

**WORKSHOP ON “CAPACITY DEVELOPMENT IN ADVANCING WATER  
AND SUSTAINABLE DEVELOPMENT”**

New York, 24-25 February 2015

**Session 3: Regional Perspectives**

**Water and Sustainable Development -  
Opportunities and Challenges in Asia and the Pacific**

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# Content

- **Major Issues and challenges on water in Asia and the Pacific**
  - **Economic development & water resources**
  - **Climate Change Impacts**
  - **Water & Sanitation**
  - **Disaster Risks**
  - **Water-Food-Energy Nexus**
- **Water sector capacity building needs in the Asia-Pacific Region for post 2015 development agenda**

## ESCAP: Overview

- ▶ 53 members of ESCAP
- ▶ 9 associated members
- ▶ Great diversity of the region, in terms of climate, natural resources, culture and economy
- ▶ Rapid economic growth
- ▶ High population density
- ▶ 60% of the world's poor population
- ▶ 40% of the world's land area territory
- ▶ ESCAP fosters regional cooperation to address development challenges and towards achieving SD with focus on three dimensions



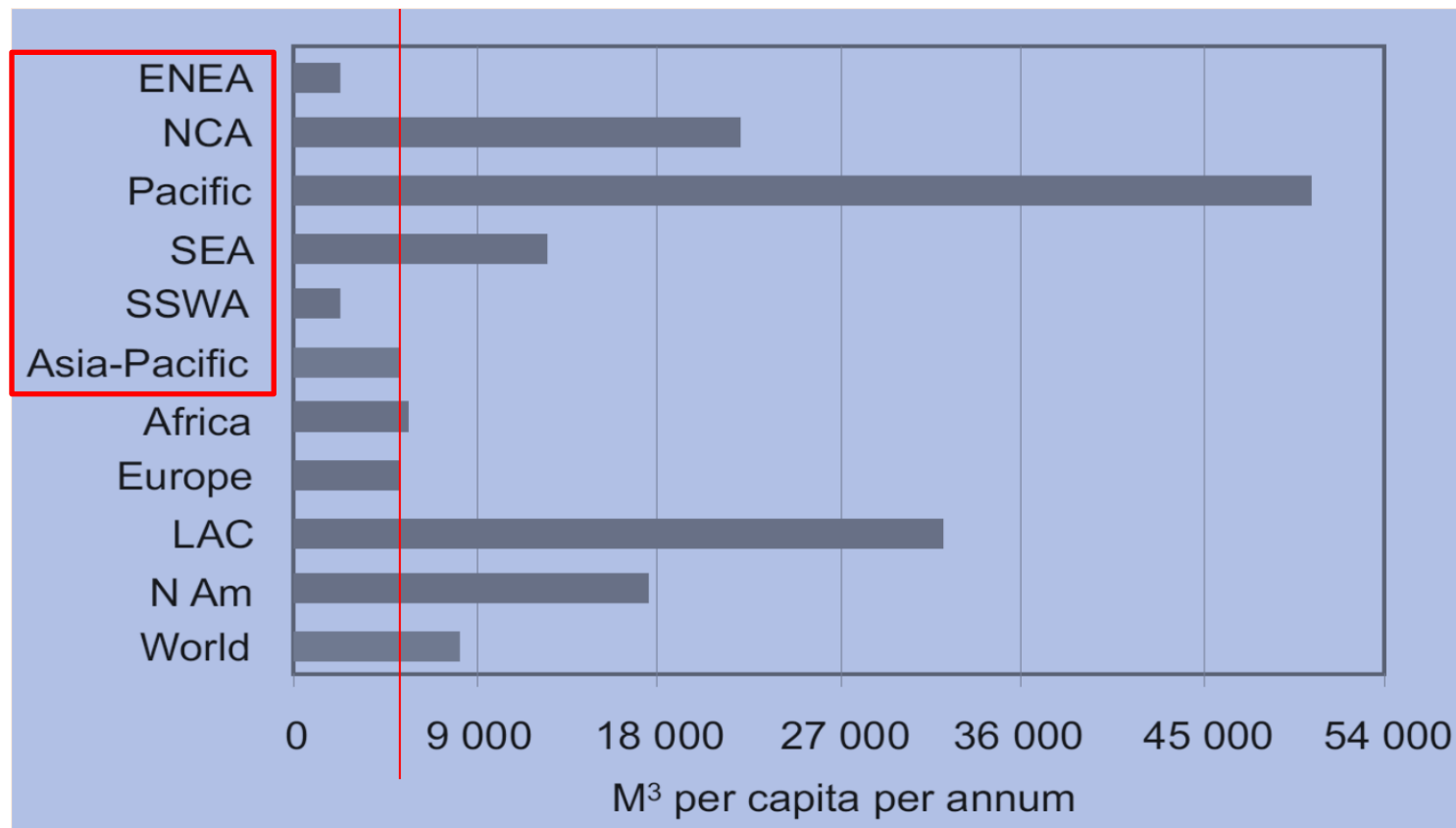
# Regional Challenges

- Population growth
- Urbanization
- Groundwater depletion, impact on agriculture
- Pollution of water sources
- Inadequate sanitation
- Poor water quality – public health concerns
- Water related disasters
- Water-Food-Energy nexus
- Water disputes & conflicts



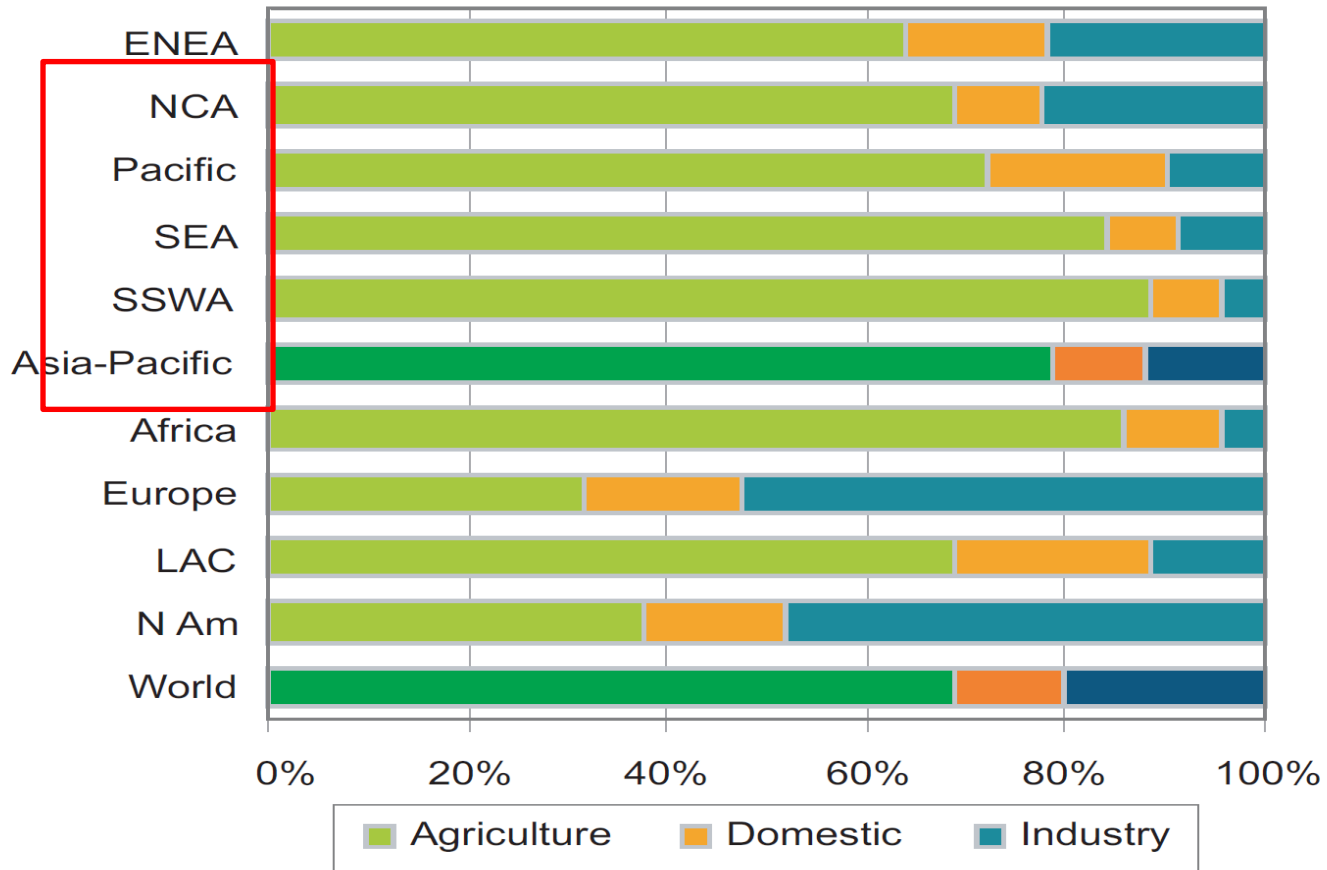
# Water Availability

- Availability of water resources per capita by world, region and sub-regions, 2008



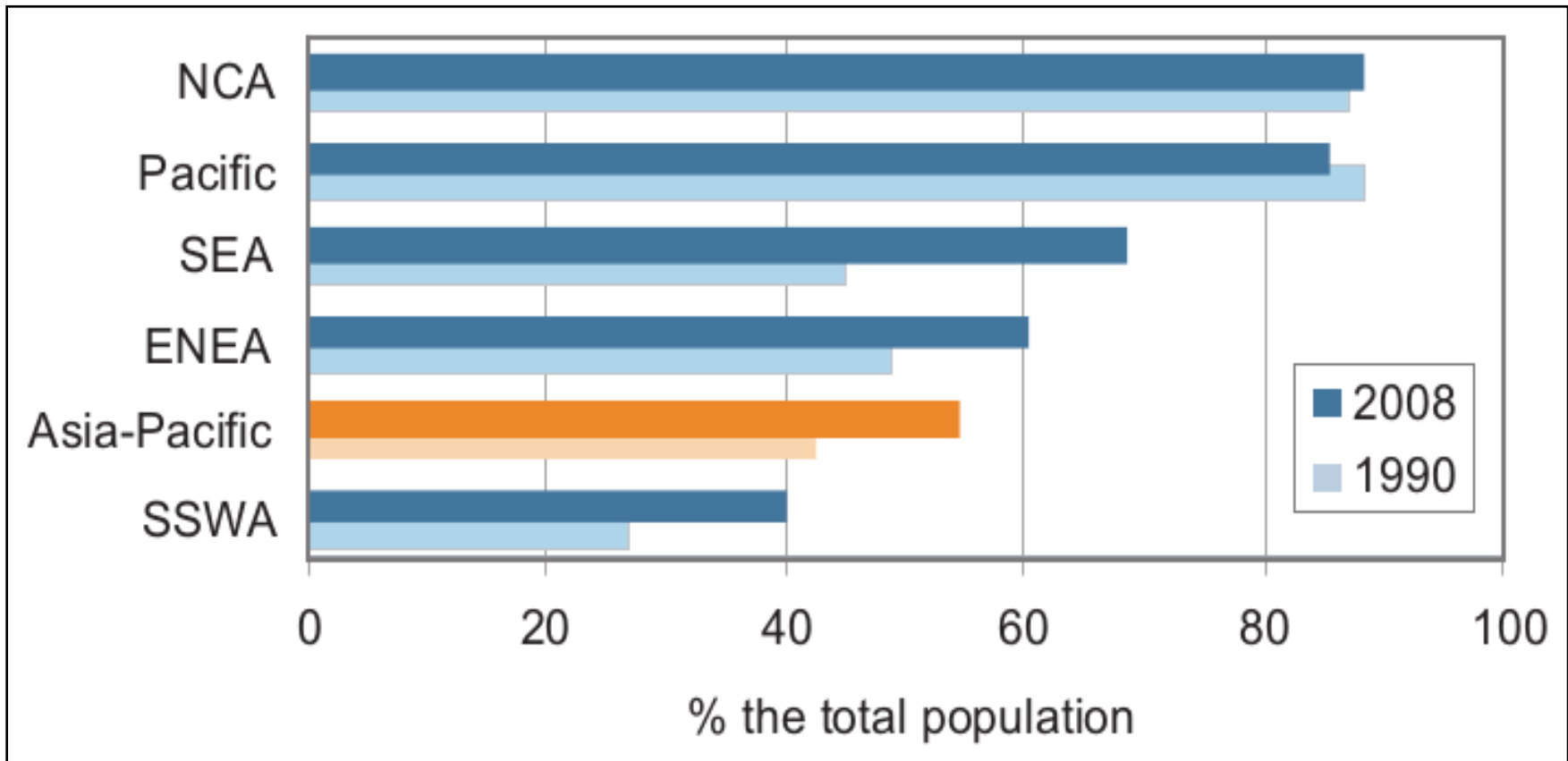
# Water Use by sectors

- Proportional use of water withdrawals by sector, regionally and sub-regionally, 2002



# Sanitation Coverage

- Trends in the proportion of the population using improved sanitation, by MDG region in 1990 and 2008



# Asia-Pacific water hotspots: 2009-2010

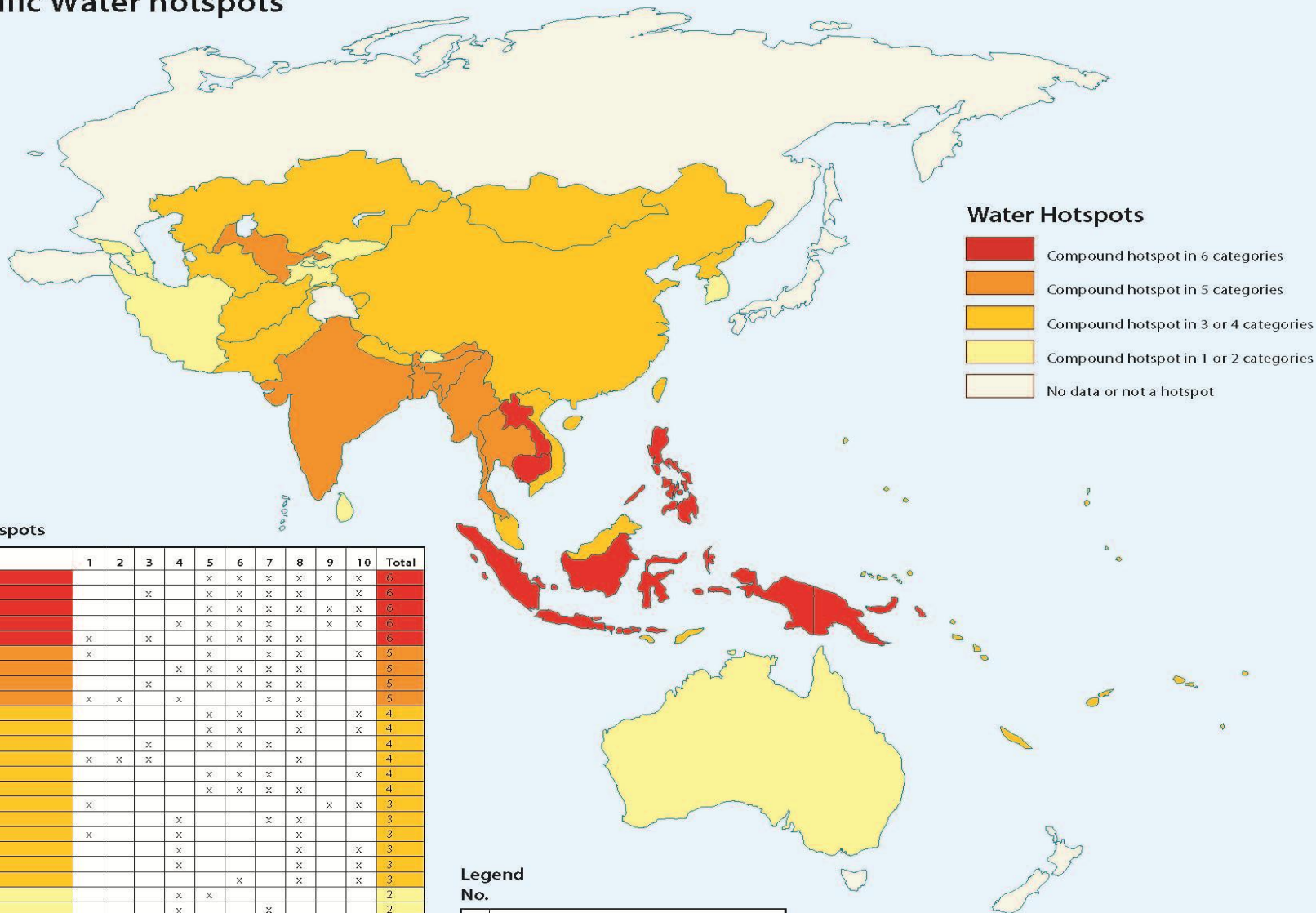
**Hotspots** - countries or areas or ecosystems with overlapping challenges of poor access to water and sanitation, deteriorating water quality, limited water availability and increased exposure to climate change and water-related disasters

- 5 countries facing at least 6 challenges
- 4 countries facing at least 5 challenges

1. Increasing water scarcity threat
2. High water utilization
3. Deteriorating water quality
4. Poor water quality and low endowment
5. Flood prone countries
6. Cyclone prone countries
7. Drought prone countries
8. Elevated ecosystem/climate change risks
9. Poor access to drinking water
10. Poor access to sanitation



