

# Measuring Governance in Smart Water Cities



**Monica Garcia Quesada**  
**IWRA Project officer**

# SMART WATER CITY Key Performance Indicators(111)

## Technical pillar(75)

### Urban Water Cycle

- Precipitation
- Surface water
- **Urban stream** (water level and quality)
- **Groundwater** (water level and quality)

### Water disaster management

- Flood
- Drought
- Climate change

### Water supply and treatment

- **Water supply** (water source - distribution)
- **Drinking water treatment**
- **Waste water treatment** (waste water - reuse)

## Governance pillar (36)

### Effectiveness

- Clear allocation of roles
- Adequate scale
- Coordination
- Capacity

### Efficiency

- Water data
- Financial resources
- Sound water management regulatory frameworks
- Innovative water governance practices

### Trust and engagement

- Integrity and transparency
- Stakeholder engagement
- Trade-offs management
- Regular monitoring

# What is water governance?

The political, social, economic and administrative systems that are in place to develop and manage water resources and deliver water services to **different levels of the society**

Roger, P., & Hall, A. (2003). *Effective water governance*.

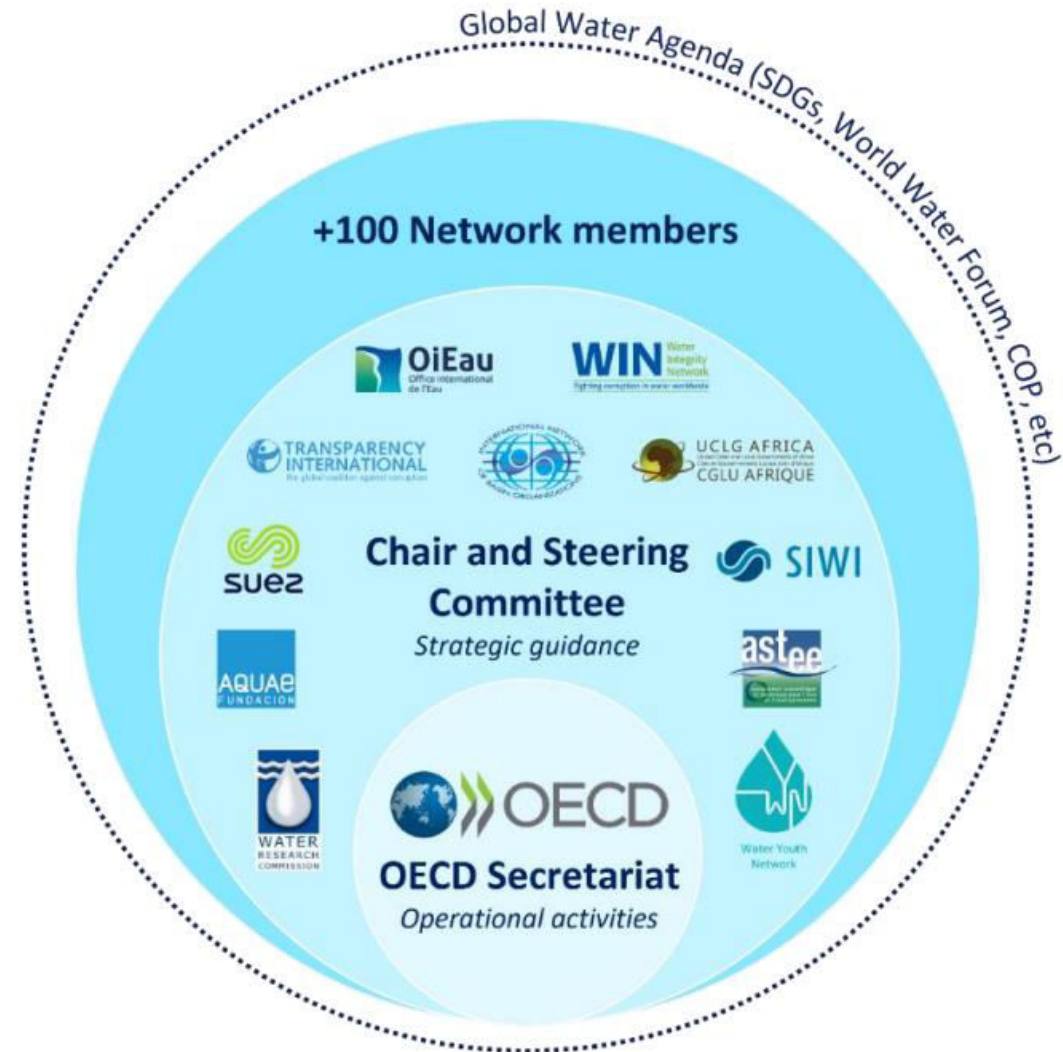
# Why do we bother with it?

