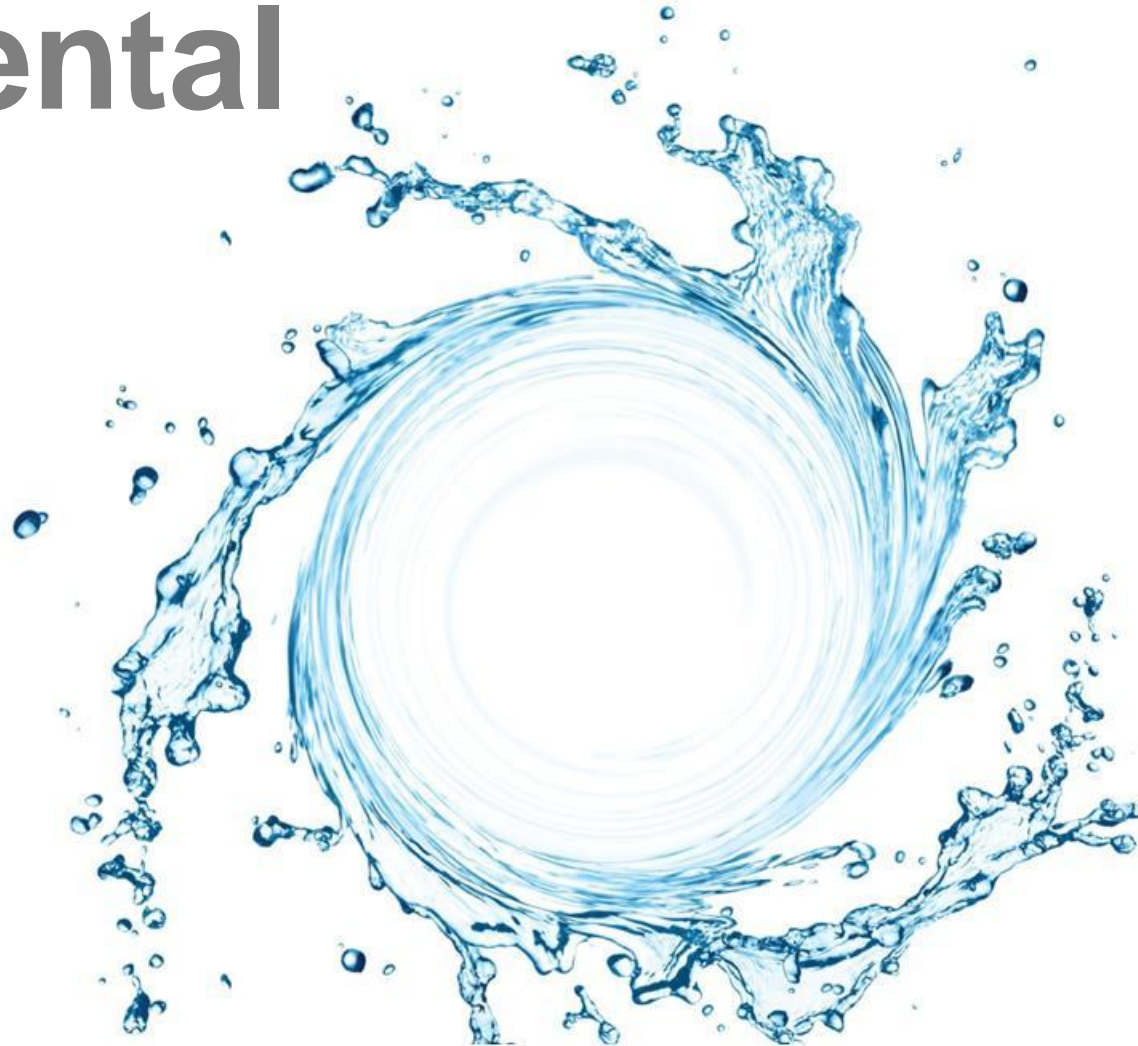




wbcscd water

Water, the next big environmental concern?

Joppe Cramwinckel
Director Water
WBCSD





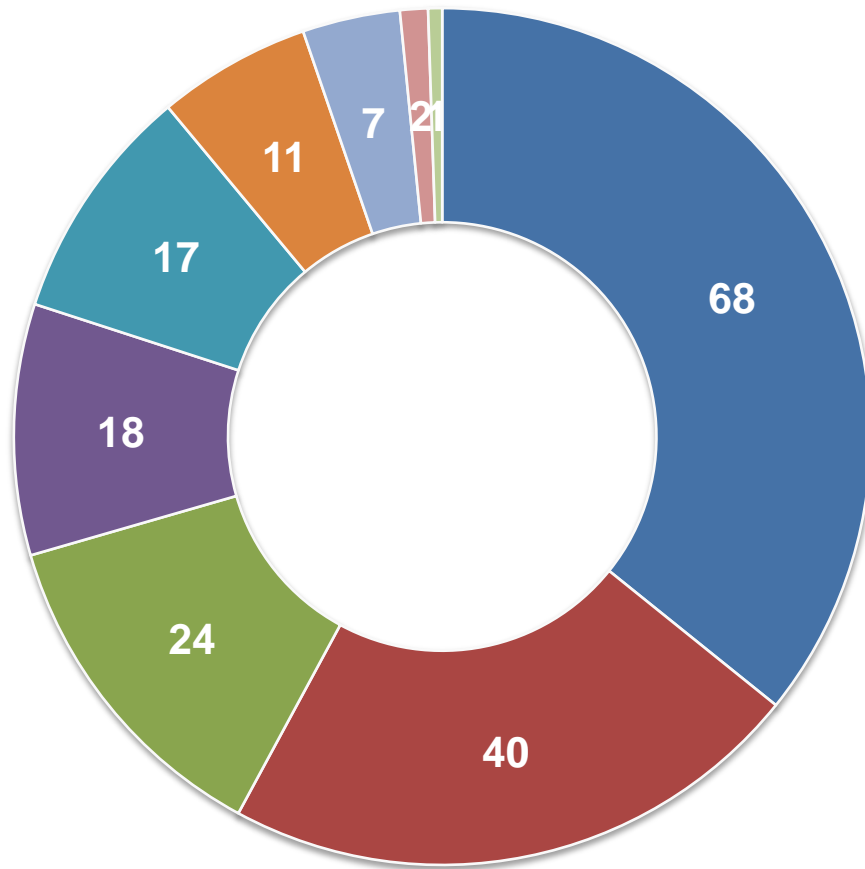
What is the WBCSD?

