

y-axis: number of planet earths, x-axis: years

Source: Global
Footprint Network

Resource Consumption



3kg/ day



11kg/day



44kg/ day

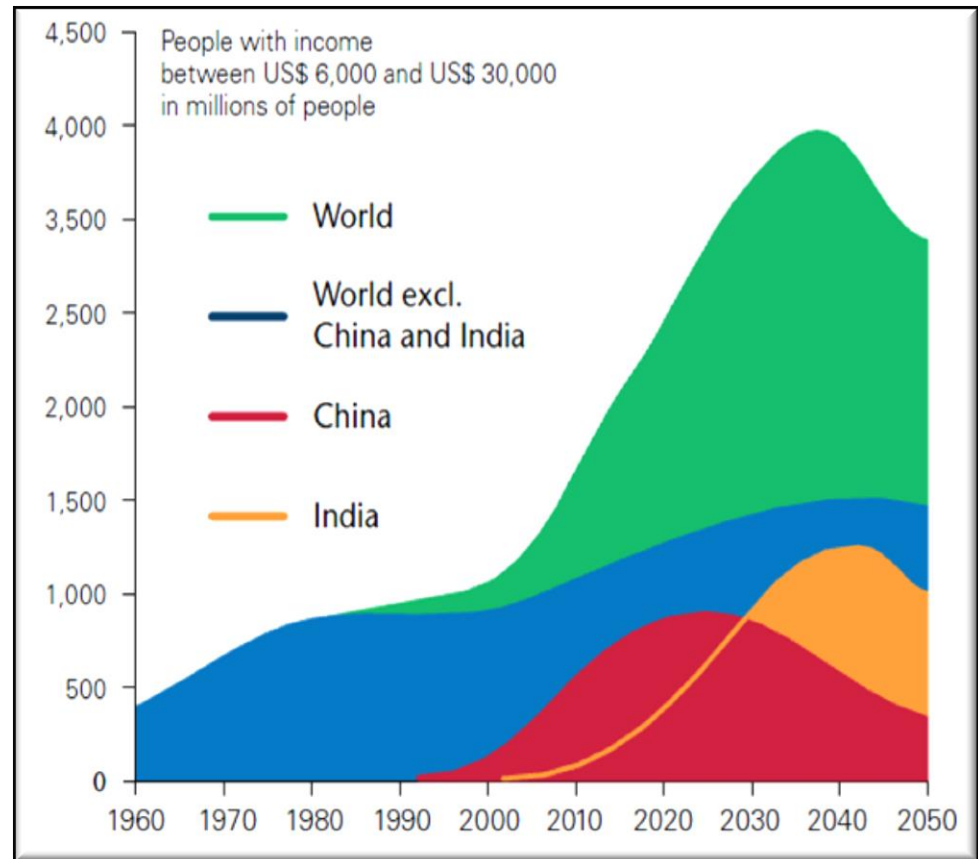
Trend: Demographic Pattern: Urban VS. Rural



- Total Population: 7.3 b – 2011: 9.0 b - 2050
- Urban Population: 3.6 b - 2011: 6.3 b - 2050
- Rural Population: 3.4 b - 2011 : 3.0 b - 2050 : 1.6 b - 2100
- Waste: Exponential Growth with increase in affluence

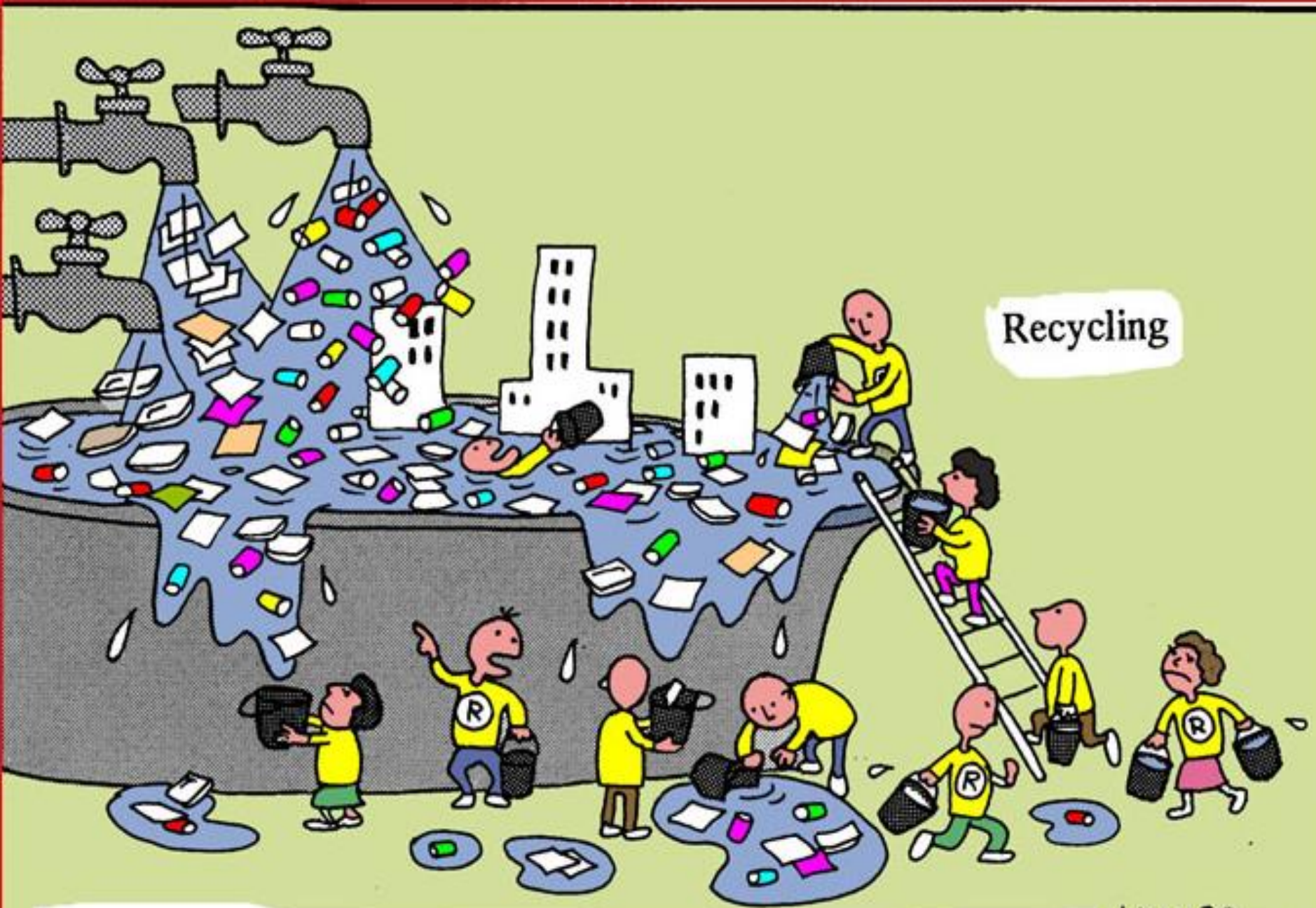
Trend: Goods Consumption Current and Future

- 2030: Middle-class consumers will triple
- 2030: 300% growth of Middle classes in developing countries
- World GDP is projected to grow by 325% between 2007 and 2050
- 60% of GDP is consumer spending on goods and services
- 70 million people each year are entering an income bracket equivalent to between US\$ 6K and US\$ 30K



