



Water Sustainability

Current trends, sector leaders and case studies

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Overview

Trends

Best practice

Leaders in water
initiatives

Investment opportunities

Business
implications

Case studies

Everyone is talking about water

Bloomberg

Disclosure: ESG data on 3,080 companies in 43 countries in the hands of investors will also include water



Advocacy: “Water and its availability and quality will be the main pressures on, and issues for, societies and the environment under climate change”



Tools: Launched an initiative to measure water related risks facing companies and their investors.

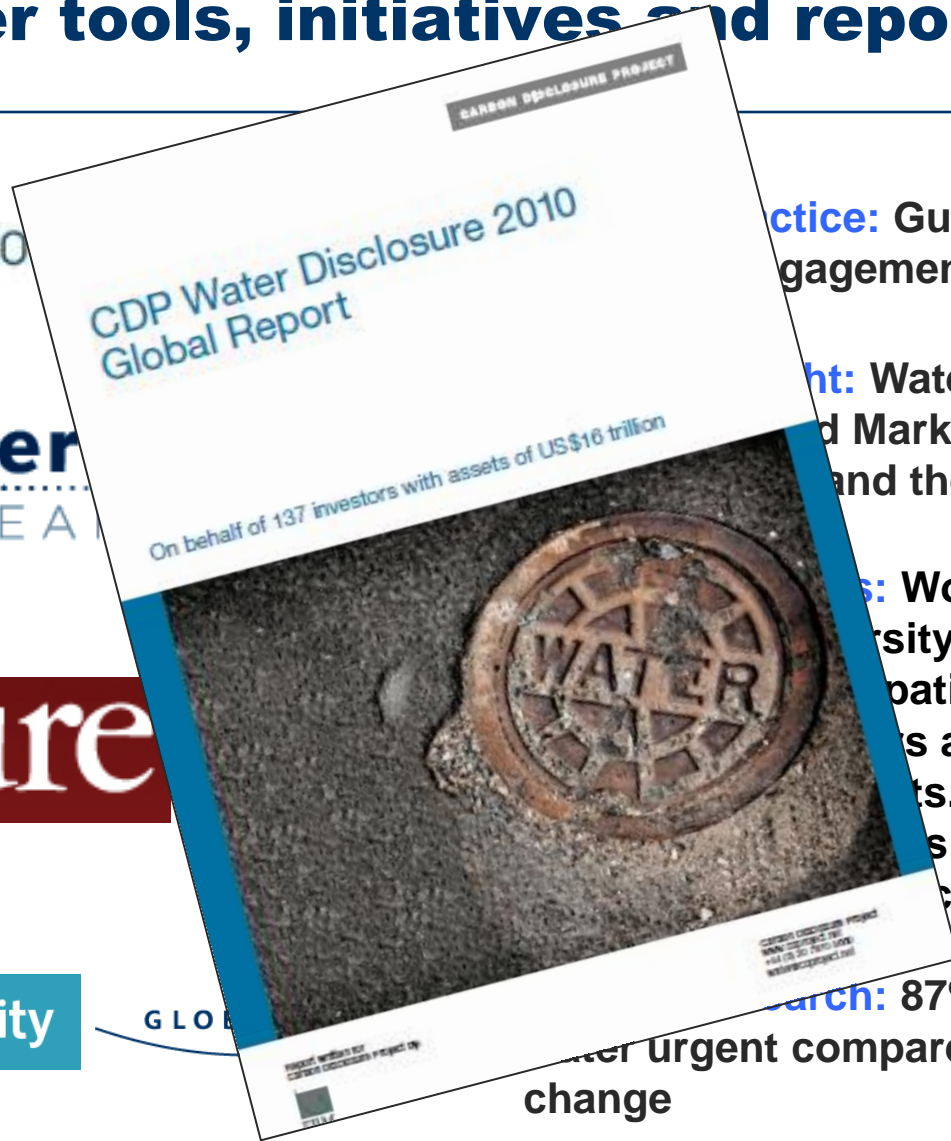


Ratings: ‘Murky Waters’ - Companies from eight sectors were reviewed and benchmarked against their peers

Many other tools, initiatives and reports



The CEO



Practice: Guide to Responsible Engagement with Water Policy

Light: Water Risk in the Global Market – focus on risk to companies and their investors

Insights: Worldwide synthesis of industry perspectives on water risk within a spatial framework that identifies hotspots and account for water security. Nearly 80% of the respondents are exposed to high levels of water security.

Research: 87% of experts rated water as more urgent compared with 82% for climate change

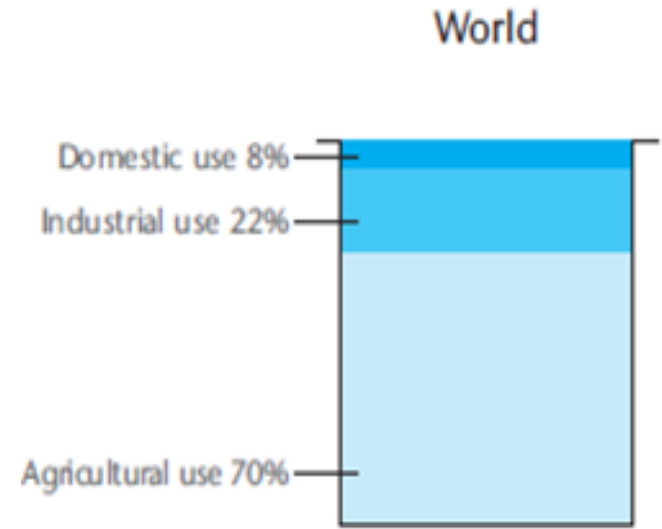
Common findings

- High awareness of water risks, but few have details or have monetised the risk
- Majority of companies report physical risk, many recognise regulatory and litigation risk, few see reputational risk
- Lack of local data and information
- Limited performance data for suppliers
- Weak stakeholder engagement
- Link between water and energy realised



Who's using all the water?

