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City Blueprint Framework

Application of

# THE CITY BLUEPRINT FRAMEWORK

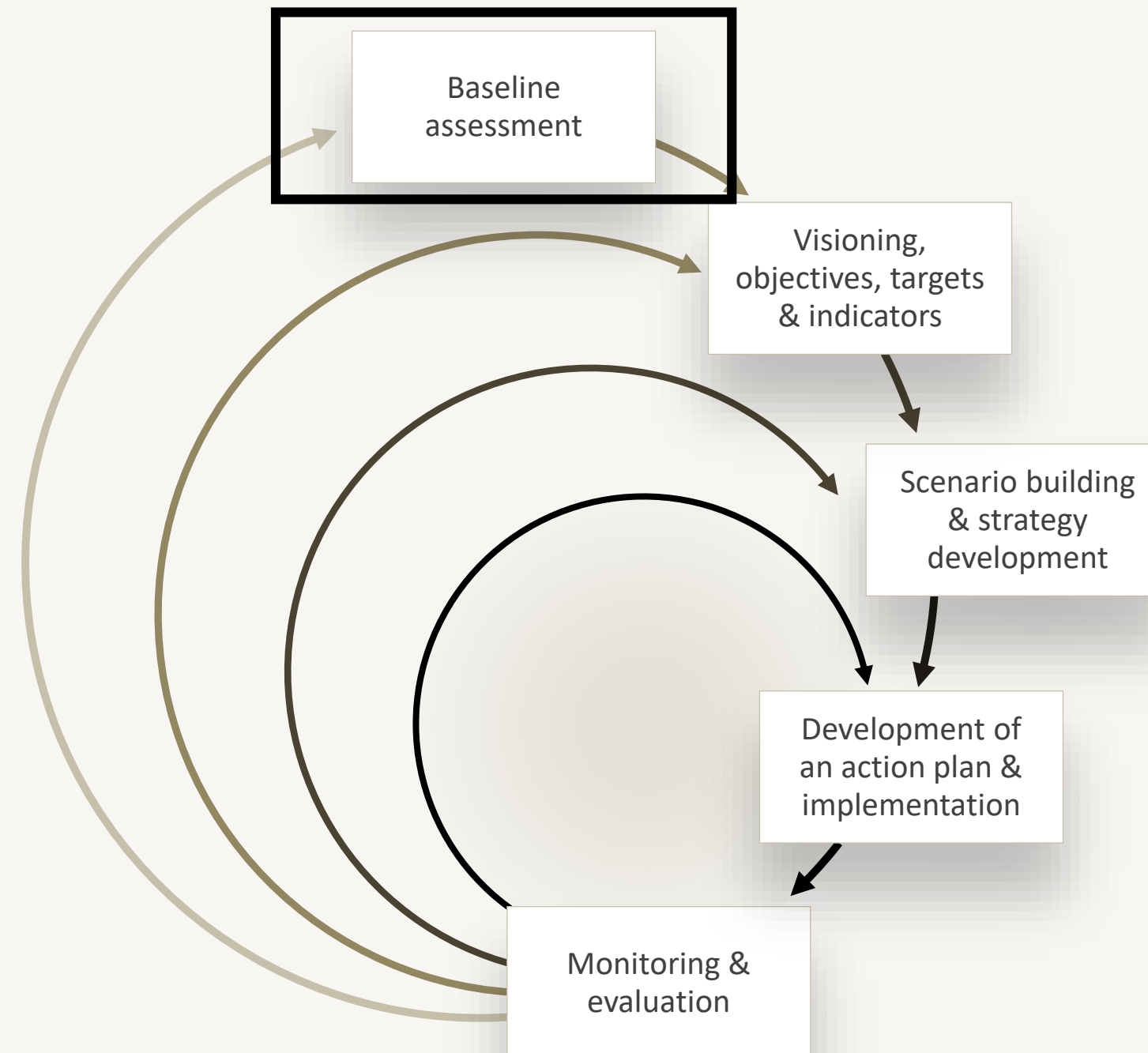in 125 municipalities and regions
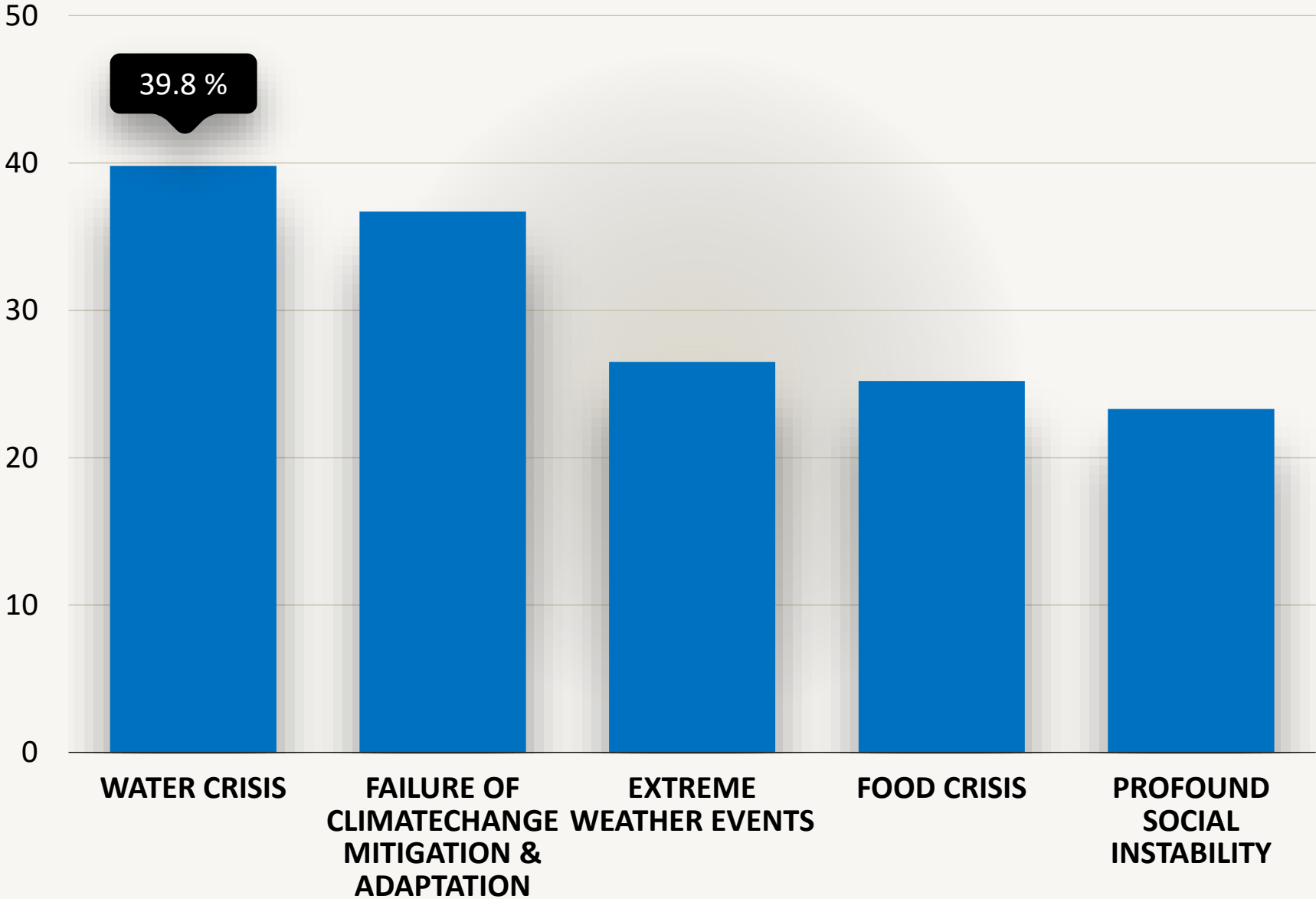
# Blue: City Blueprint®