Source: Goldman Sachs, 2008

The expanding world middle class



Recycling

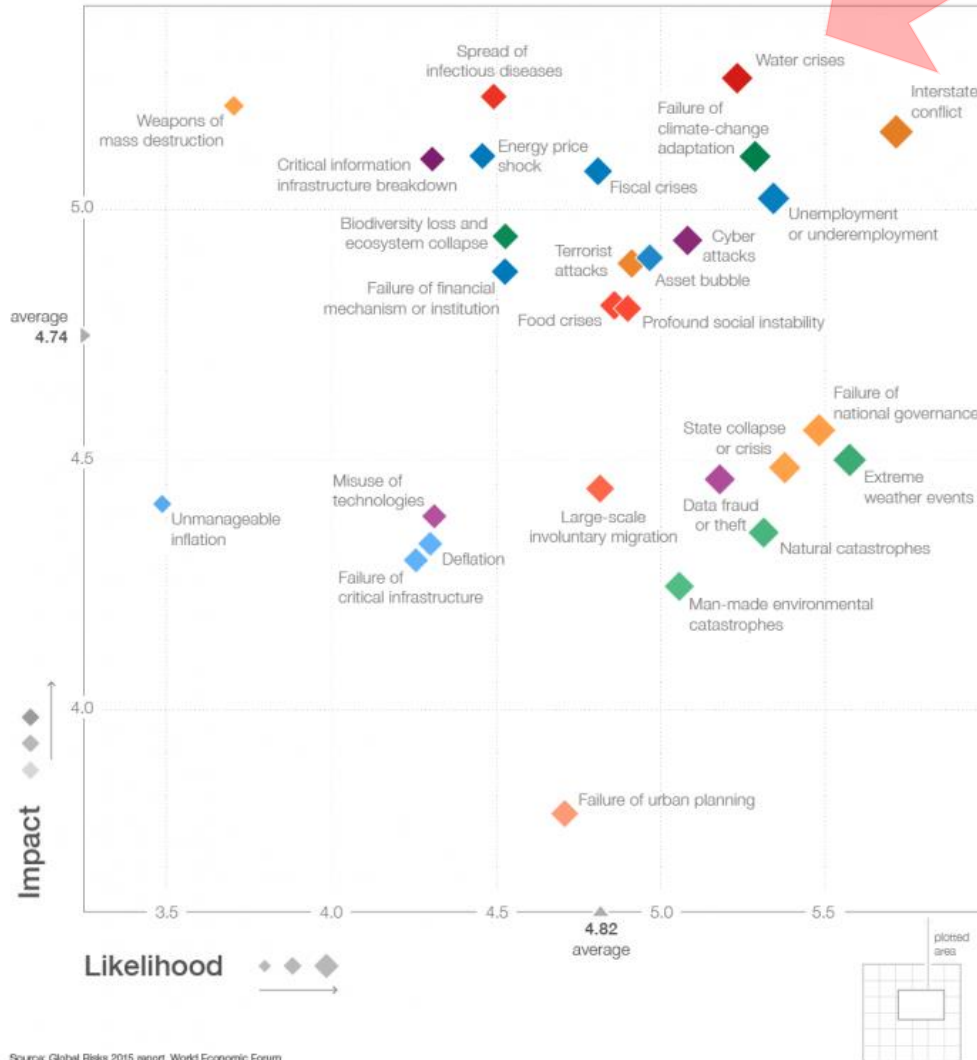
"Wouldn't it be better to simply turn off the taps ?" High Moon

WATER SECURITY RISK

The Global Risks 2015 Report

The Global Risks Landscape 2015

Respondents were asked to assess the impact and likelihood of each global risk on a scale of 1 to 7 and in the context of a 10-year time frame.

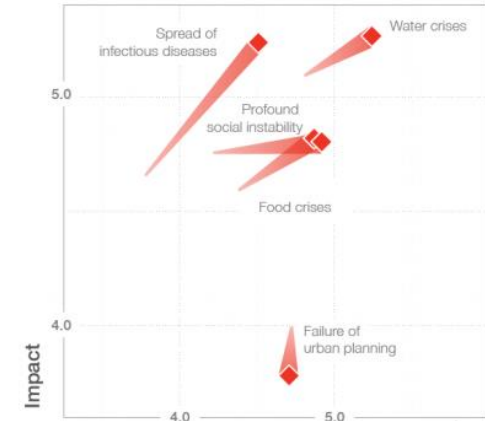


Source: Global Risks 2015 report, World Economic Forum

The Changing Global Risks Landscape

Societal Risks

2014 → 2015



The Global Risks 2015 Report

The Ten Global Risks in Terms of Likelihood and Impact

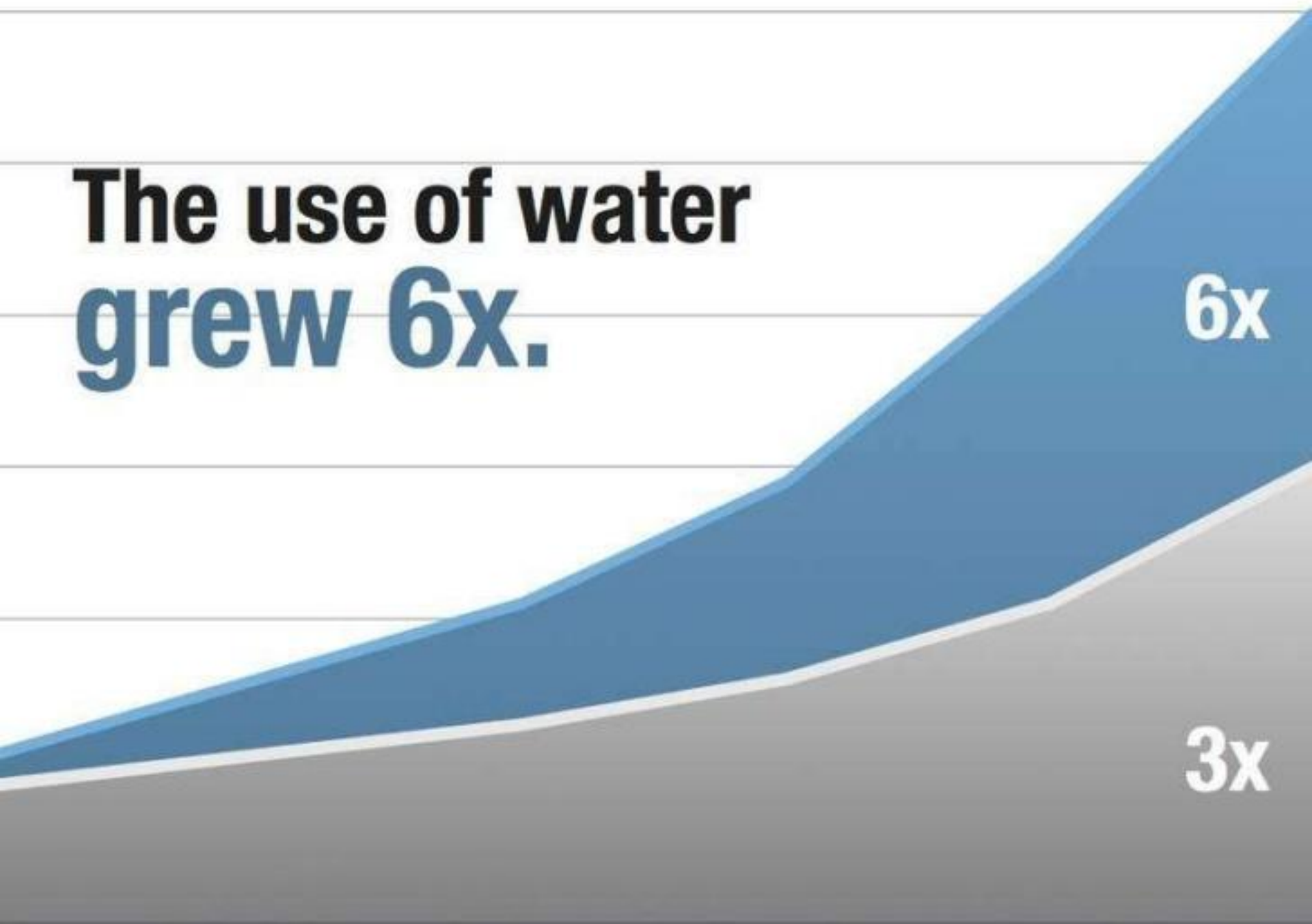
Top 10 risks in terms of Likelihood

1. Interstate conflict
2. Extreme weather events
3. Failure of national governance
4. State collapse or crisis
5. Unemployment or underemployment
6. Natural catastrophes
7. Failure of climate-change adaptation
8. Water crises
9. Data fraud or theft
10. Cyber attacks

Top 10 risks in terms of Impact

1. Water crises
2. Spread of infectious diseases
3. Weapons of mass destruction
4. Interstate conflict
5. Failure of climate-change adaptation
6. Energy price shock
7. Critical information infrastructure breakdown
8. Fiscal crises
9. Unemployment or underemployment
10. Biodiversity loss and ecosystem collapse

**The use of water
grew 6x.**



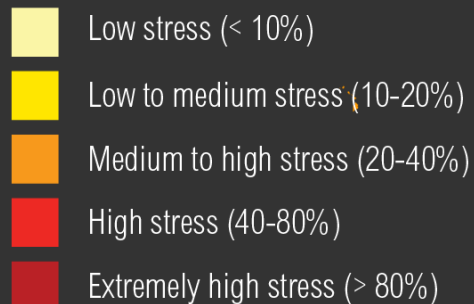
Global Water Challenge through 2030

- Globally, agriculture accounts for approximately 3,100 billion m³, or 71% of water withdrawals today, and without efficiency gains this will increase to 4,500 billion m³ by 2030.
- Industrial withdrawals account for 16% of today's global demand, growing to a projected 22% in 2030. The growth will come primarily from China (where industrial water demand in 2030 is projected at 265 billion m³), which alone will account for 40% of the additional industrial demand worldwide.
- Demand for water for domestic use will decrease by 2030 as a percentage of the total water withdrawals, from 14% today to 12% in 2030, although it will grow in specific basins, especially in emerging markets

