Argidius-YSB Case Study:
Impact Water

Presented by MarketShare Associates

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MARKETSHARE ASSOCIATES

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Executive Summary

This case study aims to identify and articulate the impacts of Yunus Social Business Uganda (YSBU), a nonprofit social venture fund, on a single business within its portfolio. Impact Water, which improves access to safe drinking water in schools and health centers in Uganda, and which was one of YSBU's earliest investments, with the first tranche of investment made in 2015. In addition to being a low-risk, high-performing investment-to-date, Impact Water's business model was considered by YSBU as having high potential for deep social impact.

Established in Uganda in 2015 as a for-profit business, Impact Water sells, installs, and maintains environmentally-friendly and low-cost water purification systems to institutions like schools and health centers on flexible multi-year credit terms. To date, Impact Water has sold over 1,800 water filtration systems in Uganda. The company plans to expand sales significantly in Uganda in the coming years, and in 2017, opened offices in both Kenya and Nigeria. Although the company's annual revenues have dropped due to late payments from schools and the business is not currently breaking even, Impact Water maintains its focus on schools as its core client base to maximize scale of impact. It is also refining its financing and product offers based on its learnings and is confident it will be able to both create new revenue from new market segments (beyond schools) and reach break-even in the coming years.

The company estimates that the systems sold in Uganda to-date provide access to safe drinking water to as many as 900,000 people. Research conducted for this case study confirms that students and faculty are drinking more water using Impact Water's systems than they did by boiling before the systems were installed. As well, the use of their water purification systems has reduced carbon emissions of 73,484 metric tons. The company also notes that this implies reduced exposure to smoke from burning biomass to boil water, potentially reducing the incidence of respiratory disease among school staff and students.

YSBU's debt financing of USD $200,000 has gone into Impact Water's general business fund, used to support the company's expansion into Uganda. YSBU also provided non-financial technical support, such as research to scope the overall market size for its products. Although Impact Water has diverse funding sources, YSBU's investment appears to have allowed the business to scale faster that it would have otherwise. It also credits YSBU for bringing significant positive attention to its work and model, and in the networks that it has helped the business build within the impact investment community. As well, YSB has facilitated an additional investment of $500,000 USD through a pay-for-success financing instrument called the "Social Success Note" (SSN) as a partnership with the Rockefeller Foundation and UBS Optimus Foundation.[1]

There were several lessons learned from Impact Water's experiences that may be relevant to other businesses wishing to articulate, improve and/or measure their social impacts:

- Being clear and realistic about the enterprise's financial objectives in terms of sustainability is critical to shaping strategy down the road.
- Investing in identifying market barriers to the social problem a company is trying to address and being clear about which ones it will prioritize can help the business focus and provide a framework within which it can innovate.
- Space – both in terms of time and resources – must be built into a social business' growth projections to allow for experimentation within the business model.

[1] http://www.yunussb.com/blog/launched-innovative-new-financing-solution-social-success-note/

- As with most social businesses, Impact Water has been scaling, including taking on additional capital even as its revenues fluctuate. However, strategies such as the higher purchase order agreement, a leasing-type system,[2] can help to minimize risk even as the business scales.

A number of lessons learned and recommendations also emerged for YSB and other social impact investors that wish to trace the impacts of their investment:

- An up-front investment in developing an impact calculator similar to the one that Impact Water has created to estimate emissions reductions from sales of its systems could be useful to estimate a business' impact / outcomes as the business scales.
- Since the investment from YSBU was used for general business operations/working capital, it was difficult to parse the impacts of those funds. If the use of those funds had been more clearly articulated, impacts may have been easier to trace.
- In addition to social impacts such as the ones that Impact Water has identified, the effects of Impact Water's growth on the growth of other businesses within related value chains (e.g. local materials suppliers) may also be significant and worth measuring at a later stage.
- The counterfactual could be articulated in a few different ways: this case study investigated what may have occurred without the infusion of capital from YSBU, and how this capital contributed to Impact Water's growth. Another approach would be to examine alternative products the schools would have purchased, if any, had they not purchased Impact Water's systems. A third, more resource-intensive approach would be something like a randomized control trial whereby social impacts (e.g. incidence of water-borne disease, attendance) in schools that disinfected their water by boiling were compared against schools that used Impact Water's systems.

[2] More information on this can be found in section 5.1 on Business Results.

Acronyms and Abbreviations

CO^2	Carbon dioxide
Logframe	Logical framework
MSA	MarketShare Associates
SB	Social Business
SME	Small or Medium Sized Enterprise
SSN	Social Success Note
TA	Technical Assistance
ToC	Theory of Change
UV	Ultraviolet
YSB	Yunus Social Business Fund Global
YSBU	Yunus Social Business Fund Uganda

1. Introduction

1.1 Argidius

The Argidius Foundation[3] has supported international, market-driven business development initiatives to alleviate poverty since 1992. With an overall vision of ''sustainable and growing small and medium enterprises (SMEs) that improve the lives of the poor through increased income generation and provision of opportunities for a dignified life through work,'' Argidius works to improve the effectiveness and reach of SME business development services by 1) building effective ecosystems of SME support in focus countries, 2) building the capacity of market-leading business development services (BDS) providers in focus countries and beyond, and 3) promoting effective learning to advance SME development by increasing the understanding of what works, and sharing our lessons with others. Aligned with its strategy, Argidius provides grant funding to organizations that support small businesses in focus countries to achieve growth.

1.2 YSB and YSB Uganda

Yunus Social Business (YSB) Global Initiatives was launched in 2011 as a nonprofit social venture fund that aims to bring sustainable solutions to social problems through growing social businesses. YSB is active in the Balkans, Brazil, Colombia, Haiti, India, Tunisia, and Uganda, coaching and mentoring entrepreneurs for investment readiness and providing concessionary loans. YSB Uganda (YSBU), a subsidiary of YSB Global Initiatives, launched in 2013 and operations began in earnest in 2015 with Accelerator and Investment services (described further below).

YSB and Argidius entered into a four-year partnership in January 2016, aimed at supporting YSBU in developing its social entrepreneurship acceleration and financing services in Uganda and scale them in the East Africa region.

> *"Across the world, small and medium enterprises (SMEs) lack access to finance. They experience a missing middle estimated to range between $2.1 trillion and $2.5 trillion in developing countries alone. This financing gap is even more acute for impact-oriented SMEs as these enterprises look to achieve both a social and financial return which may, in certain circumstances, come into conflict.*
>
> *Money, however, is not the problem. There is an estimated $210 trillion invested commercially by institutional and retail investors around the world. Over recent years, a variety of innovative financing tools, including impact investing and results-based financing, have emerged to help channel some of this capital to achieve greater social outcomes."*[4]

1.2.1 Nature and Scope of Social Businesses Supported

YSBU's stated goal is to foster small and growing businesses that provide market-based solutions to critical social issues. Thus far, YSBU has supported 38 SBs through its Accelerator program and 11 SBs through the Fund, six of which have been supported through both programs. Throughout its

[3] Referred to throughout as *Argidius*. Argidius is a Switzerland-based charitable foundation, founded in 1952. Argidius is part of Porticus, the international organization that advises the philanthropic programmes of charitable entities established by the Brenninkmeijer family.
[4] IT YSB. *Introduction to the Social Success Note*. Yunus Social Business Blog. December 2015: https://bit.ly/2HaXLs4

programming, YSBU works with two types of SBs and defines social impact differently for each of these types:

1. 'Livelihood' businesses that aim to improve access to jobs and improved incomes for marginalized populations – e.g. waste collection businesses that buy from waste pickers.
2. 'Social product' businesses that develop and sell items or services of need to marginalized populations – e.g. clean cookstoves, water filters.

