

# **“CONVENTIONAL STRATEGIES AND SYSTEMS FOR WASTEWATER DISPOSAL: COMMENTS AND RECOMMENDATIONS EMPHASIZING IN SOCIAL AND GENDER ASPECTS”**

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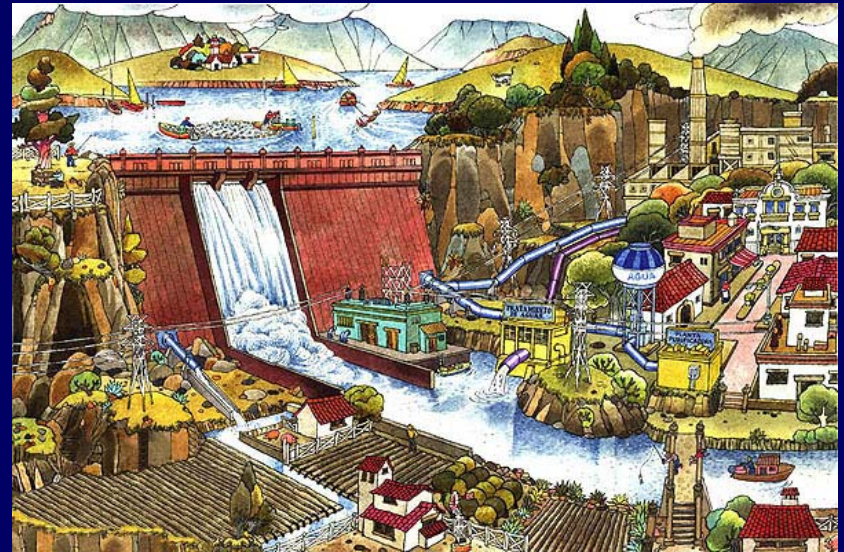
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Assessments Area*

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Steering Committee Member  
Gender and Water Alliance*



\* **Increasing world population in urban areas**

\* **Wastewater produced by that population**



# Annual water use per capita

**USA**  
**366 m<sup>3</sup>**  
100 m<sup>3</sup> household  
140 m<sup>3</sup> services  
126 m<sup>3</sup> industry



**EUROPE**  
**232 m<sup>3</sup>**  
57 m<sup>3</sup> household  
35 m<sup>3</sup> services  
140 m<sup>3</sup> industry



**AFRICA**  
**25 m<sup>3</sup>**  
10 m<sup>3</sup> household  
8 m<sup>3</sup> services  
7 m<sup>3</sup> industry



**Use: 150-500 l/d**  
**Drinking: 1-2 l/d**



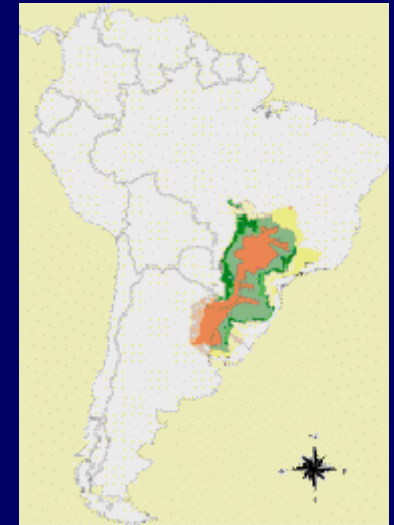
\* **50% current population in urban areas (3 billion)**

\* **By 2030 population 8 billion 60% urban areas (4.8 billion)**



Also, water supply and sanitation for all will mean:

**4.8 billion people will produce  $348 \times 10^9$  m<sup>3</sup> sewage per year, equivalent to 4.2 times the exploitable volume of the Guarani Aquifer, one of the biggest aquifers of the world.**



# Current practise of urban water use not sustainable

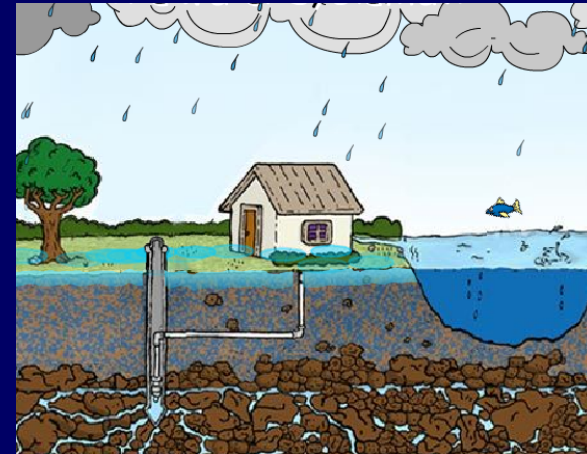
- » Usually is used only once
- » Discharged into water bodies without treatment. <15% world wide



# Current practise of urban water use not sustainable



- \* Water Resources Deterioration
- \* Decline both in quantity and in quality
- \* Less Availability of surface and groundwater





1900 - 2000:

**Population increased 3 times**  
**Water use increased 6 times**

sustainable?



