EIP WATER: CITY BLUEPRINTS

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'Technology is important to implement an intelligent city concept, to create new business opportunities, to attract investments and to generate employment. But technology alone would not bring about any wonders. Good governance and the active involvement of citizens in the development of new organization models for a new generation of services and a greener and healthier lifestyle are also important.'

Hahn, EU Commissioner for Regional Policy

URGENCY

Competing demands for scarce water resources may lead to an estimated 40% supply shortage by 2030.

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1 WHY CITIES?

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WHY CITIES?

Cities are concentrated centers of production, consumption and waste disposal that drive land change and a host of global environmental problems and are highly dependent on other cities and hinterlands to supply materials (including water), energy, and to dispose waste.

Sources:
Grimm et al., 2008. Science 319 (5864), 756-760.
Bai, 2007. Journal of Industrial Ecology 11, 1-6.
Engel et al., 2011. World Wildlife Fund, Germany.

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URBANISATION

Urban areas of the world are expected to absorb all the population growth expected over the next four decades. By 2050, urban dwellers will likely account for 86 % of the population in the more developed regions and for 64 % of that in the less developed regions

CLIMATE CHANGE

Climate change may worsen water services and quality of life in cities.

WATER USE AND SCARCITY

Water withdrawals have tripled over the last 50 years. In 2030, there will be a 40% supply shortage of water.

SANITATION

Currently, 2.5 billion people are without improved sanitation facilities.

HUMAN HEALTH

Currently, 3.4 million people - mostly children – die from water-borne diseases every year.

HAZARDS

Water-related hazards account for 90% of all natural hazards.

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MAKING URBAN INFRASTRUCTURES MORE SUSTAINABLE TO HELP DRIVE A GREEN ECONOMY

An estimated US$ 41 trillion is required to refurbish the old and build new urban infrastructures over the period 2005–2030:

- **$22.6 trillion for water systems**
- **$9 trillion for energy**
- **$7.8 trillion for road and rail infrastructure**
- **$1.6 trillion for air- and sea-ports**

- **1 trillion means 1 thousand billions (10^{12})**

Source: UNEP City-level decoupling, 2013

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GOVERNANCE: PEOPLE MATTER

*Governance has emerged as a concept in political science, sustainability science and other fields as a response to the growing awareness that **governments are no longer the only relevant actors when it comes to the management of societal issues.***
(Lange et al., 2013)

*As stated in the report of the European Green City Index (2009) about three-quarters of the existing technological changes that would help London to meet its long-term **carbon reduction targets depended on the decisions of citizens or companies, not of governments.***

Public participation, i.e. the engagement of individuals with societies around them** — or the strength of civil society in a city — **has a strong link to environmental performance (see next slide).

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Comparison of rankings: EFILWC Voluntary Participation Index and European Green City Index
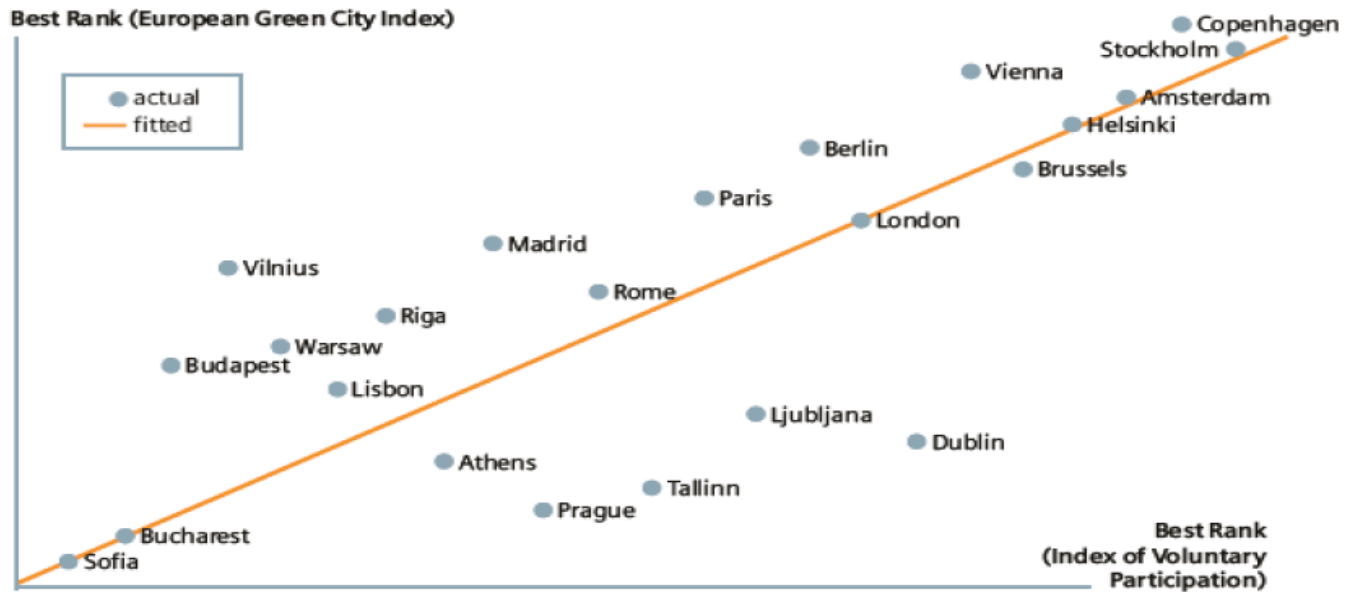
Source: European Green City Index, 2009

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WATER SUPPLY: A GLOBAL RISK

Table 1: Ten Global Risks of Highest Concern in 2014

No.	Global Risk
1	Fiscal crises in key economies
2	Structurally high unemployment/underemployment
3	Water crises
4	Severe income disparity
5	Failure of climate change mitigation and adaptation
6	Greater incidence of extreme weather events (e.g. floods, storms, fires)
7	Global governance failure
8	Food crises
9	Failure of a major financial mechanism/institution
10	Profound political and social instability

Source: Global Risks Perception Survey 2013-2014.
Note: From a list of 31 risks, survey respondents were asked to identify the five they are most concerned about.