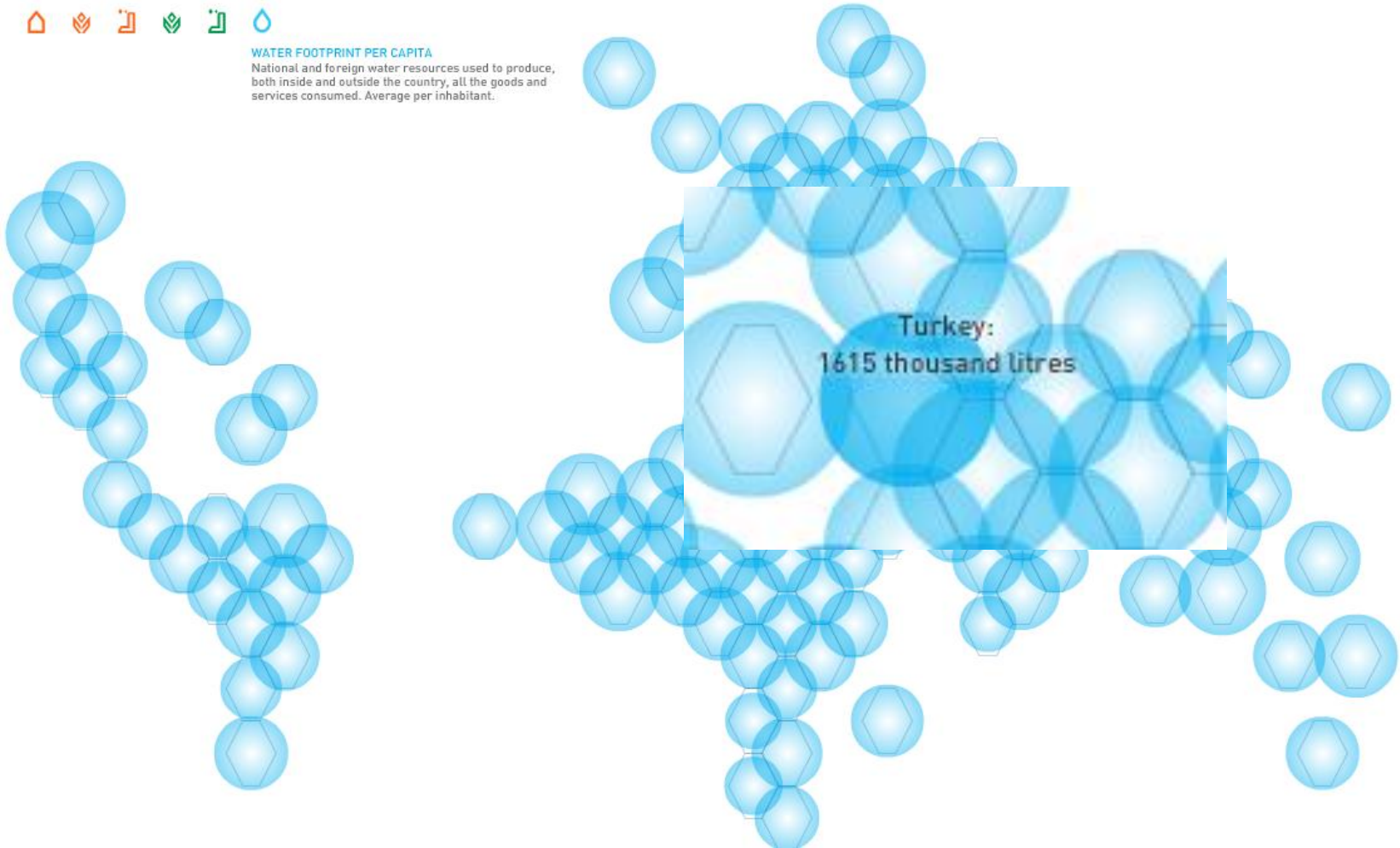
- Majority is used in **industry** in Europe and NA and in **agriculture** for the rest of the world
- By 2030 the projected 8 billion inhabitants will require **25% more freshwater**
- Already 1bn people who lack **access to water** and 2.4bn who lack **access to basic sanitation**