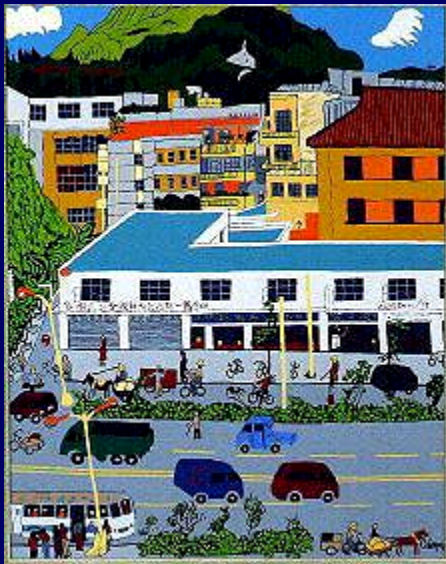
## Up to 2002 in Major Cities:

**% Households connected to piped water ( house or yard connection):**  
**94%**

**% Households connected to sewers:**  
**86%**

**% Coverage Wastewater Treatment:**  
**>15%**

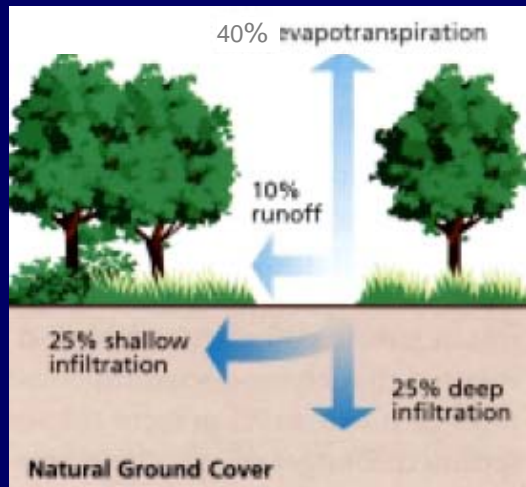
# Direct relationship between water uses and water quality destruction



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# Origin of urban wastewater production....

