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CSP Center for Sustainable
Finance & Private Wealth

Unlocking Investments for Water Entrepreneurship

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Initiative for
Blended Finance
at the University of Zurich

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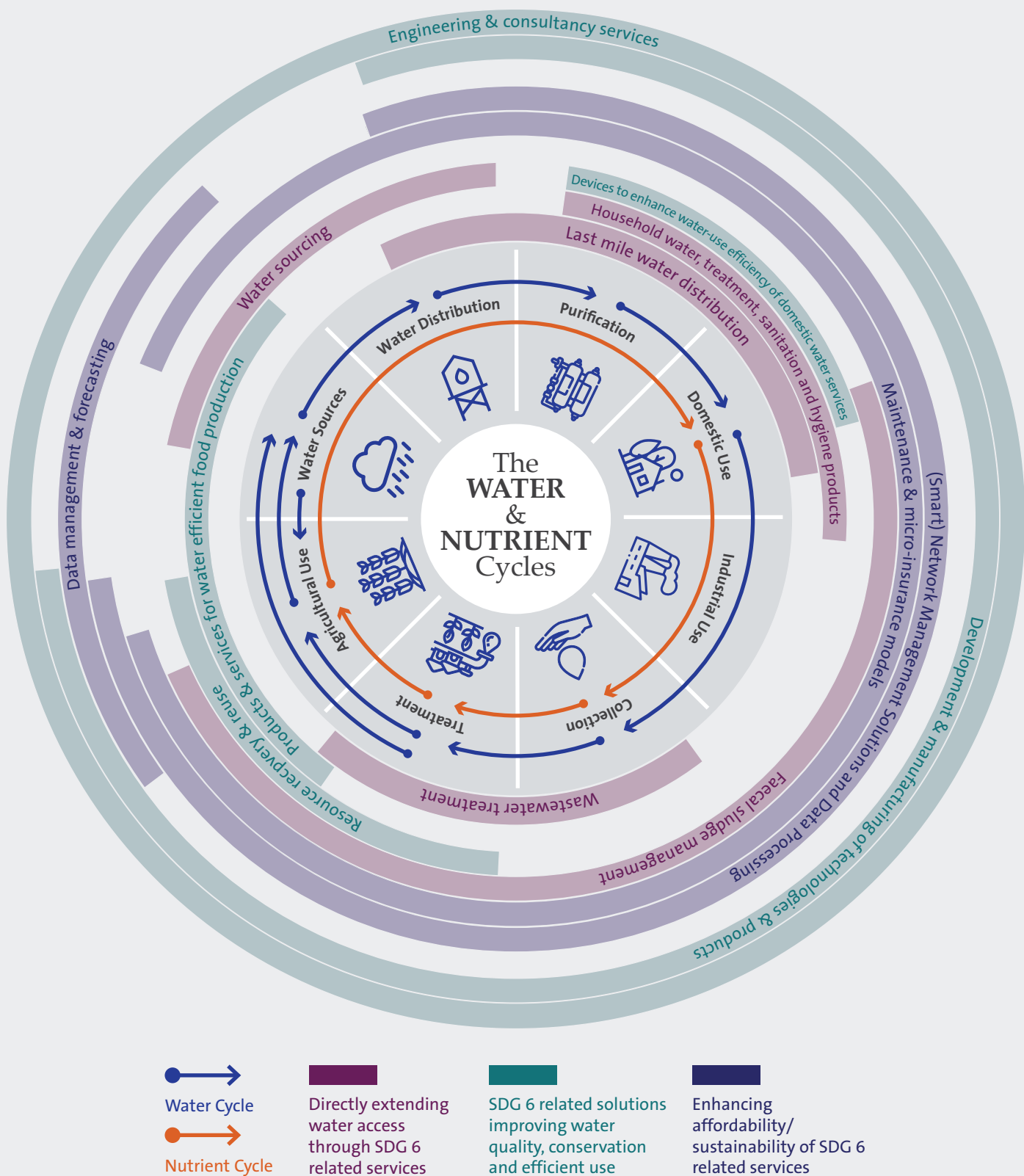
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Figure 1: Water Solution Mapping



Challenges and Funding Needs of the Water Sector

Funding the water sector has its own sector-specific challenges. For instance, in order to build or expand piped water infrastructure, climate-smart agricultural systems, wastewater systems, or nature-based flood protection, many enterprises are dependent on large, upfront capital investments with long payback periods⁷. Thus, initial capital expenditure (Capex), as well as maintenance costs, are particularly high in the water sector. This means that external financing is critical for water enterprises, especially in the start-up phase.

