WHAT IS WATER SECURITY?

AN INTERNATIONAL PERSPECTIVE

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“Water Security from the Ground Up”
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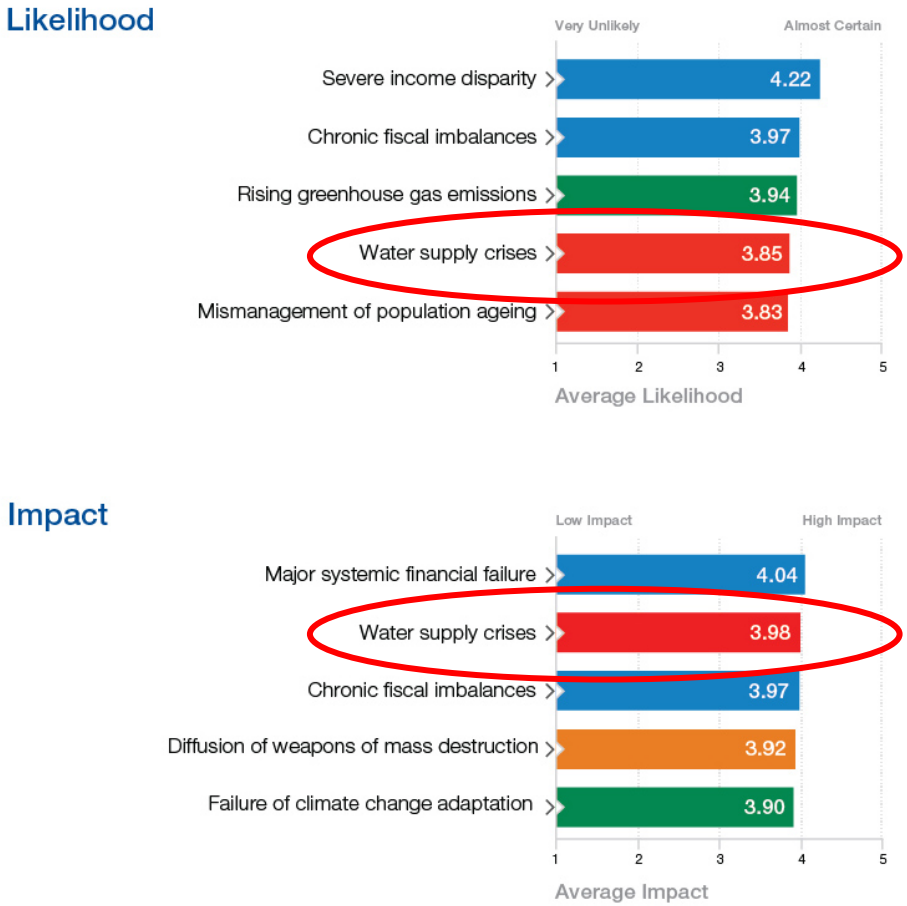
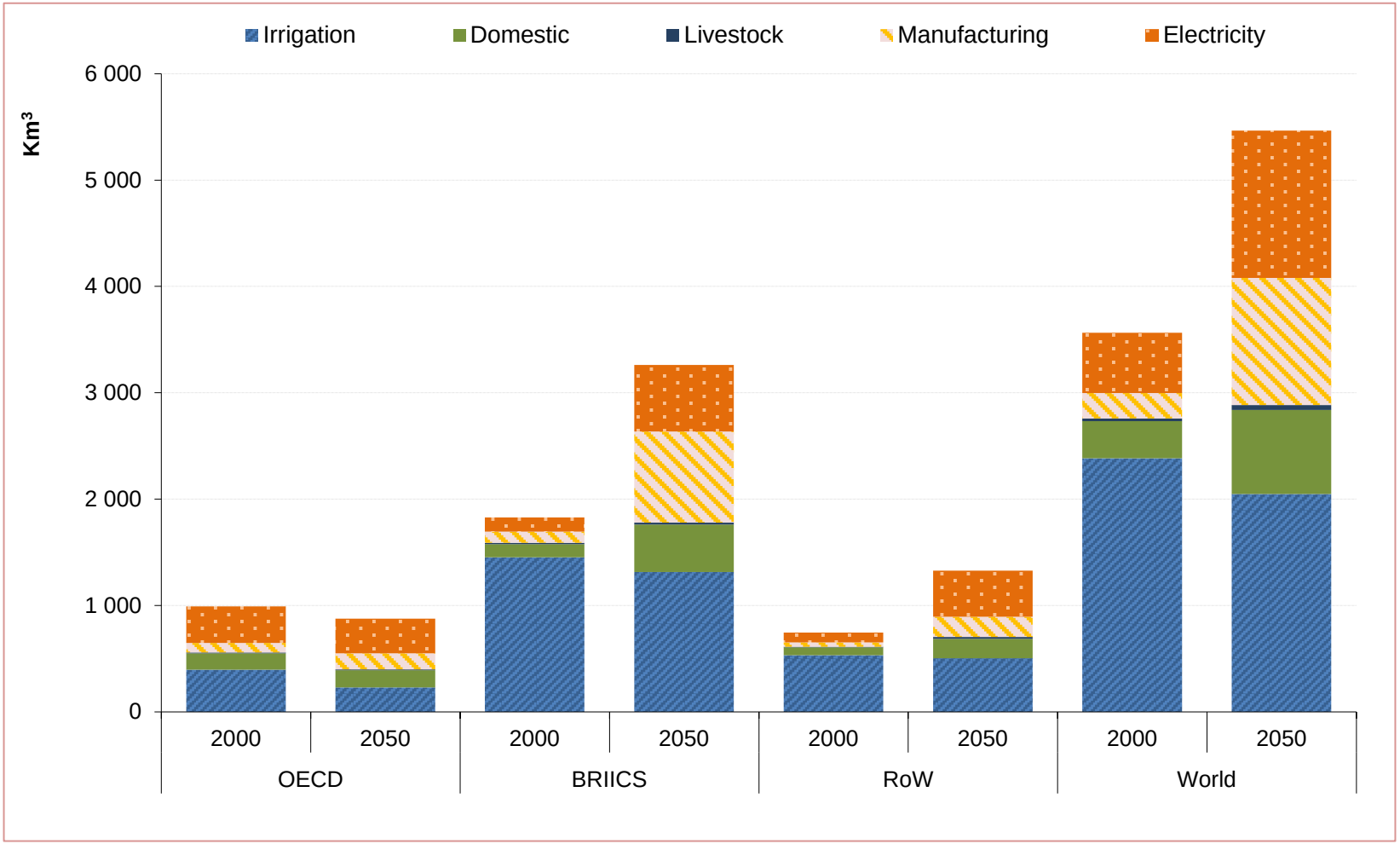
OECD
BETTER POLICIES FOR BETTER LIVES

