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Water and the Private sector

**ACCELERATING SUSTAINABLE CORPORATE
WATER STEWARDSHIP & COLLECTIVE
ACTION IN PAKISTAN**

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Introduction

Water covers around 71% of the earth's surface, however freshwater accounts for only 3% of the total water available (United States Geological Survey 2016). The freshwater resources are increasingly under stress due to various multi-dimensional and interrelated issues (Figure 1). The biggest challenges like population growth, environmental pollution, and climate change are the sources of this stress (International Hydrological Programme [IHP] 2011). Consequently, there is a growing disparity between demand and supply of water (The 2030 Water Resources Group 2009) which impacts human health, agriculture, economic development and ecosystems (UN WATER 2015). It is expected that by 2050, nearly 240 million people worldwide will have no access to clean water, (Organization for Economic Co-operation and Development [OECD] 2012). With ageing global water infrastructure, outdated technology, ill-equipped governance systems, the risks posed to communities, industries and environment are likely to worsen in coming decades (OECD 2015).

South Asia, which is home to major international water courses, is also gradually moving towards water scarcity. This will not only have implications for internal socio-economic disruptions but also for national security of the South Asian states (Adhikari 2014). Water availability is rapidly declining and so is the quality. This is due to the population explosion coupled with increasing industrial and agricultural demands for water (Biswas et al. 2017). The situation is no different in Bangladesh where groundwater is being pumped at exaggerated

rates. Southwest Bangladesh is specifically water scarce (Raju 2017). Pakistan is not an exception to this and has huge gap between water demand and supply which is likely to expand substantially by the end of 2020 (State Bank of Pakistan [SBP] 2017). The issue of water availability, its quality and governance is likely to emerge as most critical development challenge in near future. .