Comparing countries



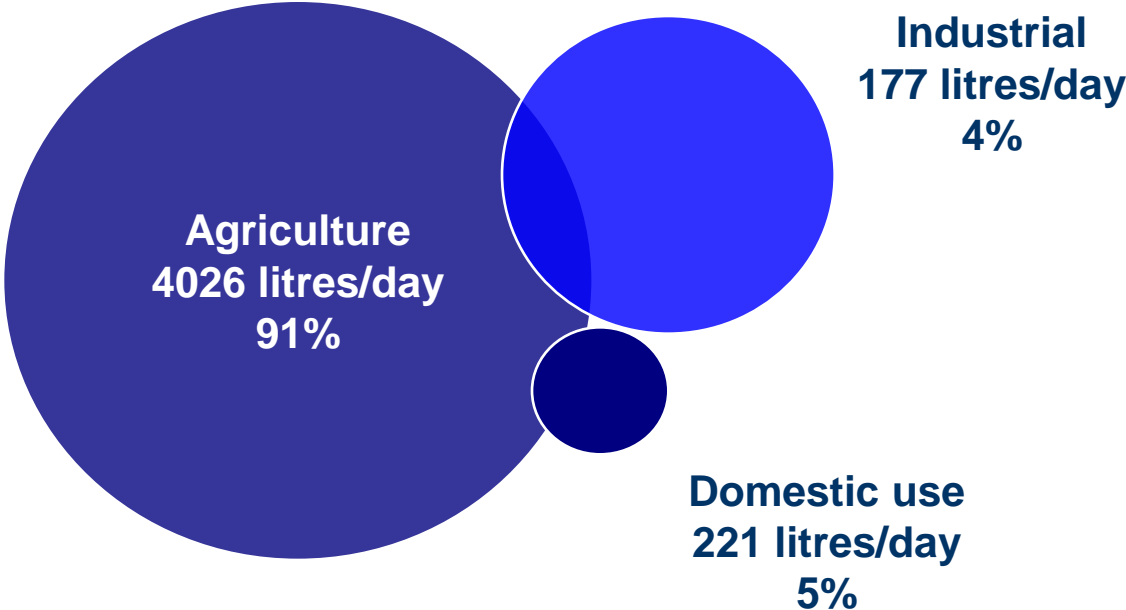
WATER FOOTPRINT PER CAPITA
National and foreign water resources used to produce, both inside and outside the country, all the goods and services consumed. Average per inhabitant.



Source: http://www.waterfootprint.org/images/infographics/swf1/map_12_MayMODIF.swf

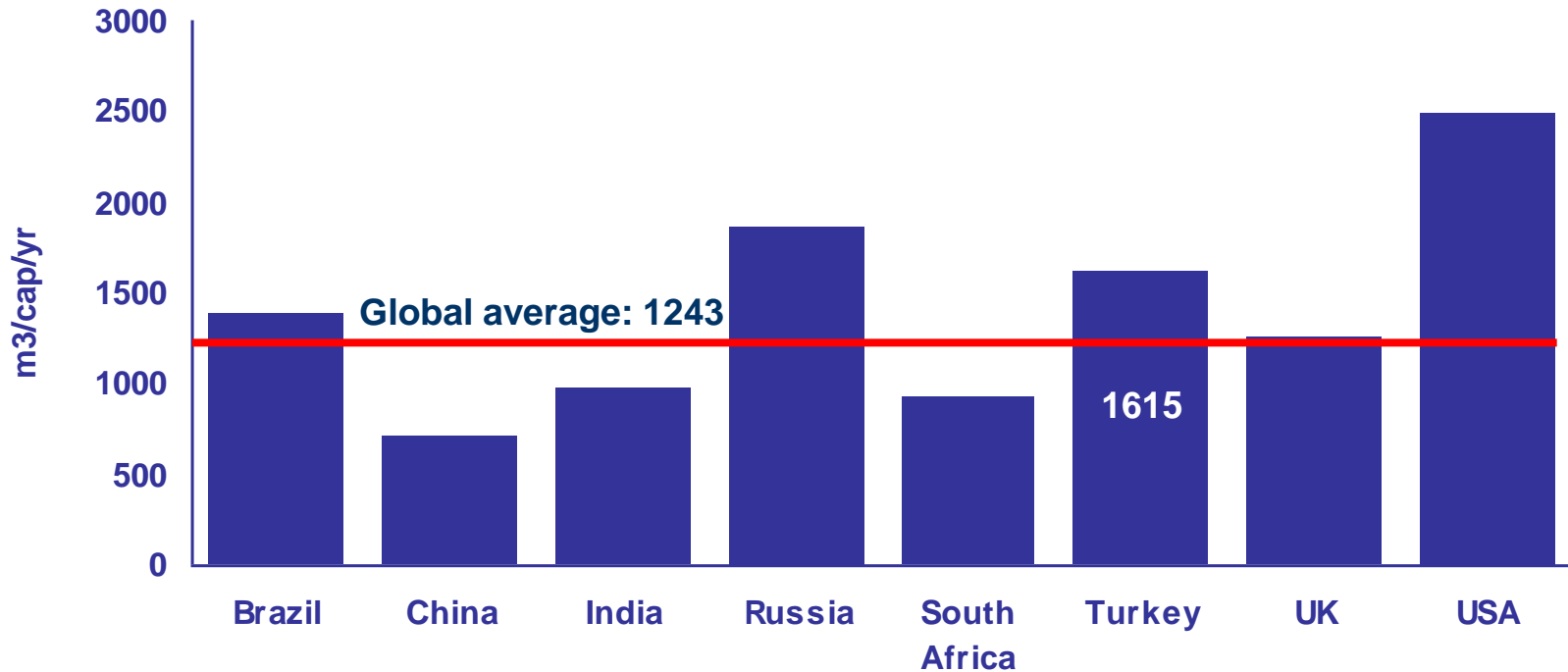


What does this mean for a Turkish consumer?