A CEO-led coalition of some 200 companies with a shared commitment to sustainable development via the three pillars of economic growth, ecological balance and social progress.





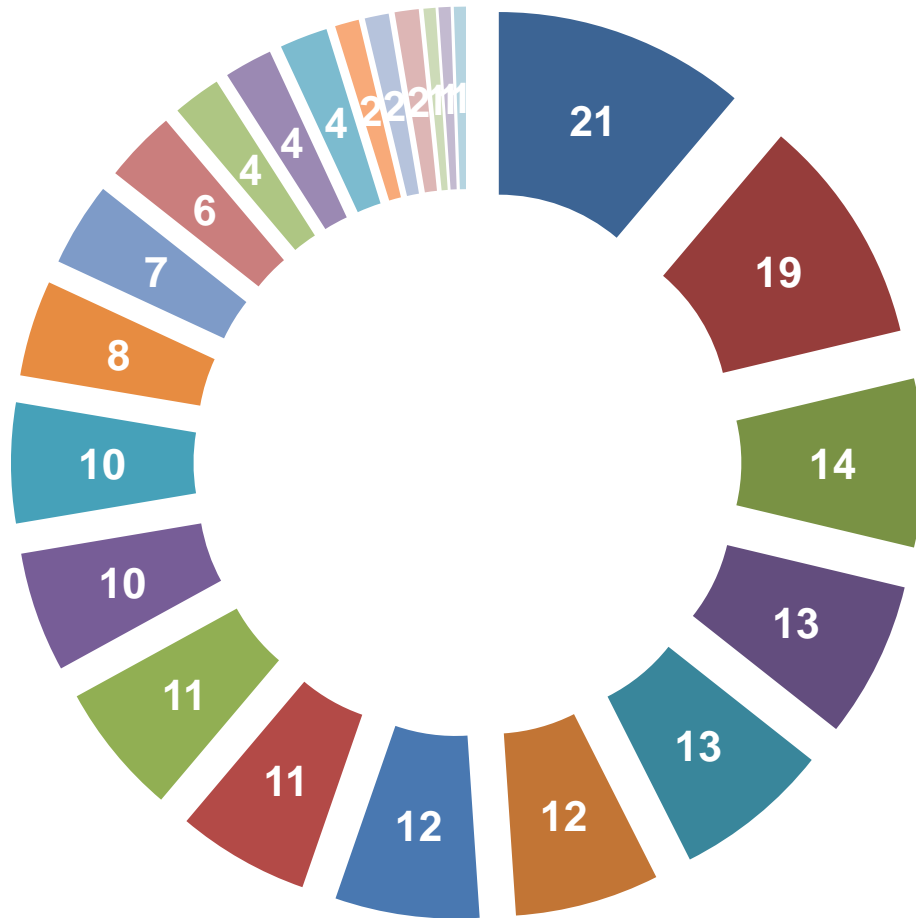
Where are our members?



■ Europe (EU)	68
■ North America (NAFTA)	40
■ Japan	24
■ Europe (non-EU)	18
■ Asia (ex-Japan)	17
■ Latin America	11
■ Oceania	7
■ Africa	2
■ Middle East	1



Which sectors do they represent?



■ Utilities & Power	21
■ Oil & Gas	19
■ Consumer Goods	14
■ Mining & Metals	13
■ Engineering	13
■ Cement	12
■ Chemicals	12
■ Services	11
■ Tires	11
■ Forest & Paper Products	10
■ IT & Telecoms	10
■ Auto	8
■ Banks & Insurance	7
■ Construction	6
■ Food & Beverages	4
■ Healthcare	4
■ Maritime	4
■ Logistics	2
■ Media	2
■ Retail	2
■ Aviation	1
■ Trading	1
■ Water Services	1



What is our mission (not impossible)?



- Provide business leadership as a catalyst for change toward sustainable development
- Support the business license to operate, innovate and grow



The “Three Hard truths” form the long term view...