BY 2050

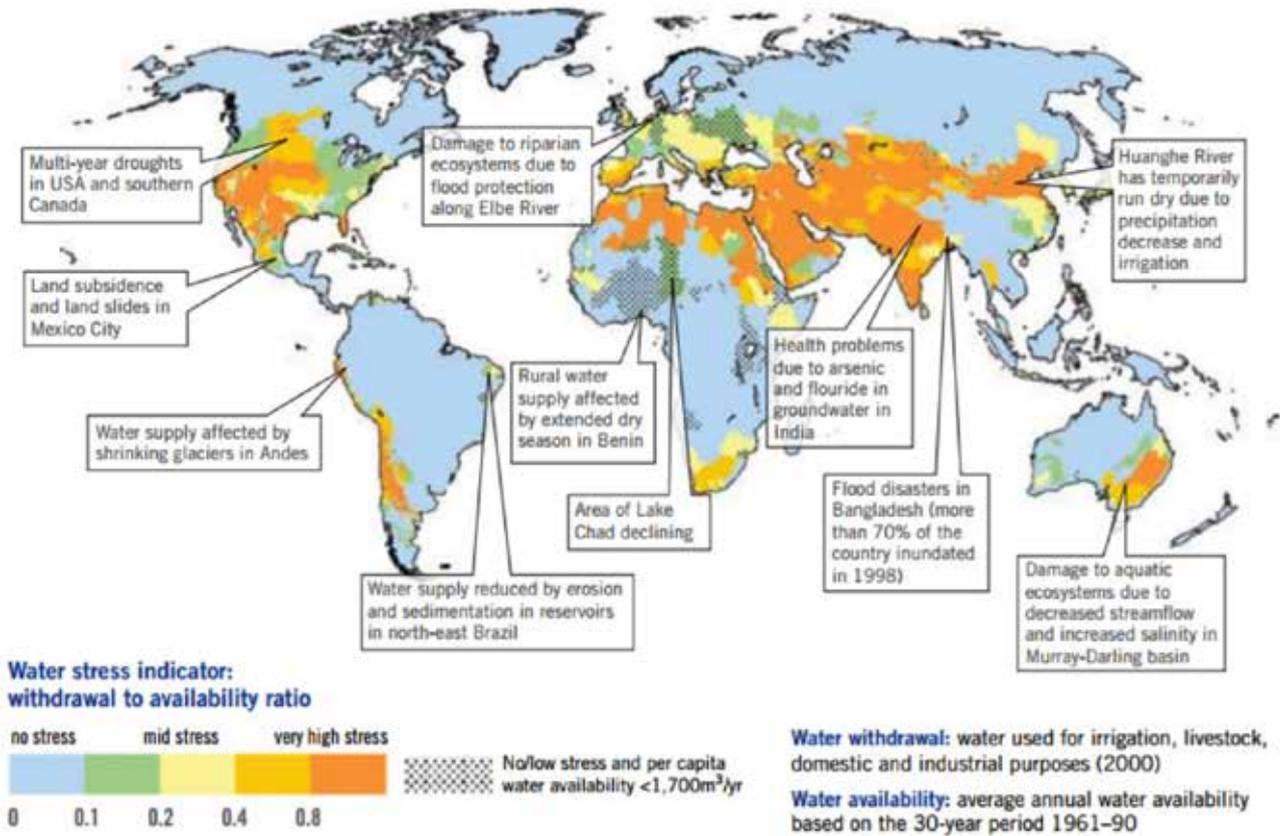
**240
MILLION
PEOPLE**

**NO ACCESS TO
CLEAN WATER**

**1.4
BILLION
PEOPLE**

**WITHOUT BASIC
SANITATION
FACILITIES**

FIGURE 1: GLOBAL FRESHWATER RESOURCE RISKS



B.C Setes et al. "Climate Change and Water IPCC," Technical Paper VI of the Intergovernmental Panel on Climate Change

SUSTAINABLE DEVELOPMENT GOALS

Water problems of today require a multidimensional and multifaceted response, bringing together an array of stakeholders, including the government, private sector, civil society and international funding agencies. In fact, as the world moves towards the achievement of the Sustainable Development Goals (SDGs), such an approach will become a necessity. The SDGs have an important focus on water whereby the goal no. 6 calls for clean and accessible 'water for all.' Meanwhile, the National Water Policy (2018) has recently been promulgated as well. The policy came about after a consensus was developed amongst all provinces in line with an integrated water management strategy for Pakistan. In this context, this study aims to:

1. Introduce and highlight the importance of water stewardship for the corporate sector in Pakistan.

2. Use a case study approach in assessing how private sector can contribute towards sustainable water stewardship and collective action.
3. Present key recommendations that can contribute to the development of an effective and sustainable corporate response to water management problems.

This analysis will be useful for policy makers and private sector alike. It will be a critical knowledge product that highlights some of the current water stewardship initiatives and promotes the idea of collective action to address key water scarcity challenges in the country. Moreover, proposed policy actions will help incentivize the private sector to become aware of their social responsibility and think on the lines of social impact investment.

Understanding Water Risks



Water, one of the most important natural resources of Pakistan, sustains the country's agriculture upon which its food security depends. It is an integral component of the growing industrial system. It provides a habitat for many plant and animal species such as the famed Indus Dolphin yet, it is being degraded at such a fast pace that both the livelihoods and ecosystems are at risk.

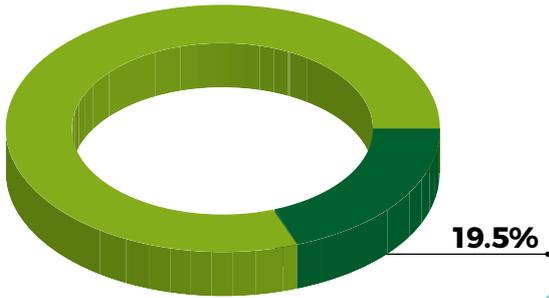


2.1

WATER AND ECONOMY: THE ESSENTIAL LINK FOR SUSTAINABLE DEVELOPMENT

Pakistan has an economy where agriculture plays a significant role; the population and the economy are significantly dependent on the Indus river system comprising the Indus, Jhelum, Chenab, Ravi, Beas, and Sutlej rivers (World Bank [WB] 2005). Agriculture's contribution to Pakistan's economy accounts for 19.5 per cent of the Gross Domestic Product (GDP), employing 42.3 per cent of the labour force and providing raw material for several value-added sectors