At the same time, cost recovery is rather challenging because water continues to be an undervalued and underpriced resource⁸, water tariffs are usually set low due to the public nature of water, and enforcement of regulations, especially for wastewater treatment, is often inefficient. The challenge is intensified for enterprises that operate in rural or bottom of the pyramid (BoP) markets since they target low-income consumers who have limited means to pay for basic services. In addition, water enterprises suffer from seasonal variations, also causing variations in revenues. Thus, businesses need financing that enables end-users to pay and can bridge dips in revenue until they have generated the necessary traction and stable customer base to cover costs or become profitable.

Given these regulatory

number of established water enterprises. The divide is worrying, especially knowing that the countries most affected by water scarcity and those experiencing inadequate water and sanitation services are in emerging markets.

Nevertheless, when broken down by country, India has the highest value of investments at \$8.27 billion USD. This is mostly due to a few large private equity investments, but it also indicates the opportunity the Indian water sector offers.

For investors, finding enticing investment opportunities can also be a challenging endeavor, particularly for investors with

little knowledge of the sector. Most impact investments today are made through illiquid assets, such as sustainably irrigated or rain-fed farmland or private-public-partnership infrastructure, with only a few liquid publicly traded water utilities and water tech businesses included¹⁶. Several hurdles and disincentives hinder the deployment of capital in water markets, largely depending on the asset type, sub-sector, and owner profiles. These complexities further add to the risk profile and transaction costs of water investments¹⁷. There is a clear mismatch between the opportunities that investors are looking for and those that are available. Figure 2 illustrates this discrepancy.

Figure 2: Ratio of number

When examining tendencies per region, the majority of investors are concentrated in developed economies, such as North America and Europe. The investors in the United States especially are mostly venture capitalists or angel investors, providing enterprises with early-stage risk capital, which allows the sector to grow. North America and Europe also deploy more risk and flexible capital through accelerators, incubators, or the government, which is very much needed to build an ecosystem of innovative businesses. On the other hand, emerging economies, such as countries in Africa or the Middle East, do have more grant providers, but they lack the pre-seed, seed, and early venture capital that allows enterprises to grow and scale.

However, there are a number of viable businesses that eventually qualify for financing. As they grow and attract investors, these businesses develop their capacity, adapt to current trends, and contribute to building the market. As already stated in the previous chapter, companies increasingly adopt new technologies to positively influence water efficiency and customer experience, making investments in R&D in water technology all

the more important. In recent years, a growing trend toward de-risking investments and increasing the effectiveness of existing funds through innovative financing mechanisms has been observed. Thus, funding water businesses and other projects in the sector is expected to become more attractive in the near future.

To conclude, despite the growing interest from investors in water, they remain hesitant when it

In order to match water enterprises with suitable financing, we present the different water enterprise types that are ready for financing. The water enterprise typology is divided into pre-seed stage or seed stage and growth stage, marked by different business model characteristics and financing requirements, and matched with fitting instruments.

The typology has been created in line with a strong investor perspective. It is based on several interviews with practitioners and data collected from water enterprises, including their funding information. Unlike other typologies that have been created by water sector actors (e.g., ODI²⁰), the typology presented in this document takes a bottom-up approach based on current financing practices instead of applying a top-down methodology that creates frameworks from conceptual constructs.



**For entrepreneurs,
the typology can:**

- Offer inspiration and guidance regarding developing the business model
- Provide information on the kinds of financing to look for
- Help understand the requirement and need to meet in order to receive financing



**For investors or
other ecosystem
actors, the
typology can:**</

Methodology

In order to develop the water enterprise typology, we use the qualitative comparative analysis (QCA) approach. QCA is a research methodology that investigates combinations of conditions instead of independent variables separately. The methodology is meant to address the complexity of causality²¹, as described through three features: conjunction, equifinality, and asymmetry²². For further details on QCA, please see the Appendix.

