



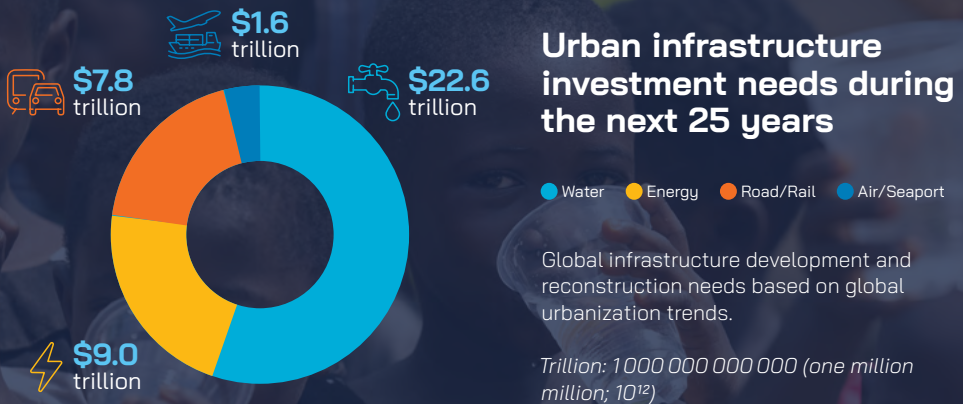
**Cost recovery constraints  
in water infrastructure development**

# **Bankable and sustainable WASH solutions**

to overcome affordability barriers limiting  
the mobilization of private capital.

# The challenge

The water utility infrastructure management and development are facing profound financing gaps Even in Europe. The reconstruction of the aging water infrastructure is underfinanced and underperforming. Capital costs are not or just partly included into tariffs, nor covered by public spending. The yearly reconstruction rate of the existing infrastructure is less than 1%–0.1%, which is presuming an unrealistic life expectancy of up to over 1000 years.



Source: UNEP City Level Decoupling 2013 [http://www.unep.org/resourcepanel/portals/24102/pdfs/Cities-Full\\_Report.pdf](http://www.unep.org/resourcepanel/portals/24102/pdfs/Cities-Full_Report.pdf)

Detailed and large-scale investment and asset evaluation results show that EU standard (nearly full scale) water and sanitation utility infrastructure investment/replacement costs are **1500–7500€/capita**. With the collection and distribution network fluctuating between **1200–5700€/capita** (75–80% of the total) depending on local conditions, but mainly on the size of the municipalities – the smaller the more expensive.

If the world's richest regions full scale and inclusive water infrastructure development is unbankable, then how do we expect it to be worldwide?

Limited and inefficient public funding enforces the mobilization of private investments to complement this area, but cost recovery is not or hardly provided. Limited capacity and/or readiness to pay (partly but not only due to affordability constraints) on the one hand and increasing sustainability pressures on the other hand are requiring new, efficient, impactful, attractive for both, public and private, approaches and solutions.

The financial resources needed to finance city level WASH investments indicated in the UNEP City-Level Decoupling Report, **22 600 billion USD** are unrealistic to be funded and invested! This enormous and unimaginably high global amount of capital can and shall be translated into individual spending. Dividing the 22 600 billion USD by the number of the population (6 billion in 2050) living in cities as indicated in the report, we are coming to 3 500–4 000 USD investment needs per capita! This corresponds exactly with our findings based on the asset evaluation results on the European “nearly full scale” water infrastructure systems.

## The solution

**The solutions are based on existing, affordable and sustainable WASH approaches and solutions that are proven and can be attractive enough for the private sector as well.** We have to focus on solutions, both for drinking water provision and liquid waste (septic sludge) handling, for communities where there is no adequate, or any water supply or sewerage network.

Drinking water for an initial investment of less than **25€/capita** and service provision for less than 5€/person/year, including cost recovery for initial capital costs. Liquid waste management, and purification for an initial investment of less than **45€/capita**, and service of less than 10€/person/year, including cost recovery for initial capital costs.

The CAPEX and OPEX differences between WASH investments are significantly indicated in the UNEP City-Level Decoupling Report. To solve the problem we have to highlight the alternative **“near to consumer” solutions.**

The alternative “near to consumer” solutions with an investment cost for drinking water provision and liquid waste handling is less than **70€/capita**, the **total capital needed for 4 billion people** living in less developed cities and rural areas will be **only 280 billion USD**.

## Comparison of full-scale and near the consumer solutions

### Infrastructure costs /person

drinking water

wastewater

drinking + wastewater

### Supply cost /person/year

drinking water

wastewater

drinking + wastewater

### Global capital needs USD

drinking + wastewater



### Full-scale solutions

500–2 500 €

1 000–4 500 €

1 500–7 000 €

35–70 €

50–100 €

85–170 €

**\$22 600**  
billion



### Near the consumer solutions

**<25 €**

**<45 €**

**<70 €**

**<5 €**

**<10 €**

**<15 €**

**\$280**  
billion

The impact of the implementation of the alternative “near the consumer” solution will be

- reduction of required investment capital by nearly **99%**,
- safe drinking water provision for less than **5€/person/year**,
- liquid waste management, and purification service of **less than 10€/person/year**,
- **affordable WASH services**, with tariffs including initial capital costs,
- **return on the invested capital** → involvement of private capital.

Our bankable and sustainable solutions are listed as a [Water Action Agenda](#) commitment which contribute to the acceleration of the Sustainable Development Goals.