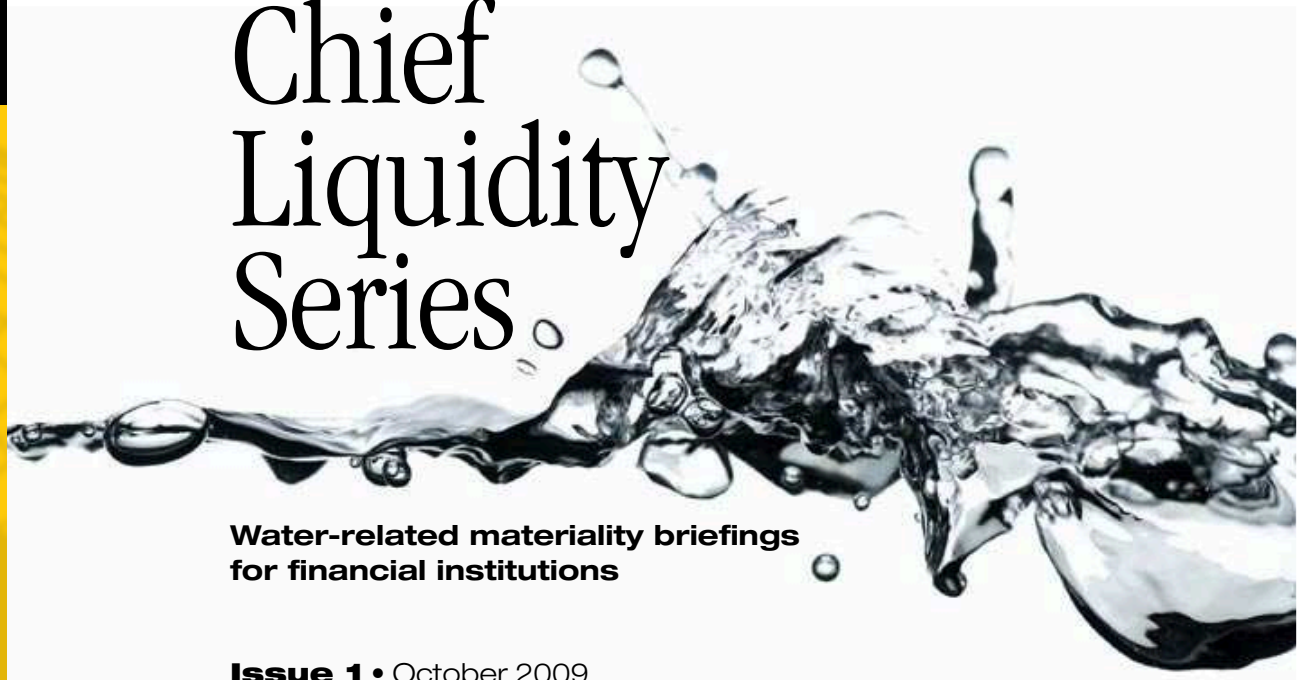
UNEP Finance Initiative
Innovative financing for sustainability