Note: 15% from abroad
Source: Hoekstra & Chapagain (2004) Water Footprint of Nations

How does Turkey compare?



Source: Hoekstra & Chapagain (2004) Water Footprint of Nations

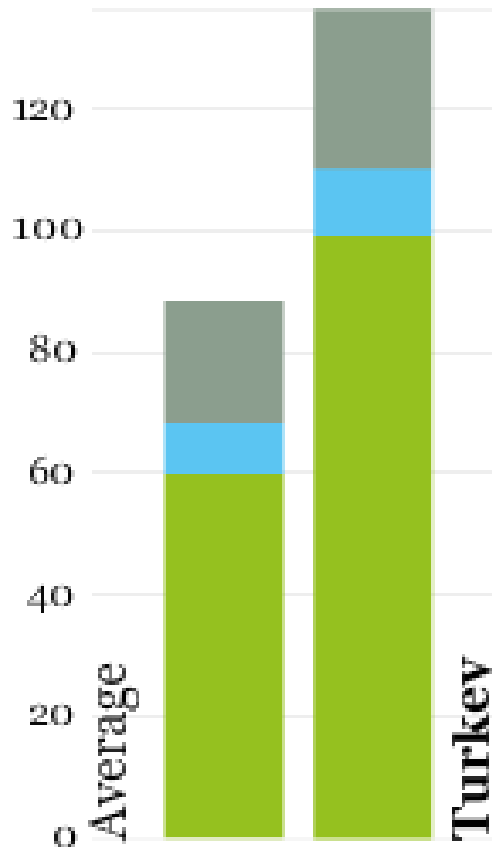
How does Turkey compare?