Getting to the top of political and business agendas



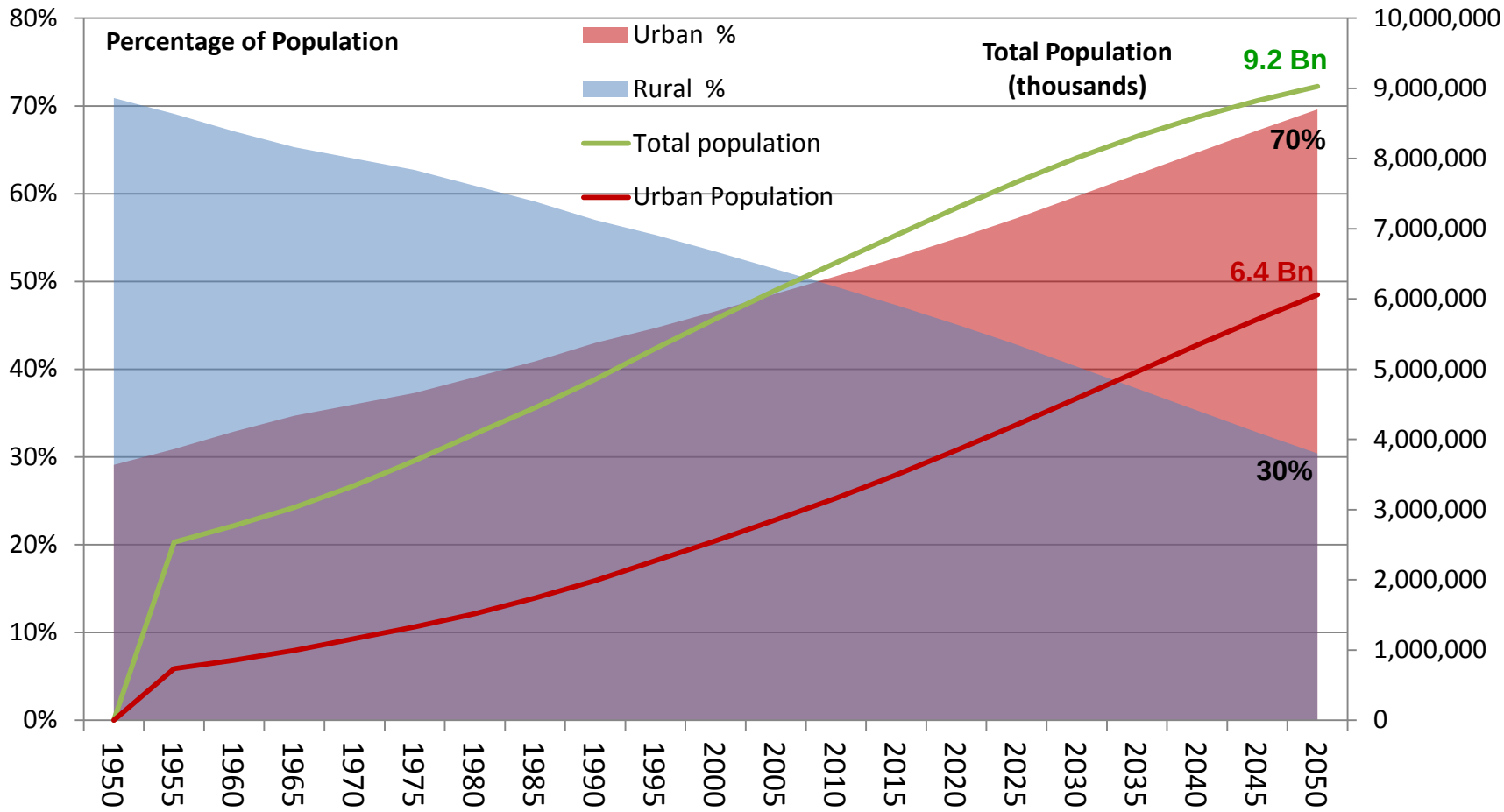
Source: World Economic Forum (2013), *Global Risks 2013*.

World water demand projected to grow by 55% by 2050



Source: OECD Environmental Outlook Baseline; output from ENV-Linkages.