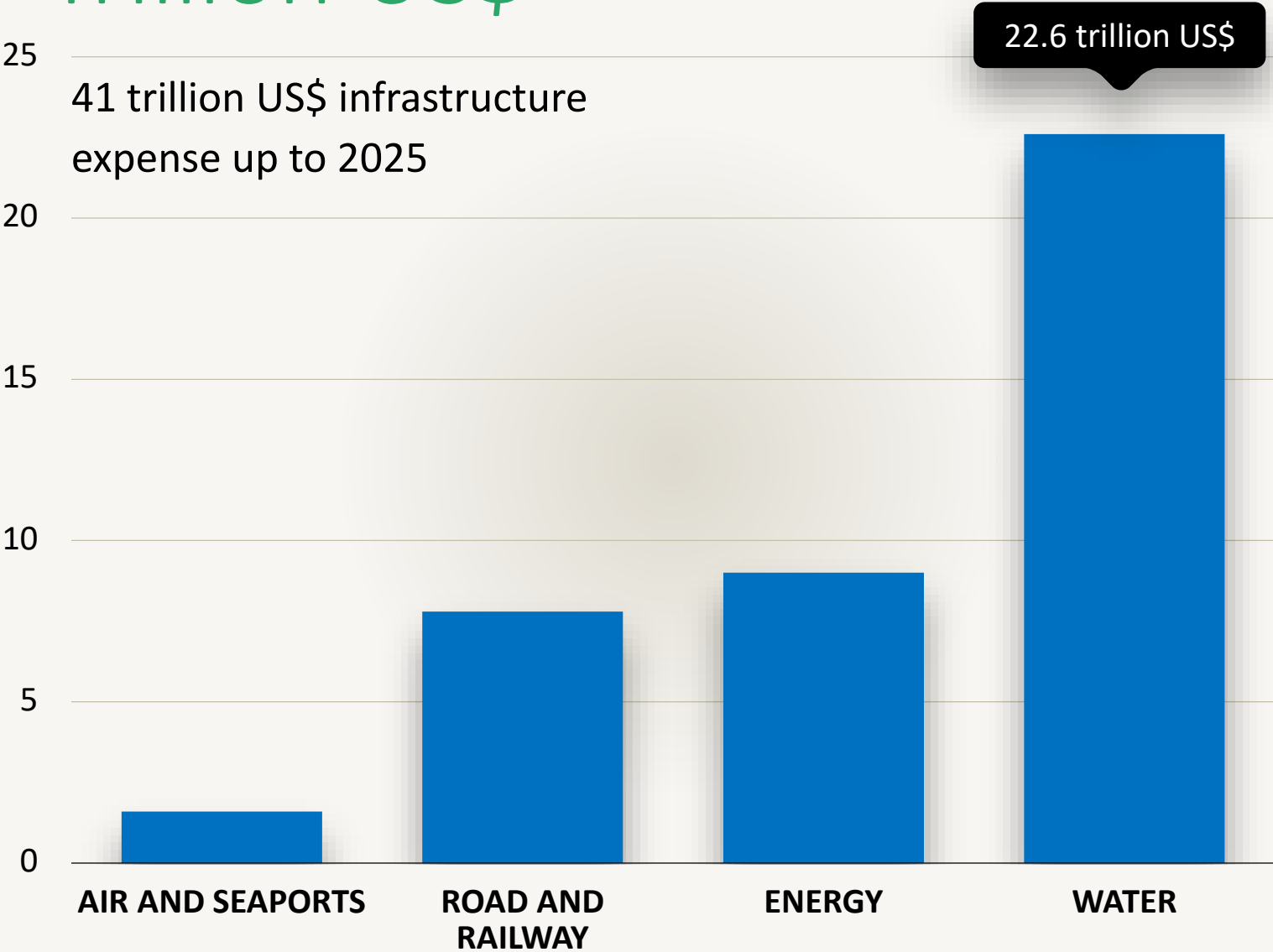Stef Koop    Kees van Leeuwen

KWR Water Research Institute

Baseline assessment

Visioning, objectives, targets & indicators

Scenario building & strategy development

Development of an action plan & implementation

Monitoring & evaluation

BlueSCities

POWER
A social response to global water issues.

KWR
Watercycle Research Institute

netwerch2o

EIP Water Action Group
Pooling resources – Innovating water

## Global risk for the next 10 years



39.8 %

Source: World Economic Forum, 2015

## Trillion US$

41 trillion US$ infrastructure expense up to 2025

22.6 trillion US$



Source: UNEP, 2013
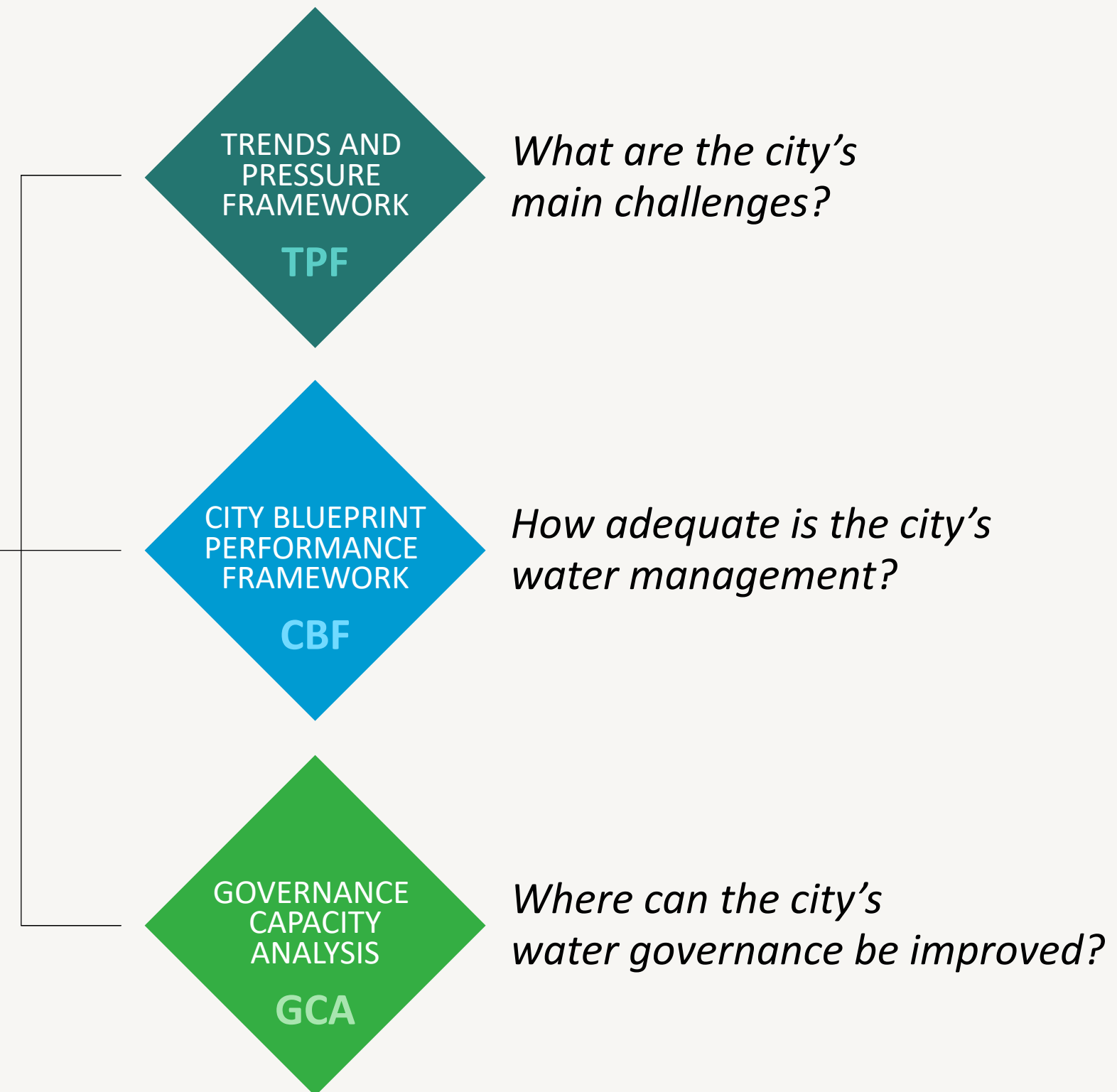
# Trends and Pressures Framework