Failing governance may lead to:

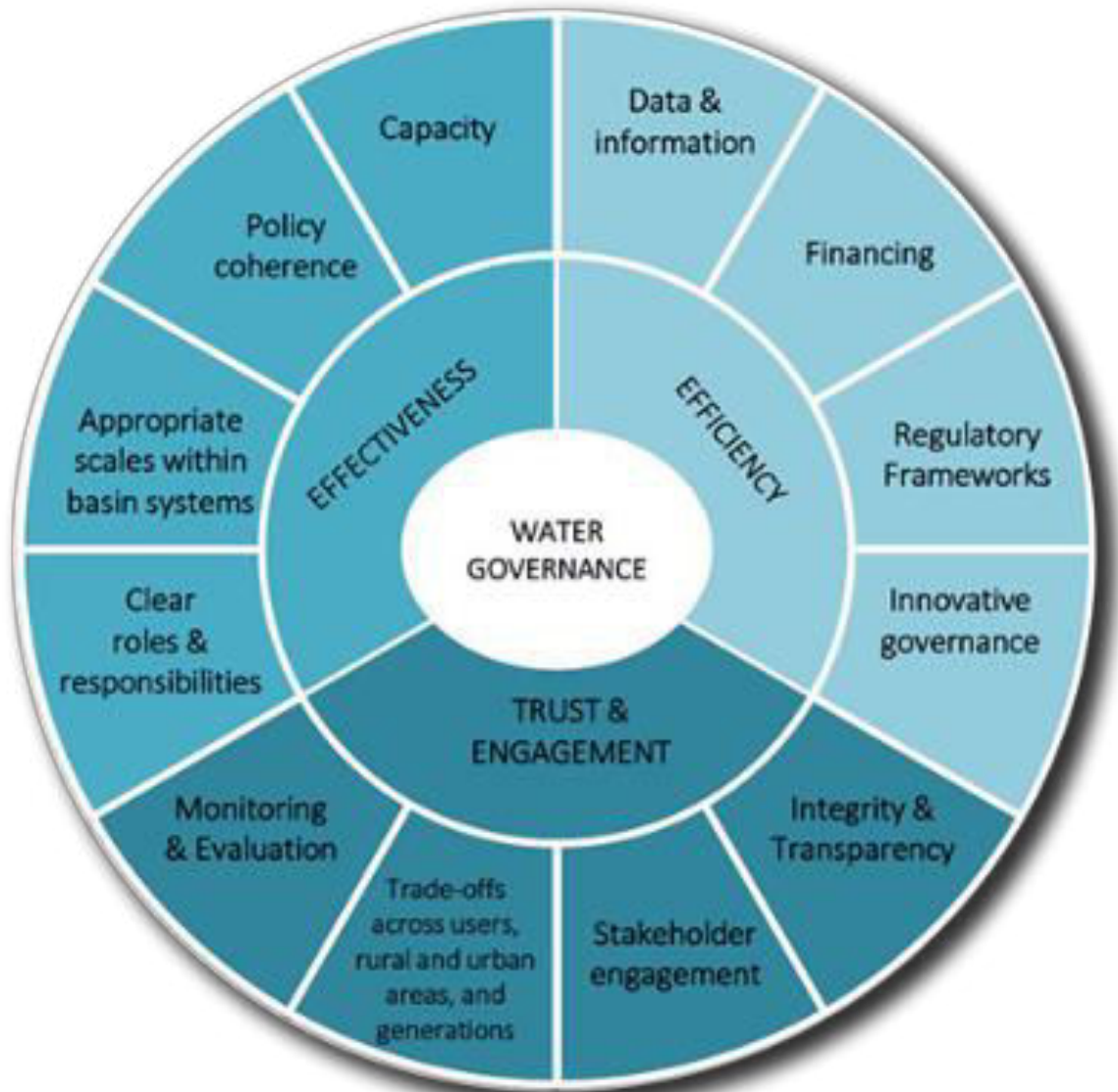
- Water Scarcity, due to over-extraction
- Infrastructure decay, due to lack of proper investment
- Ecosystem degradation, due to inadequate regulations
- Health risks, due to failing monitoring of water quality
- Social unrest, due to social exclusion

# OECD Water Governance Initiative

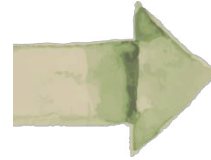
- 12 Principles of Water Governance
- Origin in 2013
- Endorsed by 38 OECD member countries, 7 non-member countries and 140 stakeholder groups.