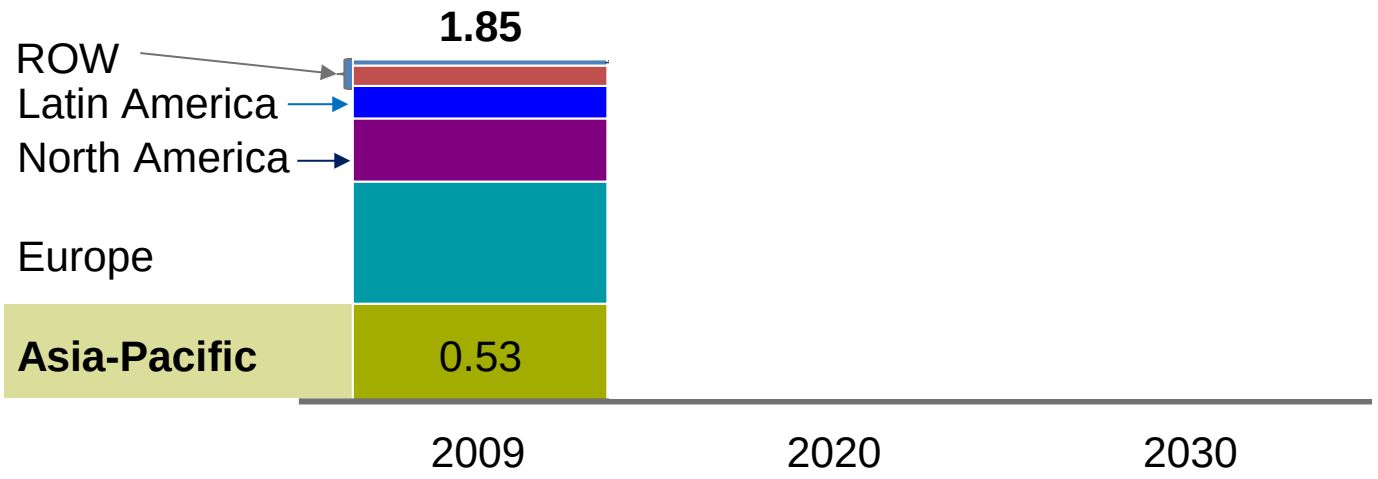
Population and urbanisation



Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2007 Revision,

The emergence of 3 billion middle-class consumers will fuel future demand

Global middle class[1]
Billions of people

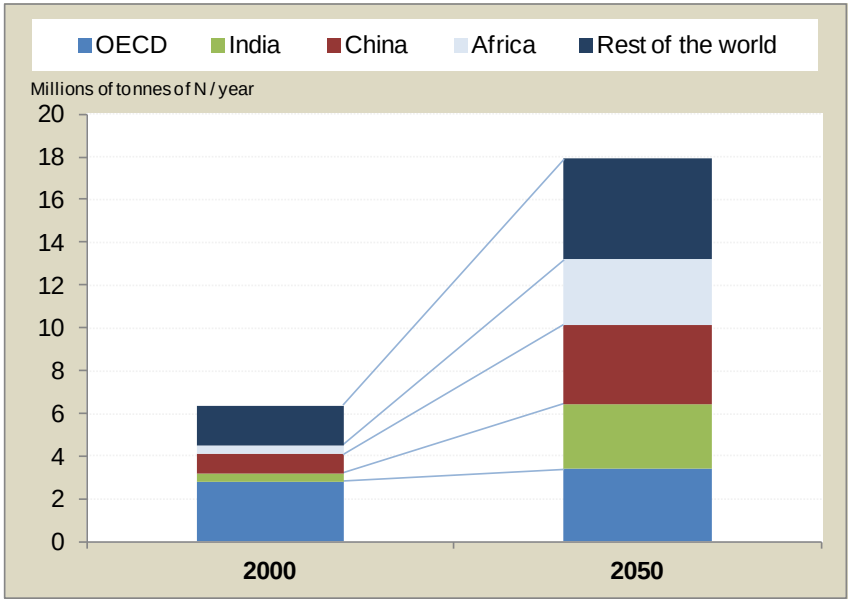


1. Based on daily consumption per capita ranging from $10 to $100 (in purchasing power parity terms)

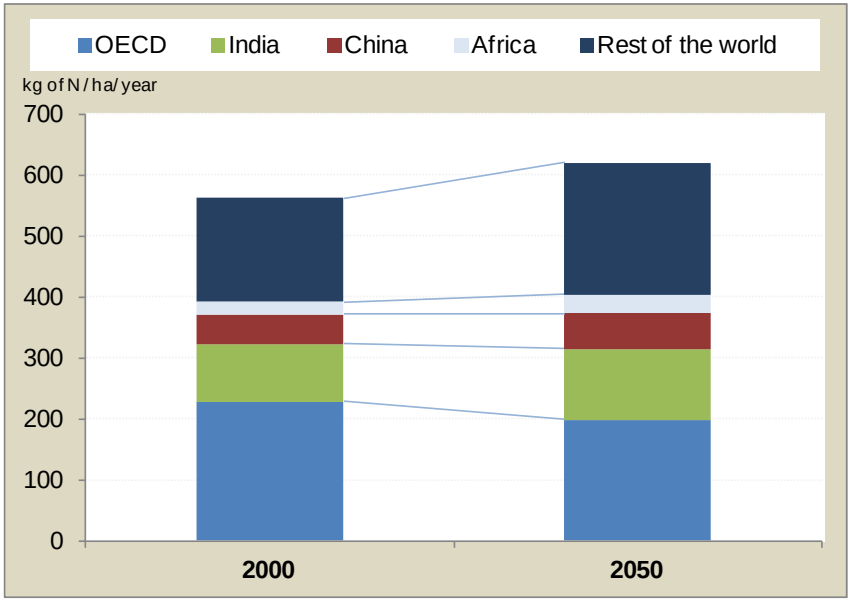
Source: OECD (2011), Perspectives on Global Development: Social Cohesion in a Shifting World