Although YSBU does not prioritize certain sectors over others, the majority of businesses that it has invested in fall into the agribusiness, renewable energy, and water and sanitation sectors. This is consistent with YSBU's investment criteria that prioritize impact on low-income populations, most of whom either work in these fields or could benefit from more sustainable access to products and services in these sectors.

1.2.2 Nature and Scope of Support Provided by YSBU

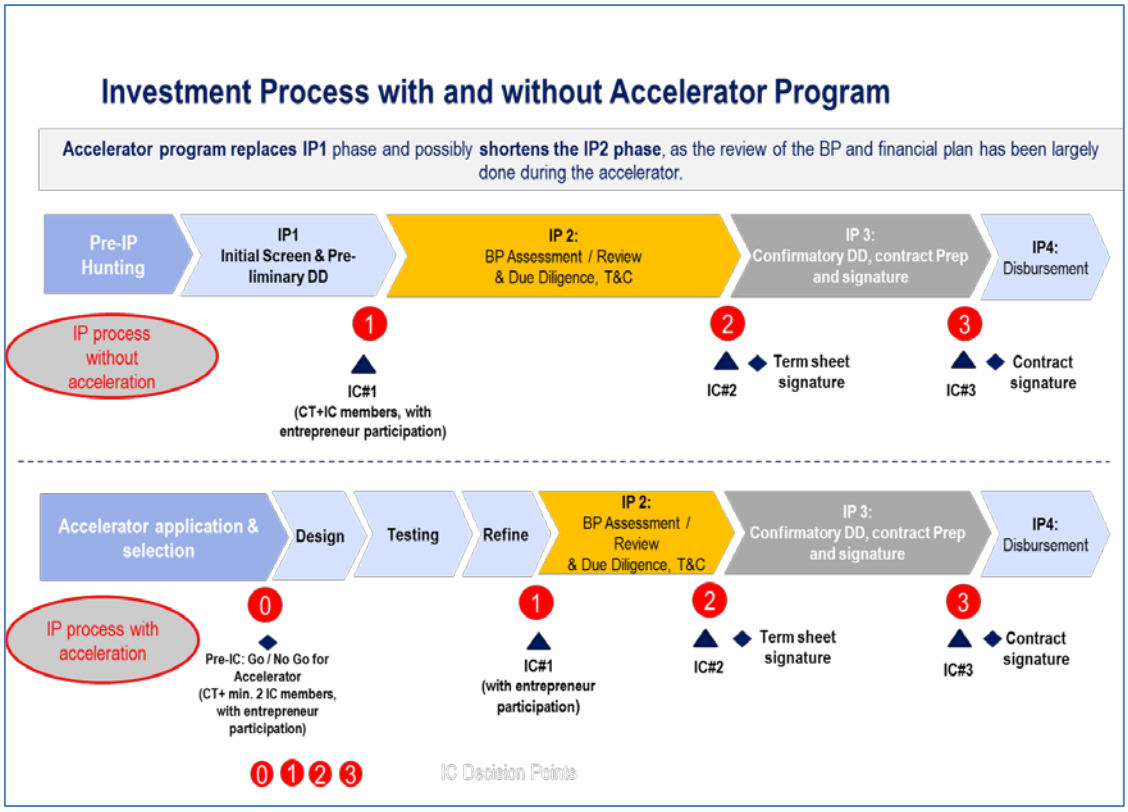
YSBU's two main business support programmes are:

1. The Accelerator, a structured program offered twice a year, which initially aimed to bring early-stage businesses to investment readiness. The Accelerator has since evolved to a shorter Investment Readiness program with smaller cohorts that targets more advanced businesses and also help YSBU understand if a company is investment-ready by working closely with them.
2. The Investment Fund that provides primary debt financing to businesses in amounts that initially ranged between USD $50,000 to $350,000, and now targets the "missing middle" with amounts between USD $100,000 to $1 million. YSBU prides itself on offering financing to social businesses without the strict collateral requirements and high interest rates of local banks. The typical tenure of its investments is 5-7 years, although YSBU also offers working capital loans for a shorter period of 1-3 years. Long-term business development support is also provided by YSBU and its partners, including business coaching, facilitating access to markets, advice on financial social reporting after initial investment.

Combining business acceleration and financing aims to support SBs along the whole lifecycle, from an early-stage social enterprise, to investment-readiness, to scaling the business to reach its full potential over a period of 5-8 years. The diagram below illustrates YSB's model, which is designed to grow SBs through a unique combination of its services, which may include the Accelerator and/or Investment. SBs may receive investment without going through the Accelerator, and Accelerated businesses may not necessarily receive investment.

Figure 1: YSB's investment pipeline[5]

[5] YSB slide deck.



2. Purpose of the Case Study

This case study aims to identify and articulate the impacts of YSBU's services on a single business within its portfolio. Impact Water, which improves access to safe drinking water in schools and health centers in Uganda, was selected[6] as the subject of the case study. With the first tranche of investment made in 2015, it was one of YSBU's earliest investments. In addition to being a low-risk, high-performing investment-to-date, Impact Water's business model is considered by YSBU as having high potential for deep social impact.

3. YSBU's Investment Objectives

YSBU began investing in Impact Water in 2015 without the business first going through the Accelerator, as it was considered to be investment-ready when discussions began in 2014. Investment began with a loan of USD $200,000 disbursed in two tranches, to be paid back by the end of 2021 with an interest rate of 12%. The money went into Impact Water's general business fund and was used as working capital to support the company's continued growth in Uganda. YSBU also provided non-financial technical support, such as research to scope the overall market size for its products. A further USD $500,000 in investment is planned for 2018 in the form of a Social Success Note (detailed further in section 4.4.6), with a variable interest rate that depends on the scale Impact Water achieves with sales of its water purification systems. YSB also worked with Impact Water to review sales projections to determine a reasonably ambitious target for the SSN.

The figure below lists the social impact targets that YSBU set for Impact Water when making the initial investment of $200,000 USD.

[6] Methodology for the selection of the focus SB is presented in Annex I.

Table 1: Social impact targets

Social impact indicators	2015	2016	2017	2018	2019
Full time jobs (#)	6	15	21	21	21
Part time jobs (#)		20	35	45	45
Female employees (#)	2	7	11	15	15
Products with social/environmental impact sold (#)	240	675	1,080	1,728	2,592
Impacted customers (#)	137,040	385,425	616,680	986,688	1,480,032

4. Background to the Social Business

4.1 History and Organization

Impact Water was established in Uganda in 2015 as a for-profit business selling, installing, and maintaining environmentally-friendly and low-cost water purification systems to institutions like schools and health centers on multi-year credit terms. To date, Impact Water has sold over 1,700 water filtration systems in Uganda, which it estimates provides access to safe drinking water to as many as 850,000 people. The company plans to expand sales significantly in Uganda in the coming years, and in 2017, it opened offices in both Kenya and Nigeria.

Impact Water[7] was started by the US-based non-governmental organization Impact Carbon,[8] which was established in 2008 by the University of California Berkley. Impact Carbon offers fuel-efficient cook stoves, which can reduce household expenditures on charcoal and gas, improve respiratory health, and at scale, reduce greenhouse gas emissions and deforestation.