Compare to


- None
- Biggest
- Average
- Smallest

Filter

- Show All
- Blue water
- Green water
- Grey water



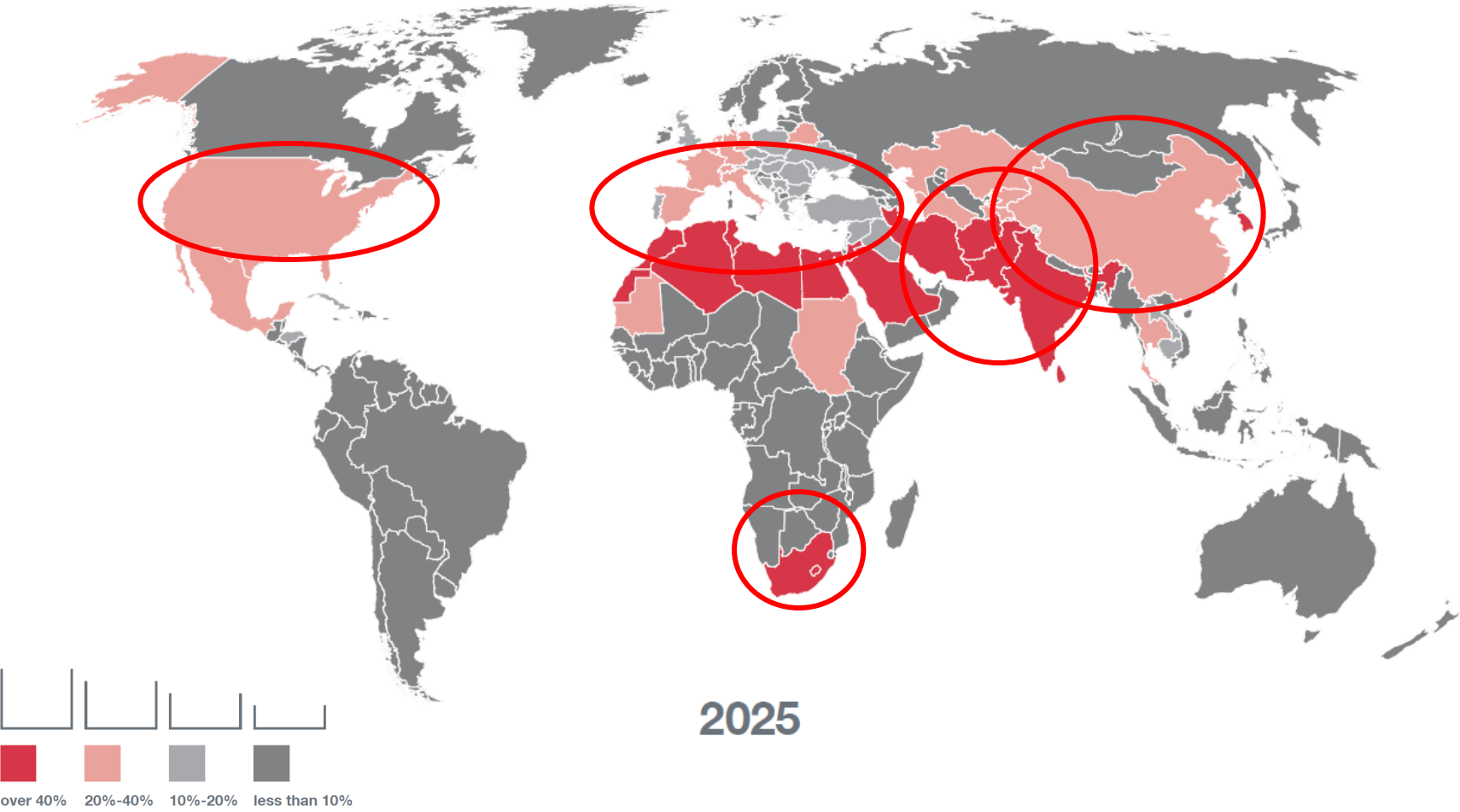
 Blue water
10.99 km³/y / 18th

 Green water
99.04 km³/y / 17th

 Grey water
26.39 km³/y / 21st

Total
136.42 km³/y / 19th

Times are changing



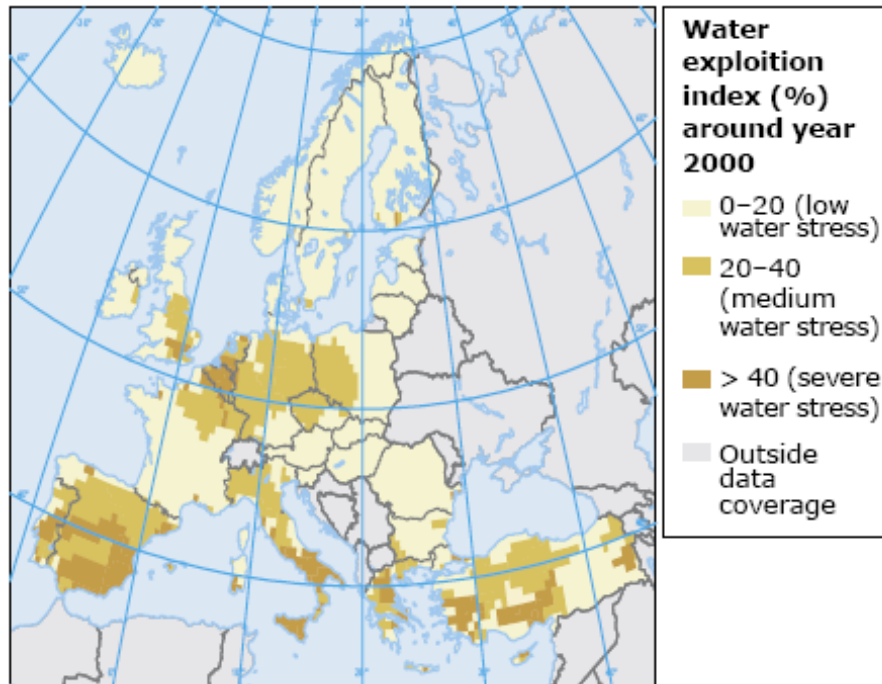
Note: Water withdrawn with respect to the amount naturally available

Source: Vital Water Graphics, UNEP

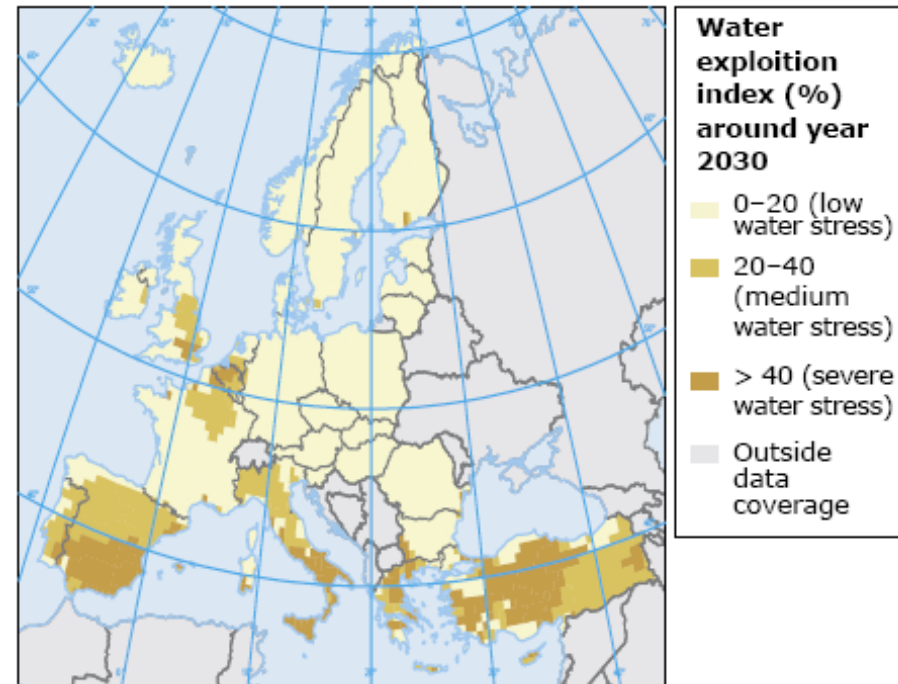


Water is a local issue

Current water stress in European river basins



Water stress in European river basins under the LREM-E scenario by 2030



Wetlands drying up

- Approximately **1.3m hectares** of wetlands of Turkey lost their ecological and economic character over the last 40 years
 - Less fishing
 - Less reed harvest
 - Harsher climate (frosts) and crop losses in agriculture
 - Biodiversity losses
- **Wetlands lost:** Amik and Avlan Lakes, Kestel, Gavur, Yarma, Aynaz, Hotamış, Eşmekaya reeds

