



**UNITED NATIONS  
ADVISORY BOARD ON  
WATER & SANITATION  
(UNSGAB)**

# ***Smallwat11 3<sup>rd</sup> International Congress***

**24-27 April 2011  
Sevilla, Spain**



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U.N. Sec.Gen Advisory Board  
on Water & Sanitation  
(UNSGAB)**

## **UNITED NATIONS SEC GEN ADVISORY BOARD ON WATER & SANITATION (UNSGAB)**

- UNSGAB is committed to ensuring that the *International Year of Sanitation-5 Year Drive to 2015* will be included in Agendas of governments globally
- Improve Sanitation and Water for Schools
- Build New Impetus for WasteWater Collection, Treatment, and Reuse

*Source: UNSGAB Hashimoto Action Plan2*

Olivia la O' Castillo

# UNITED NATIONS GENERAL ASSEMBLY DECLARES 2008 INTERNATIONAL YEAR OF SANITATION

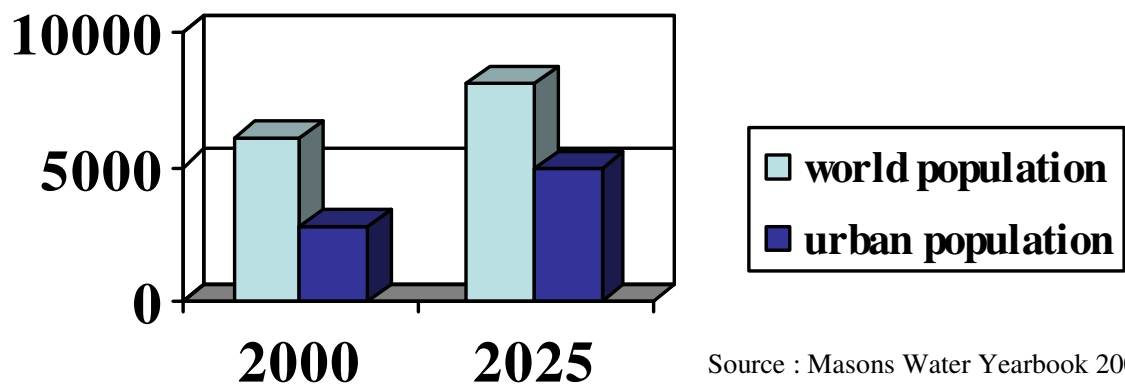
The worldwide sanitation crisis is already of such a momentous human and economic scale that we cannot afford to carry on with “business as usual”. It is high time that all those in positions of responsibility ACT – and this DEG/MWCI PPP provides a solid basis for doing so

This program is another example of what concerned stakeholders can do – to give its share and commitment in showing, demonstrating, and implementing what we should and can do – WE ALL CARE!!!



# *Our World*

- Growing population
- Exploding urban population



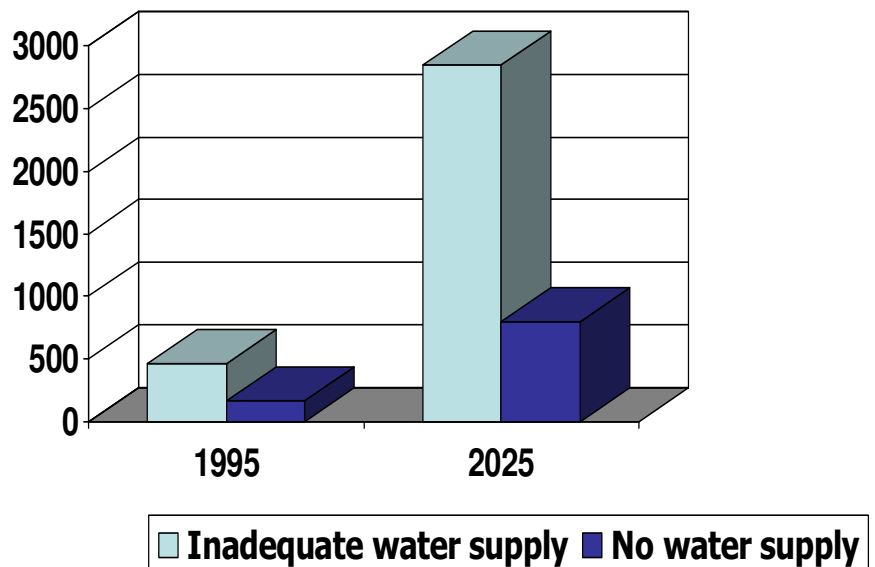
- Deaths from water scarcity (12 M / year)
- Increased poverty in developing countries

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# ***Diminishing Resources Worldwide***