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WHY CITIES?
THINK GLOBALLY, ACT LOCALLY

1. Cities are the major problem holders

2. Active civil societies incl. the private sector with visionary local government can cope with water challenges

3. It requires a bottom-up approach and collaboration among cities and regions by sharing best practices (communication and collaboration on implementation)
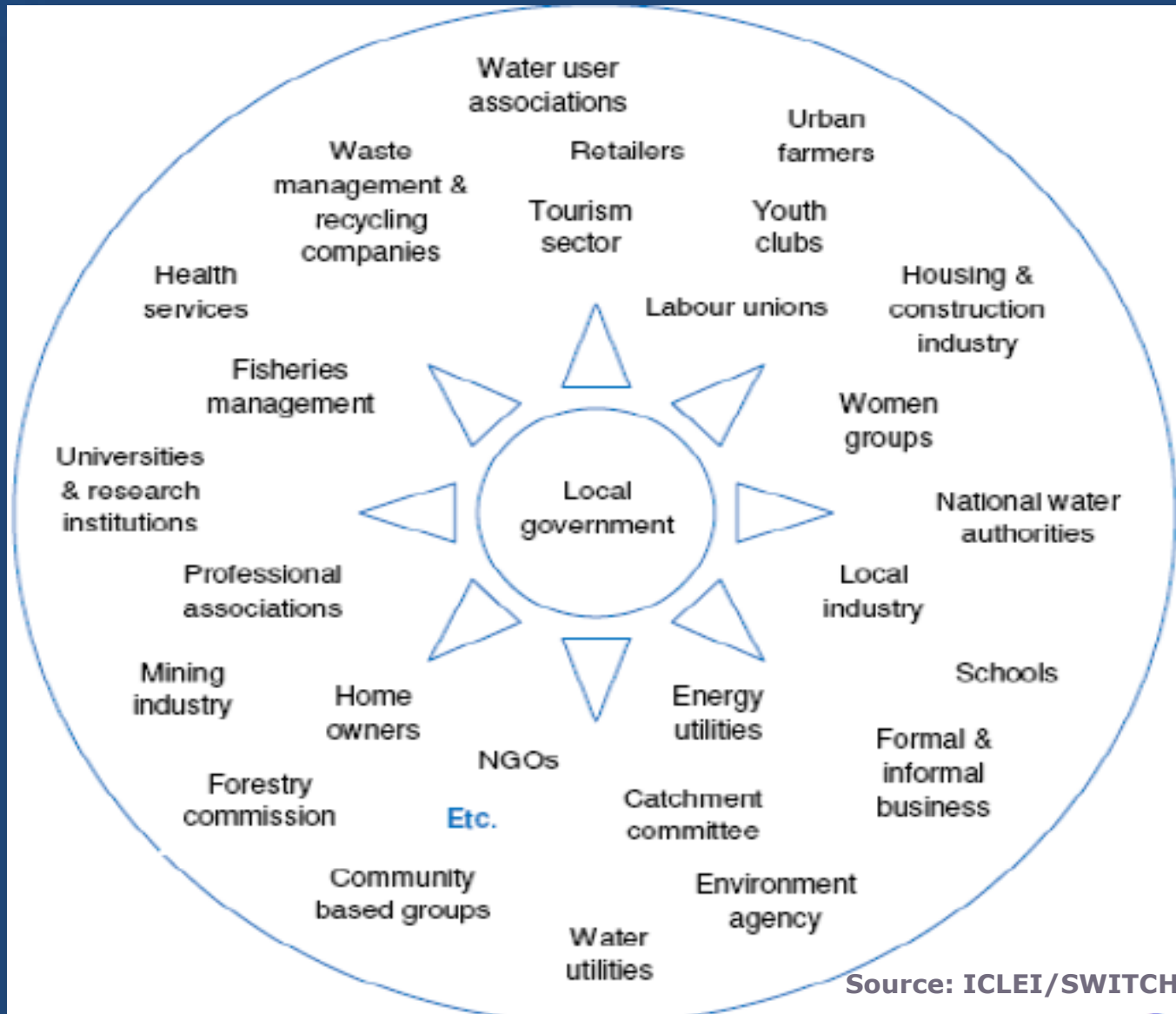
CITY BLUEPRINTS
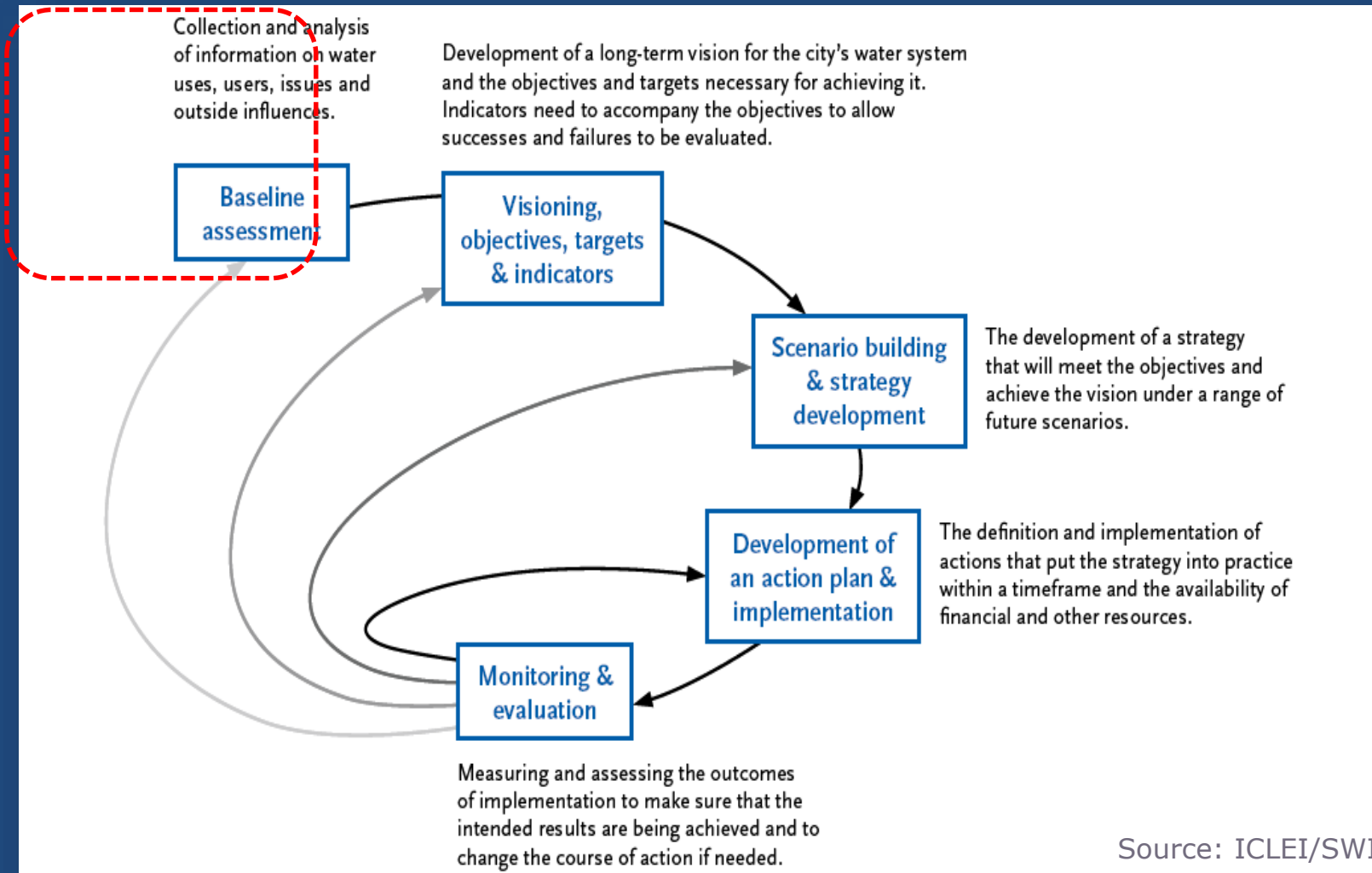
TOWARDS TRANSITIONS OF CITIES
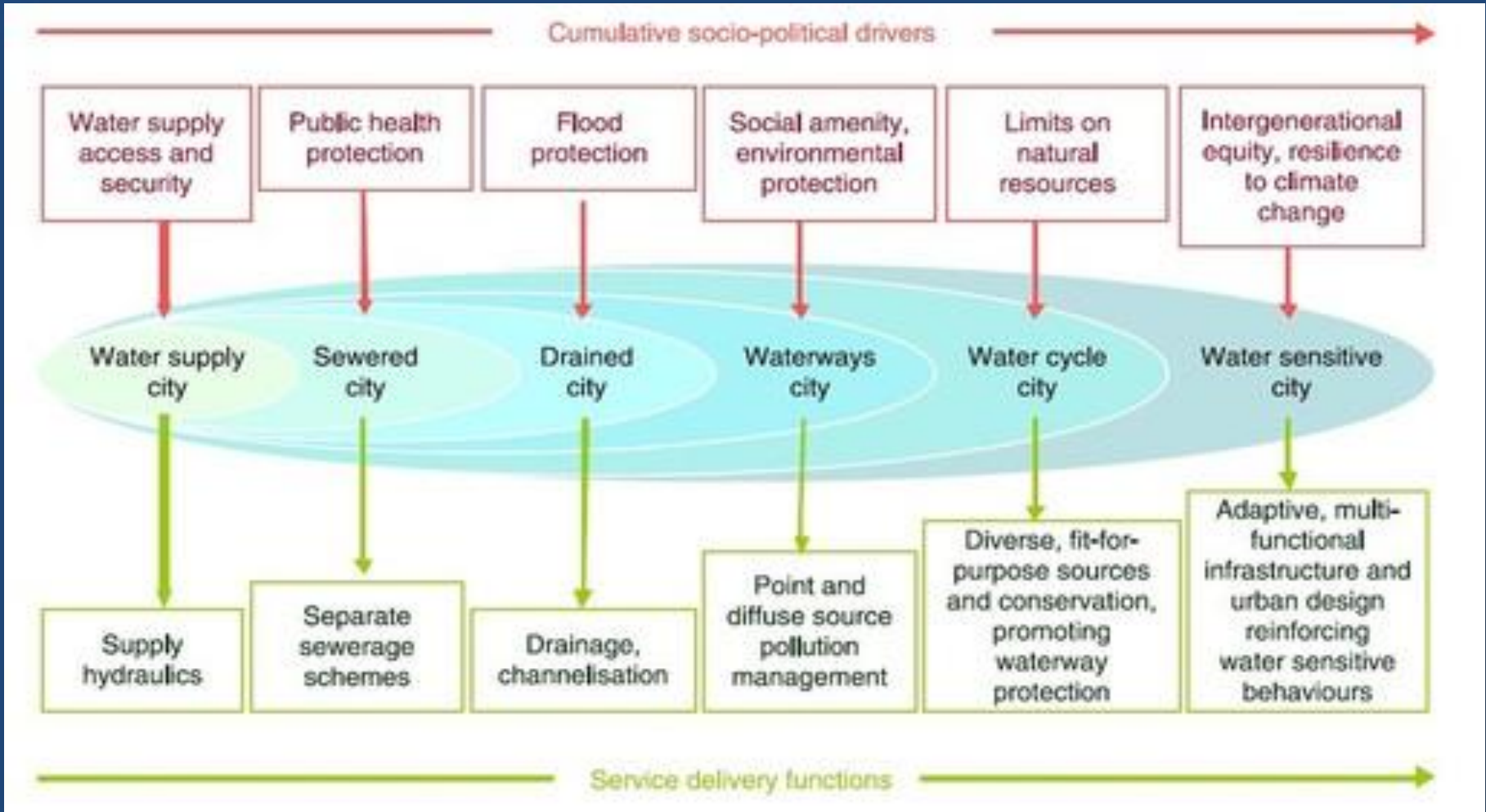
URBAN WATER MANAGEMENT TRANSITIONS FRAMEWORK (SOURCE: BROWN ET AL. 2009)