**City Blueprint**

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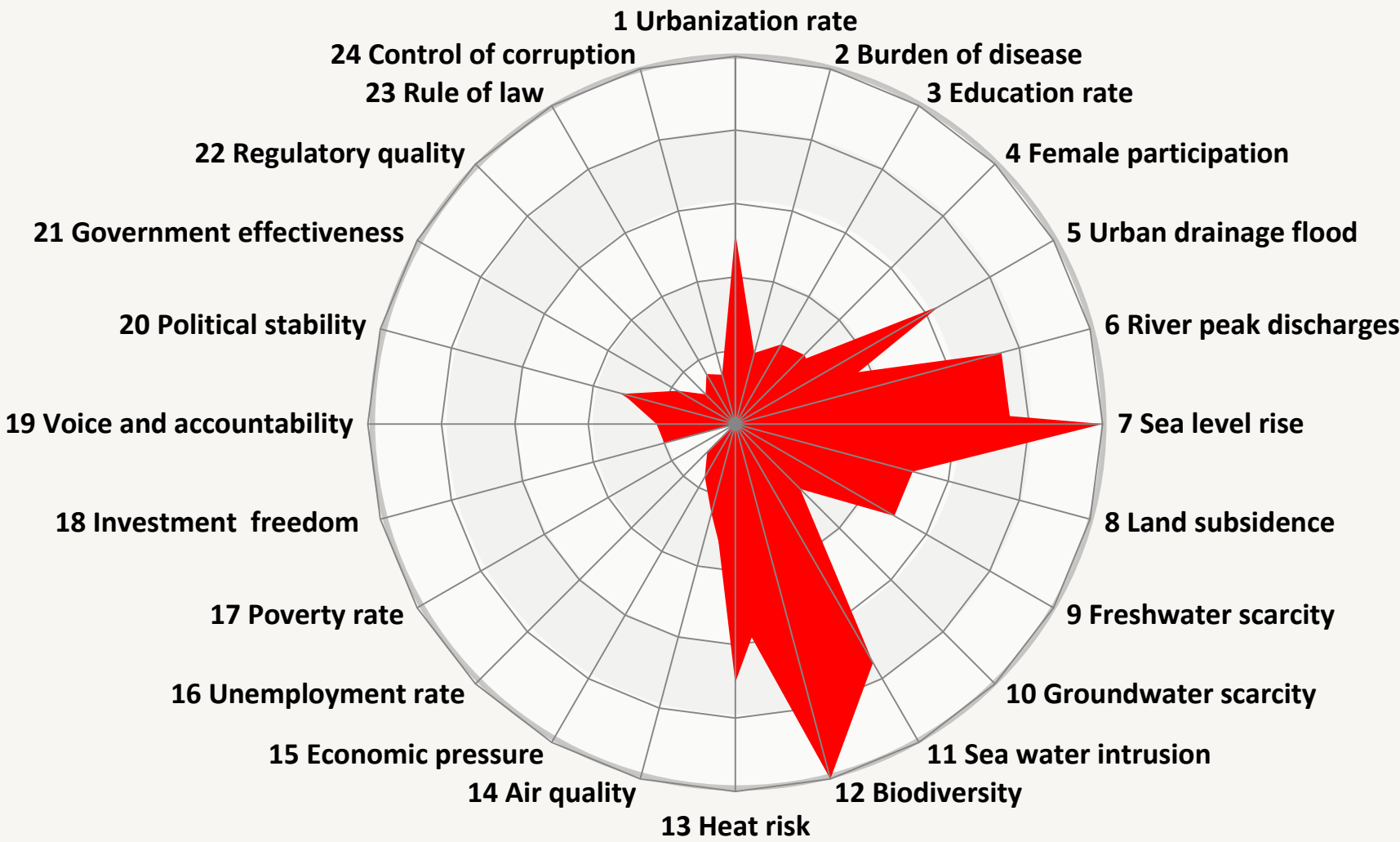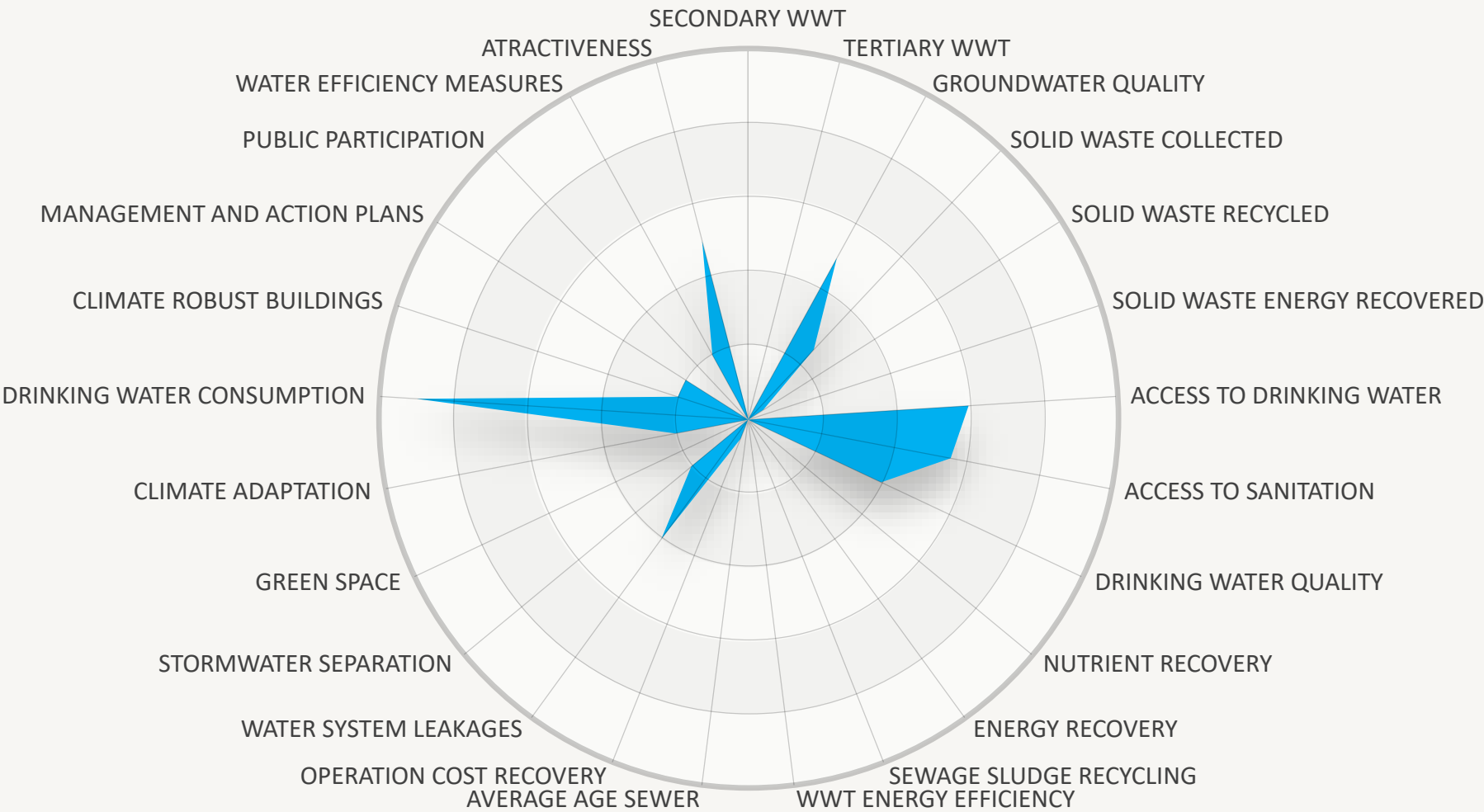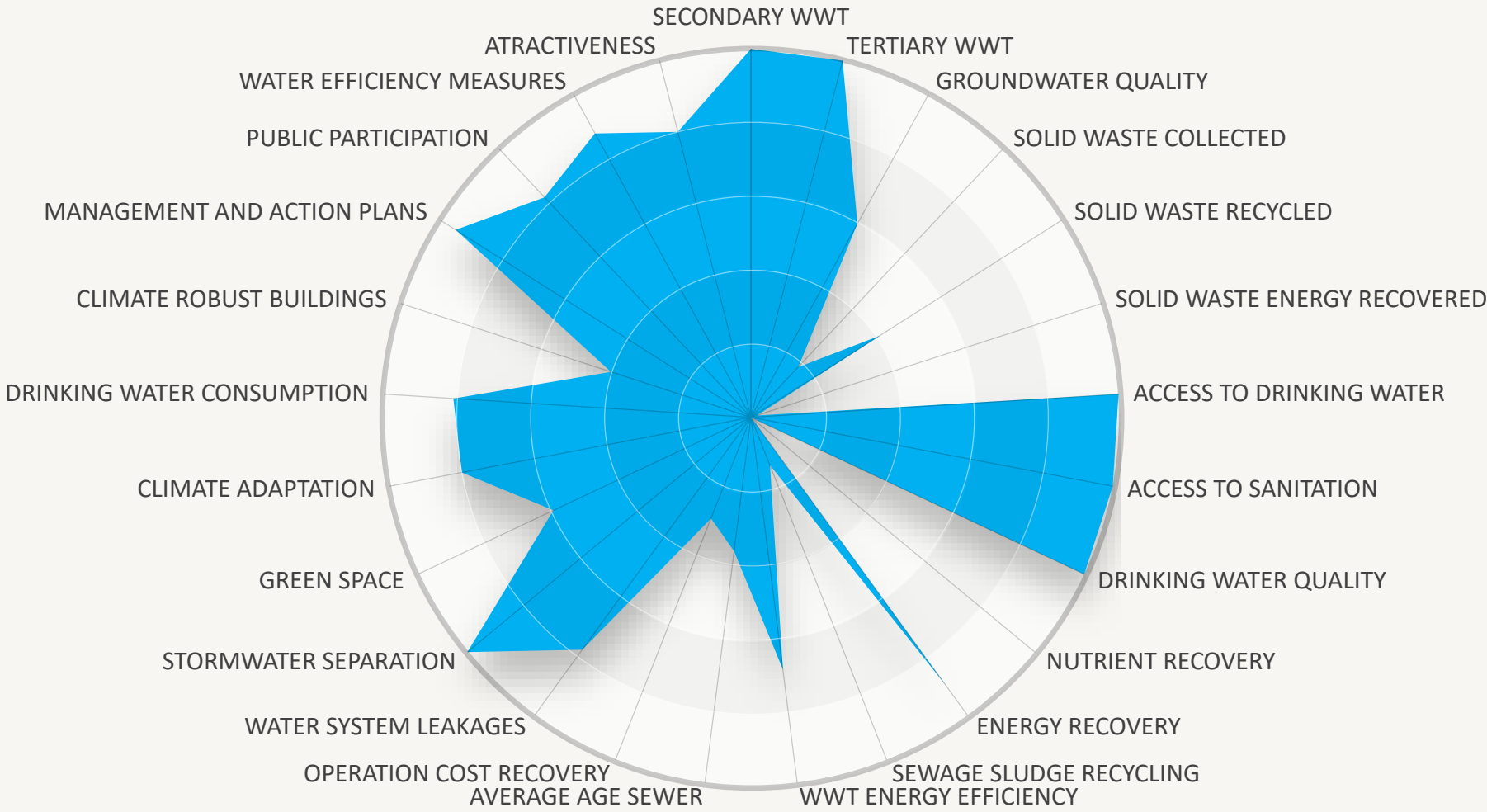| | |
|---|---|
| **Goal** | **Baseline assessment** of the sustainability of Urban Water Resources Management |
| **Indicators** | Twenty-four indicators divided over four categories:<br><br>1. Social<br>2. Environmental<br>3. Financial<br>4. Governance |
| **Data** | Public data or data provided by the (waste) water utilities and cities based on a questionnaire |
| **Scores** | 0 (no concern) to 10 (serious concern) |
| **TPI** | Trends and Pressures Index, the mean of 24 indicators which varies from 0 to 10 |
| **Stakeholders** | Water utility, water board, city council, companies, NGOs, etc. |
| **Process** | Interactive with all stakeholders involved early on in the process |