In the course of Impact Carbon's work, the organization found that most schools in Uganda rely on either piped or borehole water, neither of which is necessarily safe for drinking without treatment. The consequences of untreated water are dire: diarrheal diseases, usually contracted by drinking unsafe water or from contact with contaminated hands that have not been washed with soap, are among the leading causes of death in the country.[9] In 2016, they caused 6.9% of all deaths of children under the age of 5.[10] And, according to UNICEF, more than 40% of diarrhoea cases in school children result from transmission in schools rather than home.[11]

The most common way that schools address this risk is to boil a fixed amount of water each day, typically using firewood, and allocate it between classrooms. Although boiling is a highly effective point-of-use disinfection method,[12] once the day's potable water is depleted, students will often drink from an untreated source. Boiling also incurs significant staff time and costs (of firewood) and may not be done consistently or correctly.

Impact Carbon saw an opportunity to further address its objective of reducing carbon emissions on a larger scale by finding potable water solutions for institutions like schools and medical facilities that

[7] Impact Water's website. http://www.impactwater.co/
[8] Impact Carbon's website. http://impactcarbon.org/
[9] Center for Disease Control. "Global Health – Uganda." https://www.cdc.gov/globalhealth/countries/uganda/default.htm
[10] https://vizhub.healthdata.org/gbd-compare/
[11] UNICEF. "RAISING CLEAN HANDS: Call to Action for WASH in Schools Advocacy Pack 2010." https://www.unicef.org/wash/schools/files/rch_cta_advocacypack_2010.pdf
[12] World Health Organization. Emergency treatment of drinking-water at the point of use. http://www.who.int/water_sanitation_health/publications/2011/tn5_treatment_water_en.pdf

do not require boiling. Uganda has one of the world's fastest growing populations, 50% of which is below the age of 15.[13] Within this context, Impact Carbon recognized the pro-activeness around safe water that existed among Ugandan schools represented a market opportunity, and Impact Water was born.

At the start, Impact Water piloted different water filtration systems to find the best kind of technologies for the needs of schools and other institutions, including ceramic filters and filtration systems that utilize ultraviolet (UV) disinfection. They found that the UV systems worked best for use in schools, and 80% of the filters the company sells are UV purification systems. With the flick of a switch, schools are able to filter at a rate of 227 to 454 liters an hour, depending on the size of the system.

The full package for Impact Water's product includes the purification system, a stainless-steel tank and stand, transport of the hardware, hardware installation, and three maintenance service visits, which are required about every six months depending on level of use. Impact Water views strong distribution and product maintenance services as key to ensuring that its product has the enduring social impact that inspired the founding of the company. Impact Water has noted that, around the world, safe water initiatives are notorious for failing after a couple of years, often due to lack of maintenance and repair service capacity in the market.[14] Impact Water therefore includes delivery, installation, and maintenance of the systems with its own staff as part of the product sale. The company believes that its maintenance and repair services, combined with its large scale of operations, make it systems and services more sustainable than most safe water initiatives.

YSBU began investing in Impact Water in 2015, with a loan of USD $200,000. YSBU is planning to invest a further USD $500,000 in Impact Water in 2018, with a variable interest rate that depends on the scale Impact Water is able to achieve with sales of its water purification systems.[15]

4.2 The Business Model

Marketing and Awareness. Impact Water targets its marketing efforts primarily toward institutions because of the scale of impact that can be achieved through schools, health facilities, and other community institutions (versus targeting households). Schools, of which there are more than 25,000 in Uganda, are its primary customers. Impact Water states, "We try not to limit our value proposition to schools, but that's where we started. Schools have the right characteristics globally for our model to be scaled." Impact Water identifies organizations and government offices that maintain networks of schools and health facilities as part of its outreach strategy. These include NGOs, the Ministry of Education, and the Ministry of Health. Having the Impact Water systems in schools and clinics also represents promotional value: the company actively markets to schools, but often schools and other customers learn by seeing or hearing about one of the existing systems.

The company has also targeted the general public with safe water campaigns using billboards and radio spots, and they are currently putting together television ads that will be viewed across Uganda. Some of the radio campaigns have aimed at raising awareness about safe water among school directors and head teachers, recognizing that they are the decision makers within schools. However, there have been numerous awareness-raising efforts in Uganda on the need for safe water, and they have not had to dedicate major efforts towards educating the marketplace. Schools and others are often quickly bought in. Their customer base already shows pro-active thinking in this respect, as evidenced by the prevalence of boiling drinking water. Awareness and prioritization around safe water

[13] Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2017 Revision*. https://esa.un.org/unpd/wpp

[14] Ruby Frankland. *Social Business Spotlight*. Yunus Social Business Blog. December 2017: https://bit.ly/2iS5HzK

[15] See section 4.4.6 Investors/ Investment Strategy for more details on this investment.

varies, however, across Sub-Saharan Africa. They have found that the felt need is lower in Nigeria, for example, where they have encountered more price sensitivity and more need to educate prospective customers. Uganda is also relatively small, which has meant they could become "a big fish in a smaller pond" more quickly. "If you ask schools or parents in Uganda, they usually know who we are," they say.

***Sales, manufacturing and distribution*.** The Impact Water purification systems combine locally sourced components (tanks, stands, and installation components such as pipes and fittings) with parts manufactured abroad such as ultraviolent multistage purifiers. Impact Water tries to achieve economy of scale by ordering in high volumes to minimize shipping costs and to capitalize on volume discounts from suppliers. Distribution of the systems remains challenging in Uganda, with poor roads, a high cost of transportation, a generally weak supply chain outside of urban centers, and a decentralized population. Impact Water's expansion markets also experience these barriers to varying degrees.

Nevertheless, the company sold 495 water purification systems in 2017, just short of its target of 550. Over the next five years, the Uganda office plans to sell and install over 3,600 systems in Uganda schools. The sales targets in its new Kenyan and Nigerian offices are even more aggressive, with more than 5,000 systems expected in 2018 alone. Impact Water is now also looking at expansion opportunities in Ethiopia and Ghana. The company believes that over the next 4 – 7 years, it can achieve 15,000 to 20,000 annual system sales globally as its business model is strengthened and scaled. The company believes this is achievable given the size of the developing country school market (Impact Water has sold to over 1,800 schools in Uganda, a country with over 25,000 schools. Sub-Saharan Africa alone has some 600,000 public schools and 150,000 private schools[16]), not to mention other institutional buyers.

The company is also testing out a new system that uses automated chlorine technology that is more affordable than the UV filtration systems, targeting government schools in more remote areas. In trials, Impact Water in Kenya and Nigeria have installed over 300 of these new systems in their first two months.

***Financing*.** With a price range of USD $300 to USD $1,200 (about USD $900 on average), the purification systems are low-cost compared to similar technologies[17] but expensive for most Ugandan schools, which make up 90% of Impact Water's customers. To address this barrier, Impact Water also offers financing options tailored to the cash flow of its customers. Schools usually collect payments for student enrolment each term – three terms per year. Repayment instalments for the water purification systems, therefore, are timed with the beginning of the school terms. Down payments are followed by up to five termly payments, averaging $60-$200 each payment (depending on the type of system purchased). The average Ugandan school has 514 students, which means that the cost per student is around USD $0.40 per term during the five terms (of repayments). Impact Water's credit services also do not require collateral, which most schools would not be able to offer.

