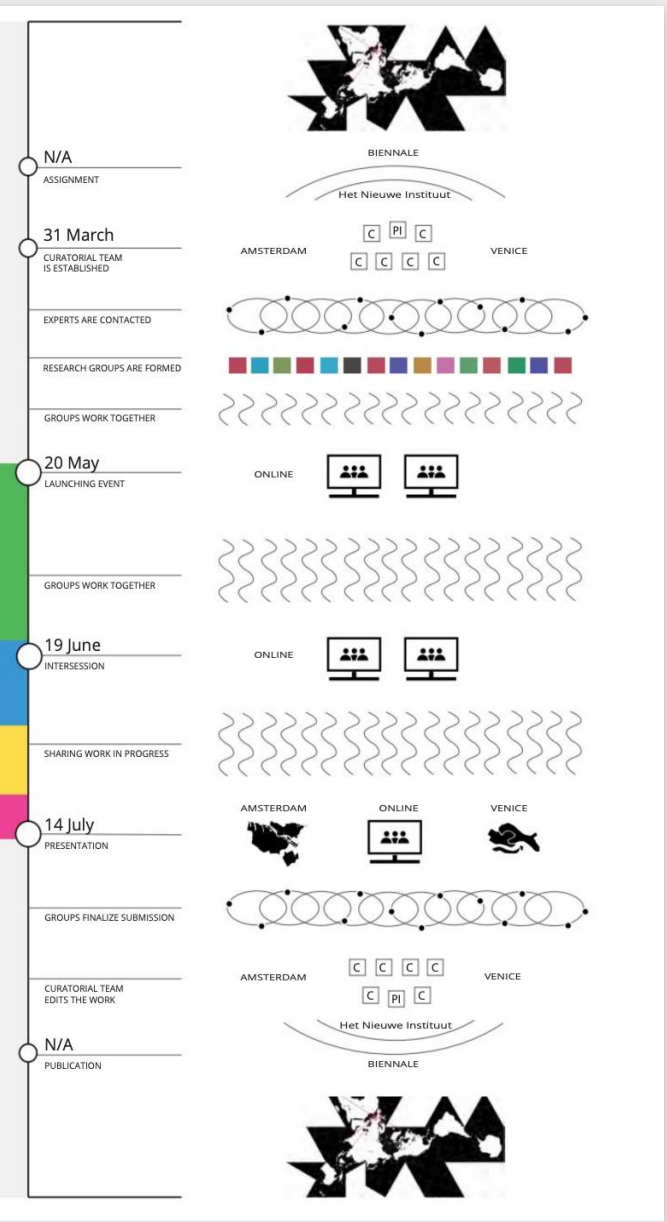
Cahier 2:

Exploratorium is a methodology for international group working on local urban challenges



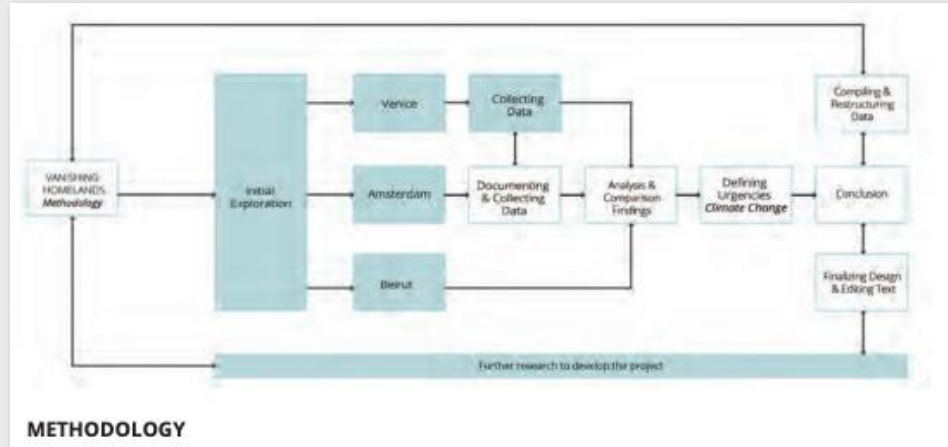
13364
**VIDEO
 MINS**
 2249
EMAILS
 1911 **TEXT**
WHATSAPP
 195 **VIDEO**
MEETINGS