TPI 6.1

# Dar es Salaam

BCI 3.0

# Melbourne



Dar es Salaam radar chart indicators:
1 Urbanization rate
2 Burden of disease
3 Education rate
4 Female participation
5 Urban drainage flood
6 River peak discharges
7 Sea level rise
8 Land subsidence
9 Freshwater scarcity
10 Groundwater scarcity
11 Sea water intrusion
12 Biodiversity
13 Heat risk
14 Air quality
15 Economic pressure
16 Unemployment rate
17 Poverty rate
18 Investment freedom
19 Voice and accountability
20 Political stability
21 Government effectiveness
22 Regulatory quality
23 Rule of law
24 Control of corruption

Melbourne radar chart indicators:
1 Urbanization rate
2 Burden of disease
3 Education rate
4 Female participation
5 Urban drainage flood
6 River peak discharges
7 Sea level rise
8 Land subsidence
9 Freshwater scarcity
10 Groundwater scarcity
11 Sea water intrusion
12 Biodiversity
13 Heat risk
14 Air quality
15 Economic pressure
16 Unemployment rate
17 Poverty rate
18 Investment freedom
19 Voice and accountability
20 Political stability
21 Government effectiveness
22 Regulatory quality
23 Rule of law
24 Control of corruption

# City Blueprint Performance Framework

| | |
|---|---|
| **Goal** | **Baseline assessment** of the sustainability of Urban Water Resources Management |
| **Indicators** | Twenty-four indicators divided over seven categories:<br>1. Basic water services<br>2. Water quality<br>3. Wastewater treatment<br>4. Water infrastructure<br>5. Solid waste<br>6. Climate adaptation<br>7. Plans and actions |
| **Data** | Public data or data provided by the (waste) water utilities and cities based on a questionnaire |
| **Scores** | 0 (concern) to 10 (no concern) |
| **BCI** | Blue City Index, the geometric mean of 24 indicators which varies from 0 to 10 |
| **Stakeholders** | Water utility, water board, city council, companies, NGOs, etc. |
| **Process** | Interactive with all stakeholders involved early on in the process |

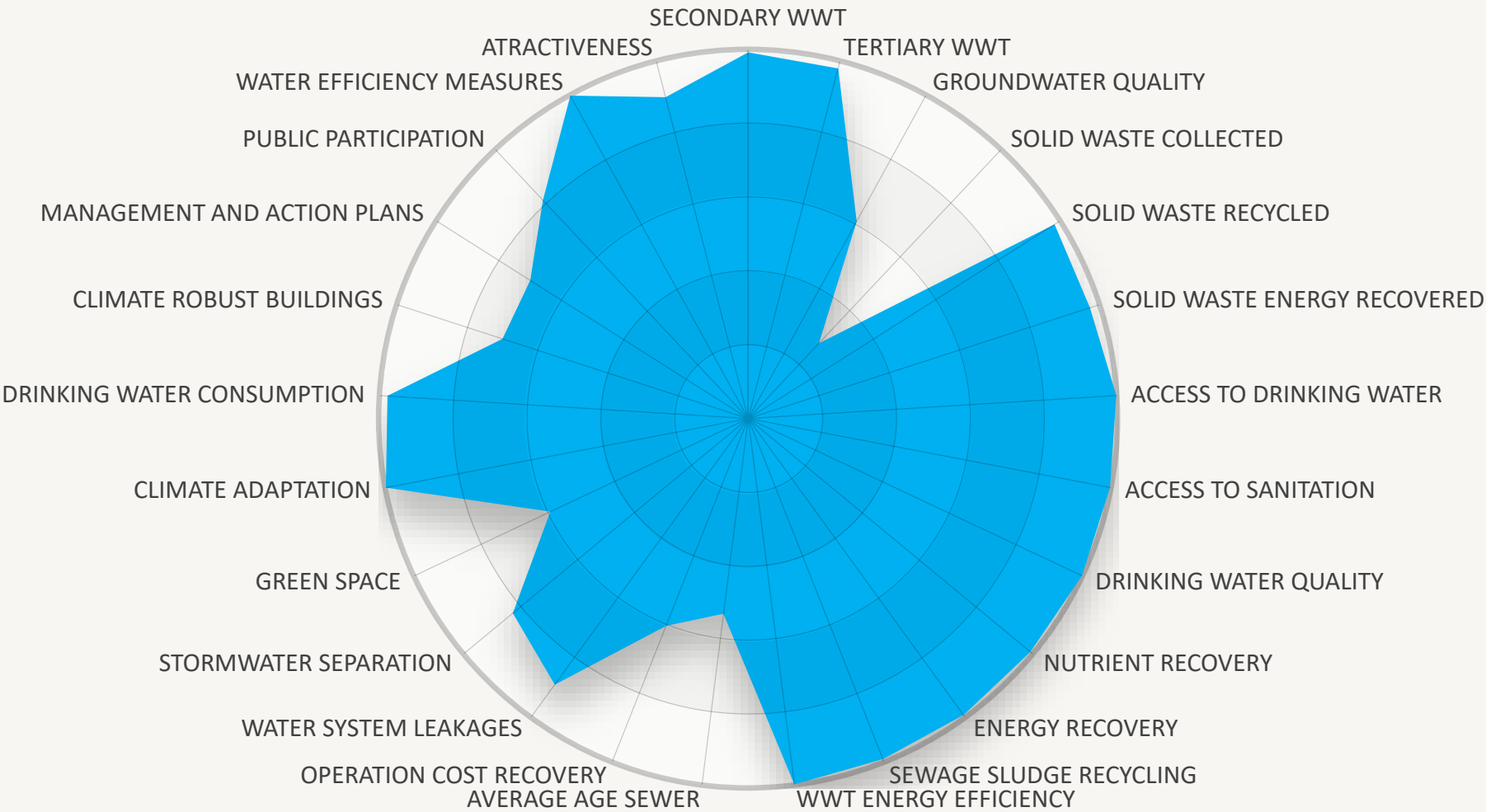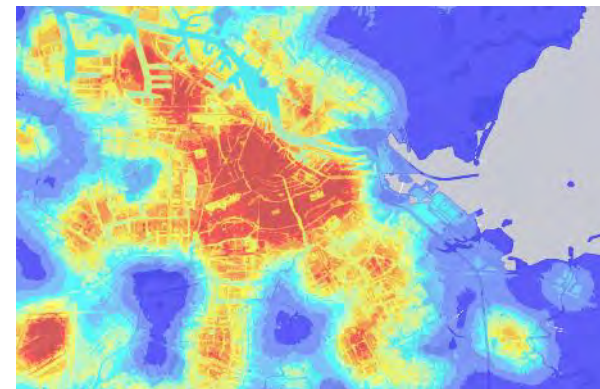# Step 2: What factors account for water wisdom?

# Governance Capacity Analysis

Centered around 5 water challenges:



FLOOD RISK     URBAN HEAT ISLAND     WATER SCARCITY     WASTEWATER TREATMENT     SOLID WASTE PROCESSING

|  | DIMENSIONS | CONDITIONS |
|---|---|---|
| GOVERNANCE CAPACITY ANALYSIS | KNOWING | 1  AWARENESS |
|  |  | 2  USEFUL KNOWLEDGE |
|  |  | 3 CONTINUOUS LEARNING |
|  | WANTING | 4 STAKEHOLDER ENGAGEMENT PROCESS |
|  |  | 5 POLICY AMBITION |
|  |  | 6 AGENTS OF CHANGE |
|  | ENABLING | 7 MULTI-LEVEL NETWORK POTENTIAL |
|  |  | 8 FINANCIAL VIABILITY |
|  |  | 9 IMPLEMENTING CAPACITY |

Governance Capacity Analysiss
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Knowing

| | |
|---|---|
| **1 AWARENESS** | 1.1. Community knowledge |
| | 1.2 Local sense of urgency |
| | 1.3 Behavioural internalisation |
| **2 USEFUL KNOWLEDGE** | 2.1 Information availability |
| | 2.2 Information transparency |
| | 2.3 Knowledge cohesion |
| **3 CONTINUOUS LEARNING** | 3.1 Smart monitoring |
| | 3.2 Evaluation |
| | 3.3 Cross-stakeholder learning |