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EARLY INVOLVEMENT OF STAKEHOLDERS

Source: ICLEI/SWITCH

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PLANNING CYCLE ACCORDING TO SWITCH
(MANAGING WATER IN THE CITY OF THE FUTURE)

Collection and analysis of information on water uses, users, issues and outside influences.

Development of a long-term vision for the city's water system and the objectives and targets necessary for achieving it. Indicators need to accompany the objectives to allow successes and failures to be evaluated.

Baseline assessment

Visioning, objectives, targets & indicators

Scenario building & strategy development

The development of a strategy that will meet the objectives and achieve the vision under a range of future scenarios.

Development of an action plan & implementation

The definition and implementation of actions that put the strategy into practice within a timeframe and the availability of financial and other resources.

Monitoring & evaluation

Measuring and assessing the outcomes of implementation to make sure that the intended results are being achieved and to change the course of action if needed.

Source: ICLEI/SWITCH

Goal	**Baseline assessment** of the sustainability of UWCS of cities
Indicators	Twenty-four indicators divided over eight broad categories: 1.Water security 2.Water quality 3.Drinking water 4.Sanitation 5.Infrastructure 6.Climate robustness 7.Biodiversity and attractiveness 8.Governance
Data	Public data or data provided by the (waste) water utilities and cities based on a questionnaire for UWCS
Scores	0 (concern) to 10 (no concern) **(Blue is good)**
BCI	Arithmetic mean of 24 indicators which varies from 0 to 10 **(in parentheses)**
Stakeholders	Water utility, waste water utility, water board, city council, NGOs
Process	Interactive with all stakeholders involved early on in the process

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EXAMPLES:

1. Dar es Salaam (4.01)
2. Bucharest (5.18)
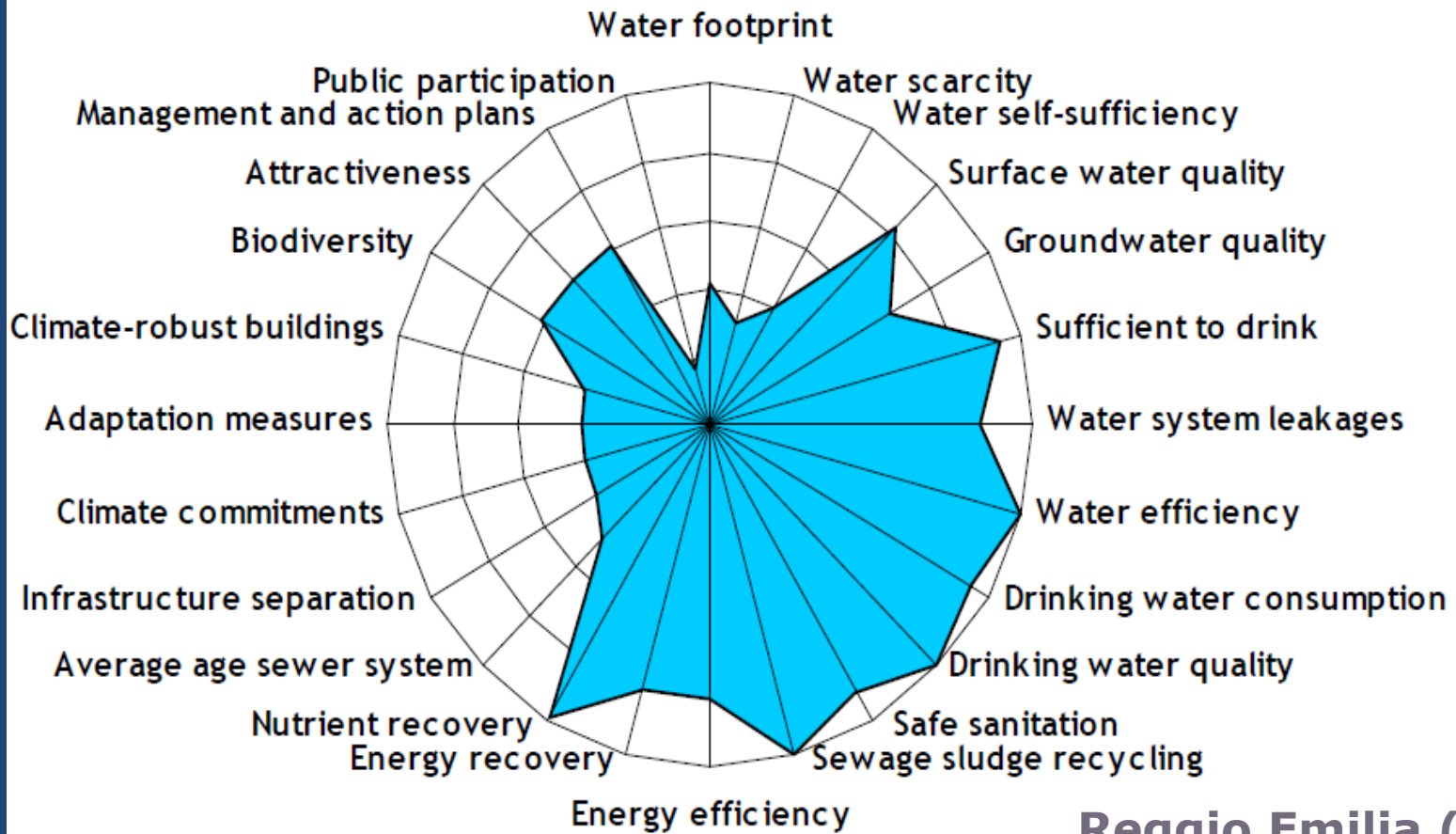3. Reggio Emilia (6.60)
4. Hamburg (7.72)

BCI = Blue City Indicator:
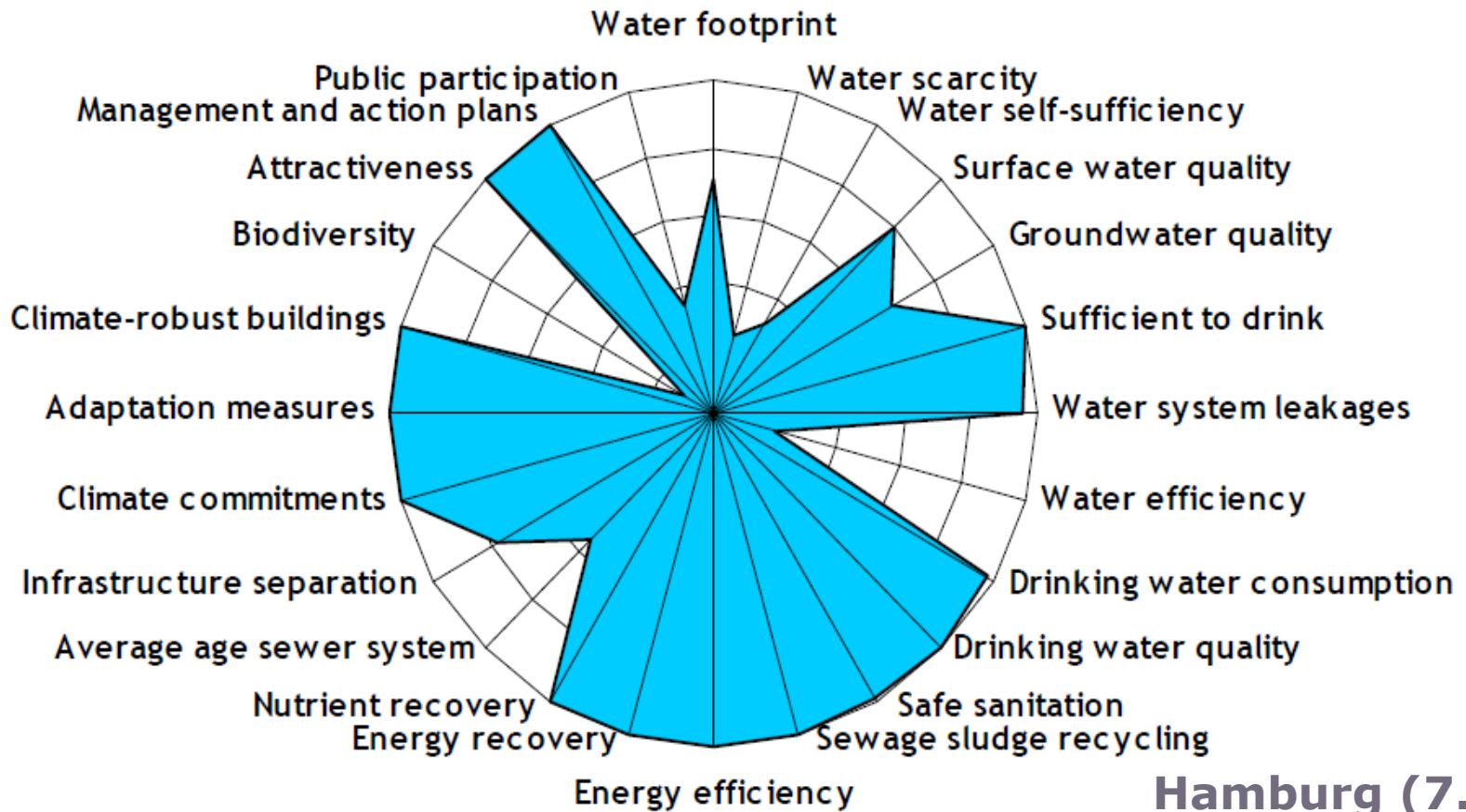Arithmetic mean of 24 indicators from 0 to 10

Dar es Salaam (4.01)

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Bucharest (5.18)