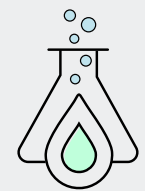
We identified QCA as the methodology best suited to this part of the project for several reasons. First, the objective of the project is to identify different enterprise models for successful financing, and QCA is known to be suitable for creating typologies. Second, QCA enables the identification of conditions that lead to financing, as well as barriers that lead to a failure to secure financing. In many cases, the mere absence of a success condition does not necessarily lead to negative outcomes, and the methodology shows the relevant conditions that contribute to negative outcomes by accounting for that²³. Lastly, QCA also allows the establishment of causal relationships without neglecting qualitative insights acquired through deep case knowledge.

Data Collection

We collected the data based on a sector-wide survey among water enterprises. In

Pre-Seed & Seed

The Water World's Technology Lab



Enterprises in this category have a range of technology-based offerings that can be applied across sectors. In most cases, solutions are aimed at treating and/or purifying water based on sophisticated, modern technology. They sell to businesses in high- to middle-income developed markets and have a recurring revenue model.

Business model defining features	This type of enterprise has an offering based on modern laboratory solutions to purify or treat water. The technology-based offering is relevant mainly to businesses (B2B) across various sectors, such as the industry, agriculture, and healthcare. While operating a B2C model would technically be possible, end customers struggle to understand the underlying technology and see its benefits. Due to the highly technical nature of the products and solutions, enterprises usually offer supplementary client services, such as customer support and maintenance services. Having a close customer relationship allows the enterprise to
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Pre-Seed & Seed

The Hippy Seeking Rural Impact

The main goal of this type of enterprise is the creation of meaningful impact for the most disadvantaged groups within society, with most of these groups residing in rural areas. It is close to its end-beneficiaries, engages the local community, and its solutions are built based on the needs of the community rather than a business opportunity.



Business model defining features	The enterprise has a diversified offering, including both products and/or services that aim to provide access to or secure/improve basic water-related services in hard-to-reach rural areas. It sells its offerings to all client types (B2C, B2B, B2G). The products primarily benefit the end-user and are based on what the communities require. The enterprise usually aims to secure recurring revenue from its customers, while also relying on other strategies to retain them
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Financing Instruments and Structures

In the following section, we introduce various financing instruments, ranging from traditional to more innovative financing tools that can potentially be deployed by water enterprises. Detailed descriptions of each instrument can be found at: www.swwm.info/financing-water-impact/financing-instruments.

1. Grants

Description

Grants are non-repayable funds provided by donor agencies, public institutions or charitable organizations. Grant recipients are often non-profit entities but can also be businesses or other types of organizations. The contributions are considered an investment to achieve overarching goals, such as “SDG 6: Clean water and sanitation for all” or other development goals, such as to foster innovation, to increase employment, or to support of the local economy. While grant providers usually do not expect to be repaid or receive any financial return, the use of grants is typically restricted to the implementation of a specific project rather than general operating costs or capital expenditures. In this sense, grant providers tend to monitor the impact of their grant funding closely³⁰.

Overview of Quasi-Equity Instruments

	Purpose	Key Feature	Involved Parties	Requirements	Enterprise	Investor/ Lender/ Outcome funder	Maturity	Collateral	Evidence of Impact	Complexity	Stage	Can Replace
Revenue-based Loan	Creditors lend flexible capital which interest rate depend on the revenue generated	Ability to accommodate seasonality o market conditions	- Lender - Borrower	- Proven model, - Ability to service debt (recurring revenue is a plus)	Interest is calculated and paid as a percentage of revenue	Investor shares risk with the enterprise	Flexible	Usually unsecured	No	Low	Early-growth to Later stage	Equity, Debt
Subordinated Loan	Public investors											