The terms of credit to customers have been an evolving process. Initially, Impact Water did not require a down payment from customers to install the water purification systems. Recognizing the need for stronger commitment at the outset to ensure customers are serious about repayment, Impact Water began requiring a deposit of 3% to 5% of the total cost for the system. That improved payment performance, but not significantly enough. Impact Water is now working with down payments between 15% and 20% of the total cost of the system, which they believe will serve as a stronger proxy for credit worthiness.

[16] Ruby Frankland. *Social Business Spotlight*. Yunus Social Business Blog. December 2017: https://bit.ly/2iS5HzK

[17] Impact Water's average system price is $900 whereas it states that other safe water technologies for institutions require an upfront investment of between $1200-$2,000.

The company is also moving to establish a new contract called a 'higher purchase,' which is essentially leasing. When schools buy the systems, they do not fully own them until they make their final payment. The implication of this is that if a school does not make a payment, the company would have the option, if needed, to repossess the system. "We currently transfer the title of the systems to the schools upon installation," explains Impact Water. "That then requires us to file a lawsuit if the schools default. With the newer model, Impact Water owns the system until it is 100 percent paid. This is in lieu of collateral, which is not commonly available among our customers."

***Maintenance*.** Each water filtration system requires various types of regular maintenance. In addition to routine maintenance, the systems can malfunction as a result of power supply fluctuations, general wear and tear and other challenges associated with a school or health facility environment. For example, sometimes National Water (the piped water supply in Uganda) will be cut off in an area due to construction or an institution failing to pay their water bill on time. A handful of schools have also had problems with children breaking the equipment, especially when children play with the taps.

The company currently employs 13 part-time technicians across Uganda. Each system comes with three maintenance visits by Impact Water technicians – one every six months. After that, customers need to pay for the services (about UGX 65,000 or USD $20) every twelve months, which Impact Water continues to offer, given the lack of other maintenance service providers in the market.

Initially, Impact Water had technicians from their headquarters filling maintenance orders in Uganda. As the company scaled, they have expanded to now having 13 technicians based throughout Uganda to respond to maintenance requests. Routine maintenance includes changing filters. The UV bulb has a 9,000-hour life, which can last from one to three years. These types of services are simple and takes the technician only five minutes to complete. Some schools have experienced damage due to periodic power spikes, as well as from children breaking the equipment.

> *"Greater system lifetime and utility equates to greater value for customers and increased demand."*
>
> *– Impact Water*

In an effort to further support the efficient scaling of the business, both in Uganda and other countries, Impact Water has been moving to a preventative maintenance starter kit with the sale of each system, allowing the schools to do the changing of the filters themselves. "It's an unproven model, though, and we don't know whether schools will do the maintenance or keep the filters in a closet," they caution. Their plan is to monitor closely a subset of schools working with this new offering and to make adjustments as needed.

4.3 Social Impact Objectives

Impact Water says that there is "a dynamic alignment between [its] social impact objectives and its business model."[18] The social benefits associated with safe water depend on reliable access, and therefore sustained social impact requires that systems are not only purchased and used, but also remain operational. Impact Water's business model addresses what the company sees as the key barriers to institutional water purification technologies in developing countries: **low awareness of product options** for water purification, **weak product distribution** where the need is greatest, **lack of appropriate financing** for the hardware, and **insufficient availability of maintenance and repair services** for the hardware.

[18] Impact Water Business Plan. October 2016.

YSBU financing was meant to allow Impact Water to scale its efforts to address these barriers, thereby scaling social impact through safe water access and reduced environmental degradation. Implicit in this is the demonstration effect (i.e. the success of their products) which could pave the way for other products and services to overcome similar barriers.

***Safe Water Access*.** Applying the company's estimate that each system sold accounts for 514[19] children gaining access to safe water, Impact Water's 2018 sales targets equate to the potential of 2.75 million new children utilizing the filtration systems. If the company's 2020 expected annual sales volumes across all country offices are reached, it would mean an estimated 7.5 million people newly have access to safe water. This can reduce waterborne illness, particularly when combined with safe sanitation facilities and hygiene practice. "There's a healthy debate in the water, sanitation, and hygiene (WASH) sector about which variables are the most important in terms of health impact," says Impact Water. "We don't focus on parsing that out. We provide safe water access, and we've purposely chosen to stay in water. That said, we fundamentally understand the interdependence of sanitation, hygiene, and water. And we plan to start experimenting with handwashing stations in some of our Ugandan schools this year. Over time, we could easily add handwashing stations and improved sanitation offerings to all our schools."

The company also says, "if you're delivering safe water, you're delivering a human right, and you're also delivering dignity." According to UNICEF, more than 40% of diarrhea cases in school-aged children result from infection in school, rather than at home.[20] "Schools are foundational structures in society, and if kids can't get safe drinking water when they go to their school, then there are both measurable as well as less measurable costs to that."

***School attendance*.** It is estimated that every year, children globally lose 272 million school days as a result of diarrhea,[21] and Impact Water is also motivated by the socio-economic advancements that can result from reduced school absenteeism. Parents want to be convinced that schools have safe and up-to-standard facilities. Having safe water access at a school can encourage increased enrolment, and therefore fees, as well as student retention over the course of the term. As well, Impact Water believes that girls' attendance will improve when safe water is combined with improved sanitation services because menstruation management becomes easier for girls.[22]

***Environmental impacts*.** Another impact objective for Impact Water is reduced biomass consumption and a corresponding decrease in indoor air pollution by eliminating the need for users of the water purification systems to boil water. In not burning wood fuels, carbon dioxide (CO_2) and methane (both greenhouse gases), as well as carbon monoxide and other particulate matter emissions are avoided.

Impact Carbon, in cooperation with the Gold Standard[23] and others, have developed an impact calculator to estimate emissions reductions as a result of the sale and presumed use of the water purification systems. The calculator is backed by primary and secondary research.[24] In addition to emissions averted, the impact calculator accounts for trees not cut down for wood fuel to boil water.

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[19] This estimate is based on the average student population of Ugandan schools.

[20] United Nations International Children's Emergency Fund. *Raising Clean Hands: Call to Action for WASH in Schools Advocacy Pack*. 2010. https://uni.cf/2fYyYXA

[21] Hutton, Guy, and Laurance Haller. *Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the Global Level, Water, Sanitation and Health Protection of the Human Environment*. World Health Organization. 2004. https://uni.cf/2EV72i3

[22] Ruby Frankland. *Social Business Spotlight*. Yunus Social Business Blog. December 2017: https://bit.ly/2iS5HzK

[23] https://www.goldstandard.org/

[24] The calculator uses a standard emissions factor for CO^2 and methane established by the IPCC.[24] Impact Carbon tested the amount of wood fuel needed to boil a liter of water using the most common method of three-stone fire stove, following the Global Alliance for Clean Cookstoves' protocol.

Impact Water converts emissions reductions calculations into carbon credits – as does Impact Carbon – which contribute to the company's revenue. Impact Water has established CO_2 emissions reductions targets under various buying agreements, including with sovereign governments. "We don't use CO_2 targets to drive country-level sales targets," says Impact Water. "We let the system sales targets serve as a proxy for the approximate amount of emission reductions we will be generating."

4.4 Key stakeholders

4.4.1 Customers

From the outset, schools have been Impact Water's primary customer base. About 70% of schools the company sells to are private. The company has found in Uganda that schools, both public or private, are very concerned with enrolment rates, both in terms of retention of current students and the recruitment of new ones. The Impact Water systems are perceived to make the school environment more attractive to parents, often helping to increase enrolment. Schools also report that the incidence of sickness drops when they install the systems, and as a result absenteeism is reduced. The value proposition of the product is highest with schools. As the business develops its lower cost automated chlorine dispensing system, it expects the percentage of public school sales to increase significantly.