# Asia Pacific Water hotspots



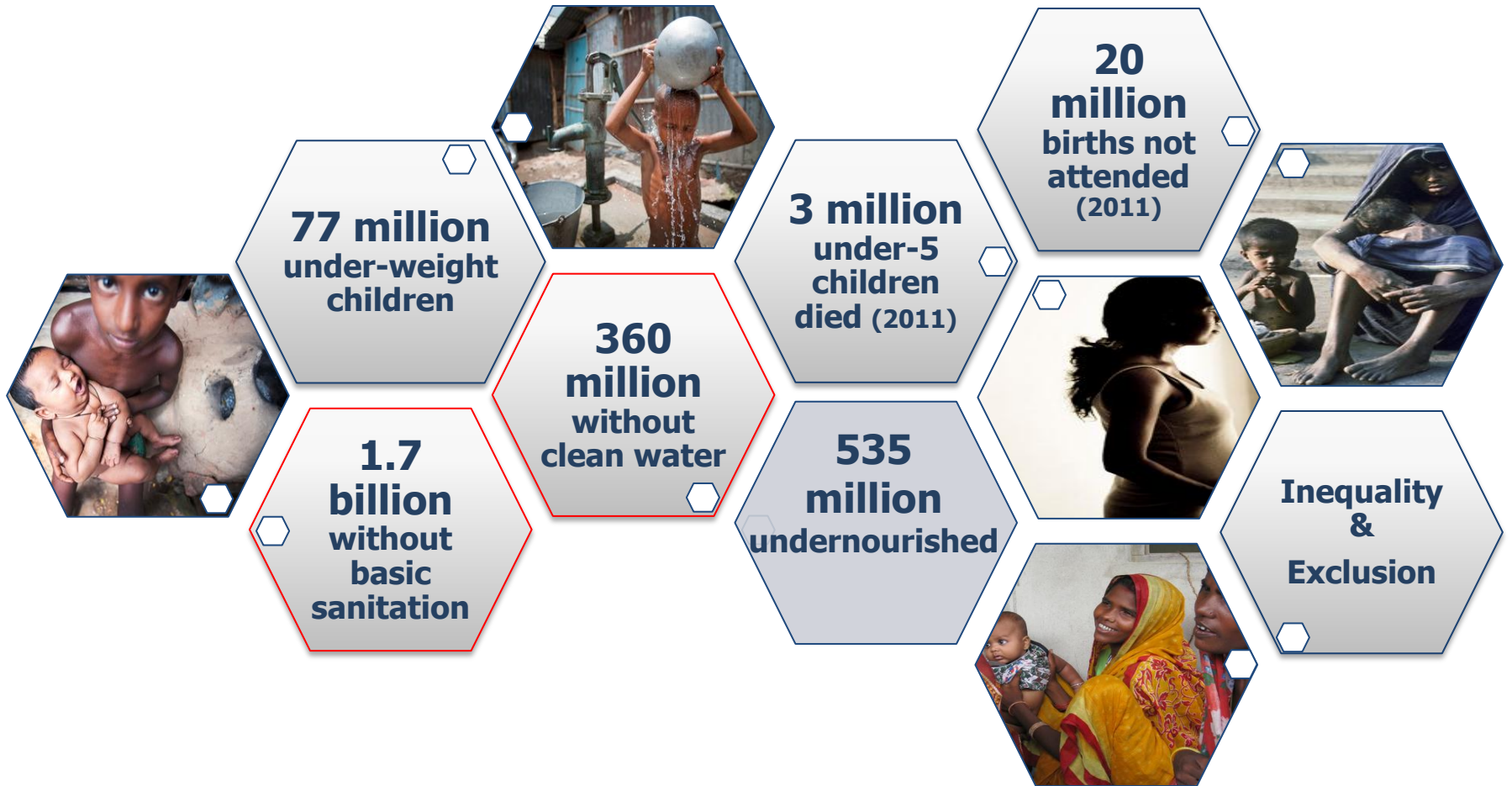
## Compound Hotspots

	1	2	3	4	5	6	7	8	9	10	Total
Cambodia					x	x	x	x	x	x	6
Indonesia			x		x	x	x	x		x	6
Lao PDR					x	x	x	x	x	x	6
Papua New Guinea				x	x	x	x		x	x	6
Philippines	x		x		x	x	x	x			6
India	x				x		x	x		x	5
Myanmar				x	x	x	x	x			5
Thailand			x		x	x	x	x			5
Uzbekistan	x	x		x			x	x			5
Bangladesh					x	x	x			x	4
China					x	x	x			x	4
Malaysia			x		x	x	x				4
Pakistan	x	x	x					x			4
Timor Leste					x	x	x			x	4
Viet Nam					x	x	x	x			4
Afghanistan	x								x	x	3
Kazakhstan				x			x	x			3
Maldives	x			x				x			3
Mongolia				x				x		x	3
Nepal				x				x		x	3
Pacific Islands						x		x		x	3
DPRK				x	x						2
Kyrgyzstan				x			x				2
Tajikistan				x			x				2
Turkmenistan				x			x				2
Australia							x				1
Azerbaijan				x							1
Bhutan				x							1
Georgia				x							1
Iran								x			1
Republic of Korea					x						1
Sri Lanka								x			1
Prevalence (countries affected)	6	2	5	14	15	13	17	19	4	12	

## Legend No.

1	Increasing water scarcity threat
2	High water utilization
3	Deteriorating water quality
4	Poor water quality and low water endowment
5	Flood-prone countries
6	Cyclone-prone countries
7	Drought-prone countries
8	Elevated ecosystem/ Climate change risk
9	Poor access to drinking water
10	Poor access to sanitation

# Asia-Pacific region: High Level of Deprivation



## MDGs in Asia-Pacific

2008: Poverty in the region reduced by half

2005: Share of population without access to clean water reduced by half

2001/03: Eliminated gender disparity in primary and tertiary education

2000: Millennium Declaration

2015

## Unfinished Agenda

Hunger

Infant mortality

Under-5 mortality

Maternal mortality

Reaching last grade in primary education and improved quality

**Basic sanitation**



# Water & Sanitation :

## Status, Trends and Overview

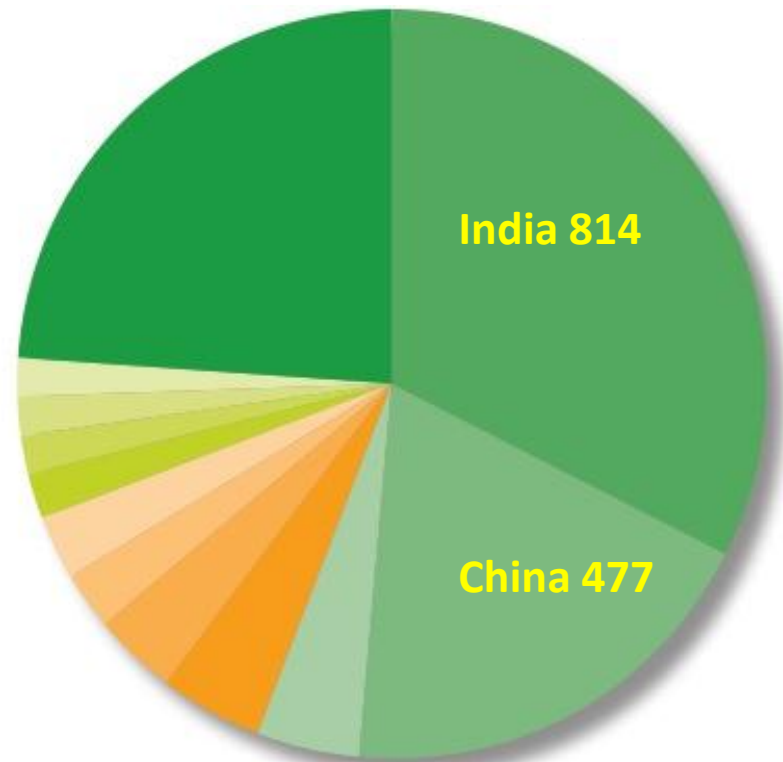
### Water Supply

- Asia and the Pacific as a whole is an early achiever for halving the proportion of people without access to safe drinking water, but not sanitation.
- The proportion of the region's population with access to improved drinking water sources increased from 73 to 88%
- The access rate increased in all Asia-Pacific sub regions, except for Central Asia and the Pacific region, where it stayed the same

### Sanitation

- Compared with water supply, sanitation coverage is in a dire state
- Only around 53% of the region's population has access to improved sanitation
- The most rapid progress has been in South-East Asia and in North-East Asia
- The progress in South and South-West Asia was even weaker.