Conserve

| Wanting | 4 STAKEHOLDER ENGAGEMENT PROCESS | 4.1. Stakeholder inclusiveness |
| | | 4.2 Protection of core values |
| | | 4.3 Progress and variety of options |
| | 5 MANGAMENT AMBITION | 5.1 Ambitious and realistic management |
| | | 5.2 Discourse embedding |
| | | 5.3 Management cohesion |
| | 6 AGENTS OF CHANGE | 6.1 Entrepreneurial agents |
| | | 6.2 Collaborative agents |
| | | 6.3 Visionary agents |

| Enabling | 7 MULTI-LEVEL NETWORK POTENTIAL | 7.1. Room to manoeuvre |
| | | 7.2 Clear division of responsibilities |
| | | 7.3 Authority |
| | 8 FINANCIAL VIABILITY | 8.1 Affordability |
| | | 8.2 Consumer willingness to pay |
| | | 8.3 Financial continuation |
| | 9 IMPLEMENTING CAPACITY | 9.1 Policy instruments |
| | | 9.2 Statutory compliance |
| | | 9.3 Preparedness |

# 4.2 PROTECTION OF CORE VALUES

**The extent to which stakeholders feel confident that their core values are not harmed in order to create a safe environment for building trust relationships**

| | | |
|---|---|---|
| **++** | **Maximal protection of core values** | Stakeholders are actively involved and co-creators of the end-result. There are clear exit possibilities and clear process procedures. All relevant stakeholders are engaged and a variety of options are assessed. The final choices are selected at the end of the engagement process |
| **+** | **Demand for commitment to early output** | Stakeholders are actively involved and expected to commit to early process outcomes. Hence some relevant stakeholders are discouraged to commit as not all options are being assessed and their contribution might be low at this stage. The stakeholders have influence on the end-result |
| **0** | **Suboptimal protection of core values** | Stakeholders are consulted or actively engaged for short periods. The number of options considered and influence on the end-result are limited. Exit rules are vague. Decisions mainly comply with the interests of the initiating party |
| **-** | **Low influence on end-result** | Stakeholders are by being informed or consultation meetings take place for already (fully) elaborated plans. The influence on the end-result is low and resistance may be invoked |
| **- -** | **Ignorance of core values** | Stakeholders are hardly engaged, not informed or only informed after decisions have already been made. There is often resistance for the implementation, distrust and lack of stakeholder participation and no clear communication |

**Approach**:

1. Literature study for each of the 27 indicators and each challenge

2. Fiftheen in-depth interviewees

3. After the interviews the participants can give feedback with respect to preliminary results





Interview Petra in Melbourne

Not secure | beta.tools.watershare.eu/gca/$/

watershare® Governance Capacity Analysis *beta*
version 1.0.1.562

**Stef Koop**
KWR Watercycle Research Institute
*Administrator*

Back

## 1.1 Community Knowledge *(Awareness)*

| Literature Review | Interviews | Feedback |

**Justification of score:**

There are some initiatives that enable people to contribute to flood risk management, e.g. people can volunteer by becoming a flood warden (Leicester City Council, 2017b), or by raising issues in ward meetings (Leicester City Council, 2014c). From a policy perspective the awareness is there, and flood risk is part of the core planning strategy (Leicester City Council, 2014a) and planning practices and to some extent integrated into other sectors.

**Score:**

| Code | Interviewee |
|------|-------------|
| 118 | Nigel Wright |
| 119 | Felicity Roos |
| 120 | Phil Thompson |
| 121 | Chis Garner |
| 122 | Adam Clarke |
| 123 | Martin Halse; Ramila Patel; Neil Hamilton-Brown |
| 129 | Peter Flavel; Vicky Salloway |

| n/a | No Score | No score has been determined for this indicator |

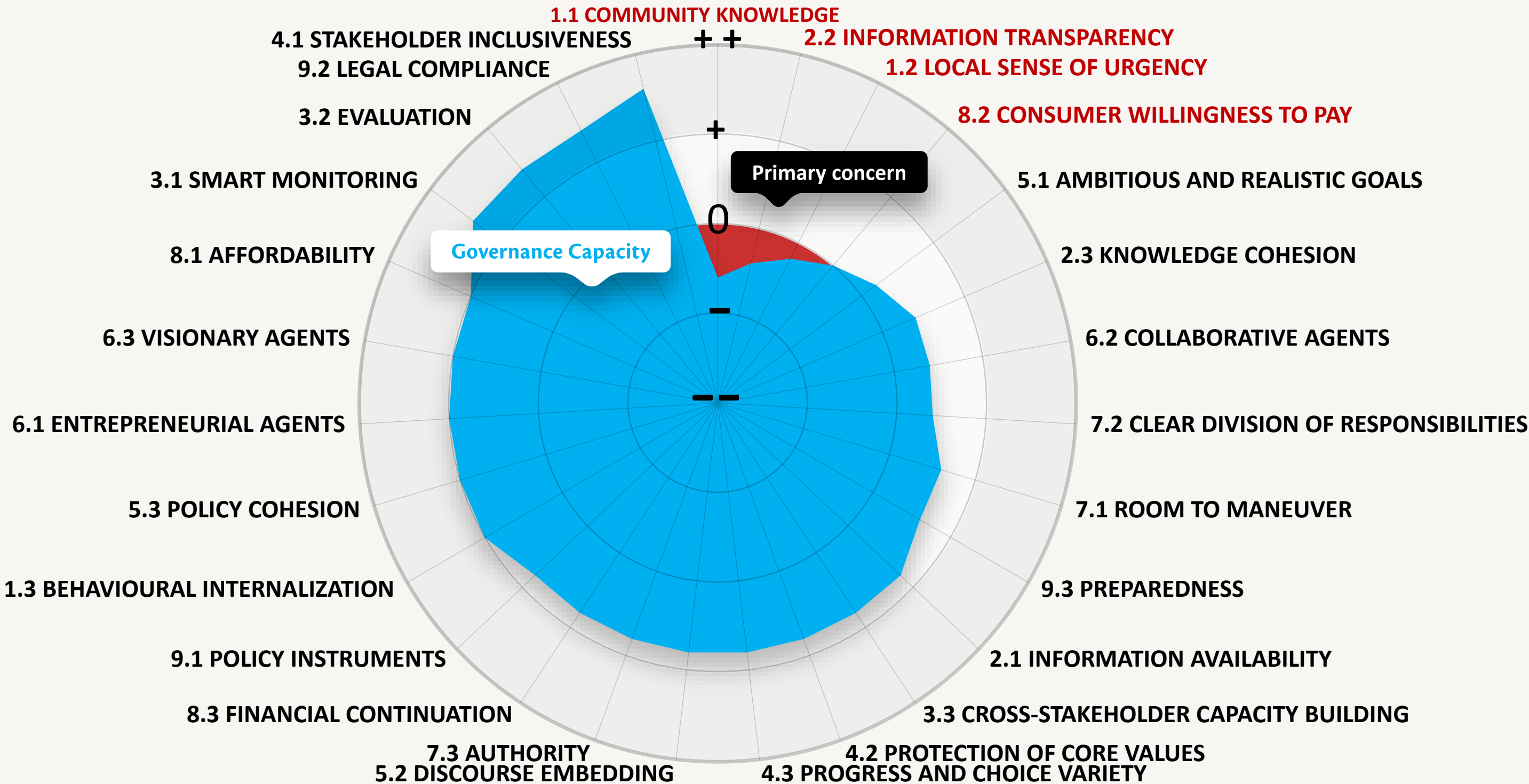| ++ | Balanced awareness | Nearly all members of the community are aware of and understand the actual risks, impacts and uncertainties. The water challenge is addressed the local level. Local communities and stakeholders are familiar with or are involved in the implementation of adaptation measures |

