



Trillions needed for access to safe water: Trends in funding and financing a water- secure future

14.11.2023

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Achieving the Sustainable Development Goals (SDGs) by 2030 will inevitably require vast investments. Especially levels of financing for a water-secure future are well below what would be needed. Scaling up existing financing flows for water-related services and infrastructure is urgent and requires more than increased funding.

Read this Trend Sheet to learn about latest insights on the international debate and efforts on funding and financing a water-secure future and explore concrete examples of innovative approaches, seizing opportunities arising from climate finance, blue bonds or alternative payment systems to make the financing of water projects more secure and less complex.

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Why this Trend Sheet?

What trend do we observe?

Water-related investments deliver substantial benefits for water security and sustainable development, by connecting multiple other sectors including agriculture, energy, urban development, public health and education. So far, this is not mirrored in levels of water-related investments that are far outweighed by funding flows benefitting other sectors.

Why is this trend important for water practitioners in development cooperation?

The world is not on track to meet SDG 6 on water and sanitation, largely due to insufficient levels of water-related investments. Scaling up investment in water is urgent, otherwise the water crisis will increasingly impede progress towards sustainable development, especially in low- and middle-income countries. One part of the challenge consists in making sure that existing policies and institutions actually enable water-related investments rather than impede them, and phase out perverse incentives to over-consume water. Another part is making the most effective use of existing funds. At the same time, exploring innovative financial approaches that have emerged recently is key in order to find out how they can best help granting sustainable access to capital markets to low-income countries and underserved communities.

What is new?

Financing water security is a crucial policy issue and has been discussed broadly since the UN2023 Water Conference. A new financing paradigm needs to be established to align financing flows with the development priorities set by the SDGs as neither public finance nor official development assistance (ODA) will be sufficient to fill the financing gap. This involves making best use of both public and private resources, as well as innovative approaches combining both. These approaches materialise via new opportunities arising from climate finance, blue bonds granting access to finance to underserved communities, or even alternative payment systems such as cryptocurrency to make funding of water projects more secure and less complex.

Definition of terms

Commercial finance: refers to various types of finance (e.g. bank loans and bonds) which are usually provided at market rates to service providers, local governments, individual users or user groups by domestic commercial banks, microfinance institutions or capital market investors ([World Bank Group, 2017](#)).

Concessional finance: refers to repayable finance offered by multilateral and regional development banks, bilateral donors, and domestic development banks, provided at a lower interest rate with a longer tenor than commercial finance ([World Bank Group, 2017](#)).

Cryptocurrency: a native asset of a blockchain network that can be traded and utilized as a payment system ([Gemini, 2022](#)).

Blended finance: a mechanism that uses public and philanthropic funds to mobilize additional (private) capital for the purposes of sustainable development ([GIZ, 2020](#)).

Bonds: a type of debt instrument in which the bond issuer borrows a sum from the bond purchaser, and returns that sum to the purchaser upon the maturity of the bond, while additionally paying periodic sums of interest ([GIZ, 2020](#)).

- **Blue bonds:** are used to fund water-related projects regarding marine conservation and restoration, water-related infrastructure, or business opportunities that positively impact the ocean and support sustainable development ([United Nations Global Compact, 2020](#)).
- **Green bonds:** are issued to raise capital specifically to support climate-related or environmental projects ([World Bank Group, 2015](#)).

Derivatives: a complex financial contract based on the value of an underlying asset, group of assets or benchmark used by providers to mitigate risks ([Forbes, 2023](#); [GIZ, 2020](#)).

Equity investment: financing provided to the finance recipient by an investor in exchange for partial or full ownership of an underlying object (often a for-profit company), typically in the form of the acquisition of shares ([GIZ, 2020](#)); common stock shares enable voting rights and possible returns through price appreciation and dividends ([Investopedia, 2023](#)).

Grant: a non-repayment required fund disbursed by one party (e.g. government or trust) to a recipient for an innovation purpose or requirement that is sometimes proposed by the recipient ([DESSIN, 2017](#)).

Guarantees: a promise of performance to a finance provider in the event that the finance recipient fails to meet contractual payment obligations used to mobilize additional private funding ([GIZ, 2020](#)).

