



Water Hotspots and Household Water Security in Asia and the Pacific

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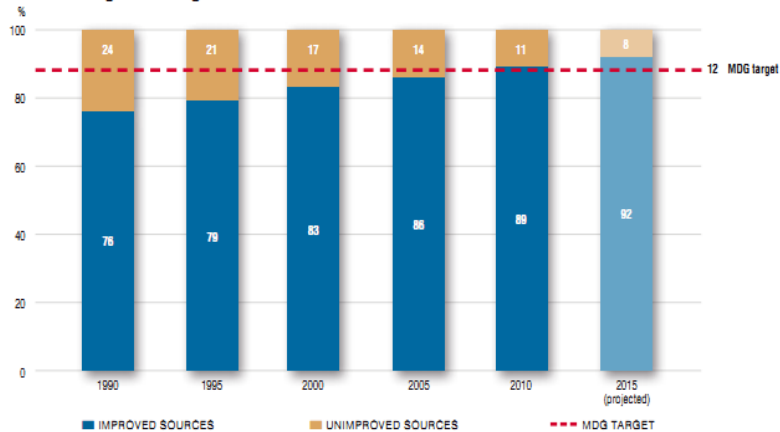


OUTLINE

- Status of MDG7c on water supply and sanitation
- Water Hotspots Map
- Main Water Issues and Challenges
- HWS Index
- Solutions