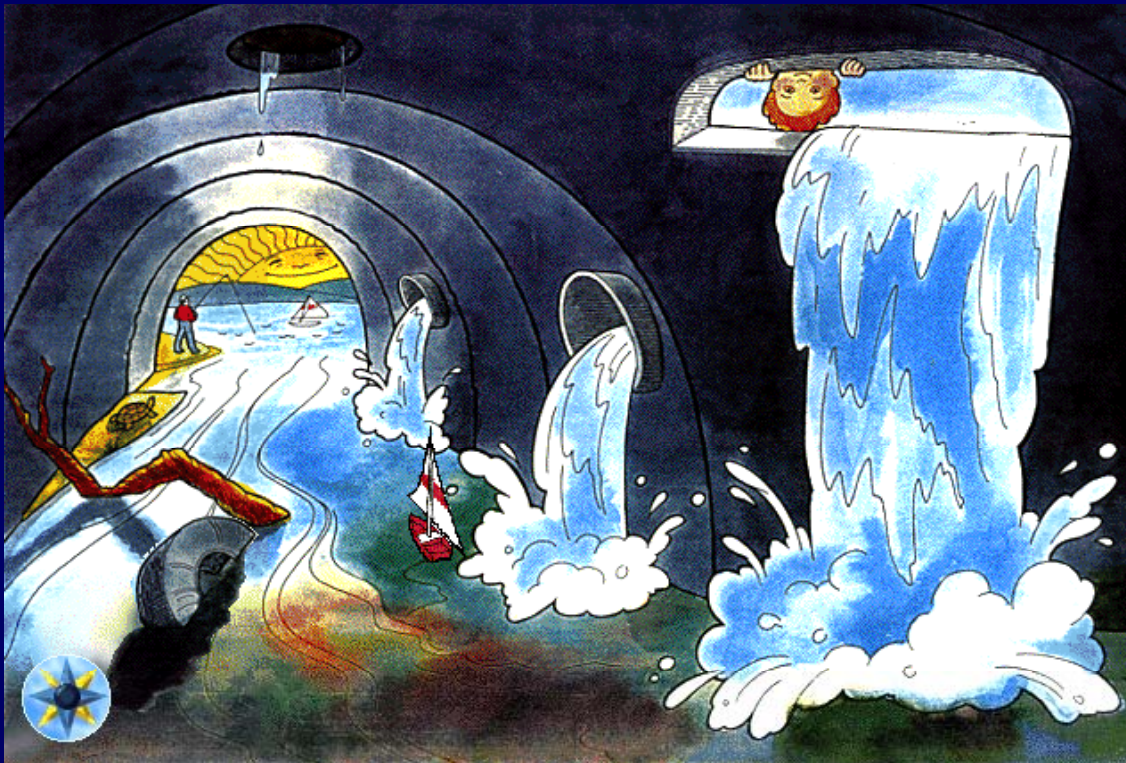
## ...urban water use and consumption





# Use of drinking water to flush toilets, showers, laundry, wash cars, etc.

# Use of water to transport waste

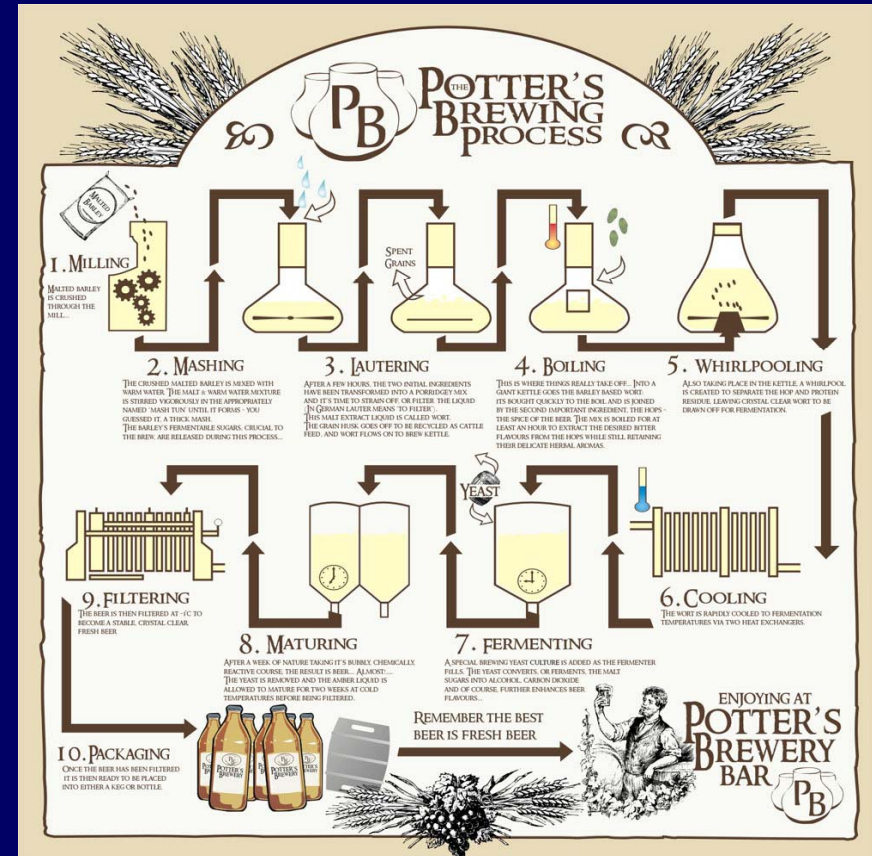


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# Industrial Water Use

## Brewery:

- Zimbabwe 7 l/l product
- Holland 3.6 l/l product



Source: Water Uses and Abuses - Sustainability Achievable?, Prof. Huub J Gijzen., UNESCO-IHE Institute for Water Education, AGUA2003  
29 September - 3 October, Cartagena, Colombia.