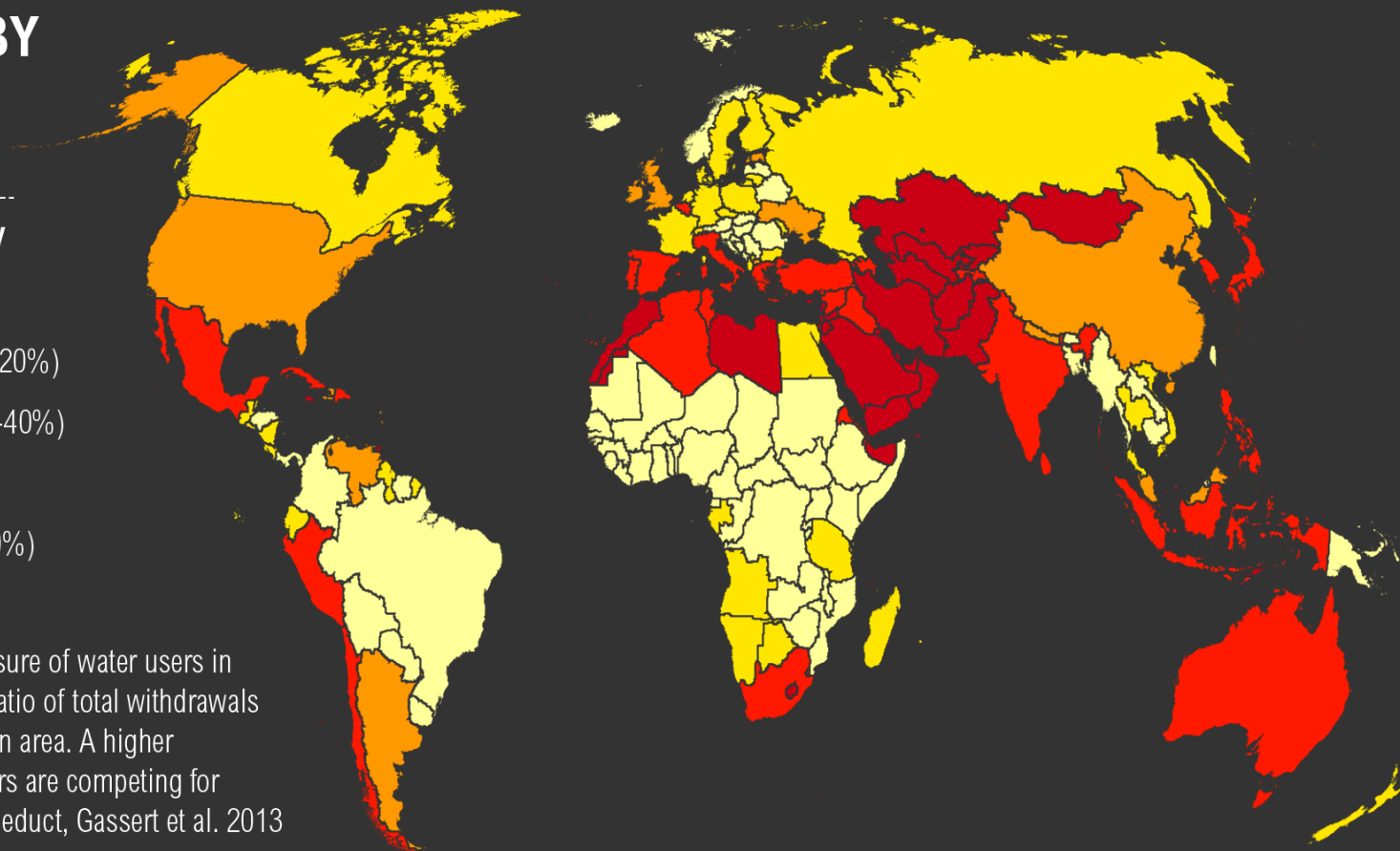
(WRG Report, McKinsey & Co. 2009)

WATER STRESS BY COUNTRY

ratio of withdrawals to supply



This map shows the average exposure of water users in each country to water stress, the ratio of total withdrawals to total renewable supply in a given area. A higher percentage means more water users are competing for limited supplies. Source: WRI Aqueduct, Gassert et al. 2013





Modern Ulaanbaatar

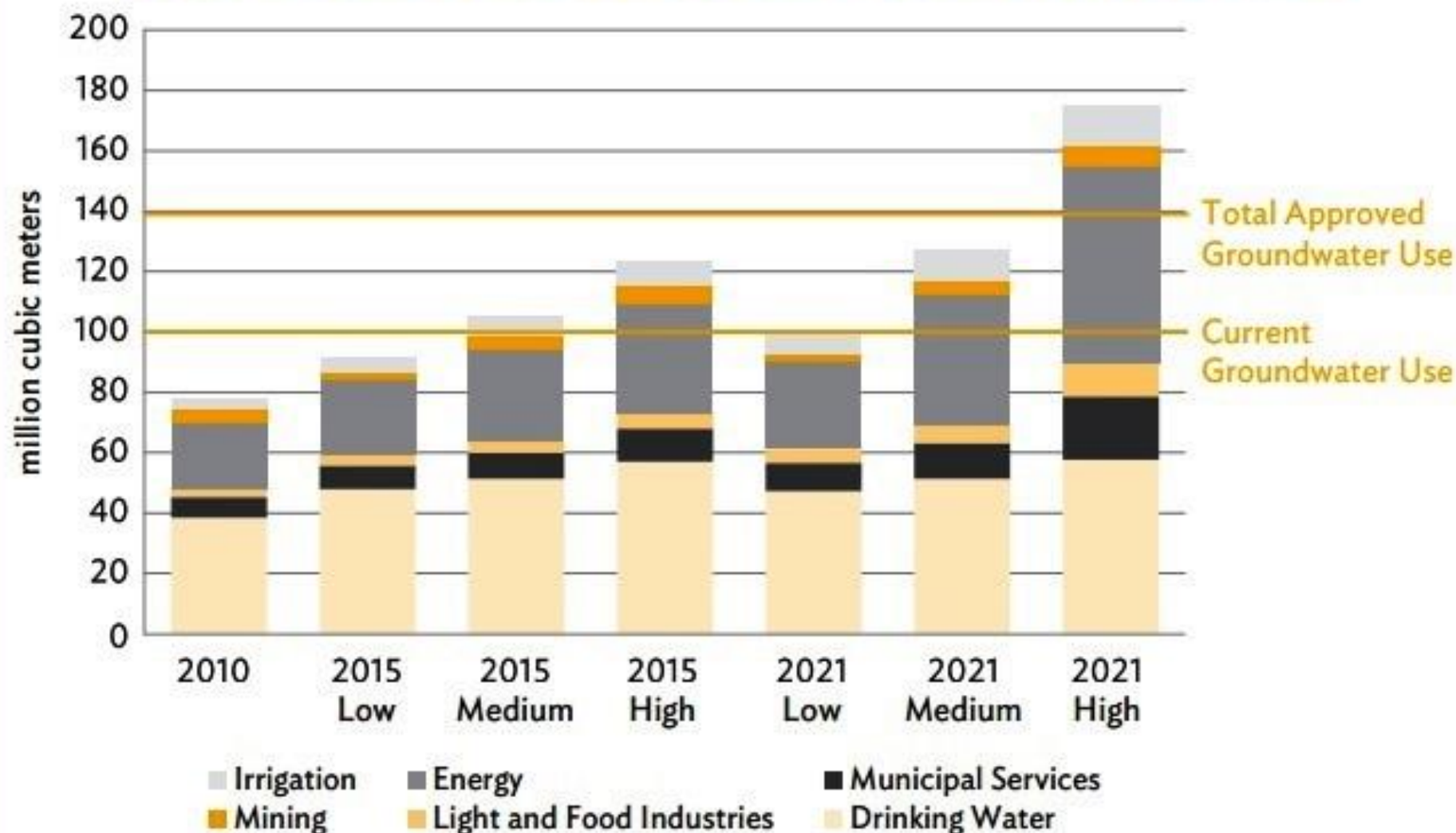


Ger District





Figure 5: Existing and Projected Annual Water Use in Ulaanbaatar



Source: Government of Mongolia, Ministry of Environment and Green Development. 2012. Part 4: Water Supply Hydro Construction, Water Use and Demand. *Integrated Water Management National Assessment Report*. Volume 2. Ulaanbaatar.

