



# **7. Finance for a just and sustainable water future**

## Key takeaways

Water remains vastly underfunded across the global economy. The GCEW highlights how we can substantially raise the volume of finance for water, as well as improve the quality and direction of such finance.

Far greater investments are needed to conserve both blue and green water and scale up innovations for more efficient water use across agriculture, industry, mining, and other sectors that are critical for stabilising the global water cycle – underpinned by the new economics of water advocated in this report. We should explore **how the value of green water can be recognised and incorporated in schemes for payment for ecosystem services**. Considering water as natural capital points in the same direction.

Every stream of finance — public, private, domestic, and multilateral — must be significantly enhanced. To achieve this, we must build **sybiotic partnerships that combine public, private, and other non-state actors, with appropriate sharing of risks and rewards** amongst them.

Governments need to provide for certainty in policies and regulation, and reprioritise investments in water. Pricing is essential, as the under-pricing of water has systematically weakened the case for investment. There is also an important opportunity to **reduce and redirect the massive direct and indirect financial subsidies that contribute to the overuse of water and environmental degradation**. Harmful subsidies in agriculture alone are estimated to exceed USD 550 billion. Further, the discount rates used to assess investments in water infrastructure and ecosystem preservation should take into account their long

term, including intergenerational, social, economic and environmental benefits.

**National, regional, and multilateral development banks must be regeared to provide the catalytic finance** needed to unlock vastly greater amounts of private finance — including patient, long-term finance. They should favour programmatic, portfolio-based approaches, aligned with public policy objectives.

**Just Water Partnerships should be established and tasked with the design, implementation, and financing of transition towards development strategies aligned with the water agenda**. These partnerships, involving development-finance institutions and national authorities, should build capacity to mobilise investments and manage blue and green water sustainably. They should make active and bold use of the menu of instruments available to catalyse private investments. These could include first-loss guarantees, concessional finance elements for lower-income countries, and co-investment arrangements to manage risks.

There is also untapped potential to diversify risks by bundling water projects across sectors and countries, to attract finance from institutional investors.

**Disclosure of how corporate activity affects – and is vulnerable to – the hydrological cycle can redirect financial flows to support the water, nature, and climate agendas**. Coordinated action with financial regulators is the way forward, building on on-going dynamics in climate and nature finance.

The water community has long advocated for bridging the prevailing financing gap. This chapter emphasises the need to shift towards considering the quality and direction of financial flows as well. It advocates for moving beyond a singular and incomplete focus on blue water to incorporating both blue and green water. Paying attention to the green water part of the hydrological cycle is crucial for succeeding in climate-change mitigation and adaptation, biodiversity, and forest and wetland conservation and regeneration.

All streams of financing – public and private, domestic and multilateral – must be enhanced to enable collective action across sectors, capabilities, and scales. For example, there are major opportunities for private investment that can yield adequate returns while serving the common good in the water value chain, including water treatment and recycling, scaling up innovations across the economy to optimise water use, and growing the circular water economy. However, achieving the symbiotic partnerships needed that combine public, private, and other non-state actors will rely on transitioning from merely "de-risking" private finance to reconsidering how risks and rewards are shared among stakeholders in a just way.

In addition to its social, cultural, and economic values, water is increasingly acknowledged as a key factor for macro- and micro-economic performance. This should translate into how it is accounted for in national and corporate accounts to drive decisions, and public and private finance.

The availability of more robust water data (Chapter 9) is a requisite for changing the scale and quality of water-related finance across all streams, and enabling the use of the financial mechanisms and tools explored in this chapter.

Key financing strategies that address the water cycle's imbalance include:

- Evolving **public finance** from a project-based approach to a programmatic,

portfolio-based, strategic approach aligned with policy objectives, incorporating conditionalities in financing contracts to shape markets.

- Shifting **private finance** from a separate silo to being mainstreamed; scaling-up blended finance, combining policy and social instruments to unlock critical investments for water, catered to individual countries' needs; adjusting discount rates to consider intergenerational justice; and valuing ecosystem services without commodification. Critically, water-related disclosure must be reinforced to assess both the financial and physical materiality of a destabilised hydrological cycle for countries, corporates, and financiers.
- Using **multilateral finance** to enhance the effectiveness of debt-for-water swaps, and transitioning from fragmented, project-based financing to holistic programmatic approaches within Just Water Partnerships for sustainable transitions at multiple geographical scales.

A paradigm shift is needed in how water financing is approached, to offer a comprehensive strategy that considers not only the quantity but the quality and direction of financial flows, the integration of blue and green water in financial decision-making, and the alignment of financial mechanisms with ambitious, economy-wide policy objectives and missions.

### Water-related financing exacerbates justice issues

While every country faces some water-related financing challenges, emerging economies are most exposed and vulnerable to the lack of finance. Within countries, disadvantaged groups and communities are most affected by the misalignment between financial flows and

water-related needs and ambitions. In the case of water supply, sanitation, and hygiene (WASH), communities not connected to public water services typically pay a higher price for lower service quality (Gulvani et al., 2005), they do not benefit from social tariffs and public support to public infrastructures, and they are most exposed and vulnerable to health issues triggered by lack of access to safe water and sanitation.

Prevailing financial mechanisms can further affect water-related justice. Massive public funds are funnelled as subsidies that can be socially regressive when they benefit agents who could afford to pay more. Moreover, when public finance's role is conceived narrowly as essentially de-risking private investment, it can exacerbate unjust allocation of capital, as it can increase public debt while securing private benefits.

Justice issues also emerge when public investment generates value that is privately captured. Flood protection is a good illustration: dikes and levees are financed by public funds but add value to property privately owned and developed. Land-value capture is a fiscal mechanism that can redress this imbalance in the allocation of costs, risks, and benefits (OECD, 2023b).

Recent examples in water-related finance have raised justice issues. Some observers caution about the financialisation of water supply, sanitation, and hygiene infrastructure where financial institutions maximise short-term profits at the expense of productive development (Arrojo-Agudo, 2021). The trend has reduced water infrastructure to a mere financial product, troubled with high risks and financial engineering to increase investment return, with little regard for its utility and capacity to address such challenges as the uncertainty of climate change and the increasing inequalities in access to water (O'Neill, 2015). Investors can move towards long-term growth investments when the right regulatory framework is in place (Chapter 8).

## An enduring financing gap

Multiple sources attempt to characterise financing needs and flows for water. They differ in scope (most focus on water supply, sanitation, and hygiene while flood protection and other domains are poorly documented), geographical coverage, methods, and time horizons. Definitions vary, making comparisons challenging. A major discrepancy regards how climate change is factored in, if at all (WWC-OECD, 2015). None reflect the consequences of a destabilised hydrological cycle.

Still, some orders of magnitude stand out. Investment needs to meet United Nations (UN) Sustainable Development Goal (SDG) 6 are three times what has been historically invested in the sector (Hutton & Varughese 2016). These projections only cover access to safe water and sanitation (Targets 6.1 and 6.2). They include neither hygiene nor requirements for operation and maintenance of infrastructure. They do not consider financing required for water to contribute to other SDGs. Regional disparities are significant. Further, the latest studies indicate that the annual investment gap for achieving SDG 6 alone in low-income countries is about USD 500 billion for 2023-30. This includes investment in water sources (such as new water-treatment and desalination plants), sanitation facilities, and wastewater management (UNCTAD 2023). These investments have to be viewed not as a cost, but as spending needed to derive significantly larger economic and social returns.<sup>45</sup>

Much larger additional investments are needed to address climate change and its potential impact on the water cycle, to conserve water and scale up innovations that enable more-efficient use of water in agriculture, industry, mining, and other sectors critical to stabilising the hydrological cycle.

<sup>45</sup> WaterAid. 2021. *Mission-critical: Invest in water, sanitation and hygiene for a healthy and green economic recovery*.

Hutton. 2015. *Benefits and Costs of the Water Sanitation and Hygiene Targets for the Post-2015 Development Agenda*. Copenhagen Consensus Center, Post-2015 Consensus Initiative.

Water-related finance is affected by several limitations. First, public investment in water has been a low priority for many governments, in both high- and low-income countries. Many take a short-term and reactive approach to water infrastructure, leading to neglected assets, frequent service disruptions and leakage – culminating in higher long-term costs. Incoherence in policy interventions and investments contributes to investment gaps (CEEW-IWMI, 2024; Taneja et al., 2023). This translates into disparate efforts between interdependent water, energy, and food systems, further widening the investment gap.

Data from emerging markets show that only 9% of finance for water supply, sanitation, and hygiene comes from the private sector, as opposed to sectors like telecoms and energy, where private capital makes up 87% and 45% respectively (WaterAid, 2022). The World Bank reports an even lower contribution of private finance for water supply and sanitation (WSS) in 113 low- and middle-income countries, at 1.7% (Joseph et al., 2024).

Second, while most water-related projects are long-lived (dams or dikes), megatrends in climate change, demographic and social changes, globalisation, and digitalisation are poorly understood and reflected in financing water (OECD, 2019). This leads to quantitative and qualitative misalignment of water and finance. It can also lead to maladaptation and additional financing needs in the future. For instance, investing in large-scale, single-crop agriculture in regions where total water storage is projected to decline (Chapter 3) can increase dependence on blue water and trigger needs for additional investment in dams, reservoirs, and irrigation.

Third, where infrastructure has been built, operation and maintenance costs are often underestimated (WWC-OECD, 2015), and cost-recovery is low. Lack of attention to proper operation and maintenance leads to a vicious cycle of poorly operated infrastructure delivering sub-par services and decaying rapidly, magnifying future investment needs to rebuild them. This is not limited to water supply, sanitation, and hygiene – cost-recovery for irrigation is even lower (OECD 2022a) – and it is an issue in both high- and low-income countries.

Distinctive features of water-related investments explain why private investment in the water economy has been scarce, and almost absent in low-income countries (Leflaive et al., 2022). Before

we list them, it is worth noting that some water-related investments do attract private finance at scale, including large facilities to supply water and sanitation services; desalination plants; and dams for water storage, hydropower generation, or multiple purposes. In these domains, the priority should be to crowd-in private finance, with minimal use of public or development finance.

Other domains have been particularly unable to attract private finance, notably flood protection, nature-based solutions, small-scale infrastructure, and rural water supply and sanitation. Financing models in these domains fail to scale up. Distinctive bottlenecks include (OECD 2022a):

- Disproportionate transaction costs
- Lack of standardised financing modes and instruments
- Fragmented nature of small-scale water-related investments
- Unstable or inconsistent regulations failing to reduce risks, even for patient investors
- Absence of sound regulatory frameworks in many geographies, leading to a persistent non-alignment of the interests of investors, water entrepreneurs, and society to leverage more capital into the water sector (McCoy & Schwartz, 2023).

The under-pricing of water across sectors and geographies weakens the case for investment. Low tariffs and misdirected subsidies increase the fiscal burden in many countries.

### **From quantity to quality, to close the financing gap**

To tackle the global water crisis, we must focus on both bridging a large quantitative financing gap and adopting a qualitative emphasis in structuring water finance. This section characterises the type of finance needed to meet water policy objectives, and the role of governments and public development banks in providing patient, directed finance with positive spillovers throughout the economy. It provides a new perspective on sharing risks and rewards. The section highlights five principles to guide finance for a safe and just water future at multiple geographical scales.

## Patient, long-term and directed finance

Mission-centred policy (Chapter 4) requires the right type of finance. Due to inherent uncertainty and lengthy development phases, financing innovation, infrastructure, and other economic activities in the water space requires a unique balance of risk and reward. Finance must therefore be patient and long-term; loans should preferably be in local currencies.

Governments play an important role in providing patient, long-term finance (Mazzucato & Macfarlane, 2018; Lazonick & Mazzucato, 2013). Finance must be directed towards addressing agreed missions with clearly defined outcomes and goals – not merely financial and budgetary allocations to certain sectors, types of firms, or technologies. Water-related missions involve sectors as diverse as infrastructure, transportation, agriculture, energy, and technology, among others. By investing in a direction and crowding-in multiple sectors, there is an opportunity to incentivise investment that would not happen otherwise (Mazzucato, 2023b; UCL-IIPP, 2020). For example, investing in grey water infrastructure can lead to multiplier effects such as health benefits, access to clean drinking water, and recycling water in agriculture, leading to more jobs and higher productivity (WaterAid, 2021). Tackling a challenge like resilience against extreme weather events requires solutions beyond grey water infrastructure – early warning systems, rainwater harvesting at landscape scale, permeable pavement, bioswales – to engage innovations and markets that can mobilise public and private investment, leading to larger multipliers.

Moving from a focus solely on filling water financing gaps to directing finance and shaping markets requires a new set of principles.

## Principles for financing water

Five principles should guide policy, regulation, international co-operation, and private investment to direct the right quantity and quality of finance towards water:

1. Recognise the science
2. Recognise that water justice issues range from local to global levels

3. Value blue and green water as natural capital
4. Share risk and rewards to unleash private investment
5. Get discount rates right

First, recognising the science means realising that the hydrological cycle is a global common good, and is out of balance. We also need to recognise and leverage water, land, and ecosystems owed to green water. Markets – including financial ones – can be shaped to direct financial flows towards stabilising the hydrological cycle and away from further destabilising it. In addition, we need to understand the sociocultural and political nature of water worldwide, and how societies have respected, used, abused, and allocated property rights to water resources (Bosch et al., 2021; Bosch and Gupta, 2022).

