

Reducing Risk

Landscape Approaches to Sustainable Sourcing

SABMiller Case Study

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Cover Photo

SABMiller brewery site in Bogotá, courtesy of SABMiller.

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Landscapes for People, Food and Nature is a collaborative Initiative to foster cross-sectoral dialogue, learning and action. The partners involved aim to understand and support integrated agricultural landscape approaches to simultaneously meet goals for food production, ecosystem health and human wellbeing. The Business Working Group seeks to expand the potential for this innovative approach in sustainable sourcing, test the concept with key commodities or sourcing regions and identify future partnerships. For more information, please visit: landscapes.ecoagriculture.org.

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Executive Summary

“Water is neither consistently well managed nor appropriately valued globally. This has led to a crucial shared resource becoming a shared risk for governments, businesses and populations across many areas of the world. If this situation doesn’t change then conflicts over water rights are inevitable. We believe that collaboration between business, governments and NGOs is the only way to tackle this.”

—Graham Mackay
Chief Executive
SABMiller

SABMiller is one of the world’s largest brewers with a strong interest in water security. We investigated their efforts in South Africa and Colombia, although SABMiller is also involved in other landscapes. In both these countries, the company faced operational, reputational and regulatory risks to the business based on water quantity and quality concerns, brought on by climate change, water scarcity, competition for water resources, unsustainable land use upstream, as well as social dimensions of water use and interactions with business.

The company is looking “beyond the breweries” to the landscape and communities it operates in, to identify shared responsibilities to craft shared solutions. This is the appropriate scale to address shared risk with local communities, governments, stakeholders and businesses involved in the water catchments and ecosystems. Landscape approaches were created to craft integrated management solutions across all key users in the catchments.

The Water Futures Partnership (with the World Wildlife Fund and German Corporation for International Cooperation, GIZ) is a critical catalyst for SABMiller’s landscape approaches, and has leveraged significant complementary investment and expertise. These landscape approaches have resulted in reduction of operational risk and creation of reputational benefits for SABMiller, as well as significant benefits for other water users. SABMiller is continuing to use this approach to understand and address risks along its value chain, and also seeking to broaden the partnership to respond.



Case Study

SABMiller's Ten Priorities: One Future

1. Discouraging irresponsible drinking
2. Making more beer using less water
3. Reduce the energy and carbon footprint
4. Packaging, reuse and recycling
5. Working towards zero waste operations
6. Encouraging enterprise development in value-chains
7. Benefitting communities
8. Contributing to the reduction of HIV/AIDS
9. Respecting human rights
10. Transparency and ethics

Box 1. SAB Miller's Ten Priorities

Context and company profile

One of the world's largest brewers, SABMiller has brewing interests and distribution agreements across six continents. Their portfolio of international beer brands includes Pilsner Urquell, Peroni Nastro Azzurro, Miller Genuine Draft and Grolsch, and local brands include Aguila, Castle, Miller Lite, Snow and Tyskie. SABMiller is one of the world's largest bottlers of Coca-Cola products. In 2012 group revenue was US\$31,388 million with lager production of 229 million hectolitres.

As SABMiller looks to its future, its business growth depends on developing and emerging markets, where beer volume growth is expected due to the growth of 'middle class' consumers with improved incomes and enhanced quality of life. In 2012, Africa and Latin America were the company's fastest growing regions –lager volumes increased by 13% and 8% respectively.¹ However, SABMiller also recognizes this will place further demands on finite resources, and simply focusing on internal operations is not enough to secure adequate water, energy and agricultural supplies for their breweries. Therefore, the company has prioritized developing partnerships with governments, non-governmental organisations and academic institutions to tackle the sustainable development challenges that they face.

At a global level, SABMiller focuses on three areas most material to their business: alcohol responsibility, water and enterprise development in their value chain. SABMiller seeks to generate 'inclusive growth,' creating long-term returns by building value-chains that drive on economic growth and stimulate social development while using scarce natural resources efficiently. As a result, underpinning SABMiller's operations is their "Ten Priorities: One Future" framework for sustainable development. Two overarching goals guide those priorities at regional scales:

- Reduce water use per hectolitre of beer by 25% from 2008 levels by 2015—a goal of using 3.5 litres of water to make 1 litre of beer.
- Reduce fossil fuel emissions from the en-suite energy use per hectolitre of beer by 50% from 2008 levels by 2020.

The "Ten Priorities: One Future" focus provides a strong framework to bring clarity to local operations on how to address material sustainable development issues. At the same time, flexibility in the approach is encouraged for local operations to invest their resources in the issues most relevant to them in their own markets. The group corporate accountability and risk assurance committee (CARAC), a sub-committee of the SABMiller plc board, is responsible for overseeing progress against the 10 sustainable development priorities. Twice a year, each business is required to provide both qualitative and quantitative data relating to each of the 10

1 SABMiller, 2012. Sustainable Development Report. Available at: http://www.sabmiller.com/files/reports/2012_SD_report.pdf

priorities. This is done through the SABMiller Sustainability Assessment Matrix (SAM). Performance is assessed against clearly defined criteria set out in the SAM 'stairways' and is reviewed by both the regional and group CARACs. The results are then published in an interactive tool on the company's website, allowing users to see country-level performance against each priority.

This case study explores SABMiller's experience of a landscape approach to mitigating water risks. In particular, it examines the rationale, modes and value proposition of this approach. Two landscapes—Bogotá, Colombia and George, South Africa—are featured in depth as they provide robust examples of SABMiller's landscape approach, though SABMiller has implemented similar approaches in other landscapes as well. The case study closes on next steps for the Water Futures Partnership, a critical catalyst for its landscape approaches, and how SABMiller is seeking to replicate the water programme within their agricultural supply chains.

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Business rationale for landscape approach: A means to address water scarcity and quality concerns

Water is a vital component of SABMiller's business, as it is required for beer and soft drink production, as well as the cultivation of crops needed for beverage production processes. With

increased water scarcity, risks to the business increase – e.g. competition for resources, higher costs, and production limitations. Water quality is also of concern due to increased costs associated with water treatment. These risks are often shared with the local community in which SABMiller's businesses operate, generating a set of secondary risks as water scarcity increases, tensions concerning the allocation of water may arise, creating reputational risks for industrial water users, such as breweries.