Loan: money provided by one entity to another at an interest rate. The borrowed money plus interest is repaid to the lender ([DESSIN, 2017](#)). More specifically:

- **Concessionary loan:** a loan bearing no interest or a rate of interest that is below the average cost, also called preferential loan ([Akvopedia, 2020](#); [Deloitte, 2015](#)).
- **Microcredit:** a very small loan extended by a bank or other financial organisations providing small amounts of money at a lower interest than under other funding schemes to small businesses and households ([Akvopedia, 2020](#)).
- **Guarantee:** a promise by one party to assume responsibility for the debt obligation of a borrower if that borrower defaults; the person or company that provides this promise, is also known as a surety or guarantor ([Akvopedia, 2020](#)).
- **Commercial loan:** a debt-based funding arrangement between a business and a financial institution such as a bank ([Investopedia, 2020](#)).
- **Syndicated loan:** a form of financing that is offered by a group of lenders, usually to a large borrower, e.g. a corporation or a sovereign government ([Investopedia, 2023](#)).

Public-Private Partnerships: are used to mobilizing private-sector financial resources and expertise to improve project preparation, execution and management ([GIZ, 2020](#)).

Shares: units of ownership in a corporation or financial asset owned by investors who exchange capital in return for such a unit ([Investopedia, 2023](#)).

Special Purpose Vehicles: are used to finance multipurpose water infrastructure (MPWI) and landscape-based approaches, which refer to investments that deliver multiple water-related benefits and which can include cross-sectoral benefits ([OECD, 2022](#)).

Water Tariff: the price assigned to water supplied by a public utility generally for both freshwater supply and wastewater treatment; water and wastewater tariffs determine the conditions of service and the monthly bills for water users in various categories and classes; tariffs are often set by a regulatory agency for the appropriate catchment, purification and distribution of freshwater, and the subsequent collection, treatment and discharge of wastewater ([FU Berlin](#)).

Tax: is the State's most important source of revenue, used to finance services that are in public interest, such as public infrastructure ([Federal Ministry of Finance, 2023](#)); there are taxes and charges on water abstraction, their level being differentiated by water source (groundwater or surface water) and by the type of user, with the objective of providing funding for water resources management or for watershed protection activities ([OECD, 2010](#)).

Token: a unit of value that blockchain-based organizations or projects develop on top of existing blockchain networks ([Gemini, 2022](#)).

Transfer: involves the movement of assets, monetary funds, or ownership rights from one account to another ([Investopedia, 2020](#)); in the water sector, it usually refers to funds from international donors and charitable foundations and include Official Development Assistance (ODA); in many developing countries, a transfer remains a major source of financing for sanitation and drinking water ([Akvopedia, 2020](#)).

Introduction

The world is not on track to meet Sustainable Development Goal 6 (SDG 6), mostly because of insufficient levels of water-related investments. Estimations show that costs of meeting SDG 6 [exceed US\\$1 trillion per year](#), which is the equivalent to 1.2% of global gross product. This means that achieving universal and equitable access to safe drinking water for all by 2030 [will require tripling current investment levels](#). [Financing needs](#) of the water sector are projected to further increase in the future as climate change exacerbates pressure on water systems.



Discussions around and since the UN2023 Water Conference highlighted that [addressing the water crisis is key](#) to address food insecurity, climate change, and the energy crisis. Recognising the urgency of the water crisis would allow the water sector to access new financing sources, including climate finance.

Besides traditional approaches to financing water-related investments, a question commonly discussed is how the public sector can bring the private sector in, relying on more innovative approaches that blend public and private finance. For instance, financing for water needs new mechanisms reaching those who currently lack access, including local governments or non-sovereign entities, which are often at the forefront to provide access to water-related services down to the local level.

While innovation seems key to accelerating progress in financing water, making better use of existing funds is also crucial. There is a [mismatch between demand and supply](#) of finance, resulting in an urgent need of improving the quality of available finance for water. For instance, it becomes increasingly clear that [mistargeted subsidies](#), coming from the failure to value or price water appropriately, can encourage water consumption and pollution instead of discouraging it. Moreover, decisions regarding water infrastructure typically rely on [historical patterns of water availability and use](#) that are increasingly unreliable due to climate change.