Water quality is an increasing concern

Nitrogen effluents from wastewater

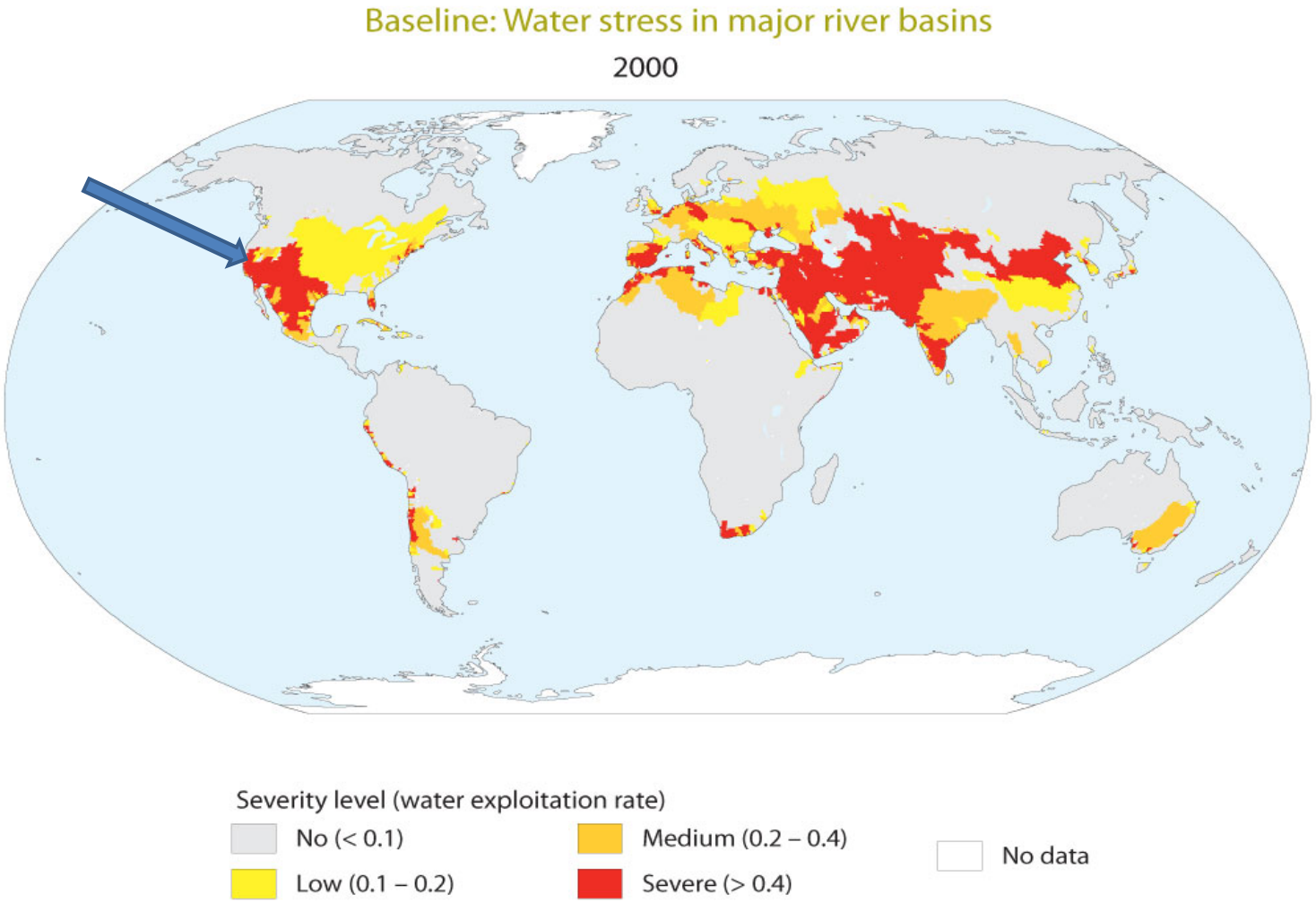