UNEP

Chief Liquidity Series



Water-related materiality briefings for financial institutions

Issue 1 • October 2009

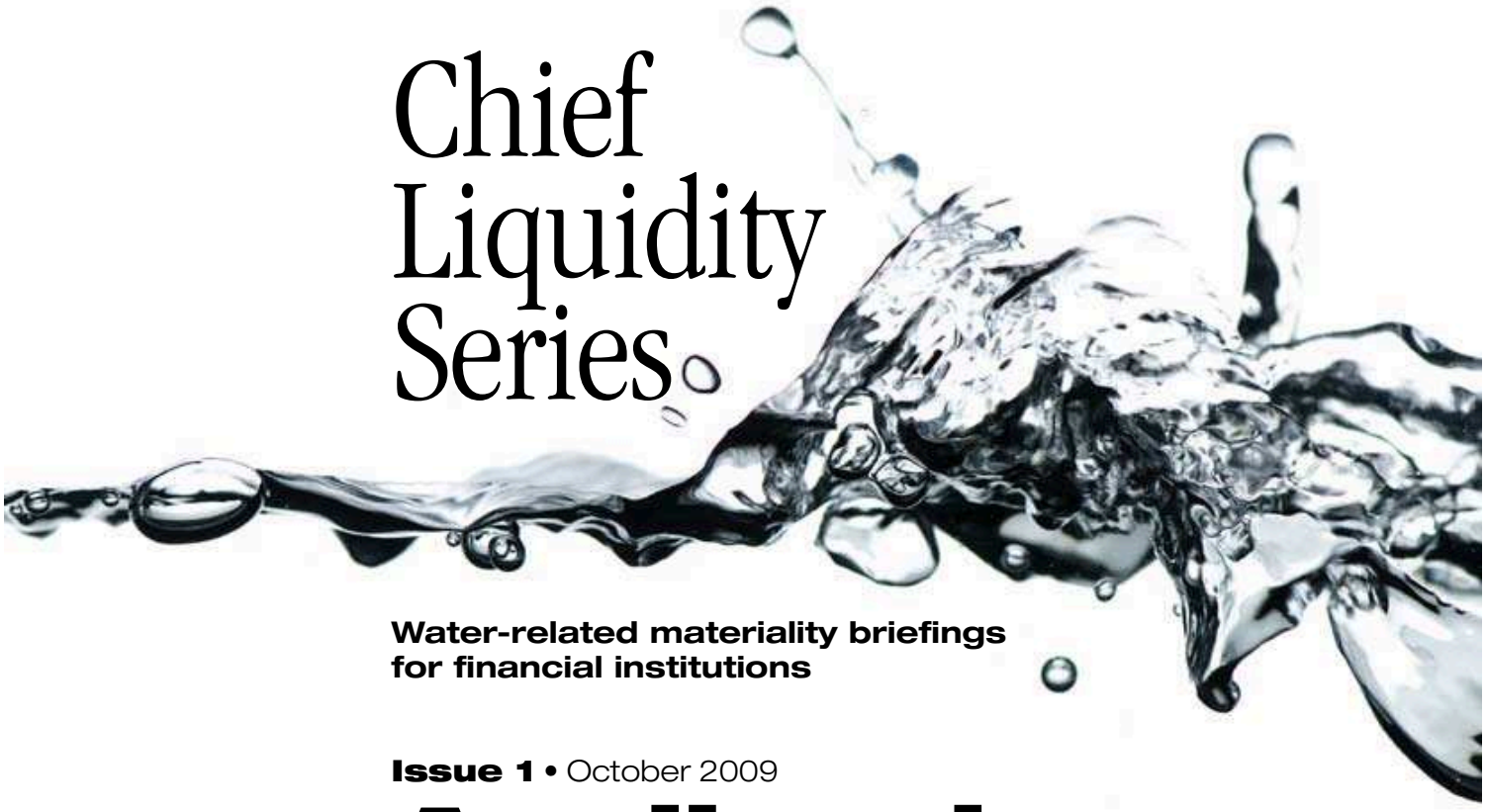
Agribusiness

Geographies
Australia
Brazil
India
Mediterranean Basin
(Morocco, Italy, Greece)
South Africa

Local guidance on a global issue
A briefing series by the Water & Finance Work Stream of the United Nations Environment Programme Finance Initiative

UNEP **Finance Initiative**
Innovative financing for sustainability

Chief Liquidity Series



Water-related materiality briefings for financial institutions

Issue 1 • October 2009

Agribusiness

Geographies
Australia
Brazil
India
Mediterranean Basin (Morocco, Italy, Greece)
South Africa

Prepared for UNEP Finance Initiative by

ARUP

Design: Rebus, Paris

Published in 2009 by UNEP FI

UNEP Finance Initiative
International Environment House
15, Chemin des Anémones
1219 Châtelaine, Genève
Switzerland
Tel: (41) 22 917 8178 Fax: (41) 22 796 9240
fi@unep.ch
www.unepfi.org

Contents

The UNEP FI Water & Finance Work Stream

Institution	Country
ANZ	Australia
ASN Bank	Netherlands
Banco Santander Brazil	Brazil
BMCE Bank	Morocco
Brazilian Development Bank (BNDES)	Brazil
Calvert	United States
Citigroup	United States
Connexis	Switzerland
Development Bank of Southern Africa (DBSA)	South Africa
IL&FS	India
Insight Investment	United Kingdom
Intesa SanPaolo	Italy
mecu	Australia
Nedbank	South Africa
Nordea	Sweden
Piraeus Bank	Greece
Rabobank International Brazil	Brazil
Rabobank Group	Netherlands
SAM	Switzerland
Standard Chartered Bank	United Kingdom
Stockholm International Water Institute	Sweden
UNEP Regional Seas	Global (based in Kenya)
UN Water	Global (based in Italy)
VicSuper	Australia
Westpac	Australia

The WFWS Project Team

Core Committee
Franz Knecht, **Connexis**
Peter Vos, **Rabobank**

Australia Committee
Dion Smith, **ANZ**
Damien Walsh, **mecu**
Emma Herd, James Sanguinetti, **Westpac**

Brazil Committee
Chris Wells, **Banco Santander Brazil**
Marcio Costa, **BNDES**
Daniela Mariuzzo, **Rabobank Brazil**

India Committee
Alex Barrett, **Standard Chartered**
Eliza Eubank, **Citigroup**
S. Prakash, **IL&FS**
S. Venkatraman, **Rabobank India**

Mediterranean Basin Committee
Soraya Sebti, Hicham Oudghiri, **BMCE Bank**
Silvia Scopelliti, **Intesa SanPaolo**
Dimitrios Dimopoulos, Prokopsis Gavriil, **Piraeus Bank**

South Africa Committee
Elsa Kruger-Cloete, **DBSA**
Vicky Beukes, Brigitte Burnett, **Nedbank**

Foreword from the United Nations Environment Programme (UNEP) Finance Initiative

As the colour green finally starts to earnestly root itself in the consciousness of virtually all layers and trends of society, the colour blue is still struggling to get the consideration it deserves. It is crystal clear, however, that there cannot be a sustainable world economy – as 'low-carbon' and 'eco-friendly' as it might hopefully get – without it being a "water-sustainable" economy as well, able to create jobs and generate well-being while at the same time preserving natural water resources for communities and ecosystems to thrive. We are unfortunately now far removed from this as current human water consumption and its unprecedented ongoing growth continues to leave deep trails: on average, freshwater species populations have fallen by about 50% between 1970 and 2000, representing a sharper decline than that measured in either terrestrial or marine biomes; since 1900, more than 50% of the world's wetlands have disappeared; at the same time 1.1 billion people lack access to water and 2.6 billion lack adequate sanitation services.

What is needed as a first step towards a more water-sustainable future is a replication of the carbon journey: the global water crisis needs to take centre-stage just as climate change has – it needs to become a priority on the agendas of governments and regulators; it needs to be taught at primary schools as much as at business schools. Products and services need to benchmarked, rated, and differentiated according to the amount of water they appropriate in the course of their life-cycles; and it should become an ongoing topic for the media at all levels. Most importantly, water issues need to be considered as what they are: a unique and scarce economic resource with complex links to social and ethical issues.

Water is a fundamental raw input to numerous industry and business sectors – such as agro-industries, chemicals and pharmaceuticals, food processing, iron and steel, oil and gas, power generation, textiles and tourism – and both quality and security of supply are essential for economic activities to thrive. For the broader industry and business community, concerns around water, exacerbated by the global warming impacts on natural water cycles, are growing. How will financial institutions play the deadly serious water game in the decades to come as the water fundamentals shift in the sectors that they finance and invest in? This is the central question addressed by this Series of Briefings to on-the-ground practitioners in financial institutions around the world.

The members of the UNEP FI Water & Finance Work Stream converged from different geographies around the world to conceptualise and develop this very user-friendly Briefing with the aim of offering financial institutions the expertise required to effectively manage water, and ensure that financial institutions understand the global water challenge and act locally to make a global difference.

Water is local: solutions to water issues must be local too.

Paul Clements-Hunt
Head of Secretariat
UNEP Finance Initiative

Foreword from the UNEP FI Water & Finance Work Stream (WFWS)

Water has already become one the most disputed resources of the 21st Century. It is clear that, globally, water supplies are limited, requiring careful and constant management by all stakeholders to strike a balance between various needs. There is the need to provide basic water services to all people; there are needs arising from economic development, and there are needs relating to the preservation of ecosystems and the environmental sustainability of water resources. In addition to these competing needs, climate change will alter precipitation patterns and make water availability more erratic in many regions of the world, including those that already today face serious water constraints.