Second, we must recognise that water justice issues range from local to global levels (Gupta et al., 2023; Gupta et al., 2024). Universal access to safe and affordable water is a societal imperative within countries and a foundation of solidarity globally. Financially sustainable models for water infrastructure are needed so that water services and protection against water risks reach the poor. This would involve reforms in water pricing and how subsidies target the poor and underserved rather than going to the privileged. Cheap water and social tariffs benefit only households connected to water services; they do not benefit the poorest, unconnected communities, and they deprive service providers of the revenues needed to extend service coverage.

Third, we must value blue and green water as natural capital: a critical resource that provides valuable services for economies and societies. Pricing water accordingly could offer revenue streams and deliver significant benefits to countries over time, a requisite for attracting financiers. Considering water a critical resource need not lead to commodification. On the contrary, it recognises the value water contributes to such public benefits as ecosystems services, livelihoods, and sustainable development.

Fourth, we must ensure an appropriate sharing of risks and rewards to unleash private investment. There is substantial scope for the

participation of private investors in the water sector, and water conservation and circular use across the economy. Private participation in infrastructure development is more common in high-income economies, as their capital markets and institutional environments are more stable. Risk and reward sharing via robust regulatory structures can stimulate more-patient private investment.

Finally, it is critical to get discount rates right, as they signal the projected value of long-term benefits in today's financing decisions.

Applying these principles to the five critical water missions set out in Chapter 5 can achieve the needed scale and directionality of investment.

## Policy shifts to move the needle on water finance

We highlight the shifts in public, private, and multilateral finance required to align finance and investment with the water agenda defined in this report.

### Public finance

#### *The role of governments in creating enabling environments*

Enabling conditions can minimise transaction costs, which are significant bottlenecks for water-related finance, especially when it comes to water efficiency and demand management, nature-based solutions, or small-scale projects. Governments have a role to create enabling environments through a combination of regulatory certainty for co-investment by non-state actors, and direct co-investment in technologies, skills, and infrastructure.

The OECD characterises four dimensions of an enabling environment for investment in water security (Sanchez Trancon et al., 2024). Such a characterisation might need adjustment to embrace the hydrological cycle.

#### *The role of national development banks to direct patient finance*

Governments cannot just facilitate, enable, and de-risk private finance to steer economies towards

### **Box 7.1: Four dimensions of an enabling environment for water finance**

*The four dimensions of an enabling environment for water finance identified by the OECD come with a scorecard to review the state of play at national level:*

1. *The overall policy framework for investment. The first dimension aims to assess if the country is attractive for investors in general.*
2. *The water policy framework for investment. Water-related policies can help water projects create value and attract investment, particularly if part of that value can be transformed into a revenue stream. Water projects that can attract investment will need to demonstrate a robust business model, generate stable revenue streams, and minimise risks (OECD, 2022).*
3. *The capacity to develop bankable and sustainable projects. This dimension assesses institutional set-up, mandates, policies, and regulations. Project bankability relates to size, revenue streams, business model, risk-return profiles, return time. While financiers typically advocate for pipelines of bankable projects, government authorities should promote broader strategic investment pathways that are resilient and contribute to water policy ambitions over the long term and at least cost.*
4. *How water features on the agenda of economic sectors. Investments in agriculture and food, energy and climate resilience, urban development, and other domains can have significant unintended consequences on the hydrological cycle, and on exposure and vulnerability to water risks. An enabling environment must ensure that investments in these domains contribute to rather than undermine water policy objectives. Assessments are particularly appropriate during the ideation and investigation phases.*

Source: Sanchez Trancon et al. (2024).

the efficient, equitable, and environmentally sustainable management of blue and green water. They must actively shape and co-create markets to achieve the five critical missions set out in Chapter 5.

In many countries, patient, strategic finance comes increasingly from national development banks (Mazzucato, 2023). Due to their mandates and stable sources of funding, these are appropriate partners for the private sector to co-finance riskier water projects. Banco Desarrollo del Ecuador, BNDES in Brazil, Banco Nacional de Obras y Servicios in Mexico, Caisse de Depot et de Gestion in Morocco, and the Development Bank of Southern Africa are among those increasingly providing loan, grant, and equity funding for water projects (Finance in Common, Crespi 2021; Reghizzi, O. et al. (2022). Considering green water could be the new frontier.

How finance is structured matters. India's National Mission for Clean Ganga employs a hybrid annuity model for water infrastructure projects, wherein the government pays out the bulk of construction costs over a 15-year period, contingent upon the performance of wastewater collection and treatment services (Global Infrastructure Hub, 2022).