# Water Governance Principles

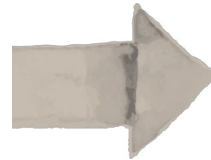


## Effectiveness



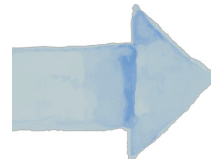
Degree to which the institution and regulatory set-up allows for development of sustainable water policies

## Efficiency



Degree to which goals are achieved with as little waste as possible

## Trust and Engagement



Mechanisms for ethical performance, transparency and fairness

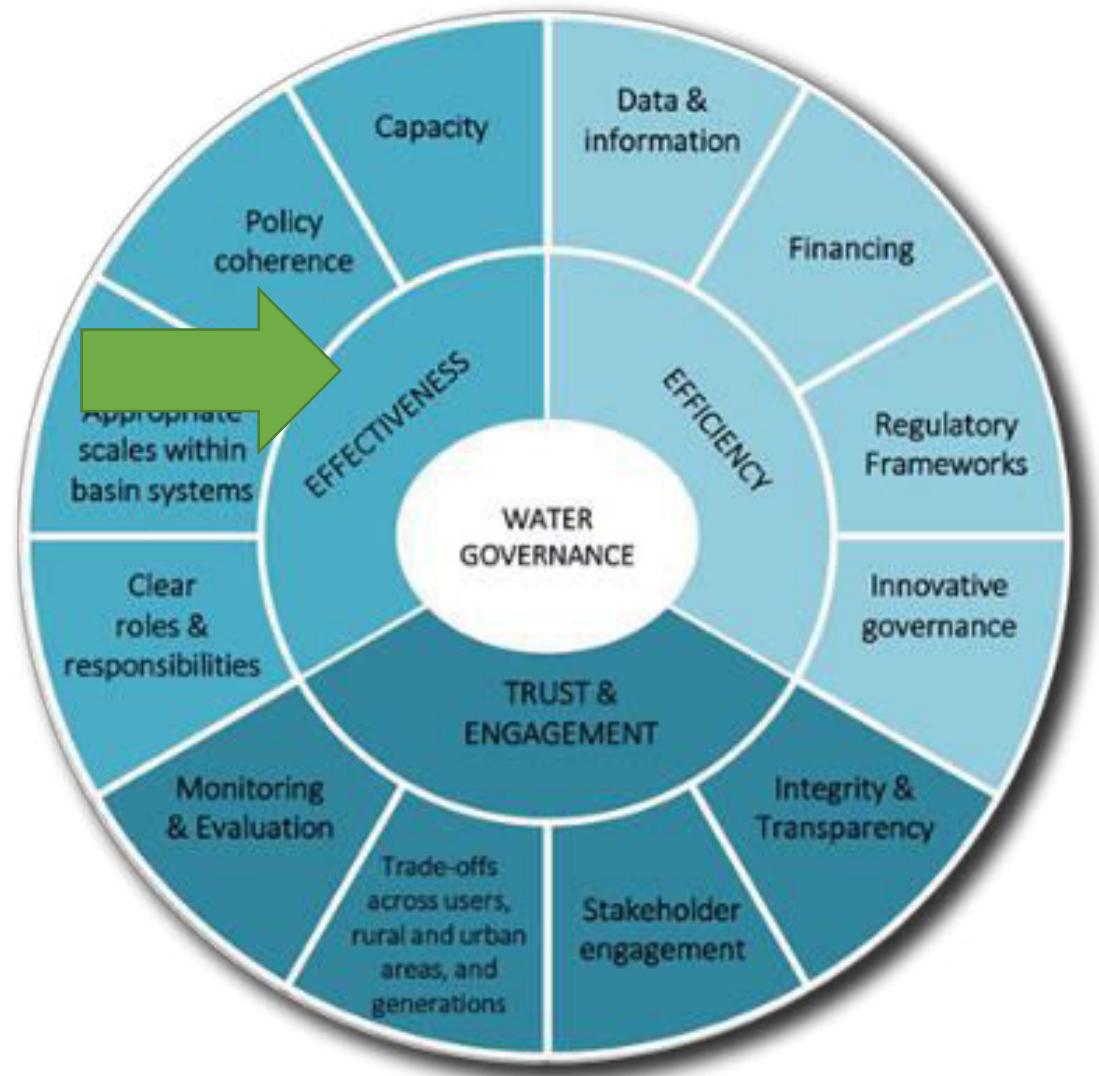
# Effectiveness category

Subcategory 1: Clear roles and responsibilities

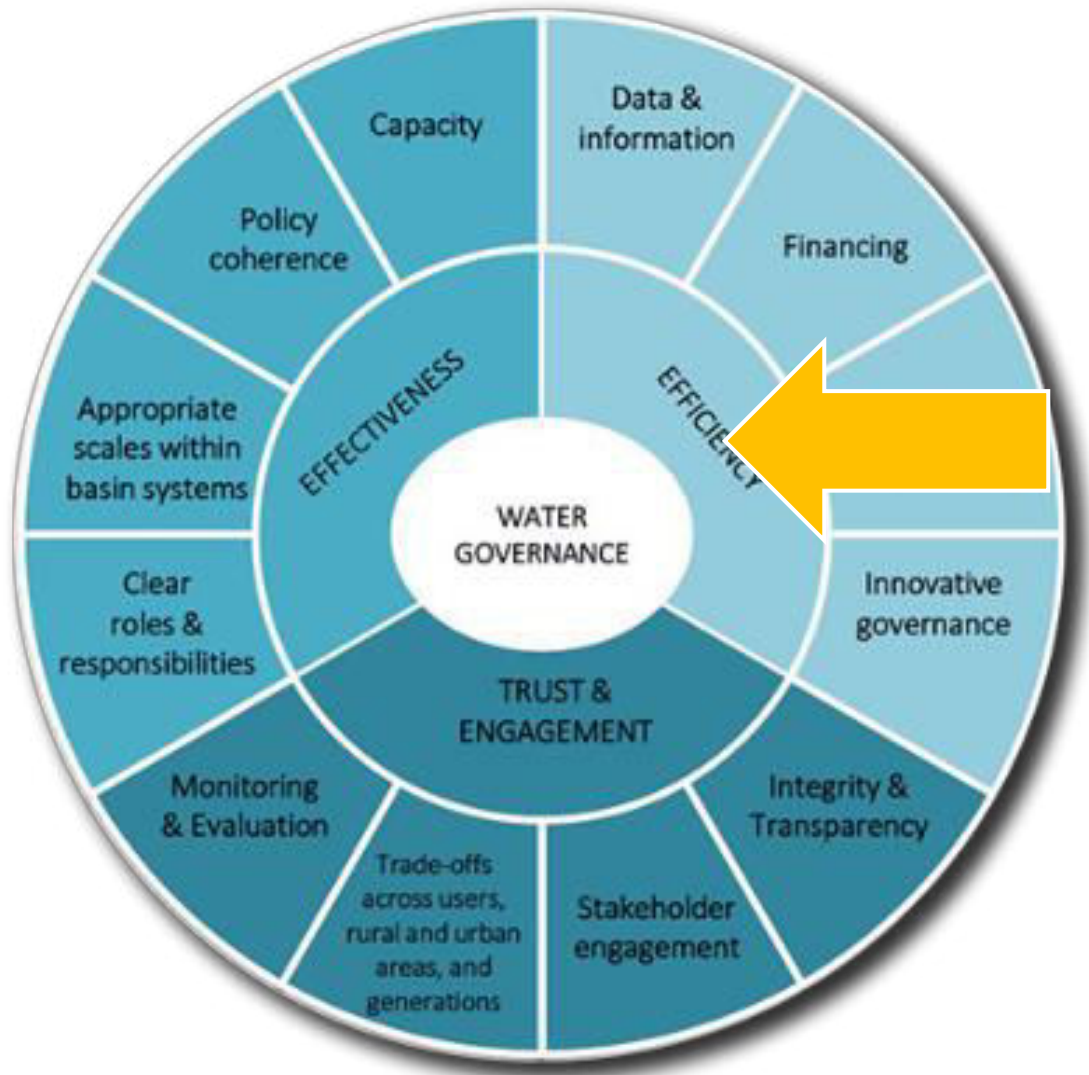
Subcategory 2: Appropriate scales within basin systems