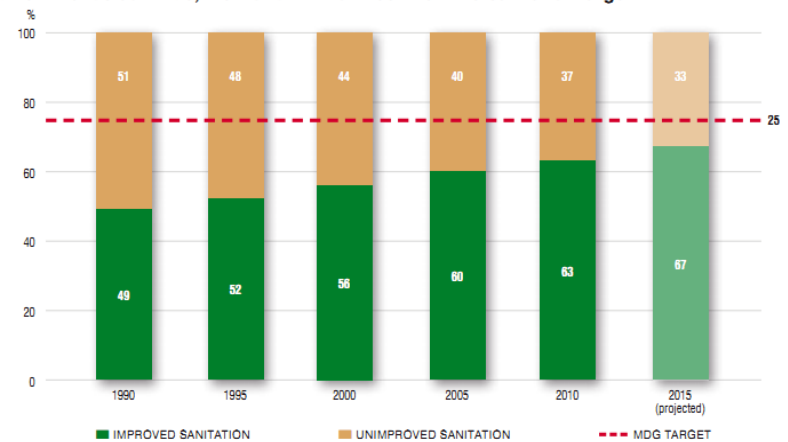
MDG 7C TARGET

The MDG drinking water target has been met



480 million people in region still had no access to safe drinking water in 2008

If current trends continue, the world will not meet the MDG sanitation target

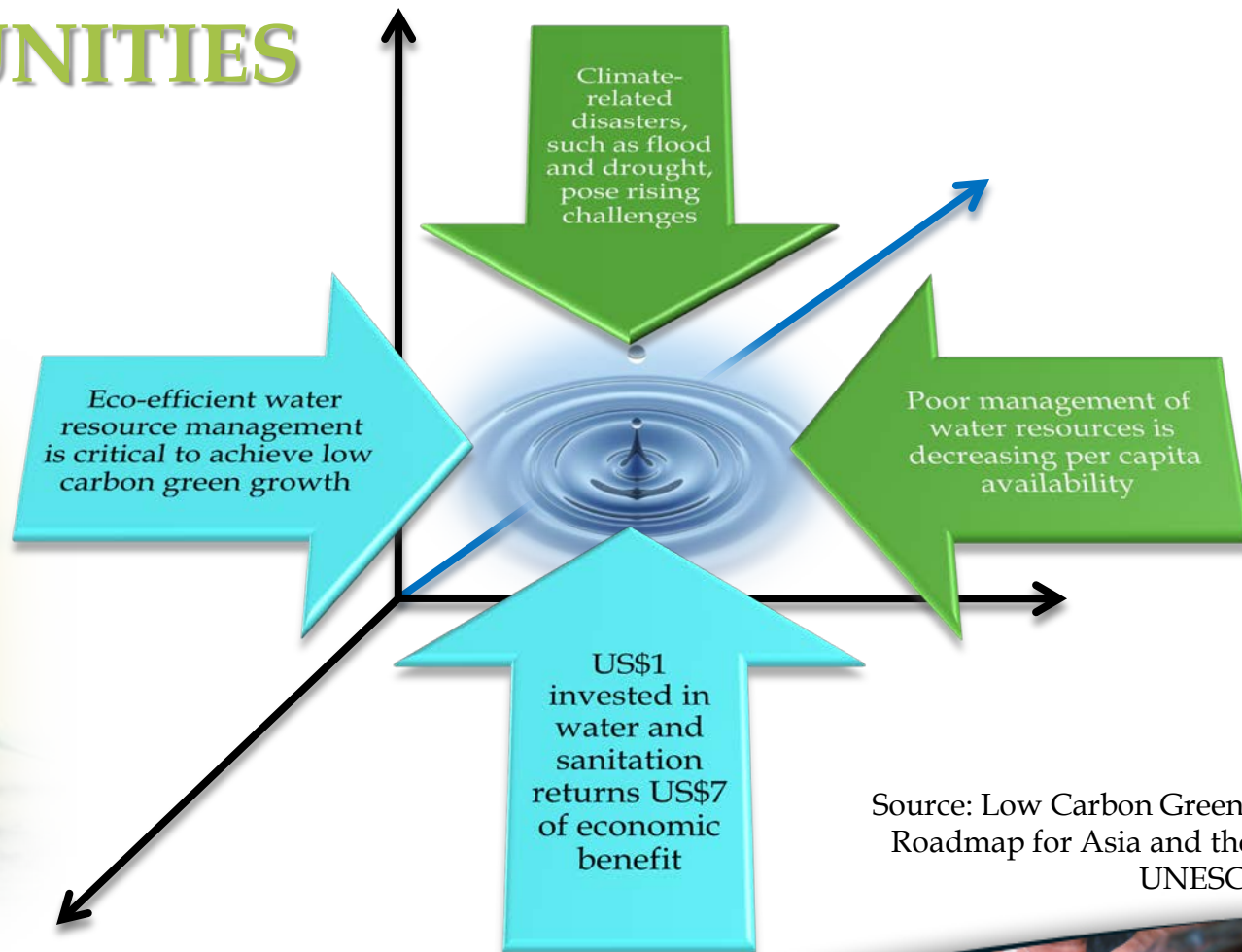


1.9 billion people did not have an access to sanitation in 2008

Source: Progress on Drinking Water and Sanitation, 2012 update, UNICEF & WHO



WATER RESOURCES CHALLENGES AND OPPORTUNITIES



Source: Low Carbon Green Growth
Roadmap for Asia and the Pacific,
UNESCAP 2012

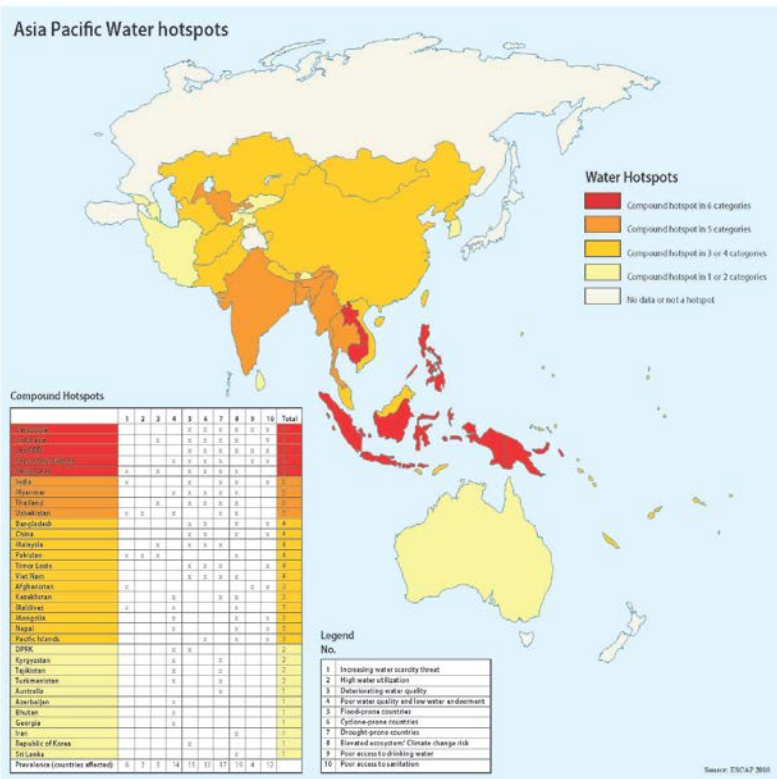
ASIA PACIFIC WATER HOT SPOTS

ESCAP identified water hotspots using indicators:

- socio-economic and environmental outcomes of water use
- capacity of communities or countries to deliver expected outcomes in an equitable and sustained way

Asia Pacific countries are most challenged on water security

- 6 challenges –Cambodia, Indonesia, the Lao People's Democratic Republic, Papua New Guinea, the Philippines,
- 5 challenges - India, Myanmar, Thailand and Uzbekistan



BASIC FRAMEWORK FOR DEFINING WATER HOTSPOTS

Challenge	Measures available*	Countries in challenge
Water availability	<ul style="list-style-type: none"> Index of Water Available for Development (IWAD) (Threat #2) Water utilization level (Threat* #1) Water quality (Threat #3 and #4) 	Afghanistan, Azerbaijan, Bhutan, DPRK, Georgia, India, Indonesia, Kazakhstan, Kyrgyzstan, Malaysia, Maldives [†] , Mongolia, Myanmar, Nepal, Pakistan [‡] , Papua New Guinea, Philippines, Tajikistan, Thailand, Turkmenistan, Uzbekistan [‡]
Vulnerability & risk	<ul style="list-style-type: none"> Frequency of floods (Threat #5) Frequency of cyclones (Threat #6) Frequency of droughts (Threat #7) Climate change pattern (Threat #8) 	Australia, Bangladesh [‡] , Cambodia [‡] , China [‡] , DPRK, India [‡] , Indonesia [‡] , Iran, Kazakhstan [‡] , Kyrgyzstan, Lao PDR [‡] , Myanmar, [‡] Malaysia [‡] , Maldives [†] , Nepal, Pacific Islands [†] , Pakistan, Papua New Guinea [‡] , Philippines [‡] , RoK, Sri Lanka, Thailand [‡] , Timor Leste [‡] , Turkmenistan, Uzbekistan [‡] , Viet Nam [‡]
Household Water Adequacy	<ul style="list-style-type: none"> Access to water (Threat #9) Access to sanitation (Threat #10) DALY from diarrhoea 	Afghanistan [‡] , Bangladesh, Cambodia [‡] , China, India, Indonesia, Lao PDR [†] , Mongolia, Nepal, Pacific Islands, Papua New Guinea [‡] , Timor Leste
Human Development	<ul style="list-style-type: none"> Life expectancy at birth Inequalities in access People living in poverty 	Cambodia, DPRK, Indonesia, Lao PDR, Myanmar, Pacific Islands, Papua New Guinea, Philippines

Household Water Security

Human Rights/Equity

Water Supply

Sanitation

Health

Means/Instruments/Tools

Policy

Technologies

Legal
Aspects

Institutiona
l Aspects

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Financial
Instruments

Status of
MDG
targets

Data
Collection,
Monitoring

Climate
concerns

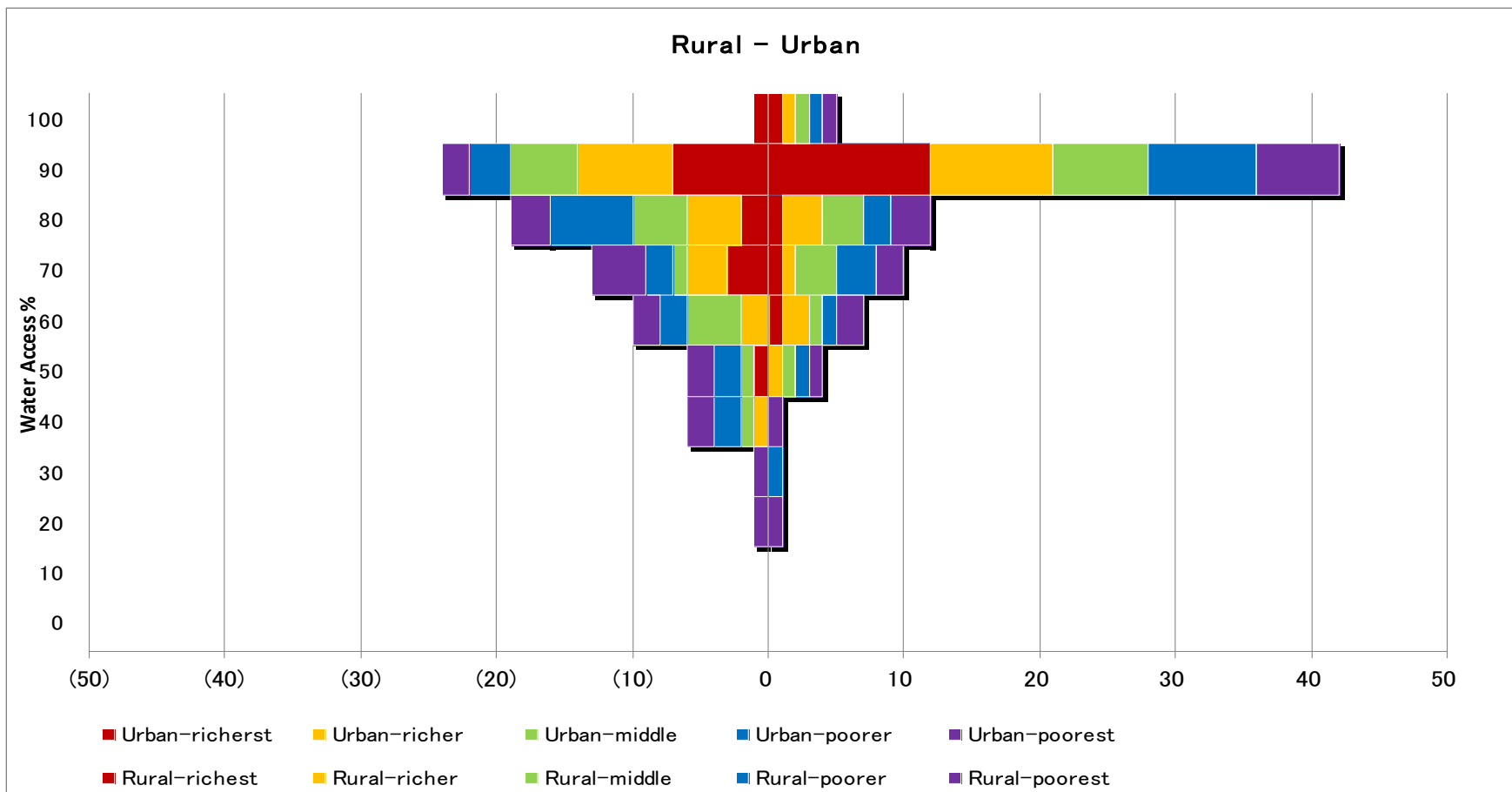
Technology

Management
and
Coordination

Financing
and
Investments

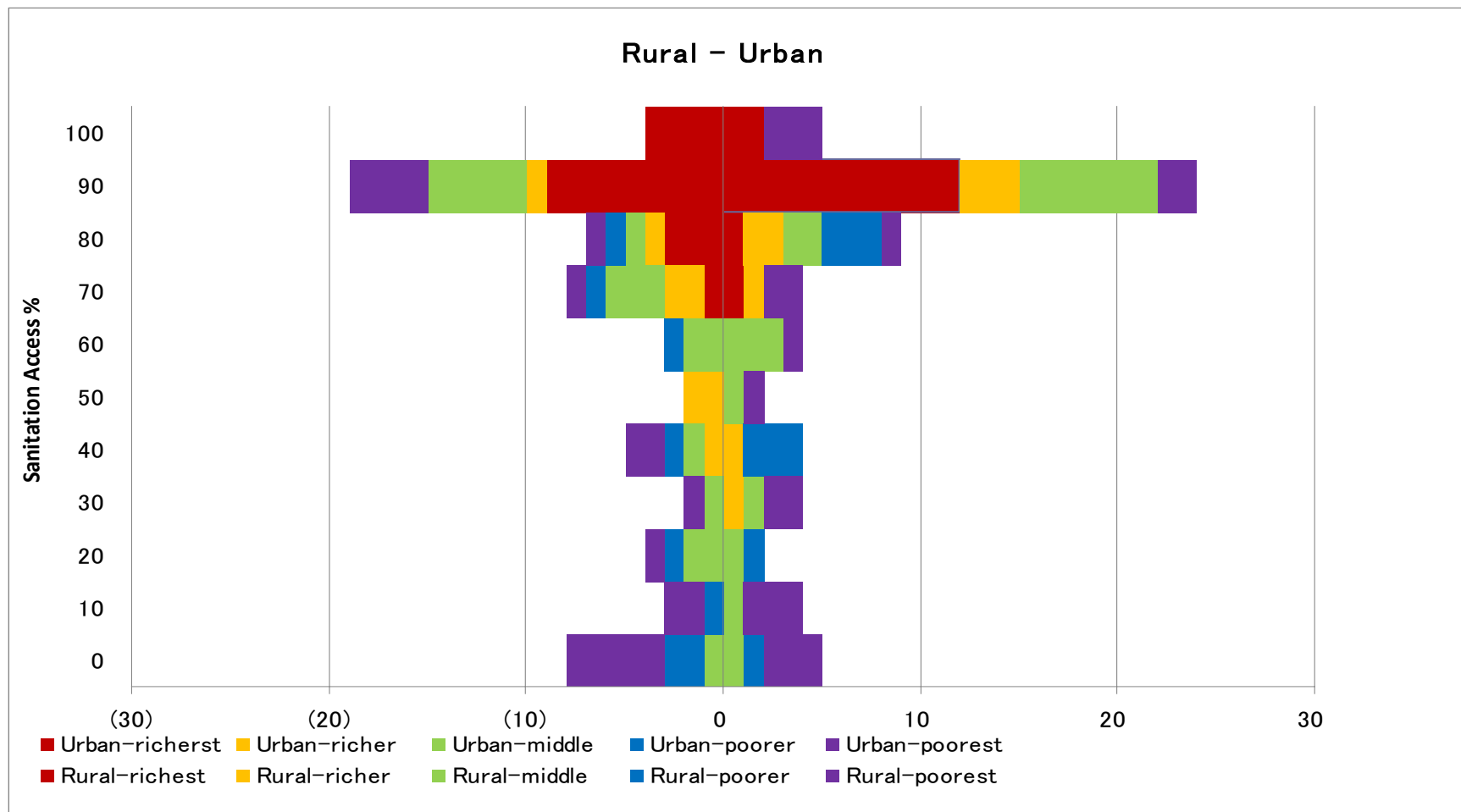
Capacities
,
Networks

Frequency distribution of household's level of water access in APAC



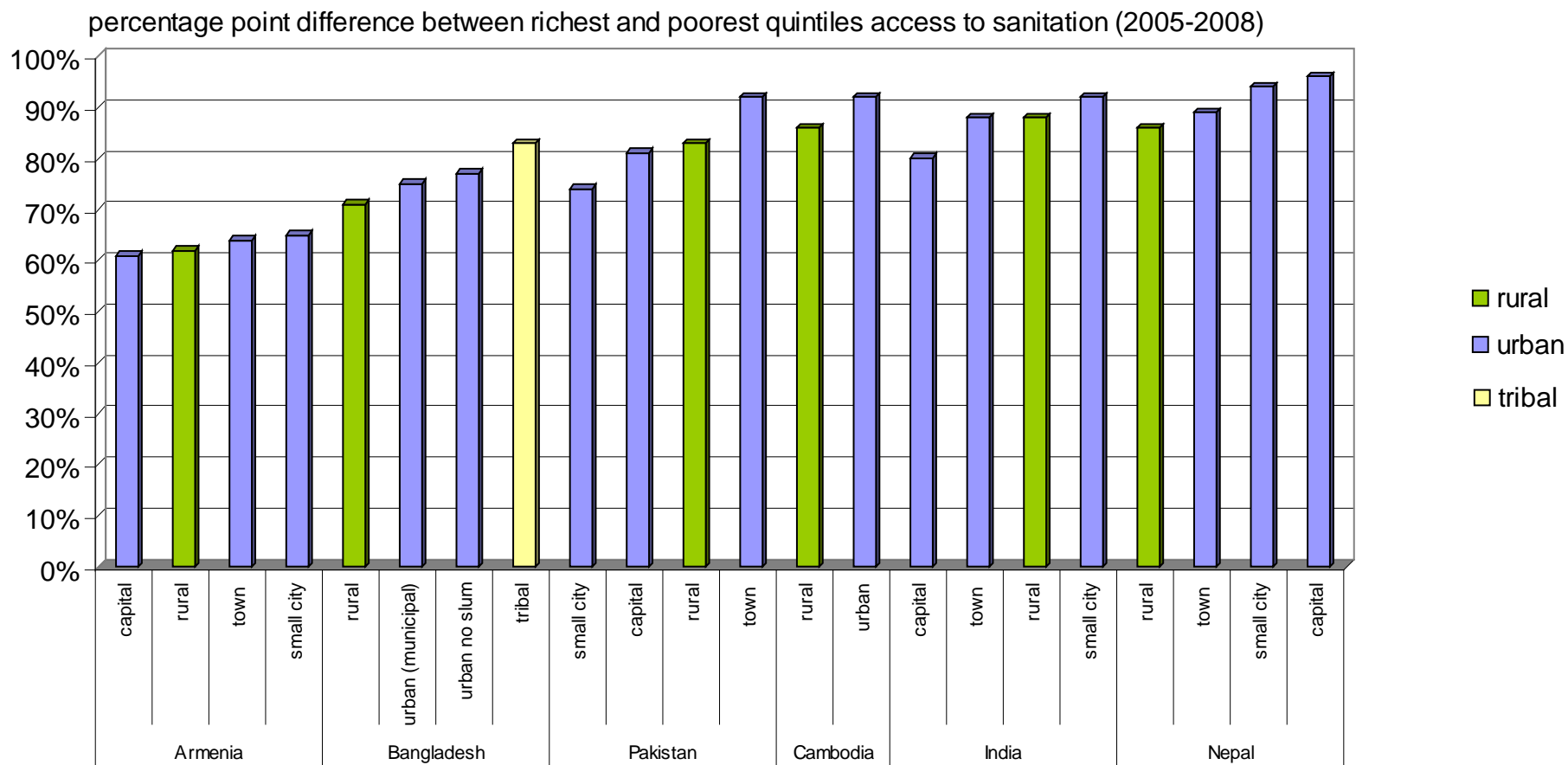
Source: DHS and MICS, 2005-2007

Frequency Distribution of household's level of sanitation access in APAC



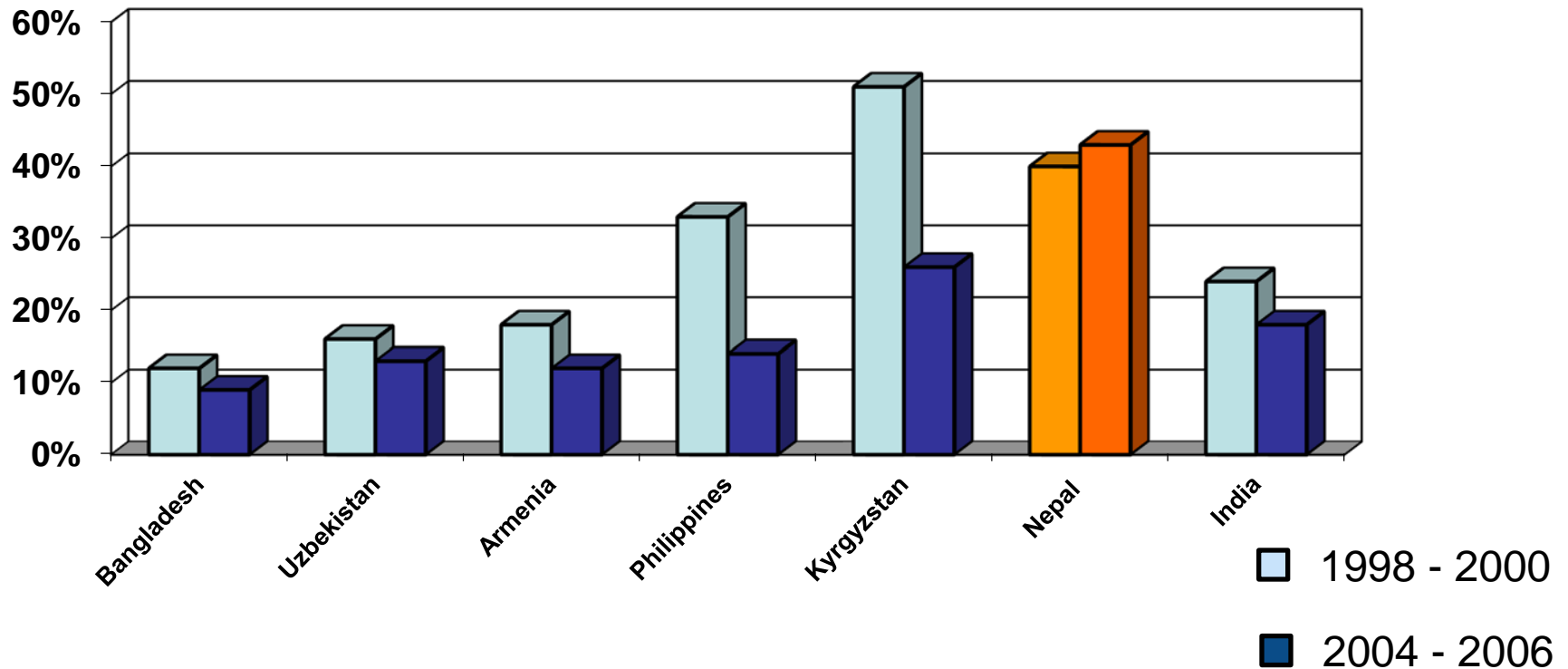
Source: DHS and MICS, 2005-2007

The highest inequalities in access to sanitation are in urban areas



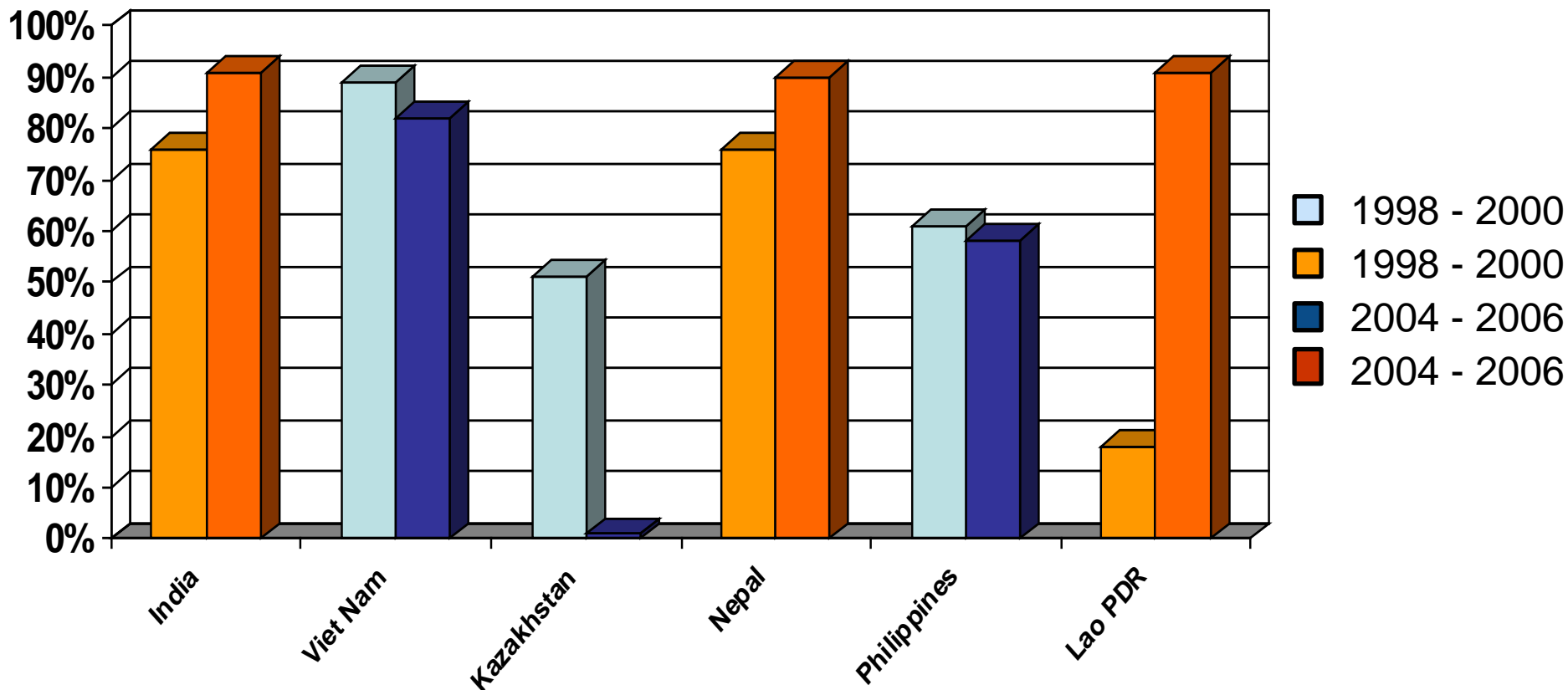
Source: DHS and MICS, 2005-2007

Falling gap in water access between richest and poorest 20% (quintiles)



Source: DHS and MICS, 1998-2007

Gap in sanitation access between richest and poorest 20%



Source: DHS and MICS, 1998-2007

Household Water Security Framework

Household Water Security Framework	Key Outcomes	Measured through	Capacity required for sustainable outcomes	Long-term Impacts