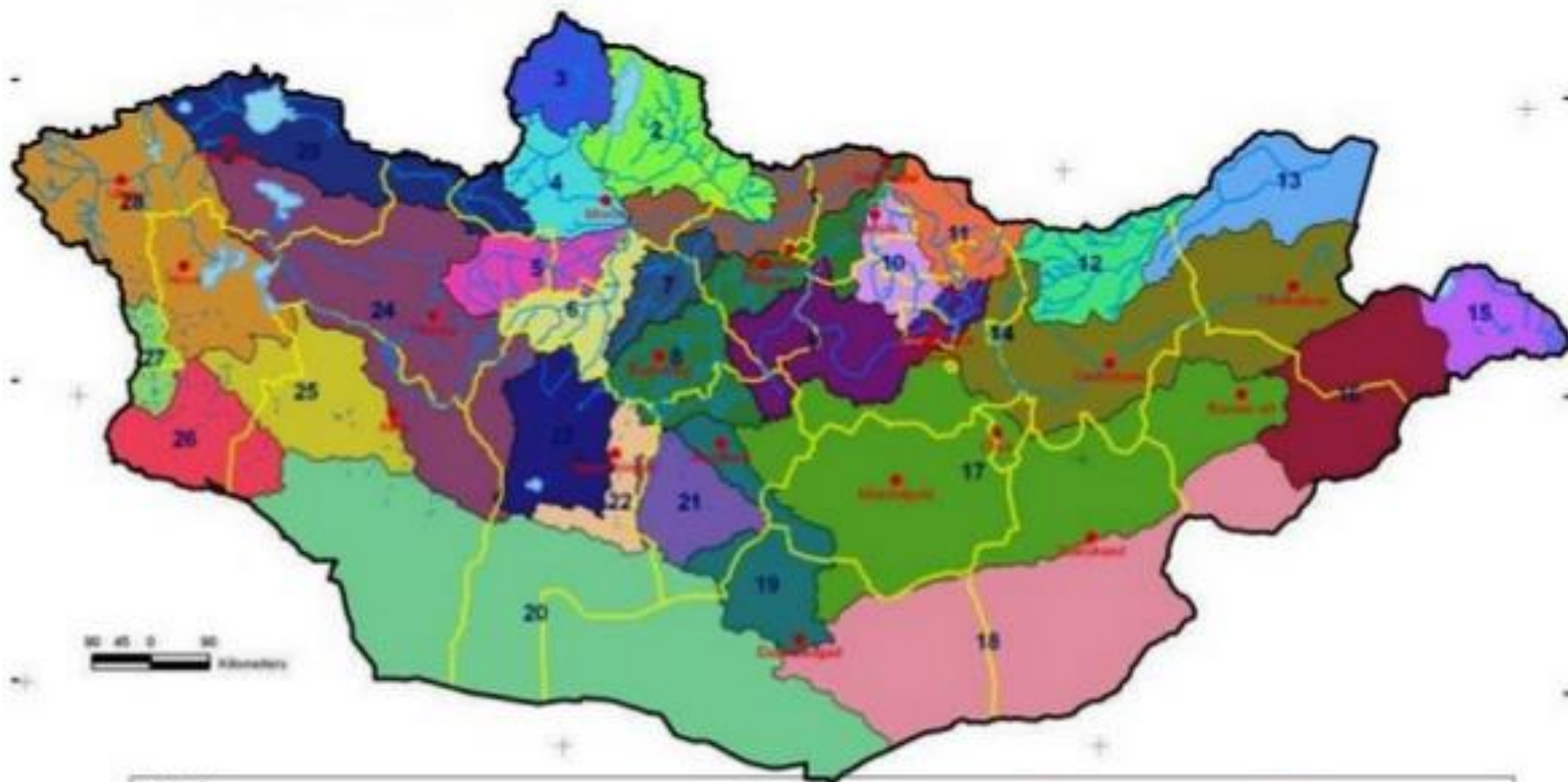
Economic Instruments

- Water utilities service charges
- Fees for use of natural resources (Water royalty) – increased 2-3 times in 2013
- Waste water fee / Water pollution fee- not yet fully implemented – challenges / complexities of regulation
- The revenues go directly to local authorities and minimum 30% must be used for environmental protection including protecting water sources
- No mining in watershed and water source areas

WATER BASINS OF MONGOLIA

*Resolution № 332 of Minister of Nature,
Environment and Tourism dated on
November 10, 2009*

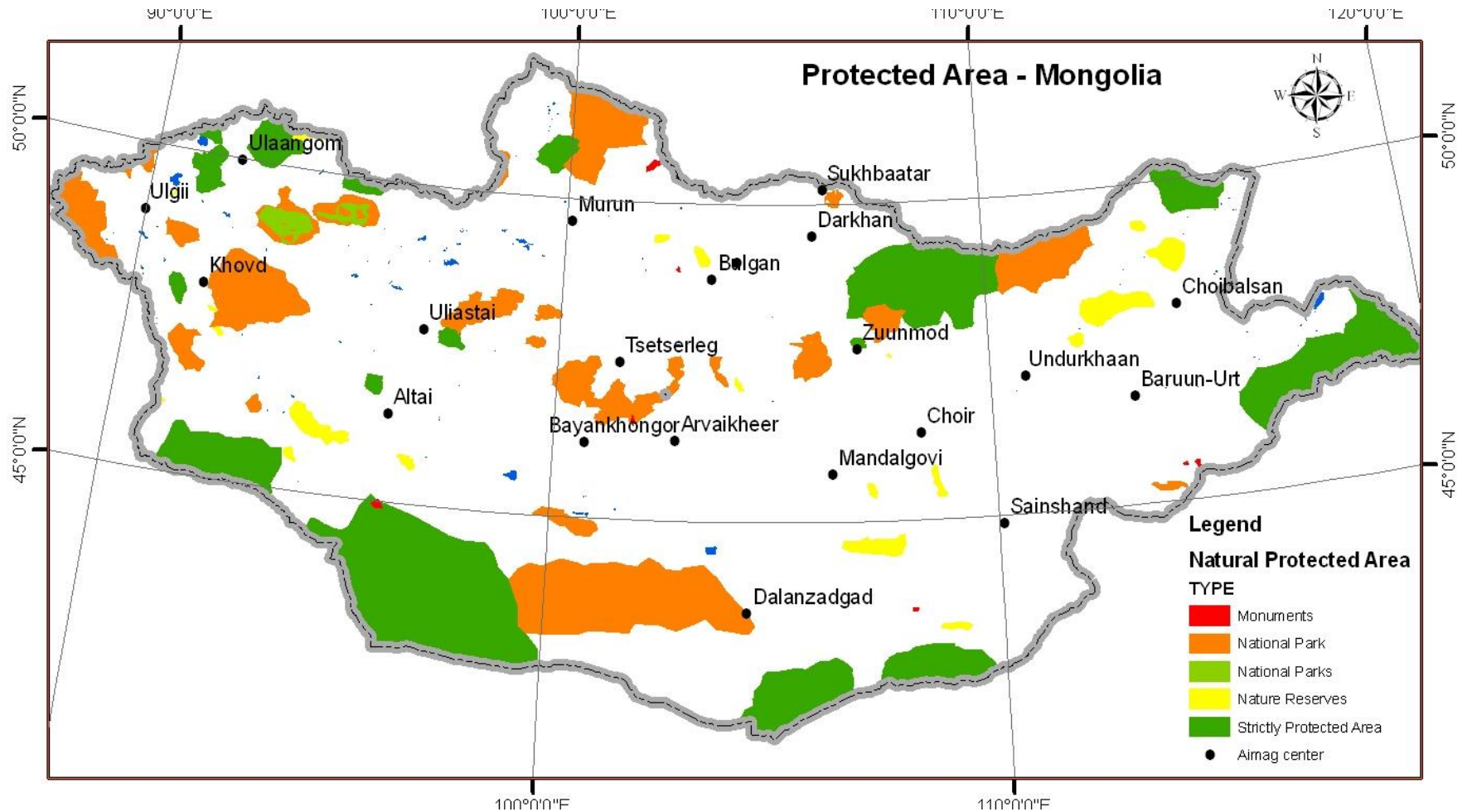
*All 29 River Basin Organizations
are established, 2012-2014*



Legend

State boundary	Water basins	6. Chukot	12. Onon	16. Gobi Gush-Ekivudai Gool	24. Khuygal-Nel-Davran
Aimag boundary	1. Saragda	7. Khend	13. Uv	17. Chig	25. Khukh-Gov-Tostog Lake
Aimag centers	2. Khongol Lake-Eg	8. Orlon	14. Khend	18. Altan-Uul Gool	26. Uerch-Bularch
Rivers	3. Shireldad	9. Tost	15. Bul Lake-Khukh	19. Tsakh	27. Bulgan
Lakes	4. Delgemyn	10. Khara	16. Murengile Tal	20. Chig Lake-Tal	28. Khul Lake-Khuvd
	5. Ider	11. Erce	17. Uvsud-Govd-Govet-Khukh-Dundul-Tal	21. Burtugan Lake-Baidag	29. Uvs Lake-Tee

Mongolia's Protected areas



Gobi Desert



LAKE KHUVSGUL



KHATAN TUUL RIVER





A Partnership for Water

*Dr. Oyun Sanjaasuren, GWP Chair
EARD-WSWG Knowledge Sharing*

OUR VISION:

A water secure world

- Enough water for all –
 - Social Equity, Economic Efficiency, Ecosystem sustainability
- Minimize the destructive force of water
 - Protection from floods, droughts, landslides, erosion, water-borne disease
- Maximise the benefits of water
 - Improve living standards and reduce poverty
- An integrated approach
 - Holistic, and multi-stakeholder processes

OUR MISSION:

To advance governance and management of water resources for sustainable and equitable development

- Effective governance
 - *Managing water equitably*
- Water security and economic growth
 - *Water investments lead to economic growth*



Water Challenges of Our Region AWDO 2016

- Challenges
 - Poverty and competing demands for water
 - Sustaining economic growth
 - Climate change, increasing variability
- Water Secure Future
 - Water resources management
 - Bridging the rural-urban divide
 - Strengthening governance: knowledge and data

Total score by country (max. 100)

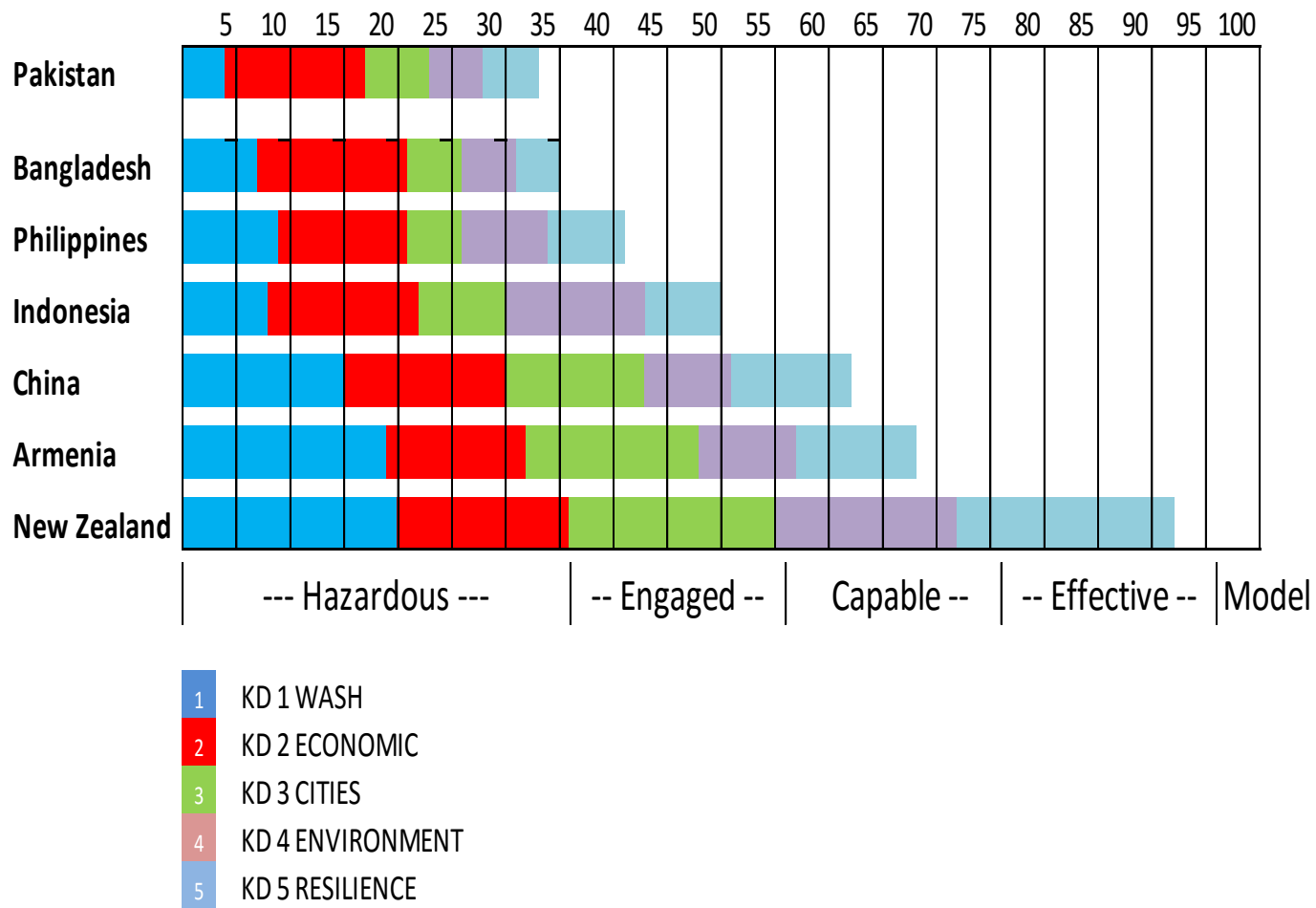


Table 3. Stages of evolution of a country's water economy

Transformation of informal water economies with overall economic growth				
	Stage I: Completely informal	Stage II: Largely informal	Stage III: Formalizing	Stage IV: Highly formal water industry
% of users in the formal sector	<5%	5-35%	35-75%	75-95%
Examples	Sub-Saharan Africa	India, Pakistan, Bangladesh	Mexico, Thailand, Turkey, Eastern China	USA, Canada, Western Europe, Australia
Dominant mode of water service provision	Self-supply and informal mutual-help community institutions	Partial public provisioning but self-supply dominates	Private-public provisioning; attempts to improve service and manage the resource	Rise of modern water industry; high intermediation; self-supply disappears
<div> <div> <div>Human, technical, financial resources used/km3 of water diversion</div> <div>% of total water use self-supplied</div> <div>Rural population as % of total</div> <div>Cost of domestic water as % of per caput income</div> <div>Cost of water service provision</div> </div> </div>				
Concerns of the governments	Infrastructure creation in welfare mode	Infrastructure and water services, especially in urban areas	Infrastructure and service in towns and villages; cost recovery; resource protection	Integrated mgt. of water infrastructure, service and resource; resource protection
Institutional arrangements	Self-help; mutual help and feudal institutions dominate	Informal markets; mutual help and community management institutions	Organized service providers; self-supply declines; informal institutions decline in significance	Self-supply disappears; all users get served by modern water industry.

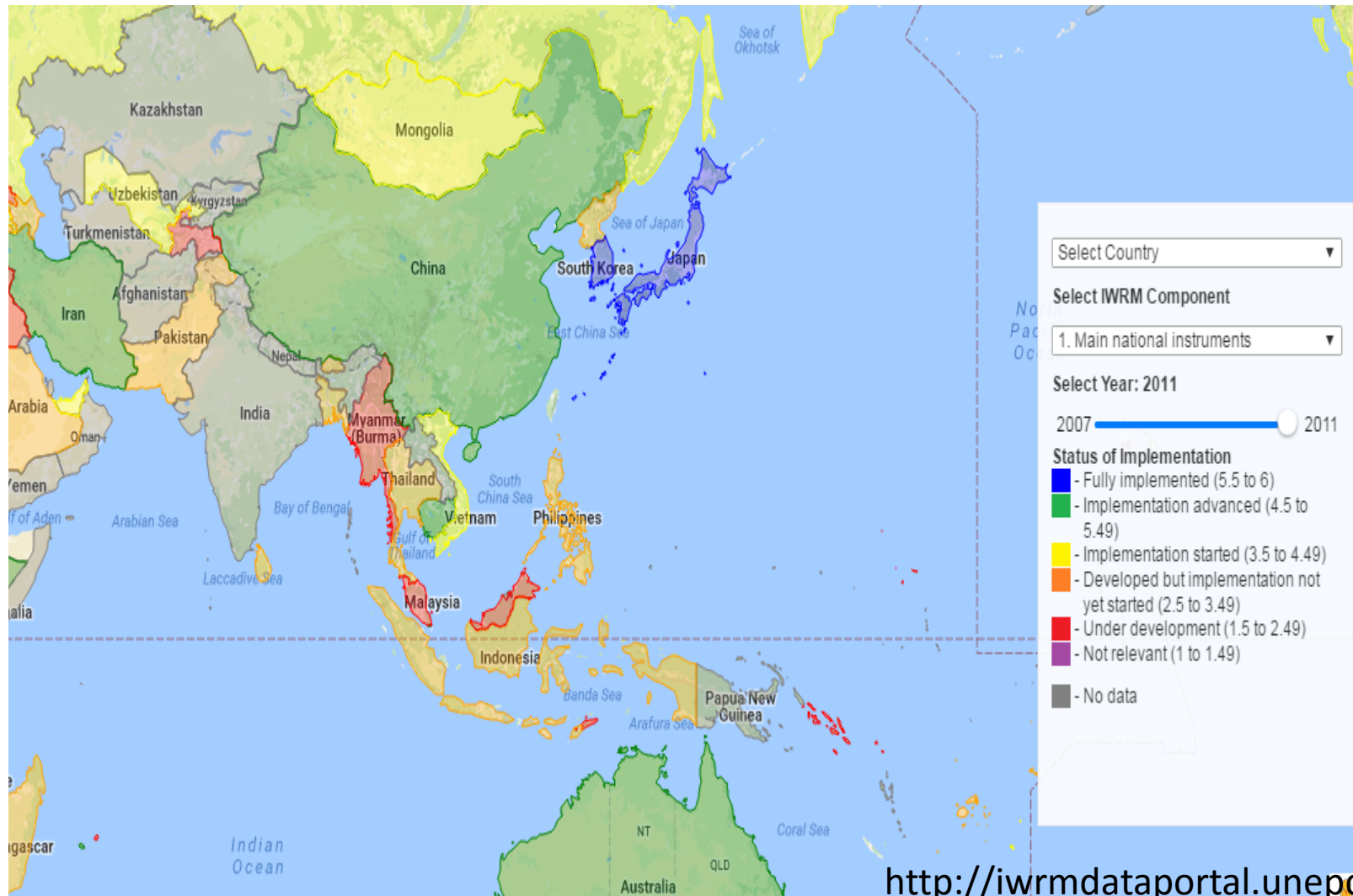
Increasing Water Security: the Key to Implementing the Sustainable Development Goals