CITY BLUEPRINTS

Reggio Emilia (6.60)
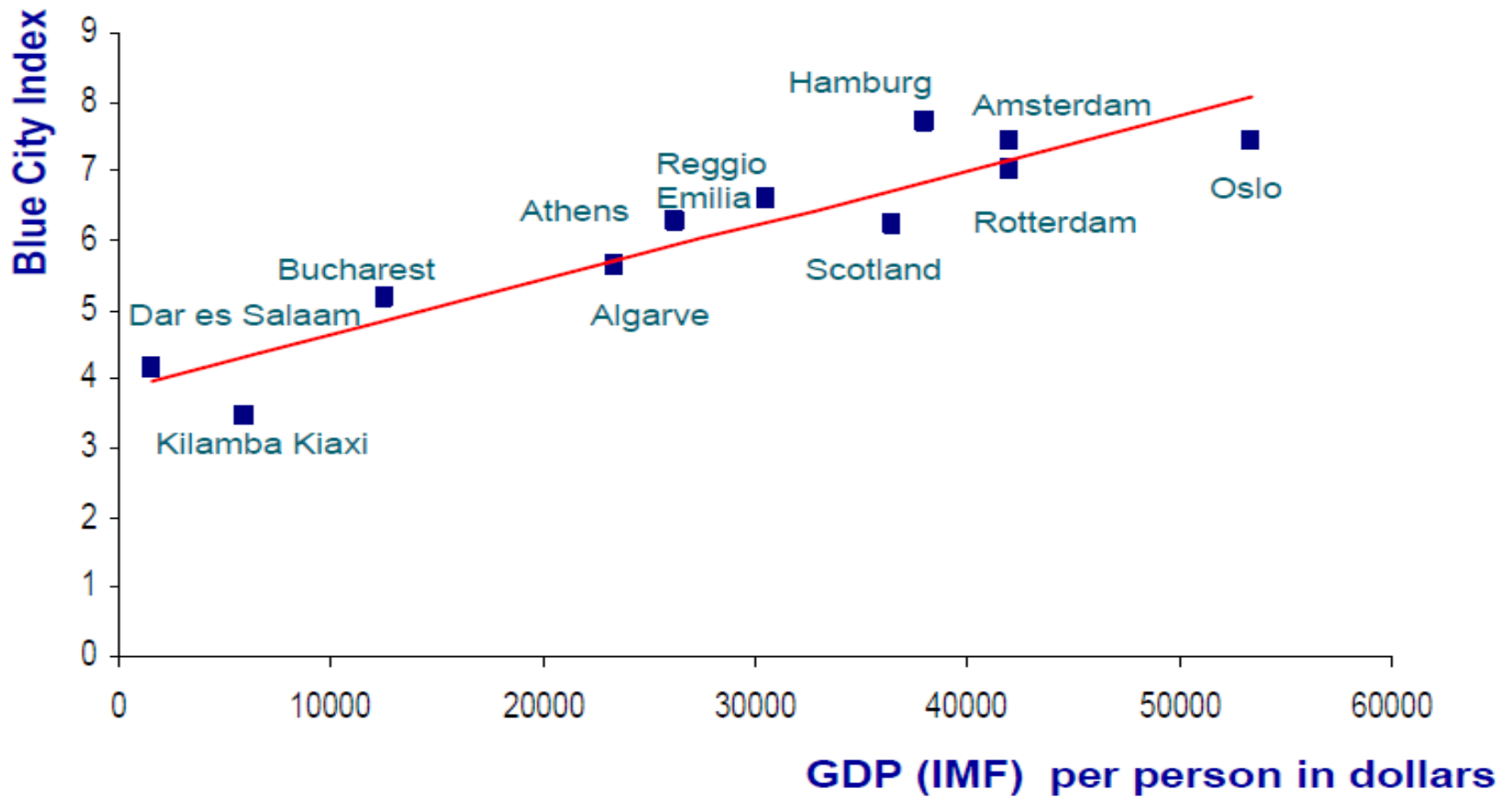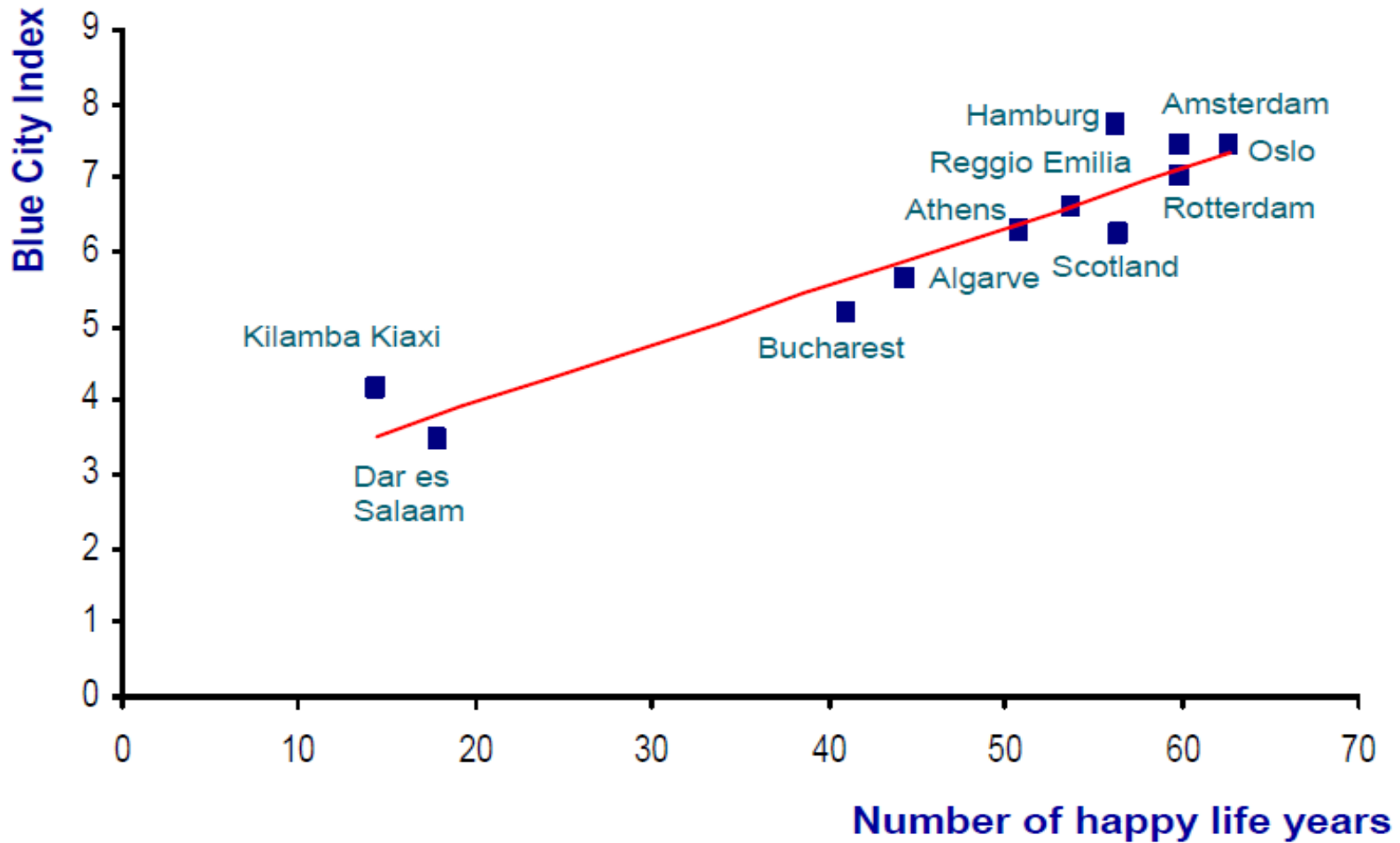
CITY BLUEPRINTS