	Access to water	<ul style="list-style-type: none"> MDG Target 7c Diarrhoea DALYs Electricity access 	<ul style="list-style-type: none"> Affordability of access (e.g. price) Reliability of access (e.g. availability of resource, reliable supply) Convenience of access (e.g. time spent collecting water) Empowering institutions (e.g. governance and education) Other socio-economic conditions (e.g. equality, poverty) 	<ul style="list-style-type: none"> Healthy people Poverty reduction Healthy ecosystems Adequate water allocation
	Access to sanitation	<ul style="list-style-type: none"> MDG Target 7c 		
	Additional Outcomes	Measured through		
	Resilience to drought, storms, floods	<i>Requires research for indicator development</i>		
	Environmental health of water points	<ul style="list-style-type: none"> Diarrhoea DALYs 		
	Water to enable livelihood creation	<ul style="list-style-type: none"> GDP per capita <i>Requires further research</i>		

Household Water Security Index (Best Performers)

Country	Sub-region	water access	sanitation access	DALYs diarrhoea	Water Rank	Sanitation Rank	DALYs Rank	HWSI	Total Rank
Armenia	CCA	96%	90%	345	1	1	1	3	1
Australia	PI	100%	100%	30	1	1	1	3	1
Cook Islands	PI	96%	100%	192	1	1	1	3	1
Japan	ENEA	100%	100%	34	1	1	1	3	1
Malaysia	SEA	100%	96%	181	1	1	1	3	1
Niue	PI	100%	100%	67	1	1	1	3	1
Republic of Korea	ENEA	98%	100%	130	1	1	1	3	1
Russian Federation	CCA	96%	87%	54	1	1	1	3	1
Singapore	SEA	100%	100%	73	1	1	1	3	1
