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www.worldwaterweek.org

2030 Water Resources Group

Water: Fuel for the Growth Engine

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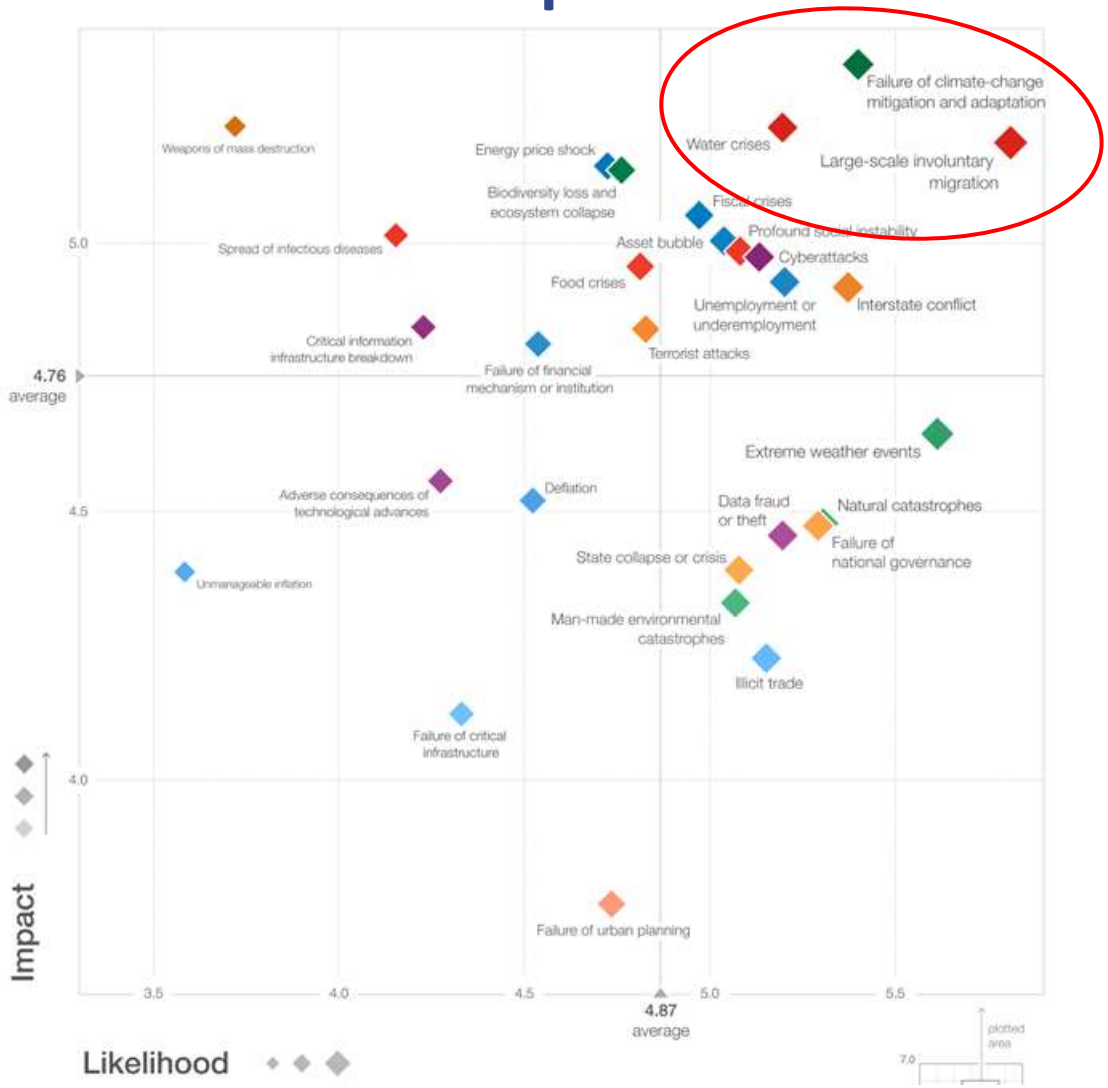
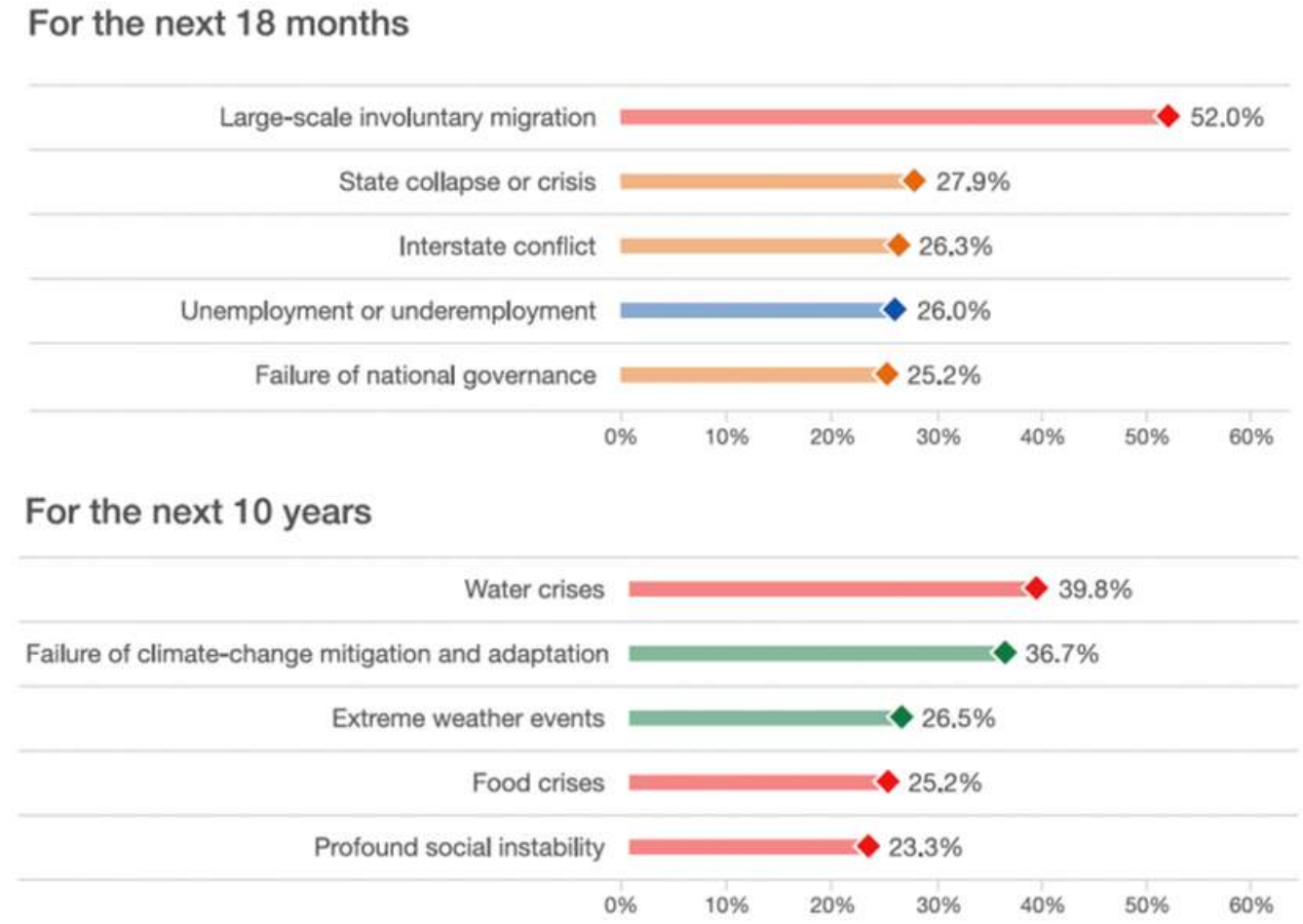
Water for Growth, People and Environment