Nitrogen surpluses from agriculture

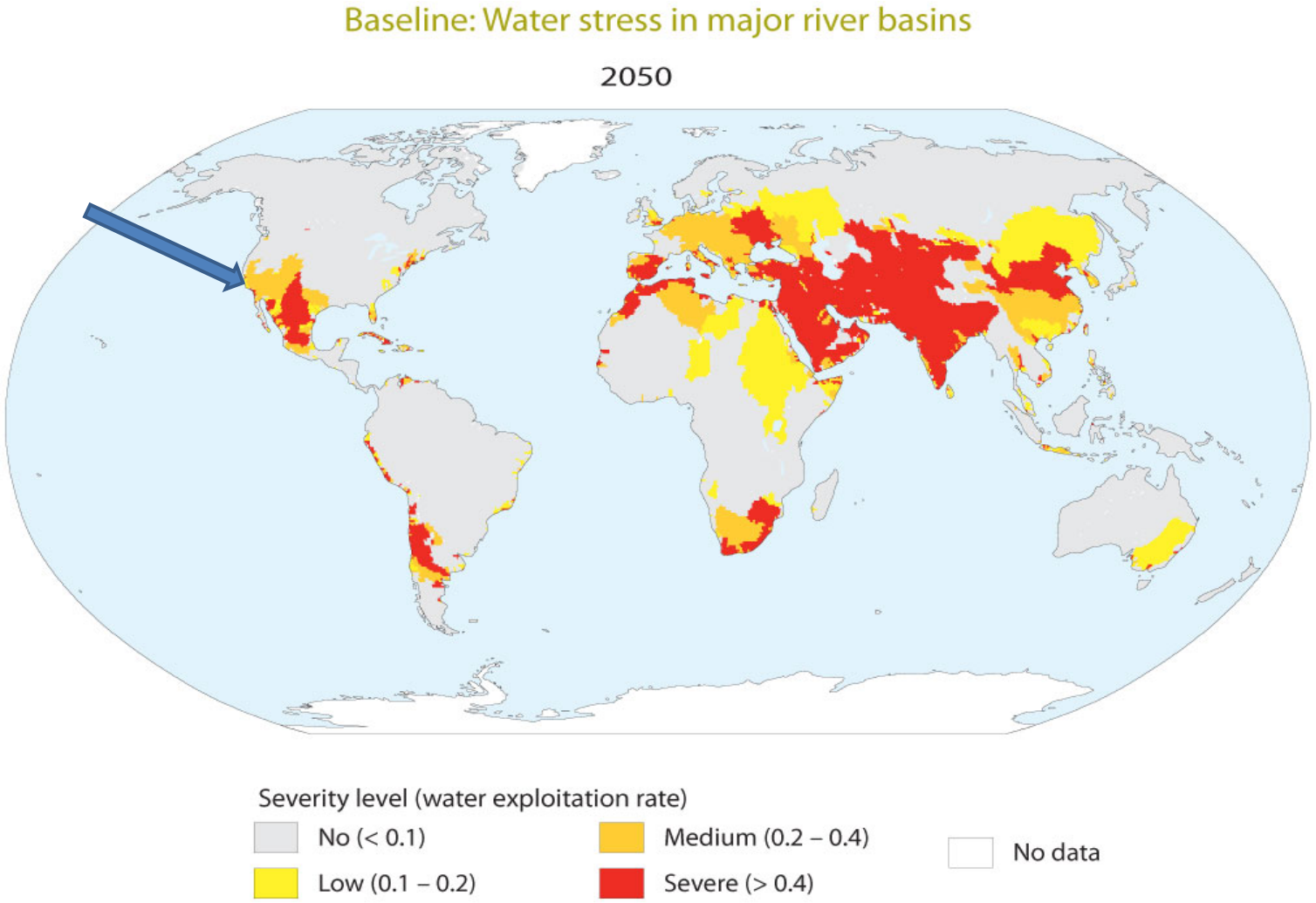


Source: OECD Environmental Outlook Baseline; output from ENV-Linkages.