Subcategory 3: Policy coherence

Subcategory 4: Capacity



# Efficiency category



Subcategory 5: Data and information

Subcategory 6: Financing

Subcategory 7: regulatory frameworks

Subcategory 8: Innovative governance



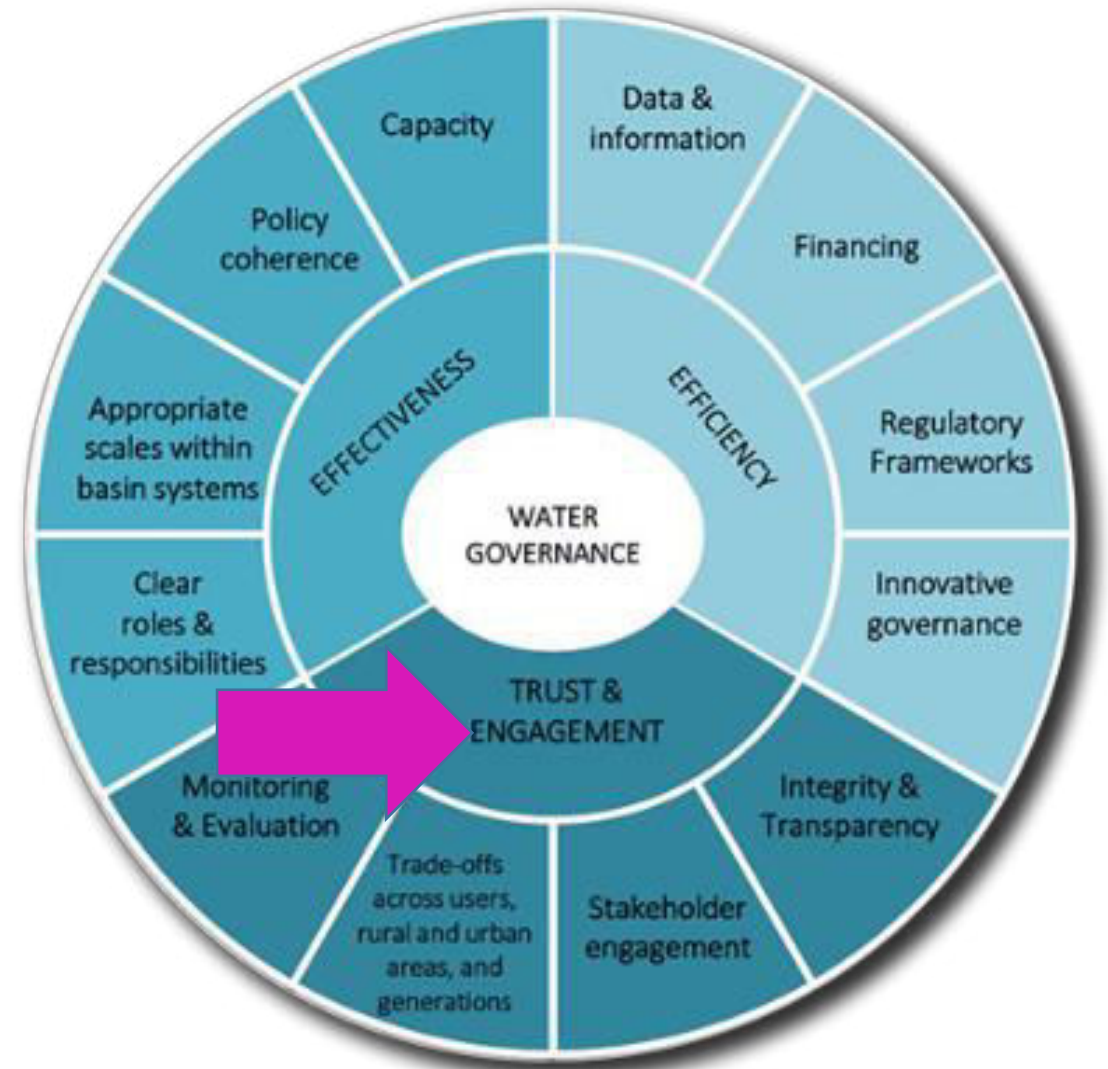
# Trust and engagement category

Subcategory 9: Integrity and transparency

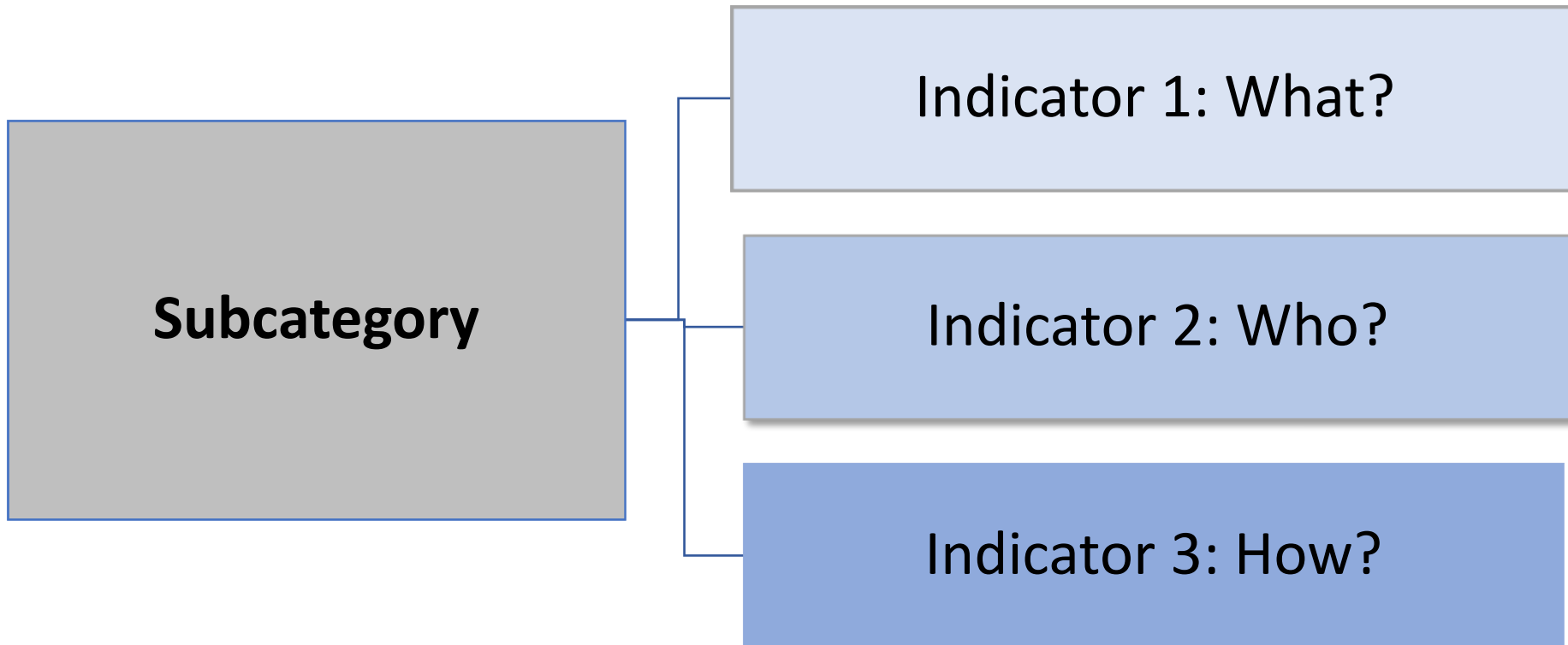
Subcategory 10: Stakeholder engagement

Subcategory 11: Trade-offs across users, rural and urban areas and generations

Subcategory 12: Monitoring and evaluation



# Indicators of the Governance pillar



## EFFECTIVENESS INDICATORS

<b>Clear allocation of roles</b>	Existence of local regulatory powers for smart water services provision and water resources management
	Existence and functioning of a department at the local level with core water-related responsibilities for water policy making
	Existence and implementation of mechanisms to review roles and responsibilities, to diagnose gaps and adjust when need be
<b>Adequate scale</b>	Existence and level of implementation of integrated water resources management policies and strategies that include the urban level and cities' features and water status
	Existence and functioning of institutions managing urban water (not necessarily exclusively) at the hydrographic scale
	Existence and level of implementation of co-operation mechanisms for the management of water resources across water-related users and levels of government, including the local level.
<b>Coordination</b>	Existence and implementation of cross-sectoral local policies and strategies promoting policy coherence between water and key related areas, in particular local environment, health, energy, agriculture, land use and spatial planning
	Existence and functioning of an inter-departmental body or institutions at the local level for horizontal co-ordination across water-related policies
	Existence and implementation of mechanisms at the local level to review barriers to policy coherence and/or areas where water and related local practices, policies or regulations are misaligned.
<b>Capacity</b>	Existence and level of implementation of hiring policies based on a merit-based and transparent professional and recruitment process of water professionals