- **Surging demand**



- **Supply will struggle to keep pace**



- **Environmental stresses are increasing**



A People-Centred Map of the World

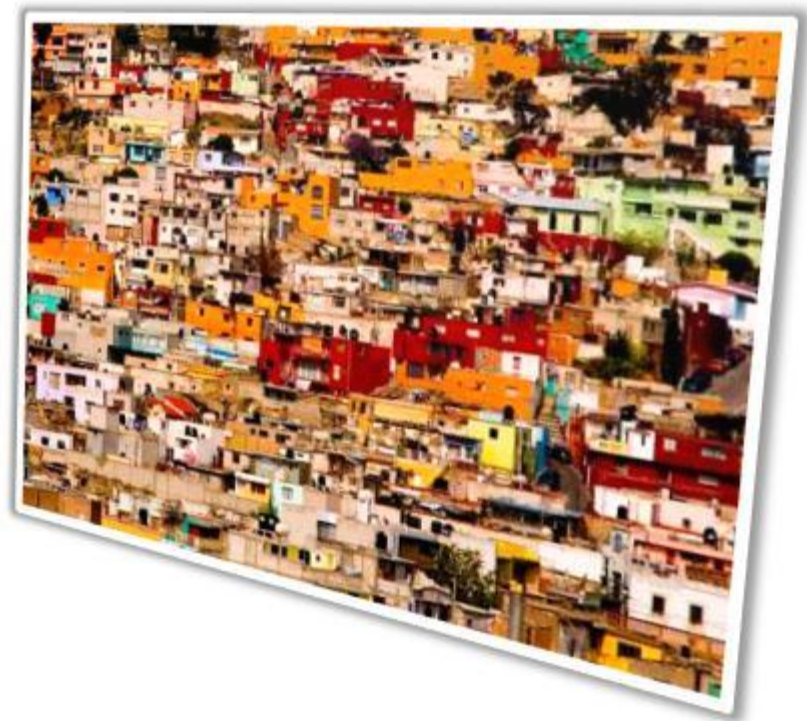


Source : Derived from population data from United Nations



Growth: The world population is increasingly urban

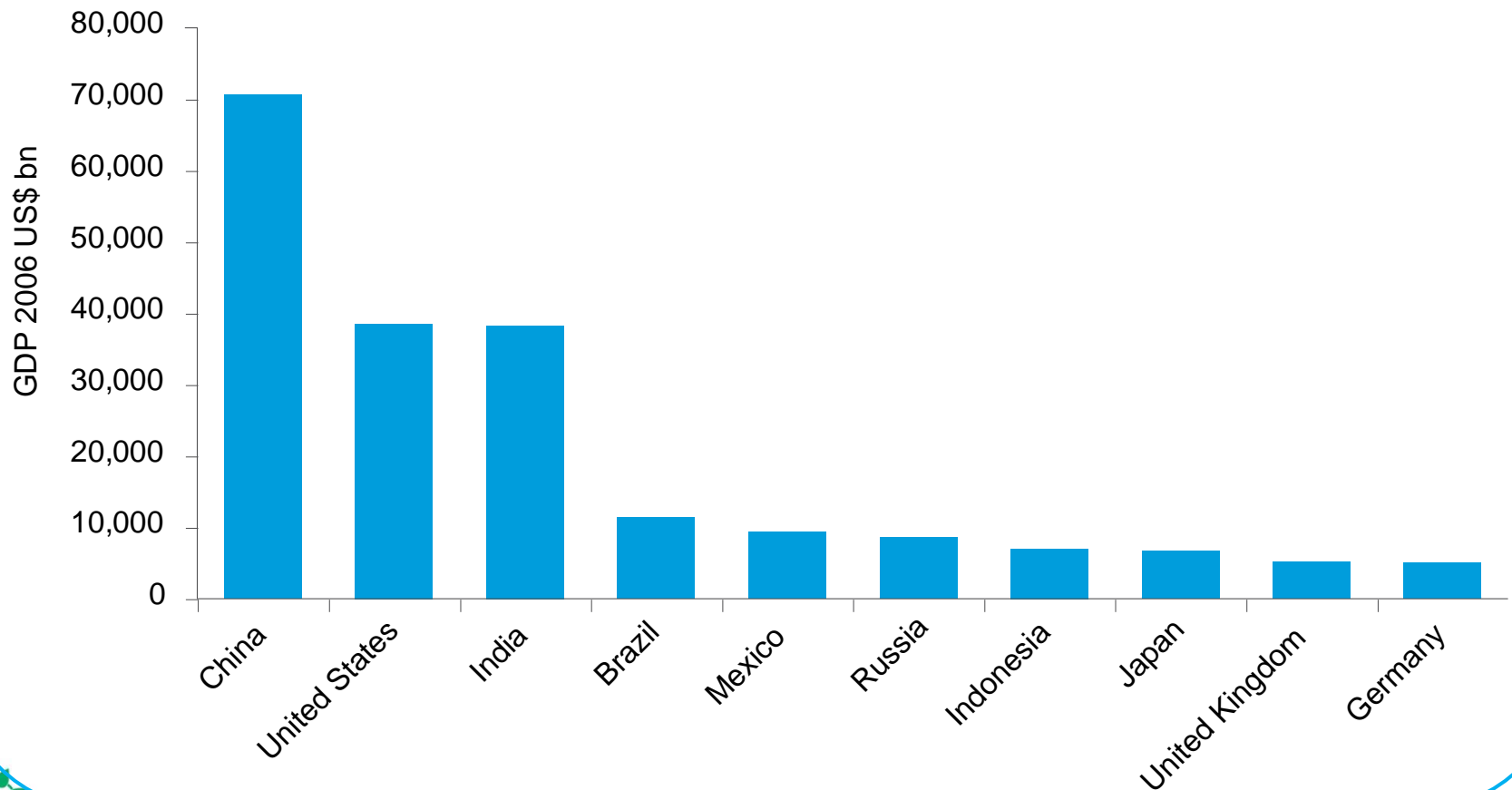
Between now and **2050** the global population is expected to increase from 6.9 billion to more than **9 billion**, with **98%** of this growth happening in **cities** and in the **developing and emerging world**