Data visualization: Methodology





Teams invent their own **specific methodologies for collaboration**



Methodology

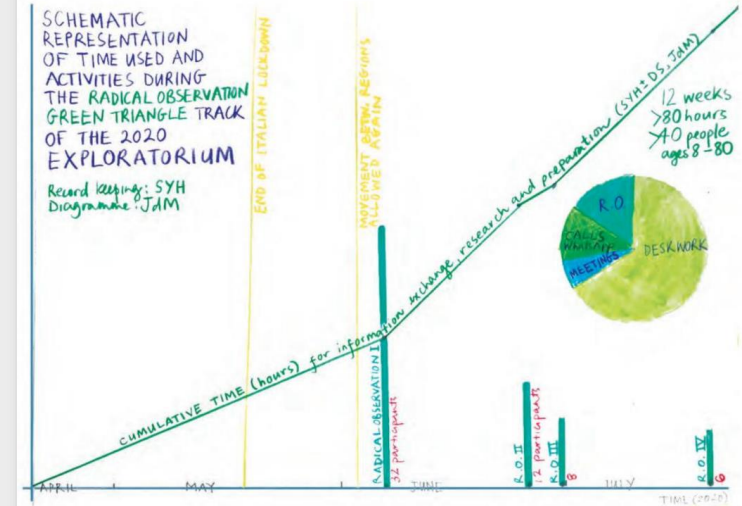
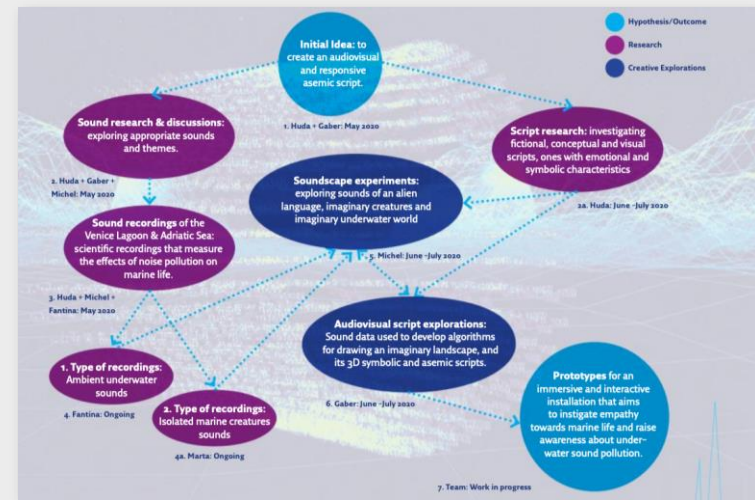
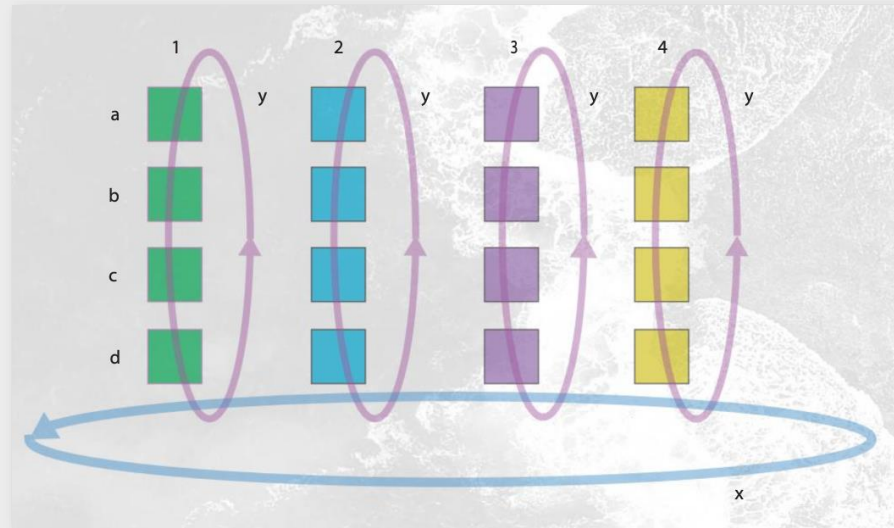
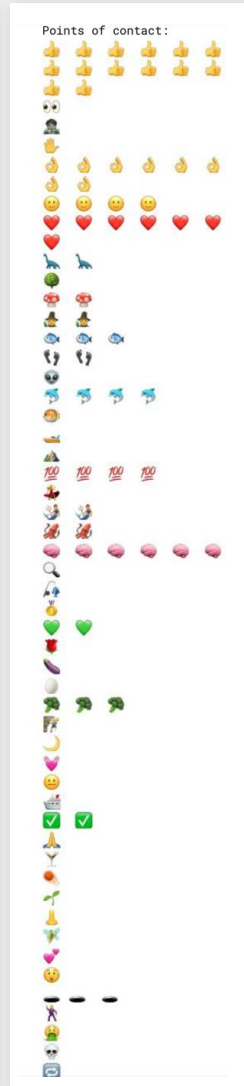
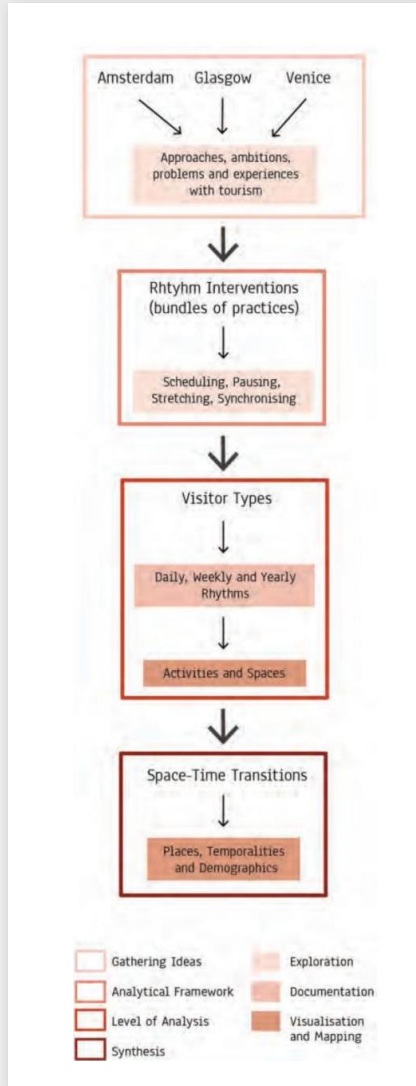