Health facilities have purchased Impact Water's systems in relatively small numbers to date (about 2% of total sales) but are expected to increase in the coming years as the company has developed more affordable products with smaller configurations that will meet health clinic needs better. The company has also started to target other institutional customers, such as factories, churches, university dormitories, and apartment buildings.

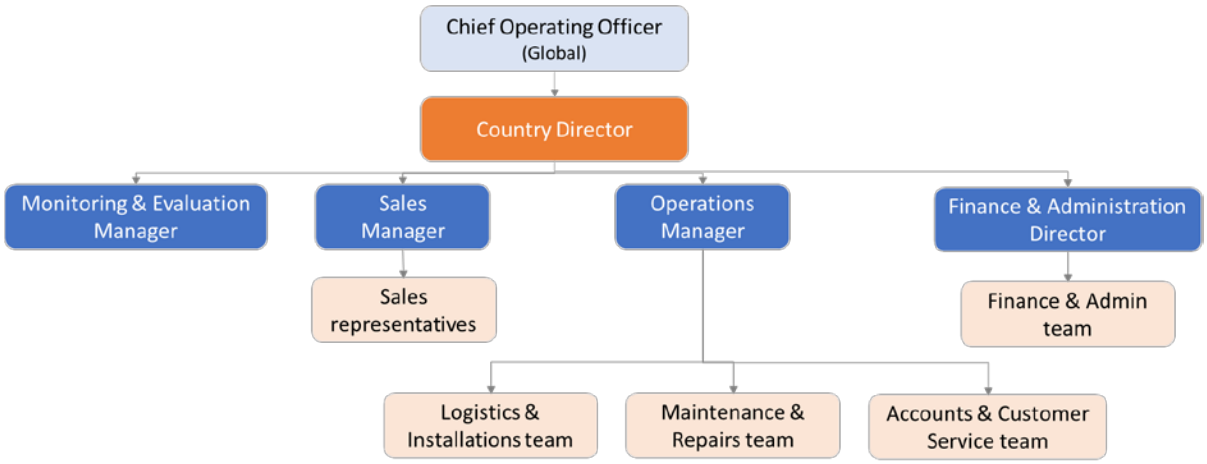
4.4.2 Employees

The founders of Impact Water are from the United States of America. The current Country Director of operations in Uganda is also American but most of the office staff in Kampala are Ugandan, as are the technicians and transport staff. As of January 2018, Impact Water employed 22 Ugandans full-time.

"We've done a lot of really valuable learning in the Uganda office," says Impact Water. "As we expand into Kenya and Nigeria, the teams will be able to start off from that foundation. The former Country Director of Uganda, for example, has moved to our office in Kenya."

The following is an organizational chart of Impact Water's Uganda office, which is indicative of the structure of newer offices in the company's expansion markets:

Figure 2: Impact Water's Organizational Chart in Uganda



4.4.3 Suppliers

Impact Water sources from several suppliers, both local and international. In Uganda, they have four to five main local suppliers and three main international suppliers. They import their UV systems from a supplier in Asia and the ceramic filters from a Dutch company producing in India. Everything else is sourced in Uganda – such as tanks, stands, and insulation components. The Ugandan suppliers, by and large, often use imported materials and components themselves. "The parts that we import cost us around a third of what they would be if we purchased them locally," says Impact Water.

4.4.4 Local governments

Local governments are important stakeholders for the company to be able to operate successfully. In Uganda, Impact Water benefits from a Letter of Approval from the Ugandan Government. Although some water infrastructure exists in Uganda, lack of effective mechanisms for maintenance means that many systems are in disrepair and much of the infrastructure does not meet government access, quantity, and quality standards. Uganda has focused on public-private partnerships to help in addressing the gap, and many developing country markets exhibit similar market conditions and government priorities to improve safe water access.[25]

4.4.5 Competitors

Impact Water does not see strong competition in Uganda within the specific market segment they are oriented towards. For example, few enterprises selling water treatment and purification technologies are willing to sell to schools on credit without collateral or allow them to repay on termly rather than monthly instalments. Furthermore, companies selling water purification equipment typically do so as part of a much broader product offering including pool supplies, submersible and above-ground pumps, borehole related equipment and parts, etc. The downside of such a model is that providing customized installations inclusive of tanks, stands, and long-term, affordable maintenance and repair services is typically not offered. Davis & Shirtliff, a Kenyan company with operations throughout the region and present in Uganda since 1996, is one such competitor, selling similar UV filtration systems but without tanks, stands, delivery, customized installation, and maintenance and repair services included as part of its standard product.

A few 'copycat' businesses using Impact Water's name and marketing materials have also been started by ex-employees but have seen limited success. Impact Water has posted about the copycat

[25] Impact Water Business Plan. October 2016.

businesses in local newspapers to alert the public that these individuals no longer worked for or represented Impact Water.

Although Impact Water aims to demonstrate that market barriers to safe water technologies can be overcome, they believe the barriers to entry will significantly limit the number of competitors. "It's difficult to make a profit from what we're doing," says Impact Water.

4.4.6 Investors/ Investment Strategy

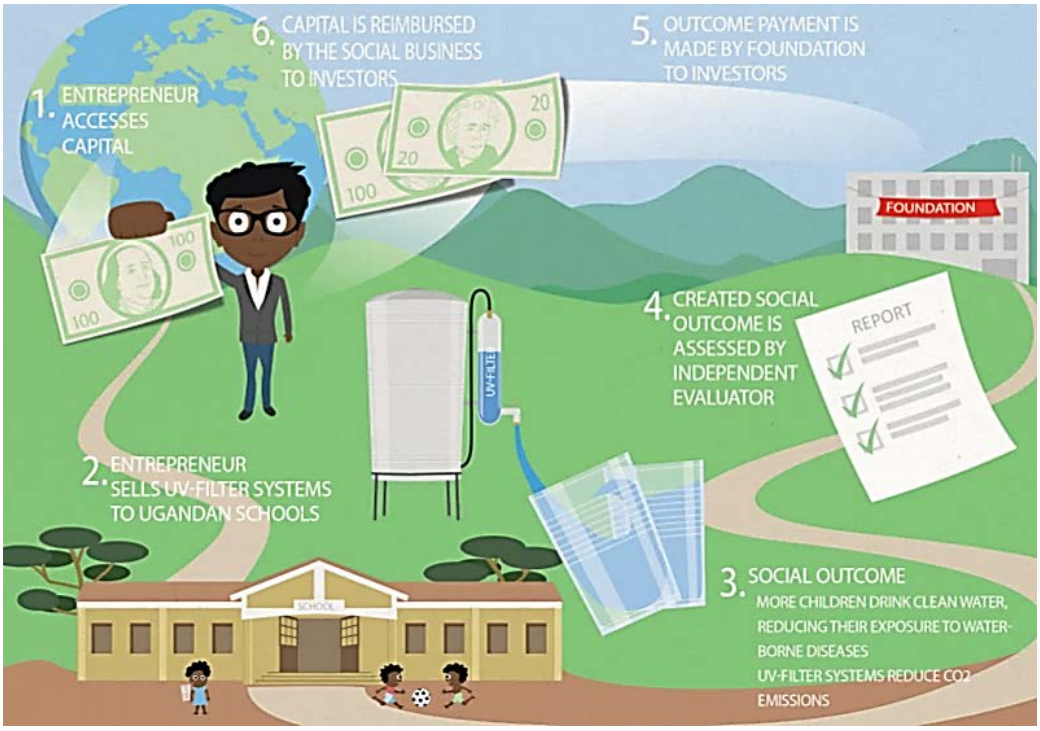
Impact Water has three main sources of investment. First, Impact Water in Uganda has a USD $800,000 credit line with Kiva[26] – a U.S.-based nonprofit lender with a mission to alleviate poverty. The company has been a Kiva partner since 2012, and nearly 90% of Impact Water's sales have been financed through Kiva loans: when a system is installed in a school after being sold on credit, Kiva raises the money through their crowd sourcing platform. Impact Water's loans are popular on Kiva and tend to be funded within a couple of days, meaning that Impact Water gets the revenue for each system sold much quicker than they otherwise would – given that schools often take a year and a half to repay in full. Once schools pay off their debt to Impact Water, the company then pays back to Kiva. Kiva covers default risk and exchange risk beyond 10%. "If we did not have the Kiva line of credit to help de-risk our asset-based finance to our customers," says Impact Water, "we would not have been able to test and scale our business." Impact Water is currently in discussions with Kiva to extend and increase its line of credit to support its operations in Kenya and Nigeria as well.