The current landscape of financing water

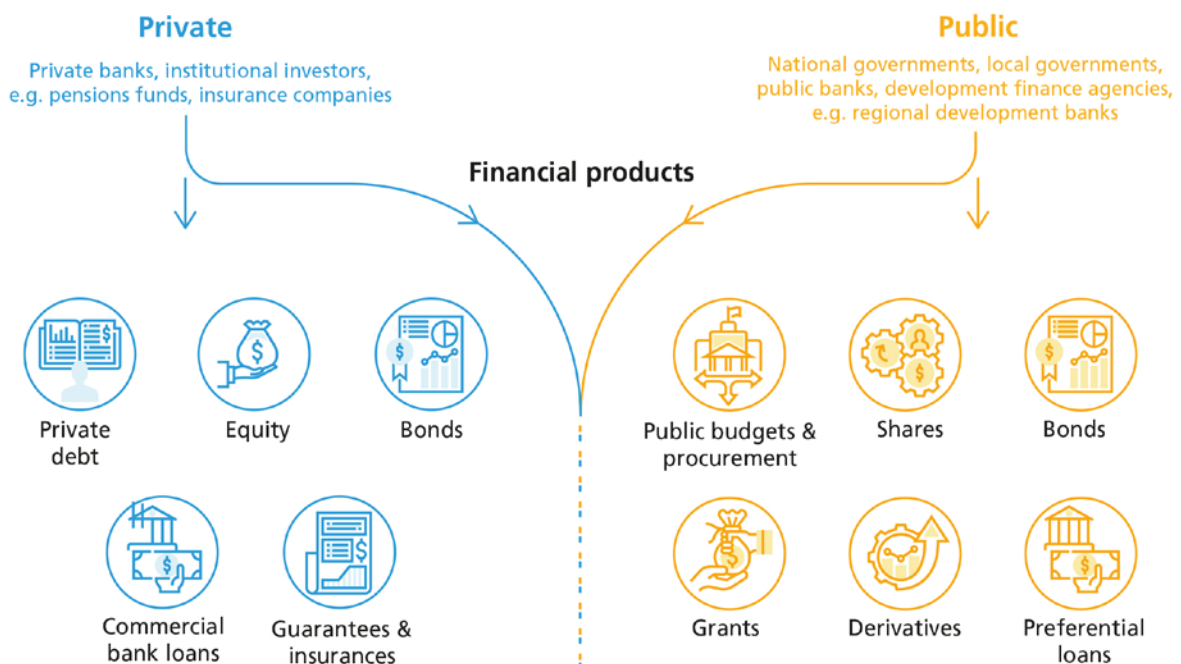
“Water-related investments” refer to all investments that contribute to water security – ranging from [delivering water and sanitation services to managing water resources and water-related risks](#).

The **demand side of water finance** consists of actors seeking funding and financing for water-related investments and the operation and maintenance of water infrastructure. They include all entities responsible for water infrastructure development, such as national and local governments, water service providers and construction, engineering and maintenance firms. They need financing for the upfront costs of water projects, while operation and maintenance is usually funded through revenue streams like tariffs and user fees.

The **supply side of water finance**, as shown in the graph below, includes actors providing financing for water-related investments. They include public entities such as national and local governments managing public budgets and procurement, as well as public banks and development finance agencies offering grants and preferential loans. They also include private entities such as private banks or institutional investors that provide e.g. commercial bank loans, private debt and equity financing.

For more information see [The United Nations World Water Development Report 2023: partnerships and cooperation for water](#).

The water sector’s financing landscape



Blending public and private finance



Water-related investments have historically been funded by public budgets, including international transfers, with contributions from water users through e.g. water tariffs. ODA for water increased steadily since the beginning of the millennium, however these funds still represent a minor share of total ODA and they are not used as a catalytic force to crowd in private capital. The amount of private finance mobilized through official development finance for water supply and sanitation totalled [USD 4.6 billion between 2016 and 2020](#), compared to over US\$48 billion for the energy sector.

For a long time, investments in the water sector have been perceived as [risky and unprofitable](#) due to requirements such as the need for long tenors, small ticket sizes, limited credit-worthiness and the lack of clearly defined revenue streams. This explains why [private finance remains limited](#) for water-related investments. Since, unfortunately, in many countries the public sector does not have adequate resources, increasing the level of private financing for the sector would allow service providers to borrow and [invest in expanding service and](#)

[improving quality](#), without having to wait for scarce public resources to be made available or relying on limited concessional financing. An important step to increase **private sector participation** in the water sector is **to de-risk water-related investments**. This usually involves **blending public and private financial mechanisms**, using ODA or public funds to incentivise private investment where commercial returns alone are not sufficient to attract private money. An important aspect is however that public development money de-risking water-related investments via e.g. bond financing should insist on clear criteria for environmental and social impacts to avoid greenwashing. Such mechanisms should be exclusively used to finance or re-finance a combination of green and social projects that are compliant with clear sustainability and social impact standards.