Given the geographic distribution of SABMiller's operations, it has a global perspective on water availability and quality. Water availability and quality are increasingly of importance at the operational and strategic level. Water withdrawals are predicted to increase by 50% in developing countries and 18% in developed countries by 2025.² Agriculture accounts for more than 70% of global water use.³ About 80% of the world's population lives in areas with high levels of threat to water security.⁴

Changes in water quality and quantity translate into water-related business risks. SABMiller recognized these could manifest as operational, reputational and regulatory risks that would affect their bottom line. Further, as Figure 1 illustrates, these risks have social, economic and ecological impacts that will have secondary effects on the business. SABMiller identified the following challenges as critical to address through an integrated approach to water management:

“Forward-looking companies must assess the risks of mismanaging this resource nexus, learn to partner outside their comfort zone, and integrate resource-saving initiatives into their long-term business plans. It's the only way we can ensure the long-term security and supply of the resources that our economy and society depend on.”

— Andy Wales
Global Head of Sustainable Development
SABMiller

- 2 UNEP, 2007. The Fourth Global Environmental Outlook Report Chapter 4: Water. Nairobi, UNEP.
- 3 World Water Assessment Programme (WWAP), 2012. The United Nations World Water Development Report 4: Managing Water under Uncertainty and Risk. Paris, UNESCO.
- 4 UNEP 2012. The Fifth Global Environmental Outlook Report. Chapter 4: Water. Nairobi, UNEP.

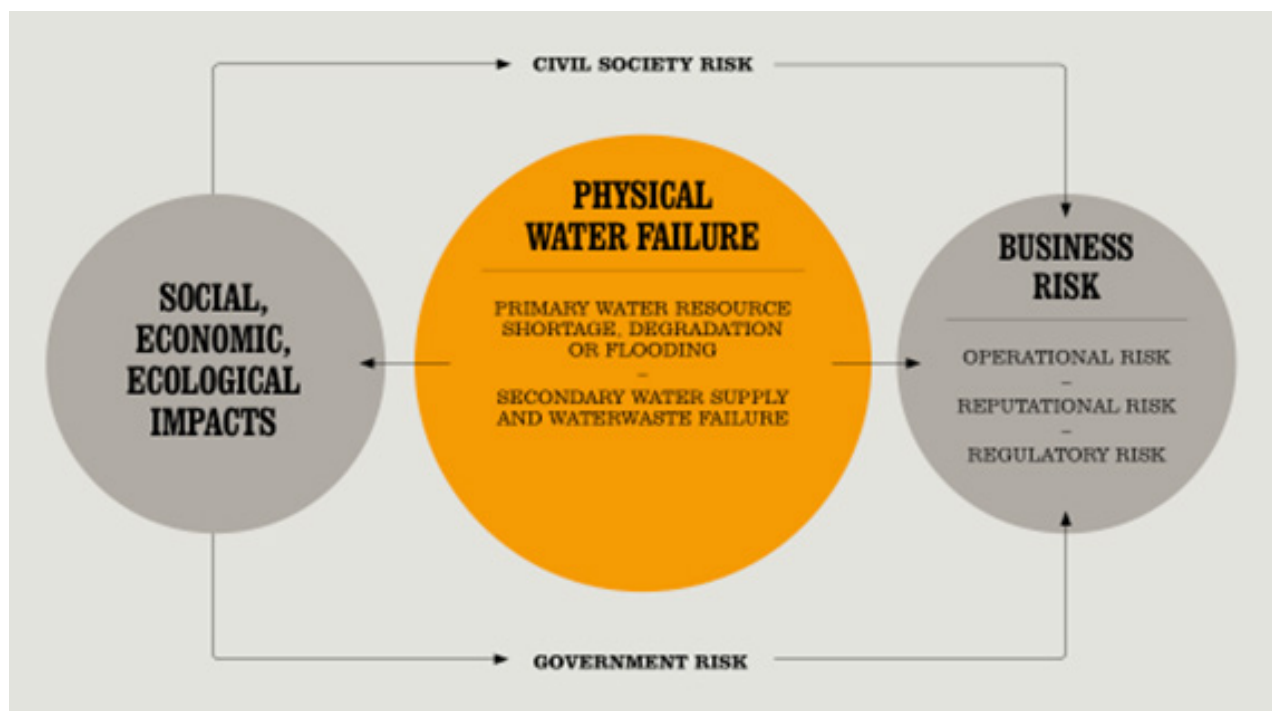


Figure 1. Water risks – Source: SABMiller and WWF. 2009. *Water Footprinting: Identifying and addressing water risks in the value chain.*

- **Water scarcity**—While poor and inefficient water management can lead to business risks, so too can economic water scarcity, where water resources are available but accessing them is financially prohibitive. Water shortages are predicted to increase as a result of demands from population pressures, unsustainable withdrawal rates, difficulty in finding new supplies and changing climatic and precipitation patterns. This translates into increased costs for business operations and operational risk.
- **Competition for water resources**—Competition for water rights/allocation due to scarcity concerns may lead to local authorities having to balance the needs of domestic, industrial and agricultural users along with those needed to maintain ecosystem services. Finding solutions to preempt price spikes or allocation decisions decreases risks to all users.
- **Declining water quality**—SABMiller recognizes the quality of freshwater resources is declining in a number of places in which it operates around the

world. Higher water treatment costs necessary to meet the quality requirements for brewing and bottling are an operational concern.

- **Social dimension of water and interaction with business**—Business interaction with communities will become increasingly important as the public exercises their rights in water allocation decisions. SABMiller values transparency and its social license as a water user, and seeks to ensure the relationship between businesses, government and society is managed to mitigate risks and conflict.