Growth: Global economic power is shifting

Top 10 economies by GDP in 2050





WBCSD Vision 2050

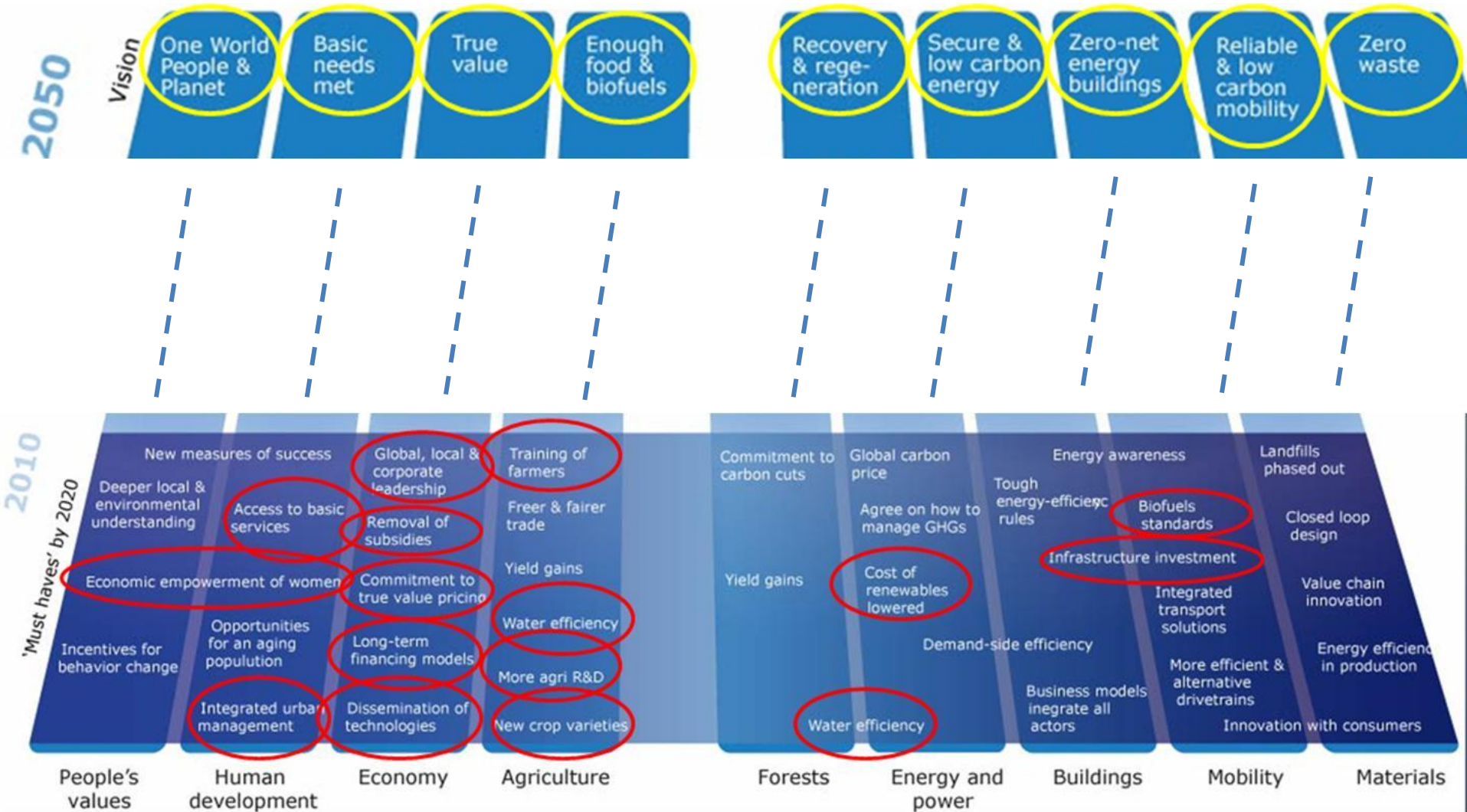
Vision 2050: Nine billion people living well, and within the limits of the planet

A platform for dialogue about the role of business in a resource & carbon constrained world...including **WATER**