[Private finance can come in various forms](#), such as vendor or supplier finance, microfinance, commercial bank loans, bonds or equity. [Private finance providers](#) can include microfinance institutions, commercial banks, private investors or investment funds via capital markets. Private and institutional investors are increasingly looking for [opportunities to grow their sustainable finance portfolios](#) but often lack adequate financial products to channel their investments. They require appropriate investment vehicles that satisfy their **risk appetite**. Appropriate vehicles for water-related investments that can help overcome the above-mentioned specificities of the water sector include (a) bonds, (b) Special Purpose Vehicles to overcome the small-scale nature of water authorities, (c) dedicated financing institutions and funds to mobilise investment for water, (d) revolving funds, (e) Public-Private Partnerships (PPPs), and (f) risk-financing instruments.

Nevertheless, blended finance is not the only, universal solution that will fill the water sector's financing gap. So far, [from a critical perspective](#), the amount raised by blended finance lacks clear data, so its leverage effect remains unproven. A lot of the blending transactions seem to take place in upper middle-income countries since blended finance projects in low-income countries still face significant implementation challenges. This applies even more so in [conflict-affected settings and fragile states](#) where access to water is often a key concern and needs to be addressed, also to avoid public health emergencies.

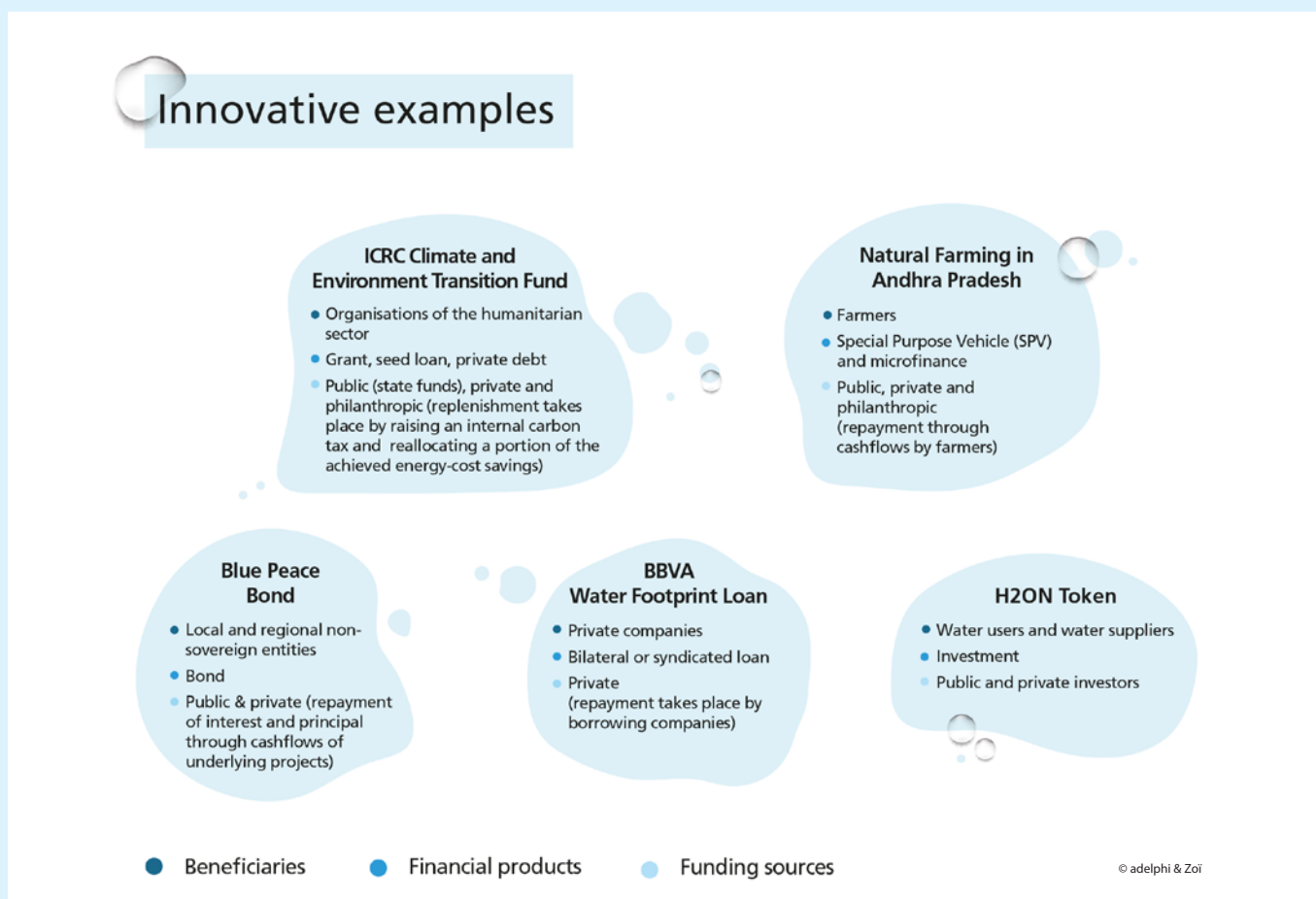
Examples of innovative approaches for financing water