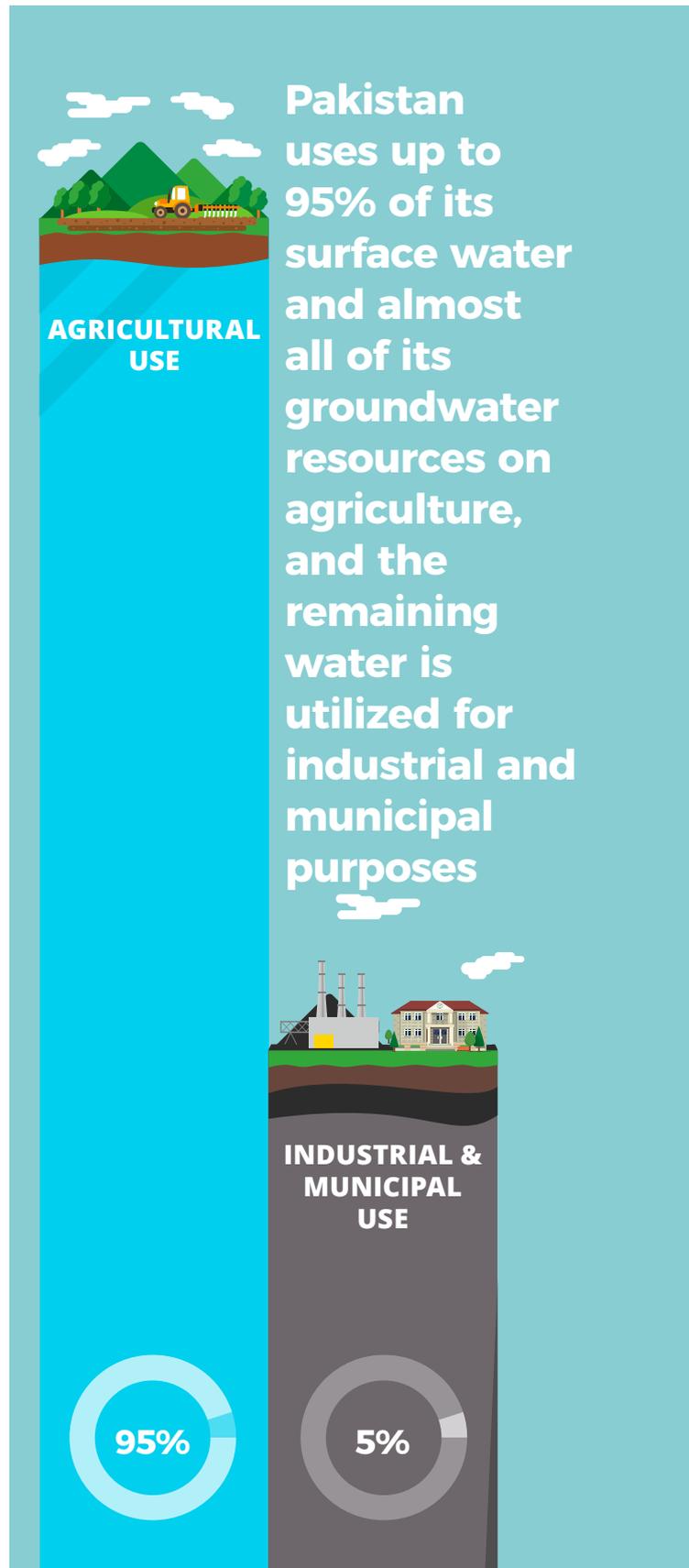
AGRICULTURE CONTRIBUTION TO NATIONAL GDP



(Ministry of Finance [MoF] 2017). Though Pakistan’s industrial and urban economy continues to grow, agriculture is still the mainstay of the economy (World Bank 2005).

Pakistan uses up to 95% of its surface water and almost all of its groundwater resources on agriculture, and the remaining water is utilized for industrial and municipal purposes (Hisaar Foundation [HF] 2016). Studies suggest that efficiency is as low as 33%, for canal irrigation. This means that only 33% of the water released into canals reaches from the farm gate. As such the issue of water availability is not of low supply but of low efficiency. Research shows that Pakistan has enough water to cater to its multiple demands provided it is used efficiently. Pakistan needs to adopt better farm water management and irrigation techniques (Mustafa 2010).