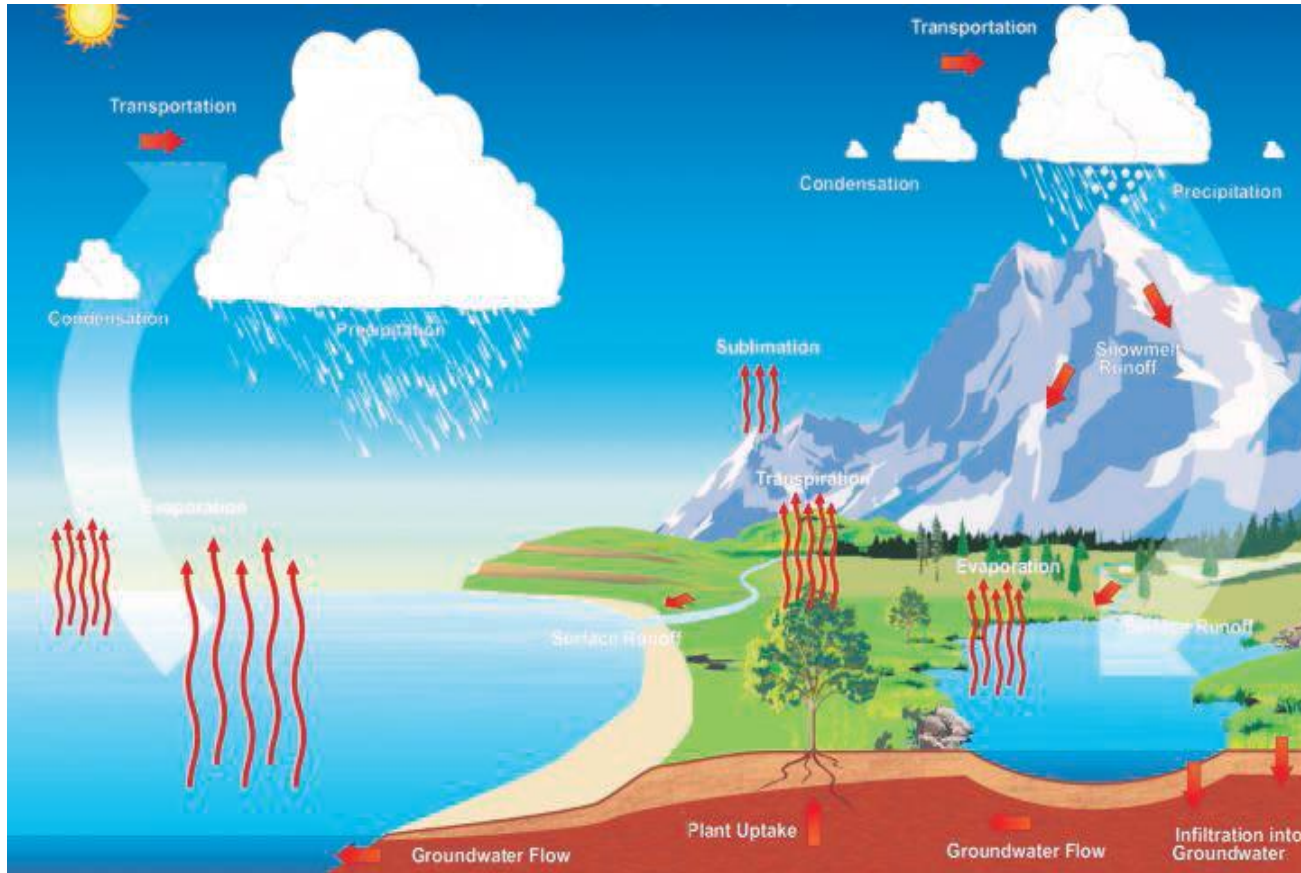


.....Water is key in each pathway





Water is cyclical



Source: Secretariat of CBD (2009) Drinking water, biodiversity and development: A good practice guide.



