City Blueprints and Porto in Perspective

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Currently, 2.5 billion people are without improved sanitation facilities.

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

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

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

Urbanization
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.
Sandy
$70 billion

Katrina
$160 billion

Andrew
$48 billion

Ivan
$27 billion

Harvey
$190 billion?

Irma
$130 billion?

Source: US National Oceanic and Atmospheric Administration (NOAA)
Potential damage from climate hazards to critical infrastructures in the energy, transport, industrial and social sector could triple by the 2020s, multiply six-fold by mid-century, and surpass 10 times today’s total of 3.4 billion €/year by the end of the 21st century, according to a new JRC study.
For the next 10 years

<table>
<thead>
<tr>
<th>Risk Description</th>
<th>Probability</th>
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</thead>
<tbody>
<tr>
<td>Water crises</td>
<td>39.8%</td>
</tr>
<tr>
<td>Failure of climate-change mitigation and adaptation</td>
<td>36.7%</td>
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<tr>
<td>Extreme weather events</td>
<td>26.5%</td>
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<tr>
<td>Food crises</td>
<td>25.2%</td>
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<tr>
<td>Profound social instability</td>
<td>23.3%</td>
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41 trillion (10^{12}) US$ infrastructure expense up to 2025

World Economic Forum 2015

UNEP 2013
What are the city’s main challenges?

How adequate is the city’s water management?

Where can the city’s water governance be improved?
Why City Blueprint Framework Indicators?

The indicators are introduced in order to:

1. **evaluate current state** of the sustainability in the cities;
2. **identify best practices** and share them with other municipalities;
3. find direct links and **explore co-benefits (win-win’s)** for all aspects of a smart city: water, waste water, solid waste, energy, transport, ICT, housing, biodiversity and climate adaptation;
4. **inform decision makers** and politicians about the current situation in the city;
5. **facilitate public engagement** for long-term plans and their implementation.
## City Blueprint performance Framework

<table>
<thead>
<tr>
<th>Goal</th>
<th>Baseline assessment of the sustainability of Urban Water Resources Management</th>
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| Indicators | Twenty-five indicators divided over seven categories:  
1. Water quality  
2. Solid waste treatment  
3. Basic water services  
4. Wastewater treatment  
5. Infrastructure  
6. Climate robustness  
7. Governance |
| 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 25 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 |