Diagram of the project methodology by Jane da Mosto ©WaV

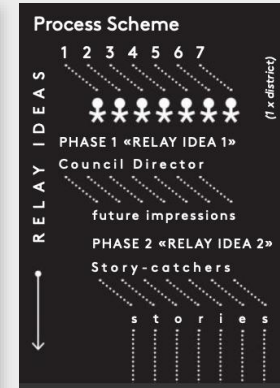
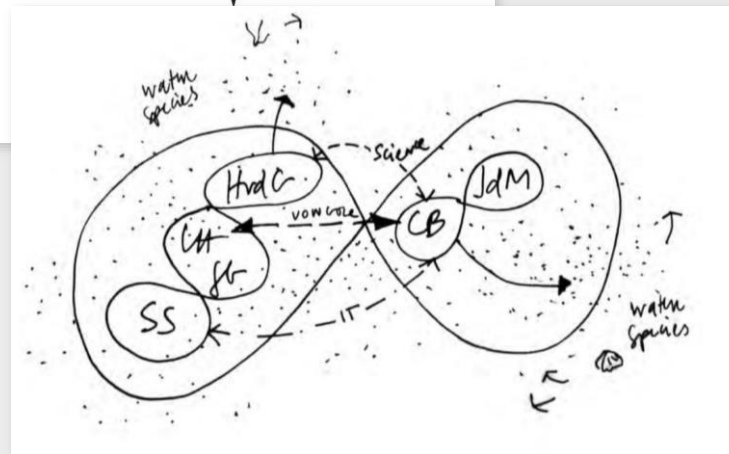
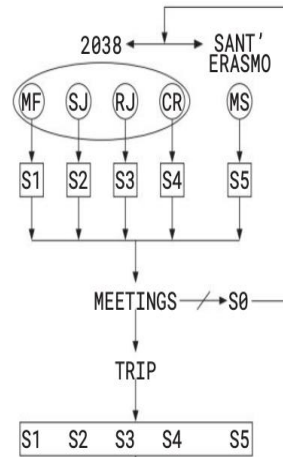