Water Situation in the World



Too much



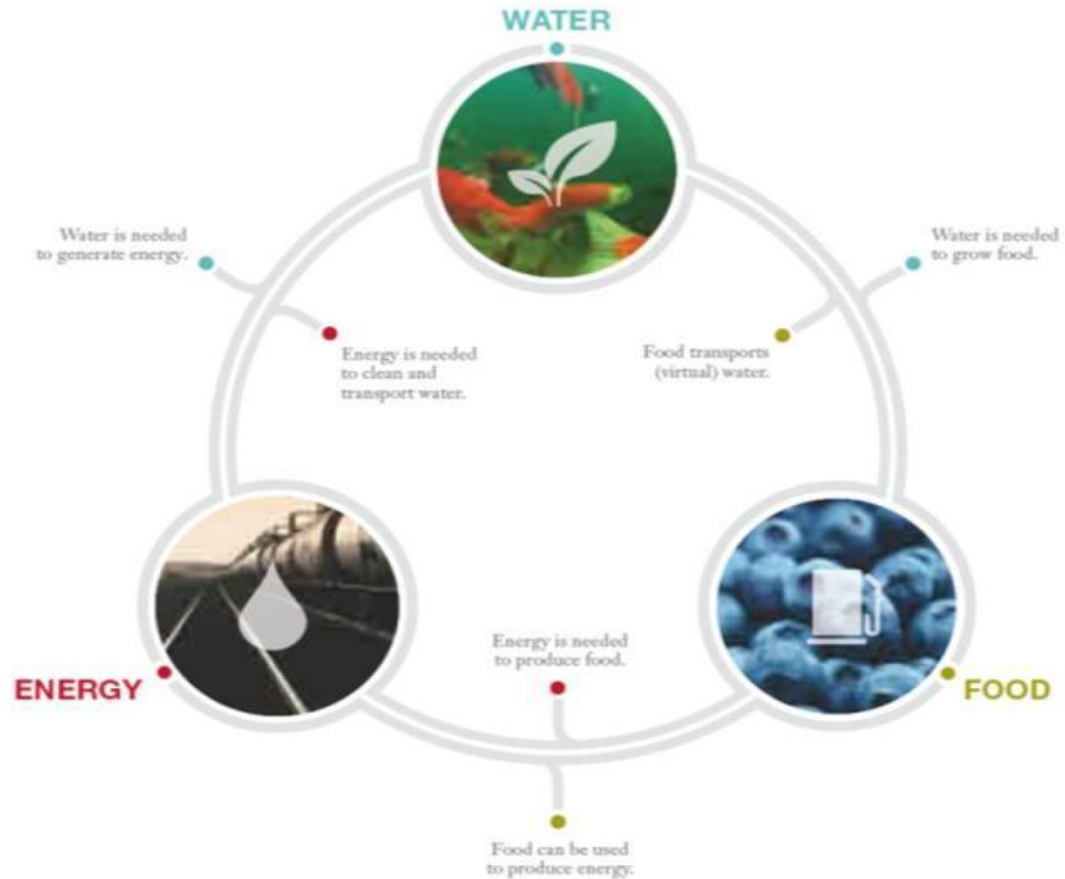
Too little



Too bad



Water is a complex issue,

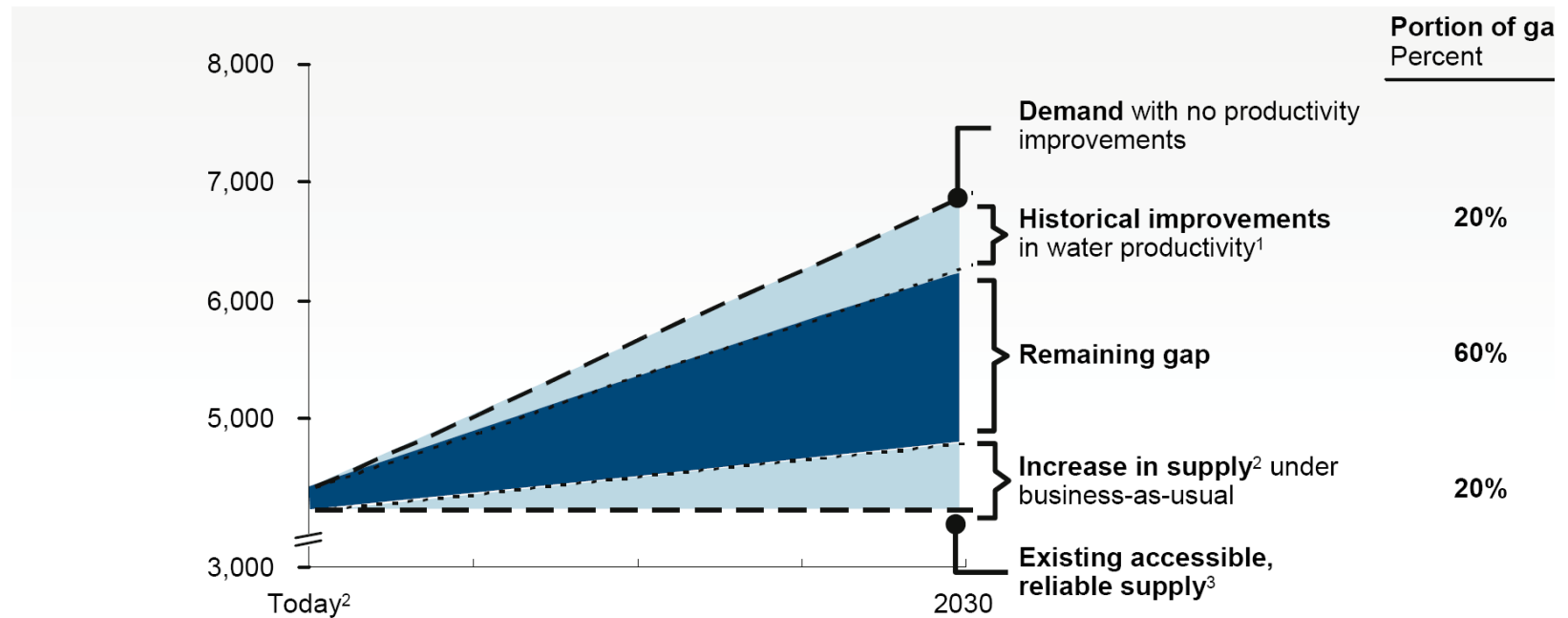




Water: The challenge

Business-as-usual approaches will not meet demand for raw water

Billion m3



1 Based on historical agricultural yield growth rates from 1990-2004 from FAOSTAT, agricultural and industrial efficiency improvements from IFPRI

2 Total increased capture of raw water through infrastructure buildout, excluding unsustainable extraction

3 Supply shown at 90% reliability and includes infrastructure investments scheduled and funded through 2010. Current 90%-reliable supply does not meet average demand

SOURCE: 2030 Water Resources Group – Global Water Supply and Demand model; IFPRI; FAOSTAT



Public Policy response

A range of options exists. Selected policy responses include:

- Reducing demand – water pricing
- Reducing demand – water efficiency
- Re-profiling demand – water rights and trading
- Increasing supply – land management investments
- Increasing supply – rainwater harvesting, unconventional sources
- Maintaining quality – command and control regulation
- Water quality – investments in waste water treatment
- Layered policy



Reducing demand – water pricing

- Pricing incentivises efficient water & generates funds for infrastructure
- But, water is rarely priced efficiently; **failing to include the full opportunity costs, or the social and environmental costs**
- Price is rarely linked to scarcity
- Pricing needs to allocate water between users, safeguarding minimum requirements for public consumption
- Example 1: Pricing for irrigation water in Israel
 - Increased prices by 65% between 1998 and 2008
 - Incentivised efficiency investments, without negative impacts on production (agricultural output value increased 60% 1990 to 2007)
- Example 2: The 2012 EU's future water blueprint
 - Water users will pay a fair price, including in the industrial and agricultural sectors, where water is often subsidized
 - A consistent approach for internalizing costs from water use and water pollution



Reducing demand – water efficiency

- Improvements in water efficiency can be a cost-effective way to reduce demand

- Example 1: EU's 2012 Water Blueprint will set **targets for water efficiency** in member states
 - Targets need to be set by member states at a sectoral and river basin level
 - Further plans to table an EU directive on water efficiency in buildings (similar to the Energy Performance of Building Directive)

- Example 2: The Chinese Government's 12th Five-Year plan targets the increase of water efficiency within the industrial sector
 - 30% reduction in water consumption per unit of industrial output by the year 2012



water rights and trading

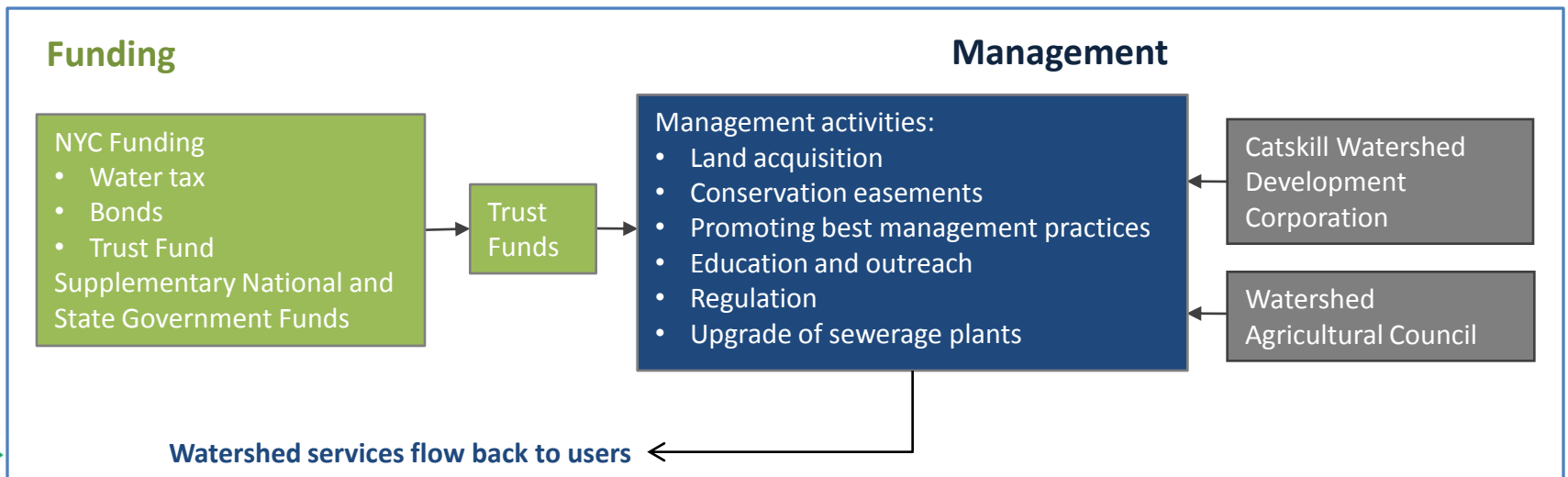
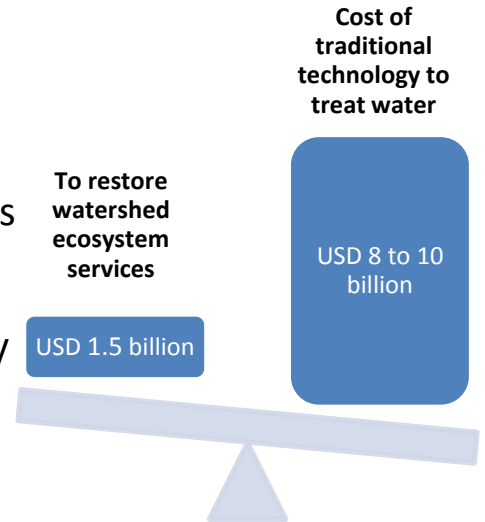
- Assigning a legal right to a specific quantity of water restricts overall use, provided the total allocation is capped
- Trading in water rights provides flexibility
- Trading schemes allow for re-profiling demand from low- to high-value uses
- Via trading schemes governments can buy back allocations, giving them the opportunity to leverage ecological benefits of environmental flows which in turn reduce required water treatment
- Example: Local markets for waste water release permits – Hunter River Trading Scheme in Australia
 - Hunter River provides irrigation for agriculture in a water scarce region
 - Coal industry discharges led to increased salinity levels, affecting soil quality
 - Cap and trade system for saline water discharges
 - Industry must enter auction for share of credits -> limited amount of saline water