The Global Risks Landscape 2016



The Global Risks of Highest Concern



Read more: wef.ch/risks2016 #risks2016

The Global Challenge

With 75% of jobs directly or indirectly dependent on water, the risk to economic growth from water is increasing, putting 45% of global GDP potentially at risk in 2050

WATER AND JOBS

Water **Demand-Supply Gap** in 2030[1]	40%	1.5 billion (50% of workers)	Number (%) of **world's workers employed** in 8 water and natural-resource dependent industries[4]
% **global GDP** at risk from water in 2050[2]	45%	2.7 billion (40%)	Number (%) of **people suffering water shortages** for at least a month/ year[5]
Water in last 4 **WEF Global Risks Reports**[3]	Top 3	2.4 billion	# **people exposed to diseases** due to inadequate sanitation[6]
% of jobs dependent on water either heavily or moderately[4]	75%	4 billion	Estimate of **population living in water scarce areas** by **2050**[7]

1 2030 WRG Charting our Water Futures
2 http://growingblue.com/water-in-2050/
3 World Economic Forum Global Risk Report 2016
4 World Water Development Report (2016)
5 http://www.nature.org/newsfeatures/pressreleases/study-over-2-billion-people-affected-global-water-shortages.xml
6 Joint Monitoring Program of the WHO/UNICEF 2015 report
7 OECD (2012) – Economic Outlook to 2050

Maharashtra: Cotton

With > 80% rainfed agriculture, collective action water solutions required to bring farmers out of poverty

Economic/ Social Context

Maharashtra:

- **64% population** employed in **agriculture** with low growth rate (8.5%) compared to Gujarat (11.3%)
- **74% farmers poor** and **marginal**, with less than 2 ha land
- <50% productivity (compared to other states) for crops such as cotton

The Water Challenge

- **81%** of the area **lacks irrigation**, majority located in arid regions
- **Climate change**-induced variability
  - **Decline in rainfall** in last 20 years, higher frequency of drought, erratic rainfall

Possible Solutions & Private Sector Role

- Public-Private-Civil Society Partnerships for:
  - i. **Water Augmentation**: Water harvesting
  - ii. **On-Farm Technology**: Water efficient irrigation, including drip & sprinkler)
  - iii. **Improved Value Chains:** Connecting farmers to markets

Private sector Role: Access to technology, finance, markets & infra delivery

2030WRG Role

Establishment of Multi-Stakeholder **Cotton Water Platform**

- Design of **end-to-end solutions** at the watershed level **at scale**
- Market-Driven **Financing Mechanisms** to catalyze commercial funding

Potential Impacts

2030WRG Cotton Water Platform

- **500,000 farmers** (direct beneficiaries)
- **2.5 million** (indirect beneficiaries)
- **$ 570 m** program
  - **40%** private sector
- Women entrepreneurship

Bangladesh: Textiles

Maintaining growth potential of key export sector (85% of export earnings) requires technology promotion and private sector investment

Economic/ Social Context

- Bangladesh one of the biggest exporters of ready-made garments:
  - **5% global market** share
  - **85% of Bangladesh's export earnings** and **10+% of GDP**
  - **4 million workers** direct employment, with **80% women**

The Water Challenge

Average factory water consumption:

- 250-300 liters/kg of fabric produced (global benchmark 100 liters/kg)
- **Heavy pollution:** Only ~40-80% of factories with ETPs*, many non-functional

Bangladesh will have a **water gap** during the dry season of ~**26% by 2030; groundwater tables** falling up to **3 meters/ year in Dhaka.**

Possible Solutions & Private Sector Role

- **Water-efficient technologies / wastewater treatment & reuse** at factories
- **Standards enforcement** by regulators and international buyers
- **Policy / incentives** support from the government
- **Private sector role**: Technology, stewardship, finance