# More than half of the 2.5 billion people without improved sanitation live in India or China



WHO/UNICEF Progress on Drinking Water and Sanitation: 2012 Update

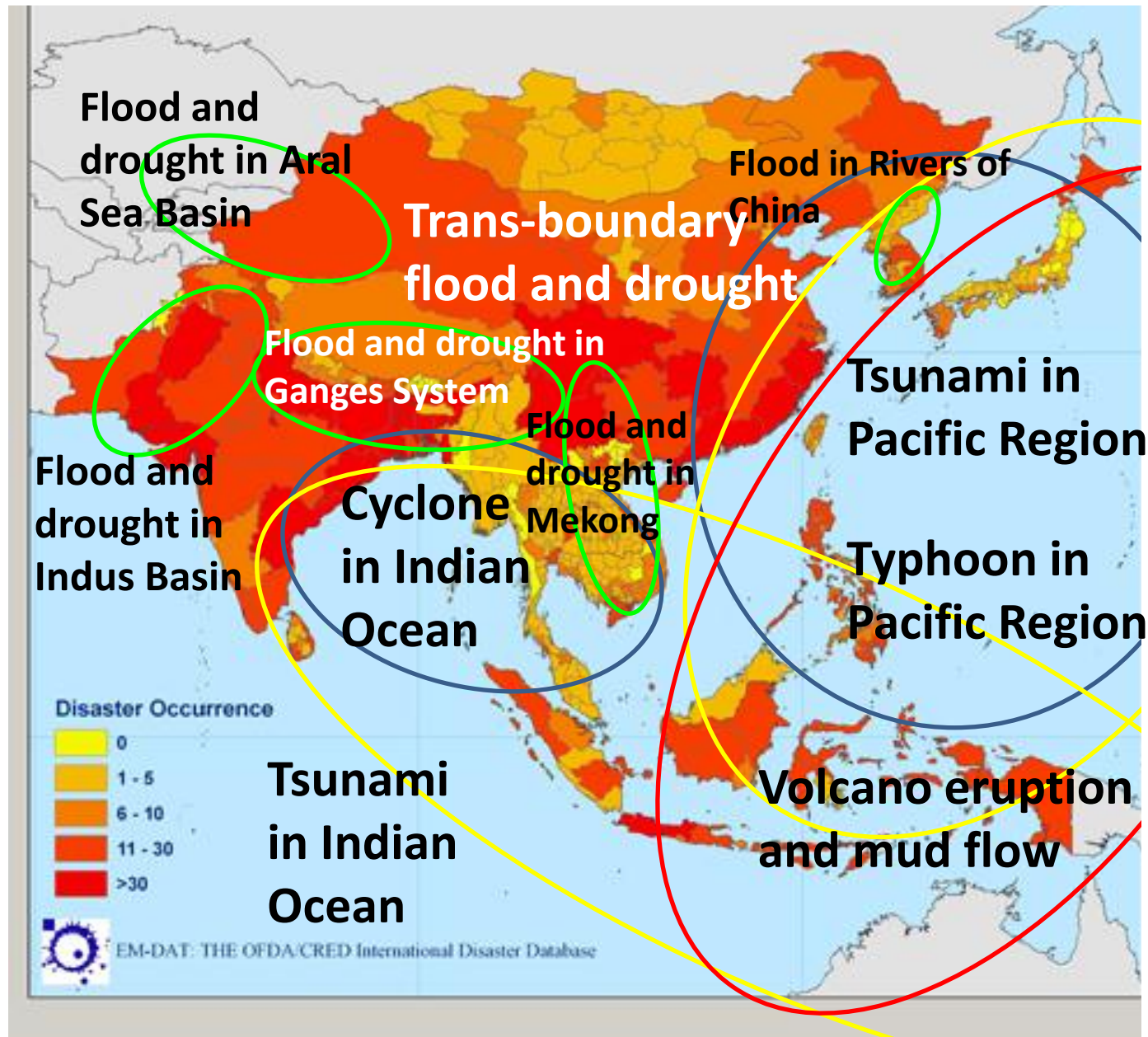
MILLIONS

■ REST OF WORLD 604  
■ INDIA 814  
■ CHINA 477  
■ INDONESIA 110  
■ NIGERIA 109  
■ PAKISTAN 91

■ BANGLADESH 66  
■ ETHIOPIA 66  
■ DEMOCRATIC REPUBLIC OF THE CONGO 50  
■ RUSSIAN FEDERATION 43  
■ UNITED REPUBLIC OF TANZANIA 40  
■ BRAZIL 40

# Common natural disaster phenomena in Asia-Pacific Region

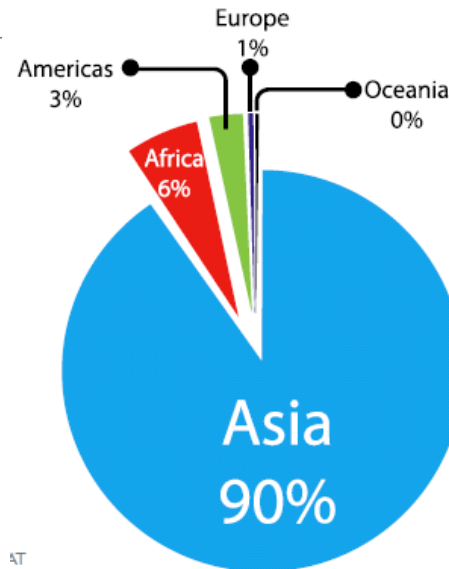
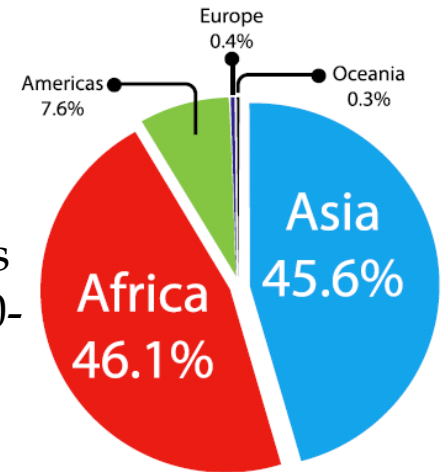
-80 % of disaster affected people are from Asia-



# Water-related disasters

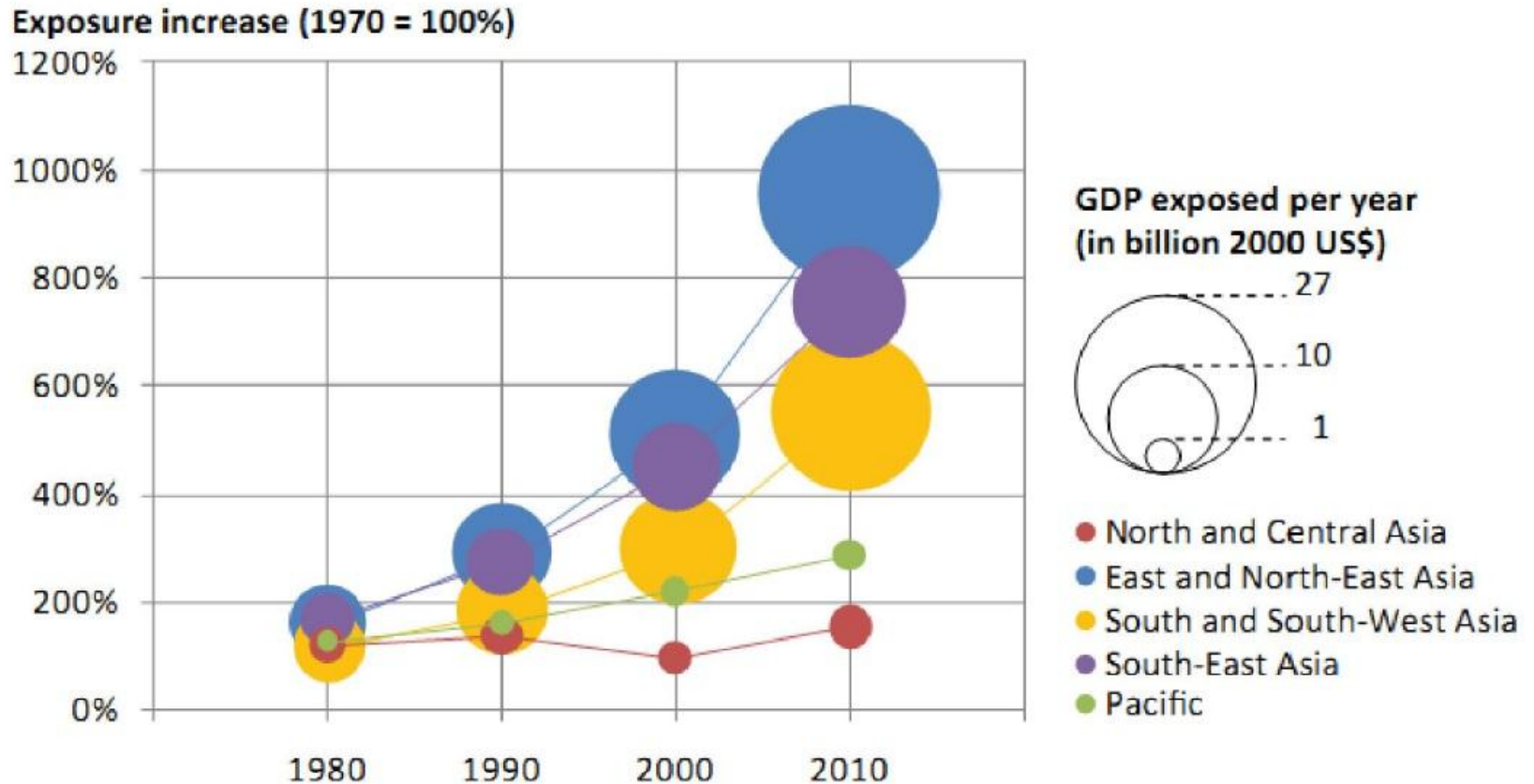
- Asia is most vulnerable to water-related disasters in the world.
- Floods, storms, tsunamis, hit the ill-prepared and densely populated region hard.