Teams invent their own **specific methodologies** for collaboration

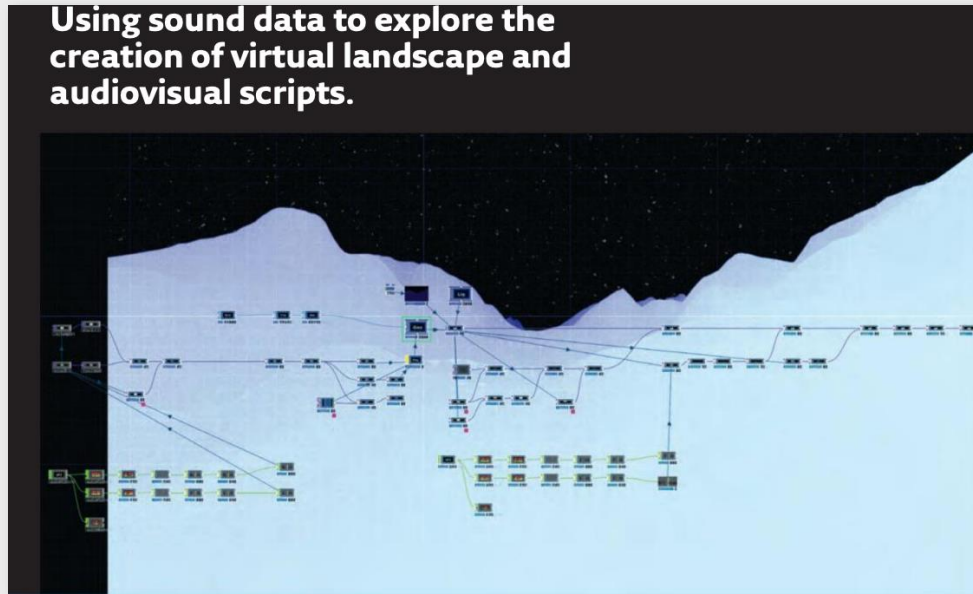
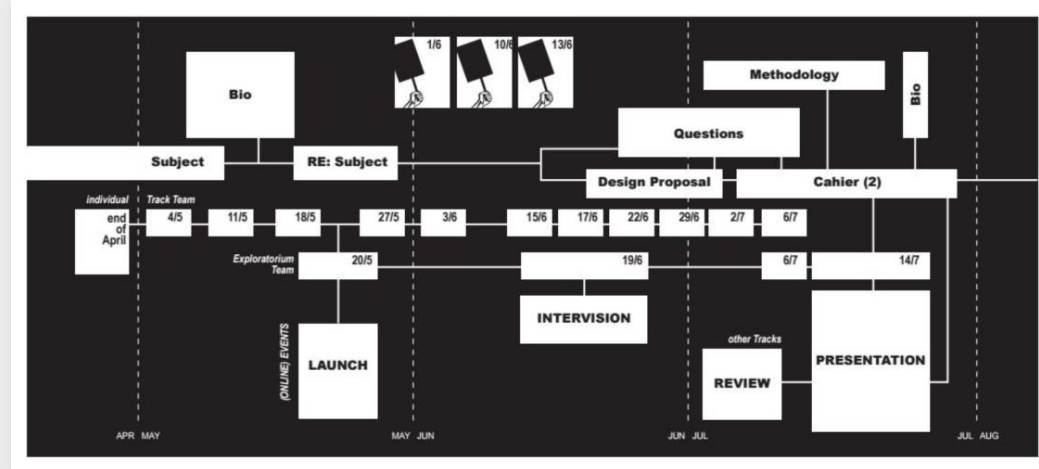