Sri Lanka	CCA	96%	90%	345	1	1	1	3	1
Tonga	PI	100%	96%	297	1	1	1	3	1
Turkey	SSWA	99%	90%	345	1	1	1	3	1
Georgia	CCA	98%	95%	597	1	1	2	4	1
Maldives	SSWA	91%	98%	609	1	1	2	4	1
Samoa	PI	88%	100%	227	2	1	1	4	1
Thailand	SEA	98%	96%	504	1	1	2	4	1
Viet Nam	SEA	94%	75%	296	1	2	1	4	1

Household Water Security Index (Worst Performers)

Country	Sub-region	water access	sanitation access	DALYs diarrhoea	Water Rank	Sanitation Rank	DALYs Rank	HWSI	Total Rank
Pakistan	SSWA	90%	45%	1,072	1	4	3	8	3
Azerbaijan	CCA	80%	45%	1,166	2	4	3	9	3
Bangladesh	SSWA	80%	53%	1,217	2	4	3	9	3
Fiji	PI	47%	71%	169	5	3	1	9	3
Mongolia	ENEA	76%	50%	811	3	4	2	9	3
Myanmar	SEA	71%	81%	1,551	3	2	4	9	3
Solomon Islands	PI	70%	32%	408	3	5	1	9	3
Tajikistan	CCA	70%	94%	1,944	3	1	5	9	3
Timor-Leste	SEA	69%	50%	556	3	4	2	9	3
India	SSWA	88%	31%	1,246	2	5	3	10	3
Nepal	SSWA	88%	31%	1,345	2	5	3	10	3
Kiribati	PI	65%	33%	769	4	5	2	11	4
Lao People's Democratic Republic	SEA	57%	53%	1,078	4	4	3	11	4
Papua New Guinea	SEA	41%	45%	1,128	5	4	3	12	4
Cambodia	SEA	61%	29%	2,170	4	5	5	14	5
Afghanistan	SSWA	48%	37%	5,289	5	5	5	15	5

UNDERSTANDING HWS

- Examine future perspectives of household water security for socio-economic development
- Explore the relationships between factors that shape water-related household choices, like geography, education and wealth, and the related outcomes
- Explore how policies can help to ensure that benefits from access to water and sanitation outweigh related costs

MAIN MESSAGES OF HWS

Lay a foundation towards strengthening the process of:

- measuring household water security within a comprehensive framework for inclusive sustainable economic development
- building on the momentum generated by MDGs
- sustaining the momentum
- measuring household water security through an index, the Household Water Security Index
- dissecting the water and sanitation outcomes for priority action
- moving forward to meeting challenges

LIMITATIONS

- Lack of data on other household water security measures other than access to water and sanitation
- Inadequacy and incomparability of data across member countries
- “Water security” is not widely used in international development literature
- No internationally accepted principles and conditions of sustainability with regard to water security

FINDINGS

- Understanding household needs and preferences can help develop more demand-responsive infrastructure planning.
- It is necessary to seek appropriate technologies, especially those resilient to climate change and water scarcity.
- The estimated costs to meeting the water and sanitation MDG targets are vast.
- Investments in water and sanitation should go hand-in-hand as willingness to pay for the former is usually higher.