SABMiller chose to address these challenges and risks through a range of mitigation strategies and operational changes. SABMiller set targets to reduce its own water consumption by 25% from 2008 levels per hectolitre of beer brewed by 2015. SABMiller also developed a water strategy across its operations based on a 5R model (pRotect, Reduce, Reuse,

Recycle and Redistribute), a comprehensive, risk-based approach to managing water in its business and in the value chain. This model provides a consistent approach, regardless of the local issues and circumstances faced by subsidiaries around the world. As a result, by the end of 2012 the business had reduced its water consumption by 8% per hectolitre of beer since 2008, when the target was first set, and has established a consistent approach across all its operations to make sure that water-related risks are considered throughout the value chain. In doing this, SABMiller has invested significant resources and management time at both a local and group level.

Recognizing it never faces these risks alone, SABMiller identified a need to look “beyond the breweries” to the landscape and communities it op-

erates in. Thus, the rationale for the company to engage a landscape approach was not as a consequence of other activities, such as supply chain interventions, but was fundamentally driven by the company's intention to foster an inclusive way of addressing water risk, in order to identify shared responsibilities to craft shared solutions. The right scale to address shared risk was with local communities, stakeholders and businesses involved in the water catchment and ecosystem.

The risks to SABMiller breweries and bottling plants have been evaluated using a combination of tools including watershed risk assessments, business water risk assessments, the World Business Council for Sustainable Development water risk tool and the businesses' own water footprinting

analyses. These are explored with greater depth in the next section.

..... **Modes of engagement in landscape approach**

Partnership: Multi-stakeholder dialogue, planning and management

Recognizing the need for an inclusive approach to identifying shared risk, while promoting local action, SABMiller, WWF and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH created the Water Futures partnership. The Water Futures Partnership would prove the business case for private sector engagement in promoting the sustainable management of water resources and share the lessons learned. Pursuing a comprehensive approach in pri-

ority water catchments allowed SABMiller to consider the supply chains they source from and the communities and ecosystems these activities interact with.

In each country, Water Futures engaged workshops with NGOs, government representatives, local businesses and others stakeholders to develop detailed watershed protection programmes based on the assessment of the risks identified collectively.

Value of the Water Futures partnership:

- Facilitated a wider discussion with local stakeholders to look beyond the boundaries of its own operations.
- Brought technical skills, capacity and resources from globally recognized leaders (WWF and GIZ) to help find solutions at local levels.
- As a lack of water security presents risks that are shared by business,

Water Futures

Partnership: SABMiller, WWF and GIZ

Started: 2009

Guiding concept: a lack of water security presents risks that are shared by the business, other water users, ecosystems and governments

Solutions:

- Assess water risks throughout SABMiller's value chain and identify how to mitigate these risks,
- Prove the business case for private sector engagement in promoting the sustainable management of water resources,
- Share the lessons learned throughout the business's global operations with other stakeholders to promote better water stewardship.

Operates in: Peru, Tanzania, South Africa, Ukraine, Colombia, Honduras, India and USA

2013 and beyond: Scaling up and refocusing joint work with external partners, as Water Futures Initiative, to more broadly address sustainable solutions at watershed levels.

Box 2. Water Futures Partnership summary

other water users, ecosystems and governments, the partnership provides the means to craft collective approaches to a problem that cannot be solved by one actor alone.

In order to obtain the necessary data to understand water consumption and opportunities for reductions, the partnership carried out detailed water footprints in select countries to provide insights and an understanding of the risks faced. Further efforts in India, Colombia and the United States build on implementing these tools as first steps towards mobilizing the private sector to support multi-stakeholder approaches to addressing water risks.

Water footprints: Starting point for watershed area management

Water footprints: included quantification of the water used throughout SABMiller's value chain from crop production to distribution of products. See "*Water footprinting: Identifying and addressing water risks in the value chain*," for more insight and details on SABMiller and WWF's experience with water footprinting.

Key findings from water footprints across the business:

- There is considerable variation between the footprints – ranging from 61 litres of water per litre of beer produced in Peru to 180 litres per litre in Tanzania.
- In all cases over 90% of water used related to the cultivation of raw crops. As this element of the water footprint is in the supply chain, and thus not directly under SABMiller's control, it is the most challenging to address.

The value of water footprinting to SABMiller: Water footprinting informs three important areas relating

to SABMiller's business planning and decision-making:

1. Provides a solid overview of the water use in the value chain—both the quantity and physical locality of the water use.
2. Provides the strategic information required to assess the risk associated with the water use. Risk in this context refers not only to physical availability but also, importantly, to regulatory risk such as future allocation and pricing. This information allows SABMiller not only to inform its own operations' business models but also to predict potential impacts on its supply chain.
3. Equips senior managers with a knowledge set that enables them to access the broader issues around water management, such as proactively engaging stakeholders, partnerships, and address problems outside of SABMiller's breweries likely to provide benefits for its operations.

The variation between the water footprints in Peru and Tanzania illustrated the impact of local factors at play on water consumed within SABMiller's value chain. Therefore, SABMiller decided to use the information gathered to gain a better understanding of how water is used within the value chain. The company decided not to use these figures to compare between countries or regions to gauge the relative impact.

Detailed water footprints have been undertaken in South Africa, the Czech Republic, Peru, Tanzania and Ukraine to get a better understanding of the key water issues each operation faces.

Translating water footprints: Business risk and decision-making

SABMiller also needed to drill down to understanding risks each operating unit of business faced. Thus, Watershed Risk and Sustainability Assessments (WRSA) were engaged as a means to enable each local business to assess its own specific risks and develop tailored strategies and action plans to address them. WRSAs include:

1. The current state of the watershed, groundwater, infrastructure, water management institutions, water policy, supply and demand etc;
2. The risks these generate for the business and surrounding communities and ecosystems; and
3. How climate and social change may affect these risks over the next 20 years.

SABMiller found the water footprint and WRSA results were not as important as the breakdown of the result across the value chain, to inform better decisions regarding how it manages its plants, how it works with suppliers, and how it engages with governments on policy issues. Therefore, the WRSA was followed up by a detailed Business Water Risk Assessment (BWRA), to establish the costs of the risks to SABMiller's business (considering the likelihood of the risks and the cost of the consequences) and examining, at a high level, the cost-benefit of risk mitigation options. The WRSAs and BWRAs form the first stage of the development of a business case to address water risks. Many causes of business-specific risks are also the drivers of other risks shared by communities—such as lack of reg-

ulation of land and water use, pollution discharge, climate change, and the behavior of other water and land users. The final stage of the BWRA is to identify mitigation actions that address the priority water risks for the business, and also those that contribute to the objectives of other partners and stakeholders, which opens up opportunities for collective action for shared benefit.