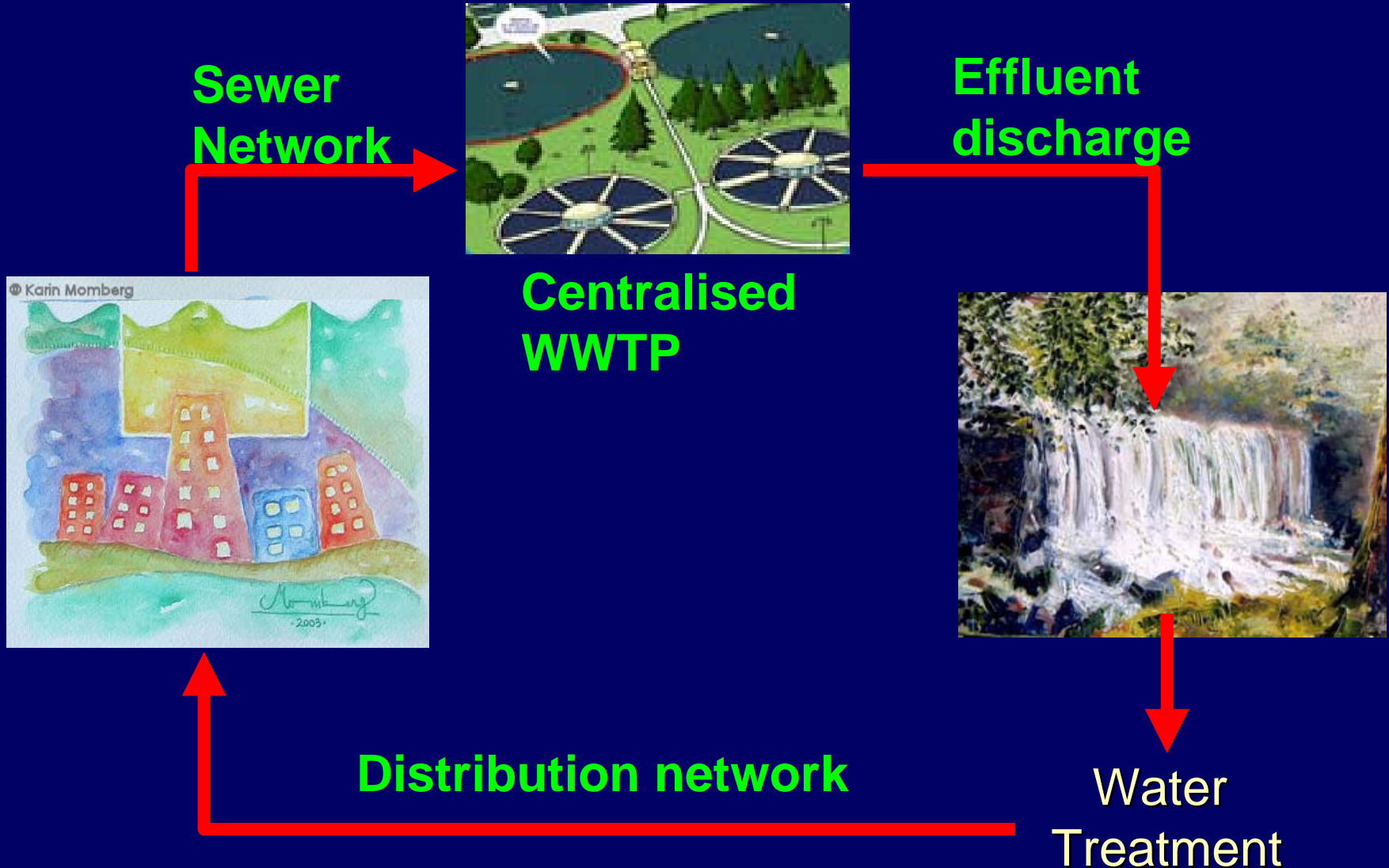
# Wastewater Management

- World-wide <15% of all sewage receives treatment
- Pollution of surface and groundwater by domestic, industrial effluent and run-off
- Public health risks (pathogens, toxic compounds)