Water risks are perceived differently by the public and private sector. Private companies (including food and beverages firms), who face a business risk due to water scarcity are answerable to the shareholders therefore, water management is part and parcel of their corporate business environment. Public sector on the other hand is considered to be risk averse and is reluctant to communicate particular risks to the civil society or public at large (Baleta & Winter 2017). This has wider repercussions with respect to effective policy and decision-making in the water sector.



Private sector, today, is seen as a crucial stakeholder that can play a significant role in water resource conservation and management. This is not only because water scarcity is a shared risk but also because of the business opportunities associated with water conservation, enhanced understanding of benefits of shared water management, recognition of private sector as a critical development partner and limited financial capacity of the governments in developing countries (Boccaletti et al. 2009; Rondinelli 2003; World Bank 2006).

Ernst, Young & GreenBiz (2012, p.4) state:

“Over the past two decades, corporate sustainability efforts have shifted from a risk-based compliance focus where rudimentary, voluntary, sometimes haphazard initiatives have evolved into a complex, and disciplined business imperative focused on customer and stakeholder requirements.”

It is in this context that many businesses have been developing sustainability plans in order to strengthen their corporate strategies. Some of the reasons for a renewed way of thinking about sustainability in the private sector include: the need to comply with environmental legislation, concerns regarding the availability and sustainability of natural resources which are essential to the company, enhanced public and shareholder knowledge in terms of corporate responsibility as well as a growing media coverage and civil society's scrutiny of corporate sector operations. Moreover, having a strategy in place demonstrates a company's willingness to protect the environment as opposed to others who have not yet taken any steps in this direction. Elkington (2004) argues that in the future a company's success will depend on its ability to connect the three pillars of sustainability, i.e. environmental, social and economic as part of the “Triple Bottom Line” which focuses on “people, planet and profit.”



Given the rapid pace of climate change, climate risk is not only recognized and accounted for by large corporations but also Small and Medium Enterprises (SMEs). Globally, SMEs are affected by both direct (through business operation and infrastructure) and indirect (through supply chain linkages) impacts of climate change and are now taking steps to lessen the adverse impacts on their businesses. In Kenya, for example, SMEs are resorting to adaptation planning in order to deal with current and future climate risks (Crick et al. 2018).

Climate Change will have far-reaching effects in terms of the types of risks the businesses will face when it comes to water security, be they physical, reputational or regulatory. These are discussed below:

a.

Physical or Operational Risks:

Physical risks pertain to disruption in water supply which can have an impact on industrial and manufacturing operations such as cooling or material processing. Businesses have traditionally failed to address the risks 'embedded in the supply chain.' These may pertain to the amount of water required for raw materials that are eventually used in an industrial process. Moreover, water availability could have an impact beyond a particular geographical area.

Degradation in the quality of water also poses significant risks to the operations of a business. Depending on the quality of water and the needs of a business, immense financial resources may be required for the pre-treatment of water. In areas affected by severe industrial pollution, for example, it may not be possible for sustained operations of a plant.

b.

Reputational Risks:

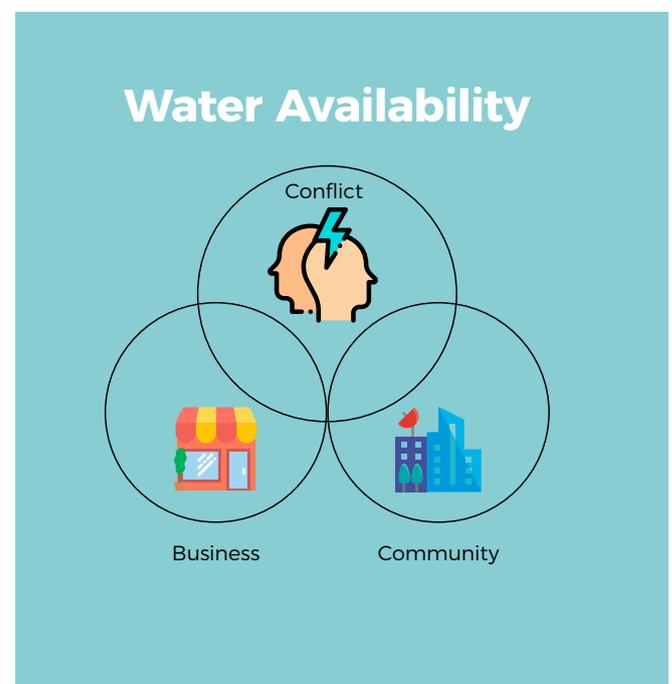
Decline in water availability or degradation of water quality may lead to conflicts amongst the businesses and local communities. This has been the case, especially in developing countries where communities lack reliable and safe access to clean drinking water. In such a scenario, the community may oppose continued operations of a business. Local conflicts can damage a brand and have long lasting impacts on the operation. As an example, PepsiCo and Coca-Cola bottlers lost their license to use groundwater in Kerala, India after a drought resulted in community wide dissent vis-à-vis water usage in the area. Similarly, water bottling plants proposed by Nestle' subsidiaries, resulted in vehement protests in Michigan and California in the USA as residents opposed the companies' plans to withdraw groundwater which the communities use for civic purposes (Sanders 2018).