Recognising that the future is uncertain, long-term strategic investment planning should focus on actions that promote flexibility and allow to shift among options depending on evolving economic, climatic and demographic trends. Considering [Nature-based Solutions](#) (NbS) more systematically in strategic investment planning has the potential of lowering the costs of achieving water security and of delivering substantial co-benefits. In the context of reduced public and ODA budgets, the [potential for investing in NbS to receive multiple benefits](#) or in programmes based on integrated sustainable basin, landscape or ecosystem plans, rather than the traditional single-purpose investments could become essential. However, the characteristics of NbS, including the long-time scale for realising benefits and the diffuse nature of benefits and co-benefits, pose challenges for both public and private investment.

To be successful, such processes should be accompanied by **scaling up existing financial mechanisms to improve access to finance altogether. Some innovative financial structures grant underserved communities better access to capital markets.** This is critical as entities such as local governments, non-sovereign entities and regional transboundary entities like river basin organisations are often at the forefront to provide access to water-related services down to the local level.

Finally, as financial institutions become increasingly aware of water risks, they start creating **new financial instruments that incentivise sustainable water management, including positive social impacts for communities, and decrease companies' water risks.** Especially in industries with a huge impact on water, an important financial as well as reputational benefit can be achieved by supporting more sustainability-oriented actions that differentiate companies from their competitors. Private sector disclosure of comparable and consistent information on exposure and vulnerability to water risks also turns out to be an [efficient factor to change corporate behaviour](#). Financial institutions are starting to act, but there is still room for improvement regarding the consideration of an entity's impact on society and the environment in financial decisions.

Switch to the next sections to learn how these opportunities are put into innovative practice.



The ICRC Climate and Transition Fund:



A new fund that offers **sustainable long-term financing of climate and environment initiatives** was launched in 2022 by the International Committee of the Red Cross (ICRC): the [Climate and Environment Transition Fund](#). It focuses on the transition of the humanitarian sector to be more climate-smart, adaptable and sustainable to make sure that delivering life-saving activities does not come at an environmental cost such as consuming natural resources like water. The fund offers access to finance by blending grants from public, private and philanthropic sources and seed loans from ICRC's own financial resources. The Climate and Environment Transition Fund stands out through its multi-year funding. That means that a known flow of funds is assured over a set time period. This financial projection is especially important for the environmental sector where project outcomes are anticipated in the long-term. Furthermore, a replenishment mechanism assures the revolving of the fund and enables participating entities to reimburse the loan. Replenishment options being considered include raising an internal carbon tax or taking a portion of the energy-cost savings generated by the move to solar power. Also, depending on the volume of the replenishment mechanism and the fund's repayment capacity, opening the fund to private investors could be considered in the medium term.

For the water sector, approaches such as the ICRC Climate and Environment Transition Fund can be especially interesting, successfully demonstrating how blending arrangements can be combined with a revolving fund structure in order to secure long-term financing. Examples like Latin America's Water Funds show how this financial mechanism makes sense to [tackle water-related challenges](#) that are too big to be solved by public, private or civil society stakeholders individually.