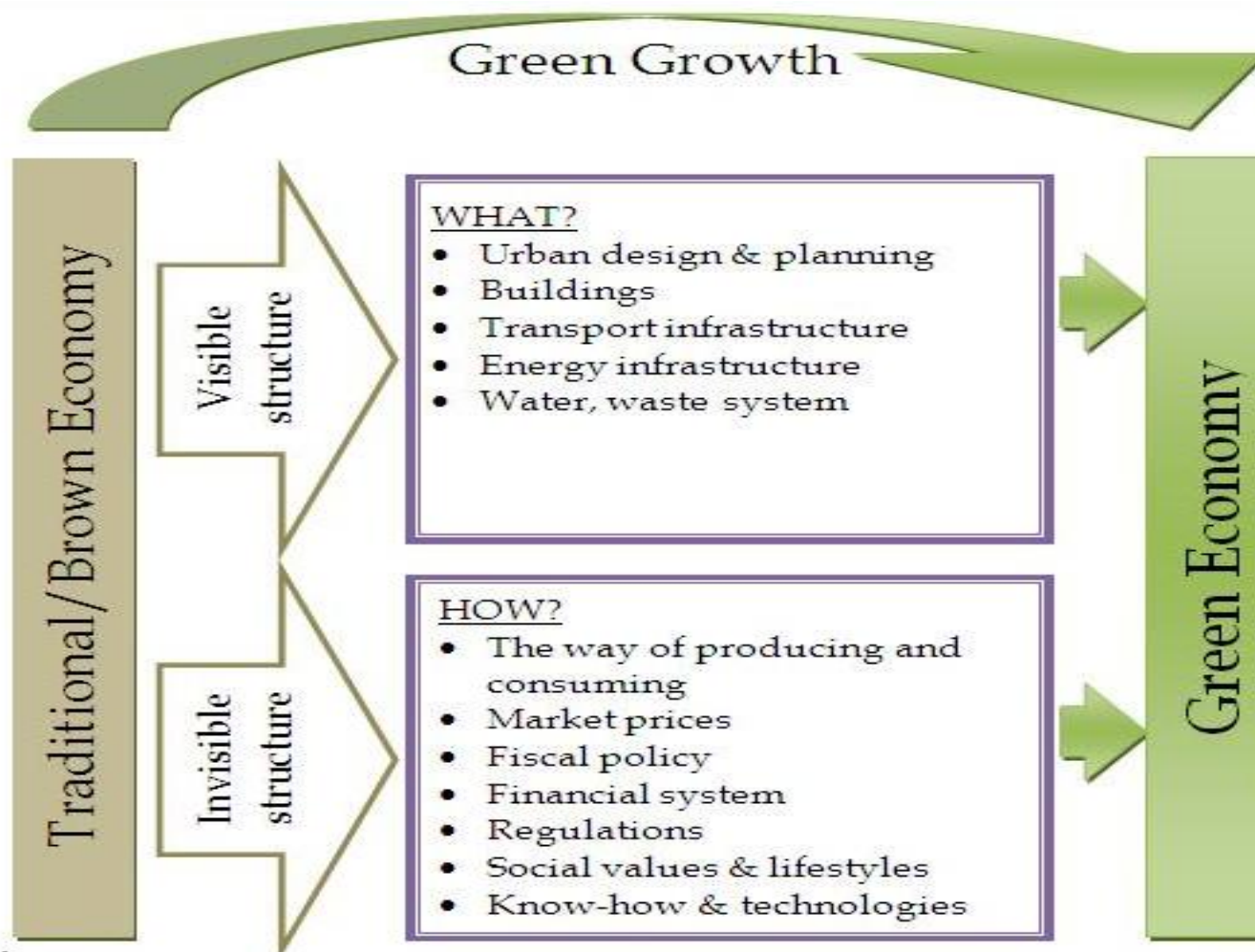
RECOMMENDATIONS FOR POLICY MAKERS

- **Institutional and Legal Policy Lever**
 - ✓ Establishing a coordinating mechanism to address water and sanitation questions
 - ✓ Raising awareness and improving understanding of benefits of water supply and sanitation
 - ✓ Establishing simple, independent and transparent regulatory environments
- **Financial Lever**
 - ✓ Explore innovative strategies to attract investments from the private sector, governments and donors
 - ✓ Leverage the potential contributions from households themselves