- Water availability
- Climatic changes
- Growing pollution

**World population suffering from water shortage (millions)**

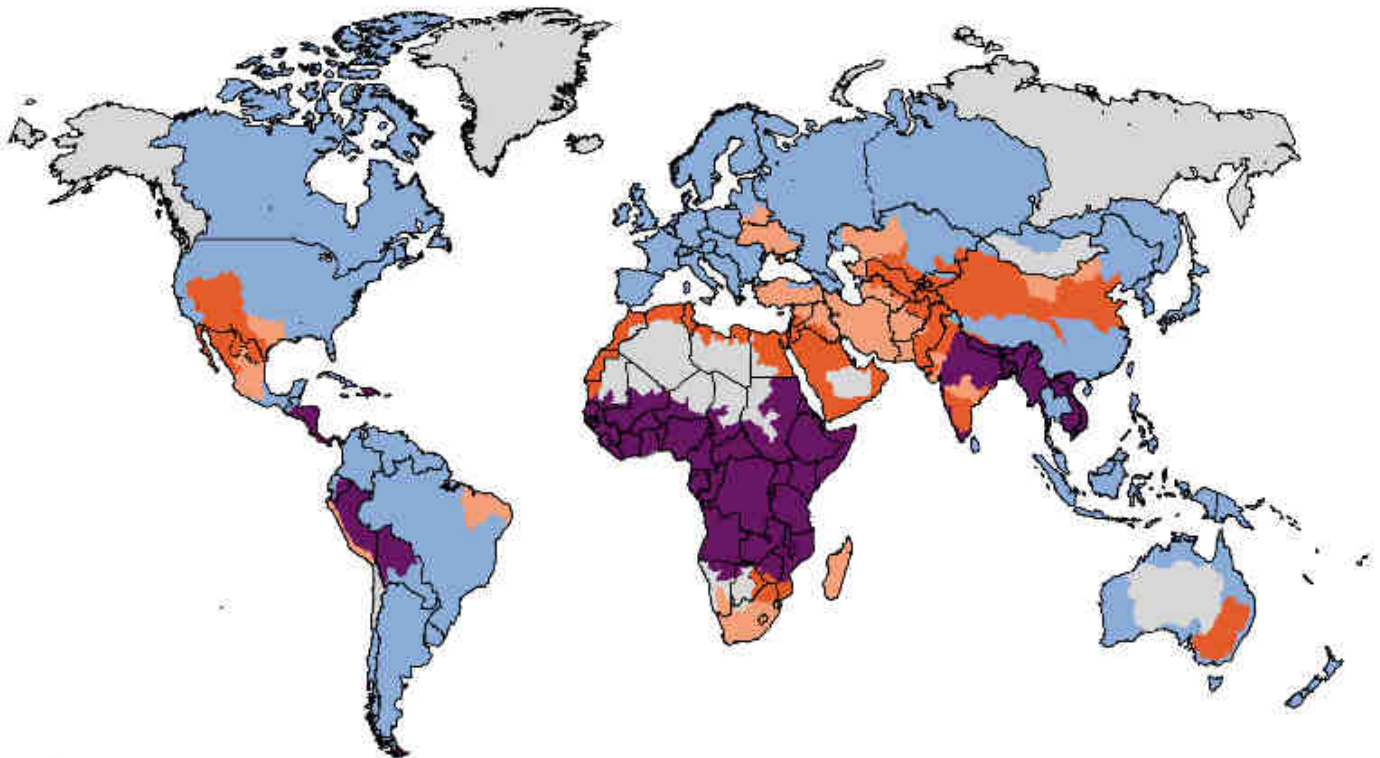
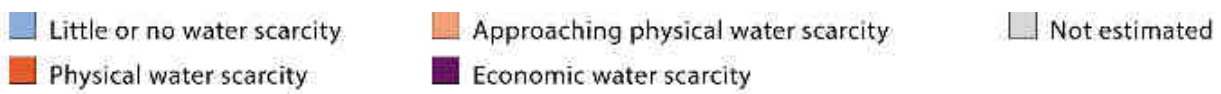


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Source : Masons Water Yearbook 2001

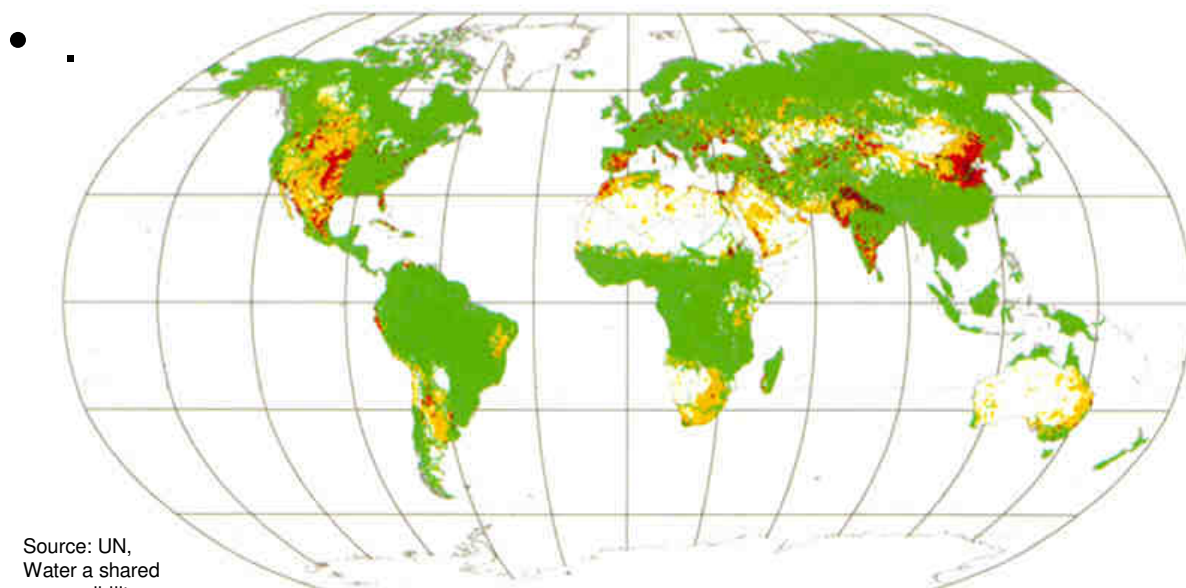
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## Water Scarcity 2000



1/3 of the world's population live in basins that have to deal with water scarcity