Assessing the risks from a financial perspective provided the rationale and evidence base for SABMiller's businesses to support interventions in water management beyond their breweries or farms. As the details in the Bogotá, Colombia and George, South Africa examples illustrate (detailed in the next section), water risks include polluted water sources requiring more costly water treatment or regional water shortages interrupting brewery water supply. The BWRA clarified business priorities for taking action and developed a better understanding of the return on investment. As addressing water-related risks does require investment, it was important for the company to formulate a defined and robust business case to support its decisions to invest.

Benefits of the Business Water Risk Assessment

- While the BWRA prioritises water risks most relevant for the business, many of these are shared by surrounding communities and/or affected ecosystems. Thus, it builds the basis for shared responsibility and mitigation action.
- The BWRA was applied in South Africa, Tanzania, Ukraine and Peru. A different approach—a Group Water Risk Assessment process—is currently being developed.

SABMiller has focused considerable time and investment in its landscape approaches to water issues, focused in specific geographies surrounding physical operations, and with the intent of building long-term sustainable partnerships. The company has also demonstrated strong interest in reporting on use and management of water issues transparently. However, SABMiller also recognizes the need to go beyond its geographic and community scales in order to engage public policy to ensure that governments effectively manage water resources. Thus, SABMiller has sought ways to promote solutions at national and international scales as well. For instance, SAB is a founding member of the Strategic Partners Network in South Africa—a multi-stakeholder platform led by government, co-chaired by SAB, focused on addressing the significant national water deficit by 2030 and developing public-private partnerships to address those risks.⁵ SABMiller is also part of World Economic Forum Water Project, Water Footprinting Network, and the UN CEO Water Mandate. SABMiller has also collaborated with the Alliance for Water Stewardship and World Economic Forum's New Vision for Agriculture.

SABMiller's landscape approach in practice

Bogotá, Colombia

Bavaria—SABMiller's Colombian subsidiary—operates six breweries and two malt houses serving the Colombian market. The Tocancipa brewery

“Managing the competing water demands of ecosystems, agriculture, energy production, industry and communities (whether megacities or small communities) requires a collaborative response involving a range of stakeholders and, crucially, is sustainable over the long term. This is why helping local companies with long-term interests in watersheds to understand the business case to engage and invest in improving water security is at the heart of our approach.”

***Andy Wales, SABMiller
Franz-Joseph Batz, GIZ
David Tickner, WWF-UK***

⁵ For more information, see: http://www.sab.co.za/sablimited/action/media/download-File?media_fileid=930

Business Water Risk Assessment

Lesson Learned:

Using a business risk assessment approach identifies, quantifies and prioritises risks, providing the framework for building a business case for addressing water issues. However, some risks are difficult to quantify, such as reputational risks.

Solution:

Use a brief qualitative risk assessment to discount risks that are of very little or no importance to the business (or are already being tackled), then focus the detailed quantification on risks required for the business case.

serves the burgeoning population of 7.5 million people living in Bogotá. Over 80% of the city's water comes from the Chingaza watershed (Chingaza and Sumapaz National Parks) and 7% comes from the Tunjuelo river basin. Deforestation and degradation in the 'páramo' – mountainous uplands—of the water catchment brought on by clearing for livestock grazing and agriculture negatively impacted Bogotá's water quality. Declining water quality created additional costs for the Aqueduct and Sewage Company of Bogotá, which were passed on to water users. Bavaria recognized the solution to escalating water costs lay in addressing unsustainable agricultural practices in the water catchment. To address this risk, partnerships were promoted to identify shared risks and collaborative solutions to address them.

Business risks and rationale for engaging the landscape approach

- » Operational risks from increased costs due to higher levels of required water treatment by the municipal supplier.
- » Operational risks due to water quality concerns.
- » Reputational risks due to potential conflicts between municipal and industrial users.

Mode of intervention in the landscape

- » **Watershed management:** Basin mapping with a 20-year projection on water supply and demand, including source supply

forecasts, ecological flow, demand required by Bavaria plants based on production needs, and projections on other user demands based on industry requirements, population growth, irrigation, and other demands. Basin mapping identified risk mitigation opportunities.

» Partnership, multi-stakeholder planning and management:

The Nature Conservancy, the National Parks System, the Aqueduct and Sewage Company of Bogotá and Bavaria seeks to prevent two million metric tons of sediments entering the basins located in the Chingaza and Sumapaz national parks, as well in the Bogota river, which supply the city, in order to halt the escalation in water costs to Bogota residents and businesses.

- » **Finance:** Support for a payments for ecosystem services (PES) scheme led by The Nature Conservancy and municipality to affect land use and protect the ecosystem in the páramo are planned. Farmers would receive payments for improved practices. Cattle ranchers are to be given better pastures for their herds to improve milk yields but also move them off the steepest slopes. Farmers will agree to give over certain areas of land and plant native species to protect the soil and use less water than alien species. The payments are expected to begin (and better land use practices to occur) once the program has been consolidated within the national parks.

Partnerships

2008: A cooperation agreement was signed between Bavaria and WWF Colombia for a partnership to promote water use reduction and strategies to decrease pressures on natural ecosystems. The first stage involved developing a model to predict the cost of water purification at Cervecería del Valle, based on the declining water quality (turbidity and pathogens) of the Cauca river. The second stage (completed in 2010) involved basin mapping, multi-stakeholder planning, identification of priorities among stakeholders to inform plan development, and development of strategies and action plans.

2009: The partnership with The Nature Conservancy, Colombia's National Parks administration, and the Aqueduct and Sewage Company of Bogotá was formed, establishing the collective fund for stewardship activities to reduce excessive sediment delivery into the Chingaza and Tunjuelo Sumapaz rivers.

2010: The launch of the Agua Somos campaign⁶ which joins the public and private sectors to ensure water supply for future generations in Bogotá.