Wetlands



Hotamiş, 1971

Hotamiş, 2006



Source: WWF

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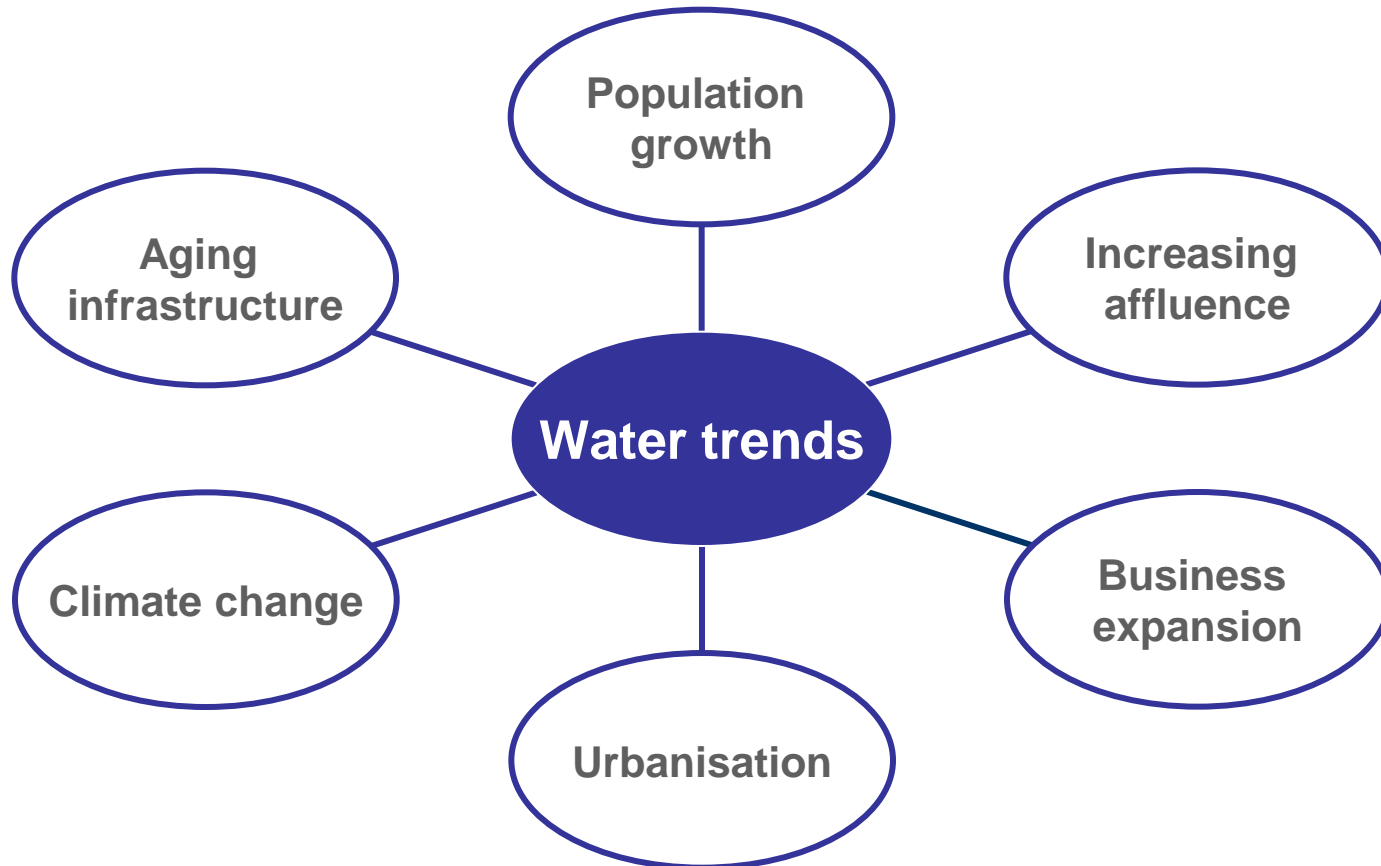
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implications**

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Global trends – local problems