# Regions where water withdrawals are exceeding natural supply

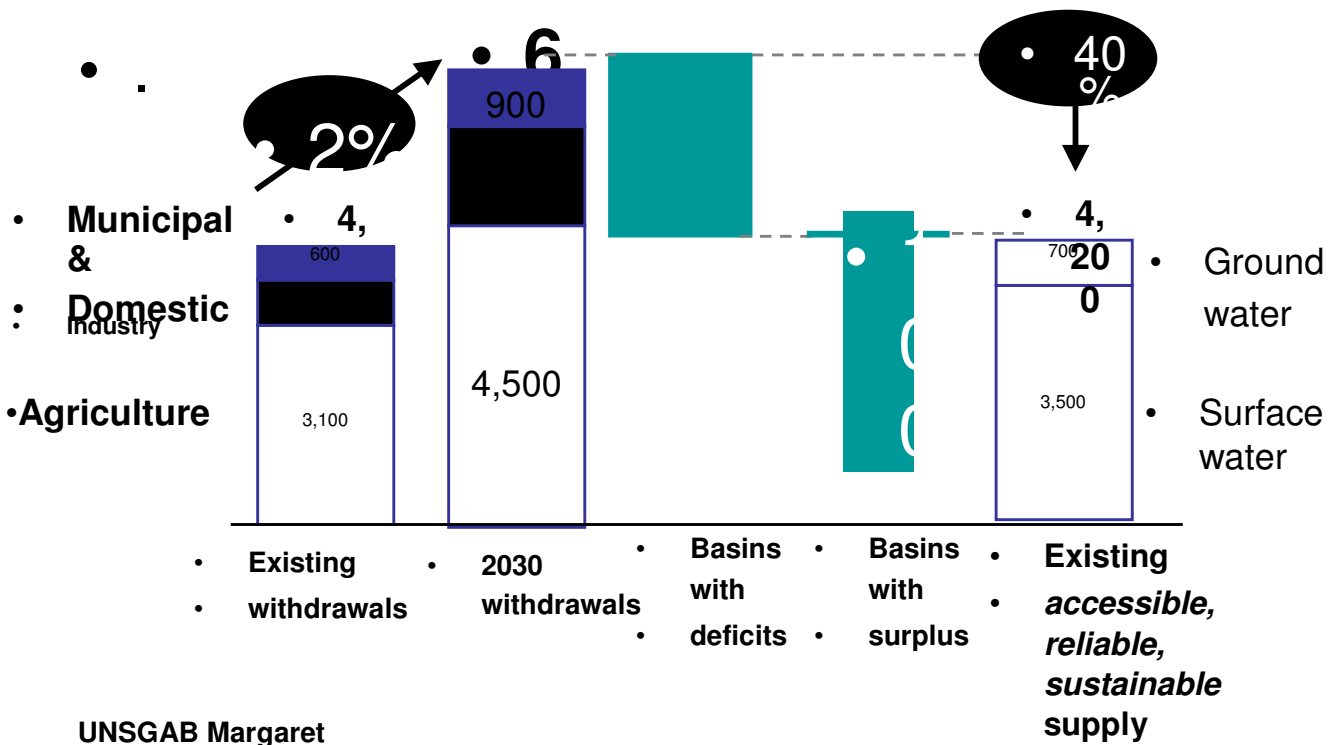


Source: UN,  
Water a shared  
responsibility,  
New York 2006



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# New Voices: McKinsey 2010: Future demand for water will outstrip our capacity to provide it