Towards a system of stories - methodology





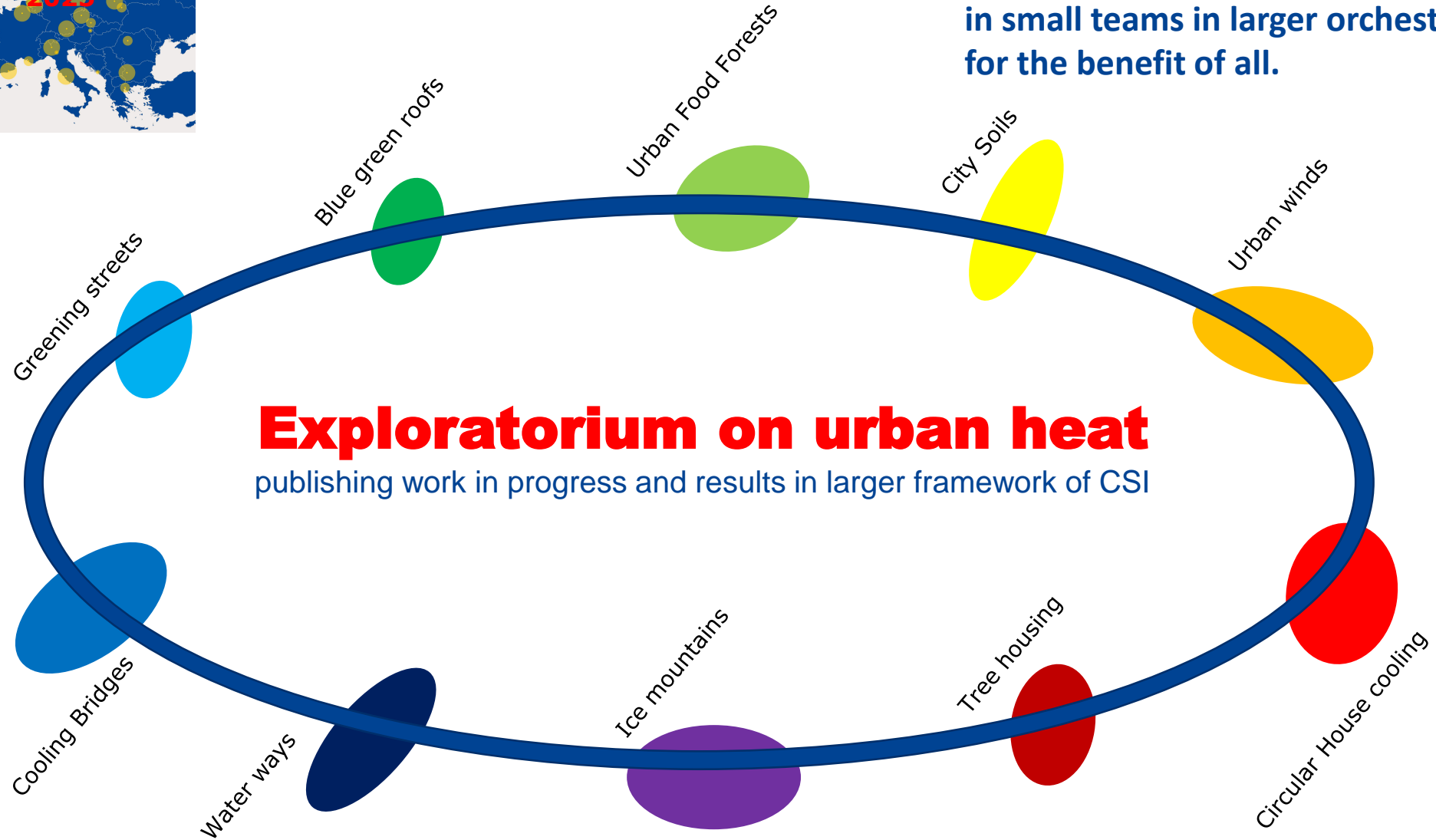
Teams invent their own **specific methodologies** for collaboration