Increasing **water demand** can have negative business implications

Water trends

Business implications

Population

UN WATER PRESENTS
WORLD WATER DAY 2011

Water for Cities:
Responding to the Urban Challenge

22 March 2011

Español Français

Ethiopia - PHOTO BY: Agnieszka Mandal - WWD 2011 Flickr Photostream

Connects with communities

de
change in
consumption

Growing demand for water efficient products

Insufficient **water supply** means **disruptions to operations**

Water trends

Third of world's population is in water stressed areas and increasing

Desalination on the rise

Business implications

Decreased water availability

Operational disruptions = financial loss

Disruption in supply chain

Limitations to growth

Declining water quality will increase company costs

Water trends

Rapid industrialisation

Aging infrastructure

Lack of safe drinking water; 5m water illness related deaths/yr

Business implications

Increase in water pre-treatment costs

Increase in wastewater treatment costs

Regulatory restrictions

Responsibility to support communities

Workforce impacts from water-related illnesses

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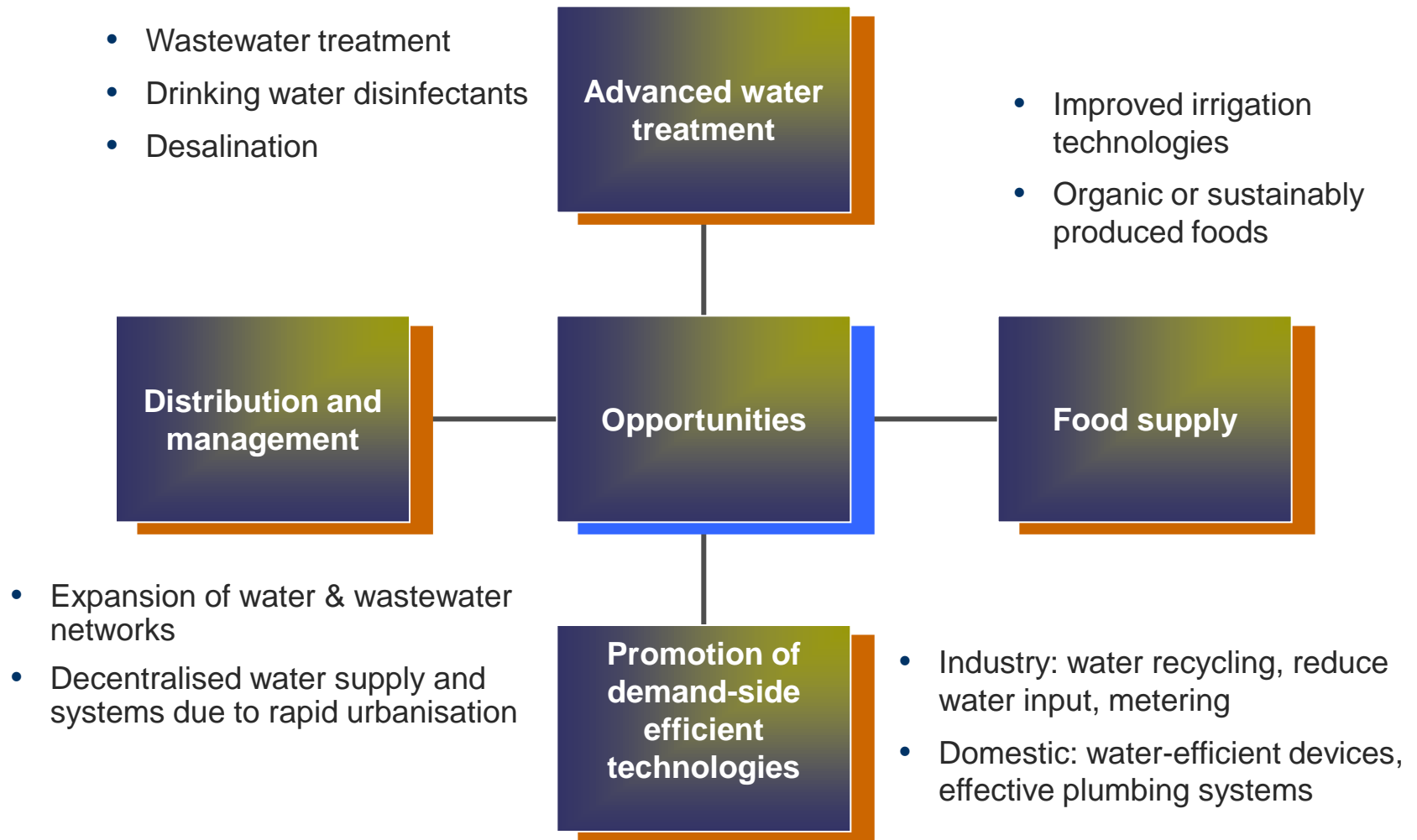
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Case studies

Where do the investment opportunities lie?

- Recession created **challenge to find funding** for investment products and **decrease in water capital expenditure growth**
 - But several countries now incorporate water spending in stimulus packages
- Water sector investments stimulus expected to **grow faster in developing countries**, especially where acute water stress
- Anticipating **consolidation of water industry**: companies to offer entire range of services
- Expecting increase in **private sector providers** of drinking water supply and wastewater treatment

Where do the investment opportunities lie?



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Trends pushing corporate water sustainability

- Increasing **water-related incidents**
- Recent focus on water rights has made water an **international political issue**
- Broader corporate understanding of the relationship between **energy and water**
- Increasing recognition that water is part of **'license to operate'**
- **Standardisation of methodologies** for measuring and understanding corporate water use

Why are some companies performing better than others?

- Set **absolute reduction targets** vs. efficiency targets
- Ability to **identify exposure of own operations**, but also incorporate and assist **supply chain**
- Implemented **water management systems** to:
 - Measure, track and report water progress
 - Inform of risks and opportunities
 - Delegate who is responsible
- Recognise water as an **opportunity** and not only risk, and **explore new markets, technologies and products**
- In constant communication and involvement with **stakeholders**

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Johnson Controls automated metering

- Manufacture products for the building and automotive industries
- **10% reduction target** in 10 years on water consumption
- **Collaborating with water providers and consumers** to reduce water usage and increase efficiency
- Developed water consumption measurement tools
 - **Automated Meter Reading and Advanced Metering Infrastructure**
 - **Minimises costs**, improves data accuracy and helps identify anomalies such as leaks, damages and tampering