	Existence and functioning of mechanisms to identify and address capacity gaps in local water institutions
	Existence and level of implementation of educational and training programmes for local water professionals

## EFFICIENCY INDICATORS

<b>Water data</b>	Existence and functioning of updates, timely shared, consistent and comparable water information systems at the local level.
	Existence and functioning of public institutions, organisations, or agencies in charge of producing, co-ordinating and disclosing standardised, harmonised and official local water-related statistics.
	Existence and level or implementation of mechanisms to identify and review local water data gaps, overlaps and unnecessary overload.
<b>Financial resources</b>	Existence and level of implementation of governance arrangements that help local water institutions collect the necessary revenues to meet their mandates and drive water-sustainable and efficient behaviours
	Existence and functioning of a dedicated institution in charge of collecting water revenues and allocating them to the right level
	Existence and level of implementation of mechanisms to assess short -, medium- and long-term investment and operational needs and ensure the availability and sustainability of such finance
<b>Sound water management regulatory frameworks</b>	Existence and level of implementation of a sound water management regulatory framework to foster enforcement and compliance, achieve regulatory objectives in a cost-effective way, and protect the public interest
	Existence and function of dedicated public institutions responsible for ensuring key regulatory functions for water services and resources management at the city level
	Existence and level of implementation of regulatory tools to foster the quality of regulatory processes for water management at city level
<b>Innovative water governance practices</b>	Existence and level of implementation of policy frameworks and incentives fostering innovation in water management practices and processes at the local level
	Existence and functioning of institutions encouraging bottom-up initiatives, dialogue and social learning as well as experimentation in water management at the local level