Outcomes

- » Interventions will prevent 2 million metric tons of sediment entering the water catchment. Anecdotal evidence suggests an added benefit is improved yields for local farmers.
- » Reducing sediment loads is projected to save roughly US\$458,000 per year in treat-

ment costs in the supply area. Across the entire water supply system, these projections equate to around US\$3.5 million per year in treatment cost savings, and US\$35 million if maintained over the 10 years.⁷

- » Bavaria improved its own water efficiency—from 5.1 litres of water for every litre of beer produced in 2008 to 4.1 litres by 2011.
- » Working in partnership to restore 60,000 hectares of cloud forests, and raise US\$60 million for conservation projects over the next 10 years, Bavaria supports a payments for ecosystem services scheme, led by The Nature Conservancy, which will focus investments with land users upstream for watershed and land management changes.
- » Improving the quality of water consumed by Bogotá residents.

Value proposition of landscape approach to SABMiller

- » Bavaria has contributed US\$240,000 to the effort thus far, which has been invested in the consolidation of the water fund. It is hoped this investment will directly improve the quality of water to the brewery, decrease operational risks and maintain reputational capital.
- » Bavaria's investment and leveraged contributions from the partnership seek to save the city of Bogotá about US\$ 3.5 mil-

6 See: <http://www.aguasomos.org/>

7 Tallis, H. and A. Markham, 2012. Water Funds Business Case: Conservation as a Source of Competitive Advantage. Washington, DC, The Nature Conservancy.

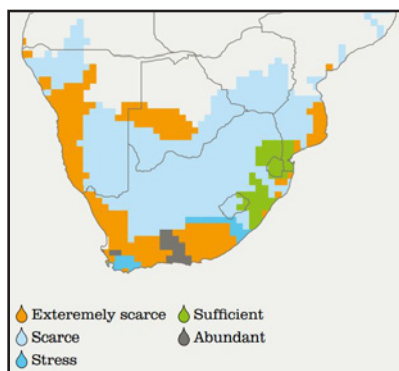


Figure 2. South Africa Water Quantity Risk

Source: SABMiller and WWF, 2009.

lion per year in water treatment costs.

- » Bavaria's simultaneous focus on water efficiency within its operations has resulted in an estimated reduction of 22,000 m³ of fresh water used per month.

Water risk in the hops industry: George, South Africa

South African Breweries (SAB) operates seven breweries and 42 depots with an annual brewing capacity of 3.1 billion litres per year. Its soft drinks division accounts for 60% of Coca-Cola sales in South Africa. The company owns a hops production company, a barley farm and a barley malting company. SAB's hops production is derived from about a dozen commercial hop farms; of which three belong to SAB, located in the foothills of Outeniqua, near George, Southwestern Cape Province (in an area of high water quantity risks, in the orange section of Figure 2). SAB increasingly engages water as a potential risk, and believes there is a clear business case for water stewardship—based on the need to secure an adequate supply of good quality water as well as increased interest by consumers, regulators and investors in water risks and quality issues.

South Africa was identified as a priority country for the Water Futures Partnership, given future projections on water quantity. A water footprint was carried out, which demonstrated that 98.3% of SAB's water footprint is in the production of barley, maize and hops (including locally cultivated and

imported grains).⁸ Given the importance of hops and the relatively small size of the hops industry, it was a logical choice for the first project for the Water Futures Partnership in South Africa. SAB, WWF and GIZ focused on the most at-risk landscape in SAB's production—the hops farms in the Southwestern Cape. The partnership brought together key stakeholders to undertake a water risk assessment and project future scenarios developed based on modeling hydrology, climate change patterns, socio-economic development and agronomic variables.

Business risks and rationale for engaging the landscape approach

Operational risks: Identification of business risks started with a situation assessment, which identified the following water availability risks:

- » Climate change impacts on water availability, through change in temperatures and to a lesser extent, rainfall patterns. The projected cost over twenty years to SAB to access groundwater to replace water loss through plant and soil evaporation is US\$200,000 per year.
- » Water availability risk from water-intensive alien tree species: Healthy tributaries are critical for maintaining groundwater and surface water quantity. The hops farm catchments are highly valued for ecological integrity, connectivity and ecosystem-based adaptation to climate change. However, the spread of invasive

8 SABMiller and WWF, 2009. Water footprinting: Identifying and addressing water risks in the value chain. <http://www.sabmiller.com/files/reports/water-footprinting-report.pdf>

