

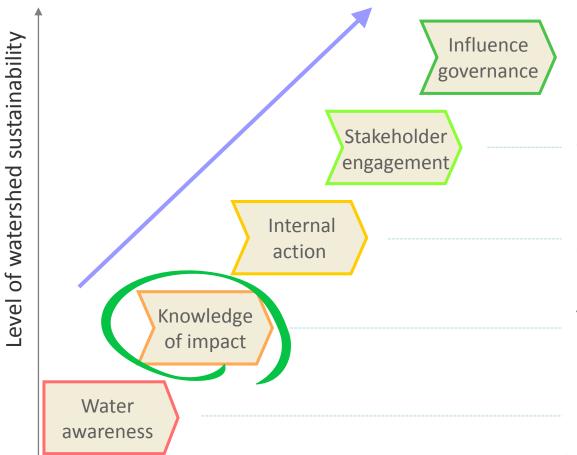
Stewardship team

WWF-DEG Water risk filter

CEO Water Mandate 16 May, 2011

Jochem Verberne, WWF International

WWF works with companies on a Water Stewardship journey towards sustainable river basins



Role of WWF:

Identify policy gaps Set up PPPs to strengthen institutional capacity Develop policy guidelines Support development of basin and global governance platforms Develop Stewardship standards Build business cases in pilot basins

Develop innovative actions Collect and share best practices

Drive Water Footprinting Thought-leadership on water risks Stimulate corporate disclosure Map companies in basins

Investigate - educate

See Appendix for more information

WWF-DEG Water Risk Filter project to turn 'red into green'

Development of Water risk filter

- to assess the exposure to water related risks of investment portfolio, covering all industries and all countries in the world
- to be shared with other organizations to turn 'red into green', not for go/no-go decisions

Holistic approach: should cover all relevant water risk indicators

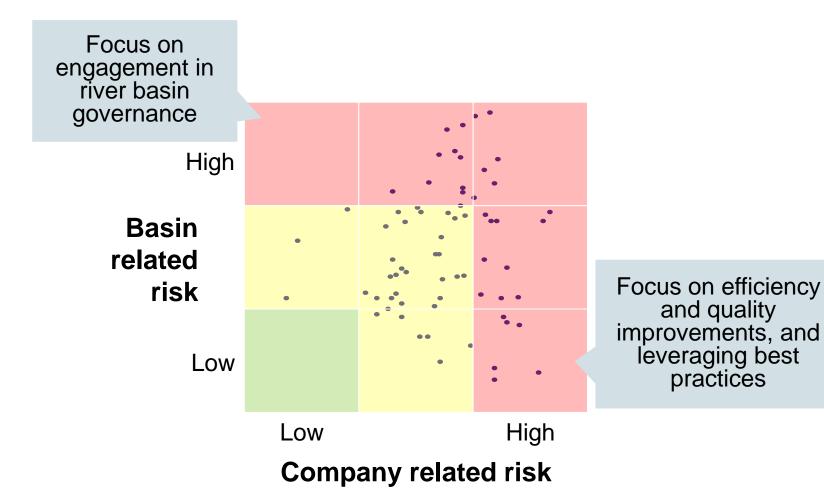
- Basin and Company (direct operations and supply chain) aspects
- Physical (quantity, quality, ecosystem impact), Regulatory and Reputational risks

Balance: easy-to-use tool fed with scientific data

Input data:

- Client company database
- Results client company online survey
- 81 new and detailed country data sets, quantitative and qualitative
- 57 industry data sets
- World Resources Institute (WRI) global basin information database
- New global GIS maps





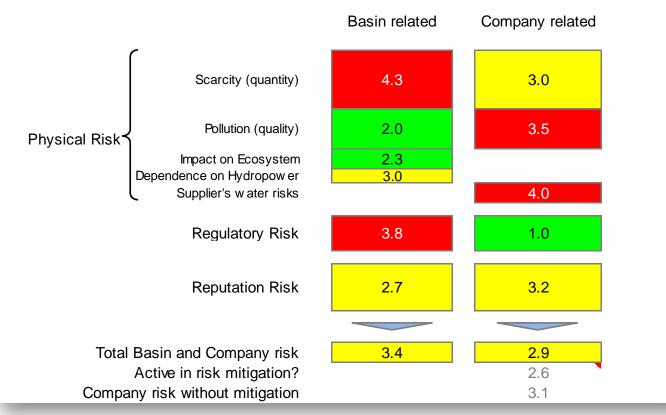


Heat maps on company level provide more insights (I)

