INVESTMENT THEME: WATER, SANITATION & HYGIENE

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WATER, SANITATION & HYGIENE (WASH)

Overview

"Water is the oil of the 21st century." Andrew Liveris, CEO of DOW Chemical Company (quoted in The Economist magazine, 21 August 2008).

The world is facing a water crisis in terms of water availability and water quality. Due to the transboundary nature of this resource, conflicts between countries over shared water resources are also beginning to arise and become geopolitically significant. Water is one of our most precious resources, yet one of the least valued in investment terms. Although the planet has an abundance of water, less than 1% of the world's fresh water resources are readily available for human consumption. This limited supply is threatened by pollution, climate change and increasing demand from an ever growing global population.

Demand for water has historically grown at twice the rate of the population and is forecasted to increase by 41% by 2030 (from 2010 levels).[i] Globally, agricultural usage is by far the largest source of consumption, comprising 70% of global water supply. Industrial usage is second, at 22%, and domestic usage trails at 8%.[ii] Agricultural usage is plagued by hugely inefficient irrigation practices, particularly in under-developed countries. As countries develop, water consumption patterns shift, and demand rises in relation to industrial capacity and changing lifestyles.

A study by the World Health Organisation (WHO) and the United Nations International Children's Fund (UNICEF) indicates that 748 million people did not have access to safe drinking water in 2012, with 43% of these people located in Sub-Saharan Africa.[iii] According to a report by the International Finance Corporation, "most drinking water in the world should be considered unsafe unless it is treated properly and then protected from recontamination until use."[iv] Lack of access to clean drinking water and sanitation facilities leads to waterborne diseases and health issues. Additional consequences include loss of economic growth due to lower worker productivity and decreased school attendance due to disease burden and time spent on water collecting. In many communities, women and children walk large distances to fetch water on a daily basis, spending up to 6 hours per day collecting often-contaminated water from local sources.

In 2012, 2.5 billion people globally did not have access to improved sanitation services. Open defecation is still practised by over 1 billion people and untreated human waste from inadequate unlined pit latrines, continues to be released directly into the natural environment. In the African context, more than 800 million Africans do not have access to safe sanitation facilities. [v] This has extensive health implications as contaminated water sources are then used for drinking purposes and for irrigation, thus entering food supply. Inadequate sanitation is the second largest cause of disease in the world.

WASH SECTOR IN SUB SAHARAN AFRICA

Total population:
973 million

Urban population:
40%

Population without access to safe drinking water:
40%

Population without access to improved sanitation facilities:
69%

% of the population spending more than ½ hour per round-trip to collect water:
25%+

Number of hours per year spent collecting water:
40 billion hours

The infrastructure and service provision required to reach the remaining 27% of the population with clean and safe water, and the majority of the population with improved sanitation, requires substantial investment from both public and private sources. Water resources development needs to continue; whilst water treatment to potable quality standards and the roll-out of improved sanitation services needs to be prioritised.

Investment Opportunity

Water is a finite resource with demand growing faster than population growth. In emerging markets, underinvestment has plagued the industry, and critical upgrading of infrastructure, uptake of efficient technologies, and expansion of system architecture to bottom-of-the pyramid (BOP) populations has languished. However, in the last decade, increased privatisation and new business models along the water and sanitation supply chain have opened up opportunities for institutional and individual investors.

The current global market for water is estimated at $360 billion with an annual growth rate of 4-5%.[vi] It is estimated that an investment of US$22 trillion is required globally to meet the need for water through 2030.[vii] In Africa, there is an estimated need of US$190 billion in public investment to provide universal access to safe drinking water and basic sanitation.[viii]

Investment opportunities can be divided into those that increase the efficiency of water use and those that ensure provision and access to safe water and adequate sanitation services. Investments in greater efficiency must address the agricultural sector as the largest user of water supplies. Efficiency investments include distribution of well-established technologies, such as drip irrigation, or creating market-related instruments to encourage efficiency, such as water access credits. Investments in improved water provision either concentrate on the expansion of infrastructure with the aim of moving more households onto centralised systems, or distribution of “off-grid”, decentralized solutions. Decentralised solutions can include community access points, vended products and services and point-of-use purification technologies. Equally important is ensuring that investment is coupled with technical assistance and community education so that infrastructure and services are utilised and maintained.

Private investment in WASH also requires financial and business models that ensure that incentives are aligned and returns gained. Critically, earned income may not always come from the beneficiary, but could come from indirect beneficiaries such as governments, donors, and NGOs. Innovative models, such as micro loans and social franchising can increase uptake of decentralised products and services that may otherwise be out of reach for BOP customers.