In the centre of the global water scarcity challenge are, among others, the production processes of businesses – or their value creation chains – that provide the basis for the economic well-being of societies. Continued population and economic growth as well as global aspirations to enable better standards of living to all, continue to quickly increase the number and length of such value creation chains – and with them, the size of their water footprints: already today global human water consumption grows at twice the speed of global population growth. Therefore, if the various needs outlined above – those of communities, the environment and businesses – are to be simultaneously satisfied, while sustainable economic growth and the eradication of poverty upheld, the way forward in tackling the global water challenge is clear: our production processes have to become more "water sustainable" – more water efficient and less polluting. As financiers and hence key enablers of production facilities, financial institutions have a significant role to play in the path towards more water sustainability. With this Series of Water Materiality Briefings our aim is to encourage lenders and investors around the world to pro-actively play this role in the future.

The systematic integration of water considerations into core decision making should not be seen as an effort of philanthropy or altruism: in light of exploding water use competition and resource constraints, tightening environmental regulation in both developed countries and key emerging markets such as South Africa, and an ever more conscious and informed customer-base and public, there is little doubt that water pressures will increasingly translate into straight financial risks. In other words: the importance of 'water performance' as a factor in the complex equation that determines the financial performance of companies – and that of loans and investments – will only continue to grow.

The water scarcity challenge is widespread and of a global magnitude, but both water pressures, regulatory frameworks, and suitable solutions vary across regions and sectors; therefore, addressing the challenge requires focused attention locally. Building on the generic Water-related Risk Management Guidelines developed by UNEP Finance Initiative in 2007, these Briefings provide concrete guidance at the local level. As such, they aim to close a gap often found in financial institutions between ambitious environmental policies at the group level but lacking awareness and know-how in daily interactions with clients and investees. We hope that these Briefings will effectively support your institution not only in improving the risk profile of clients, investees and your balance sheet, but also in contributing to the response to one of the most serious challenges the world will face in this century.

Sasja Beslik
Director of ESG Analysis, Nordea
Co-Chair of the UNEP FI WFWS

Vicky Beukes
Sustainability Manager, Nedbank
Co-Chair of the UNEP FI WFWS

1

Water, development and financial institutions

Economic prosperity is an essential ingredient to overall human development and underpinned by the prosperity of many of the producers and providers of goods and services that make up economies around the world. Production activities along the value-creation chains at the heart of the economic system are often described as transformation processes of natural and other resources into goods and services: human labour, energy, fibre, minerals and other resources are inputs in the generation of value and wealth as a basis for human development.

Among all the resource types under consideration, **water** stands out as one of the few resources needed for almost all of such transformation processes, the **production of all goods** and the **delivery of all services**; across countries and throughout sectors, **water is needed by all.** Most importantly, however, and beyond a discussion on the resources needed for products and services, water is the key element needed to **sustain life on Earth**. Strikingly, water is unsubstitutable and its physical availability ultimately capped by nature. Water is unique as it is an irreplaceable condition for human life and the functioning of ecosystems on the one hand, and a core factor in most production processes on the other; coupled with the absolute limits of water availability, this uniqueness makes it a reason of concern and issue of focus, not only by governments but increasingly by private sector companies and their investors.

Population and economic growth, coupled with improving standards of living in many parts of the world are causing global consumption of water to double every 20 years. That is twice as fast as the world's rate of population growth; at the same time, more than one billion people on Earth already lack access to fresh drinking water and it is estimated that by 2025, approximately 2.7 billion people will face severe water shortages if consumption continues at current rates. It does not come as a surprise that water is deemed to become the most contested resource of the 21st century.

Economic prosperity is an essential ingredient to overall human development, but not the only one: equally essential are the functioning of life-supporting ecosystems and the health of human livelihoods, with sustainable access to water in sufficient quality and quantity. In coming decades, it will therefore be one of the key challenges of decision-makers in policy and business to 'de-couple' production processes, economic growth and ultimately standards of living from water consumption and pollution.

Such de-coupling will not only have benefits on the environment and societies, but should be well in line with long-term commercial interests: in light of increasing resource bottlenecks around the world, growing public and consumer awareness on sustainability matters and tightening environmental legislation, businesses and financial institutions that are able to ensure the 'water sustainability' of their operations will be increasingly at a competitive advantage.

The Chief Liquidity Series aims to equip financial institutions with a better understanding of water pressures around the world and their impacts on business performance as well as to guide them on how to start assessing the operations of clients and investee companies in regard to water impacts and exposure to water risks.