From 1.6 billion people living in severe water stress in 2000 …



… to 3.9 billion by 2050



Projected infrastructure needs in 2030

Average annual world infrastructure expenditure (additions and renewal) 2020-2030

Type of infrastructure	Average annual expenditure (USD billion)	Approximate % of world GDP
Road	292	0.29
Rail	58	0.06
Telecoms	171	0.17
Electricity	241	0.24
Water	1037	1.03

Source: OECD (2006), Infrastructure to 2030

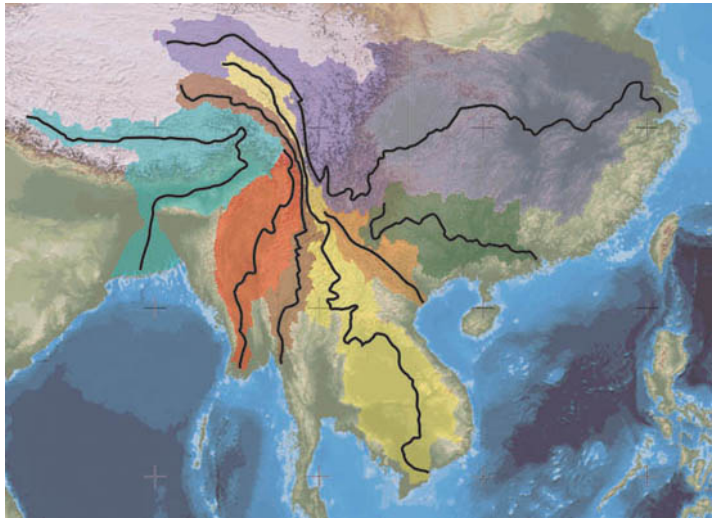
National security?

- Long-standing concern in US
- Physical security of water assets against terrorism and vandalism

Transboundary security?

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

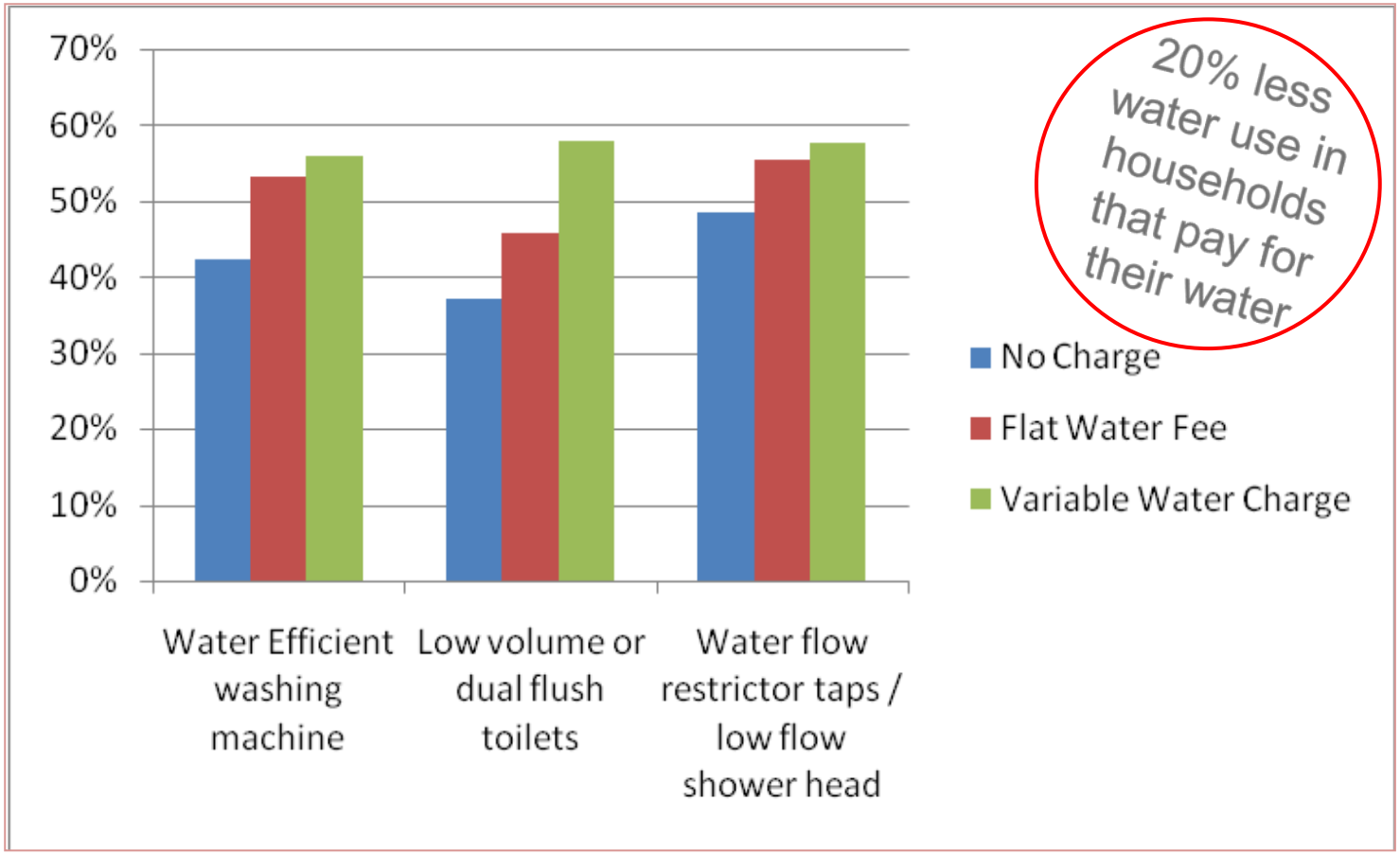
  (I. Serageldin, VP World Bank, 1999)
- 263 transboundary lake and river basins, nearly 50% of Earth's land surface, 145 nations
- No wars as yet, but many points of tension
  - Middle East, Asia
- Are existing international institutions adequate?