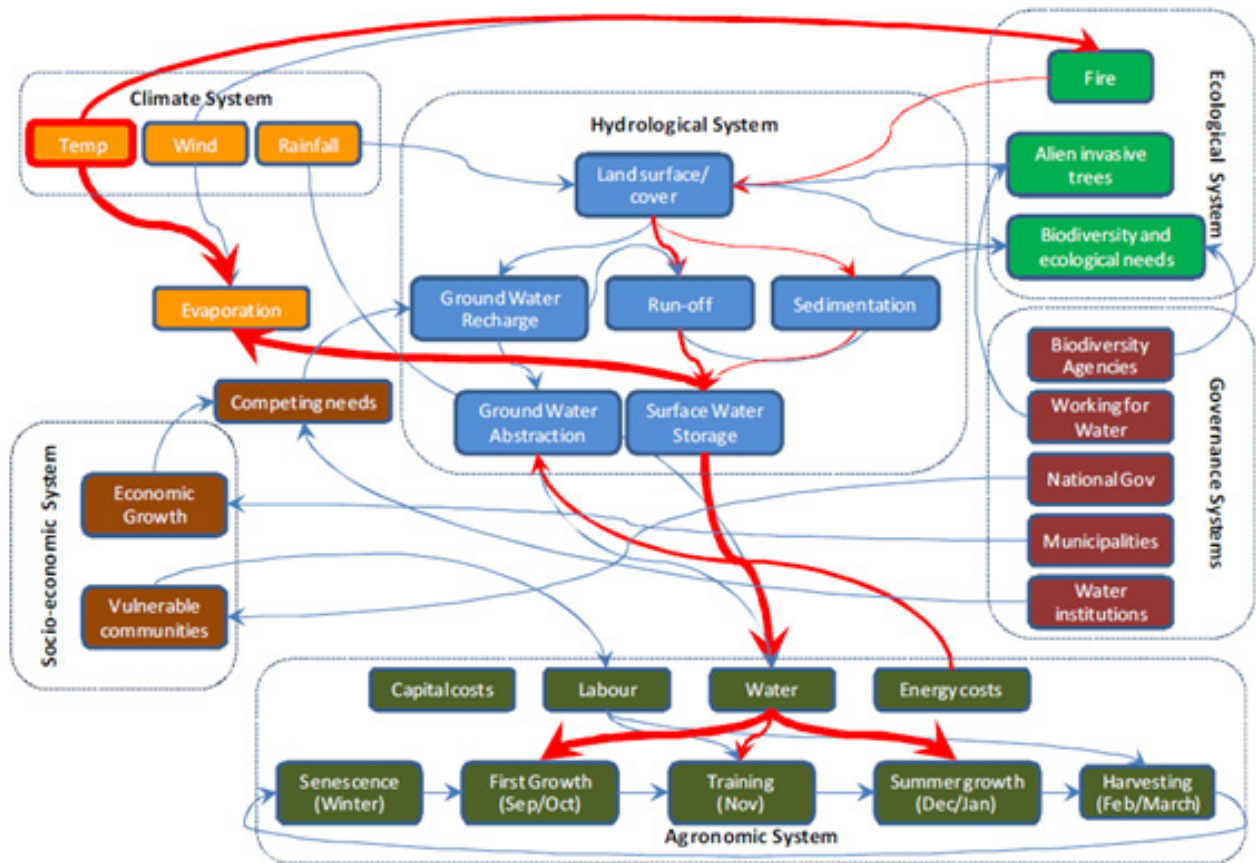


Figure 3. SAB integrated systems model. Source: South African Breweries, WWF, GIZ, 2012. South African Breweries: Water stewardship in the hops industry - a shared water risk assessment by the Water Futures Partnership.

alien trees; hakea (*Hakea sericea*), pine (*Pinus* spp.) and black wattle (*Acacia mearnsii*), posed one of the greatest threats to ecological integrity and water resources, as their annual water usage is predicted at 3 million cubic meters, significantly more than indigenous vegetation. This reduces annual mean runoff by 15%, and if unchecked, would reduce surface water yield by 41% by 2032. This directly competes with farm water requirements, potentially resulting in expected costs of over US\$700,000 per annum.

» Competition for water from urban development: The main driver for competition for water will come from the municipalities of George and Oudtshoorn. The increasing competition for ground water from municipalities is expected on water availability and the cost of irrigation. This means that water levels in boreholes must be monitored on a systematic basis to understand the impact of extraction from the shared aquifer.

Local community risks and operational risk: Though identified as an intermediate driver of risk, the situ-

ation assessment identified extreme poverty in the Oudtshoorn area as a concern (40% of residents earning no income). Water scarcity is identified as a major constraint to economic development, thus this issue was prioritized in response measures.

To identify the ultimate drivers of water risk to SAB hops farms, a conceptual model of this integrated system was developed. This model helped SAB identify how ultimate drivers of water risk will drive risk and impacts throughout the system. Scenarios of future change were developed for each of these risks to understand the

nature of the risk and its impacts over time at a more detailed level.⁹

Mode of intervention in the landscape

Partnership, multi-stakeholder planning and management: Multi-stakeholder workshops evaluated results of the water footprints in the context of both ecological and business risks and needs, as well as the broader water policy context. The footprints were used to develop a matrix of water risk for each business covering blue water, green water and grey water, and in response to develop local action plans to mitigate these risks. The partnership and shared commitment to solutions resulted in creative technical solutions to the municipal effluent plant, enabled by private and public sector contributions leveraged by the partnership.

Watershed area management: Restore the natural hydrological and ecological functionality of the catchment, primarily through the removal of invasive alien trees and through engagement in formal biodiversity stewardship agreements. In addition, SAB worked with WWF and the South African government's Working for Water Programme to pilot the 'water neutral' concept in two water-scarce regions where it has breweries. The scheme allows SAB Ltd to voluntarily monitor and reduce its operational water consumption and then potentially offset the residual by investing in projects that clear alien vegetation. This in turn releases equivalent volumes of water back into natural aquatic ecosystems.

Regional producer support: Agricultural water use is the biggest risk area in the South African water footprint. Thus, WWF South Africa has an existing project focused on a toolkit for sustainable agriculture practices for sugar cane, which were tailored to barley farming. The result is the Better Barley, Better Beer initiative, bringing SAB agriculturalists and selected SAB barley contract farmers together to develop a set of criteria, indicators and verifiers for sustainable barley farming, and work is now underway to implement these practices.¹⁰ SAB Ltd already employs agricultural extension workers who engage with farmers on issues such as yield management and water efficiency.

Partnerships

- » The initial engagement via Water Futures brought significant technical and capacity skills to carry out water footprints. Subsequent additions to that partnership via stakeholders and municipal governments have enabled SAB to achieve the integrated landscape management approach it sought, based on recognition of shared risks and responsibilities to find solutions.
- » Developed a local coordinating body to manage the comprehensive catchment rehabilitation and stewardship programme.
- » Initiated a process to explore setting up a local Water User Association, based on specialist support from the Water Futures Partnership, the Department of Water

9 South Africa Breweries, 2012. Water Stewardship in the hops industry. A Shared Water Risk Assessment by the Water Futures Partnership.

10 South African Breweries, 2010. Better Barley, Better Beer: Promoting sustainable agriculture in South Africa.



*Photo of SABMiller water project near George, South Africa.
Photo courtesy of SABMiller*

Affairs, catchment management agencies, and local municipalities.