	Existence and level of implementation of knowledge and experience-sharing mechanisms to bridge the divide between science, policy and practice at the local level

## TRUST AND ENGAGEMENT INDICATORS

Integrity and transparency	Existence and level of implementation of legal and institutional frameworks (not necessarily water-specific) on integrity and transparency
	Existence and functioning of independent courts (not necessarily water-specific) and supreme audit institutions that can investigate water-related infringements and safeguard the public interest
	Existence and level of implementation of mechanisms (not necessarily water-specific) to identify potential drivers of corruption and risks in all water-related institutions at different levels, as well as other water integrity and transparency gaps
Stakeholder engagement	Existence and level of implementation of legal frameworks to engage stakeholders in the design and implementation of local water-related decisions, policies and projects
	Existence and functioning of organisational structures and responsible authorities to engage stakeholders in local water-related policies and decisions
	Existence and level of implementation of mechanisms to diagnose and review stakeholder engagement challenges, processes, and outcomes
Trade-off management	Existence and level of implementation of formal provisions or legal frameworks fostering equity across water users and generations at the local level
	Existence and functioning of a local Ombudsman or institution(s) to protect water users, including vulnerable groups
	Existence and implementation of mechanisms to manage trade-offs across users, and/or over time in a non-discriminatory, transparent and evidence-based manner at the local level
Regular monitoring	Existence and level of implementation of policy frameworks promoting regular monitoring and evaluation of water policy and governance
	Existence and functioning of institutions in charge of monitoring and evaluation of water policies and practices and help adjust where need be
	Existence and level of implementation of monitoring and evaluation mechanisms to measure to what extent water policy fulfils the intended outcomes and water governance frameworks are fit-for-purpose