Despite the challenges, the impact associated with WASH investments is strong. As Dalberg states, “Investing in sanitation and drinking water brings very large economic returns–estimated to average approximately 2% of GDP, rising to over 7% in some specific country contexts.”[ix] Investment also provides strong health returns, reducing the 2.7 million deaths annually attributable to lack of access to hygienic sanitation facilities.[x]

INDUSTRY SEGMENTS & KEY PLAYERS

Water supply
Utilities providing water storage and distribution infrastructure, such as piped water and community water standpipes; Companies providing off-grid solutions, such as boreholes and standalone water treatment facilities

Water treatment and technology
Companies providing water treatment and associated technology including materials, construction and engineering, filtration, disinfection, quality monitoring and testing

Sanitation infrastructure
Sanitation facility and sanitaryware manufacturers, as well as installers

Sanitation services
Vended toilets, showers, ablution facilities, human waste harvesting

Financiers
Governments, microfinance institutions (MFIs), development finance institutions (DFIs) and private investors

Demand drivers
Standards setting, quality assurance, self-help groups, nongovernmental organisations (NGOs), and community health workers

CASE: SANERGY

Overview

Sanergy provides a sustainable, dignified sanitation solution in informal settlements throughout Nairobi. Sanergy designs and manufactures low-cost, high-quality Fresh Life Toilets (FLTs) with easily manageable waste cartridges. Waste cartridges from the sanitation units are collected by Sanergy on a regular basis and transported to a centralised facility for treatment and re-use. Waste is then recycled and used to produce organic fertilizer and insect-based animal feed, which are both in short supply in Kenya.

Business and Impact Model

Sanergy operates through a franchise network of Fresh Life Operators (FLOs) who maintain and operate the FLTs across Nairobi. The FLOs are micro-entrepreneurs who purchase the FLTs with interest-free loans available through Sanergy's partnership with Kiva, an online microlending program. Sanergy's end-to-end solution integrates the entire value chain to provide a sustainable solution. Residents can pay per single use of the FLTs or for weekly or monthly subscriptions. Rates are competitive relative to other sanitation services offered in the informal settlements while the quality of the FLTs is of a much higher hygiene standard.

Investment

Acumen invested in Sanergy in 2013 with a consortium of investors, including Novastar and Eleos. The investment is intended to grow operations to thousands of toilets, servicing hundreds of thousands of customers daily. Acumen has also provided technical assistance grants that have helped Sanergy to undertake important market research for parts of their model, such as the branding and marketing of fertilizer. Acumen has built a network of corporate partners, such as Dow and SAP, who have provided networks, insights, mentors and leadership courses.

COMPANY PROFILE	INVESTOR PROFILE
Company: Sanergy	**Investor:** Acumen, a fund which raises charitable donations to invest in companies, leaders and ideas that are changing the way the world tackles poverty
Website: http://saner.gy	**Website:** www.acumen.org
Legal structure/ownership: For-profit and non-profit	**Investment type:** Equity and technical grants
Industry segment: Sanitation services	**Investment size:** US$400,000
Business model: Sanergy provides franchised, low-cost sanitation centres in slums; waste collection and recycling	**Investment date:** 2013 (Initial investment)
Countries: Kenya	**Investment return:** Not available; Sanergy is yet to break even
Customers: 750 toilets with an average of 33,000 daily uses	

CASE: SENEGALAISE DES EAUX (SDE)

Overview

Senegalaise des Eaux (SDE) is a water services operator which has been servicing Senegal since 1996 through a public-private partnership with the state holding company that is responsible for carrying out water reforms. SDE was the first African water utility to be certified ISO 9001-2000 in 2002 and was classified by UN Habitat as the most efficient water company in West Africa in 2009.

Business and Impact Model

SDE is responsible for the water treatment and distribution of drinking water in the major cities and towns of Senegal. Within its 10-year lease term, the company has expanded services to customers, improved environmental efficiency and increased financial performance. SDE has also implemented a "social water connections" program intended to boost water coverage in poor areas through the installation of standpipes in poor neighbourhoods. Standpipes are operated by community members that sign a contract with SDE, pay a deposit and receive a monthly bill; low-income users are cross-subsidised by higher-income users through a system of social tariffs. At a time when no banks were willing to lend money to the water sector, SDE saw the opportunity to serve the Dakar region where there was a great shortage of drinking water.

SDE has largely managed to solve earlier water shortages in the area. Between 1996-2010, SDE increased water production by 121% and increased client numbers by 115% (from 242,000 to 520,000). Additionally, SDE promotes water conservation by customer sensitisation through television broadcasts and posters, while other corporate responsibility initiatives include the training of plumbers. SDE also acts as a model for other utility operators and delegates from other African water utilities visit SDE for management benchmarking purposes.