Hamburg (7.72)

CITY BLUEPRINTS
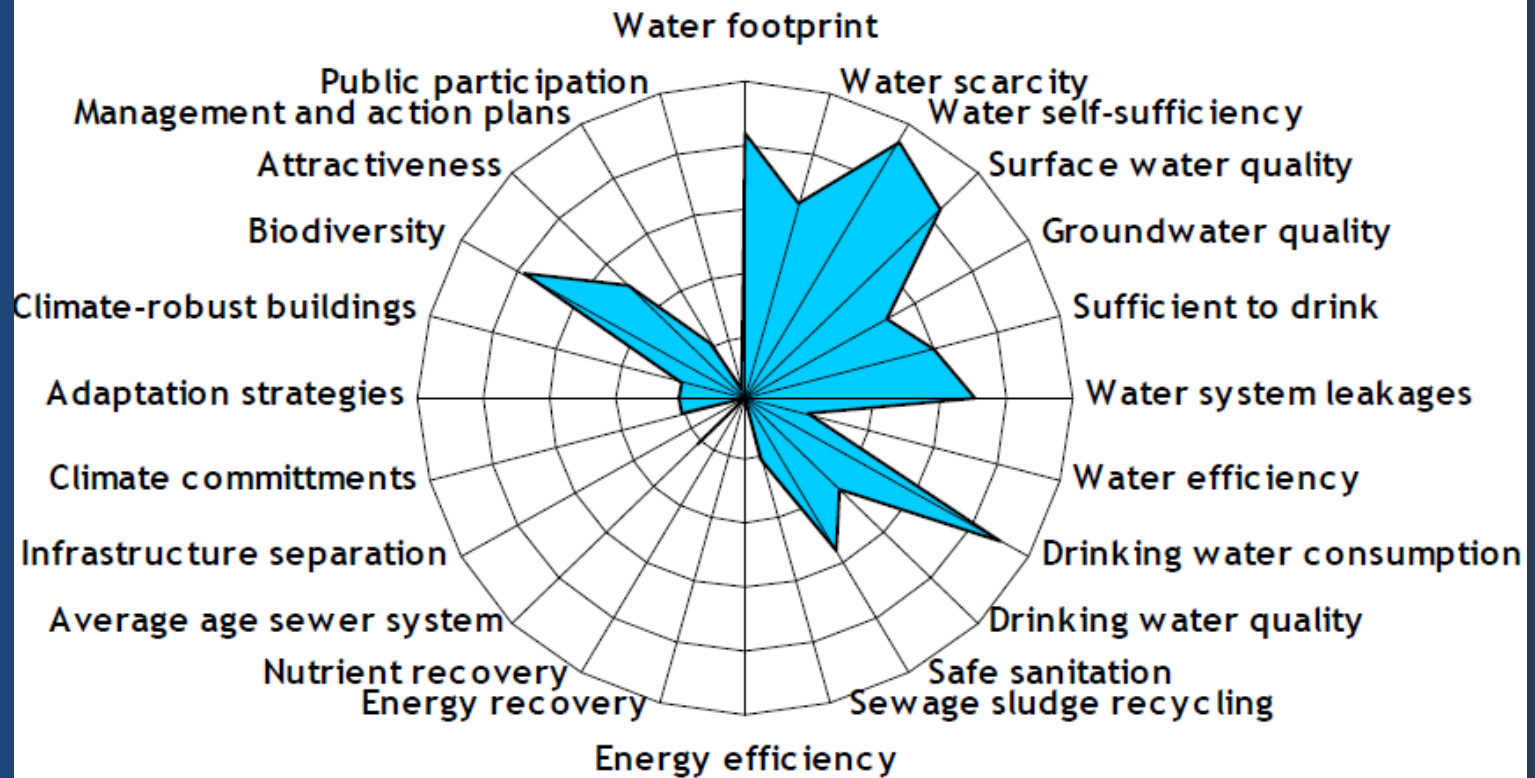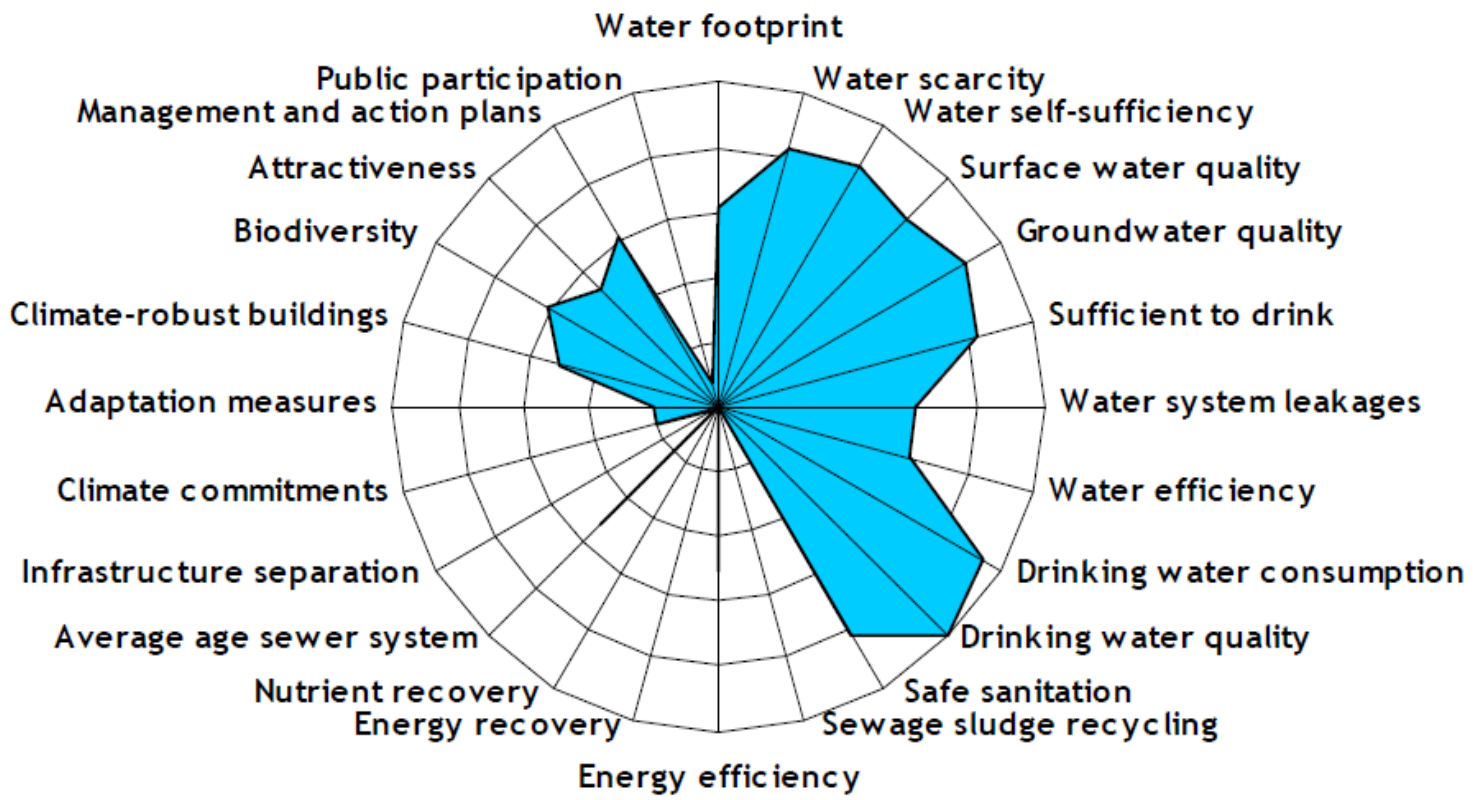
There is a positive relation between the Blue City Index (BCI) and the:

- Voluntary Participation Index (r = 0.727)
- UWCS ambitions and measures (r = 0.904)
- GDP according to IMF (r = 0.927)
- Government effectiveness – World Bank (r = 0.927)
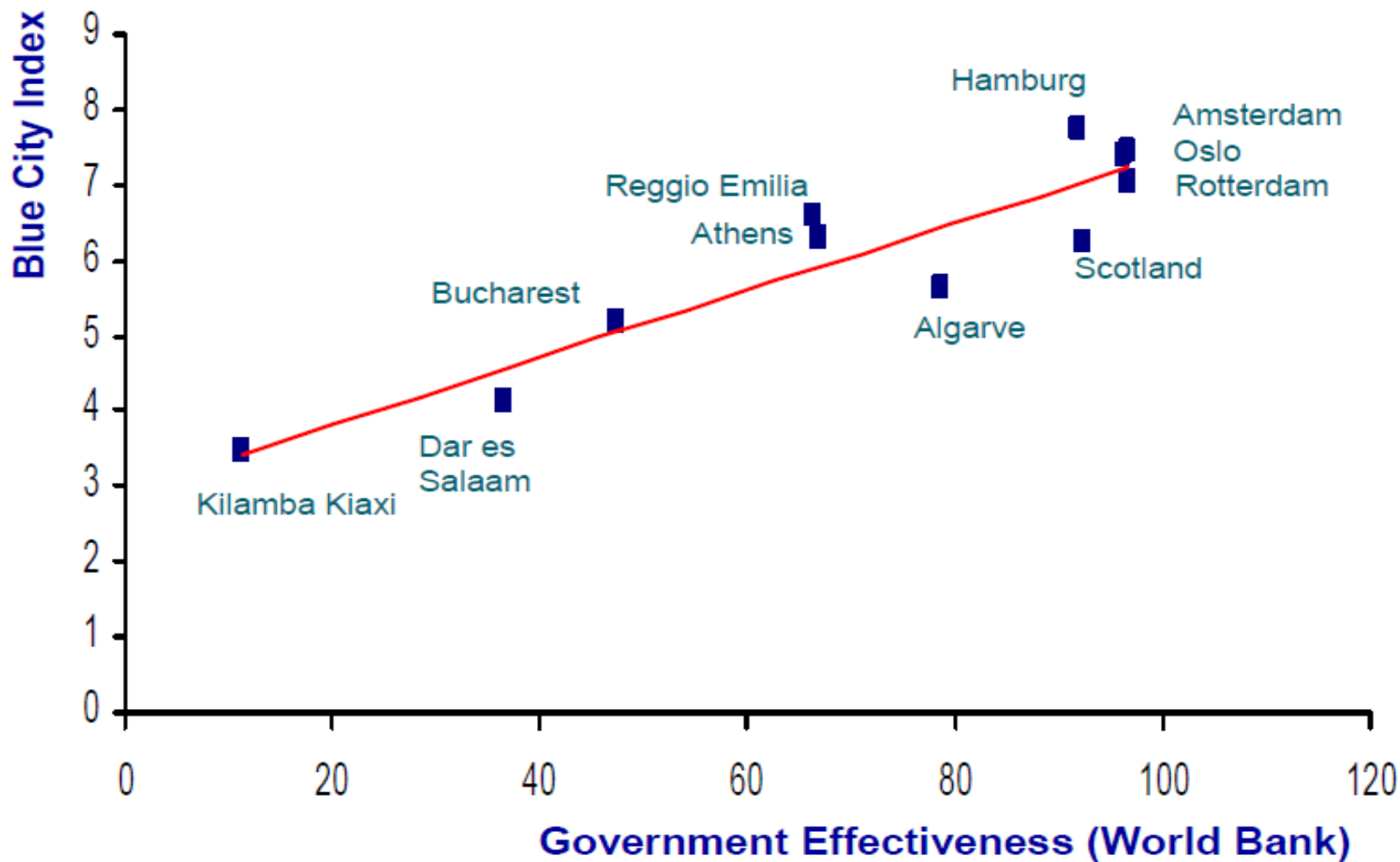- Number of Happy Life Years - Erasmus Univ. (r = 0.950)

Where, r is the Pearson correlation coefficient

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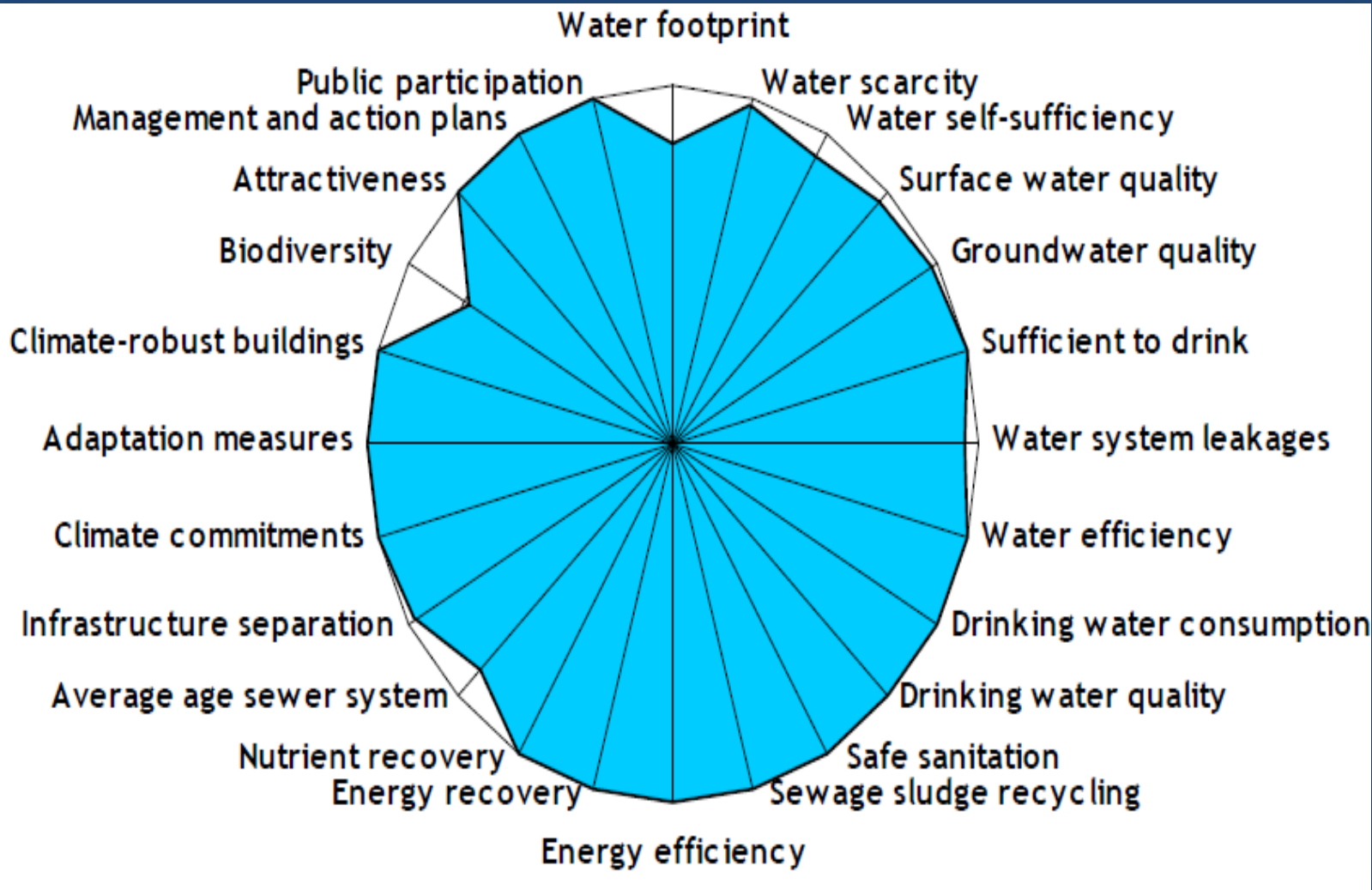CITY BLUEPRINTS