By Tushaar Shah

Global Water Partnership
Technical Committee (TEC)



IWRM status in

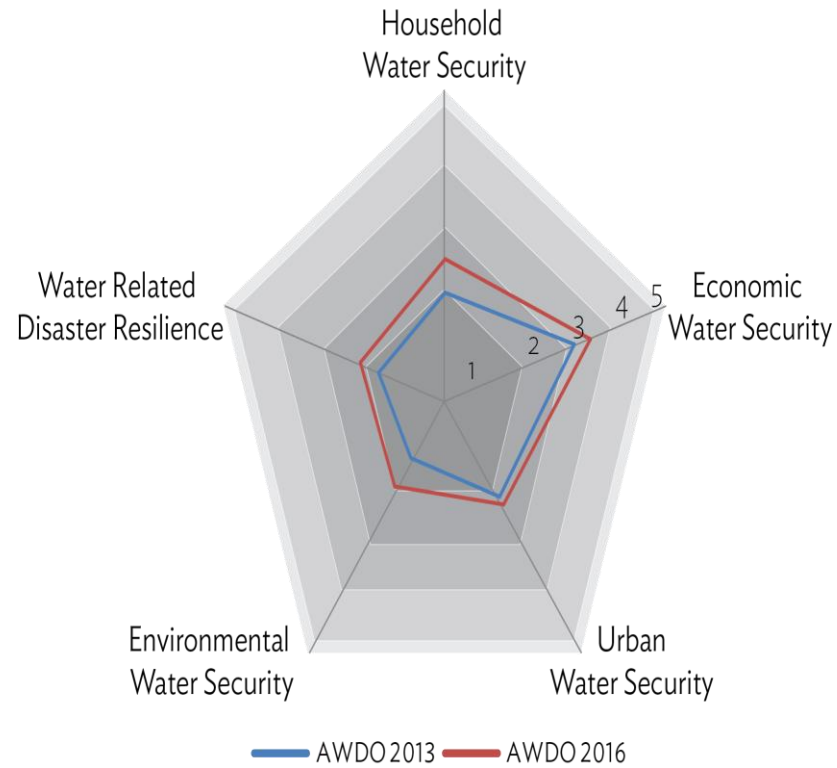


<http://iwrmdataportal.unepdhi.org/>

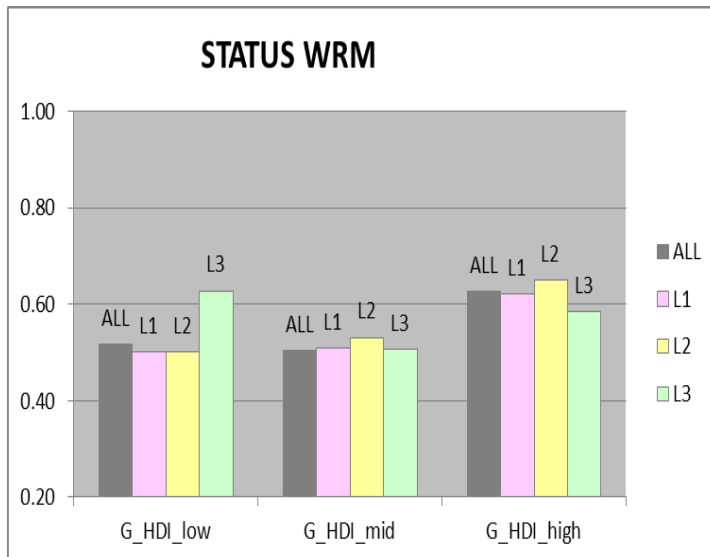
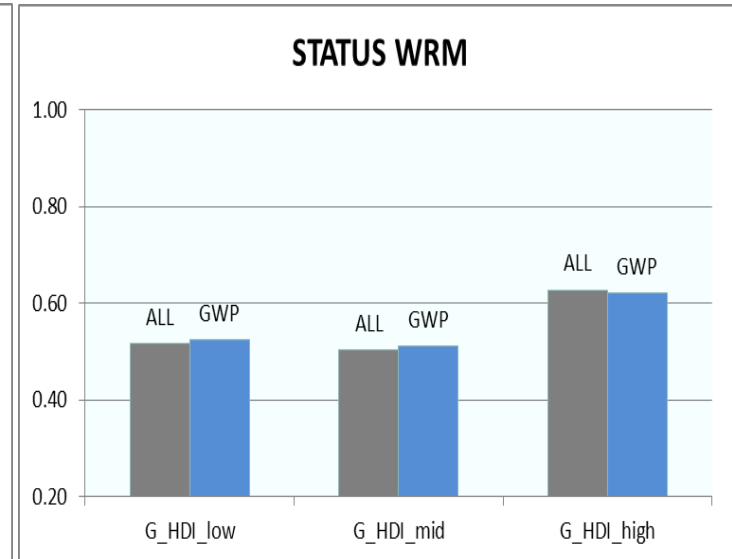
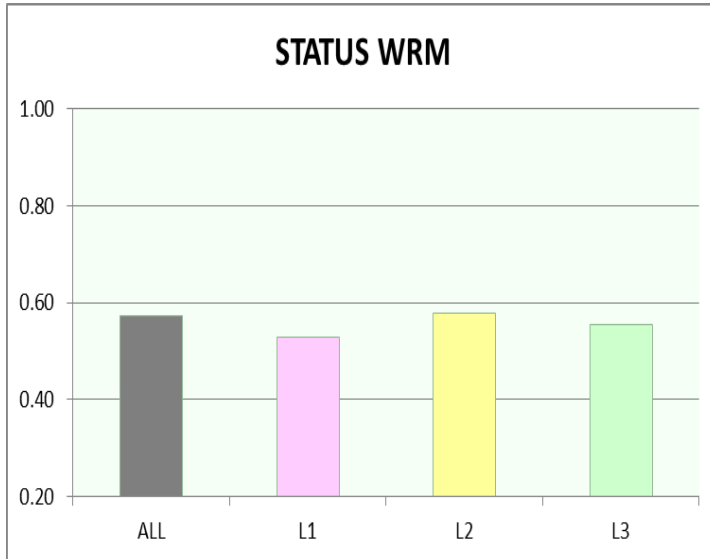
Regional and Country Water Partnerships

- **Multi-stakeholder platforms** that bring together sectors and interest groups to identify solutions at regional and national level.
- They develop their **own regional and national strategies and action plans** based on the integrated water resources management (IWRM) approach, and raise funds to implement them.
- They develop **Urban Water Partnerships, River Basin Partnerships, or Area Water Partnerships** for implementing IWRM approaches at various scales.