There are opportunities for more national development banks to adopt mission-oriented mandates aligned with the SDGs. Germany's national development bank, KfW, aligns its financing with three "megatrends"; the Scottish National Investment Bank directs its funding towards three missions: (1) Achieving a just transition to net-zero carbon emissions by 2045; (2) Extending equality of opportunity through improving places by 2040; and (3) Harnessing innovation to enable Scotland's people to flourish by 2040. Adopting water-related missions in line with those set out in Chapter 5 could be equally promising for national development banks. This would also include shifting from programmatic approaches that dominate development bank operations to portfolio-based approaches aligned with key priorities. As a result, all direct and indirect finance mechanisms become aligned with these priorities as well.

### *Embedding conditionalities to share risks and rewards*

Critical to delivering direct finance is designing relationships with the private sector and other

non-state actors that share the risks and resulting rewards. If governments and public sector institutions are the drivers of patient, long-term, and high-risk finance, sharing the rewards and the risks is at the heart of more symbiotic partnerships between the public and private sectors.

Conditionalities are one policy tool governments can use. Governments can embed conditionalities in contracts to, for example: (1) improve water conservation and the efficiency of water use; (2) direct investment for water-intensive industries towards regions that are less water stressed; (3) reinvest profits in productive business activities, such as research and development (R&D) and innovation around water; or (4) reinvest profits into watershed and water basin conservation programmes so the source is being governed in a sustainable way (Mazzucato and Rodrik, 2023; Mazzucato and Zaqout, 2024).

Governments can use conditionalities to transform sectors and industries so they align with public policy objectives. In the case of water, industries such as mining, energy, and semiconductor manufacturing are highly water intensive. If the government's objective is to change over-consumptive use of water, conditionalities can be used to improve water efficiency.

Efforts can also be made to design Just Water Partnerships using conditionalities (GCEW, 2023a; see below).

## **Private finance**

### *Making water investments viable and just*

Blended finance offers the option of using catalytic (public) capital to act as a risk-reducing mechanism and mobilise private sector investment. Despite its attempts to structure and right-size risk through different types of capital, blended finance remains under-utilised for water-related projects. Between 2012 and 2017, only about 1.4% of private finance mobilised through development finance was dedicated to the water supply and sanitation sector (OECD 2022a).

A range of solutions is needed to diversify and expand financing options, catering to individual countries' needs. These include:

- **Strengthening data architecture** (Chapter 9)



- **Creating an enabling environment** to support innovative financing solutions (see above)
  - **Developing the capacity of stakeholders** in the blended-finance ecosystem, including the public, private, and philanthropic sectors
  - **Developing a pipeline of bankable projects** that generate sustainable benefits for communities and the environment
  - **Learning from the success of other infrastructure sectors.** For example, the water sector could adopt a policy instrument like the feed-in tariff designed to support the development of renewable energy sources. This guaranteed, above-market price for power producers provided certainty and reduced risk for new renewable-energy installations.
- After a period, feed-in tariffs were wound down because financiers became more comfortable with the risks of the sector and the finance pool grew substantially.
- **Adopting social instruments such as offering incentives to communities.** Communities can be engaged and rewarded for their efforts as citizen-scientists for water-quality monitoring. Such intervention will need investments for capacity-building. The creation of a “social fund” from the revenue of a project can provide base access for the poor, and other social benefits.
  - Despite low uptake, there are examples where blended finance helped ensure more equitable access and distribution of water, and addressed the needs of the poorest and most vulnerable (see examples in Leflaive et al., 2022; Box 7.2).

### **Box 7.2: Examples of blended finance by municipalities, corporates, and governments**

#### ***A pooled municipal-bond issue to help small providers access private finance***

*In India, providers had been held back from accessing private finance by a lack of credit ratings or ability to cover bond issuance costs and legal fees. The State of Tamil Nadu created the Water and Sanitation Pooled Fund (WSPF) in 2002 to help 13 small- to medium-sized Urban Local Bodies (ULBs) finance water supply and sanitation services by accessing long-term domestic capital markets.*

*The AA-rated bond for USD 6.2 million had a coupon of 9.2% per annum and a maturity of 15 years. The debt was repaid through general ULB revenues. Investor confidence was ensured through five credit-enhancement mechanisms:*

- 1. State government debt-service reserve fund (DSRF): 1.5 times annual principal and interest payments*
- 2. ULB escrow accounts: revenue accounts to pay annual debt service obligations early*
- 3. Local debt service reserve fund: 5% of the principal borrowed by each ULB*
- 4. State revenue intercept mechanism*
- 5. Partial credit guarantee: provided by the US Agency for International Development (USAID) to pay 50% of the principal through the through the DSRF in the case of default*