CSI
2022 - 2025



Example: Exploratorium on Urban Heat between different EU cities who engage in small teams in larger orchestration for the benefit of all.



Exploratorium on urban heat

publishing work in progress and results in larger framework of CSI

Greening streets

Blue green roofs

Urban Food Forests

City Soils

Urban winds

Cooling Bridges

Water ways

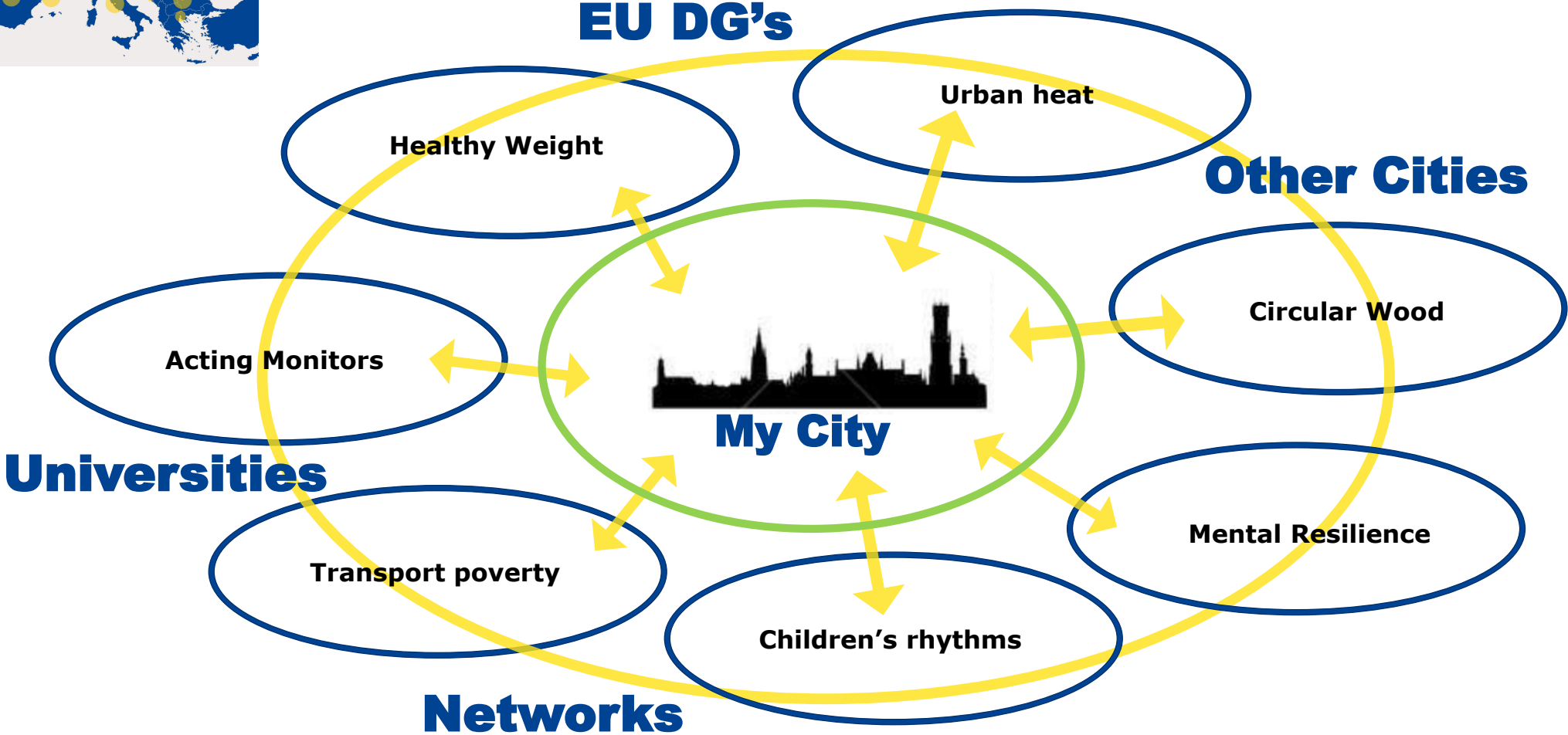
Ice mountains

Tree housing

Circular House cooling



A city can participate in the small teams of different exploratoria to enhance the benefit of European interaction for its city while contributing to all





Urban Regional Research Ecology

On the **local interaction** between
**science and government, research
and execution, theory and practice**
in times of **accelerating and
accumulating global crises.**



- Caroline Nevejan (CSO Amsterdam)
- Christian Fernando Iaione (Reggio Emilia)
- Panagiotis Bamidis (Thessaloniki)
- Thomas Jacob (Hamburg)
- Anne-Sophie Hollstein (Paris)
- Jean-Charles Lardic (Marseille)

Amsterdam Antwerp Barcelona Berlin Brno Brussels Cluj-Napoca
Copenhagen Cork Dubrovnik Espoo Gent Glasgow Groningen
Hamburg Helsinki Leuven Lisbon Lublin Madrid Malmö Marseille
Milan Munich Nijmegen Oxford Paris Prague Reggio Emilia Rome
Rotterdam Sofia Stockholm Thessaloniki Vejle Vienna Warsaw



Urban regional research ecology

- To enhance **resilience** of cities in transition
- To develop **methodologies** for cities in transition
- To facilitate **learning and collaboration** between cities
- To create **effective interfaces** for the European Commission
- To become a **sounding board** for the European Commission



Blue prints for Messy Cities

Structural reflection on action

- Merging on- and offline realities
- Cultural orchestration
- Rhythm in interactions
- Iteration in research design

Incommensurability