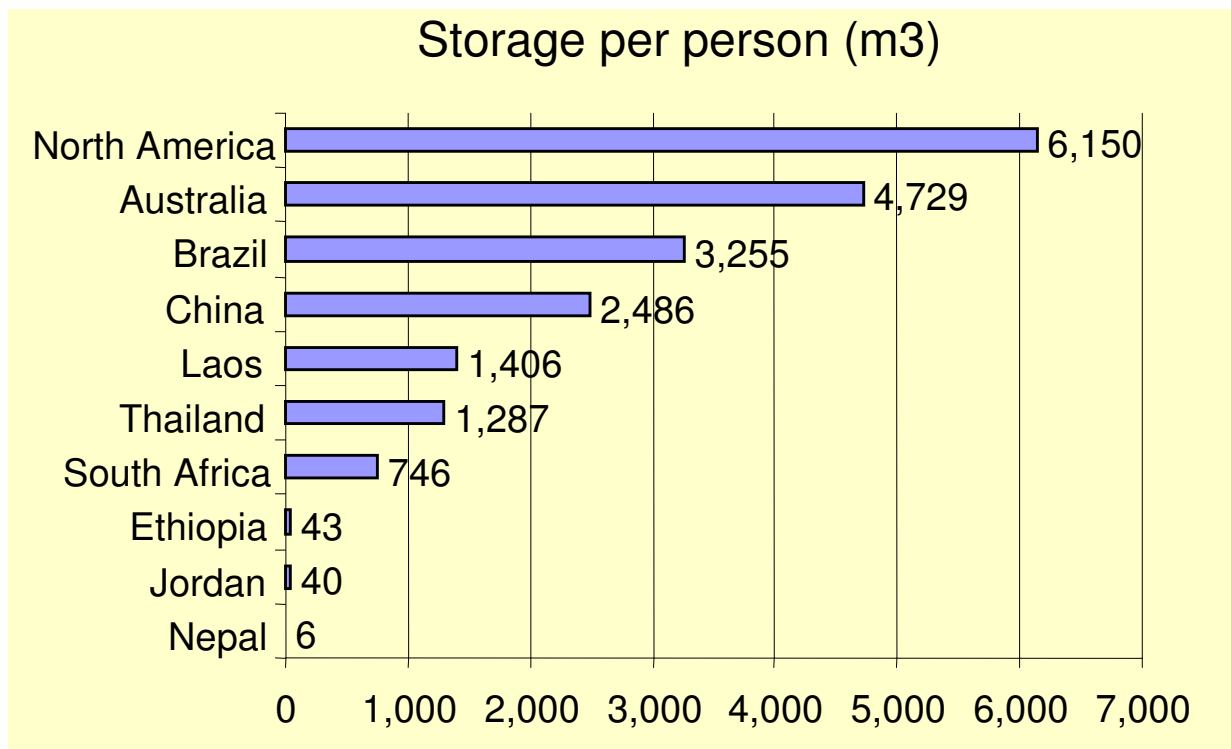


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**So – with all this rising demand –  
How do we create this better water world?  
And ??? "THE ROLE OF WASTEWATER IN  
ADDRESSING SANITATION PROBLEMS"**

- **Storage**
- **Conservation**
- **Agricultural productivity improvement**
- **Brackish water – agriculture and industrial**
- **Re use, recycling, reclaiming water**

# New Storage: Huge discrepancies in hydraulic infrastructure between developed and developing countries



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## Why do we need water?