ITC increasing land productivity

- ITC worked to **stabilise supply of water** to agribusiness sites
 - Improving yields
 - Safeguarding community access to water
 - Differentiating products
- Improved water logistics and increased site size to **improve water usage efficiency**
 - Reduce water costs
 - Strengthened reputation
 - Set regional water management standard



AkzoNobel assessing own and suppliers' water risk

- Use life cycle and eco-efficiency analyses
- Water risk assessments at production sites on:
 - Water sources
 - Supply reliability
 - Wastewater discharge
 - Efficiency
 - Compliance
 - Social competitive factors
- Set target of 100% sustainable fresh water management at production sites by 2015
- On-site assessments of supplier sustainability practices
 - 200 in 2009



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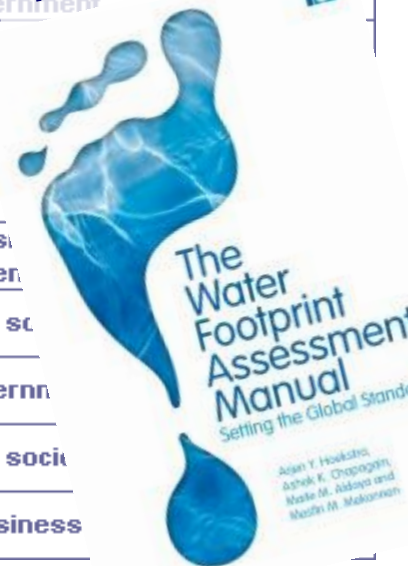
Case studies

Many accounting methods with different purposes

- Accounting concepts
 - Supply chain mapping
 - Product footprinting
 - Corporate footprinting
 - Risk assessments
- How to decide what to use
 - Need to look holistically, regionally and consider control (direct) vs influence (indirect)
 - Academic methods may not always be feasible or practical for businesses
 - Need to adapt methods to suits needs

	Main issue of concern			Geographic focus	Leader	Multi-stakeholder
	Identify risks & opp related to water use and impacts	Measure water use & assess water related impacts	Develop response options			
Aquawareness			X	Europe	Civil society	X
Alliance for Water Stewardship		X	X	Global	Civil society	X
Collecting the Drops: A Water Sustainability Planner	X			Global	Business	
The Corporate Water Gauge™		X		Global	Business	X
GRI Water Performance Indicators		X	X	Global	Business; civil society	X
ISO 26100 Water Footprint Principles, Requirements and Guidance		X	X	Global	Government	X
Strategic Water Management in the Minerals Industry: A	X			Australia	Business	X
UK Federation House Commitment to Water Efficiency			X	UK	Business; government	
UN CEO Water Mandate			X	Global	Business	
UNEP/SETAC Life Cycle Initiative – Project Group on Water Use		X		Global	Business	
Water Brief for Business – The S.E.F. Change Initiative	X			Global	Business	
Water Footprint Network		X		Global	Business; academia	
Water Neutral Offset Calculator			X	South Africa	Civil society	
WaterSense® Program			X	US	Government	
Water Stewardship Initiative		X	X	Australia	Civil society	
WBCSD Global Water Tool	X			Global	Business	

Released Feb 28th



Allen Y. Hoekstra, Ashok K. Chopra, Maki M. Aldaya and Karli M. Makarewicz



Case Study: Water shortages affecting own power generation

Description

A mining company paid a premium price for an energy intensive acquisition, citing access to hydropower as a key factor driving the decision. In 2010, low snowfall and rainfall led to several hydropower dam levels being too low to produce power.



Implication

The smelter operations had to purchase emergency power from the grid at a price premium.

Financial impact

The company took a \$100m write-down on the acquisition. Production levels may have been affected (not reported).

Case Study: Shareholder disinvestment due to environmental performance

Description

A mine was discharging 230,000 tonnes of tailings per day into a natural river system. This was within legal limits and the company felt justified to continue despite shareholder pressure.



Implication

The shareholder's ethics committee found this to constitute "grossly unethical behaviour" and disinvested their entire \$850m holding in the parent company.

Financial impact

The share price fell 5% (but recovered thereafter).

Future project finance could become more costly.

Case Study: Product Footprinting for Cadbury

Description

- Develop a pilot tool and method to calculate a cradle to gate footprint for Endearmints.
- Part of a programme to further their corporate responsibility.

Results

- Over 70% of the footprint is from sugar and glucose.
- 13% is from the manufacturing (direct control).
- Old site with many areas where efficiencies can be made.



Next steps

Explore how current water conservation methods influence the footprint.

Further ecosystems work related to sugar.

Case study: Tesco Corporate and Supply Chain Water Footprint

Description

Completed a direct and indirect water footprint of the entire supply chain.

Results

Direct water footprint was 23 billion litres, nearly all of which came from metered consumption in stores.

This represents just 1% of the total water footprint associated with the products Tesco sell, with some 850 billion litres from their upstream supply chain, and 1,000 billion litres used by customers consuming their products.



Next steps

Tesco is using these figures to develop a water strategy over the next year.

Final thoughts

- The availability of water per capita per year in Turkey is only about **one fifth of that of the water rich countries**.
- Water **stress and scarcity** is expected to intensify quickly.
- Business will be subject to **higher costs, possible shortages, poor quality and demand to improve efficiencies**.
- First steps are to **determine risks and opportunities** for direct operations and supply chain and create a management plan.