*Source: World Bank (2016a)*

#### ***Water Access Acceleration Fund***

*The Water Access Acceleration Fund (W2AF) is a private-equity, water-focused, blended-finance, impact fund by Incofin,<sup>46</sup> which was announced in the lead-up to the UN 2023 Water Conference. The fund invests in innovative water businesses that provide affordable, safe drinking water to underserved populations.*

<sup>46</sup> Incofin is a leading emerging-markets-focused impact-investment-management firm specialised in financial inclusion, agri-food value chain, and access to water. Founded in 2001, Incofin has invested (via equity and debt financing) over EUR 2.7 billion in more than 320 investees, financial institutions, and SMEs in the agri-food value chain across 65 countries in Asia, Africa, Latin America and the Caribbean, and Eastern Europe.

*It seeks to mobilise patient capital in innovative, early- to growth-stage businesses along the water access value chain to achieve this objective.*

*USAID provided USD 760,000 as concessional catalytic funding for its first loss tranche, conditioned on Incofin raising four times the amount of capital from private sector investors.<sup>47</sup> This commitment from USAID helped W2AF derisk the fund for private investors, building momentum for the fund's first close. W2AF hit EUR 51 million in commitments at this first closing and aims to achieve total capital commitments of EUR 70 million in subsequent closings.*

*The first investment by Incofin's W2AF was in Rite Water Solutions (India), which has raised EUR 7.5 million and provides potable water and water-quality-improvement services in areas where water sources are chemically and biologically contaminated. Incofin also invests time and effort to educate private investors about the investment readiness of the water sector, allowing investors to better assess the risk in a sector they would have traditionally shied away from due to lack of knowledge and perception of high risk.*

### **Brazilian water utilities**

*The Brazilian water market is transforming to meet societal needs, with private investors bidding to take over poorly managed and loss-making municipal water concessions. A long-term (30-35 years) concession approach has attracted significant investments.*

*Tariffs are fixed, with inflation adjustments only.<sup>48</sup> Private investors capture full upside from cost-cutting and other efficiency improvements. As such, the concession is incentivised to invest to deliver the pre-agreed service levels and improve efficiency (i.e., reduce leakage, which increases costs). As early CAPEX often means faster revenue growth and lower operating costs, the operator has flexibility to upgrade the network seeking improvements, to invest in more efficient equipment, and to introduce extensive monitoring and automation to reduce costs.*

*Municipality concession auctions aim to expand coverage in poor areas, improve quality of service, and reduce environmental impact. Poor communities, often deprioritised in pre-privatisation investment programs, are now the most positively impacted. Illegal tapping is replaced by formal connections with subsidised prices, reducing losses and leakage. To date, concessionaries have delivered major investments without real tariff increases.*

We must address the need to make water investments attractive to the private sector across the economy. Strained public finances add urgency to doing so. It means shifting from thinking of public and private finance as siloes, towards mobilising total finance on a much larger scale through regulatory reforms and appropriate sharing of risks and returns.

### **Valuing water as natural capital**

A natural-capital approach considers nature as a stock that provides benefits to people and the economy. Recognising the value that

nature provides can encourage investment in its protection and restoration. This shift in perspective, from seeing nature as free, to valuing ecosystem services, creates a mutually beneficial outcome: businesses can invest in sustainable practices that benefit the environment while generating financial returns and safeguarding the resources on which they depend (see case studies in Leflaive et al., 2022).

<sup>47</sup> Investors in the fund include Danone, Aqua for All, the US International Development Finance Corporation (DFC), Norfund, Investment Fund for Developing Countries (IFU), BNP Paribas, and several other private investors.

<sup>48</sup> Once awarded, the tariff is no longer subject to periodic regulatory reviews but is fixed for the whole concession period (except for the allowed annual inflation adjustment). This provides certainty to the bidder on what returns to expect during the life of the concession based on its business plan.