RESULTS SPECIFIC COMPANY: CONFIDENTIAL

Select company&location number:







Heat maps on company level provide more insights (II)

Risk	Risk Item	#	Question	Score	Answer
Physical	Scarcity	1	Water availability	3	Vulnerable
	(Quantity)		(qualitative)		
		2	Freshw ater	5	<500 m3/capita/year: Extreme
			availability per capita		water scarce
		3	2025 w ater	5	<500 m3/capita/year: Extreme
			availability per capita		w ater scarce
		4	Withdraw al as % of availability	2	Demand is 10-20% of available supply: Sufficient
		5	Impact climate	4	Water is predicted to be less
			change		available with a risk of increased
		6	Impact of droughts	5	>25% of the country affected by a
		7	Impact of floods	4	High risk of flooding
*****	Pollution	8	Water pollution	2	Low probability, low severity of

Pre-assessment tool

High level risk indication in minimum time

	INPUT										
		Cleara	llinput								
	1 Select country:										
	[Lithuania									
	2 Do you k										
		Yes	on or the com	any:							
						elect the resultin		te following			
						on the country le					
	2.1 2.2	1000-1700 m3/ 500-1000 m3/	3/capita/year		nnual renewable water supply per person (1995)						
			ailable supply	Forecasted annual renewable water supply per person (2025) Mean Annual Relative Water Stress Index							
	3 Select industry:										
	l	CHEMIE									
	RESULTS										
	Basin related risk Medlum										
		Basin relater Industry rela		Medium High							
		industry rela	Le u lisk	ngi	righ hak:	riease perionii	Tur Hele Tisk	accessinen.			
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	Low					risk		1.134			
		Low	Medium	High			Quantity	Quality related			
Copyright WWF and		inc	lustry related r	ISK			related				



Used risk definitions

Relates to water quantity (scarcity and flooding), water quality that is unfit for use Physical risk (pollution), the impact of both quality and quantity on the surrounding ecosystem. On a company specific level, it also includes the physical risks of suppliers. Potential causes as lack of basin governance or of enforcement of water legislation is included in Regulatory risk Regulatory Relates to the imposition of restrictions on water use by government. This may include the pricing of water supply and waste discharge, licenses to operate, water rights, quality risk standards etc. In this project, lack of basin governance is also part of Regulatory risk In this project, the risk relating to the potential for conflict or political disagreement over transboundary river basins, or national political imperatives, such as trade restrictions on food crops with embedded water are part of Regulatory risk for simplicity reasons (defined by Lloyd's as Geopolitical risk) Relates to the impact on a company's brand and that can influence customer purchasing Reputation decisions. Manifests through tensions and conflict around access to water or the risk degradation of local water resources. In a highly globalised information economy, public perceptions can emerge rapidly around business decisions that are seen to impact on aguatic ecosystems or local communities' access to clean water. Under socially and politically unstable conditions, companies may be blamed by local stakeholders just because they provide an easy target (Coca Cola example) In this project, the tensions around local access to water or local water • degradation are part of Reputation risk for simplicity reasons (defined by Lloyd's as Community risk)



Example of underlying data: 81 country data sets, entire world will be covered before 2012

	COUN	TRY DAT	SETS		Kenya			
	Physical	Water	Freshwater quantity	Water resources:				
	Aspects	Quantity		total internal	534			
	Aspects			renewable per capita				
				Water resources:				
				total external	258			
				renewable per	200			
				capita Water resources:				
				total renewable per	792			
				capita (actual)				
				Water Availability	500-1000 m3/capita/year			
				Water availability				
				(Total water	72.44			
				withdrawal per				
				capita) Groundwater				
				Recharge	1			
				Groundwater	1			
				Abstraction				
				Total dam capacity	4.079			
				Water Stress	1.1			
				WPI Total Water	47.3	11	514	lar en
				Total Water Footprint Gm3/year	21.23	Health	EVI	At risk 45.3
			Hazards and Climate				ESI	45.3
			Change	and Severity	5		WATER_E	51.4 62.8
					High annual risk,		WATER_C	62.0 Environmental
				Impact of droughts	with strong			Vulnerability
					negative impact			Index: At risk,
				Impact of floods	-			Environmental
				(Classes)	4		Threats to aquatic	Performance Index: 51.4 out
				Impact of floods	High risk		ecology	of 100, Effects
				Climate Vulnerability	4			of water on
								ecosystems:
				Impact of climate	Vulnerability Index: 4 of 4:			62.8 out of 100
				change	Strong impact		Endangered	65
		Wa	ter Quality	WQI_pt	57.9		Species Protection Wildness	39.01
			La La carrey		High probability,			
				Water quality Disolved Oxygen	low severity		Safe Drinking Water	57
		1.4		Concentration	6.83		CAP_GOV	-0.37
ch cc	ountry	dat	a 7	Phosphorus	0.58			Environmental
				concentration			Proxy for:	Governance (ESI Sub index):
							Water strategy	
							Water strategy	-0.37, of range - 1-+1
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set in quar	nclude ntitativ	es ve					Bertelsman Transformation Index Corruption Index Groundwater Problems Environment Agreement Compliance Dependency ratio Surface water: inflow secured	-0.37, of range - 1++1 4.53 2.1 2 0 32.57
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KENIA SICAL ASPECTS WATER RESOURCES 1. WATER RESOURCES ere are five main drainage areas in the country Lake Victoria, covering 8.0 percent of the count Ewaso Ngiro, covering 36.3 percent All the strain of the strain o As a result of the skewed water distribution between the bas water use conflicts among irrigation, livestock, wildlife and e is quite common in the <u>Exaso No.100</u> north, in the upper cat and the Adb basins. estern quaternary areas; Volcanic he Rift valley; Older sedimentar 1.2. WATER QUALITY, ECO SYSTEMS AND HUMAN HEALTH Major environmental problems are water pollution from urban and industrial wastes degradation of water quality from increased use of pesticides and fertilizers; wate hyscinth infestation in Lake Victoria; deforestation; soil erosion; desertification large and medium d y, 1782 small dams (e are 9 lakes with a surface area of 11 akes with a surface area of 10 n of Victoria. Naivasha and Ba of Rensar sites as wetandso and environment. GOVERNANCE ASPECTS Salinity as result of irrigation where it is a result of already was experienced in the trac 2.1. WATER INSTITUTIONS 2.1. WATER IRRNING review management law with the Univery of Water Resources Management and Development (MNRWD) granted through the Water Act 2002. The ministry's counter of looks (1999) (sources on decentration, privatation, commercialization and sakeholder participation. The Water Act 2002 has provided the formation of Water Reduces Management Actions, response to the variable format and the management of Sakes, applies and rives, and the variable format action management of Sakes, applies and rives, and the variable format action management of Sakes, applies and rives, and the variable format action management of Sakes, applies and rives, and the variable format action management of Sakes, applies and rives, and the variable format action management of Sakes, applies and rives, and the variable format action of the same particular structures and the same particular structures. The same particular structures are structures and the structures the same particular structures and the same particular structures. The same particular structures are structures and structures the same particular structures and the same particular structures the same particular structures are structures and the same particular structures. The same particular structures are structures and the same particular structures are structures and the same particular structures are structures. The same particular structure structures are structures and the structures are structures and structures are structures are structures and structures are structures ar Kenya is under a number of institutions, including both the ncidences of malaria and bilts Water Resources Management and Development, has developed guidelines f development, operation and management of smallholder farmer-managed softh The IDD has developed some guidelines and manuals to direct the developm smallholder imgation and the process of commiter vanishization for events 3. RELIGIOUS AND CULTURAL ASPECTS 2.2. WATER MANAGEMENT Water is allocated by water apportionm various users depending on the availat duration of the permit are based on the car has to be renewed after 5 years and the pr be impated. The permit holder should on construct a reservoir to store enough water for 80 days. These two conditions are rare during the dry season and the cost for cost The predominant religion in Kenya is Christianity, adhered to by about four oppulation. Other faiths practiced in Kenya are Baha'i, Hinduism, Islam, an African religions. Today, the main Christian denominations in Kenya are Protestant confession: make up 65% of the country's religious composition. They include the Anglican of Kenya, and the Presbyrain. Reformed. Baptist, Lutheran and Pan churches. The Roman Catholic Church represents 33% of the population. African religions are typically based on natural phenomena and reverence to anceston The deal are presumed to merely transform into another state of being and capable of the deal are presumed to many transform into another state of being and capable of the deal and family or valuence to the luing. Most religious rites are therefore goodse 2.3. WATER POLICY AND LEGAL FRA The cost are pre-bringing good fortune or calamity to the liv on appeasing the dead through sacrifices of appearing to the letter. The Ki The Nile basin is shared with nine other countries The Nile Basin Initiative has been created and a St The Baha'is onew to an estimated of 308.0 accepted four hydropower and four irrigation development Ethiopia. Sudan, Ethiopia and Egypt have also adopted a str EOPOLITICAL ASPECTS (enva shares a number of rivers with oth The Umba, Mara and Pangani basir Tanzania, ...as well as qualitative description of local context

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In principle, this filter can be used by any investor/financial institution

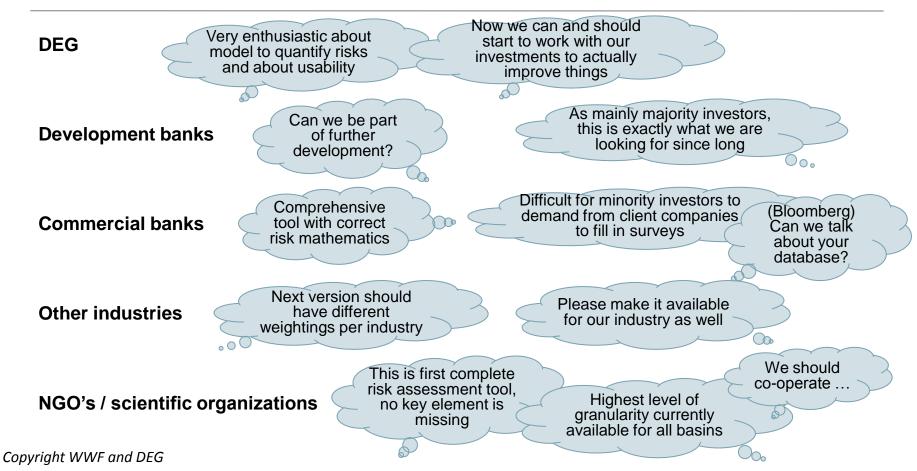
- Future versions aim for providing as much insights as possible without need of client survey
- Even minority investors can (together) demand transparency and improvements in corporate reporting

This filter can be tailored to suit specific other industries outside financial sector for assessments across the globe

• In the final phase, weightings will be adjusted per industry, and country data sets will be expanded to cover the entire world



Some of the feedback so far





Improve risk filter for use by FI's and other industries

- Underlying data sets
- Alignment on risk definitions, data sources and corporate disclosure questionnaires with WFN, WRI, and CDP
- More detailed supplier risk assessment
- Second round of testing
- From Excel to web-based application

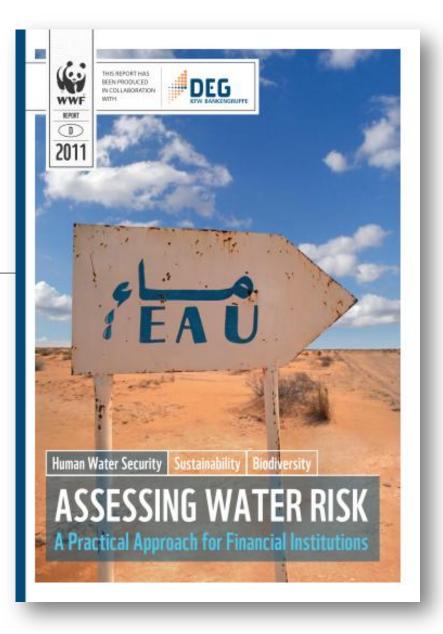
Prepare 'mitigation toolbox'

- · 'Know your risks and know what to do'
- Ranging from public policy engagement to technical assistance

Water Risk Filter and Mitigation Toolbox will be ready to be shared with other parties in January 2012



Thank you



Download the report at

http://wwf.panda.org/about_our_earth/about_freshwater/freshwater_news/?199886/ Water-shortage-becoming-growth-risk-for-business-says-DEG-and-WWF-report



APPENDIX

Water Stewardship is part of the Freshwater Network Priority

Global Freshwater Strategy

Securing water for people and nature

Keeping rivers flowing

Safeguarding representative freshwater habitats

Water Stewardship

Promoting Water Stewardship to Reduce Water Footprint Impacts on WWF's priority river basins while meeting the needs for business and agriculture development

Water Security

Promoting Responsible Water Infrastructure and Securing Sustainable Flows to safeguard hydrological regimes that freshwater flora and fauna rely on, while meeting water demands for basic needs, social purposes and economic development

Water Conservation

Protecting Representative Freshwater Habitats and where possible, to establish freshwater conservation networks in WWF's priority river basins, to secure freshwater dependant flora and fauna



Water Stewardship

Vision:

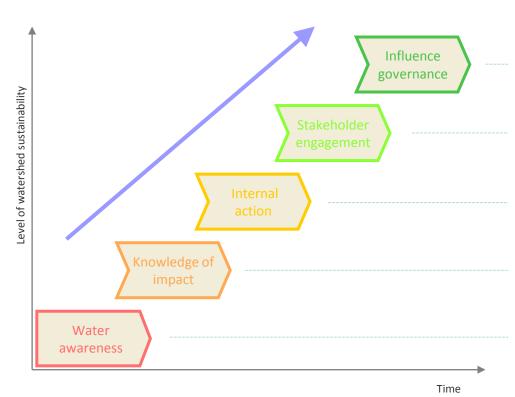
All stakeholders in our priority river basins, including an active private sector, are fully engaged in efforts to secure water for people and nature by recognizing and taking responsibility of their role in managing freshwater within the wider water cycle, and integrating the principles of good stewardship into their core (business) activities

- By reducing the impacts of their own water footprints
- By taking voluntary action to conserve freshwater ecosystems
- By participating in constructive public policy and industry standard dialogues to improve water resource management

We firmly believe that active cooperation with key private sector companies is crucial to achieve our goals



To achieve this vision, WWF has developed the Water Stewardship strategy



Ultimate goals per step for WWF:

Governments are incentivized and motivated to manage water basins in a sustainable way and are investing in improvements of the basin

Companies, governments and NGO's are engaged together in multi-stakeholder platforms to address user standards, responsibility and governance

Company has taken action to optimize internal water governance, water efficiency and measuring and reporting water quantity and quality, and to reduce pollution

Company has a detailed understanding of the impact they and their suppliers have on river basins, including identification of high risk 'hot spots'

Company has a (high level) understanding of the global water challenges, their dependence on freshwater and their exposure to water related risks



Water: moving from CSR to CEO

Water is different from for example carbon

Companies increasingly understand that insufficient amounts of good quality freshwater directly impacts company's profit

Water topic is therefore increasingly treated as a business (operational) risk, not just a reputational risk

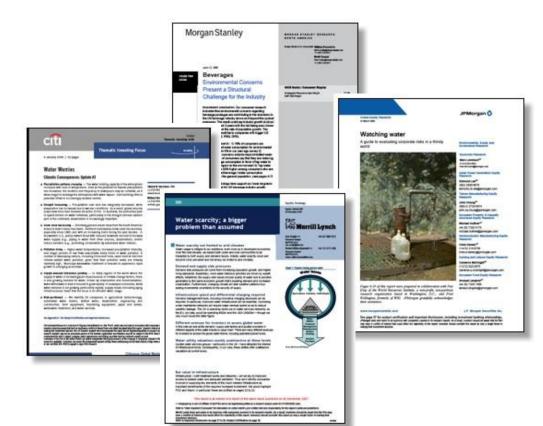
Increasing importance to companies leads to different dynamics: from CSR (marketing departments) to boardrooms...

...And more available funds to mitigate water related risks

But first... a company needs to understand their exposure to these risks



Investors increasingly demand disclosure

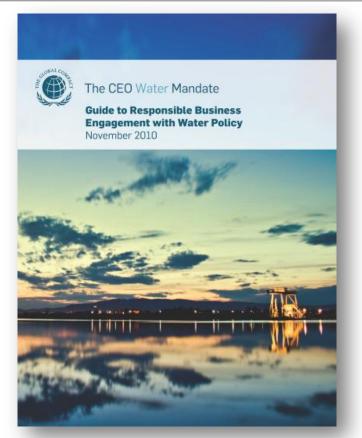


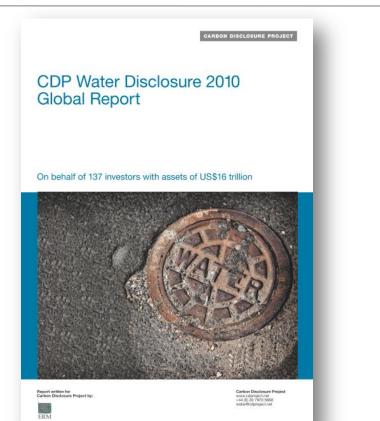
"Corporate disclosure of water-related risks is seriously inadequate and is typically included in environmental statements prepared for public relations purposes"

JP Morgan Global Equity Research, March 2008



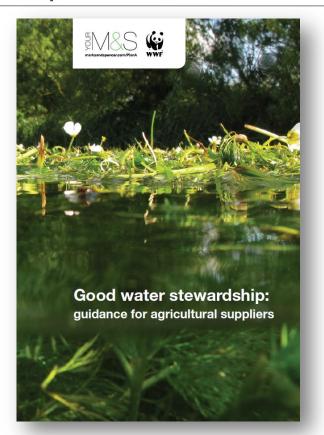
WWF is supporting initiatives which enable companies to act - examples

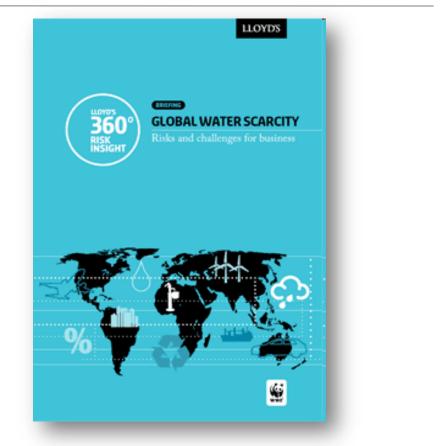






WWF is supporting initiatives which enable companies to act - examples







Global water challenges

Today we live in a water scarce world, which not only affects humans but also our freshwater ecosystems and species.

Our current global water challenges:

- Of all species, freshwater species are declining the fastest, especially in the tropical regions (70% decline of Living Planet Index since 1970)
- 41% of the world's human population lives in areas of severe water stress
- 1.1 billion people lack access to safe drinking water
- 2.6 billion lack adequate sanitation services
- >60% of rivers longer than 1000 km do not reach the sea
- Water pollution is high, especially in developing countries where up to 70% of industrial wastewater is disposed without treatment

These challenges will grow as a result of three megatrends in particular:

- First, the world's population is expected to peak at 9 billion by 2050. Already in 2025, 65% of the world's population and 1/3 of the land area will be in severe water stress due to additional food and water requirements. Most of the 3 billion additional people will live in cities in the developing world with poor water and sanitation infrastructure. Increasing water scarcity leads to increased potential for conflicts.
- Temperature increase of 1-2 degrees by 2050. Climate change results in higher weather variability, less freshwater stored in ice, more droughts and floods, and changes in the ecosystem due to higher water temperatures.
- Urbanization and rising incomes, especially in BRIC countries, leading to higher consumption patterns. To feed the larger and richer population a near doubling of water for irrigation is needed and will result in higher per capita water requirements, especially through shifts in demand for different types of food.