2 Why this series of briefings?

This is the first of a series of Water Materiality Briefings with which the Water & Finance Work Stream (WFWS) of the United Nations Environment Programme Finance Initiative (UNEP FI) aims to assist fellow UNEP FI Signatories and the broader financial services community in understanding the financial risks and emerging opportunities associated with water challenges across a range of particularly exposed sectors and diverse geographies.

The notion of providing guidance on a level of sectoral and geographic specificity builds on a set of universal but indicative guidelines for water-related risks and opportunities for financial institutions, published by the UNEP FI WFWS in October 2007.[1] As a logical continuation, these Briefings provide greater detail for easier integration of water-related considerations into financial due diligence and stock picking processes. The reason is that water pressures and their implications on business materialise locally and vary considerably by sector and geography.

The structure and sequence of the Chief Liquidity Series

<table>
<tr><th></th><th></th><th colspan="4">Sectors</th></tr>
<tr><th></th><th></th><th>Agribusiness</th><th>Power generation</th><th>Extractive industries</th><th>…</th></tr>
<tr><td rowspan="9">Geographies</td><td>Australia</td><td rowspan="5">ISSUE 1 – 2009</td><td rowspan="5">ISSUE – 2009</td><td></td><td></td></tr>
<tr><td>Brazil</td><td></td><td rowspan="6">Future issues…</td></tr>
<tr><td>India</td><td></td></tr>
<tr><td>Mediterranean Basin</td><td rowspan="5">Future issues…</td></tr>
<tr><td>South Africa</td></tr>
<tr><td>China</td><td></td><td></td></tr>
<tr><td>USA</td><td></td><td></td><td></td></tr>
<tr><td>…</td><td></td><td></td><td></td></tr>
</table>

2.1 First issue on agribusiness

The aims of this briefing on agribusiness are:

- To deliver to financial decision makers – particularly in credit institutions – (but potentially also to asset managers and financial analysts) an overview of water sustainability issues specific to corporate agricultural operations. This is done across a set of geographies around the world where, from the perspective of the finance sector, water-related problems strongly clash with economic growth and financial performance: **Australia, Brazil, India, South Africa and the Mediterranean Basin.** The focus on specific geographies should not exclude businesses and financial institutions in other regions from making use of these Briefings. Rather, they should feel encouraged to use these guidelines as 'proxies' for the management of water issues in all regions that have similar water conditions to either of those addressed here.

- To provide an initial framework of water-related indicators for financial institutions to assess the strategic and operational water performance of agribusinesses. A number of indicative performance indicators (PIs) have therefore been developed and tailored to each of the geographies addressed.
- To raise awareness on the complexities of the topic and the fact that water sustainability is not only a matter of pure water availability and water efficiency; water quality issues as well as the social and environmental implications of corporate water use can be just as important depending on local circumstances and the type of activity observed.

Water footprinting

Water footprinting is an emerging concept to measure the total volume of fresh water that is used directly and indirectly: the total water volume appropriated by products and services. Theoretically, it accounts for the operational water footprint (the direct water use by the business in its own operations) as well as the supply-chain water footprint (indirect water use e.g. for fertilizer production). Water footprinting protocols for agribusiness are still being developed and no consensus has yet been reached on an accepted methodology. While the concept is very promising and it is likely to become a powerful tool in the future, due to methodological gaps, the concept still has to evolve further to become applicable by the financial community. In the meantime, this Briefing is expected to provide guidance to and a first step for financial institutions to address water considerations in commercial (agribusiness) activities until the concept of water footprinting reaches the level of maturity needed.

3
How to use this Briefing?

Each issue of the *Chief Liquidity Series* focuses on the use of water in different sectors, across particularly exposed regions. This first issue looks at activities in the agribusiness sector across Australia, Brazil, India, South Africa and the Mediterranean Basin.

Each chapter of this report addresses a different region and begins with an overview of its overall water-related situation.

The *WaterGAP* (Water – a Global Assessment and Prognosis) model is used throughout to compare amounts of water naturally available with amounts of water required for human use. Outputs of the model are shown for each region. These indicate the level of pressure put on water resources and aquatic ecosystems and provide a quick overview of where water-related 'hotspots' lie.

The implications of water pressures on agribusiness activities and their financial performance are analysed and the impact of agricultural activities on local water parameters discussed. This is done by examining water issues with regards to a set of specific crops: those considered by financial institutions themselves to be the most financially relevant in each of the geographies concerned.