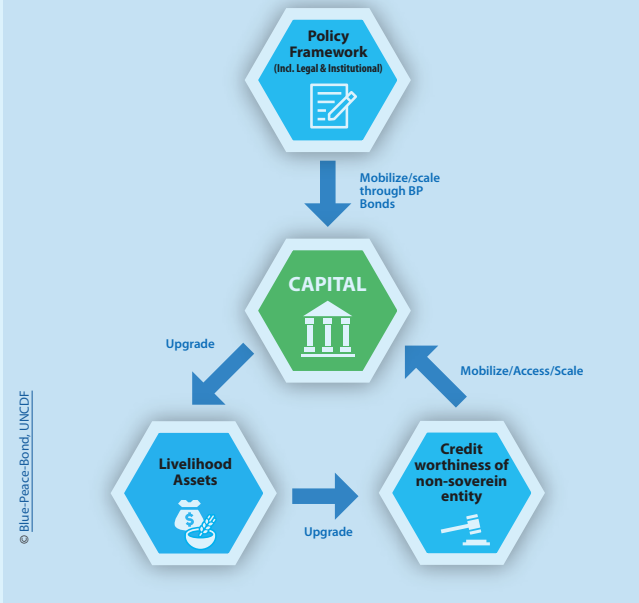
Natural farming in Andhra Pradesh

The state of Andhra Pradesh, located in the southeast of India, is known as the [bejewelled rice bowl of India](#). About 64 % of the population depends on rainfed agriculture as their primary source of income. But climate-induced extreme weather events like droughts and floods create severe challenges for the agricultural production and thus pose a major threat to livelihoods of rural farmers.

In order to strengthen the farmers' economies, a **governmental quasi-policy instrument** has been established: the [Andhra Pradesh Community-managed Natural Farming](#) (APCNF). The pioneering agroecology-based programme is considered as a farmer welfare scheme by focussing on an [innovative farmer-to-farmer scaling strategy](#). So-called "Champion Farmers" share their knowledge on agroecological and regenerative farming practices with other farmers (e.g. on drip irrigation as water-saving measure, mulching for increasing the water retention capacity, and water reuse from drain channels). Due to its low-input needs, it became the [world's largest agroecology program](#) with 700,000 farmers enrolled in 2020. As a result, the regions' agricultural production increased rapidly and boosted the income and financial credibility of farmers tremendously.

The success of APCNF is rooted in the unique anchoring of financing mechanisms within national policy frameworks. The central government of India allocated funds to different state governments. The state government of Andhra Pradesh used these funds to set up the not-for-profit organisation Rythu Sadhikara Samstha ([RySS](#)). Since 2016, they have been responsible for the implementation of APCNF, deployed as a Special Purpose Vehicle bridging the gap on access to finance between the national and local level. RySS offers advice and financial support for natural farming practices also through microfinance opportunities accessible locally. The programme's expanding popularity also attracts funds beyond its original scale by national and international agencies, such as Azim Premji Philanthropic Initiatives ([APPI](#)), World Bank, and FAO.

The Transformation Cycle /Theory of Change



Blue Peace Bond

In the current financial ecosystem, [most investments take place at national and sectoral level](#) while the responsibility for managing water resources remains within local and regional non-sovereign entities.

In order to provide these actors access to capital and investments, **a new financial instrument has been developed by the Swiss Agency for Development and Cooperation (SDC): the [Blue Peace Bond](#)**. In a first step, policy frameworks of the non-sovereign entity are translated into a multisectoral investments plan, based on which the entity issues a Blue Peace Bond, hereby getting access to capital. The entity can then use the capital mobilised for project implementation (e.g. infrastructure project) under the investment plan. Thus, the non-sovereign entities are able to enhance their livelihood and creditworthiness, which allows them to further expand their activities for capital mobilisation – leading to a self-reinforcing process of mobilisation of public and private capital.

By providing the basis for [long-term investments](#), Blue Peace Bonds strengthen partnerships across countries, sectors, and financial entities. They provide effective incentives not only for cooperation but also for political agreements as a means of collective and sustainable management of shared water resources. By doing so, the innovative bond transforms [water from a potential source of crisis into an instrument of cooperation and peace](#).



The BBVA Water Footprint Loan

New financial instruments should incentivise sustainable water management of all industries which have a huge impact on water resources. The Spanish bank [Banco Bilbao Vizcaya Argentina](#) (BBVA) has therefore developed the [world's first Water Footprint Loan](#). The loan is offered to companies with an intensive water use, such as in the mining, oil and gas, agricultural, textile and the packaging sector. It functions as a steering instrument to reduce the water footprint of companies by **providing customized incentives for more sustainability-oriented actions**. The Water Footprint Loan focusses on water indicators that are particularly relevant for the respective company.

In the case of Iberdrola – one of the largest energy utilities worldwide – the loan is conditional amongst others to the implementation of the [CDP Water score](#), which supports the company's disclosure and mitigation of environmental impacts. Iberdrola was the first company that formalized the Water Footprint Loan with BBVA. The syndicated loan which also involved 24 BBVA-led financial institutions, was signed for a total amount of EUR 2.5 billion in 2022.

As illustrated by the example of Iberdrola, the Water Footprint Loan stands out through its innovation, customization and practicability. It addresses key priorities of sustainability policies that are nowadays indispensable in many industries. Most importantly, the loan provides financial and reputational benefits and thus differentiates companies from their competitors.