According to Hoeskstra (2014), brands face a reputational risk because the public and media are becoming increasingly aware that many companies contribute to unsustainable water use. Failure of governments to provide 100 percent coverage of water services in areas where businesses are using up large amounts of water can result in backlash from the communities.

c.

Regulatory Risks:

With greater awareness in terms of pollution of water supplies or withdrawals in water scarce regions, the government may enact legislations to consider water pricing, reallocations or cap usage and demand stricter water quality standards. The regulatory risks can lead to additional costs for companies in terms of fees for water extraction or usage as well as wastewater discharges. Noncompliance with a regulation could lead to expensive litigation costs or penalties which can in turn impact a businesses' reputation.





The idea of water stewardship:

collective action for water conservation

Business community worldwide found the solution of emerging water scarcity and related business risks through water stewardship, which encompasses the concept of water as a scarce public resource and stresses the need to ensure that it is managed responsibly, sustainably and equitably (World Wide Fund for Nature [WWF] 2017). Water stewardship is particularly an action-based business approach to deal with water scarcity issues (World Wide Fund for Nature [WWF] 2013a). It also focuses on engaging with all the boundary partners (i.e. local communities, NGOs, government, etc.) for sustainable water management. An important element which makes this process dynamic is that it starts with the understanding of water risks, taking actions to address it and then advocating and reaching out to other stakeholders to promote the concept of 'shared responsibility' (World Wide Fund for Nature [WWF] 2013b; Kopnina & Shoreman-Ouimet 2015).

The idea of water stewardship is born out of the fact that water is one of the major global resources intensively under pressure due to massive population growth, ever-increasing climate risks and industrialization (Jiménez Cisneros 2014). While the global sources of water supply are limited, the demand for water is expected to increase up to 6,900 billion m³ from 4,500 billion m³ by 2030 (McKinsey & Company

2009). There are also evidences on how the current approaches of water usage would lead to a gap of 40% between freshwater demand and supply globally, by 2030 (ibid). In line with this, Global Risk Report 2016 highlights water crisis as the third most important risk to global economic growth for the next 10 years (World Economic Forum [WEF] 2016). All of this has raised the question of sustainability not only in terms of economy, but more so with respect to businesses. Water scarcity in Pakistan is attributed to increased population, urbanization, and domestic and industrial demands (UNDP 2016).

Shared water risks also call for collective action to meet the challenges of depleting water resources. Bringing together concerned stakeholders not only ensures that the process of water conservation is sustainable over a long period of time but also promotes ownership, transparency and accountability of initiatives. This is the underlying philosophy behind Global Alliance for Water Stewardship, which helps companies around the world responsibly manage their water consumption in a collaborative manner. This also allows mutual learning between partners, ensures technical oversight by international experts and implementation of standardized mechanisms of sustainability to achieve intended impact (CEO Water Mandate 2013).