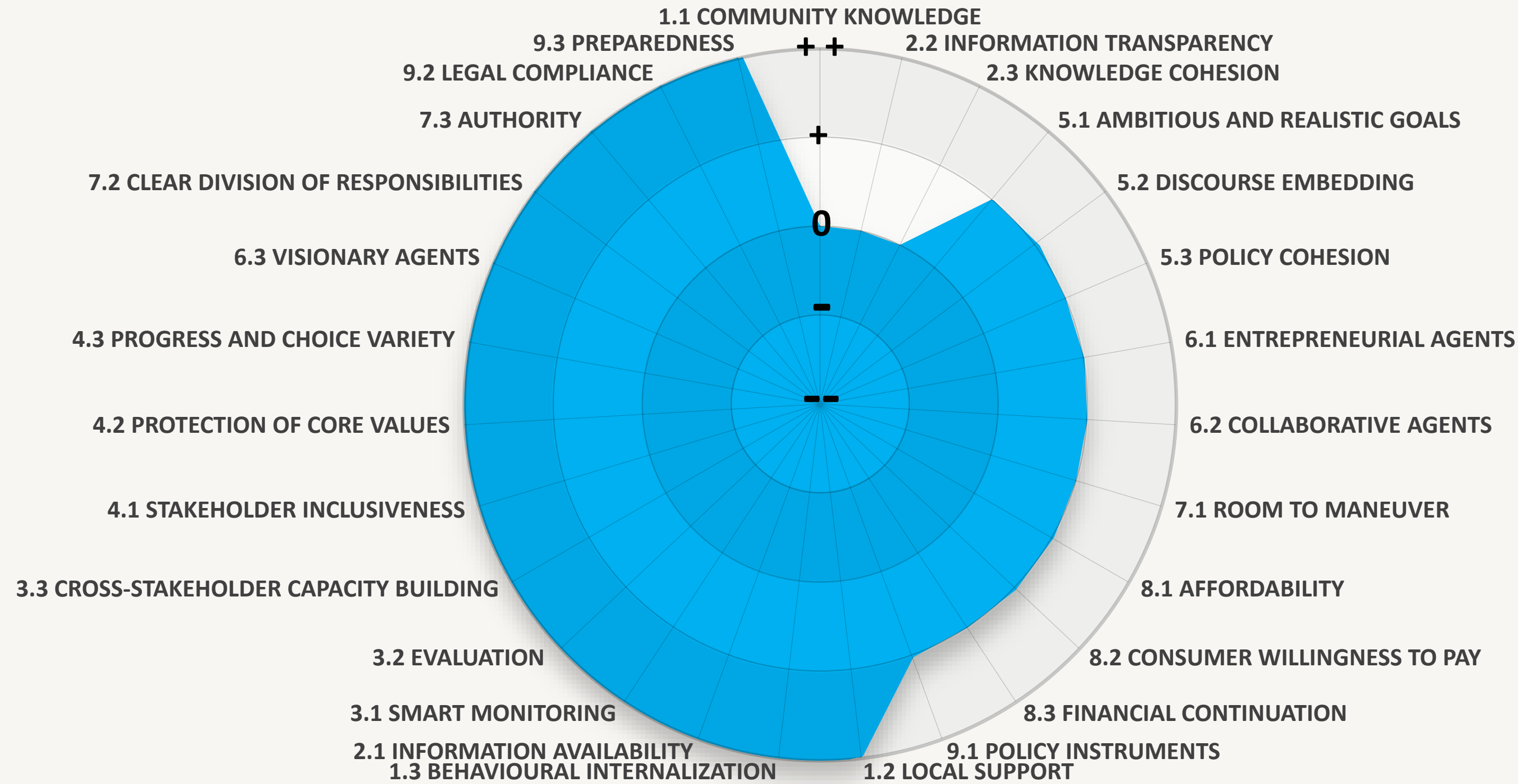| + | Overestimation | The community is knowledgeable and recognize the many existing uncertainties. Consequently, they often overestimate the impact and probability of incidents or calamities. The water challenge has been raised at the local political level and policy plan may be co-developed together with local communities |

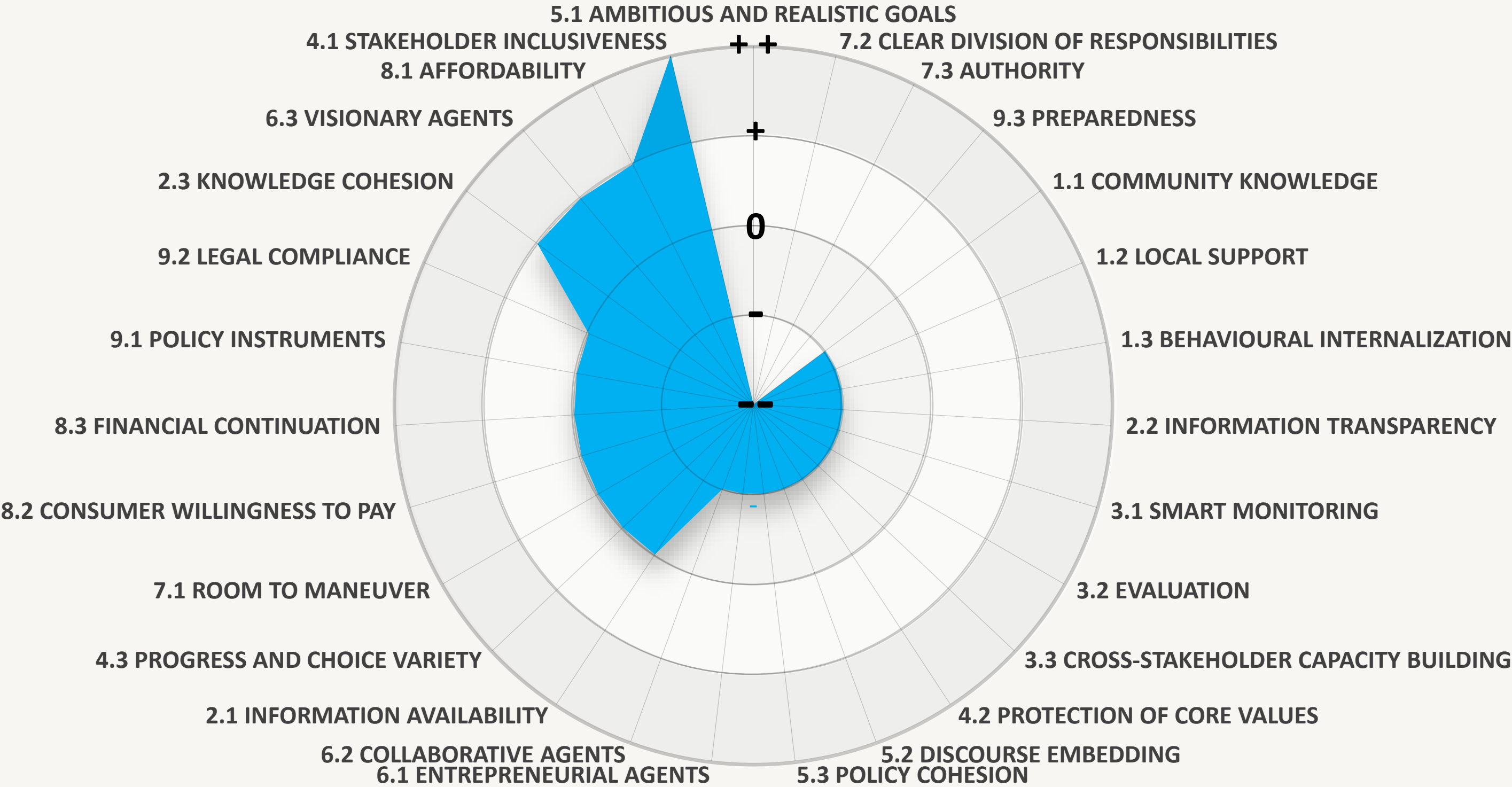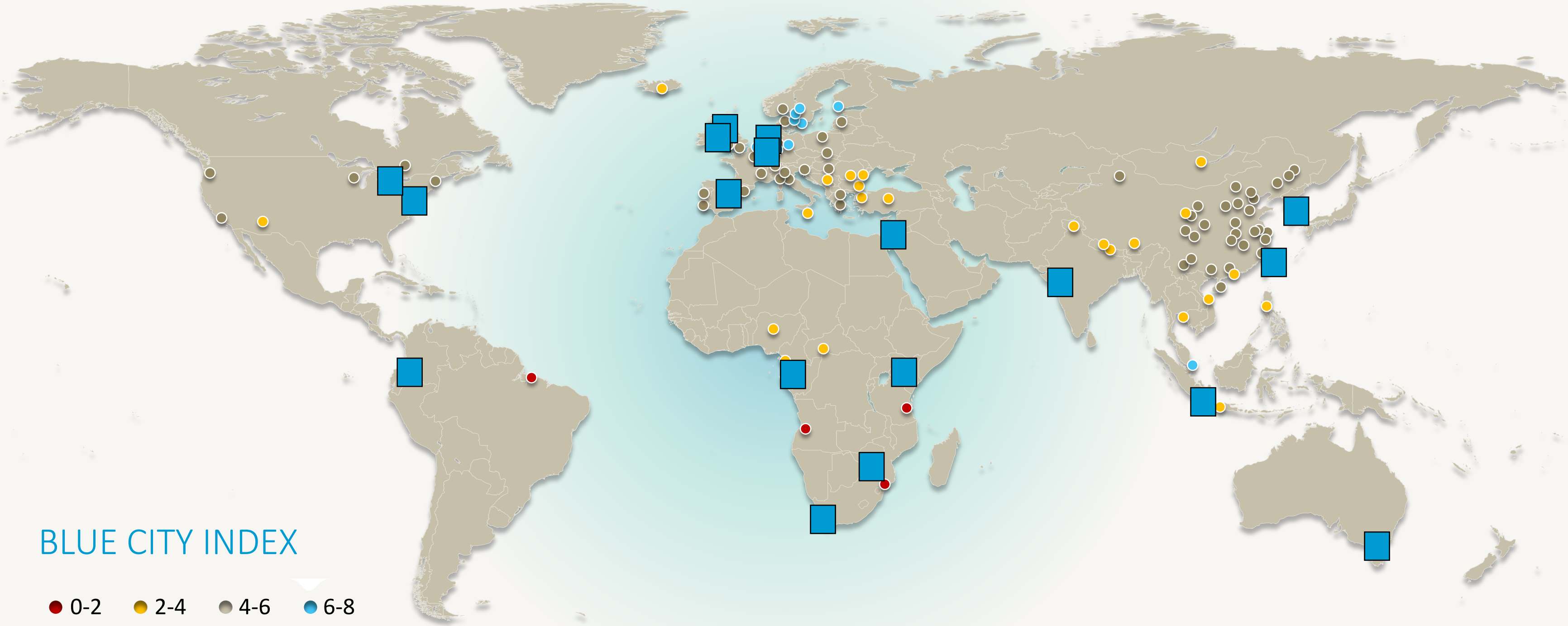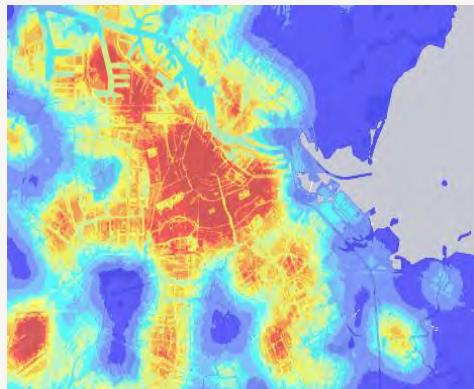| 0 | Underestimation | Most communities have a basic understanding of the water challenge. However the current risks, impacts and frequencies are often not fully known and underestimated. Future risks, impacts and frequencies are often unknown. Some awareness has been raised amongst or is created by local stakeholders and communities |

