United Nations
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Towards affordable wastewater treatment technologies

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Wastewater treatment by world regions

Regions	Population with sewerage connection in large cities, %	Portion of wastewater treated to secondary level, %
Northern America	96	90
Europe	92	66
Asia (including Japan and South Korea)	45	35
Latin America and the Caribbean	35	14
Africa	18	<1

Source: WHO/UNICEF Global Water Supply and Sanitation Assessment 2000 Report

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Wastewater treatment technologies

On-site, decentralized technologies

Conventional centralized technologies

Innovative cutting-edge technologies

Low volume and treatment capacities , low capital cost

High capital and infrastructure investment, high O&M costs

Do not require infrastructure, potentially cost-effective, can work with renewal energy

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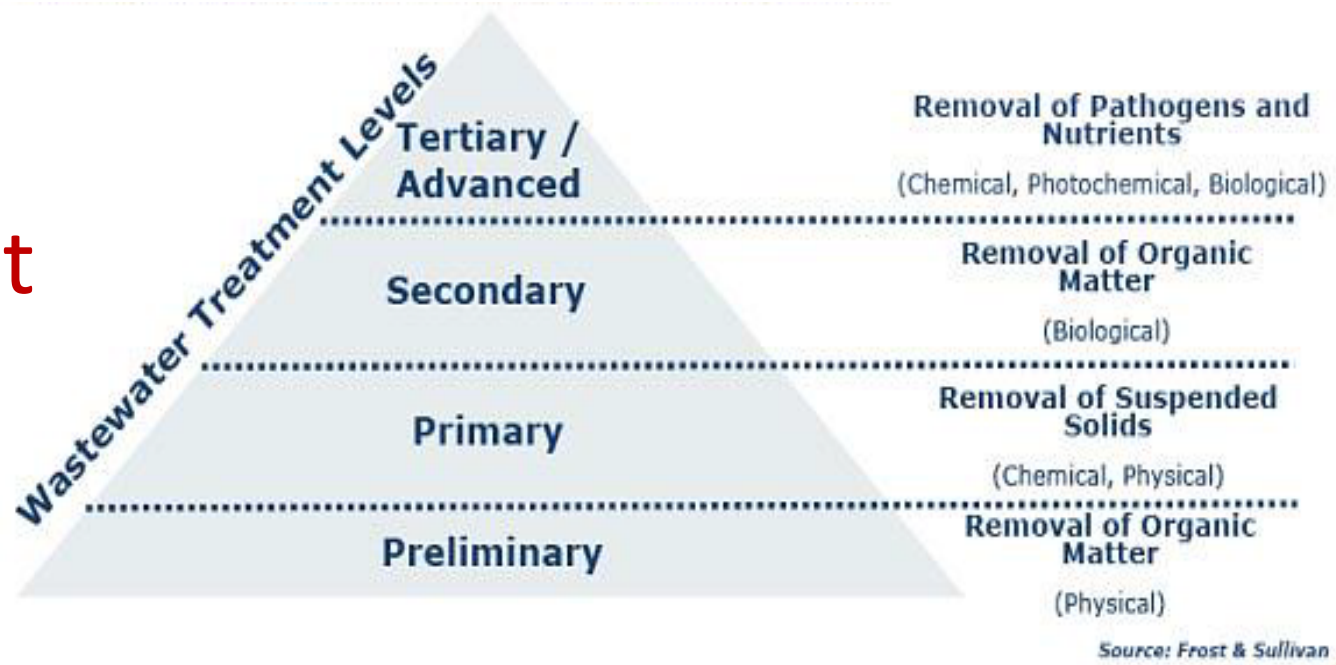
Cost of wastewater treatment technologies

Cost



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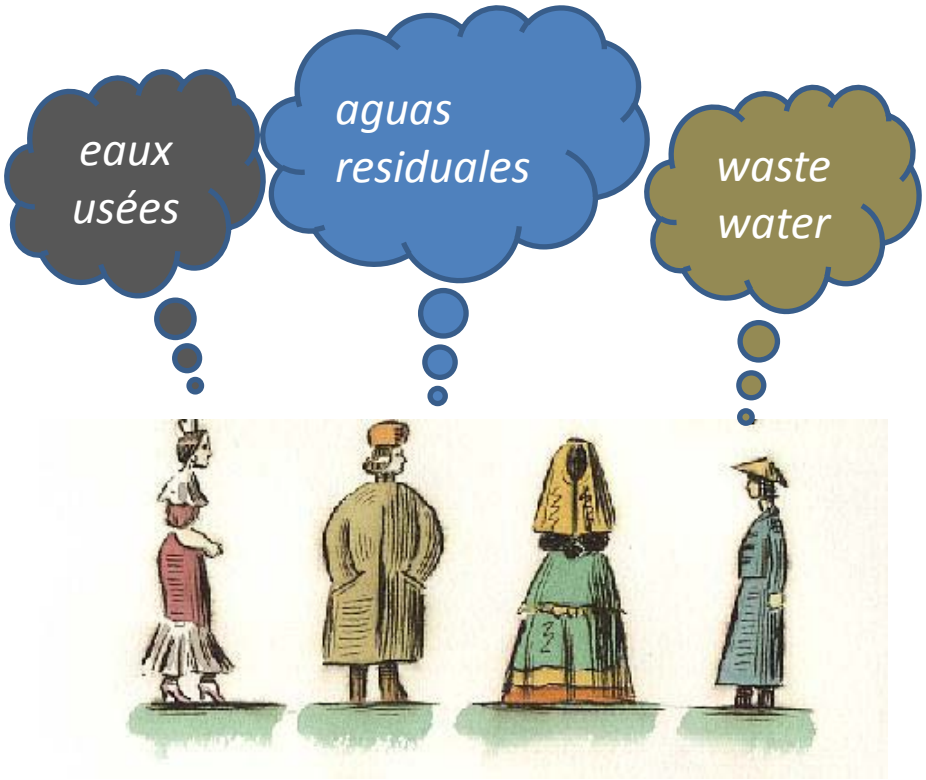
Alternative energy solutions are needed for wastewater treatment

A solar photocatalytic reactor

- **Energy-efficient wastewater treatment technologies**
- **Energy recovery from wastewater** (biosolids and sludge)
- **Renewable energy-based wastewater treatment technologies**

Technology is culturally sensitive



- Different cultures and traditions associated with water
- Religious, cast and tribal norms
- The role of women in the uptake and use of technologies

Technology is a practical application of science and knowledge

- Scientific innovation, cutting-edge research
- Paradigm changes: a scientific paradigm shift, a technological paradigm change, and social paradigm changes
- Water education and capacity building, including knowledge generation and dissemination
- Policies that encourage greater uptake of sustainable technologies

Towards affordable wastewater treatment

Sustainable, innovative wastewater technologies that:

- are low-cost (not investment intensive)
- do not require huge infrastructure and engineered facilities
- are adaptable to local needs and conditions, as well as to local social and cultural contexts
- to be accompanied by adequate training and capacity building
- to be implemented with other measures such as wastewater reduction at the source

Technology is a tool—a means of implementation—to reach a Sustainable Development Goal on water

- To meet the basic water needs for all
- To improve access to water and sanitation
- To fulfill water and food safety
- To satisfy water demands in a sustainable way
- To provide a new source of water (wastewater reclamation and desalination) and make productive use of wastewater

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