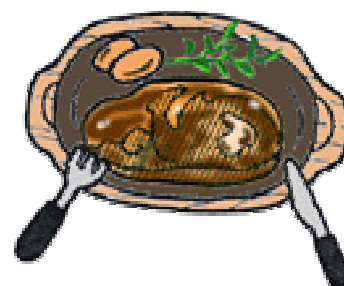
2 - 5 litres  
daily



20 – 500 litres  
daily



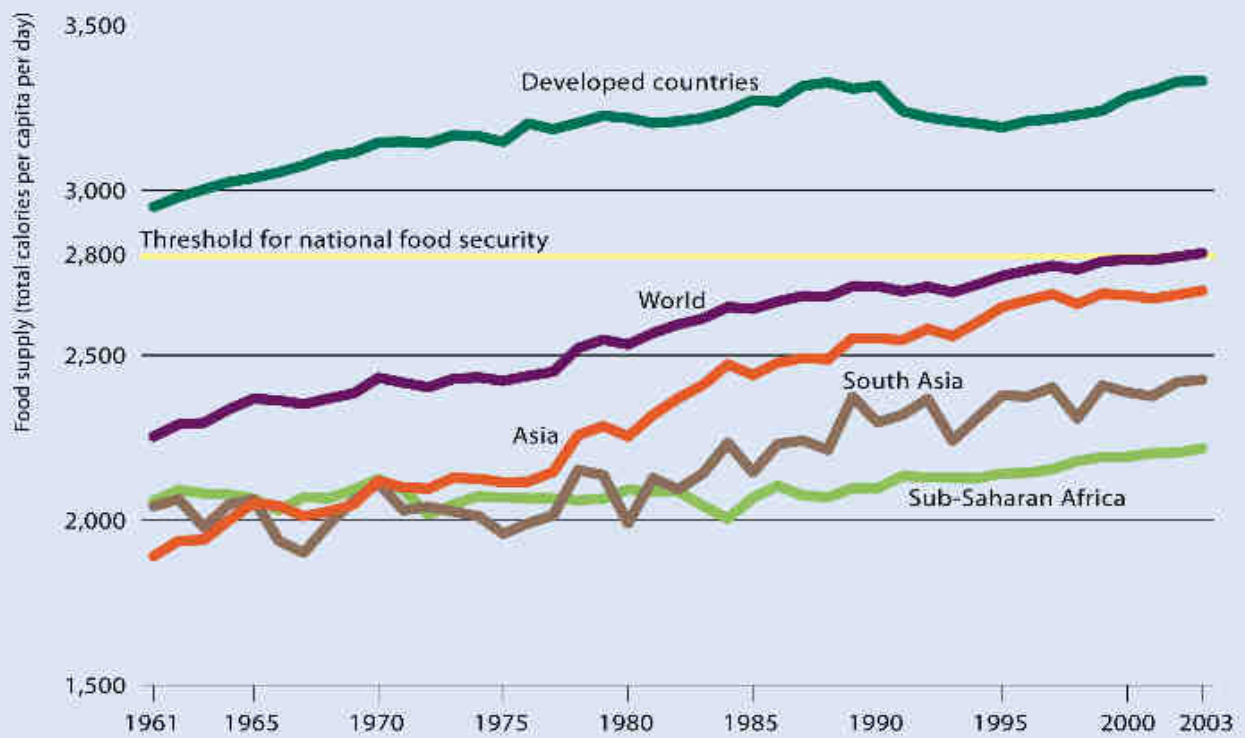
500 – 3000 litres  
per kg



2000 l/day - vegetarian diet  
5000 l/day - grainfed meat  
diet



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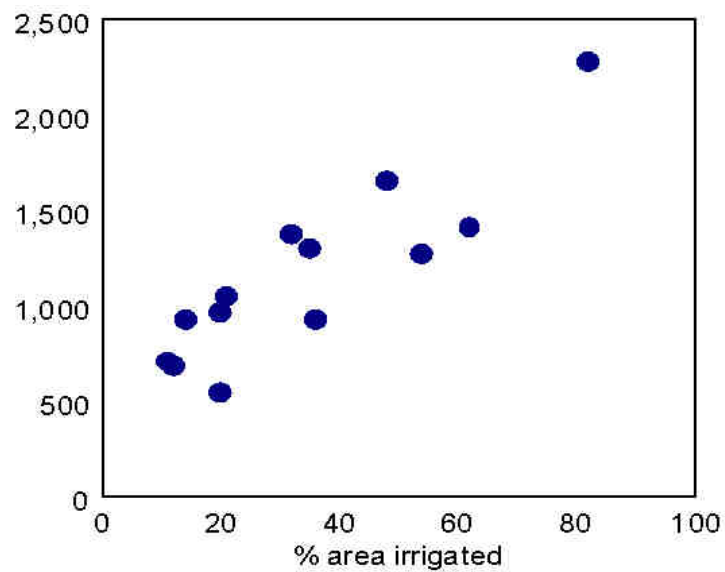
Source: FAO 2006b.

**Why do we need water? Food - 75% It takes a litre of water to produce every calorie. on average**

# Irrigation lifts rural poor out of poverty

Average income levels and irrigation intensity in India

Income per capita

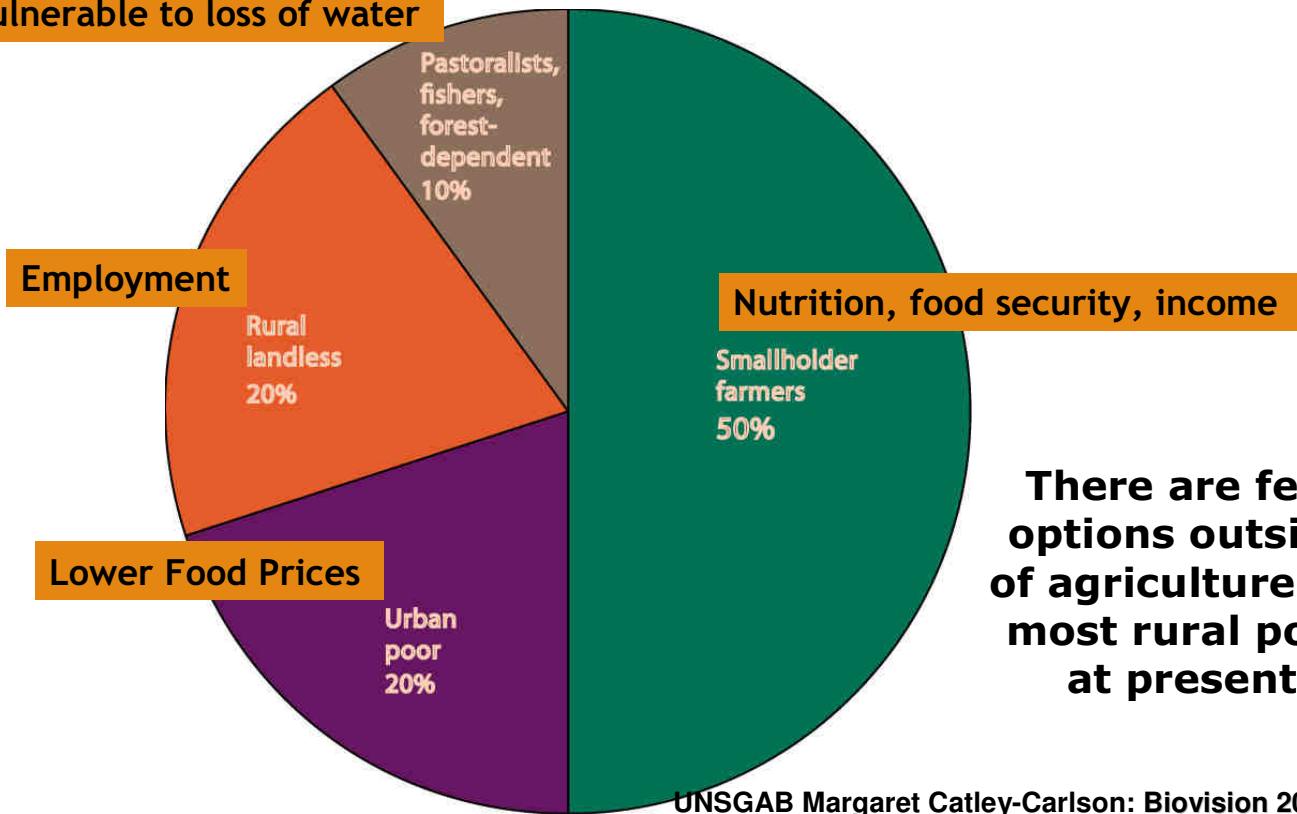


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# The 850 million undernourished.

Dependent on Water for Agriculture?

Vulnerable to loss of water



**There are few options outside of agriculture for most rural poor at present**

Source: FAO data, graphic from SEI

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**Water is used for energy generation  
energy: consumed in water extraction, distribution,  
treatment and desalination**

Business environment

**Water used to generate  
energy**

Extraction & refining

Hydropower

Fuel production  
(Ethanol, Hydrogen)