# Results Amsterdam



1.1 COMMUNITY KNOWLEDGE
4.1 STAKEHOLDER INCLUSIVENESS
9.2 LEGAL COMPLIANCE
2.2 INFORMATION TRANSPARENCY
1.2 LOCAL SENSE OF URGENCY
3.2 EVALUATION
8.2 CONSUMER WILLINGNESS TO PAY
3.1 SMART MONITORING
Primary concern
5.1 AMBITIOUS AND REALISTIC GOALS
8.1 AFFORDABILITY
Governance Capacity
2.3 KNOWLEDGE COHESION
6.3 VISIONARY AGENTS
6.2 COLLABORATIVE AGENTS
6.1 ENTREPRENEURIAL AGENTS
7.2 CLEAR DIVISION OF RESPONSIBILITIES
5.3 POLICY COHESION
7.1 ROOM TO MANEUVER
1.3 BEHAVIOURAL INTERNALIZATION
9.3 PREPAREDNESS
9.1 POLICY INSTRUMENTS
2.1 INFORMATION AVAILABILITY
8.3 FINANCIAL CONTINUATION
3.3 CROSS-STAKEHOLDER CAPACITY BUILDING
7.3 AUTHORITY
4.2 PROTECTION OF CORE VALUES
5.2 DISCOURSE EMBEDDING
4.3 PROGRESS AND CHOICE VARIETY

++
+
0
–
– –

# FLOOD RISK

BLUE CITY INDEX

● 0-2    ● 2-4    ● 4-6    ● 6-8

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City Blueprint Framework

| | Flood risk | Water scarcity | Wastewater treatment | Solid waste treatment | Urban heat islands | Water reuse |
|---|---|---|---|---|---|---|
| 1. Amsterdam | ■ | ■ | ■ | ■ | ■ | |
| 2. Melbourne | ■ | ■ | ■ | ■ | ■ | |
| 3. Ahmedabad | ■ | ■ | ■ | ■ | ■ | |
| 4. Quito | | ■ | | | | |
| 5. Sabadell | | | | | | ■ |
| 6. Navaisha | | | | | | ■ |
| 7. New York City | ■ | ■ | ■ | ■ | ■ | |
| 8. Bandung | ■ | ■ | ■ | ■ | ■ | |
| 9. Leicester | ■ | | | | | |
| 10. Milton Keynes | | ■ | | | | |
| 11. Rotterdam | ■ | | | | | |
| 12. Taipei | ■ | | | | | |
| 13. Cape Town | | ■ | | | | |
| 14. Jerusalem | | ■ | | | | |
| 15. Seoul | | ■ | | | | |
| 16. Utrecht | | ■ | | | | |

City Blueprint Approach 2020

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*What is the relation between water management performances and governance capacity?*
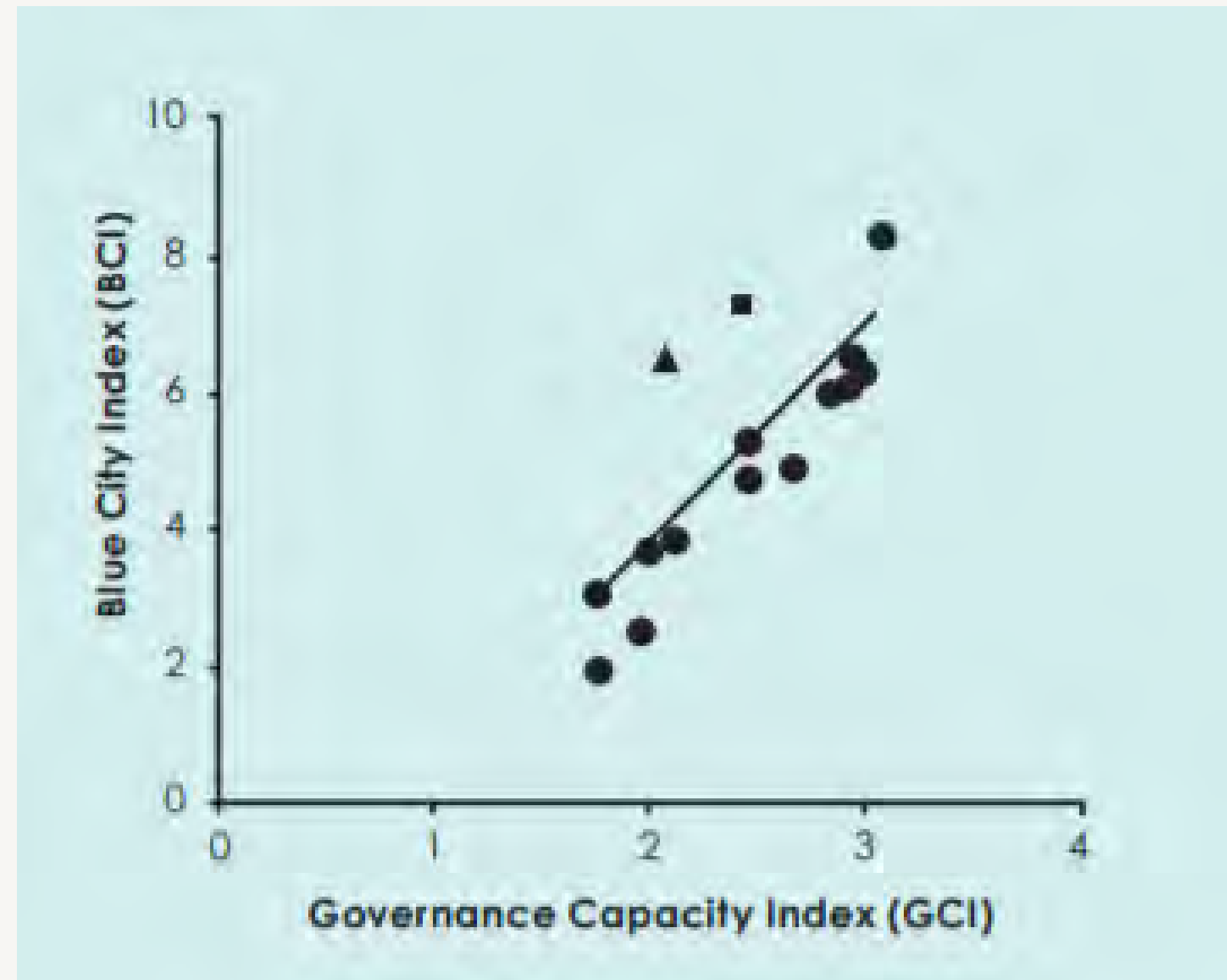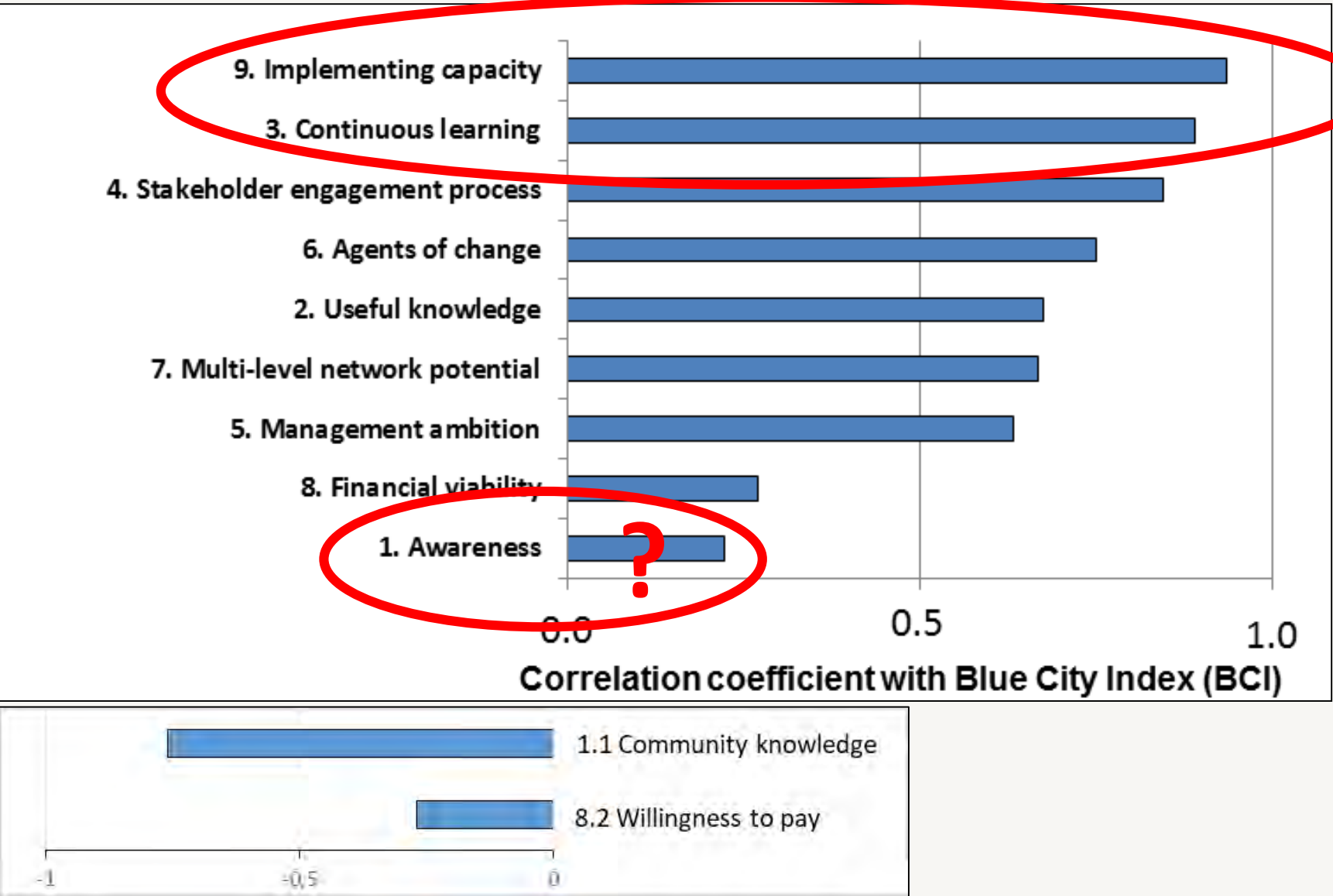
# Conclusion