YSBU has provided a USD $200,000 debt investment to the company, with a 12% monthly interest rate. The YSBU loan helped Impact Water to scale at a critical time. "That money went into the general business fund," explains Impact Water. "It made it easier for us to make some purchases and pay for some operational expenses. At the time our Kiva credit limit was lower, and we were close to topping out." A further USD $500,000 debt investment has recently been approved through a mechanism known as a Social Success Note (SSN)[27] – structured like a development impact bond[28] whereby the interest rate on the social success note is reduced over time as Impact Water achieve outcome objectives. "There's a lender, there's an outcome payer, and there's an implementer," explains Impact Water. "In our case, UBS Optimus Foundation[29] is the lender (USD $500K) and Rockefeller Foundation[30] is the outcome payer (USD $200K). If Impact Water Uganda hits its target of 3,600 water purification systems sold and installed to schools during the five-year loan period, we will receive part of that outcome payment - effectively reducing our interest to 0 percent."

The image below from YSB illustrates how the model works specifically in the case of Impact Water.

[26] https://www.kiva.org/
[27] IT YSB. *Introduction to the Social Success Note*. Yunus Social Business Blog. December 2015: https://bit.ly/2HaXLs4
[28] Development impact bonds seek to mobilize commercial capital to fund proven social programs, with a promise to be paid back by government if these programs achieve desired social outcomes.
[29] https://bit.ly/2uirZBY
[30] https://bit.ly/1CdnjHE

Figure 3: The Social Success Note investment process[31]



Finally, Impact Water partners with carbon buyers, which they have referred to as "monetizing positive externalities." This includes sovereign nations – Germany and Norway specifically – as well as intermediaries. Buyers purchase carbon credits from Impact Water to offset their own emissions. The German Government, through The Foundation "Future of the Carbon Market", has paid Impact Water upfront for the carbon credits, while the Norwegian Ministry of Climate and Environment and the intermediaries have required the company to generate the emissions reductions – through the sale of their water purification systems – before buying the carbon credits. "Carbon financing has substituted equity for the first couple years of the business," says Impact Water. "We were able to start because of financing from Impact Carbon, who raised money through carbon emission reductions. Normally, a business like ours would need a large equity investment because nobody would give you debt without assets. Carbon finance has been really important for the initial creation of the business, and the first several years of operation. In the longer-term business plan, though, carbon is deemphasized. We don't want the business to be dependent on carbon since we don't know if the market will be there in the future."

In terms of an investment strategy, Impact Water has only pursued debt investment to date but is now considering equity investments as well. Historically, they have wanted to ensure that taking an equity investment was well aligned with the social impact focus. They also felt that investors might not value the company accurately due to overemphasizing exit versus retained earnings potential and future cash flows. "A big part of that is about carbon," says Impact Water. "Some investors aren't as familiar with the carbon model."

5. Impact Water's Results

5.1 Business results

[31] YSB. "Social Success Note."

***Sales*.** Impact Water has sold and installed over 3,200 water purification systems since the company began, with about 55% of total sales coming from Uganda. In 2017, Impact Water sold 495 systems in Uganda, about 10% short of their target of 550 systems.

2017 was an inflection point for the company, as their operations expanded to both Kenya and Nigeria. Sales targets across the two countries for 2017 were extremely aggressive at 5,000+ systems, and the company fell well short of this target achieving only 273 installations of which about three-quarters were in Nigeria.

Impact Water attributes the sales shortfall in Kenya to setbacks related to the presidential election (and run-off election), which cast deep uncertainty in the marketplace for the entire school year and caused many decision-makers to postpone new purchases to 2018. Kenya received 264 orders, most of which were placed in the few remaining weeks of the school year following the conclusion of the run-off presidential election. In addition, Impact Water faced increased price sensitivity and a much greater need to educate schools on the risks of untreated water than anticipated. This delayed uptake forced the company to invest heavily in sensitizing schools which it did via conducting a water quality analysis (which showed 90% of 246 schools surveyed failed at least one national drinking water standard parameters). This analysis was then used to conduct product demonstrations and marketing and sales presentations for schools, school associations and State Governments across more than seven States. This effort helped generate a total of 783 purchase orders in Nigeria in 2017 but many schools delayed submitting their down payments until the start of the 2018 school year (Nigeria also emerged from a recession in 2017).[32] This backlog and an increasing uptick in both sales and installations has contributed to a strong start in 2018 for both country offices with a combined year-to-date installation total of over 1150 systems. The majority of these have been for a lower-cost, automated chlorine *UltraFlo* systems, which the company now views as an important part of achieving its ambitious growth targets.

***Financing*.** Some 90% of Impact Water's customers choose to purchase the water purification systems on credit, making it a vital sales mechanism for the company to reach its intended customer base. The majority of customers pay back their debt to Impact Water on time and in full. However, 20% of payments are late.

"We've realized that our deposit was originally a bit low as compared to other best practices, like pay-as-you-go solar energy companies," explains Impact Water. "When you think about the total value of our systems ranging from $300 - $1200, and we've been asking for a deposit of only 3-5% – that's a bit too small. Being a social business, we want to increase our impact, but at the same time we need to be cognizant of those costs." By raising the down payment, Impact Water believes payment performance will improve, viewing the higher down payment as a proxy for credit worthiness.

The company is also exploring the use of credit worthiness tools, credit assessment tools, and personal guarantees. In Uganda, Impact Water has conducted a large-scale survey to try and capture characteristics of schools that correlate positively with payment performance. Schools that have three-stone fires instead of an improved cook stove, for example, have been highly correlated with poor payment performance, according to Impact Water. Schools that collect 40% or more of termly payments due from parents within the first 30 days tend to be reliable payers, in another example.

As previously mentioned, Impact Water is in the midst of rolling out a new credit approach called the *higher purchase order agreement*, which is essentially like leasing. While it is too early to know how effective this will be but the ability to repossess a system in the event of delinquent payments has the potential to be game-changing for the business.