Overview of Results-based Financing Instruments

	Purpose	Key Feature	Involved Parties	Requirements	Enterprise	Investor/ Lender/ Outcome funder	Maturity	Collateral	Evidence of Impact	Complexity	Stage	Can Replace
Impact Bond	Investors provide pre-financing for social or environmental projects while return and principal is paid back when predefined impact targets are met	- Improve risk/return profile of the investee - Improve effectiveness of the project - Concessionary capital - Outcome focus	- Investor - Investee (e.g., enterprise, NGO) - Outcome funder (e.g., dev. Agency, DFI)	- Proven model, - Track record - Ability to deliver measurable outcomes within short timeframe								

5.a. Results-based Financing
Impact Bonds

Description

An impact bond typically involves a private investor, a service provider, and an outcome funder, who is usually a governmental agency. The private investors provide upfront capital to enterprises for social services and are repaid by the outcome funder if the agreed-upon outcomes have been achieved⁴⁹. This way, the outcome funder pays only for the desired outcomes instead of focusing on activities and input, while the private capital bears the risk.

When applied as an instrument to finance enterprises, impact bonds allow an entrepreneur to receive investments to create impact during a transitory period and attract investors that are impact-driven. Since the investor’s financial return is tied to the created impact, the investor’s incentives are aligned with the enterprise’s social mission. For investors, the enterprise’s ability to effectively deliver on the desired impact is therefore of key importance for this investment instrument, even if they are not meeting financial return expectations.

Characteristics	Implications for the water business
Impact bonds allow more flexibility in terms of activities than traditional (grant) contracts	All

Water Enterprise Questionnaire

Criteria	Question
1 Business	
1.1 Size of the business	How many people work in your business in total?
1.2 Country of operation	Which countries are you currently operating in? Which countries are you planning to operate in?
1.3 Sector of intervention	What is your sector of intervention? Water sources (conservation; IWRM), water distribution, water purification, water use (domestic use, sanitation, hygiene, industrial and agricultural use, energy use), waste (collection, treatment), reuse & recycling.
1.4 Development stage	What development stage is your business currently in?
1.5 Funding stage	What funding stage is your business currently in?
1.6 Funding received	What is the total amount of investment received? (in USD) What kind of funding did you receive up until now? (grant, debt and/or equity)
1.7 Offering	Does your business offer products or services? How many products or services does your business offer?
1.8 Customer segment	Do you target end-custom

	Criteria	Question
3.7	Access to safe and affordable drinking water (SDG 6.1.1)	What is the projected number of people that receive new access to safe and affordable drinking water during the next 12 months? What is the projected number of people that receive improved access to safe and affordable drinking water during the next 12 months?
3.8	Access to adequate and equitable sanitation and hygiene (SDG 6.2.1)	What is the projected number of people that receive new access to adequate and equitable sanitation and hygiene during the next 12 months? What is the projected number of people that receive improved access to adequate and equitable sanitation and hygiene during the next 12 months?
3.9	Water quality (SDG 6.3.1 & .2)	What is the expected amount of newly treated wastewater during the next 12 months that would otherwise have not been treated? (in cubic meters) What is the expected amount of newly treated organic waste during the next 12 months that would otherwise have not been treated? (in tons) What is the expected amount of newly treated inorganic waste during the next 12 months that would otherwise have not been treated? (in tons)
3.10	Water-use efficiency (SDG 6.4.1)	What is the expected amount of water

Question 3.11 Integrated Water Resources Management (IWRM)⁶³

There currently exists no agreed or official framework on how to measure IWRM efforts. We have gathered information and categorized the concept of IWRM into the following two main areas, upon which we have based our performance evaluation:

SDG 6.5.1 Degree of integrated water resources management implementation: Indicator 6.5.1 tracks the degree of integrated water resources management (IWRM) implementation by assessing the four key components of IWRM:

- **Enabling environment** - This includes the policies, laws, plans and strategies that create the “enabling environment” for IWRM;
- **Institutions** - This includes the range and roles of political, social, economic and administrative institutions that help to support the implementation of IWRM;

- **Management Instruments** - The tools and activities that enable decision-makers and users to make rational and informed choices between alternative actions; and
- **Financing**



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