## *What factors account for water wisdom in urban areas across the globe?*

### 1.   What is water wisdom?
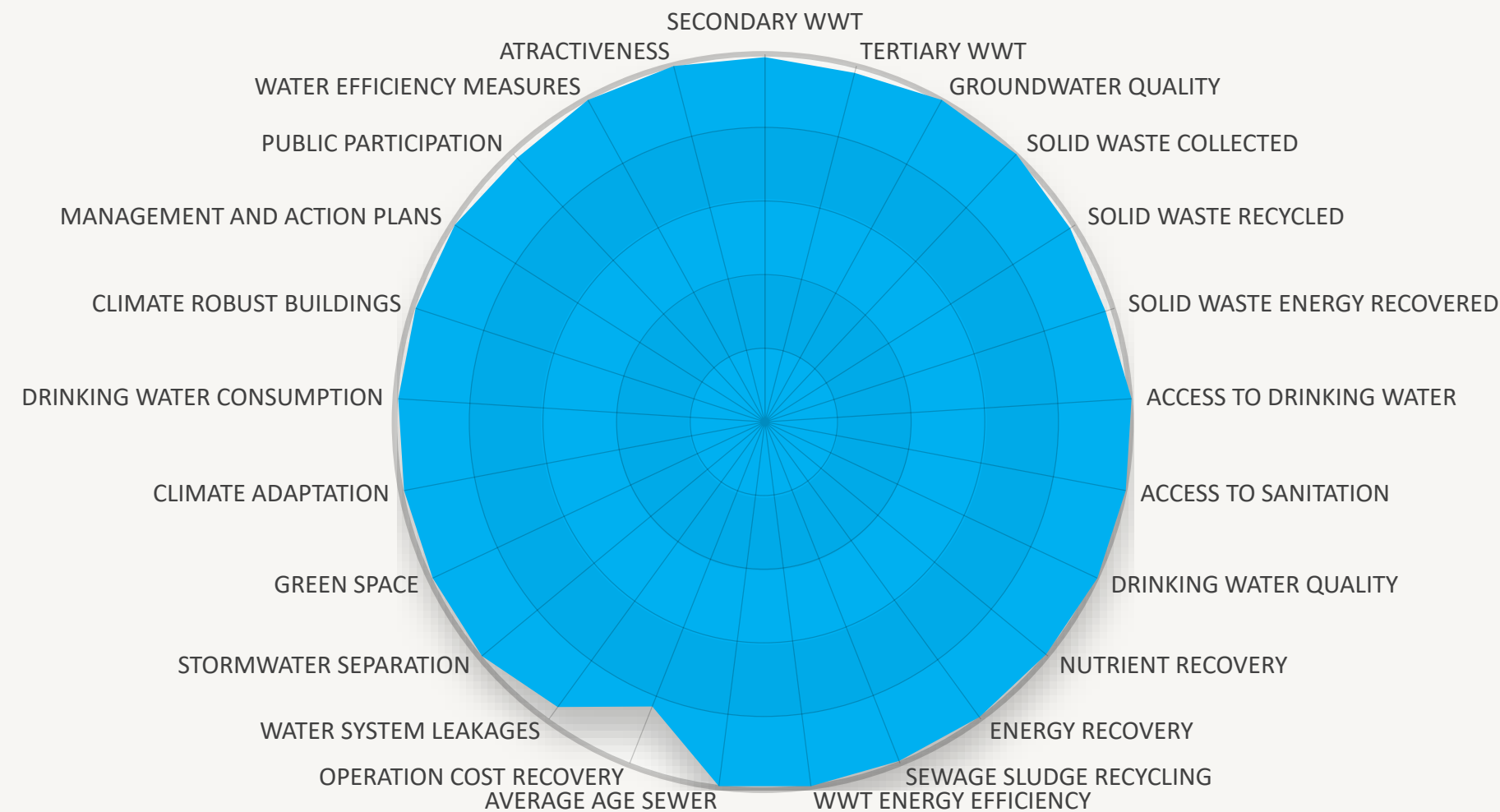


### 2.   What factors account for water wisdom?

# Applicability for you

- Method designed to be applicable as self-assessment → e.g. in workshops

- Can be useful as a checklist for governance assessments

- Method has mainly been tested & applied by students (14 in total!)

  - Laurence  (method development)
  - Alisa  (Amsterdam)
  - Eric  (Quito)
  - Petra  (Melbourne)
  - Martien  (Ahmedabad
  - Daniel  (NYC)
  - Marketa  (Sabadell

  - Suzanne  (Taipei),
  - Noyara  (Bandung)
  - Laura  (Leicester)
  - Fabian  (Milton Keynes & Rotterdam)
  - Chakira  (Jerusalem)
  - Boipelo  (Cape Town)
  - Romy  (Utrecht)

# List of papers:

- METHOD GOVERNANCE CAPACITY ANALYSIS: HTTPS://LINK.SPRINGER.COM/ARTICLE/10.1007/S11269-017-1677-7

- METHOD CITY BLUEPRINT: HTTPS://LINK.SPRINGER.COM/ARTICLE/10.1007/S11269-015-1139-Z

CITIES
- AHMEDABAD, INDIA: HTTPS://LINK.SPRINGER.COM/ARTICLE/10.1007/S10113-018-1363-1
- SABADELL, SPAIN: HTTPS://WWW.MDPI.COM/2073-4441/10/6/739
- AMSTERDAM, ROTTERDAM, LEICESTER & MILTON KEYNES: HTTPS://WWW.MDPI.COM/2071-1050/10/8/2869
- CAPE TOWN, SOUTH-AFRICA: HTTPS://WWW.MDPI.COM/2073-4441/11/2/292
- TAIPEI, TAIWAN: HTTPS://LINK.SPRINGER.COM/ARTICLE/10.1007/S00267-019-01137-Y
- NYC, USA: HTTPS://LINK.SPRINGER.COM/ARTICLE/10.1007/S00267-017-0952-Y
- QUITO, ECUADOR: HTTPS://LINK.SPRINGER.COM/ARTICLE/10.1007/S10668-017-9916-X
- SEOUL, SOURTH-KOREA: HTTPS://WWW.MDPI.COM/2073-4441/10/6/682
- UTRECHT, THE NETHERLANDS: HTTPS://WWW.MDPI.COM/2073-4441/11/7/1501

- DISSERTATION: HTTPS://LIBRARY.KWRWATER.NL/PUBLICATION/59260805/

For questions and other input, please contact me:
Stef.koop@kwrwater.nl

# Are there any Questions???