Outcomes

- » SAB improved its average brewery water efficiency by 20% since 2008, and seeks to reduce water use to 3.5 litres per litre of beer by 2015.¹¹ SAB undertook hydrological analysis and installed water loggers for optimal water level monitoring on a number of hops farms. A formal and systematic water level monitoring process has started with regular feedback to farmers.
- » Completed a detailed alien species mapping exercise as basis for a multiyear plan and funding model for alien species clearing and job creation. Currently signing off on a US\$1.1 million multi-year partnership with WWF and the Department of Environmental Affairs for systematic alien vegetation clearing project.
- » Local Catchment Coordinator appointed to support farmers with legal compliance on water use and to engage the government on new water regulations.
- » Established viability of supporting farmers with better irrigation practices (based on findings of on-farm water management assessments).

Value proposition of landscape approach to SABMiller

- » If the reduced surface water (41% reduction by 2032) were to be re-

placed by groundwater sources, it would add about US\$700,000 to the production costs of hops at current energy costs—a conservative figure given rising energy prices and increased evaporation. It was estimated that the economic benefit of clearing invasive species would be roughly equal to the cost averted, in dollar amounts. However, by mitigating this risk, SAB could contribute to the creation of 50 jobs per year, benefitting 900 people in a region faced with high unemployment. This brings reputational benefits and also bolsters SAB's ability to nurture a local workforce that it depends on for training hops vines and harvesting. Further, the biodiversity stewardship agreements will make a significant contribution to the ecological integrity of the catchment.

- » The ten water loggers installed, based on hydrological analysis, will measure detailed water levels and ensure sensitivity by farmers and local government to ground water abstraction and recharge
- » Working with farmers on improving on-farm water management practices such as reducing pipe leakages and improving irrigation efficiency could potentially save 5% of water. A key cost benefit is electricity costs.
- » It is estimated that the project could off-set 30m hl of the 100m hl of water used annually in SAB breweries.

11 See: http://www.sab.co.za/sablimited/action/media/downloadFile?media_fileid=1050

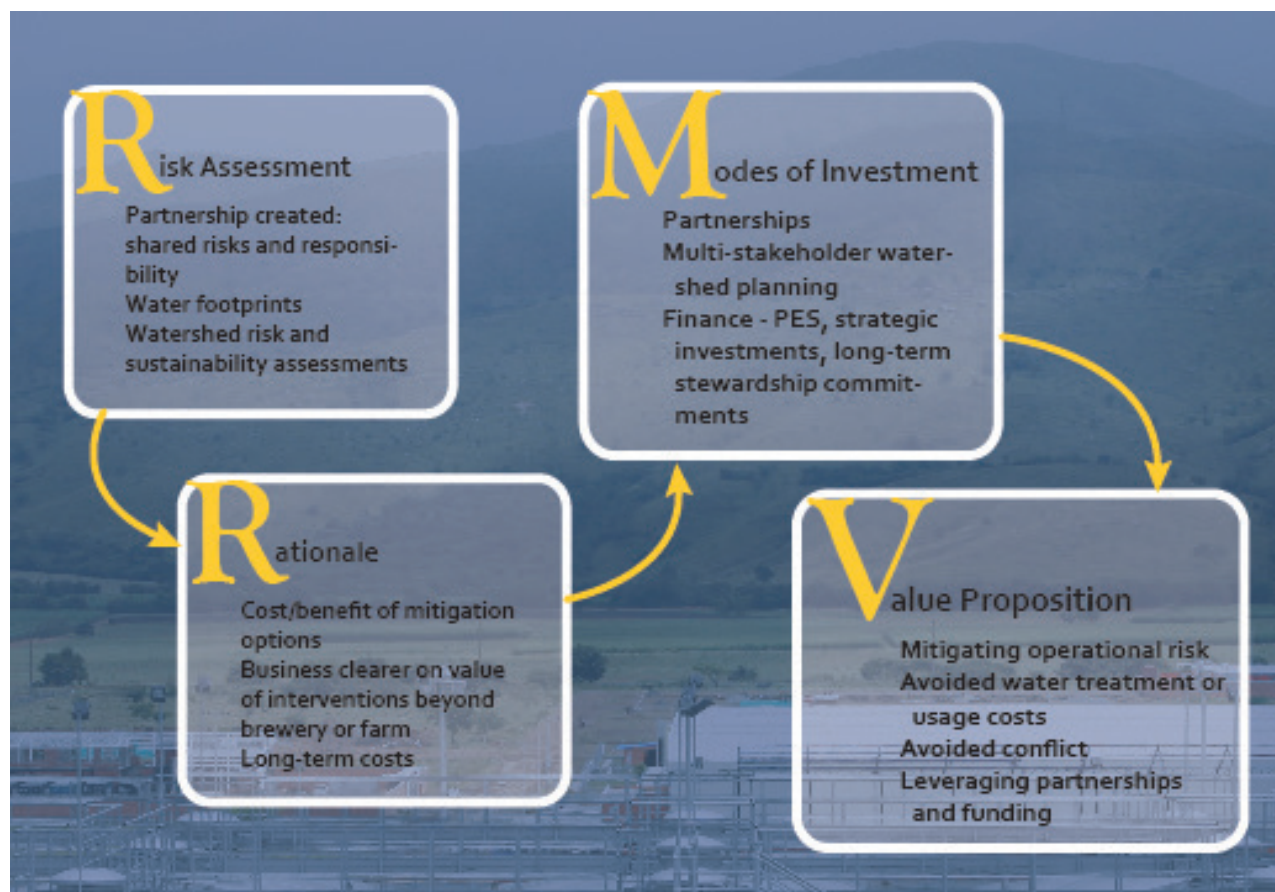


Figure 4. SABMiller's business case for the landscape approach

Key lessons learned and next steps for SABMiller's landscape approach

Landscape health at the core of business planning

One of the most fundamental reasons for SABMiller's embracing a landscape approach is due to its recognition that future company growth, resilience and social license relies on a healthy resource and healthy communities. Recall that on a global level, SABMiller focuses on three areas most material

to their business: alcohol responsibility, water and enterprise development in their value chain. Thus, pursuing a landscape approach to minimizing risks and promoting constructive partnerships sits at the core of its business activities, helping to deliver on its' *Ten Priorities: One Future* commitments and strategically mitigating resource risks.