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30 cities/regions have participated so far

- Algarve (Portugal)
- Amsterdam (The Netherlands)
- Ankara (Turkey)
- Athens (Greece)
- Belém (Brazil)
- Berlin (Germany)
- Bologna (Italy)
- Bucharest (Romania)
- Copenhagen (Denmark)
- Dar es Salaam (Tanzania)
- Eindhoven (The Netherlands)
- Genova (Italy)
- Hamburg (Germany)
- Ho Chi Minh City (Vietnam)
- Istanbul (Turkey)

- Jerusalem (Israel)
- Kilamba Kiaxi (Angola)
- Lyon (France)
- Maastricht (The Netherlands)
- Malmö (Sweden)
- Malta (Malta)
- Manresa (Spain)
- Melbourne (Australia)
- Oslo (Norway)
- Reggio Emilia (Italy)
- Reykjavic (Iceland)
- Rotterdam (The Netherlands)
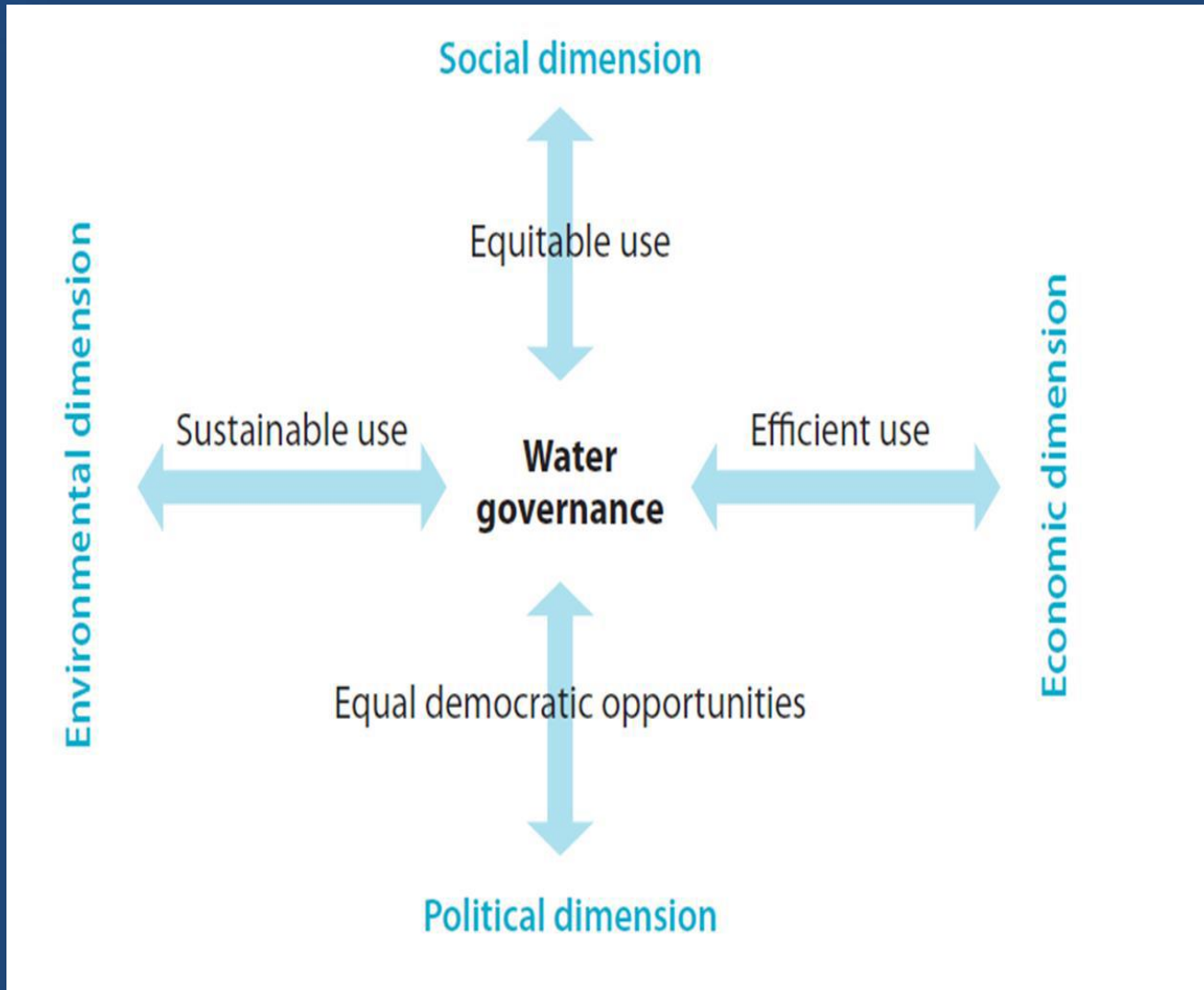- Scotland (UK)
- Venlo (The Netherlands)
- Zaragoza (Spain

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Successful transitions

1. Develop a shared long-term vision
2. Involve civil society and the commercial sector
3. Manage the process / expertise
4. Stop the excessive focus on technology development
5. Make data accessible and share knowledge
6. Carry out a thorough cost-benefit analysis and remove barriers
7. Monitor implementation

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