[32] https://www.cnn.com/2017/09/05/africa/nigeria-south-africa-recession/index.html

***Revenues*.** Impact Water's annual sales revenue has decreased since the company began: revenues were $452,789 in 2015, $440,048 in 2016, and $345,962 in 2017. "Revenues are low because schools have limited financial resources and have competing priorities," Impact Water explains. "We could sell to hotels and restaurants and be more profitable more quickly, but then we wouldn't be that unique, and more importantly we wouldn't be in 1,800 Ugandan schools by now. We also launched a 120 liter ceramic filter in 2017 called *UltraOne* priced at a fourth or third of our UV systems and this drove down revenues as more schools chose the lower priced ceramic filter. As social entrepreneurs, it's our challenge to continuously focus on maximizing our social impact and using that as our compass while we work to achieve enough revenue to break even. Our input costs are very low. A lot of our costs are human resource costs, and as a matter of ensuring quality we don't want to lower those."

Profits. Impact Water is not currently making profits even as they scale (and perhaps because of this). As a social business, they recognize that the breakeven period is longer than other businesses, and they currently lose USD $100,000 to $200,000 per year in Uganda. "The company's very mission driven," says Impact Water. "To be profitable in the short-term, we would have to focus on other commercial segments, push our pricing up, and reduce our risk appetite. None of that would be consistent with our mission. As opposed to pushing towards profitability or 'breakeven' as soon as possible, we are interested in continuing with a broad focus on the school segment. That includes looking at ways to reach public schools, form new partnerships, and new product development. Now that we're scaling, we're looking at charging for things like delivery or installation, or increasing down payments. But none of that has changed our focus and mission to reach as many schools as we can. We are also confident that the Uganda business can reach break-even within three to five years as it matures further and continues to scale."

The company is looking at ways to cover losses through grant funding, citing that their social impact objectives outweigh any profit objective. "The social value we create is high, and we may find that we will prefer to delay our breakeven point if it means increased social impact."

***Maintenance*.** Depending on the location of the schools and the type of maintenance that needs to be done, technicians can cover twenty schools in a day. Currently there are about 300-500 schools that need their filters serviced per term. "We do mapping and clustering based on the need," says Impact Water. "The filters then get sent out by bus to our remote technicians. The technicians have their list of schools to cover, and we do the coordination with the schools before and after servicing." The product includes a two-year maintenance package, or three maintenance visits.

Matching maintenance services with the needs of product users is a clear challenge for Impact Water. "It's been a process with the technicians we've identified up to now," says Impact Water. "There are still four more districts that we need to recruit for." Some schools report challenges getting maintenance service when they request it, and others report not knowing when or how to contact a technician for maintenance. Many users of Impact Water's systems are not thinking ahead to the need for maintenance and, therefore, are surprised when the filtration rate slows, thinking the system has broken. Still others hesitate to make their payments to Impact Water when they notice that the system is not functioning optimally – not realizing that it may only need a filter change.

"Most of our maintenance happens when the school term opens," the company explains. "We complete termly maintenance calls to schools to make sure the systems are working as well as communicating with schools regularly about payments. We have been in communication with all of these schools this term. We have also started tracking maintenance on Salesforce, as well as uploading maintenance forms to each school to organize the maintenance history."

5.2 Social Impacts

***Safe Water Access*.** The 1,800 water filtration systems it has sold in Uganda are estimated to provide access to safe drinking water to as many as 900,000 people. If the average Ugandan school has 514 students, Impact Water's 2017 sales alone equates to an estimated 254,430 children gaining access to a sustainable source of safe water. This impact can be considered additional; the schools are buying Impact Water's systems as they do not believe their water, even after treatment by boiling, is safe to drink. As well, research conducted for this case study confirms that students and faculty are drinking more water using Impact Water's systems than they did by boiling before the systems were installed. There would generally be a limit to the amount of water being boiled each day by schools, owing to the time and costs required. This 'suppressed demand' means that once filters are installed, water usage rises to meet the demand.

The water quality from the systems is tested randomly by third-party auditors, that are accredited by the United Nations, as part of the carbon monitoring conducted on behalf of Impact Carbon. Impact Water notes that audits have revealed that the rate of water use varies, unsurprisingly, depending on whether the school is a day school or boarding school. Impact Water also reports that these audits have found that 100% of their systems sold are in use, although research conducted for this case study suggests that use is likely below 100% due to outstanding maintenance needs and challenges with infrastructure.

Some school faculty have anecdotally reported health improvements among students from the water systems. That said, these schools were presumably not properly boiling water, which can be an effective point-of-use disinfection method. As well, safe water chains are not being extended to the household – meaning children can still become sick from drinking water at home.[33] "Our intervention is not a silver bullet," says Impact Water. "Very few entities are going to deliver water, sanitation, and hygiene all with equal intensity to have a high degree of probability of reducing diarrheal disease incidence. It's a tough thing to do holistically."

Customer Highlight: Namungoona Kigobe Primary School

Namungoona Kigobe Primary School is on the outskirts of Kampala's city limits. It purchased and had installed an Impact Water purification system in 2017. The public school currently has 629 enrolled students between the ages of 6 and 14. The school facility is connected to the municipal water supply, which draws water from nearby Lake Victoria. "That water is not safe," says one of the school's teachers who manages the Impact Water purification system. "Untreated sewage drains into the lake, and the water treatment plant does not do a good enough job purifying the water. It used to be safe, but with population growth and higher demand on the system over the years, it started to make people sick."

[33] Impact Water is however now looking at launching a chlorine tablet product called UltraTab, which will be available as 100-liter tablets for schools that do not have adequate water pressure. Parallel to this product launch will be a 20-liter tablet available for sale by schools to parents to use in their homes.

Before purchasing the water purification system from Impact Water, the school used to treat a fixed amount of tap water using purification tablets. The treated water went into several buckets, which teachers and students would fill bottles from for classroom or individual use. “It was often not enough water, though, for what the children drink,” says the teacher. “Towards the end of the day, if the children came to get more water, and the treated buckets were empty, they would just drink straight from the tap. We didn’t always know it was happening. There were regular cases of typhoid among the students.”

The school purchased the Impact Water UV system with a 450-liter tank, which is connected to several spigots that students and teachers fill their personal water bottles from. They purify the water about every week, refilling the tank. “The whole process takes about seven hours. The students now have access to as much safe drinking water as they want, and cases of typhoid are much lower now,” the teacher explains. “Some of the children definitely have safe drinking water at home, but some may not all of the time. The typical approach is to boil water in the house to make it safe for drinking. That’s the same thing us teachers do at home as well.” The school also conducts sanitation and hygiene lessons every Friday to complement the safe water access. The belief is that the lessons will “sensitize” students so that they will influence behaviours within their families at home.

The school learned about the purification systems when Impact Water came to the school to promote their product. “It’s cheaper in the long run,” says the teacher. “It also saves time. We used to have to fetch water from the tap, which was a bit of a walk. Now the tap is connected directly to the filter, and the children just fill their own individual bottles throughout the day.” The school has paid two USD $200 instalments since purchasing the water purification system, with three more to go until their loan is fully paid off.

***School attendance*.** As mentioned earlier, WASH infrastructure can reduce the rate of absenteeism due to diarrheal disease, which also has economic returns. Impact Water does not report on the impact of their systems on school absenteeism, though Impact Water schools often report to Impact Water a reduction in absenteeism after the installation of their Impact Water system.

***Environmental impacts*.** Based on the impact calculator they developed, Impact Water has reported that by October 2017, the use of their water purification systems has reduced carbon emissions totaling 73,484 metric tons.