Ratio of water-related disaster fatalities in 1980-2006



Ratio of affected people by water-related disaster in 1980-2006

# Trends in Economic Exposure to Floods by Subregions, 1970-2010



Source: UNISDR, Global Assessment Report on Disaster Risk Reduction, Geneva, 2011. Global analysis, reprocessed at subnational level by UNEP/GRID Geneva



# Water-Energy- Food Nexus

- Water intensive crops
- Water intensive irrigation systems
- Subsidized water and energy
- High energy use for water treatment and distribution
- High water consumption in energy production



# Demand for food (and meat) is growing...

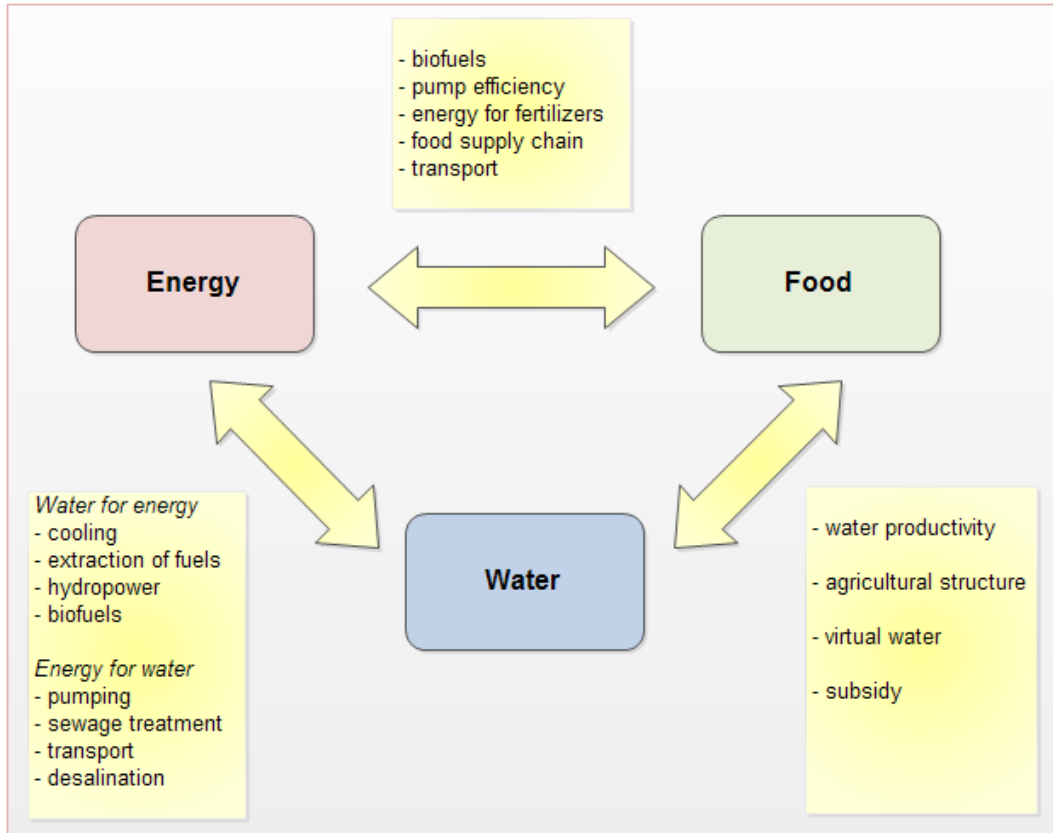
- To meet forecast growth in demand for food over the next 20 years, farmers will need to increase global agricultural production by 70-100%
- **More than 25% of this increase in grain demand will actually be due to changes in consumer diets (meat)**

# Demand for energy is growing...

- Global energy demand is set to grow by 37% by 2040 (IEA Central scenario)
- The global distribution of energy demand changes more dramatically, with energy use essentially flat in much of Europe, Japan, Korea and North America, and rising consumption concentrated in the rest of Asia (60% of the global total), Africa, the Middle East and Latin America
- By 2030 China will need to expand its power generating capacity by over 1,300 GW (1.5 times the current level of the United States); and India by 400 GW (equal to the current combined total power generation of Japan, South Korea and Australia) (IEA)
- More energy and more food means growing demand for water...

# Linking energy, water and food resources

## Energy, water and food are inextricably linked



- **Water for energy** currently amounts to about 8% of global water withdrawals (45% in industrialized countries, e.g. in Europe).

- **Food production** and supply chain is responsible for around 30% of total global **energy** demand

- **Food production** is the largest user of **water** at the global level, responsible for 80–90% of consumptive blue water use

# The Nexus Approach

Recognizes **interconnections** of water, energy, and food across space and time.