- Different kinds of knowledge
- Different kinds of disciplines
- Different kinds of stakeholders
- Different kind of experts
- Different kinds of engagement

In need for new methodologies for handling urban challenges



A variety of Emerging Communities of Practice

- **Theory and practice based**
(reflexive)
- **Sharing a sense of urgency**
(vital information)
- **Accepting responsibility**
(crucial network)
- **Committed to shared values for design**
(value sensitive design)



Accelerating and accumulating crises

1. In an **acute crisis** certain actors or institutions gain special authority to be able to take decisions quickly, such as 'lockdown' measures
2. In a **chronic crisis**, as when the pandemic changed after the first wave, there is more room for doubt and democracy.
3. The **predicted crisis**, such as the climate crisis, is highly politicized from the beginning.



National & international handling of Science and policy in times of crises

NL-WRR: handle crisis on national level

- Adaptation (learning capacity)
- Responsibility
- Multidisciplinarity
- Preparedness

EU Scientific Advisors about handling crisis from EU perspective

- Communicate uncertainty
- Be open and transparent
- Take a multidisciplinary approach
- Ensure a clear demarcation between science, advice and politics



Local handling of science and policy in times of crises

Urban regional research ecology

- Using **interdependence as a force for resilience**
- Based in **communities of practice**, built on mutual experience with each other's way of working, methods and techniques, relationships and networks
- **Values** direct policy and research processes
- Orchestrate relations which offer **efficient and effective synergy** in (un)expected ways
- To maintain a **transparent** urban regional research ecology that welcomes **newcomers** at all times