**Box 7.3: Water as natural capital provides economy-wide benefits**

*The linkage between forests and hydrology is complex. Nevertheless, under certain conditions, reforestation can improve water quality through a reduction in soil erosion and prevention of nutrient-rich agricultural runoff draining into freshwater bodies. Assessment undertaken in Tietê Basin, Brazil, which supplies water to the São Paulo megalopolis, suggests that the increase in water availability through enhanced water quality is the greatest benefit of reforestation as a strategy to improve water-related ecosystem services in the region (Ferreira et al., 2019). Similarly, protecting wetlands such as tanks, ponds, and lakes can ensure the provision of multiple-use water services, which include water for irrigation, domestic needs, fisheries, and recreational uses; improve groundwater recharge; and contribute to flood control and silt capture (Bassi et al., 2014). It can also enhance the resilience of urban areas to climate change.<sup>49</sup> Tourism around wetlands can make a significant contribution to a nation's economy and employment (Bassi et al., 2014). These examples illustrate how investing in natural capital (forests, wetlands) delivers benefits across the economy. Factoring in the contribution of ecosystems to green water stocks and flows can strengthen the economic case for their protection.*

Valuing water as natural capital is in its early stages, with much work ahead. It is an important enabler for responsible stewardship of freshwater ecosystems and decision-making on land-use changes. Standards are being developed by several coalitions such as the Alliance for Water Stewardship, the Capitals Coalition, and the collaborative initiative between the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and other stakeholders on a Toolkit for Ecosystem Service Site-Based Assessment (TESSA)(see also Chapter 9, on data).

Four courses of action can support development and apply beyond water, sanitation, and hygiene.

Considering the green water part of the hydrological cycle, domains that affect land use are particularly relevant, such as food and agriculture, industry, and urban development.

The first course of action consists of monetising cashflows from the provision of ecosystem services. Payment for ecosystem services (PES) for watershed conservation remains dominated by the public sector. The key to unlocking commercial investments in natural capital is to demonstrate a link between investment upstream and benefits for users downstream. Green water credits deserve particular attention (Box 7.4).

**Box 7.4: Reviving green water credits**

*Green water credits are designed to promote and finance green water management as a solution to increase productive transpiration, reduce soil surface evaporation, control runoff, encourage groundwater recharge, and decrease flooding. As defined by ISRIC, green water credits are a financial mechanism that supports upstream farmers to invest in improved green water management practices. Those farmers will benefit directly, but the benefits might not be sufficient to compensate for their investments. Therefore, a green water credit fund must be created by downstream private and public water-use beneficiaries. Initially, public funds might be required to bridge the gap between investments by upstream land users and the realisation of the benefits by those downstream. Pilots were initiated in China, Kenya, and Morocco two decades ago, bringing together users in the design, implementation and financing of proper landscape management.<sup>50</sup> Green water credits combine three perspectives to unlock finance to conserve catchments such as tropical forests, and to stimulate transition towards sustainable land use at landscape scale, namely: (1) a landscape (regional) transition perspective; (2) a farm-level perspective; and (3) the perspective of financial investors (Rode et al., 2019). There are opportunities to reshape that mechanism and make it a tangible connector between watershed users, in line with the five critical water missions highlighted in this report. At national, regional, or global levels, it seems appropriate to explore how market mechanisms can be designed to compensate others for contributing to rainfall.<sup>51</sup>*

<sup>49</sup> *Water as Leverage* provides multiple examples, guided by eight project lifecycle principles. <https://english.rvo.nl/subsidies-financing/water-leverage>

<sup>50</sup> <https://www.isric.org>

<sup>51</sup> <https://naturexclimate.substack.com/p/a-new-market-or-non-market-mechanism>

In the second course of action, on-going work should be leveraged to measure, value, and account for nature (including water), such as the Natural Capital Protocol, the Taskforce on Nature-related Financial Disclosures (TNFD), the Valuing Water Initiative, the International Sustainability Standards Board, and the Science Based Targets Network (SBTN), which is developing water targets for corporates, alongside other dimensions like biodiversity and land degradation. Other efforts include the Taskforce for Climate-Related Financial Disclosures (TCFD) and the Climate Disclosure Standards Board (CDSB), which help companies provide better information to support market transparency and informed capital allocation. Water has been a part of these initiatives, and a substantial number of companies or government bodies have already accumulated experience in this area.

Third, sustainability-linked bonds can be used more systematically to finance water projects. One such instrument is the European Investment Bank's (EIB) Sustainability Awareness Bond (SAB). It is a use-of-proceeds bond that utilises the funds raised through the issuance of SABs to finance water and wastewater projects that meet the bond criteria. Such bonds are classified into green, social, and sustainability bonds and reached almost USD 1 trillion in 2021 (OECD, 2023b).

Fourth, social instruments, such as incentives for a community to protect water ecosystems, can improve water security and services. One example of the use of social instruments is flood management in Indonesia using nature-based solutions. As a part of the Zurich Flood Resilience Alliance, a results-based financing mechanism was developed to support the implementation of nature-based flood resilience projects. The mechanism included community-based cash-for-work projects for mangrove planting, river swales for stormwater management, and wetland rehabilitation (Molnar-Tanaka & Surminski, 2024). Similarly, there is scope to mobilise more climate finance for water-related investments. This report argues that protecting green and blue water can mitigate and support adaptation to climate change, making a case for such projects to qualify for the Green Climate Fund (GCF), for instance.