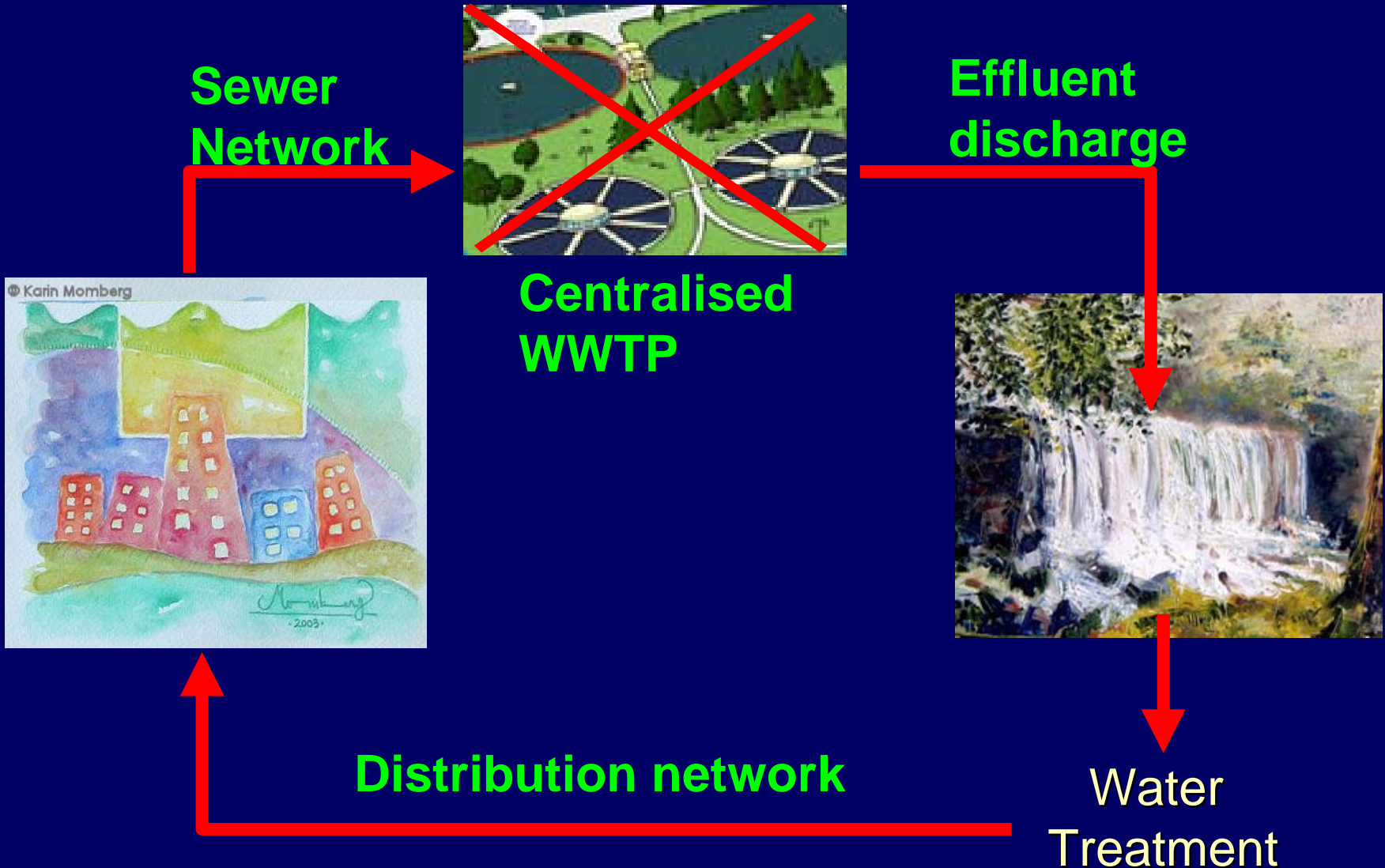


# <15% Urban Water Management



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# >85% Urban Water Management



# Wastewater and people

- \* In 2002 some 2.6 billion people, half of the developing world lacked improved sanitation.
- \* Richest are 4 times more likely to use improved sanitation than the poorest.
- \* Health of poor people is severely affected by contaminated water, poor sanitation services and hygiene.



# Wastewater and gender

- \* Women are more seriously affected by inadequate water supply and sanitation services.
- \* Women have different interests and benefits from the availability, use and management of water.
- \* Women's Social Capital increase the benefit of water services for their communities.



# What to do?

- \* **Water Governance.**
- \* **Communities and stakeholders involvement and participation.**
- \* **Gender Mainstreaming.**
- \* **Demand side Management (Ex: Water saving technologies)**
- \* **Offer side Management (Ex: Reduce unaccounted for water)**
- \* **Water Reuse and Recycling (Crop irrigation)**
- \* **Pollution Prevention**
- \* **Education for a new “Culture of Water”**



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