3.1

WATER STEWARDSHIP – GLOBAL LANDSCAPE

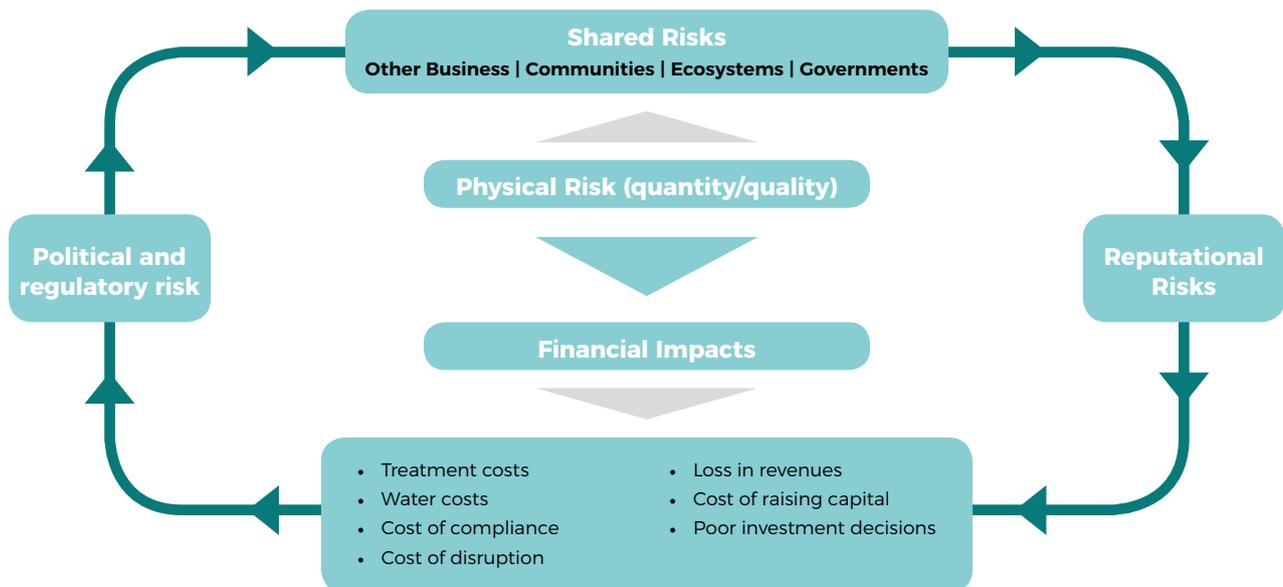
The Alliance for Water Stewardship (2013) defines water stewardship as “the use of water that is socially equitable, environmental, sustainable, and economically beneficial, achieved through stakeholder-inclusive process that involves site and catchment-based activities.” WWF has provided a more focused definition of water stewardship for businesses. It states that water stewardship is “a progression of increased improvements of water use and a reduction in the water-related impacts of internal and value chain operations.”

Depending on its operations, water can be integral to the operations of a company. The availability of water or lack thereof presents risks to its operations (Figure 2) while the same risks are transferred to the society if the company has the potential to impact fresh water quality, quantity, flow and ecology. Water stewardship is thus a response to such broader water security concerns particularly as related to the legal, financial and political costs inherent to the debate.



 **4,500**
Billion m³ **CURRENT GLOBAL WATER DEMAND**

 **6,900**
Billion m³ **WATER DEMAND BY 2030**

Figure 2: Risks for Producers

Source: WWF (2010)

Food and Beverage industries have been at the forefront of water stewardship (McGregor 2015). Unilever, through its 'Sustainable Living Plan' is undertaking efforts to lessen its business environmental impacts through reducing the water usage per consumer for the usage of company's product (for example, in laundry process) and water abstraction for manufacturing (Unilever 2017). In another water stewardship initiative, PepsiCo, is partnering with stakeholders in developing countries (China, India, Mali, Brazil, Colombia and other Latin American countries) to provide access to safe water to marginalized communities through different initiatives related to water conservation, distribution and purification (Pepsi Co n.d.). In another initiative, Marks & Spencer (M&S) has reduced water consumption (under its Plan A) as part of its business transformation strategy (Marks & Spencer Group PLC 2018.). In collaboration with WWF, M&S has supported agriculturists in promoting effective on-farm water usage practices. Similarly, Nestlé through its 'creating shared value' plan has been able to reduce its water withdrawal per ton of product by 25% (Nestlé 2017).