Thermoelectric cooling

Waste water treatment

Extraction & transmission

Energy associated with  
uses of water

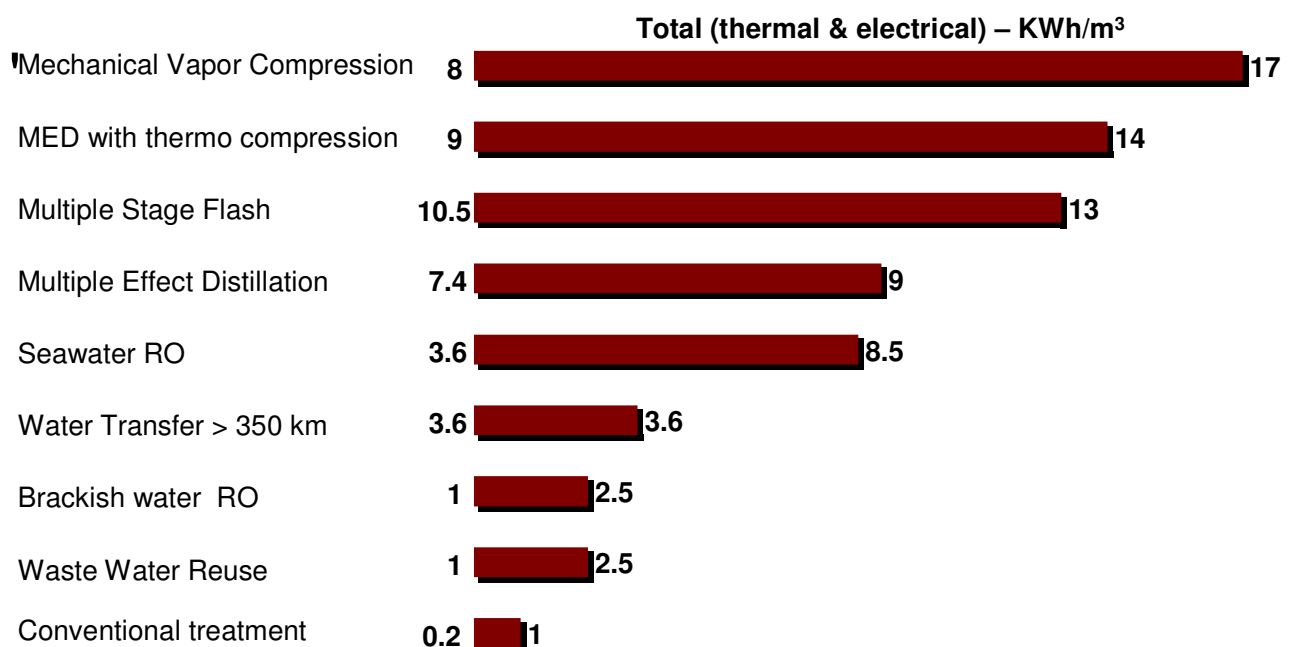
Drinking water treatment

**Energy used for water**

## The water sector is increasingly becoming a significant energy consumer

Business environment

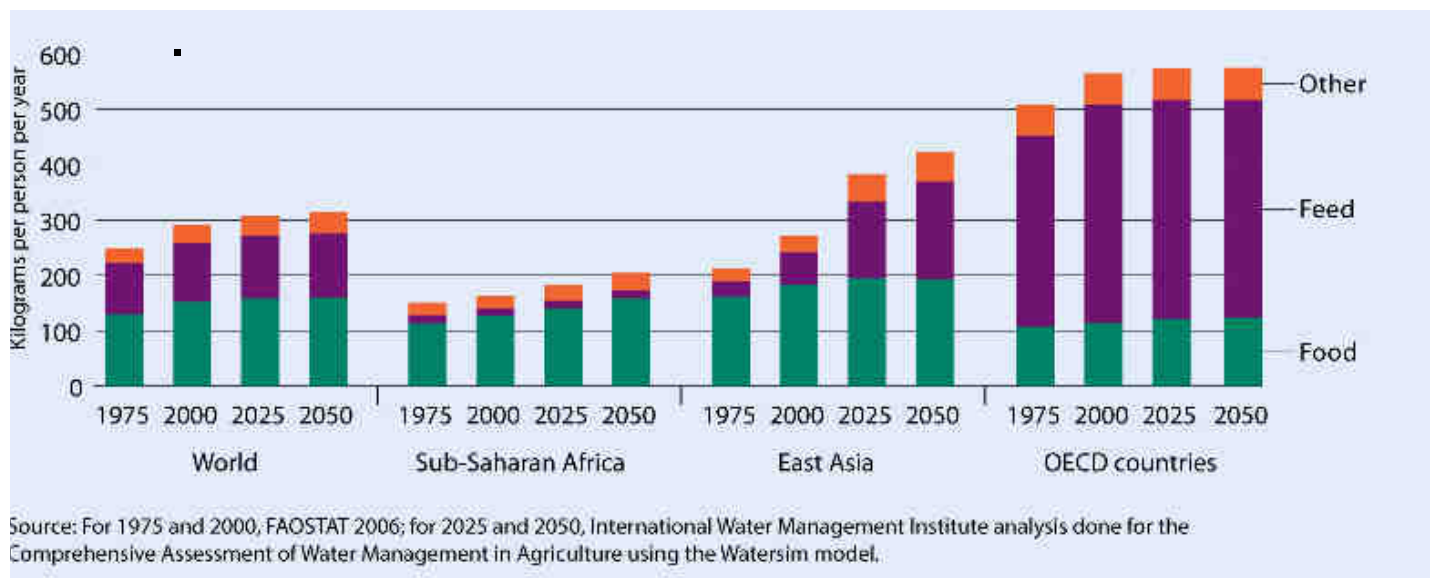
### Specific Energy Consumption for Different Water Sources



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**Water is used for energy generation and energy is consumed in water extraction, distribution, treatment and desalination**