The objectives are:

- Improve energy, water, and food security
- Address externality across sectors, and decision-making at the nexus
- Support transition to sustainability

Projections for 2050 with 9.2 billion people:

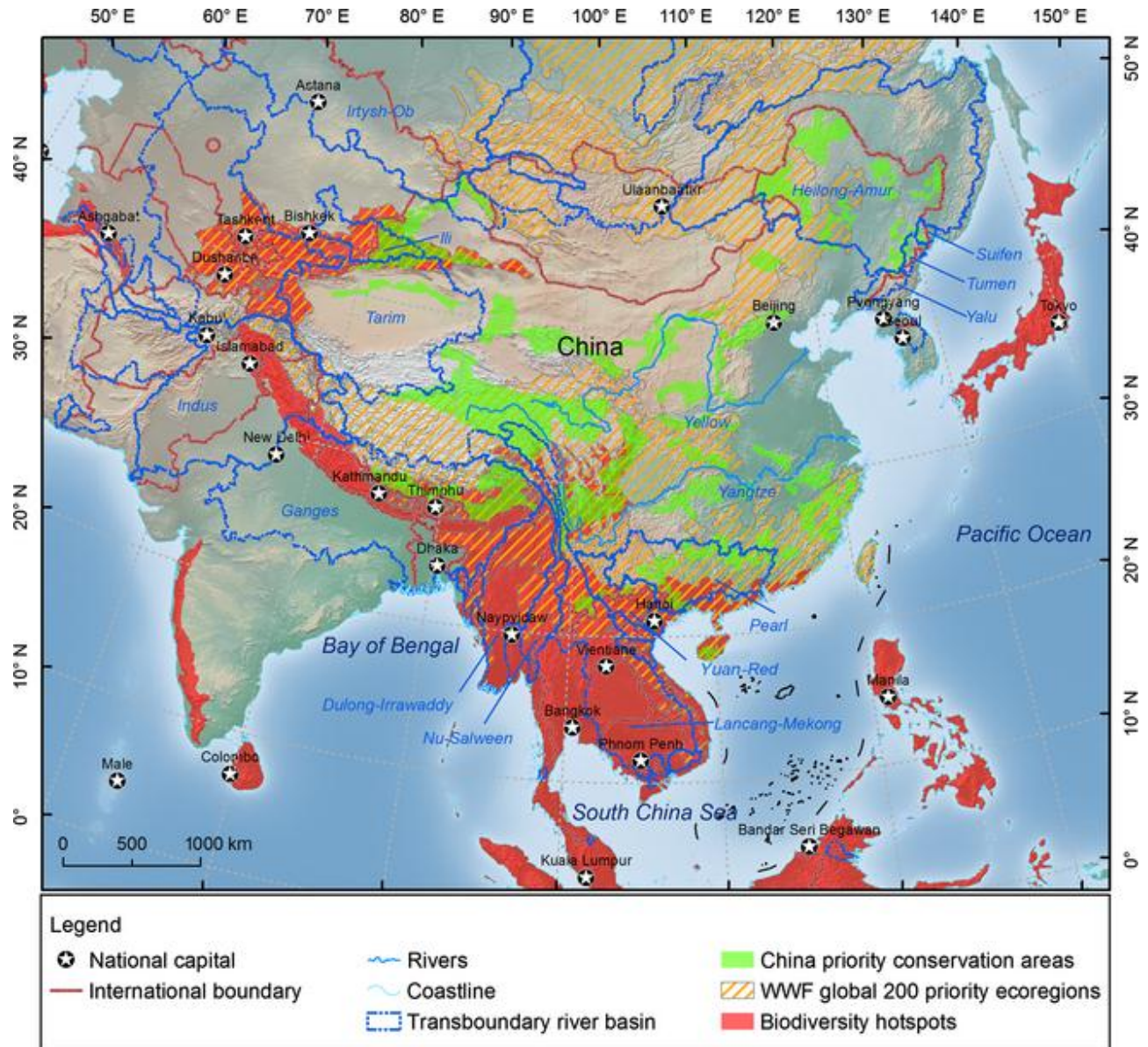
- 70% increase in agricultural demand for food by 2050
- 40% energy demand increase by 2050
- **But by 2030:** confronting water supply shortage of ~ 40%

# Water disputes & conflicts

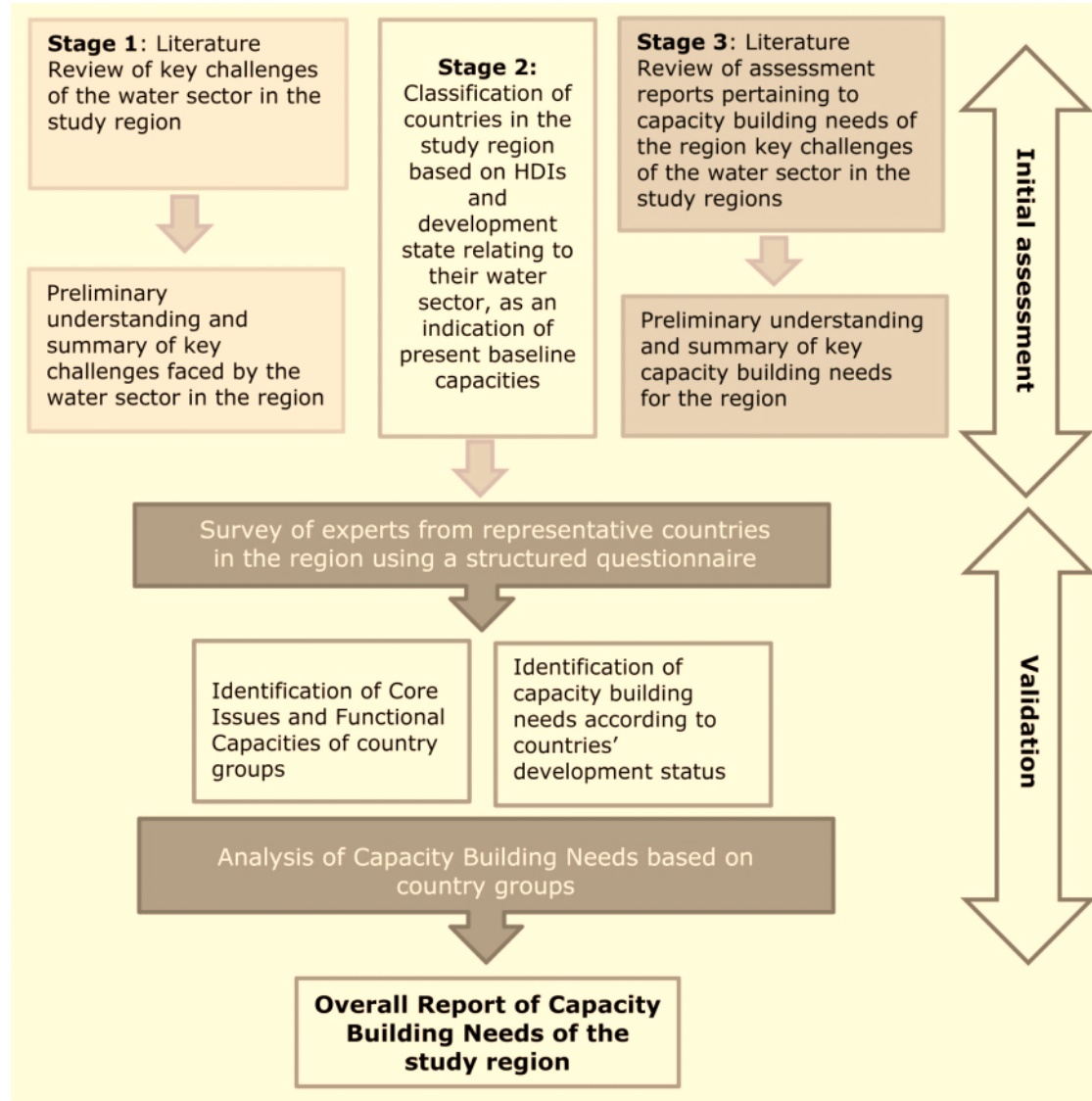
- There are 276 transboundary river basins in the world , 60 in Asia, such as
  - Indus
  - Ganges
  - Brahmaputra
  - Mekong River
- Internal water sharing issues: city-outskirts, interstate rivers