Security of water flows?

- Increasing competition for water
  - Are water allocation processes adequate?
- Improving water use efficiency
- Augmenting water supplies
  - Wastewater as the third resource (re-use, recycling)
  - Desalination
- Improving the pricing of water and removing perverse incentives

Water prices increase efficiency - Evidence from household survey data



Source: OECD (2011), Greening Household Behaviour: The Role of Public Policy

Environmental security?

- Intergenerational issue of protecting the resource base
- Government role as environmental steward
  - Murray Darling Basin example
  - Private sector and NGOs

Security against disasters?

- Trade-off of risks and costs of prevention
- Role of green infrastructure
- Climate change is water change
  - Future for freshwater will not look like the past – living in a non-stationary world
- Delta Programme in the Netherlands
  - Putting a price tag on water security

Human security?

- Access to water and sanitation
- MDGs have resulted in huge gains, but much more needs to be done
- 884 million without access to improved water source (not necessarily safe)
- 2.6 billion without access to basic sanitation

A definition of water security

"Maintaining an acceptable level of risks – in terms of water shortage, excess, pollution, and freshwater system resilience – for society and the environment, today and in the future, through the effective and efficient application of water and water-related policies."

Taking a risk approach to water security

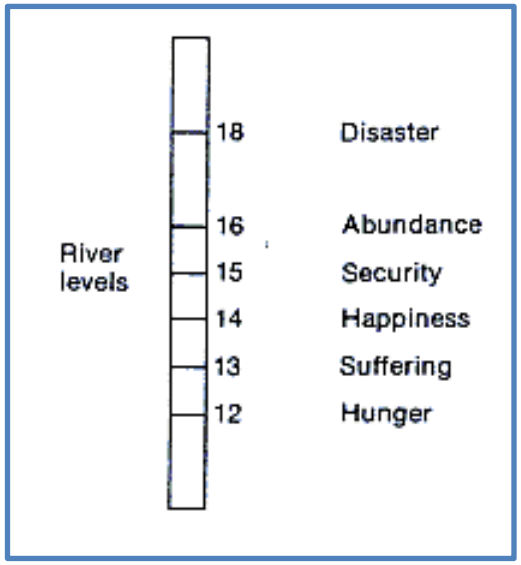
- Intersection of hazard, exposure and vulnerability
- **Know** – appraising the risks
- **Cap** – judging tolerability and acceptability
- **Manage** – use policy tools to avoid, reduce, transfer or bear the risk

Source: Adapted from IPCC (2012).

Key ingredients to a risk approach

- Take a holistic approach to water, energy and food security
- Metrics, models and monitoring for decision-making with risk
- Move from reactive to proactive institutions and build-in flexibility
- Think long-term and focus on resilience

Did the Ancient Egyptians have it right?



The Nilometer

Thank you!

Visit the OECD water website

www.oecd.org/water

or contact me via email

(**anthony.cox@oecd.org**)