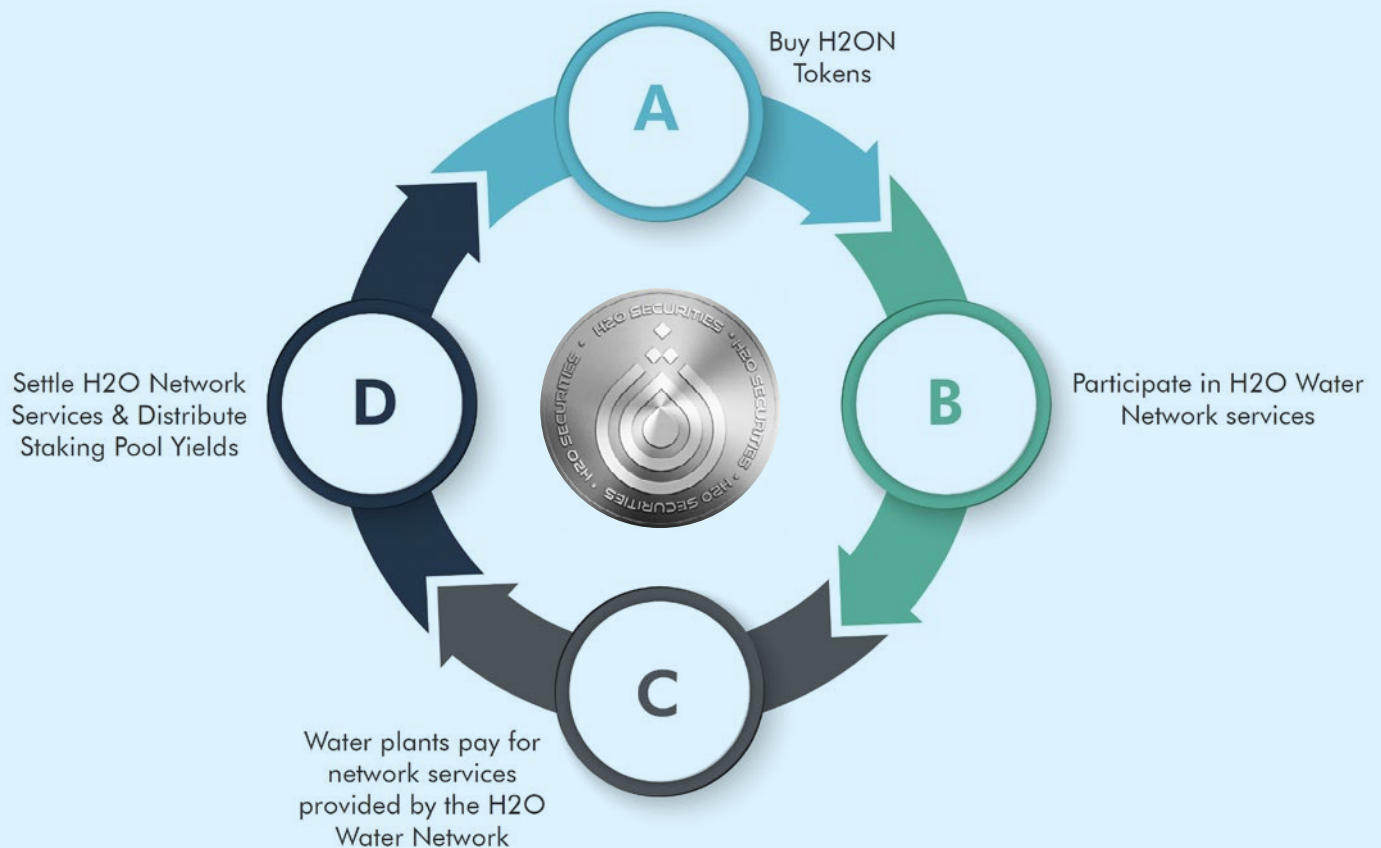
The H2ON Token - An alternative, cryptocurrency payment system for water services

In the [digital world](#), cryptocurrency offers multiple ways for accessing finance to address global challenges. Since 2022, huge progress has been made regarding the establishment of an exclusively water-specific digital exchange system. It is acknowledged as innovative solution because it combines finance, infrastructure, and expertise by modernising the global deployment and operation of water plants using blockchain technology.