# New Science to reduce the water needed: feed & fodder.

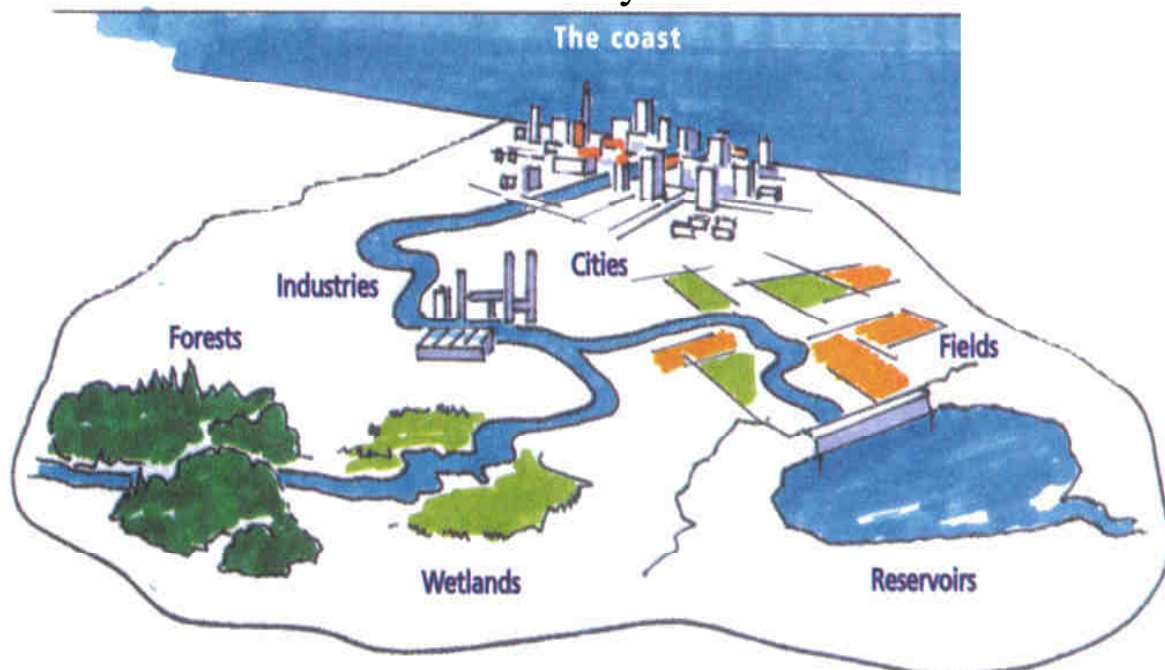


**Food demand doubles over the next 50 because of diet and population**

**Water Needs (ET) will double – without water productivity gains**

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We have to  
**lose less – and re-use more**  
in this system.



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# The main problem??

- We don't value water
- Irrigation systems – 40-60% efficiency norm in too many places
- Municipal systems – 30% unaccounted for water
- We leave taps running – literally and metaphorically
- We don't pay enough for it
- We don't design it in as a scarce VALUABLE

# Great New Ideas

(the world we need to create)

- Water sparing, disease resistant high yield crops
- Buildings that are water neutral....
- Desalination.....IF
- Waste Water Energy Sources
- Waste Water ReUse - agriculture
- New Urban Design – the cell phone not the landline.

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- New Technologies such as CENTA's knowledge and expertise....may play an important role today!!!

- "THE ROLE OF CENTA's TECHNOLOGY AND INDUSTRY IN ADDRESSING SANITATION"
- **CENTA's views, observations, expertise should be included in a country's agenda and working plans/programs**
- **Investing in adaptation/ providing information/ translating information into different languages/making language understandable**
- **Coordinating better**



- Technologies that create ‘cascading use’ –
  - clean water for drinking and personal use,
  - cascading down to grey water which can be ‘cleaned enough’ for agricultural, urban, and industrial use
  - which can be ‘cleaned enough’ for recycling or environmental recharge etc
  - Sewage, either harvested for energy and/or nutrients then ‘cleaned enough’ for agricultural or environmental use.
  
- Filters, energy sparing devices, re-use devices, reed bed examples
  
- “As small as possible – as big as necessary”:
  - collection of existing prototypes and development of new designs for small cities and urban units.
  - mosaic of modules in the cities, not uniform design types.

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- Modular installations
  - Replace city wide trunk and branch systems in not-served (and refurbishment) areas;
  - Acceptance of a mosaic of methods
  - adoption of the idea of ‘getting started’ with an initial module,)
- Collection and piping systems that allow “like sewage/like wastewater” to be collected and treated
  - opens doors to ecosystem, small scale and biological methods
  - new high tech, even energy harvesting methods.
- Treatment which corresponds to the next use of the water,
  - aquifer or river recharge,
  - agricultural or
  - industrial use.
  - “just clean enough”,
  - Nutrients saved, health better protected and costs cut deeply.