Investment

Emerging Capital Partners invested EUR€25 million through its ECP Africa Fund II in 2009. ECP's investment has enabled SDE's general growth and has contributed to SDE's rollout of its social (subsidised) connections program which has increased access to water for 1.5 million citizens in lower income groups. The investment and ECP's partnership have also enabled SDE to embark on a series of environmental initiatives, which have increased its network efficiency (ratio of water distributed to water produced) from 68% to 80%.

COMPANY PROFILE	INVESTOR PROFILE
Company: Senegalaise des Eaux (SDE)	**Investor:** Emerging Capital Partners, a private equity fund manager dedicated to making investments in leading companies across the African continent
Website: www.sde.sn	**Website:** www.ecpinvestments.com
Legal structure/ownership: Private company. SDE is one of four core subsidiaries of Eranove, a Paris-based holding company	**Investment type:** Equity
Industry segment: Water treatment and distribution	**Investment size:** EUR€25 million
Business model: SDE operates through a public-private partnership with a state holding company; SDE manages the water supply network for Senegal	**Investment date:** June 2009
Countries: Senegal	**Investment return:** Undisclosed
Customers: 519,000 clients serving 5 million users with 148 million m^3 water produced in 2010	

CASE: WATER HEALTH INTERNATIONAL (WHI)

Overview

WaterHealth International provides reliable and affordable access to purified potable water in underserved communities in developing economies. WHI accomplishes this through off-grid water purification facilities called WaterHealth Centres (WHCs). The WHCs serve the drinking water needs of the communities affordably and sustainably compared to other options available in the market. They are modular in structure and utilise advanced filtration processes and technology to purify the locally available raw water source to better than World Health Organization (WHO) drinking water standards.

Business and Impact Model

WHI operates a build, operate, transfer (BOT) model whereby WHI constructs and operationalises the WHC. Ownership is then transferred to the local community under a contractual agreement wherein WHI operates and maintains the facility, using local workers, for a period of 15+ years. A centralised, real-time monitoring system enables high plant uptime and high water quality. To allow for convenient access to its water services, WHI deploys a reliable delivery service through an engaged network of Delivery Service Providers (DSPs) that deliver 20 litre containers of purified water directly to consumers' homes, typically situated within 1-5 km from the local WHC. WHI charges a user fee of approximately US$0.10 for 20 litres, which is substantially cheaper than other clean water alternatives. Additionally, WHI undertakes various community engagement programs to educate the community members on health and hygiene issues around safe water. WHCs can be constructed in as few as 20 days and can provide quality water through a sustainable model to any community for life.

An investment of US$10 million can finance 100-200 new WHCs (depending on the location) and provide a solution for centralised water utilities looking to provide immediate drinking water access to those people that remain unserved within its footprint. WHI sells WHCs to communities, foundations, governments and corporations and has recently developed an innovative financing vehicle that allows private capital to be deployed in these water plants on a commercial basis.

Investment

Vital Capital committed an investment of US$10 million to WHI in 2014. This investment has been used to develop WHI's operations and technology platform that enable it to operate at an unmatched scale. Today, more than 5 million people in 5 countries have sustainable access to affordable and safe drinking water because of WHI's presence in communities around the world.

COMPANY PROFILE	INVESTOR PROFILE
Company: Water Health International (WHI)	**Investor:** Vital Capital Fund, an impact investment fund that invests in opportunities which enhance the quality of life for communities in rapidly developing nations
Website: www.waterhealth.com	**Website:** www.vital-capital.com
Legal structure/ownership: Private social business	**Other investors:** International Finance Corporation, Coca Cola Company, Acumen Fund, Dow Chemical Corporation, Tata Capital and Sail Capital Partners
Industry segment: Water purification, retailing and distribution	**Investment type:** Equity capital investment in WHI technology and operations platform to enable scale up
Business model: WHI builds, operates and transfers off-grid water purification centers under a community contract; WHI also serves safe water in 20L cans to rural, peri-urban and urban customers at affordable rates	**Investment size:** US$10 million for expansion in Ghana and India and the development completion of WHI's next generation WaterHealth Center
Countries: WHCs are operational in India, Ghana, Bangladesh, Liberia and Nigeria	**Investment date:** 2014
Customers: Over 5 million people have been reached by the WHCs, providing up to 20 litres of purified drinking water per person per day (one WHC provides access to about 10,000 people)	**Investment return:** (Expected) Equity IRR of 20%+ within 5 years. Payback dependent on the occurrence of a liquidity event (IPO/M&A)

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ENDNOTES

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[v] United Nations Development Program. "Impact Investing in Africa: Trends, Constraints and Opportunities." Working Paper, November 2014. p. 31.

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