land management investments

Improved land management can provide a low cost alternative to traditional technological investments in water purification

- E.g. New York, Catskills payment for ecosystems services
 - 9 million residents draw water from 3 watersheds
 - Increased urbanisation and pollution affecting quality
 - Looking for a solution at the source of the problem





Increasing supply – rainwater harvesting

- The imbalance between supply and demand has catalyzed some states to adopt rainwater harvesting policies and hence increase supply
- **Legislation is a primary driver** for regional harvesting markets

	Type	Example
1	Mandates for rainwater harvesting	<ul style="list-style-type: none">• In the US, some states new homes must have harvesting facilities• In Chennai (formerly Madras), India, new water and sewer connections are provided only after the installation of rainwater harvesting systems
2	Tax rebates	In France a 40% tax rebate on installation and equipment costs up to €5000 (between 2007 and 2011). In 2008, the French market witnessed a 50% growth
3	Tariffs	Relatively low water tariffs are seen as the key barriers to the wider uptake of rainwater harvesting in the UK. Policy review and recommendations ongoing



Command and control regulation

- **Command and control mandates specific actions** installations must take, increasing certainty over the policy outcome
- **Example: US Clean Water Act, 1972**
 - Primary federal policy governing the release of toxic substances to water bodies
 - Aims to ensure water bodies meet standards necessary for sports and recreation (excludes groundwater which is governed by the Safe Drinking Water Act)
 - Principle focus is point sources - industrial installations
 - Technology based standards – requires use of ‘best available technology’
 - Water quality standards – if after technological solutions water quality still deficient the installation is subject to permit limitations
 - Based on the water courses Total Maximum Daily Load



Water quality – investments

- Investment in water infrastructure is often required alongside policy
- Example: The Chinese Government has made water a major priority
- The 12th Five-Year Plan includes a range of targets and policies to improve water supply
 - Growth in number of municipal waste water treatment plants increasing from 18% between 2005 – 2009 to 32% between 2009 to 2012, with 5'200 plants built every year

Source: China Greentech Initiative analysis



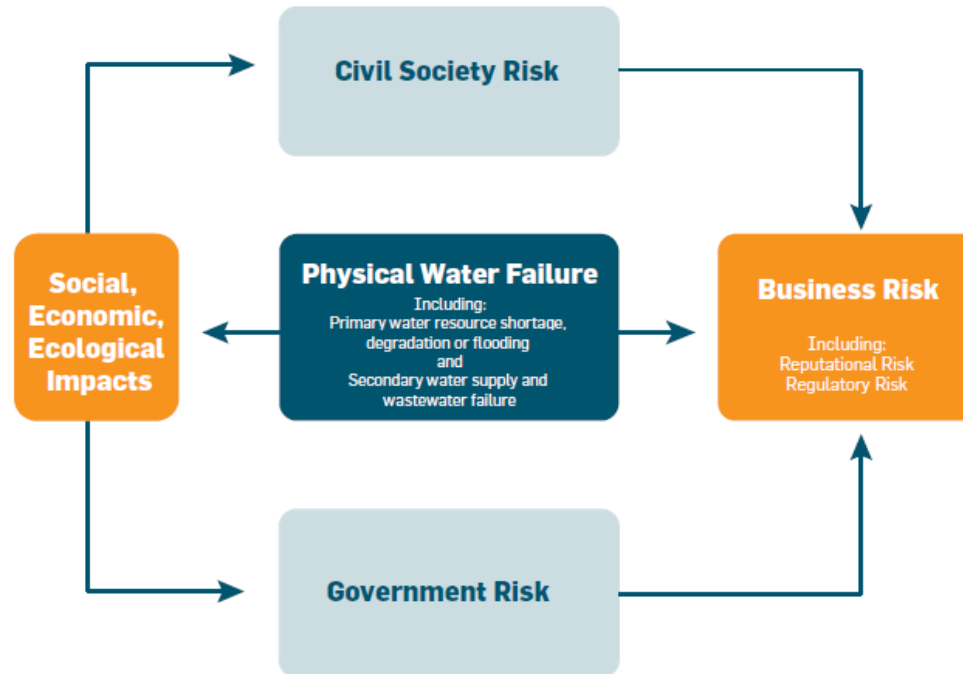
Layered policy

- Layered policy combines different aspects of water regulation to provide a cohesive response to water allocation
- Example: South Africa Water Law, 1996
 - Water viewed as a common resource, policy review aimed at redistributing resources to maximise equality and fairness
 - Revoked inequitable private ownership, appointing the National Government as custodian of water resources
 - Minimum requirements for drinking water and ecosystem functioning set aside in The Reserve, which has free access
 - Water allocation and use above and beyond The Reserve is subject to:
 - Water pricing reflecting the ‘full financial cost of provision’
 - Limited term rights allocation – in some cases with trading
 - Regulated by Catchment Management Agencies
 - Water intensive industries to be reviewed
 - Agriculture, particularly on dry land