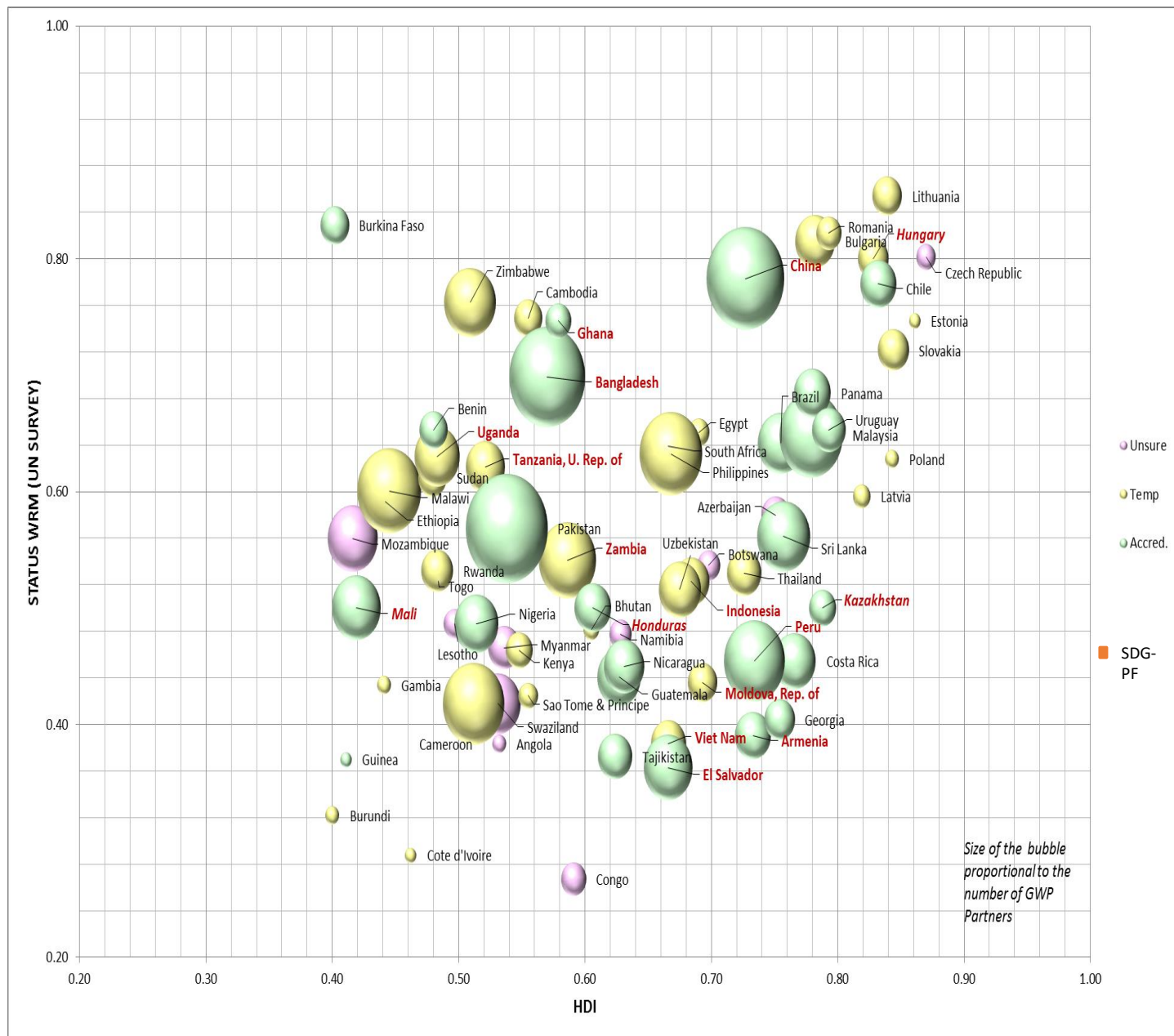
NATIONAL WATER SECURITY INDEX



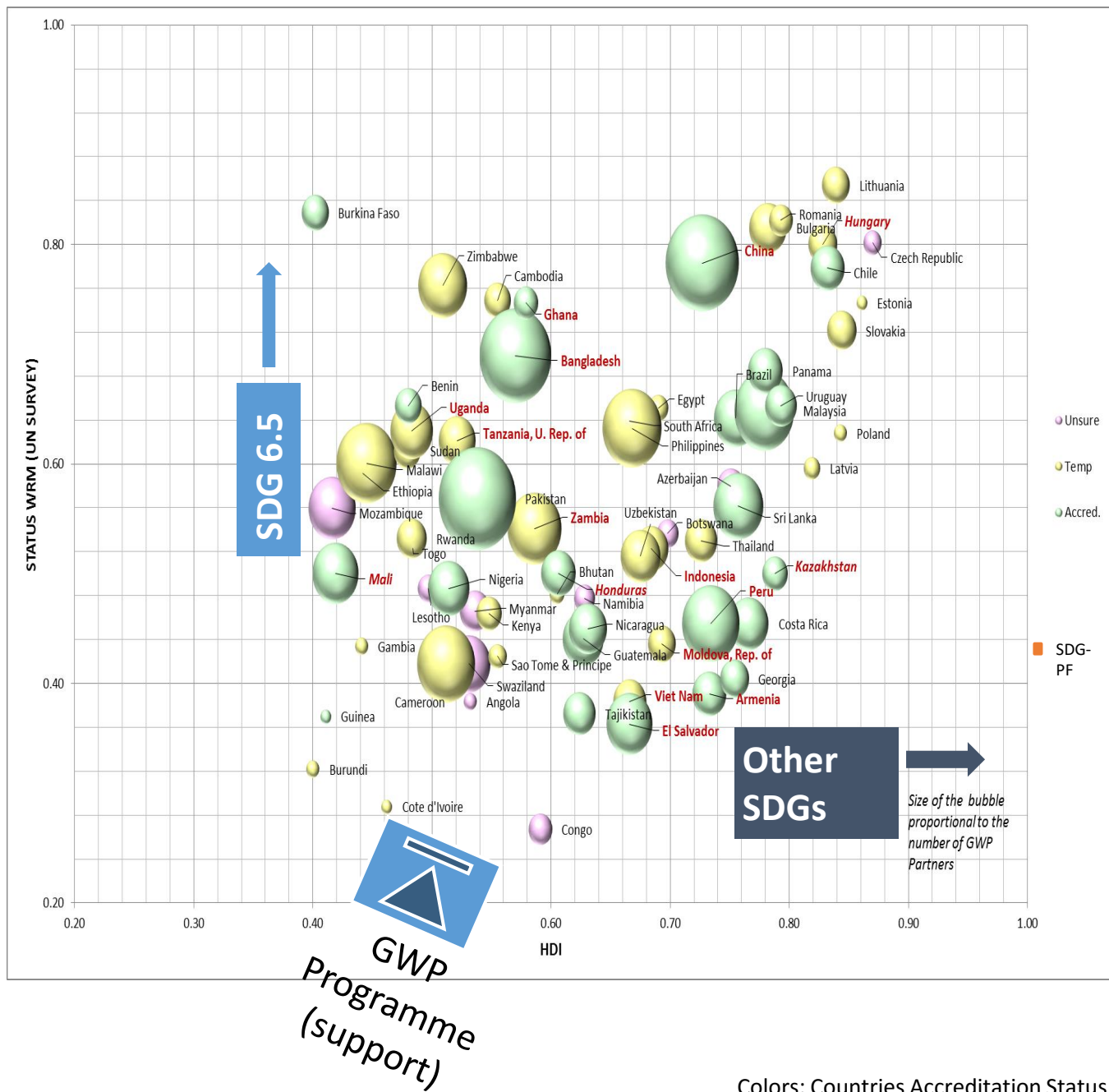
2012 UN Survey Analysis - Status of WRM in countries & GWP's role



GWP may have had a positive influence in a few low HDI countries.
"With & without GWP" analysis difficult.



Colors: Countries Accreditation Status (May 2016)



Designing GWP programme to strategically/optimally foster progress on SDG ladder

Primary SDGs targeted	SDG 1 No Poverty	SDG 2 Zero Hunger	Good Health and Well-Being	SDG 4 Quality Education	SDG 5 Gender Equality	SDG 6 Clean Water and Sanitation	SDG 7 Affordable and Clean Energy	Decent Work and Economic Growth	Industry, Innovation and Infrastructure	SDG 10 Reduced Inequalities	Sustainable Cities and Communities	Responsible Consumption and Production	SDG 13 Climate Action	SDG 14 Life Below Water	SDG 15 Life on Land	SDG 16 Peace, Justice and Strong Institutions
SDG Preparedness Facility	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
WACDEP	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
Associated Programme on Urban Water Security	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
Towards Urban Water Security in Africa	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
The GWP IWL Training Programme	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
APFM	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
IDMP	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
GWP nexus prog. for food security in Sub Saharan Africa	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
Global Programme of Action on Deltas	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
The GWP Water and Youth Initiative	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16
The GWP Gender and Water Initiative	SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 14	SDG 15	SDG 16

To be completed

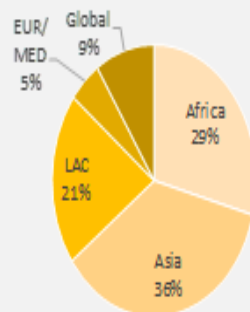
GWP @20 years: About 400 Water Governance Outcomes recorded, majority at country level

GWP@20
YEARS OF IMPACT

1996 – 2016

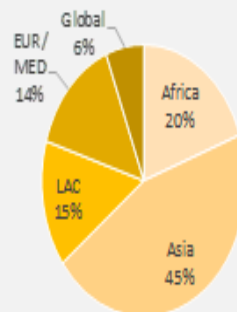
217 enabling environment outcomes, including:

- Almost 30 new or revised water policies and visions at continental, regional and national levels
- More than 30 new and strengthened water laws and water related legislation/ regulation
- 12 investment plans and strategies
- Almost 20 agreements and declarations supporting an integrated approach to water management



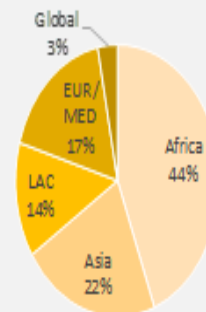
200 institutional outcomes, including:

- 16 institutional reform processes aimed at improving water governance
- Almost 20 river basin management authorities and other water management bodies strengthened or established
- Around 50 civil society institutions and community based organisations
- Around 20 outcomes related to enhanced institutional capacity



