

Global Challenges

**Sustainable
Water and Energy
Resources
-impact in cities (Lisboa)**

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Lisboa November 2006



EC - sustainability

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Chairman of the largest Wind Co-op in
Denmark (DK)
Chairman of the first PV-Co-op in DK
Chairman of European Green Cities DK



Water Scarcity

70 % of the planet Earth
97,24 % sea water (salt)
Water in ice/snow
Water in the underground
*Less than 1 % is available for
creatures who need water
(human beings and animals)*



Water Scarcity

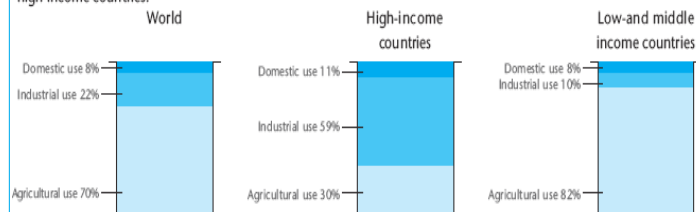
Available water is to a great extent
economically unavailable:
Amazonas Bassin (transportation)
Monsoon areas (storage)
Same amount of water for the past
10 mio. years
Challenges: more people
and climate changes!



Who
USES fresh water?

Competing water uses for main income groups of countries⁶

Industrial use of water increases with country income, going from 10% for low- and middle- income countries to 59% for high-income countries.



Ref. 6: "Water for People, Water for Life" United Nations World Water Development Report, UNESCO, 2003
www.unesdoc.unesco.org

People & Water Consumption

6,3 billion (now)

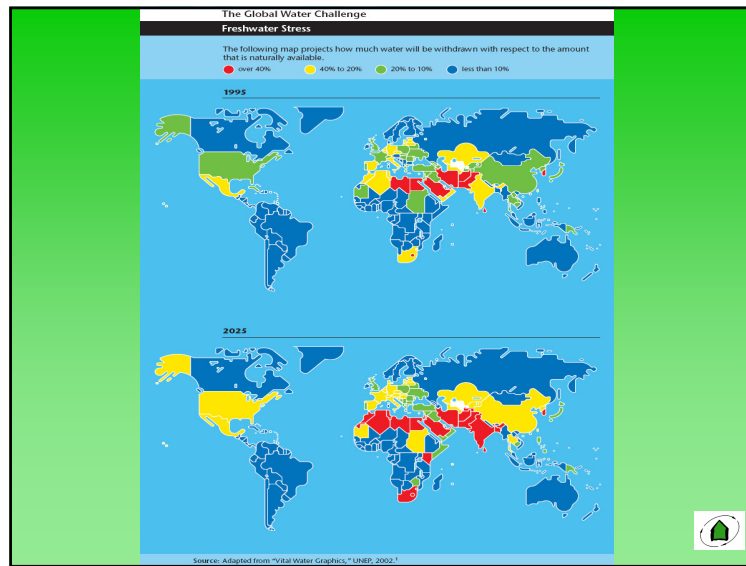
9,3 billion (2050)

Challenge: to be better managers and distributors of available water!

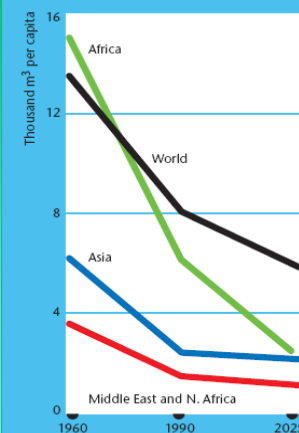
In the 20th century:

Population tripled

Water consumption six-doubled

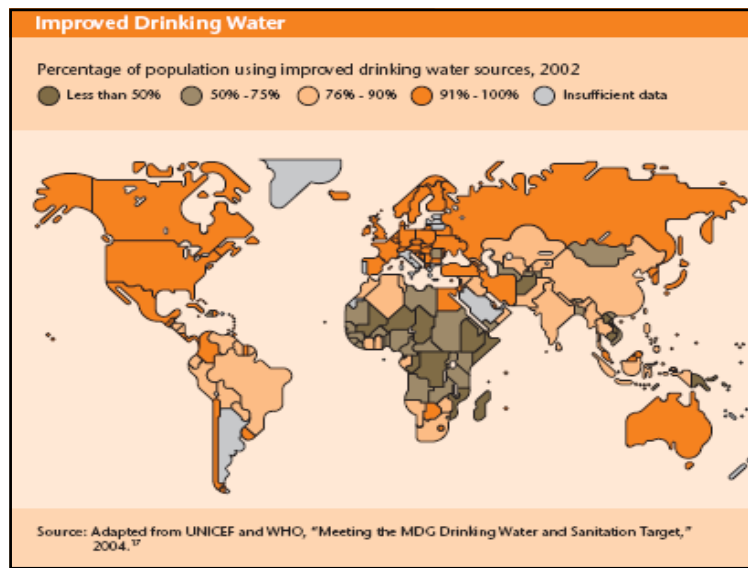
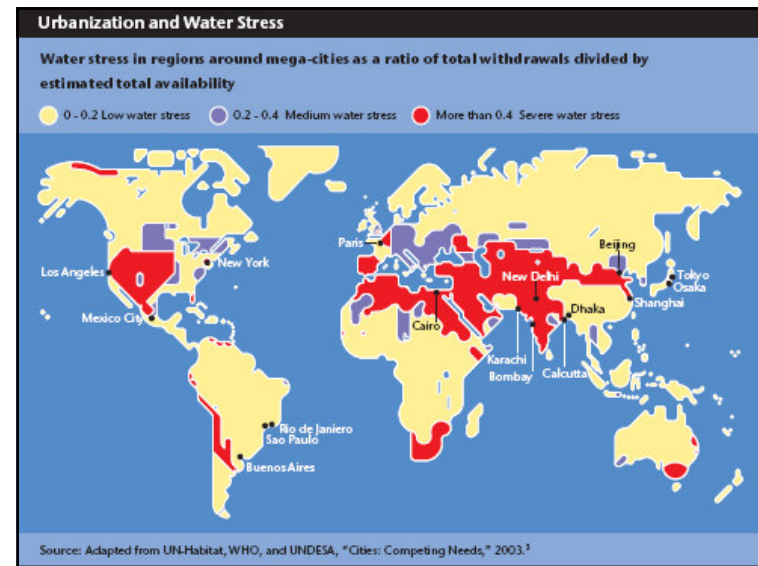
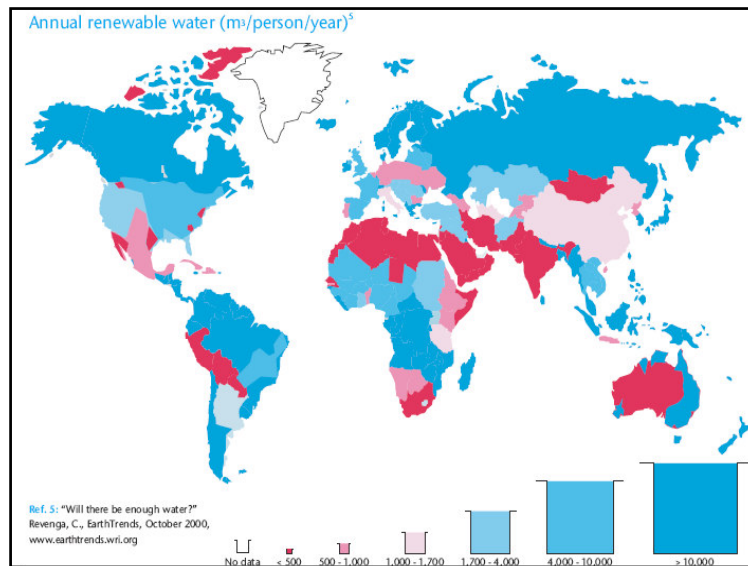


Per Capita Water Availability



Source: Adapted from Grey and Sadoff, "The Global Water Challenge," 2006.²





In 2000 scientists estimated that in 2015
 1/3 of the World's population would
 experience water scarcity.
 In 2006 the estimation is fulfilled!

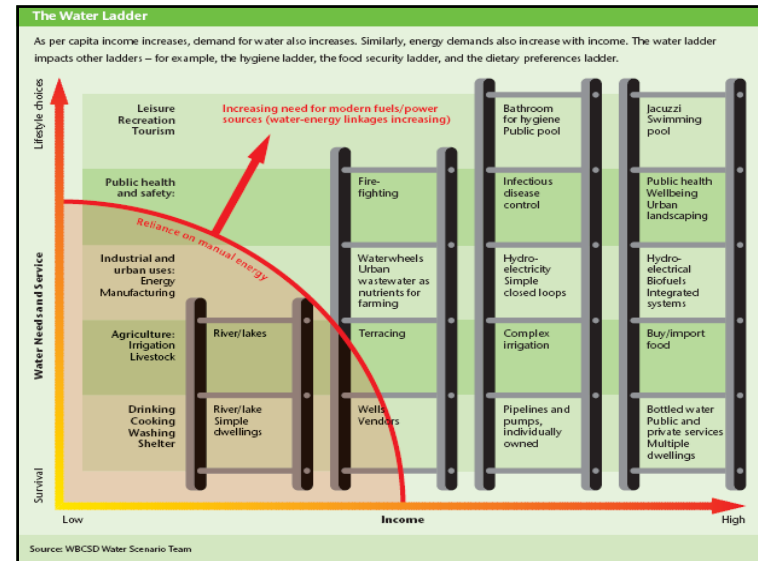
"The wars of the next century
 will be about water"

World Bank Vice President
 Ismail Serageldin, 1995

So what are the reasons and what can be done???

Reasons:

- water scarcity
- water consumption (the water ladder)



What can be done??

- or what can you do??



Best practice??

Shower: on Earth: 50-80 l

in Space: 10 l

Reuse: urin and moisture

No water for hairwash and shaving

No flush in toilets



Examples from DK

- Community Guidelines in new built and existing areas
Agenda 21
(water savings)
- Citizens competitions
(water savings)
 - Reuse of water
(water as a resource)



Community Guidelines

- Agenda 21 as a planning tool
 - Checklists for new built
 - Checklists for renovation
- Consumers manual/guidelines
 - Water work's guidelines

<http://www.greencatalogue.com/en-GB12228/Sideri/Greenbuild+system/Green+build+questionnaire.htm>

www.graested-vandvaerk.dk



Citizens Competition

- Housing areas (Green Diploma)
 - Competitions
- Public Buildings

www.hvidovrefermvarme.dk



Water as a resource

- Cleaning of grey and dark water
 - Purification of water
 - Reuse examples