Business challenge

- How best to comply with policy?
- Keeping track of new regulation and new policies
- How to measure and manage water risks?
- How to identify the business opportunities?

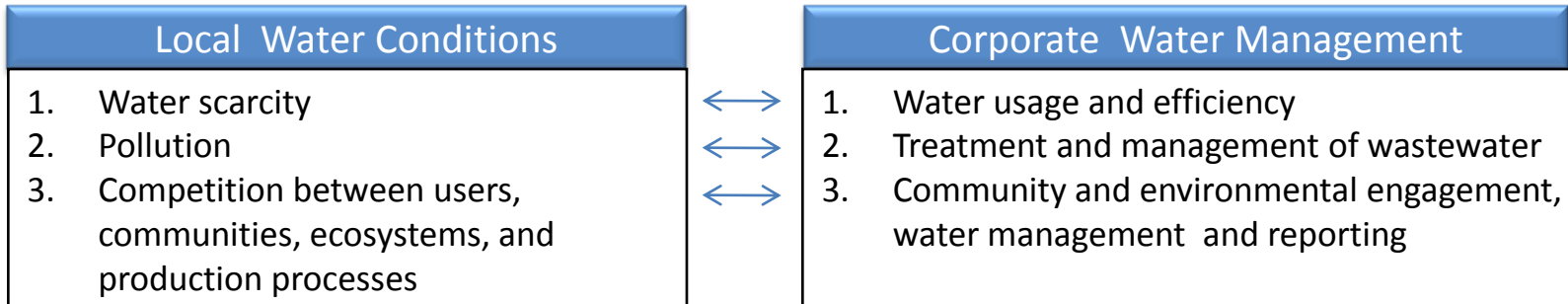


Source: CEO Water Mandate, Guide to Responsible Business Engagement in Water Policy, 2010



Business challenge (cont.)

Water pressures translate into financial risks



- Heightened Public Awareness
- Shifting Consumer Preferences
- Tightening Environmental Regulation
- Increasing Resource Bottlenecks

Corporate Risks:

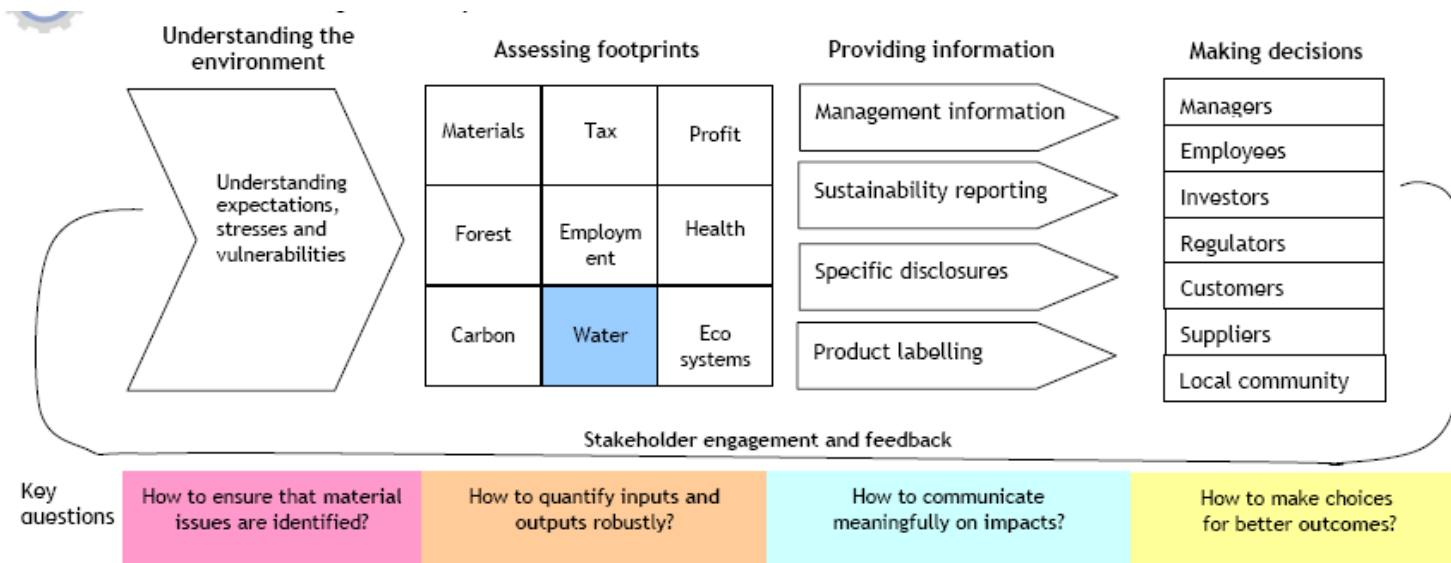
- Physical operations risk
- Increasing water-related costs
- Regulation & litigation risk
- Reputational Risk
- Financial
- Markets and products

Financial Institution Risks:

- Debt-servicing ability
- Creditworthiness of clients
- Reputational risk



Putting Water in Context





For more information
wbcasd.org/water