# China's transboundary rivers



# Methodology Framework for the Study on Capacity Building





# Assessing Current State of Development

## Proposed Regional Development Groups

Group A		UN HDI Ranking
1	Afghanistan	Low Human Development
2	Nepal	
3	Myanmar	
4	Timor-Leste	
5	Bangladesh	
6	Pakistan	
7	Bhutan	Medium Human Development
8	Cambodia	
9	Lao PDR	
10	India	
Group B		
11	Vietnam	
12	Indonesia	
13	Philippines	
14	Maldives	
15	Thailand	
16	Sri Lanka	
Group C		
17	Iran	High Human Development
18	Malaysia	
19	Brunei	Very High Human Development
20	Singapore	

# Validating water-related challenges

## Key water related challenges in Asia and the Pacific

- Poor water quality in rivers, lakes and ponds
- Discharge of untreated waste water into water courses
- Industrial waste discharge in waterways
- Inadequate municipal wastewater collection and treatment
- Increasing demand for domestic consumption of water
- Inadequate knowledge about integrated water resources management

# Validating water-related challenges

## Group A Countries

- Lack of safe drinking water
- Lack of basic sanitation facilities
- Concern for human health due to water-borne diseases
- Depletion of ground water table
- Inefficient water systems (e.g. large water leakages, illegal water connections)

## Group B Countries

- Poor water quality (e.g. pollution) in rivers, lakes, and ponds
- Discharge of untreated waste water into water courses
- Inadequate municipal wastewater collection and treatment
- Increasing demand for domestic consumption of water
- Inadequate knowledge on IWRM

## Group C Countries

- Poor water quality (e.g. pollution) in rivers, lakes, and ponds
- Discharge of untreated waste water into water courses
- Inadequate knowledge about IWRM
- Highly subsidized water

# Water sector capacity building needs in the Asia-Pacific Region

While most of Asian countries have decentralized responsibilities to local governments, large gaps still exist between existing and required capacities, local governments and other local stakeholders need to be **empowered financially, technically and institutionally**.

**Regulatory functions** have to be strengthened to increase service performance. Further reforms are needed to optimize the roles and contributions by the public and private sectors and by civil society organizations, through effective government-corporate-society (GCS) partnerships.

Additionally, another significant need throughout the region identified is to **achieve new standards of excellence in the development and dissemination of knowledge** in selected topics of importance to the water sector.

# Way forward for capacity building in the water sector on post 2015

- The Asia-Pacific region is diverse and complex, there is a need to take a differentiated approach to assessing capacity building needs
- Targeted capacity programs needed to design specifically to respond to urgent and critical challenges articulated by regional groups according to the current state of development
- **The study was the first of many studies on the subject to adopt a directed approach to assessing capacity building needs.**
  - It will have potential synergistic impacts when key challenges are addressed according to countries' baseline capacities
  - It would present opportunities for country groups to support their less developed counterparts in areas where they have already developed capabilities
  - It will also have positive impacts on resource optimization of capacity providers

# ESCAP Resolutions on IWRM

United Nations

E/ESCAP/69/L.13



**Economic and Social Council**

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27 April 2013

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**Economic and Social Commission for Asia and the Pacific**

**Sixty-ninth session**

Bangkok, 25 April-1 May 2013

Agenda item 3 (d)

**Review of issues pertinent to the subsidiary structure of the Commission, including the work of the regional institutions:**

**Environment and development**

**Draft resolution**

**Sponsored by: Thailand**

**Co-sponsored by: Australia, Cambodia, Indonesia, Japan, Kazakhstan, Republic of Korea, Singapore, Viet Nam**

**Enhancing knowledge-sharing and cooperation in integrated water resources management in Asia and the Pacific**

*The Economic and Social Commission for Asia and the Pacific,*

*Recalling* paragraph 119 of the outcome document of the United Nations Conference on Sustainable Development, entitled "The future we want",<sup>1</sup> in which the Conference recognized that water is at the core of sustainable development and is closely linked to a number of key global challenges, reiterating, the importance of integrating water into sustainable development and underlining the critical importance of water and sanitation within the three dimensions of sustainable development,

*Recalling* that the period from 2005 to 2015 was proclaimed by the General Assembly as the International Decade for Action "Water for Life",<sup>2</sup> and that 2013 was declared the International Year of Water Cooperation,<sup>3</sup>

*Recalling* the Plan of Implementation of the World Summit on Sustainable Development ("the Johannesburg Plan of Implementation")<sup>4</sup> and

United Nations

E/ESCAP/69/L.12



**Economic and Social Council**

Distr.: Limited  
27 April 2013

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**Economic and Social Commission for Asia and the Pacific**

**Sixty-ninth session**

Bangkok, 25 April-1 May 2013

Agenda item 3 (c)

**Review of issues pertinent to the subsidiary structure of the Commission, including the work of the regional institutions: Information and communications technology and disaster risk reduction**

**Draft resolution**

**Sponsored by: Thailand**

**Co-sponsored by: Bangladesh, Cambodia, Indonesia, Japan, Philippines, Singapore, Viet Nam**

**Enhancing regional cooperation for building resilience to disasters in Asia and the Pacific**

*The Economic and Social Commission for Asia and the Pacific,*

*Recalling* General Assembly resolutions 60/195 on the International Strategy for Disaster Reduction, in which the Assembly endorsed the Hyogo Declaration and the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters,<sup>1</sup> 63/217 of on natural disasters and vulnerability, 65/157 and 67/209 on the International Strategy for Disaster Reduction, and 65/264 on international cooperation on humanitarian assistance in the field of natural disasters, from relief to development, 66/290 on follow-up to paragraph 143 on human security of the 2005 World Summit Outcome, and Commission on the Status of Women resolution 56/2 on gender equality and the empowerment of women in natural disasters,<sup>2</sup>

*Recalling* the results of the midterm review of the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters,<sup>3</sup>

*Also recalling* its resolutions 62/7 on strengthening regional cooperation and coordination of early warning system arrangements for tsunamis through the Multi-Donor Voluntary Trust Fund on Tsunami Early Warning

# THANK YOU