Partnerships

A critical enabling condition of its landscape approaches is the partnerships formed and maintained. Without these partnerships, SABMiller would

not have leveraged the capacity and resources necessary to achieve the outcomes. The Water Futures Partnership between SABMiller, WWF and GIZ formed the basis for a partnership approach, which has been modified and diversified in the different geographies SABMiller has operations in. This partnership aspect has had direct impacts on reducing operational and reputational risks and finding lasting solutions.

Shared water risk

Identifying company risk at a river basin level allowed the company to see

what other users faced similar risks—including ecosystems, businesses, communities and governments—and to translate that shared risk into common ground on solutions. SABMiller's recognition of the need for cross-sectoral coordination, between competing business interests, communities and ecosystems, is critical. The company has experienced challenges with governments adequately addressing collective water resource risks, and therefore views collective action as a critical response.

..... **Avoided costs—basis of the business case**

In SABMiller's experience, the business case for a landscape approach is not about reduced costs, but rather about avoided costs. Assessing avoided costs is a more speculative exercise than quantifying reduced costs. Thus, developing internal buy-in and support for avoided cost response measures can be a challenge. However, SABMiller has achieved strong internal support for addressing water risks through a landscape approach because the cost of the business-as-usual or "do-nothing" scenario is so large. When the quantum of avoided cost risks is so great, the value proposition is clarified, and risk mitigation strategies through a landscape approach are worth the investment.

..... **Management solutions across the landscape**

The water footprints, WRSAs and BWRAs assessed risks and opportunities, and integrated management solutions across the landscape. Thus, management solutions did not only

focus on SABMiller's long-range needs, but rather solutions for stakeholders, communities, and long-term ecosystem service provision.

..... **A package of solutions provides greater impact than 'one-off's'**

While supply chain interventions such as producer support programmes or supporting better farm practices through payments for ecosystem services can have impact, they do not constitute a 'landscape' approach if applied at broad scales. However, when these interventions are implemented within the partnerships and land and resource planning context that defines landscape approaches, there is greater ability to coordinate interventions for impact and scale. The Bogotá, Colombia example illustrates this well, as Bavaria, the municipality, NGO partners, and the National Park system implemented coordinated interventions for greater impact in the water catchment.

..... **SABMiller's definition of the landscape approach**

SABMiller does not refer to its efforts to mitigate water risks as a landscape approach, though it clearly meets the Landscapes for People Food and Nature Initiative's definition, as defined in the synthesis report accompanying this case study.¹² Rather, the company defines its efforts as mitigating risks and costs to the business. Water is a fundamental component of SABMiller's business operations. When water quantity and quality are at risk, these external risks "beyond the breweries" are assessed, shared water risks are identified with stakeholders and

12 See: http://landscapes.ecoagriculture.org/global_review/reducing_risk

“Water supply to cities and agriculture relies heavily on healthy ecosystem services, especially the continued flow of water through rivers, lakes and aquifers.”

other water users, and partnerships developed to pursue mitigation options within the landscape, communities and regions SABMiller operates in.

..... **Overview of SABMiller's business case for the landscape approach**

SABMiller's pursuit of landscape approaches to mitigate water risks and build partnerships for long-term solutions mirrors the analytical framework developed for this Landscapes for People, Food and Nature investigation. Below is a summary of the key attributes that led SABMiller to realize a strong value proposition from its landscape approach. Of note, the value proposition is first identified after the risk assessment, and runs throughout each subsequent phase.

..... **Next Steps for SABMiller**

From water to the rest of the supply chain: SABMiller is now applying the landscape approach more broadly across its supply chain.

- » Rolling out across the global business, including all subsidiaries, a water efficiency process to assess water risk within each brewery – looking outside the walls of their operations for how to identify risks and mitigation actions necessary to ensure water quality and quantity.
- » SABMiller is building on its experience in South Africa—where the company looked beyond the brewery to mitigate water risks in its agricultural supply chain (hops and barley). One example is SAB-

Miller's project in the Neemrana and Behror watersheds in Rajasthan, India, seeking to improve water conservation and resource management over 27,500 hectares. The rationale for doing so is to address water scarcity both for SABMiller's operations and for agricultural production in the region (which comprises 87% of water use). The mode of intervention is through: a) technical innovation and finance—building structures to capture rainwater and run-off, which has already resulted in a 24 ft improvement in the aquifer level due to better groundwater recharge, b) regional producer support via working with smallholder farmers (that do not supply the company) to promote better farming practices, including nutrient management and more efficient use of irrigation, and improved varieties such as millet, cauliflower and okra.

- » Also related to its positive experience in South Africa supporting the Strategic Water Partners Network seeking to 'close the water gap by 2030' with the federal government, industry and stakeholders, SABMiller is assessing how it can promote constructive engagement with governments in other operating regions.

The Water Futures Partnership is transforming into the Water Futures Initiative (WFI) in 2013. The WFI will build on the original Partnership by:

- » Increasing the number of corporate, civil society and donor partners
- » Moving into new watersheds and up-scaling activities in existing watersheds
- » Securing new funds and developing new funding mechanisms to support local implementation
- » Creating a better-resourced central coordinating body with specific capacity building and advisory services to help initiate and support local partnerships in fostering collective action.

The Water Futures Initiative is basing its work in the future on a charter. This charter expresses the shared principles of the partners. The first three of its nine principles reflect the attributes inherent in landscape approaches:

Affordable and sustainable water supply and sanitation should be a priority for all. Water is essential for health, education, livelihoods, businesses and ecosystems. It is a fundamental building block for the prosperity of a country. We believe that while there are many competing demands for water, priority should always be given to basic human needs.

Water resources should be managed to ensure the health of critical ecosystems. Water supply to cities and agriculture relies heavily on healthy ecosystem services, especially the continued flow of water through rivers, lakes and aquifers. We believe that it is critical to understand the water needs of these services and allocate water to maintain the health of ecosystems as a priority.

Water is the life-blood of local and national economic development.

Water is a critical resource for public and private enterprises to thrive, which in turn fuels foreign investment, job creation, tax revenues, improved living standards and broader economic growth. We believe that water must be appropriately valued, and that the value created by economic activities should be considered in its allocation.



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