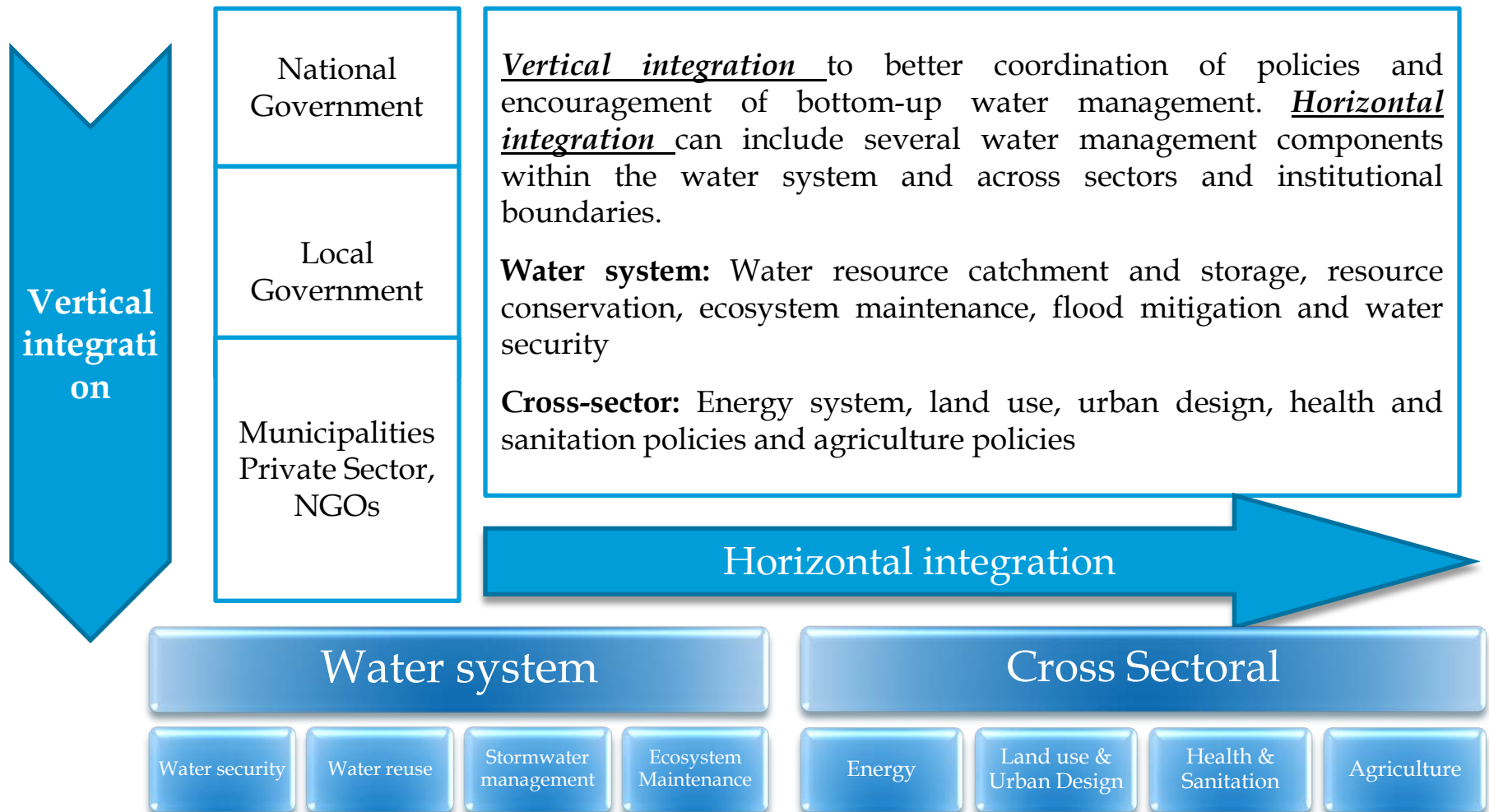
THE WAY FORWARD

1. Build awareness of linkages of the HWS components
2. Build capacities on the efficient and affordable tools
3. Create enabling policy environment for businesses and investments to ensure HWS, in particular to sanitation;
4. Establish regional cooperation and the exchange of best practices on IWRM;
5. To bridge developed, rapidly developing and poor countries of region in achieving MDGs

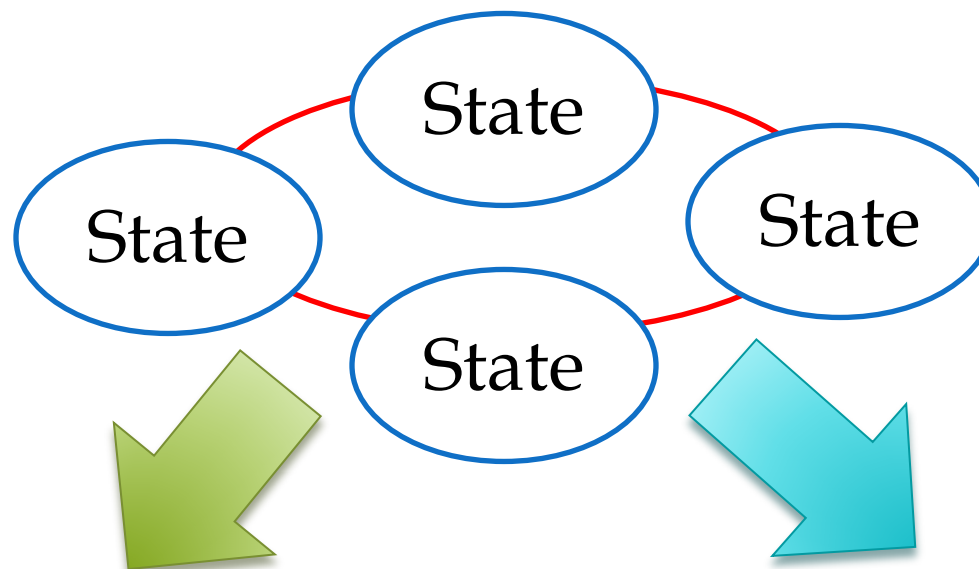
WATER SOLUTIONS: ECONOMIC SYSTEMS CHANGE



WATER SOLUTIONS: INTEGRATION IN IWRM



WATER SOLUTIONS: INTERNATIONAL PARTNERSHIP AND COOPERATION



Brown economy:

- unsustainable development;
- increasing challenges in developing countries;
- crisis in developed countries;
- the collapse of existing economic model

Green economy:

- paradigm shift;
- provision with equal rights;
- development and prosperity of both developed and developing countries

EXAMPLES OF WATER HOTSPOTS:

ARAL SEA



July – September, 1989



August 12, 2003



August 16, 2009



EXAMPLES

Integrated water resources management (IWRM)

- Development of the Third Aral Sea Basin Programme on cooperation of CA states in applying IWRM principles to protect water resources and environment in Aral Sea basin (with EU, WB, USAIDS, GTZ, SDC)
- Mekong Integrated Water Resources Management Project

Distributed wastewater management

- Australia's wastewater system and water reuse scheme

Water cycling system (reuse & recycle)

- Water reuse measures in China, Nepal, Singapore, etc.

Water pricing

- Singapore's water pricing policy

Source: Low Carbon Green Growth Roadmap for Asia and the Pacific, UNESCAP 2012

Thank you