5.3. Results for YSBU

Impact Water has been a high-performing loan with consistent repayment; from a financial perspective, YSBU appears to have met its objectives.

In terms of social impact objectives, results for these have been mixed. The table below shows Impact Water's results in comparison to the impact targets that YSBU agreed upon with them when the initial investment was made.

Table 2: Social impact objectives and results

	2015			2016			2017		
	Target	Actual	% variance	Target	Actual	% variance	Target	Actual	% variance
Full time jobs (#)	6	28	+367%	15	19	+27%	21	19	-10%
Part time jobs (#)		4		20	-	-100%	35	-	-100%
Female employees (#)	2	10	+400%	7	9	+29%	11	11	0%
Products with social/environmental impact sold (#)	240	651	+171%	675	486	-27%	1,080	495	-57%
Impacted customers (#)	137,040	325,500	+138%	247,000	243,000	-2%	233,500	254,430	+9%

Additionality. The additionality of its investment and its attribution to Impact Water's overall growth, including revenues, profits and jobs created, is mixed: the original $200,000 constituted 20% of Impact Water's available credit at the time, so one could attribute 20% of the company's growth since then to YSBU. However, they also had about USD $2 million from the German government (as an advanced payment against a carbon buying agreement) via KfW's The Foundation "Future of the Carbon Market", which was also supporting operating costs from 2015 onward, as well as unrestricted funds from the parent nonprofit. As Impact Water puts it, "It's difficult to know the counterfactual. We can't say that there's anything we wouldn't have done without YSB's investment, but the money certainly helped us scale faster […] Without YSB, things would have been slowed down, but it wouldn't have derailed us completely. We have our Kiva credit line, and we would have worked to find other options. Having said that, YSB has been a fantastic partner for us and helped bring a lot of positive attention to our work and our model, and we are confident that our partnership with them will only grow in value over time."

Going forward, Impact Water feels that YSB played an instrumental role in structuring the $500,000 investment as part of the Social Success Note, unlocking the investment capital from UBS Optimus Foundation as well as the outcome payment thanks to Rockefeller Foundation. "The Social Success Note provides Impact Water with an interest to scale up," Impact Water says. "It helps us to be further motivated by the number of beneficiaries that we can work with, finding new technologies that at the same time make business sense but can also reach a larger population."

Mentorship. Impact Water has stated that there is significant value in the networks that YSBU has and the credibility to the company that their investment brings. YSBU invites the company to impact investment conferences and community building meetings, which offers valuable exposure for Impact Water. They did note the caveat that they would benefit more if there were other companies of a similar size, scale, and maturity in the community building events led by YSBU.

Impact Water does not receive much technical support from YSBU. This is likely in part due to the fact that they are a more mature investee than others in YSBU's portfolio: "the technical support that YSBU has to offer is more tailored for smaller-scale businesses," they explain.

6. Lessons Learned and Recommendations

The lessons learned and recommendations in this section are geared towards other businesses wishing to articulate, improve and/or measure their social impacts, as well as funders or investors of social businesses:

6.1 For Impact Water and other social businesses

- Being clear and realistic about the enterprise's financial objectives is critical to shaping strategy down the road. In Impact Water's case, for example, commercial sustainability in the short-term is secondary to ensuring ongoing use of its systems, achieving scale and meeting its other social impact objectives. Consequently, it only seeks out funding that aligns with these objectives.
- On a related note, Impact Water has invested in identifying key market barriers to the social problem it is trying to address. Being clear about which ones it will address (e.g. the maintenance/ongoing operation of these systems) and which ones it will not prioritize (e.g. ensuring safe water within households) has given the business focus and a framework within which it can innovate.
- Space – both in terms of time and resources – must be built into a social business' growth projections: even as Impact Water scales, it continues to fine-tune its client credit model, its approach to maintenance and its distribution strategy.
- As with most social businesses, Impact Water has been scaling, including taking on additional capital, even as its revenues fluctuate. However, strategies such as the higher purchase order agreement can help to minimize risk even as the business scales.

6.2 For YSB and other social impact investors

- An up-front investment in developing an impact calculator similar to the one that Impact Water has created to estimate emissions reductions from sales of its systems could be useful to estimate a business' impact / outcomes as the business scales.
- Since the investment from YSBU was used for general business operations/working capital, it was difficult to parse the impacts of those funds. If the use of those funds had been more clearly articulated, impacts may have been easier to trace.
- In addition to social impacts such as the ones that Impact Water has identified, the effects of Impact Water's growth on the growth of other businesses within related value chains (e.g. local materials suppliers) may also be significant and worth measuring at a later stage. A full accounting for the impacts that they've generated, such as job impacts, would need to consider those effects as well.
- The counterfactual could be articulated in a few different ways: this case study investigated what may have occurred without the infusion of capital from YSBU, and how this capital contributed to Impact Water's growth. Another approach would be to examine alternative products the schools would have purchased, if any, had they not purchased Impact Water's systems. A third, more resource-intensive approach would be something like a randomized control trial whereby social impacts (e.g. incidence of water-borne disease, attendance) in schools that disinfected their water by boiling were compared against schools that used Impact Water's systems.

Annex I: Methodology

The following steps outline the methodology that MSA followed to conduct and write this case study:

1. **Selection of the social enterprise**. This consisted of:

- *Determining the criteria for selecting the case study:* This was done collaboratively with YSB and Argidius. The following criteria were decided upon:
    - Impact Potential (e.g. "game changer")
    - Risk level
    - Length of time supported
    - Performance to date
- *Selecting the case study business:* By applying the criteria, a business was identified in close consultation with YSB to conduct the case study.

2. **Setting Objectives:** During and prior to fieldwork (i.e. remotely), MSA posed the following questions to the selected business:
    - What is the social problem or issue that the social enterprise is trying to solve?
    - What resources or inputs does the social enterprise have and need to undertake its activities?
    - What activities is the social enterprise undertaking to solve the social problem or issue?
    - What are the expected outcomes, in terms of economic return for the business and social impact on beneficiary groups?
    - What are the key factors in the cause-and-effect relationship?

3. **Analysing Stakeholders:** this step was about understanding who creates impacts on the social business and who is impacted by their activities by mapping out these relevant stakeholders and then engaging with them individually. This process prioritized representatives of the groups that benefited from their produces and services (i.e. schools that had purchased the Impact Water systems). MSA visited 3 schools that had purchased Impact Water's systems to conduct interviews and verify impacts reported by Impact Water.

4. **Measuring Results: Outcomes, Impact and Indicators:** This principally drew upon, but also cross-referenced, the data of YSBU and the social business itself. This included a spot check of the data collected by the business. MSA assumed that it was not necessary to do large-scale data collection of impact data from a representative number of beneficiaries (e.g., the poor people who are the vendors and/or customers of the enterprise), and that rather the information will already exist that can be gathered and then verified.

5. **Verifying and Valuing Impact:** MSA tried to verify that the impact claimed actually happened and was real to the intended stakeholders. MSA employed the following methods to validate or verify the impact:
    - *Desk research*: looking at external research reports, databases, government statistics etc. to confirm the trends the social business has dictated through the outcome indicators.
    - *Interviews*: ask beneficiaries/target clients through on-site visits and personal interviews about the results of the social enterprise's products and services. MSA selected 5 schools at random from a list of approximately 1,700 schools that had purchased Impact Water's systems in Uganda to interview.