Recognizing collective action as a key to address water challenges, CEO Water Mandate, an initiative by UN Global Compact to bring together businesses on water issues, brought together business leaders in California to materialize California Water Action Plan. This came in response to the extreme water stress in California as a result of droughts and rapid groundwater depletion (CEO Water Mandate 2017) and is a perfect example of public-private partnership.

Moreover, Badische Anilin und Soda Fabrik (BASF), an international chemical company, has ensured effective water usage along their company's value chain through the re-usage of water in manufacturing, cooling and processing (as solvent) stages along with water purification services for the neighboring communities. This recirculation of water and reduction in water discharge has also resulted in the reduction in water emissions (Badische Anilin und Soda Fabrik [BASF] 2017).

One of the examples highlighting elements of a sound corporate water strategy is given in Figure 4.

Figure 4: Water strategy: An example



Source: Sarni, W (2012). Ripple effects: Why water is a CFO issue. Deloitte Insights. Retrieved from: <https://www2.deloitte.com/insights/us/en/topics/social-impact/ripple-effects-why-water-is-a-cfo-issue.html>

The following section looks at the case of Nestlé Pakistan as the first company in Pakistan to adopt the water stewardship framework as part of its work in the country. The Sheikhpura factory in the Punjab Province is the first in the Nestlé network to obtain certificate of AWS from Alliance for Water Stewardship. As discussed earlier, the International Water Stewardship Standard offers a framework appropriate for each local context. It guides companies to improve their results by taking concrete actions that help protect shared water resources and involve local communities, which collaborate in the process (Working together for water, n.d.).

Nestlé Pakistan's case study

4.1

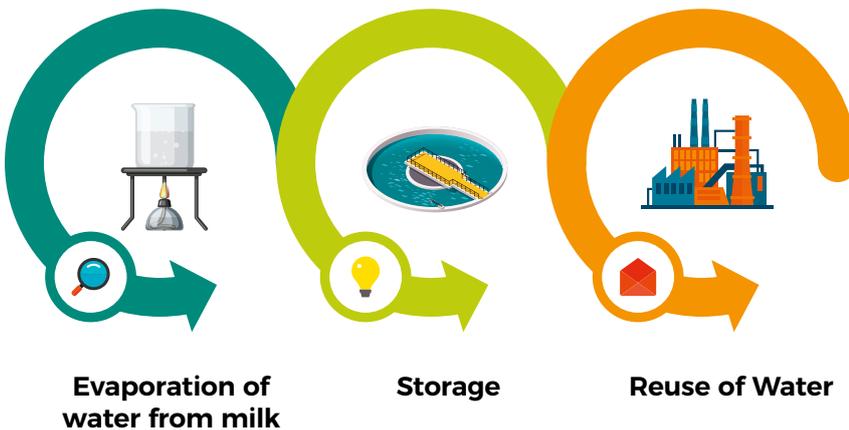
NESTLÉ'S EFFORTS TOWARDS WATER STEWARDSHIP



Nestlé's Pakistan Sheikhupura plant

Nestlé Pakistan is improving its water use efficiency by using less water in its operations, recycling the water and managing its wastewater effectively (Watering down 2017). Its factories are among the few in the country that treat their wastewater in accordance with the National Environmental Quality Standards (NEQS) before disposal. The most interesting way of using less water is how Nestlé Pakistan in Sheikhupura acquires water from fresh milk which is 87% water. This water is extracted and powdered milk is acquired as a byproduct which generates revenue for the company. The water is evaporated from the milk and reused elsewhere to minimize water withdrawals (Ibid). This is of significant importance to Pakistan due to the country's continuously lowering water availability owing largely to population rise, urbanization and climate change.