Throughout the report, boxed case studies highlight best local practice and innovation in the sustainable management of water resources in agribusiness activities, with a view to inspiring financial practitioners to promote such practice within their spheres of influence.

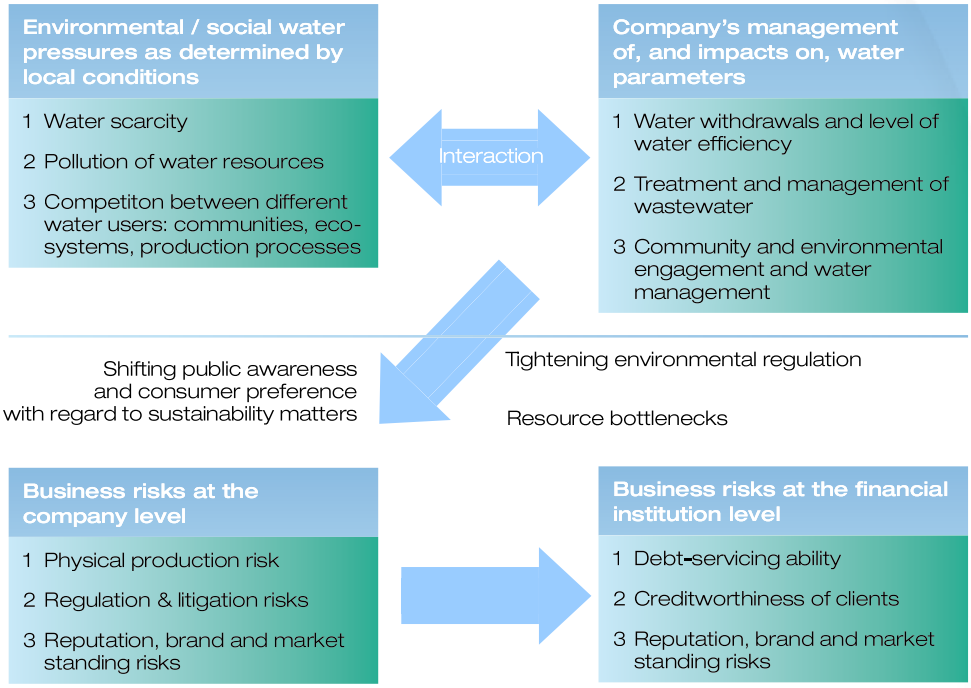
Most importantly, at the end of each geographic chapter (i.e. region), a set of regionally tailored performance indicators (PIs) is presented, and their nature, rationale and financial materiality explained.

4

How water pressures translate into financial risks

Figure 1

Framework of how environmental and social water pressures translate into business and financial risks



Water-related risks can be seen as the result of how a given company deals with external water pressures in a given location: the extent to which it lessens the negative impacts of such pressures on its operations and, vice versa, the extent to which it mitigates negative impacts of its operations on the local water environment. Water-related risks can broadly be categorised as follows:

- **Primary physical (production) risks** – the risk of inadequate quantitative and qualitative water availability needed to sustain minimal levels of production for businesses to be viable, i.e. insufficient or inadequate water supply to ensure profitable yield levels on farms.
- **Reputation and regulatory risks** – the risk of negative impacts on business activities arising from constraints on water quantity and/or deteriorating water quality, other than those directly related to minimal production levels. While these risks stem from water constraints, they do not materialise through insufficient production levels but through reputational and/or regulatory/litigious damage. Such risks can especially arise from the unsustainable behaviour (be it real or perceived) of a given agribusiness operation – either in the form of the over-abstraction and/or the pollution of water resources.

If such risks materialise, they can immediately affect lenders and other types of financial institutions in any of the following areas of concern:

- **Debt-servicing ability** – resource bottlenecks can have immediate effects on company turnover, factor costs, and ultimately profitability and solvency. Financial institutions of all types will be affected by such resource shocks and developments: either through clients' inability to service loans or by insufficient dividend yields from investee companies. Water bottlenecks are expected to become the resource constraint of greatest concern in the 21st century.