- The South African registered Exchange Trust Settlement Services (ETSS) developed the **world's first Water Utility Cryptographic Token**: the **H2ON Token**. It is part of an alternative payment system – such as [Bitcoin](#) – dedicated to [make financing of global \(potable\) drinking water projects more secure and less complex](#). As digital currency, the token provides access to the H2O Water Network where participants can (1) buy or pay for services of real-world physical water plants, (2) add water network services, or (3) connect more water plants to the network.

The H2O Water Network water plants are connected via [Internet of Things](#) (IoT) to the blockchain and controlled by immutable smart contracts. The aim is to globally connect more people to drinkable (potable) water, faster, and more cost effectively. The H2ON Token provides access to the H2O Water Network, and is a currency within the ecosystem wherein network participants can participate and earn rewards based on their participation.

The growing cryptocurrency industry however also raises concerns regarding its environmental impact. Primarily, because of the energy-intensive process of generating new digital tokens where computers require a lot of processing power. Referring again to the Bitcoin example – its “mining” process [consumes as much annual electricity as Chile or Belgium](#). Intent to make cryptocurrency more sustainable earmarks the shift from using fossil fuels to renewable energy or even stranded or wasted energy. Another environmental cost is outdated mining hardware. In the business of cryptocurrency, equipment improves very quickly and leaves behind toxic electronic waste. One of the industry's most pressing challenges will be the establishment of sustainability rules and regulations in order to build a greener future.



Making the case for water in Climate Finance

Water-related investments that contribute to climate action can benefit from Climate Finance. The [Green Climate Fund \(GCF\)](#) is the [biggest contributor to water related projects](#), in climate finance, with a large average project size of around USD 39 million, as well as a large overall share of USD 500 million.

The worldwide largest climate fund is the GCF. It is part of UNFCCC's framework and focusses on adaptation and mitigation practices in developing countries. Between 2006 and 2017, [the water and climate resilience-related expenditure amounted to USD 498 million](#). The fund leverages blended finance and crowds in private investment for climate action. To achieve this, the GCF uses a combination of financial mechanisms such as grants, concessional debts, guarantees and equity instruments. In 2020, a total number of 49 countries, regions and cities have contributed to it.

In Jordan, for example, the fund finances a [USD 33.3 million project aiming to improve water use efficiency](#) in agriculture and thus ensuring water and food security and protecting livelihoods in light of climate change. The financial support consists of a USD 25 million GCF grant, topped up with a total of USD 3.8 million of grants through co-financing arrangements and USD 4.5 million co-financed in-kind payments.

Another fund that was established under the UNFCCC framework is the [Adaptation Fund](#). Since 2010, a total amount of [USD 783 million has been committed to climate adaptation and resilience activities](#). Between 2006 and 2017, a total amount of [USD 286 million were explicitly water-dedicated](#). The fund receives its financing basically from sales of certified emission reductions under the Clean Development Mechanism, as well as from governments, the private sector and individuals.

The bankability criteria of the Green Climate Fund and other prominent climate finance sources [tend to screen out smaller-scale sub national level projects](#). For water project developers, a financing source to tap into in the future maybe the [Subnational Climate Fund \(SCF\)](#), a recent financing instrument aiming to address this hurdle. The SCF consists of an investment fund of mid-sized infrastructure projects and a grant-funded dedicated to technical assistance facility. The aim of this structure is to remove barriers to sourcing, financing and sustainability certification of mid-sized sub-national infrastructure projects.

For more information on other programmes with a focus on the subnational level see [The Local Climate Adaptive Living Facility \(LoCAL\)](#) by the United Nations.



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Suggest Citation: Semmling, Elsa and Aufdembrinke, Lilly 2023: Trillions needed for access to safe water: Trends in funding and financing a water-secure future. Bern, Switzerland: SDC Trend Observatory on Water.

The **“Trend Observatory on Water”** of the Swiss Agency for Development and Cooperation (SDC) aims at informing the RésEAU, SDC’s Water Network, and interested parties about relevant emerging trends and innovative approaches for development cooperation in the water sector. Initiated by SDC’s Water Section and run by adelphi, it analyses how major global trends can affect water resources and management practices in the future. Through various communication formats and its website <https://hazu.swiss/deza/trend-observatory-on-water> it aims to raise awareness of opportunities that arise for more sustainable solutions, but also of the risks and challenges that might come along with them.

Contact:

SDC - Swiss Agency for Development and Cooperation
Section Water
Eichenweg 5, CH-3052 Zollikofen, Switzerland
Phone: +41 (0)58 465 04 06
Focal Point Water E-Mail: daniel.maselli@eda.admin.ch



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