2030WRG Role

I. Proposed **Textile Environment Alliance (TEA)** – Industry-Driven Platform for water efficiency & wastewater treatment

II. PPP for CETP establishment in Greater Dhaka

Partners: H&M, other leading brands, Ministry of Water Resources, Bangladesh Economic Zone Authority, Department of Environment

Potential Impacts

Industry (TEA), 2030 WRG and other initiatives by 2021

- **20% water** use reduced
- **~ 3 million additional jobs** through sector growth (80% women)
- **$150 million investment** by private sector (technologies)

* Effluent Treatment Plant

** Common Effluent Treatment Plant

Peru: Mining

Mining serves as backbone of Peruvian economy, generating 14% of GDP, albeit plagued by water conflicts

Economic/ Social Context

- Peru's mining sector (2015 figures):
  - **58% of exports**
  - **14 % of GDP**
- Peru: 2nd largest producer of silver, 6th largest of gold, with 2nd largest known reserves of copper
- $66 bn – total mining portfolio projects
- For every $1 bn investment lost, Peru loses 173,000 jobs & $166 mn in taxes

The Water Challenge

- Mining industry - **Social conflicts** in Peru water-linked:
  - **Water Use**: Conflict in agri vs mining water use, even though mining only uses 2% of total water vs 85% used in agriculture
  - **Water pollution**

Possible Solutions & Private Sector Role

- **Public-Private Dialogue** to resolve social conflicts
- **PPPs** as demonstration alliances to benefit communities

2030WRG Role

Enabling **mining industry participation** in public initiatives:

- **Obras x Impuestos** with Ministry of Agriculture
- **Blue Certificate** on water footprint measurement and improvement

Potential Impacts

Water pollution reduction

Efficient practices linked to implementation of

(1) Blue Certificate in mining companies or

(2) Obras x Impuestos with Ministry of Agriculture

South Africa: Mine Water for Irrigation

Reuse of mine-water for irrigation: A potential win-win-win for jobs, the economy and the environment

Economic/ Social Context

- Mining contributes ~**10% of South Africa's GDP**
- **1 in every 9 employed South Africans in a mining related job** (1 million jobs total)
  - **5% of these jobs** lost between 2012-15

The Water Challenge

- Mining areas face severe **water scarcity** and **wastewater** challenges
  - Nonetheless, total water use in mining only ~240 million m3 (2.5% of surface water available)
- Water issues a physical barrier to new, non-mining job creation
- **17**% water demand-supply **gap** projected by 2030 at the national level

Possible Solutions & Private Sector Role

- **Treatment and reuse of mine water** for new job-creating economic activities (including agriculture)

Private Sector Role: Internal reuse; facilitation of reuse of industrial wastewater by other sectors

2030WRG Role

- Development of **new partnerships and approaches** for mine water reuse for agriculture: **Strategic Water Partners Network**
- **Key Stakeholders**: South Africa Department for Water and Sanitation, Anglo-American, Exxaro, Anglo Coal, South 32, and the University of Pretoria

Potential Impacts

2030WRG Initiative:

Potential for **12,000 hectares** of irrigation in project region

146 million m3 of treated water reuse in agri

(2.5% of total agri water demand) per annum

Generating new jobs*

*Precise direct and indirect employment impacts still to be estimated: will vary greatly depending on crop. Pilots underway.

Summary and Conclusions

- With 75% of jobs directly or indirectly dependent on water, the risk to economic growth from water is increasing, putting 45% of global GDP potentially at risk in 2050
- The Water Sector need to reach out to and engage with various economic sectors that are at risk because of water, to identify possible solutions, often through collective action
- Maintaining countries' growth potential requires water-related technology promotion, private sector investment, better policies and management
- Particularly for rural economies that are water-stressed, including rainfed agriculture, collective action for water solutions is required to bring farmers out of poverty and develop sustainable livelihoods
- Mining is a critical sector for many developing countries, yet often water conflicts hinder sustainable development, and proven win-win solutions should be replicated across countries