- **Creditworthiness of clients** – water-dependent companies and/or companies with a large water impact may become less creditworthy as water constraints intensify over time; this will increase the overall risk exposure of finance providers, which in turn will increase the return expectations of shareholders and equity capital requirements of regulators (where applicable: Basel 2).
- **Reputation, brand and market standing risks** – if reputational or litigious damage occurs at the company level, it can foreseeably affect the financial institutions and investors involved. Impacts can include profitability and solvency problems at the company level as well as direct reputational damage at the level of the financial institution (including, for instance, poor ratings by SRI rating agencies in the marketplace).

Intuitively, corporate water performance in production processes can be addressed by increasing water productivity or water use efficiency. While water productivity – "more crop per drop" – is a significant variable in corporate water performance, it is always affected by local circumstances. Depending on the sector and location of operations, other variables may come to the forefront; the pollution of watercourses may, for instance, represent a greater problem, and hence a greater financial risk, than the pure availability and efficient use of water.

It is the spatial and sectoral complexity of water issues as a source of financial risk that these Briefings aim to provide guidance on; by looking at water challenges where businesses and financial institutions are confronted with them: locally.

5
Global recommendations from local insights

While it is clear that water issues vary from location to location and that, consequently, the management of water-related risks by financial institutions must be tailored to the specific circumstances of the client's operations, a number of issues have been identified that – if systematically considered by financial institutions – can lead to greater water sustainability as well as more profitable and resilient agribusiness operations, everywhere. Regardless of location, financial institutions should make sure that agribusiness operations:

Ensure appropriate levels of water productivity levels relative to regional and national averages or local competitors. *High levels of water productivity may not be a sufficient condition for sustainable water management, but a necessary one. Water productivity is usually measured as m^3 per ton of harvest or unit of turn-over. The level of water efficiency of a given operation will depend on a wide set of local factors. National or regional averages can, therefore, only serve as rough 'proxies'.*

Comply with current but also emerging environmental regulation. *Breaching environmental standards and subsequent prosecution can incur financial costs and cause reputation damage and losses from litigation, both for the farm as well as the lender. On the contrary, agribusiness operations that already today comply with environmental regulation that is likely to emerge in the future will be at a clear advantage relative to unprepared peers. Comprehensive environmental regulation with a focus on water impacts is being developed not only in developed countries (EU Water Directive) but in many emerging economies and developing countries as well (National Water Act and the Water for Development and Growth Framework in South Africa).*

Make use of best-available, water-efficient irrigation systems/techniques and provide financing to this end if needed. *The use of innovative irrigation systems can significantly enhance water productivity relative to other conventional techniques. It reduces exposure to water availability risks and input costs making an agribusiness operation more resilient, profitable and solvent. Such improvements can already be achieved by means of proven and economically viable technologies with quick amortisation horizons. Barriers of deployment are usually the lack of awareness and upfront financing.*

Rely on sustainable freshwater sources. *In many parts of the world – examples are Australia, India, the Mediterranean Basin and South Africa – conventional freshwater sources for agriculture, such as natural surface- and ground-water, are unsustainably over-exploited, polluted and at risk of collapse. Relying on alternative, more sustainable sources of freshwater will not only lessen the negative impacts of water withdrawals on natural resources and ecosystems, but also the dependence of agribusiness operations on unreliable water sources and their exposure to increasing water costs – rainwater harvesting, water re-use and recycling as well as sustainable desalination options should be explored.*

Actively look beyond their 'fence' and reach out to local communities and environmental stakeholders. *The sustainability of water resources can only be ensured by an integrated water resource management approach that involves all water users at the basin level. As such, water sustainability goes beyond the mere availability of water for the production process of a given company or farm. It is in the interest of any agribusiness operation to engage with other water users making sure local communities and ecosystems are provided with water in sufficient quality and quantity; if not, its*

acceptance among local stakeholders and, ultimately, its 'licence to operate', will be at stake. Stakeholder engagement and environmental impact assessments are measures that financial institutions can demand on an on-going basis.

Seek to reduce negative impacts on natural water resources and ecosystems. *Water sustainability goes beyond the mere availability of water for the production process of a given company or farm. In addition to water efficiency measures and the use of water from sustainable sources, further steps can be taken to lessen the environmental impacts of agribusiness activities. Such measures will improve the risk profile of the client in light of tightening environmental regulation and growing public and consumer awareness on sustainability matters. Such measures may include: biological pest management, periodic monitoring of soil through physical-chemical analysis, soil erosion prevention, use of agrochemicals with low contamination and leaching potential, etc.*