Values Urban Regional Research Ecology

**Sharing
research
for
democracy**

**Evidence-based
policymaking**

**Societal impact
in the city**

**Design for
Planet
People
Profit**



Dynamics Urban Regional Research Ecology

**Inspire
&
Advise**

**Connect
&
Collaborate**

**Facilitate
&
Implement**

**Document
&
Publish**

**Learn
&
Test**

**Collect
&
Organize**

**Include
&
Control**

**Just-in-time
&
All-the-time**



Organisation Urban Regional Research Ecology

Research capacity

in management,
organization

Formal agreements

between city &
universities

Structural collaborations

ateliers, centers,
institutes

Temporary collaborations

living labs, pilots,
projects

Data

harvest
aggregate, publish

Networking

different kinds of
knowledge

Catalysts

science,
innovation
business culture

Publish

relevant research
work in progress



Urban regional research ecology

| URBAN REGIONAL RESEARCH ECOLOGY My City | VALUES | | | DYNAMICS | | | | |
|---|----------------------|-----------------------|--------------------------|------------------------|-----------------------|----------------------|-------------------|-------------------------|
| Organisational | Research for society | Evidence based policy | Valorization of research | Inspiration and Advice | Connect & Collaborate | Facilitate & Control | Gather & Organize | Make public and Publish |
| Capacity in Management | ■ | ■ | ■ | | ■ | ■ | | |
| Formal Agreements | | ■ | ■ | ■ | ■ | ■ | | |
| Structural Collaborations | | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Projects and Programs | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Innovation Catalyst | ■ | ■ | | ■ | ■ | ■ | ■ | |
| Science Catalyst | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Business Catalyst | | ■ | ■ | ■ | ■ | ■ | | |
| Regional Catalyst | ■ | | | | ■ | ■ | ■ | |
| Expert Networks, workshops ateliers & labs | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Data organization | ■ | ■ | ■ | | | ■ | ■ | ■ |
| Publishing platforms (data, maps, openresearch) | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |



Contributions to an Urban Regional Research Ecology

| ACTIVITIES MUNICIPALITY | | | | | | ORGANIZATIONAL ELEMENTS for science & policy | ACTIVITIES UNIVERSITIES | | | | | | | |
|-------------------------|-----------------------|-----------------------------|-----------------------|---------------------------------------|---------------------|---|-------------------------|---------|----------|----------------------------------|----------------------------|--------------------|--------------|------------|
| EXPLORE | CHOOSE | EXECUTE | | | EVALUATE | | EDUCATION | | RESEARCH | | | | | |
| Doing research | Strategize & Evaluate | Execute Faciliate & Control | Innovate of practices | Just in Time research & policy-making | Facilitate Learning | | Bachelors | Masters | PhD's | Experiments/ Pilots/ Living Labs | Structural collabo-rations | National subsidies | EU subsidies | Incubators |
| | ■ | ■ | ■ | ■ | | Capacity in Management | | | ■ | | ■ | ■ | | |
| | ■ | ■ | ■ | | ■ | Formal Agreements | ■ | ■ | ■ | | ■ | ■ | | |
| ■ | ■ | | ■ | ■ | ■ | Structural Collaborations | | | | ■ | | | | |
| ■ | ■ | ■ | ■ | ■ | ■ | Projects and Programs | | | ■ | | ■ | ■ | | |
| | ■ | ■ | ■ | ■ | | Innovation Catalyst | | | ■ | | | | | |
| | | | ■ | ■ | | Science Catalyst | | ■ | ■ | | ■ | ■ | | |
| | | | ■ | ■ | | Business Catalyst | | | | | | | ■ | |
| | ■ | | | | | Regional Catalyst | | | | | | | | |
| ■ | | | | | | Expert Networks, workshops ateliers & labs | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | ■ | ■ | | ■ | | Data organization | | | ■ | | | | | |
| ■ | | | | ■ | ■ | Publishing platforms (data, maps, openresearch) | | ■ | ■ | ■ | ■ | ■ | ■ | |



Image: Cyprian Koscielniak



Thank you

<https://openresearch.amsterdam>