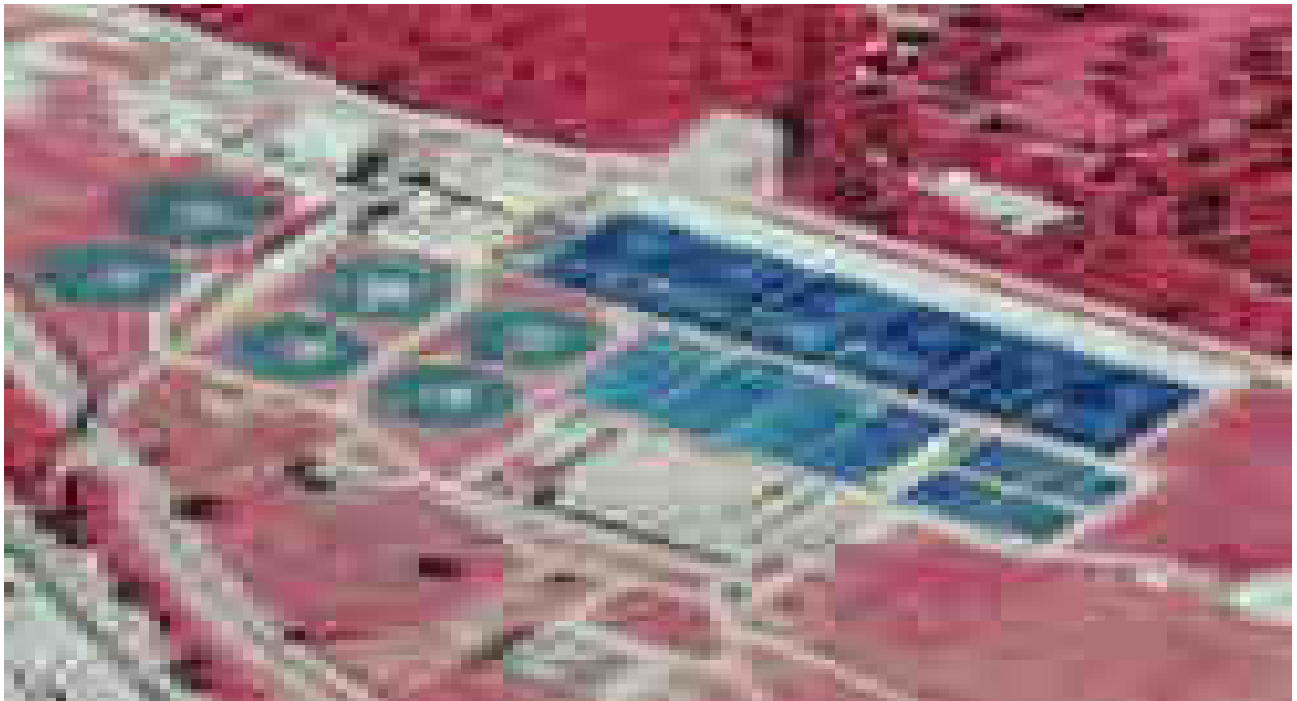
# Mechanisms we need

- Financial mechanisms – taxes, subsidies, concessions, etc. to encourage the extraction of resources from wastewater (when Wastewater is seen as a resource, the incentive package changes)
- lending and capital market financing for new solutions
- research awards for solutions now: getting pathogens out of sewage and leaving nutrients

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- **New ideas/ suggestions coming from YOUR Groups**

It is clear that this has to be part of the solution. . . . UNSGAB Margaret Catley-Carlson: Biovision 2010



# Speaking about the unspoken

- Wastewater irrigation is common in 3 of 4 cities in developing countries
- Ca. 20 million ha are irrigated with raw or diluted wastewater (10% of Asia; 2 x Africa)

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- CENTA will greatly benefit countries in adopting their technologies, particularly in mapping the danger zones

Another part of the solution...



# **Raises difficult questions...research areas**

## **1. Safe and productive use of wastewater**

→ *Field level action research to enhance food safety*

## **2. Integration of urban development, agriculture and the environment**

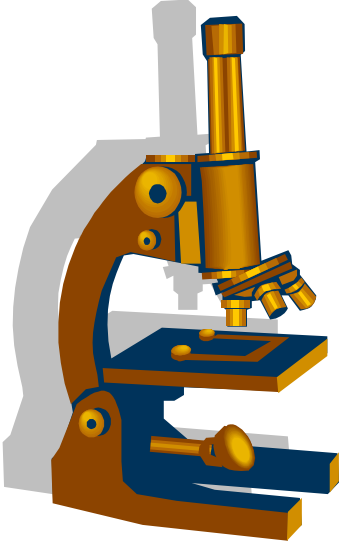
→ *Modelling up- and downstream impacts of cities*

## **3. Institutional capacity building for sustainable urban water resources management**

→ *Multi-stakeholder processes and policy support*

# To make the invisible risks **visible**

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Good Science needed now/especially CENTA's  
Expertise!!!



# WHAT TO DO?



## | TAKE RESPONSIBILITY

- Ø not to pollute
- Ø for sustainable development

## | COOPERATE

- Ø to conserve and restore nature
- Ø on clean water & sanitation
- Ø on initializing wastewater revolution
- Ø on better housing
- Ø on good governance
- Ø on LCA strategies
- Ø on ECO-Labeling
- Ø on sustainable agriculture, tourism, mobility, health, education
- Ø on 3Rs, Renewable Energy, Sustainable Building & Construction
- Ø Build networks and partnerships, local/regional/global

## **Strategy for Action**

- Look at the possibilities of application of networking, collaborating, partnering with other stakeholders
- Creating the Enabling Environment (good governance)
- Water/Sanitation as the Entry Point for development
- Help move forward the **SANITATION ACTION PROGRAMS** in **YOUR REGION**
- Partner, Network, Collaborate with international organizations like what **OTHER** Groups are doing today – and start the **SANITATION** Programs in **THIS REGION!!!**



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# ***Who Cares?***

***If all we leave our  
children are Dead  
Rivers and Lakes,  
Slum Housing and  
Dirty Water***

Source: Howard Belton, former CEO, UNILEVER



***We all Do !!!***



Source: Howard Belton, former CEO, UNILEVER



*Thank you very much!*



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Please visit our website:

[www.unsgab.org](http://www.unsgab.org)