Figure 5: Nestlé's Pakistan Sheikhpura plant extracts water from the milk it processes



As Nestlé produces food items and beverages, it is imperative to also increase water use efficiency in agriculture sector. Nestlé Pakistan's operations in the country also depend on a vast dairy business. This, therefore, makes it imperative that the company is working together with dairy farmers so as to ensure the sustainability and reliability of the value chain. Nestlé has mechanisms in place enabling itself to not only monitor and ensure the quality of the products but also assist the farmers in resolving any problems. Moreover, Nestlé Pakistan's Sustainable Agriculture Team has introduced the water sense technology to help save water through digital intervention. The project has been executed in collaboration with the Center for Water Informatics and Technology at Lahore University of Management Sciences (LUMS). The technology allows farmers to monitor soil moisture levels for crops thus ensuring sustainable use of water resources. The farmer regularly receives information about which areas to irrigate via a cloud-based monitor. The results have shown improved yields since the use of water sense technology was initiated by Nestlé. Moreover, it is expected that water sense technology will allow farmers to save up to 12% vis-à-vis water usage at the farm level (Watering down 2017). Apart from this, Nestlé Pakistan, in its efforts for responsible management of water resources, has gone a step further by providing access to safe drinking water to approximately 60,000 people. Six water filtration plants were installed across Pakistan in order to cater to this initiative.



NESTLÉ PAKISTAN, IN ITS EFFORTS FOR RESPONSIBLE MANAGEMENT OF WATER RESOURCES, HAS GONE A STEP FURTHER BY PROVIDING ACCESS TO SAFE DRINKING WATER TO APPROXIMATELY 60,000 PEOPLE. FOR THIS, SIX WATER FILTRATION PLANTS WERE INSTALLED ACROSS PAKISTAN



Nestlé Pakistan facilitated drip irrigation system in nearly 93 acres of agricultural land in Sheikhpura which led to



of water savings



WATER SAVING THROUGH DRIP IRRIGATION

To further the agenda of increasing water use efficiency in agriculture, Nestlé Pakistan is also exploring the prospect of drip irrigation (in collaboration with PARC and Punjab Agriculture Department). Drip irrigation in contrast to flood irrigation is via “dripping”, which requires less water but at precise timing. The farmers are also educated about how to seed at intervals as opposed to back-to-back seeding. It is estimated that drip irrigation technology can result in the saving of at least 50% water (‘Watering down’, 2017). Nestlé has facilitated a drip irrigation system in nearly 93 acres of agricultural land in Sheikhpura. It is expected that this will result in an annual saving of 140 million litres of water (Baig 2018).

Stakeholders’ engagement is also an important pillar of Water Stewardship. Nestlé Pakistan has partnered with Lahore University of Management Sciences (LUMS) to support the LUMS Centre of Water Informatics and Technology (WIT). It seeks to fund the innovation and ideas that can further the agenda of Water Stewardship (Nestlé, LUMS enter into partnership 2017). Moreover, Nestlé Pakistan is engaged with stakeholders from all relevant corners ranging from farmers to government institutions such as Pakistan Agriculture Research Council and think tanks and Not-for-profit entities such as Sustainable Development Policy Institute (SDPI) and World Wide Fund for Nature (WWF).

Conclusion and Recommendations

The corporate sector has an important role to play to address the growing threat of water scarcity in Pakistan not only in terms of water use efficiency but also in terms of the wastewater management. Nestlé Pakistan and its adoption of water stewardship as a long-term goal is a good example for companies to emulate especially in terms of minimizing operational, reputational and regulatory risks. In this regard, the following recommendations can be useful to move forward:

01

Corporate sector entities already involved in implementing water stewardship initiatives can play an integral role in enhancing the capacity of other businesses. This can be done through the formation of a 'water network' that comprises businesses as well as research institutes from the government, non-governmental sector, and academia.

02

Information dissemination is the key to advocacy. Corporate sector entities should ensure that data in terms of water withdrawals for operations and supply chain is made public on a regular basis. Moreover, information in terms of the quality of water that is being extracted or withdrawn should also be made public. This will ensure trust building and confidence enhancement.

03

No water stewardship initiative can be completed without the involvement of local communities. They should be made an integral part of any initiative that aims to foster sustainable acquisition and use of water resources.

04

The concept of Water Stewardship should be integrated into national, regional and local water policies and plans in order to mainstream sustainable and efficient water resources management across sectors.

05

Collaborative research initiatives need to be undertaken so as to bridge the information gaps particularly as they pertain to risks due to climate change.

06

SMEs (working within the water industry and other associated industries with high water usage) have an important role to play in water management and conservation. There is however, a need to build their capacity so that they fully understand water risks and their potential role in water stewardship in terms of collective action.

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