202 management instrument outcomes, including:

- Around 50 IWRM plans, roadmaps and strategies at regional, river basin and national levels
- More than 40 water management and development programmes, strategies and action plans at all levels
- 14 climate adaptation and other sectoral plans that incorporate water and climate resilience
- More than 30 information management networks, systems and tools to facilitate IWRM



Asia Water Development Outlook 2016 - links with GWP

- **Resilience to water-related disasters (KD5)** - APFM, IDMP and WACDEP – strongest link with AWDO. Flood management, incl. on transboundary level, highlighted as key area for cooperation with the RWPs as well as between them, across Asia (e.g. ‘Learning Deltas’)
- **Urban water security (KD3)**: In our RWPs there is strong interest for IUWM, urban water security and water-sensitive cities (aka “Sponge Cities” in China)
- **Environmental water security (KD4)**, esp. in relation to river health and individual infrastructure projects, and **Economic water security (KD2)**, a topic discussed in the related **GWP-OECD** Publication ‘Securing Water, Securing Growth’
- **Community-based Approaches to Flood Management** and DRR (e.g. With CBFEWS)
- **Climate Finance** and GWP support to countries on NDCs is

WACDEP-NDC 2017-2019

- Support to formulation of **NDC implementation roadmaps** and plans at the national, water sector and subsector level. This will be linked to existing and planned adaptation activities, including NAPs and other water related strategies.
- Support to **formulation of investment plans** to finance implementation of NDC roadmaps. This includes estimating the finance and investment requirements, sources of finance, linking national budget planning processes medium expenditure frameworks, absorption, financial management capacity, and potential to mobilise private investments.
- Support to project **preparation and development of funding proposals** to implement NDC road maps including NAP road maps and plans. Countries will be assisted to prepare proposals for submission to international climate funds such as the Green Climate Fund (GCF) and others.
- Capacity development for planning, implementation, and monitoring of NDC related activities.
- Promote coordination at all levels in implementation of water related actions in NDCs, NAPs, and SDGs.

South-South Cooperation: China Floods Workshop

Key topics:

- *flood forecasting, monitoring, warning and responses*
- *flood management in urban settings*
- *community-based approaches to flood management*
- *flood management practices in a changing climate*

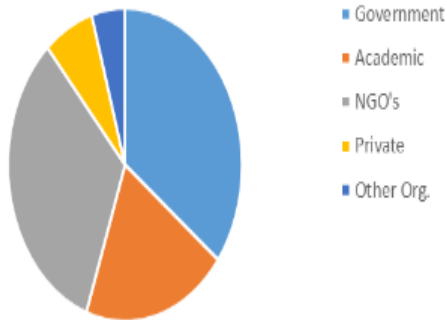
First step in **establishing a framework for cooperation** on further topics of shared interest (e.g. climate resilience, disaster risk reduction, Sustainable Development Goals, urban water management).

Full report:

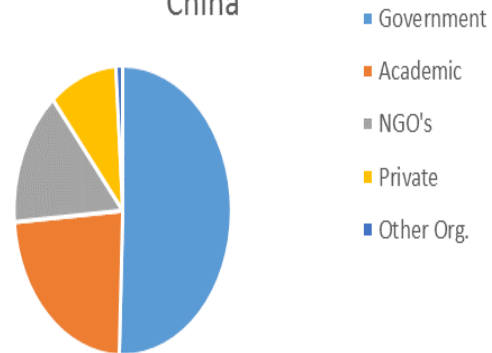
http://www.gwp.org/Global/Activities/News/May%202016/GWP%20Workshop%20on%20Flood%20Management_Report_China.pdf

GWP Network Partners, by type

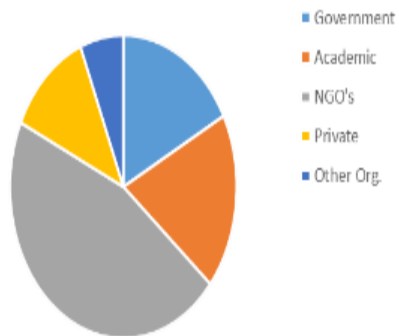
Central Asia and Caucasus



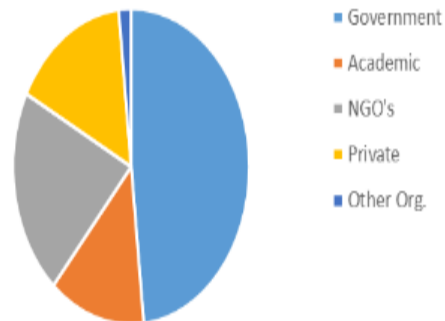
China



South Asia



South East Asia



Learning Deltas

Improve learning around the necessary connection of 3 processes in urbanizing deltas:

- IWRM planning exercises;
- broader integrated planning processes that guide socio-economic development; and
- preparation, financing, and implementation of bankable projects that contribute to the resilience of urban deltas and help them adapt to climate change.

Output:

- bankable projects that contribute to climate adaptation and supported by stakeholders

GWP SDG- PF countries

Regional Water Partnership	Country	# of Partners	IWRM Plans
CAC	Armenia	21	N
CAC	Kazakhstan	12	Y
CAM	El Salvador	39	N
CAM	Honduras	22	N
CEE	Hungary	15	N
CEE	Moldova, Rep. of	14	Y
CHI	China	99	Y
EAF	Uganda	33	N
SAF	Tanzania, U. Rep. of	25	Y
SAF	Zambia	53	Y
SAM	Peru	61	N
SAS	Bangladesh	94	Y
SEA	Indonesia	21	Y
SEA	Viet Nam	20	N
WAF	Ghana	11	N
WAF	Mali	39	Y

GWP around the world: 2015 highlights

CENTRAL AFRICA 174 Partners, 6 countries

- GWP supported stakeholder participation in finalising a National Adaptation Plan on climate change in Cameroon (page 9).
- GWP workshop led to formation of a regional taskforce for water security project development and financing (page 22).

Global Water Partnership



This map is based on the Peters Projection.

MEDITERRANEAN 90 Partners, 25 countries

- GWP and partners helped develop a formal management plan for the Buna/Bojana River Basin (page 12).
- Programme implemented by GWP won a World Water Forum Award (page 13).

CENTRAL AMERICA 167 Partners, 7 countries

- GWP participated in drafting a new Regional Environmental Strategy (page 10).
- GWP raised awareness of the need to include water security in National Adaptation Plans on climate change (page 22).

CARIBBEAN 101 Partners, 24 countries

- GWP helped develop a framework to support investment in climate resilience and water security (page 9).
- New water policy incorporating resilience to climate change prepared in Curaçao following GWP support to stakeholders (page 9).

SOUTH AMERICA 331 Partners, 10 countries

- GWP mediation and facilitation helped secure basin agreement for the Santa Eulalia River in Peru (page 13).

WEST AFRICA 290 Partners, 15 countries

- GWP project facilitated a transboundary river basin agreement (page 19).
- GWP and partners helped establish a National Youth Parliament for Water in Benin (page 20).

SOUTHERN AFRICA 330 Partners, 13 countries

- GWP's long involvement in the Regional Strategic Action Plan IV culminated in the plan's approval (page 18).
- GWP helped Mozambique secure funds for building climate resilience (page 10).

CENTRAL AND EASTERN EUROPE 171 Partners, 13 countries

- GWP brought different sectors together to develop proactive and formal drought management plans (page 23).
- GWP facilitated public consultation on Ukraine's National Action Plan to combat soil degradation and desertification (page 10).

CENTRAL ASIA AND CAUCASUS 176 Partners, 9 countries

- National dialogue on a new Water Law in Georgia coordinated by GWP (page 11).
- GWP brought stakeholders together to work on a long-term green development policy for Ulaanbaatar, Mongolia (page 22).

CHINA 101 Partners

- GWP research results incorporated in Shaanxi Province work plan (page 11).
- GWP and partners conducted a survey on water management in the Heihe River Basin (page 11).

SOUTHEAST ASIA 250 Partners, 10 countries

- Cambodia developed a National Adaptation Plan on climate change with GWP support (page 17).
- GWP shared knowledge on climate change and irrigation in Vietnam (page 17).

SOUTH ASIA 538 Partners, 7 countries

- GWP workshop linked projects with financing in Bangladesh (page 13).
- GWP promoted stakeholders' voices in streamlining State water policies in India (page 16).

GLOBAL 248 Partners from 32 countries that are not in a developing world region or not yet assigned to a GWP region

- GWP created the Sustainable Development Goals Preparedness Facility to support countries in their efforts to achieve the SDGs (page 20).
- GWP launched a formal Youth Engagement Strategy (page 30).

EASTERN AFRICA 214 Partners, 10 countries

- GWP led efforts to map the vulnerability of the Kagera River Basin to climate change and identify adaptation measures (page 12).
- GWP signed MoU to guide collaboration on drought resilience in the Horn of Africa (page 27).

GWP@20

YEARS OF IMPACT

1996 – 2016