**Sample  
Evaluation sheet**

Indicator 1.1.a. Existence of a clear allocation of responsibilities in water resources management and water services provision						
<b>Function</b>	<p>A clear allocation of responsibilities is important in water resources management, urban water safety and all water services provision because it helps to ensure that stakeholders understand their roles and responsibilities, promotes efficient use of water resources, and ensures sustainable provision of water services. In water resources management, various stakeholders such as national and local governments have different roles and responsibilities in managing water resources. If their roles and responsibilities are not clearly defined, there may be conflicts and duplication of effort which can lead to inefficient use of water resources and even water scarcity. Clear allocation of responsibilities helps to avoid such conflicts, ensure coordination among stakeholders, and promote efficient use of water resources. In water services provision, different entities such as different water utilities and regulatory bodies have different roles and responsibilities. Clear allocation of responsibilities helps to ensure that each entity performs its role effectively, and that water services are provided efficiently and sustainably.</p> <p>This indicator examines if the distribution of responsibilities is comprehensive and detailed enough so every stakeholder knows their roles and duties.</p> <p>A clear allocation of responsibilities is usually established by legal texts and policy documents.</p>					
<b>Q1.1.a</b>	<b>Is there a clear allocation of responsibilities among relevant stakeholders in water resources management and water services provision in your city?</b>					
<b>Response</b>	<i>Please tick the option that better describe the existing situation</i>					
		Yes	Yes, with some deficiencies	Yes, but not operational	No, but underdevelopment	No
	For Urban water resources management					
	Urban water safety					
	Waste water					
	Water quality and treatment					
<b>Data type</b>	Qualitative					
<b>Sources of information</b>	<i>Please indicate the source of this information (national or local laws, regulations, policies, guidelines etc.)</i>					

# How to measure and score?

Scale from 0 to 4, depending on Value for each indicator

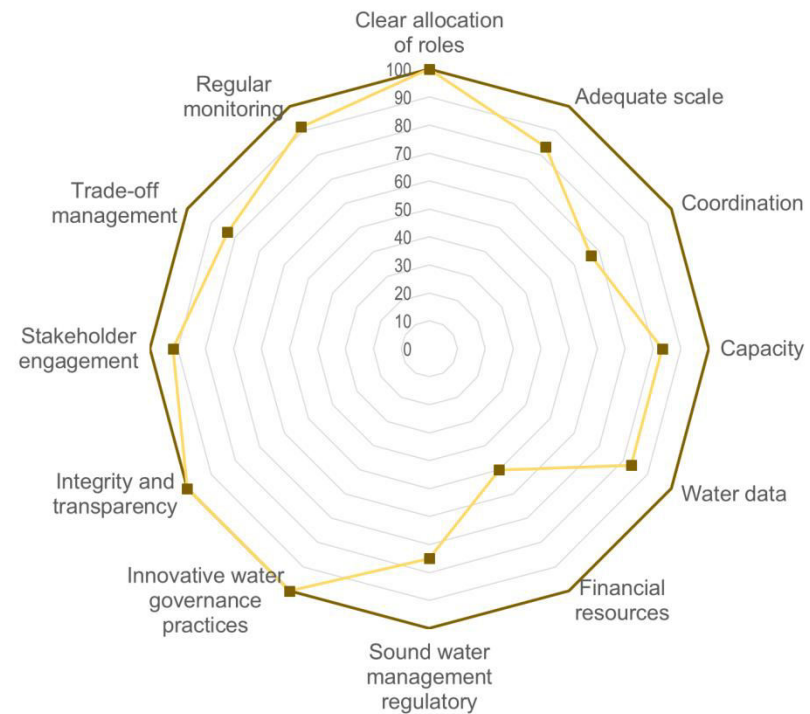
	Score
<b>In place, fully operational.</b>	<b>4</b>
<b>In place, partly operational. The measure is adopted but it is only partially implemented</b>	<b>3</b>
<b>In place, but not operational. The decision to adopt a particular measure is taken, but the implementation is inexistent</b>	<b>2</b>
<b>Under development. Only preliminary measures have been adopted (the topic is on the agenda)</b>	<b>1</b>
<b>Not in place. No points are given when a measure is neither adopted nor under development</b>	<b>0</b>

# Radar diagram of Results

## Governance and Prospective pillar

City evaluation score  
Governance and Prospective Pillar

■ Governance and Prospective city score



Governance and Prospective Pillar City total score:

84.03



# Lessons so far

- 1.Challenges in data availability and quality**
- 2.Need to enhancing communication and guidelines**
- 3.Capacity building for local policy and decision-making**
- 4.Analysis of urban water systems over time**

Thanks!