SF 67: Decentralizing water treatment and supply, as well as wastewater treatment for higher resiliency

Fr	B	C	NY	S	T	Total
2	4	4	8	1	6	25

Example:
Several examples exist, e.g. rainwater harvesting for irrigation and cooling (in Via Verde, **NYC**) as well as wastewater treatment within building complexes (The Solaire, the Visionaire) in **New York City**; rainwater usage in Copenhagen, supported by HOFOR.
Most examples for decentralized elements of the urban water infrastructure are realized for water saving and therefore money saving purposes or to increase sustainability. In areas with low population density and/or with a dynamic changing demography, decentralized systems often are the more favored option due to higher flexibility and economical aspects.
The increase of resiliency is mostly not the main emphasis for these projects, since the vulnerability of the water infrastructure system is often not put into question. However when questioning the vulnerability of the water infrastructure system, decentralized elements of water treatment and supply, as well as wastewater treatment lead to higher resiliency due to reducing independency from the one centralized water supplier or provider of wastewater treatment.

1. Differentiated description of the key field

Decentralizing elements of the water treatment and supply, as well as wastewater treatment can be realized on different implementation levels, and within different organizational structures. One possible element is a singular rainwater harvesting tank, as realized within several "green buildings" in NYC, from which the rainwater is used for irrigation purposes or building cooling. Another element is the use of water filters on household level, in case water cannot be provided in the desired quality due to problems within the water supply system in general or on building level.
Wastewater treatment (e.g. by usage of Membrane-Bioreactors) on building level is also an element of decentralizing parts of the urban water infrastructure system.
The implementation can be triggered by individual whishes for better water quality (as in the case of water filters on household level) or economical aspects (usage of rainwater for irrigation) as well as by regulative incentives (as in the case of Battery Park City Authority of NYC). The operation and maintenance can be organized individually (e.g. on household/building level) or more centralized by an operating unit being responsible for several (or even all) decentralized treatment facilities (e.g. American Water operating several units in Battery Park City in NYC via American Water Works Company Inc.).

In the six cities, observed within the m:ci project some impressive implementations of elements of decentralized water treatment and supply, as well as wastewater treatment could be observed. However, pressure for a broad action and for more implementation is currently not seen high enough in these cities.
The main incentives for implementation in the six observed m:ci cities were individual and to some extend regulative objection for higher quality and increase sustainability. However, if needed this approach would allow an increased resiliency, due to a reduced independency from singular technological units of a centralized water supplier or provider of wastewater treatment.

2. Reference to sustainability:

3. Relevance to industrial sectors?

Mobilität: Low
Energie: Middle
Produktion & Logistik Low
Sicherheit: High
IKT: High
Wasser Infrastruktur: High
Gebäude: High
Governance: High

4. Impact (positive & negative)

5. Implementation measures:

6. Actors: Who can shape things?

7. Prerequisites:

np prerequistes necessary

8. Obstacles/barriers:

9. Indicators:

10. Special features/remarks: