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Collaboration: Preserving water through partnering that works

Identifying water as a potential business risk and understanding the strategies to reduce exposure

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Contents

Executive summary 1

Why should business think about water as a risk? 2

Too much, too little, too dirty or too expensive – the implications of water issues for business 6

Managing water risks and building in resilience 7

Cooperating with users: Perspectives from the water shed 10

Collaborate to use water responsibly 12

The art of stakeholder management 17

The value of water to the economy 19

Working together to tackle water problems 21

Contacts 22

Executive summary

You are probably reading this report because you are concerned about your business' water-related issues. And you want to do something about them. You recognise that water is a precious, perhaps the most precious, resource for your organisation, and that too little or too much water will have an impact on your operations. You are keenly aware of the need for responsible water use for wider economic benefits and that you're sharing this resource with others so you're sensitive to the quality and quantity available to those around you. But you also see the bigger picture. It's not just about buying it and using it, but also managing water as it comes into and leaves your business, and what you do to it along the way. You know you can't solve the issue of water resources management on your own, or just within your industry. So you're looking to collaborate with others to do your part; to be part of something that has an even greater impact.

Welcome to **Collaboration: Preserving water through partnering that works** This is a report that helps stakeholders understand how to collaborate with a cross-section of partners, specifically to collectively work towards responsible water use.

The challenge of water management affects all of us, but in many different ways e.g. pollution, scarcity, sanitation, supply, governance, climate change, disaster threat – to name just a few. Understandably, when stakeholders come together with the best intentions to solve the problem, they have hugely differing perspectives and therefore expectations. So it's not surprising that collaboration can be difficult, even when we know it's the best approach.

In this report, we pull from a range of case studies and good examples to:

1. ***Highlight the extent of the water problem and its impact and risks to business.***
2. ***Share the differing stakeholder perspectives, to help you better understand where your potential partners are coming from.***
3. ***Explain the drivers of success that make collaboration work for the long term.***
4. ***Propose an approach for weighing up trade-offs and evaluating the best alternatives for all stakeholders.***

Whether you're a business leader, an investor in water intensive industries, a utility provider, a government official, a non-governmental organisation, or a community leader, this report can help you on your way to collaborative action.

Malcolm Preston
PwC, Global Sustainability leader

1 Why should business think about water as a risk?

Having too little, too much, too dirty or too expensive water can have devastating effects. And there's no doubt that water is fundamental to business – to heat, cool and clean. Yet, more than oil or talent, water is perhaps the most problematic of resources, due to inconsistency of supply, quality, pollution, drought and flooding.

The business world is beginning to recognise this. In the World Economic Forum's Global Risk Report 2015, water crises was ranked as the top risk in terms of impact (see Figure 1: Top ten global risks in terms of impact).

These issues have not gone unnoticed by CEOs. In PwC's 17th Annual Global CEO Survey, 46% agreed that resource scarcity and climate change will transform their business in the next five years.[2]

Figure 1: Top ten global risks in terms of impact

Top Ten Global Risks in terms of impact in 2015

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

Source: WEF, Global Risks 2015

[1] World Economic Forum, Global Risks 2015, Tenth Edition
[2] PwC 17th Annual Global CEO Survey 2014 (1300 CEOs participated)

Business leaders are right to be worried about water

40%

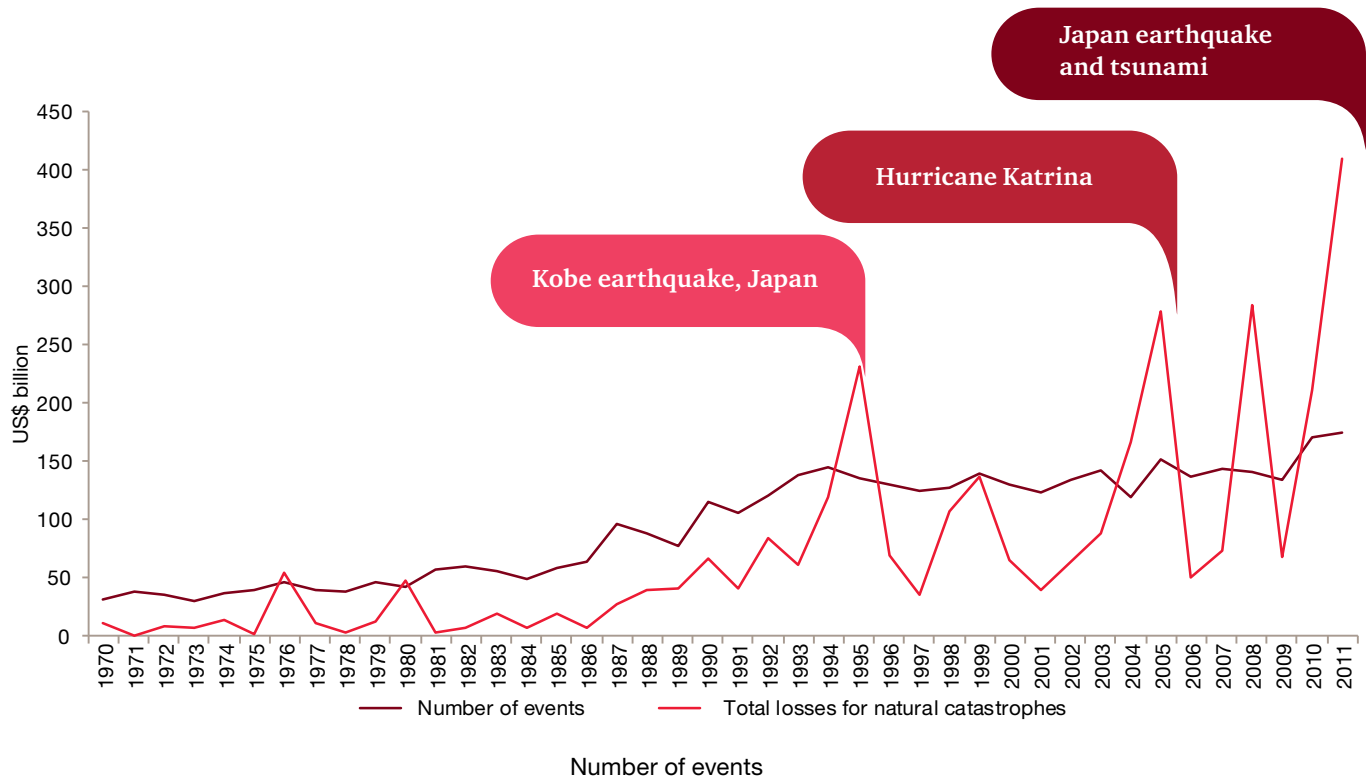
"The world will face a 40% global shortfall between forecast demand and available supply by 2030."
– World Resource Group

In 2030, 47% of the world population will be living in areas of high water stress, predicts UN-Water, and it would be safe to assume that a significant percentage of businesses will be operating here too.[3]

UN Water also say that water use has been growing at more than twice the rate of population increase in the last century. The Organisation for Economic Co-operation and Development (OECD) projects that, under business as usual, water demand will increase by 55% globally by 2050. The increase will mainly come from manufacturing (+400%), electricity (+140%) and domestic use (+130%). Add in competition from agriculture to feed growing populations and a potential 40% supply gap by 2030 seems very real.[4]

This situation can only be exacerbated by natural disasters. Based on data from between 1990 and 2000, in several developing countries, the cost of natural disasters can reach 15% of GDP.[5] Certainly insured losses are increasing, driven by a combination of a greater frequency and severity of natural catastrophes, having more things to insure and more expensive things at that, and a greater awareness of the benefits of insurance (See Figure 2: Increase in catastrophes and costs).

Figure 2: Increase in catastrophes and costs



Source: Swiss Re, Sigma explorer data

[4] 2030 Water Resources Group (2009). Charting our water future: Economic frameworks to inform decision-making

[5] World Water Assessment Programme, 2009 http://www.unwater.org/statistics/statistics-detail/en/c/211787/

What's causing the water crisis?

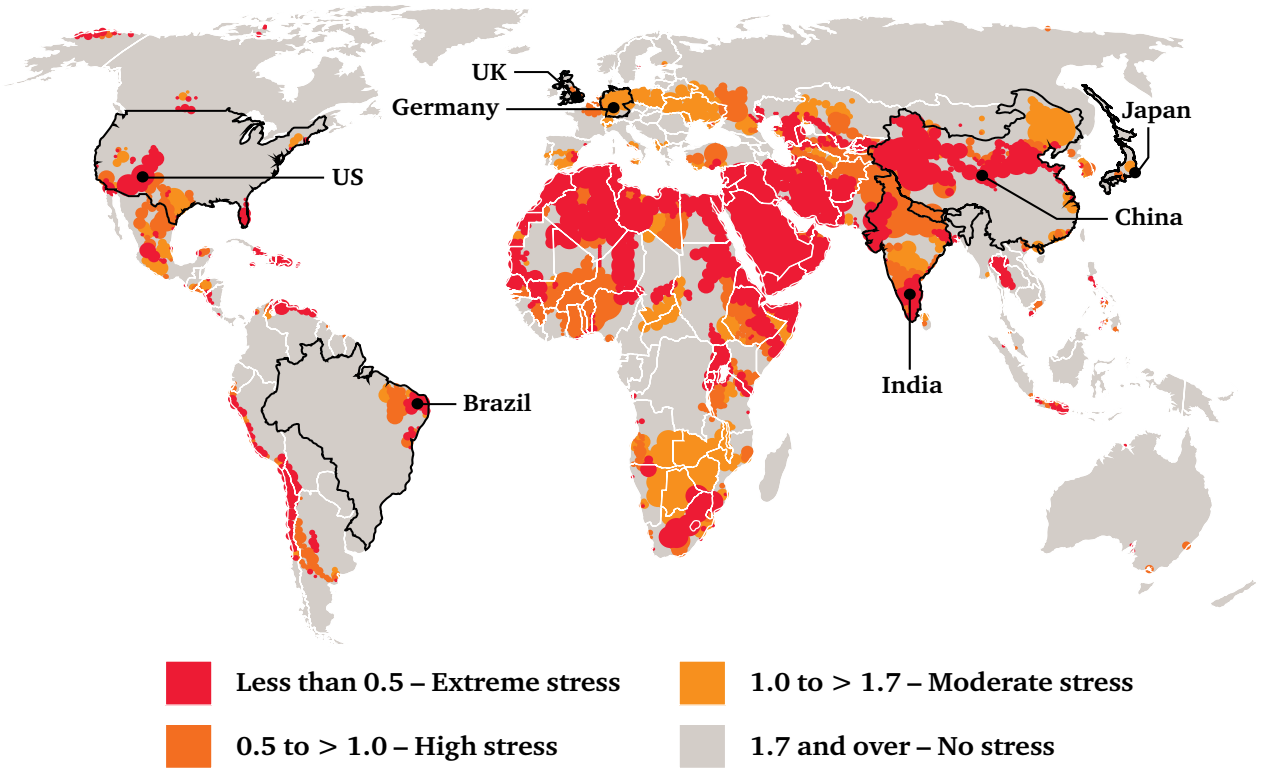
To start with, there's water stress and it's seemingly all too easy to make it worse. Water stress reflects how well the available supply meets the human and ecological demand – it includes water scarcity and quality, environmental flows and accessibility. Governments are keen to attract business to development regions and business is keen to expand to new markets. Economic development drives an interconnected demand for water through urbanisation, increased wealth and the rise of the middle classes, changing food habits and demand for beef in particular, and the need for energy. In many cases, economic development is expected in regions and countries where there is already a water shortage such as the Middle-East and parts of Africa. Figure 3 maps projected water scarcity against the areas that CEOs consider most important to their organisation's future growth.

> **"Water shortages are more pressing than climate change... The impact of water stress is one of the most important business risks for the agri-food business globally."**
>
> ***– Paul Kelly***
> the vice president for corporate affairs at Asda[6]

What's a varied diet got to do with water?

With the rise in the middle classes driving an increase in wealth, choices around diet are on the menu. Meat and dairy consumption is increasing, shifting away from starch-based foods.[7] From a water perspective this has serious consequences. Looking at the amount of water required to produce 1Kg, beef needs 15,415 litres of water compared to 2,497 for rice and 1,608 for bread. Chocolate consumption is on the rise too and this takes a whopping 17,196 litres of water to produce 1Kg.[8]

Figure 3: Projected water stress in 2050 and the top countries that CEOs consider to be most important to their organisation's future growth



Sources: 18th Annual Global CEO Survey and Centre for Environmental Systems Research, University of Kassell

[6] http://www.edie.net/news/4/Water-stress-and-climate-change-must-be--top-priority--for-businesses/
[7] Meat consumption is expected to rise sharply, UN Water at http://www.unwater.org/statistics/statistics-detail/en/c/211410/
[8] http://www.waterfootprint.org/?page=files/productgallery

> **"We have a water crisis because we make wrong water-management decisions."**
>
> ***– Peter Brabeck***
> **Chairman Nestlé[9]**

The consequences for business are obvious – not enough water, increased costs for it, disruption and financial loss, stilted growth, and the potential removal of their license to operate.[10] But business isn't always deterred by water stress – often there are higher priority reasons to choose a location or it's been dictated by history and is now too expensive to move. For example, by 2025, 25% of Ford's operations are projected to be in areas of scarcity or extreme scarcity.[11] In the US, 47% of fracking wells are in regions with high or extremely high water stress.[12]

Water stress is exacerbated by the precariousness of supply, distribution and management, as well as the climate. It may be that during certain times of the year there is no issue, but at other times all users suffer. Expansion requires the right water infrastructure; whether that's distribution pipelines, sewage treatment and waste water management, or point of use treatment technology. Often that infrastructure can't be supplied speedily enough and/or there are issues connecting it to existing systems. Overtime, as water infrastructure ages, it's at greater risk from the growing occurrence of natural disasters.

But, investing in infrastructure for water is costly. The OECD estimates that by 2025 water will make up the lion's share of global infrastructure investment. For just the OECD countries, and Russia, China, India and Brazil, water spending will top £1trillion, nearly triple the amounts needed for investments in electricity or transport.[13]

On the other side of the coin, too much water also poses its own threats, to the economy and to people. For example, $96 billion in GDP is disrupted annually by flooding and that number could increase more than five times to $521 billion by 2030.[14]

UN Water says that by 2050, rising populations in flood-prone lands, climate change, deforestation, loss of wetlands and rising sea levels are expected to increase the number of people vulnerable to flood disaster to two billion.[15] In fact, looking at just coastal flood plains alone, global simulation results on future flood damages to buildings and infrastructure put a cost on the impact, at $10-$40 billion per year today rising up to $100,000 billion per year by the end of century, if no adaptation action is taken.[16] Drastic increases in these damages are expected due to both rising sea levels and population and economic growth in the coastal zone. Asia and Africa may be particularly hard hit because of their rapidly growing coastal mega-cities, such as Shanghai, Manila and Lagos.

[9] Nestlé warns water scarcity 'more urgent' than climate change, FT.com (Pilita Clark, Environment Correspondent)
[10] http://ceowatermandate.org/business-case/global-water-trends/water-scarcity-and-unsustainable-supply/
[11] http://corporate.ford.com/microsites/sustainability-report-2013-14/water-scarce.html
[12] http://www.ceres.org/issues/water/shale-energy/shale-and-water-maps/hydraulic-fracturing-water-stress-water-demand-by-the-numbers
[13] The World Bank, Investing in water infrastructure, 2012
[14] Source: World Resources Institute
[15] World Water Development Report 2012 http://www.unwater.org/statistics/statistics-detail/en/c/211681/
[16] 'Coastal flood damage and adaptation costs under 21st century sea-level rise' published in PNAS on 31 January 2014. http://www.reportingclimatescience.com/news-stories/article/huge-flood-costs-projected-for-21st-century-sea-level-rise.html

2 Too much, too little, too dirty or too expensive – the implications of water issues for business

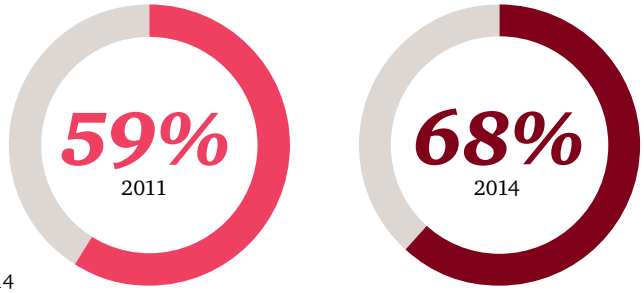
Water has a place on the risk agenda for every business, either as a direct operational issue or in the supply chain. Business needs to have effective monitoring and management in place, both from its own perspective and that of its stakeholders. Not only is production at stake, reputation and licence to operate are too, so the decisions around water have far reaching consequences.

The world as a whole isn't running out of water, but freshwater is not always available when and where people, ecosystems and companies need it. So water constraints and disruptions can translate into significant risks for businesses operating globally. Look at how Thailand's slow-onset floods in 2011 slowed global car production and hard-drive manufacture for the world's computers as supplies of components were cut resulting in economic losses of $45.7bn.[17] Or, how drought in Russia in 2010 led to restrictions on agricultural exports, causing the price of staple grains to rise across North Africa and the Middle East.[18] And then again, drought in the US corn-belt in 2012, generated an $11.6bn insured loss for insurers to deal with and saw corn prices rise by 40%.[17, 19]

These recent events are stark reminders that, often, the biggest risks, impacts and water dependencies are not associated with a company's own operations but its extended value chain around the world. Addressing this water usage challenge often requires action outside its direct control.

Figure 5: Water – a risk for business?

%FTSE 500 companies saying water was a substantive risk to business (180 responses)



Source: CDP 2014

Water risk – both a direct and indirect impact

In the US, corn production is a $65bn industry accounting for 40% of global production. But as a key commodity in the value chain of other companies, it's vulnerability to water risks has a significant impact beyond the farming community. 87% of irrigated US corn and 27% of rainfed corn is grown in regions with high or extremely high water stress. 16 industry sectors rely on US corn as a key ingredient of their products or as a market for their inputs and services – everything from fast food companies to fertilizer manufacturers to grocery retailers. In 2013, the top 45 companies in the corn value chain earned $1.7 trillion in revenue, more than the value of Australia's annual GDP.[20] The impact of water risk is therefore far reaching and is a real threat to business as usual for many companies, not just those directly affected.

"The marginal cost of water is rising around the world… Previously, water was treated as a free raw material. Now, companies are realising it can damage their brand, their credibility, their credit rating and their insurance costs."

– Christopher Gasson
publisher of Global Water Intelligence[21]

"Water now gets discussed at the board level"

– David Grant
Senior Manager for water risks and partnerships at SAB Miller[22]

"It's beginning to dawn on companies that the supply could dry up… They want to get a handle on the risks, not only within their own operations, but up and down their supply chains."

– Marcus Norton
CDP's previous Head of Water[23]

17 2011 Thailand Floods Event Recap Report Impact Forecasting–March 2012, AON Benfield
18 Global Risks 2014: Understanding Systemic Risks in a Changing Global Environment, WEF
19 America's corn farmers high and dry as hope withers with their harvest http://www.theguardian.com/environment/2012/jul/22/americas-corn-farmers-dry-harvest
20 Water & Climate Risks Facing U.S. Corn Production, Ceres http://www.ceres.org/issues/water/agriculture/the-cost-of-corn
21 A world without water, July 2014 FT.com
22 What is water worth? http://fortune.com/2014/05/01/what-is-water-worth/
23 Walking on water May 2011, http://www.theguardian.com/sustainable-business/water-footprinting-local-issue

3 Managing water risks and building in resilience

Identifying water as a risk and managing its impact on the business is the first step to becoming more resilient, but it isn't cheap. Since 2011, data from Global Water Intelligence suggests that $84bn has been spent by business around the world to conserve, manage or obtain water.[24] So where do you start to strengthen your resilience to water-related risks wisely:

- Identify and understand how ***water-related risks*** will impact your growth strategies
- Take ***action*** to reduce and better manage your water use
- Next, ***collaborate*** with the right partners for sustainable systemic resilience to water issues

Identifying water-related risks

According to the World Business Council for Sustainable Business Development, these are the main broad categories of business risks that flow from water:[25]

Financial risks

Companies without sound programmes to assess and manage their water impacts will face restricted access to capital, higher loan rates and insurance premiums.

Operational risks

Production costs may escalate, due to decreasing availability, quality, and reliability of the water supply.

Market risks

As customers and clients become increasingly concerned about their environmental impacts, companies risk losing market share to competitors that offer products with a lower footprint.

Reputational risks

Public disputes, in which corporate water use competes with local community needs, can threaten the company's license to operate.

Regulatory risks

Businesses risk new fees, regulations, and lawsuits, where their water use is seen as conflicting with the public interest.

[24] Source: FT July 2014, http://www.ft.com/cms/s/2/8e42bdc8-0838-11e4-9afc-00144feab7de.html#slide0

[25] The Corporate ESR: Guidelines for identifying business risks and opportunities, WBCSD

Taking action

The good news is that there are steps that businesses can take today to reduce their water footprint.

To help business think about the implementation of a water strategy, the Corporate Water Disclosure Guidelines: Toward a Common Approach to Reporting Water Issues (October 2014) propose a seven step approach:

Step 1

Provide, and properly maintain, drinking water, sanitation, and hygiene services in the workplace for the health and well-being of a company's workers.

Step 2

Measure and monitor water management practices
Track the extent to which direct operations use and affect water resources.

Step 3

Drive operational efficiency and reduce pollution
Implement water efficiency and pollution reduction measures that improve performance and begin to manage risks and negative impacts.

Step 4

Identify and understand water-stressed and high-risk basins
Identify and investigate those areas that are experiencing water stress or are considered high-risk.

Step 5

Integrate water management into business strategy
Think strategically about developing policies and programs to address top water priorities.

Step 6

Leverage improved practices throughout the value chain
Address water risks and negative impacts in the value chain.

Step 7

Advance sustainable water management and engage in collective action – engage externally to ensure long-term business continuity by contributing to the sustainable management of shared water resources on which the company relies.

Water management isn't an isolated activity, but sits within a community or a business district or an industrial area or an agricultural area, that ultimately sits within a shared water basin. Step 7 reflects this neatly. Engaging in collective action can take many forms (for example, information sharing, community engagement and basin-restoration projects; or working with local and regional governments). It all helps to ensure the long-term continuity of access and supply. So once all internal avenues are exhausted and the water footprint managed as far as possible by changing process and behaviour under the control of the business, what happens when there is still an issue?

Cooperating with other users

It's quite probable that with water usage and water stress increasing over the next twenty years, internal action will not be enough to cost effectively mitigate the risks of supply scarcity in some regions. Leading companies are talking to other water users and increasingly collaborate within a watershed, based on the understanding that water is a shared resource with finite volumes resulting in collective risk.

This mindset, that water is a finite resource, also needs to permeate the valuation of water too. Collaboration will be needed to understand the true cost of water and to set more appropriate pricing to encourage the behavioural change necessary for its long-term sustainability. (See 'How much do we value water?' below.)

Water affects the bottom line. Collaboration with one or more parties (government, communities, NGOs, inter- and across industries) is the way to tackle the water problem sustainably. The question is how can you find the right potential partners and establish partnerships that really work?

"… successful water management needs the cooperation of a wide network of water users, public and private institutions."

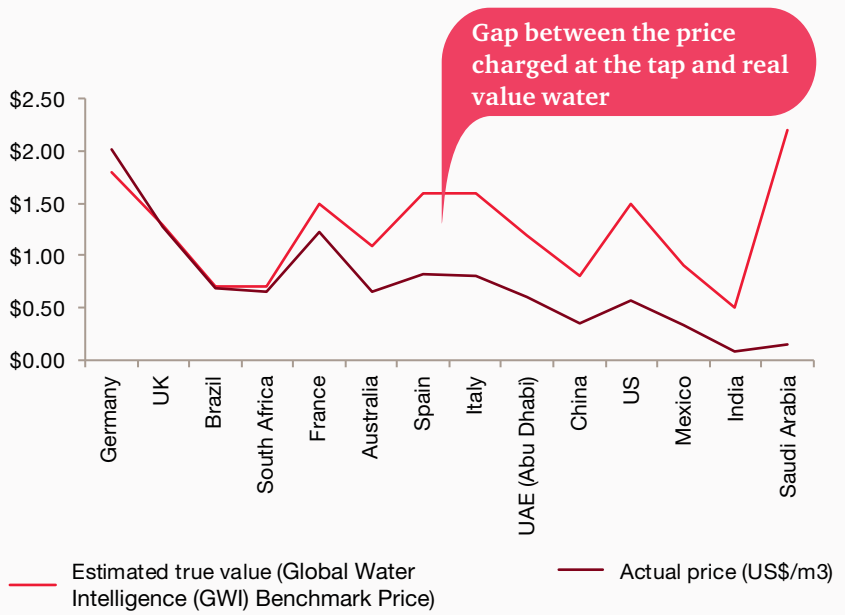
– WEF Global Risks 2014

How much do we value water?

Water is a vastly under-valued resource (see Figure 6: The real value of water). However finding common ground on how to value it to give a true price of water to users is complex and global agreement hard to secure. As users, few think about the cost of extracting, transporting, chemically treating and providing water. And then there's the cost to our ecosystems of removing water from nature, the cost of polluting rivers and so on. All of this has a price, but access to water is a basic human right, so prices are kept low, compared to the real cost.

While prices are kept low, it's taken for granted and consumption patterns are difficult to change as there is little incentive. Increase prices to reflect its true value and the reaction will be fierce, but behaviour would change.

Figure 6: The real value of water



Source: Water Asset Management

"Water as an asset class will, in my view, become eventually the single most important physical-commodity based asset class, dwarfing oil, copper, agricultural commodities and precious metals."

– Willem Buiter
Citi economist[26]

[26] Citi's Top Economist Says The Water Market Will Soon Eclipse Oil at http://www.businessinsider.com/willem-buiter-water-2011-7#ixzz3Fe0sM1xy

4 Cooperating with users: Perspectives from the water shed

Productive collaboration starts with having a shared vision of the problem that actually needs to be solved. This isn't necessarily as straight forward as it sounds. Each stakeholder group is faced with differing water challenges, questions and frustrations. With such a wide-reaching issue as water, perspectives are not only varied, they are often at odds with each other. Stakeholders need to understand what's important to each other before any fruitful collaboration can proceed.

What might each of these participants be concerned about coming into a water partnership?

The local community representative

"My demands are simple; we want enough clean water for our needs and to protect our livelihoods. But, I'm the little guy here, with a small voice. Will I even be heard? I mean, everyone listens but I don't see any action. When are we going to start seeing the changes promised? It doesn't seem fair that our local community seems to be suffering the most when we aren't at blame here. What kind of justice or compensation will we get? Do I have to do something drastic to get noticed? And to add insult to injury, will I be taxed more to pay for it?!"

The business leader

"Managing water responsibly is the right thing to do, but it's difficult to balance the trade-offs. I need to have good access to water, but also keep our energy operating costs low to remain competitive. That might mean taking some less favourable decisions, but having good community relations is essential for us, and I don't want to attract any negative PR. How can I demonstrate that we've a good story and maintain a positive reputation? This water collaboration needs to create some return on investment for all, but I'm also hoping it will help our business become more competitive if we identify some innovative approaches to water management. How can we be a catalyst for change in the partnership (and capitalise on our work), without bulldozing other points of view? If regulation is on the table, how can I engage to improve standards and get them enforced? Even if we do our part, our suppliers are part of the problem. I don't want to be found responsible for their actions, so how do we manage them? Have we really explored all the options open to us? I am running a business at the end of the day not a charity, so how do I balance my needs with the community? How do I get stakeholders to not only come to the table but come with flexibility to agree a way forward (even if it's a compromise for all of us)?"

The small business owner

"My business is suffering because of the big guys. I've been told to find ways to reduce my water usage, but shouldn't it start with them? And anyway, it all costs, but I don't know if it will really make a difference to my business and I don't have the money."

The non-governmental organisation

"I need to find a way to restore harmony between competing needs, perhaps by focusing people on protecting and conserving what we have for future generations. What water legacy do we want to leave for future generations anyway? I don't have a vested interest – I just want to make companies accountable, get them to listen and do the right thing. I have robust data to share and can size the problem. How can we get governments to intervene and so keep us all headed in the same direction?"

The government official

"I want our region to remain attractive to business to spur growth and for people to prosper. We have to have the right kind of businesses though; those that encourage good growth, good for our environment and people, not growth at any price. I need to find out what voters want – elections are coming up after all. Water regulation seems to be the way forward, but do businesses want this? What will regulation involve? How will we enforce it effectively to change behaviour? Do we have the enforcement capacity? Implementing inspections and fines is expensive to set-up and run so how will we fund it? Increasing taxes is likely to annoy businesses but the days of incentives have passed, and diverting taxes from other priorities might upset citizens. Is there another way – should we be more visionary than just regulation? What are other countries doing and how can I get access to best practice? Maybe we need to get back to basics, and the source of the problem. We're storing up problems, but the community can't be expected to pay to clean up the mess that industry has left behind – it needs to be held accountable for historic bad behaviour as well as today. "

The utility provider

"How can I supply water to all these users at the right price? We desperately need to invest in the infrastructure now, but water prices are low, and regulated, so I can't really afford it yet. What can I do to influence water price-setting? I understand that investing in our natural capital and ecosystems is important, but how do I start? What role should I play, compared to government in setting policy? How do I handle the new policies coming out? How will privatisation/nationalisation affect us? Who can help us educate customers on sustainability and demand management? How do I manage customer expectation and keep my reputation in tact? "

The regulator

"I want to help business prosper, but it has to be done by the rules. It may cost more but that way it's fair and we're better able to manage water as a resource for our people. It's difficult to define the rules and time consuming to ensure compliance, but working with business and the community means we can put a practical system in place. I need to be able to trust my team though, bribes are all too common and it undermines our purpose and the people's trust in us."

The banker

"I'm being asked to make loans for water improvements, but the customers aren't a natural good risk, they're either small or have no track record. I want to make sure I get my money back and it's a good business for my share holders."

The financial investor

"I don't think I know the water risk exposure of my portfolio of companies – how can we influence more transparency in water disclosure? What benchmarks can I use to analyse companies? I'm just not convinced they're factoring water risk into their financial projections."

Coming to the table with inflexible views and a fixed agenda will not induce the right conditions for a successful collaboration. Taking time to understand and accept the differing, but equally valid perspectives and values of others around the table will engender respectful conversation early on.

5 Collaborate to use water responsibly

Start off on the right foot

- Right partners
- Strong government support
- Right skills
- Shared long-term vision

Get the system going

- Agreed workstreams
- Confirm buy-in
- Stakeholder interests
- Staff
- Pilot
- Policies and procedures
- Contingency plans

Strengthen the glue

- Equity and inclusiveness
- Mutual respect
- Funding
- Mutually agreed upon information
- Open regular lines of communication
- Transparency

Maintain momentum

- Independent facilitation and governance
- Achieving incremental milestones
- Sharing success and positive stories
- Give and take
- Strong leadership

Multi-stakeholder collaboration is heralded as the best approach, but realising that you need to work with others to resolve the water challenge is the easy part. Who are the right partners? How can you come to a collective vision of success from so many perspectives? How will you maintain momentum? What challenges are you likely to face and how can you overcome them? How can everyone agree and ultimately accept a compromise?

Example: Getting the right partners to the table

With too much water extraction and declining water quality, ***all key stakeholders involved in the use, management and regulation of water united*** to form the New Zealand Land and Water Forum to find ways to address New Zealand's water management issues. Stakeholders included industry groups, environmental and recreational NGOs, Maori communities, scientists and other organisations with a stake in freshwater and land management. The Forum's members were joined by active observers from local and central government.

For the full story, visit pwc.com/water.

In the next section, we'll outline some of the key drivers of success, drawing from a number of water collaboration examples as well as PwC's experience working with clients.

1. Start off on the right foot

A collaboration effort is a coming together of people who are genuinely interested in achieving something together that brings benefit to all. As you initiate your collaboration efforts, ask yourself: Who are the right partners, with the right skills? What is our shared, over-arching, long-term vision? Do we have similar interests in participating, and are we truly committed? Can we get strong government support?

Getting the right partners at the table from the beginning is essential. The right partners are those groups who in some way can impact or are impacted by the water issue at hand. Each stakeholder group holds part of the answer to the puzzle in their hands, and has something to gain by being part of finding the solution collectively.

Strong government support can help pave the way to success. When Singapore prioritised becoming truly

water self-sustainable, the government not only took leadership in setting the vision, it also took a very active role. It ensured collaboration across government agencies, and between government, industry and academia. It managed demand and supply side issues relating to water usage by organisations and citizens. It managed the demand and technological risk associated with new water technologies to encourage private sector involvement and expertise confidence. It also invested heavily in R&D and technology. Consequently, Singapore has become internationally recognised for its water expertise.

Having the right skills or other resources in the collaboration is critical. Business management skills and technology skills are always useful and, perhaps too, people with connections to others who can help the collaboration.

Establishing a shared, long-term vision early on is also a key success factor. A vision that is set in the context of the wider economic development picture will capture hearts and minds and help keep the partnership focused on the positive long-term outcomes stakeholders strive for. While the vision should take into account the desires of the participating stakeholders, it will transcend all group concerns. The vision should also be a unifying force to help resolve future conflicts should they arise.

Agreeing specific outcomes really sets the stage for the team to develop action plans and work streams once the collaboration gets going.

With the collaboration vision set, all stakeholders need to confirm their buy-in for the long-term. What is their commitment to the mission? How much time can they give to it? What does the organisation they represent expect to get out of their participation and investment? How can they act on behalf of their organisation?

"Water is not a sector – but a connector.... Cooperation between stakeholders is necessary ... It is essential to more powerfully engage this large, diverse, and thirsty stakeholder group in the discussion and management of water as the world faces growing water scarcity."

World Water Week 2013[27]

[27] http://www.worldwaterweek.org/documents/WWW_PDF/2013/2013-Overarching-Conclusions-web.pdf

2. *Get the system going*

Successful collaborations don't just happen by themselves – they are complex systems that need planning and co-ordinating. As you begin, ask yourself: What frameworks will we work within? What kind of structure will the collaboration take? What policies do we need? What are the immediate priorities? What work streams and action plans need to be set up to achieve those? Do we have enough tools, people and funding?

In a new organisational constellation with new partners, it's not easy knowing what funding, staffing requirements, contacts or other resources are necessary. Other successful approaches have started with a pilot study, to test the waters. In New Zealand, the Waikato and Bay of Plenty councils came together to create an assessment of their river management and flood protection activities. This then became an input to a nationally consistent river management assessment framework.

Early on, contingency plans need to be established for any number of disruptions. Conflicts are likely to occur, stakeholders may abandon the effort, some parties may partake in bribery and corruption, the very natural disasters that cause water crises might strike unexpectedly. These are occasions that create much tension and emotion. Being ready for them will help ensure the resilience of any collaboration efforts.

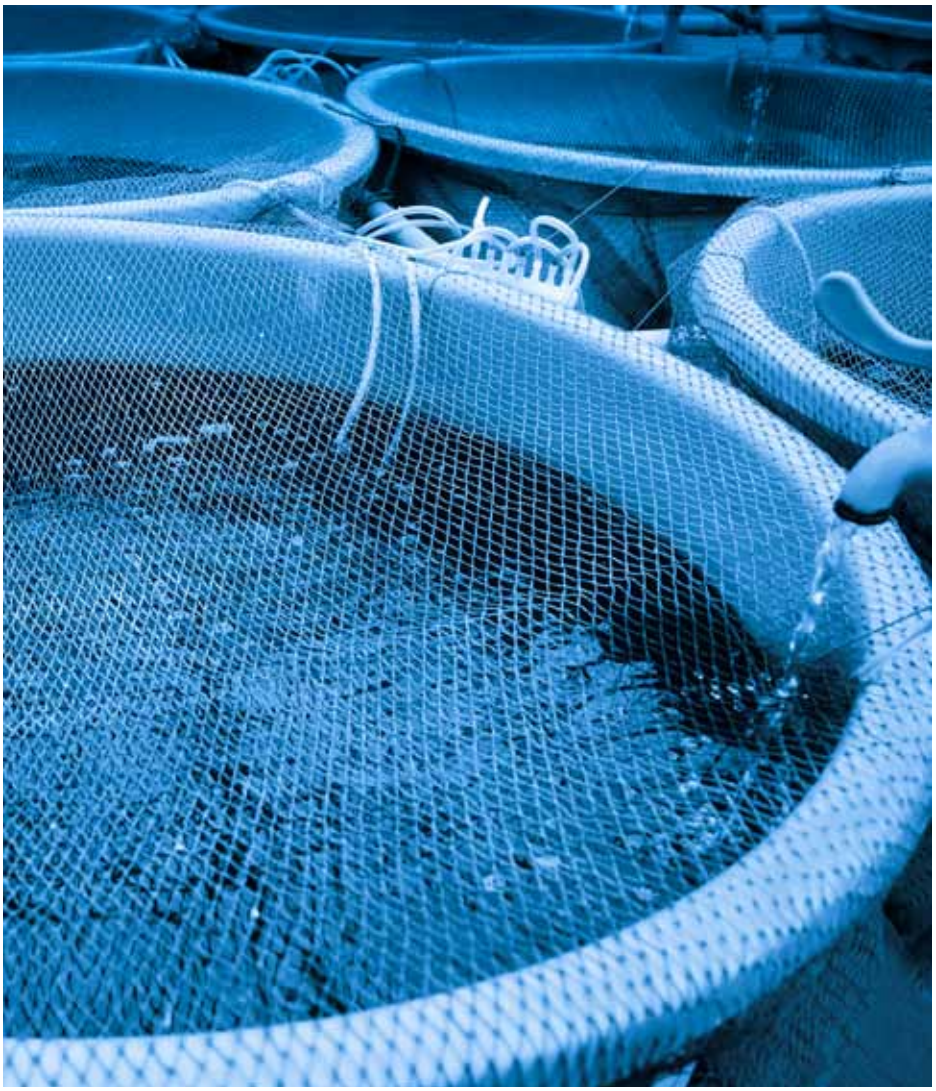
"Business has a critical role to play in applying its expertise and experience in developing, implementing and scaling-up, through partnerships, watershed focused solutions. Over the next 20 years, a broader focus on water management beyond the "fence-line" – outside the company – is needed by businesses to ensure the sustainable use of one of the world's finite resources."

WBCSD[28]

Example: Get the system going

In India, one company is seeking ways to become water neutral, comply with regulations as well as improve local communities' perception of its water related activities. The company's employees, external hydrology subject matter experts, local NGO's, local communities and relevant government land and water agencies are collaborating to initiate watershed interventions across the country. ***Engaging various stakeholders on a common platform was a major challenge.*** So it developed its own Integrated Watershed Management Programme (IWMP) to support the collaboration. The programme involves: a common framework for capturing diverse issues; an organisational structure; process mapping of proposed activities of the communities and government; and assignment of responsibilities.

For the full story, visit pwc.com/water.



[28] Sharing Water: Engaging Business, Why watershed approaches are important to business sustainability, WBCSD

3. *Strengthen the glue of collaboration*

Effective collaboration is based on trust. Putting the principles of equity, transparency and mutual respect at the centre is the way to unlocking respect, trust and sustainability; the glue of the collaboration. As the collaboration proceeds, ask yourself: Are we being open and transparent in our communications? Are members feeling supported? Are discussions generally happening respectfully? Is information easy to find and understand?

At its very core, successful collaboration depends on equity and inclusiveness. All voices should be heard and given equal weighting, all parties shown mutual respect, and asymmetry of power needs to be avoided. Typically, groups such as local farmers or local communities can feel marginalised which will break the trust in the collaboration.

Clear, mutually agreed upon information is critical to success. A well-functioning collaboration will maintain open, regular lines of communication, and there will be equal transparency to all information and decisions made for all participants. This is a foundation for building trust and collaborative relationships between stakeholders who may previously have seen each other as opponents. Think about competitors coming together in a cross-industry collaborative effort. How likely are they to share best practices or be willing to transfer technology if they don't trust other stakeholders? They are more likely to adopt delay tactics, or question each other's motives.

Example: Strengthen the glue of collaboration

When cotton farmers in India were encouraged to replace flood irrigation with drip/micro irrigation systems to decrease water consumption, ***inclusiveness*** paid off. The collaboration involved the farmers themselves, global textile and furnishing brands, international development institutes, irrigation companies, financial institutions, other cotton value chain players such as spinners and traders, local and national governments and NGOs and other agencies working with farmers. Instead of having the smallest voice, the farmers' concerns were placed at the centre. The collaborative work started with a study to establish farmers' reasons for not adopting the systems. The main reason was lack of funding. In response to this, funding was made available to 300 farmers in the pilot areas, enabling them to adopt the water-saving irrigation systems. This case also highlights the importance of having enough funding to achieve collaboration goals, as mentioned earlier.

For the full story, visit pwc.com/water.

4. *Maintain momentum through motivation and measurement*

The last thing you want is for efforts to start to slow down, or fizzle out. Keep the momentum up by holding stakeholders accountable and celebrating progress. Ask yourself: What metrics are we using to monitor progress? How shall we celebrate success along the way?

In many of the successful cases, independent facilitation and governance has kept projects moving in the right direction. The role of an independent facilitator can be fulfilled by a range of different parties – NGO's or external business consultants are often used, and in the case below, it's a government body.

At the end of the day, a good collaboration requires give and take from all parties for the sake of a common, long-term shared goal that nobody can achieve alone. A strong leader will greatly influence the process and progress. They will make sure all perspectives are heard and understood, they will moderate through fixed and inflexible views, ensure alternative solutions are found and common ground built upon.

Example: Maintaining momentum

In central and western India, farmers had started harvesting the ground water for agricultural and domestic needs. This ground water usage was so extensive that in the last few decades there has been an alarming decline in the water table. A number of local groups – farmers, government, training centres, funders, geological experts, farming technology providers – are collaborating to preserve the current water table and yet provide water access for domestic and agricultural needs.

Reporting success

As incremental milestones were achieved, **sharing successes and positive stories helped stakeholders start to feel the change and benefits**. In a process that spanned 15 years, the project was split into the following milestones:

- One farmer successfully runs a pilot showing higher returns with less water.
- Group of farmers organise to participate in next phase.
- Water harvesting infrastructure built.
- Weather measuring infrastructure set up, frequent monitoring of the ground water table rise starts.
- Annual ground water availability from rains received in the region estimated.
- Farmers reskilled to alter farming practices to maximise returns based on available irrigation water and soil type.

For the full story, visit pwc.com/water.

An independent view

- Part of this project's success was the **involvement of an independent facilitator** and their alternative perspective. The government meteorological department provided technical expertise and also helped to drive the project forward to achieve its logical conclusion.

For the full story, visit pwc.com/water

6 The art of stakeholder management

As most of the cases illustrate and as our experience shows over and over, managing the desires of a diverse group of stakeholders, and keeping focused on the common ground, is always a challenge. When each stakeholder looks at the water problem from their own stand-point, it's difficult to objectively quantify the problem, identify water solutions, take optimal decisions, and balance trade-offs.

One way is to step back and look at the bigger picture. Adopting a total impact approach allows the positive and negative impacts of different water management scenarios to be clearly valued and presented. Impacts that are material to the decision in hand are identified and quantified – these might cover environmental, social, economic and tax impacts. Rather than viewing through a singular lens or a personal perspective, stakeholders are able to see the impact in its entirety and better understand the implications and trade-offs between different scenarios.

This common approach brings greater transparency to the decision making process and better enables the group to choose a way forward that would lead to the optimal decision.

PwC developed the Total Impact Measurement and Management (TIMM) framework with this in mind. It helps all stakeholders explore the impacts of an operation or an investment decision, and it can help in creating a more holistic view of the total impact of a new strategy.

It's the ability to assign a monetary value to both individual and aggregate business impacts that is crucial here. And it's not just the inputs and outputs that are measured, the outcomes and the impacts are measured too, so capturing the value of wider effects. It means that like-for-like assessments and comparisons can be made as all impacts are ultimately monetised, and it's easy to see the trade-offs. (See 'Engaging stakeholders' on the next page.)

We are living in a time when technology and data analytical capabilities allow us to more accurately model and document different scenarios. Such an approach is invaluable for underpinning communications outside of the collaborating partnership. If parties that haven't been involved question decisions that are made, the partnership can justify decisions by referring to its process of assessing long-term impact on all the different stakeholder groups.

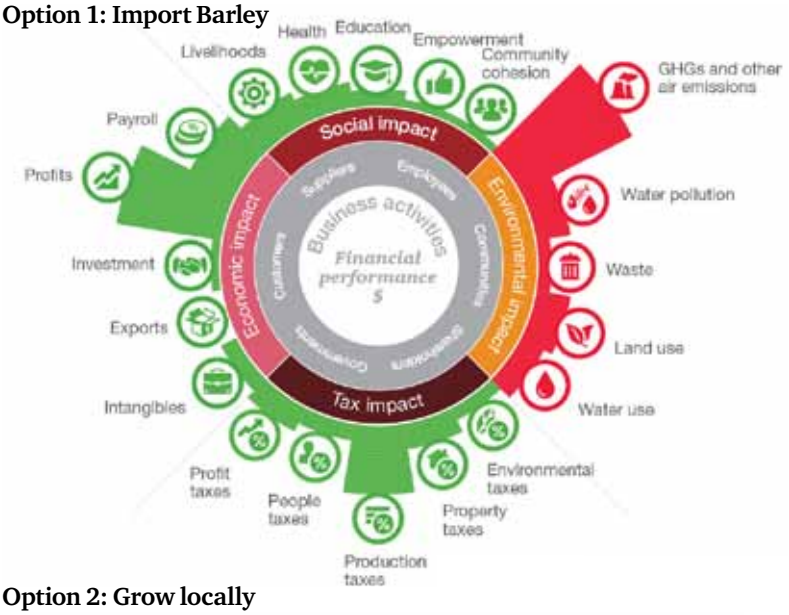
When you have an agreed set of metrics based on outcomes, and can quantify the impact of decisions on all parties involved, you're forced to put yourself in other stakeholders' shoes. It enables inclusivity, respect and empathy – cornerstones of every successful partnership that can also decrease emotion and tension.

Engaging stakeholders

It's impossible to please everyone all of the time, but it is possible to identify the optimal approach to address a problem, a useful starting point for any discussion with stakeholders about change. PwC's Total Impact Measurement and Management approach allows impacts (negative as well as positive) to be measured and valued. So when it comes to decision making and weighing up the pros and cons of different options, it's easier to see the merits of viable options.

Example: A brewer in Africa is looking to expand into a new market. It could import barley or grow an alternative crop locally – the choice has significant consequences for water usage for the local community.

Option 1: Import Barley



Option 2: Grow locally

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With a monetary value calculated and assigned to each impact, the impacts can be compared and the trade-off between decisions established. At first glance, the high water usage generated by growing the crop locally looks untenable. Water stress and scarcity in Africa is a real problem, driving up the true value of water. But it becomes a decision to discuss with the local community, because it's apparent that there are benefits to be had that might offset the reduction in water availability to some extent – boosted livelihoods, health, education, empowerment and community cohesion. Understanding what's important to the community and how water can be shared and distributed equitably, is an important factor in the decision making process.

Source: Measuring and managing total impact – strengthening business decisions for business leaders, PwC 2013
Find out more, visit www.pwc.com/totalimpact

7 The value of water to the economy

Collaboration is not always easy, but coming together to solve water challenges is worth the effort and can lead to additional benefits.

Driving innovation and behaviour change

Collaboration can lead to innovation opportunities that bring competitive edge and growth. In the retail and consumer industries, for example, some companies are collaborating more closely with consumers to understand how changed water consumption might impact the way their products are used – some are even identifying new products requiring less water at the point of use. Companies in the chemicals sector are also working with clients to develop products that save water. For businesses, collaborating to resolve water issues opens opportunities for their supply chains, operations and clients.

Driving new markets

Partnership that works well can become more than a platform for solving the major water crisis at hand; it can also be a prototype for other efforts. In the case of Singapore's water management journey, its success was not only in nearly reaching complete self-sustainability, but also in the unique way it managed to convert a potential vulnerability into opportunity. The country is increasingly seen as a model of sustainable water management and is today home to approximately 130 local and international water companies and 26 research institutes operating in a vibrant ecosystem. Many of these Singapore-based water companies have successfully exported water expertise to key overseas markets such as China and the Middle East, and have secured more than 100 international projects between 2006 and 2012.

Organisations weighing up whether to participate in collaborative efforts to address water-related business risks would do well to factor in such potential unexpected positive outcomes. Co-operating with new partners is more than risk management, more than being a good corporate citizen. Approached right, it's the doorway to new thinking and fresh ideas, to longer-term innovative solutions that also deliver positive economic impact and growth.

Driving regional prosperity

The positive economic impact is huge. Access to safe drinking water and basic sanitation services spurs social, economic and environmental benefits. According to HSBC and Frontier Economics:[29]

- Several developing countries in Africa and Latin America stand to gain the equivalent of 5% or more of their annual GDP as a result of reaching the Millennium Development Goal (regarding sustainable access to safe drinking water and basic sanitation). This share trebles to an average of more than 15% of annual GDP if the target is expanded to universal access.
- In 2010, the ten most populated river basins in the world were home to more than a quarter of the world population and generated almost 10% of global GDP. Based on current GDP and population growth forecasts, almost a quarter of global GDP could be generated in the ten most populated river basins by 2050. But only with careful management of scarce water.

Driving resilience

There's another upside to collaborating to solve the water crisis regionally, namely disaster resilience. Good partnerships will have defined plans and processes for responding to water disasters, be they flood, drought or pollution. Thinking about possibilities for the future, collaboration helps stakeholders take a longer term view so that investment in time, money and resource happens only the once. Other partnerships may exist solely with disaster-resilient water infrastructure as their main objective.

But perhaps more implicitly, by partnering and working together, different stakeholder groups get to know each other, open up lines of communication and establish trust. This might prove invaluable, even life-saving, if and when major disasters happen, when speedy recovery relies on speedy decision-making in those moments that matter.

[29] Exploring the links between water and economic growth HSBC & Frontier Economics: June 2012

8 Working together to tackle water problems

Collaboration isn't easy but it is essential for solving the global, systemic water crisis sustainably. Businesses and industries need to come to the table – they are major users, providers and polluters, for instance:

- 15% of the world's total water withdrawals are used for energy production, according to the World Water Development Report 2014.[30]
- In developing countries, 70 percent of industrial waste is dumped untreated into waters where they pollute the usable water supply, says the World Water Assessment Programme.[31]
- In industrialized nations, industries consume more than half of the water available for human use. Belgium, for example, uses 80% of the water available for industry.[32]

But above all, businesses are powerful change agents. They have access to invaluable resources such as technology, R&D, finance and networks and can tap into innovation to smooth collaboration and change behaviour.

So how can PwC support your collaboration initiatives? We have experts working with utility companies, NGOs, government and business all discussing water issues and risk reduction all of which gives us a great perspective especially when we bring this experience together. We can help support you explore the way forward for your project:

- Bringing together different stakeholders from industries, NGOs, government, regulators etc.
- Acting as independent facilitators and providing governance to collaborations.
- Advising on measurement and metrics to reflect milestone achievements.

In addition our experience, makes us well placed to:

- Help business figure out new ways to produce goods and services requiring less water.
- Work with utility companies to put a true value on the price of water.
- Work with regulators on policies and regulations that encourage careful water management.
- Work to help businesses assess their water footprint (including their supply chain).

30 UN water statistics: http://www.unwater.org/statistics/statistics-detail/en/c/211818/
31 UN water statistics: http://www.unwater.org/statistics/statistics-detail/en/c/211800/
32 http://www.worldometers.info/water/

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If you're now keen to understand and manage how water issues may be impacting your business or want to manage your business' water consumption more effectively, please do get in touch:

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