### *Getting discount rates right*

Discount rates in cost-benefit analyses give a lower value to benefits that accrue after longer periods, and thus disincentivise long-term investments. Getting discount rates right for water infrastructure projects, especially over longer time horizons (also called intergenerational discounting) will address the impacts on and preferences of generations to come. Ideally, discounting should be based on the rate at which society is willing to postpone water consumption and land-use change today for consumption in the future (USEPA, 2010). This will yield both societal and environmental benefits. Shifting from static multipliers to more dynamic evaluation methodologies can help governments quantify the multiplicative effects of strategic and mission-oriented public investment into water.

### *Incorporating the materiality of water risks*

While water regulators can encourage more efficiency in water withdrawals and consumption, financial regulators have a role in monitoring corporates' and financial institutions' dependency on water, and the water-related impacts of their supply chains or portfolios.

There is growing awareness of the economic and financial impacts of water risks, with emerging evidence suggesting potential implications for financial stability. In July 2024, Moody's flagged that rising water risks could amplify credit pressures across a range of sectors, and that water management will play an increasingly important role in tempering growing exposure to physical climate risks, as climate change exacerbates water scarcity and hazards.<sup>52</sup> While central banks and financial institutions have yet to fully capture water-related risks in their risk assessments, the financial sector's material exposure to water-related risks is increasingly recognised, with the potential for macro-economic impact (Davies & Martini, 2023).

Davies & Martini (2023) examine the financial sector's understanding of water risks and their materiality. Practice shows that water risks are not fully captured by existing risk-assessment approaches. To address this, better tools, data, and proactive engagement are needed. Initiatives such as the Network for Greening the Financial System (NGFS) and the Taskforce on Nature-related

52 <https://www.moody.com/web/en/us/about/insights/infographics.html>

## 7. FINANCE FOR A JUST AND SUSTAINABLE WATER FUTURE

Financial Disclosures (TNFD) offer frameworks to consider water-related climate and nature risks across the financial sector.

The overarching goal of future work should be to develop a framework for policymakers and financial supervisors to understand, identify, and assess water risks, taking account of the full hydrological cycle. More work is needed to develop regulatory standards on water disclosure that are consistent and aligned with international best practices, including Target 15 of the new Global Biodiversity Framework.

The ongoing journey towards internationally agreed standards for carbon disclosure is a major precedent. For instance, the International Sustainability Standards Board (ISSB) has highlighted the connection between the carbon and water agendas in its climate disclosure framework; it is also embarking on disclosure for biodiversity and ecosystems.

To date, two competing approaches to materiality co-exist. One aims at ecosystems restoration: the European Union (EU) Corporate Sustainability Reporting Directive (CSRD) defines as material both the impacts of a corporate on water resources and how water-related risks can financially impact that company. The other approach prioritises growth maximisation: only the financial impacts of risks are accounted for; typically, a corporate's impact or dependency on nature is only considered as material by the ISSB standard if it materialises through a specific cost. Whatever standard prevails, the overarching ambition should be to drive corporate behaviour

towards a safe and just water future, considering both blue and green water.

### *Strengthening disclosure of corporate water footprints*

Water is the main topic covered when countries carry out a natural-capital assessment. The next step is to raise companies' awareness of how their activity affects – and is vulnerable to – the hydrological cycle, so that their investments align with the ambition of water policies. This is a step towards corporations addressing their water dependency and the impacts of their supply chain on the hydrological cycle.

This task requires joint work among accounting professionals; experts in monitoring, review and verification; regulators and standard setters; institutional investors; and policymakers. Such an exercise will need a publicly available data platform and the institutional infrastructure to assess the stock, measure the flows, and value both the stock and flows coherently. Recognising water as an asset should not lead to hoarding and speculative behaviour.

Robust shadow pricing for water contributes to that objective, building on new data sources and analytical capacities. The recent initiative by Oxford University, Watermarq, the Asian Development Bank (ADB), WRC, and International Water Management Institute (IWMI) seeks to develop a novel, shadow water price framework to generate context-specific, differential shadow water prices based on indicators of resource availability and investment needs at the basin-scale.



## Multilateral finance

### *Aligning multilateral, regional and national development banks*

Multilateral development banks (MDBs) and regional development banks (RDBs), in collaboration with national public development banks (NDBs), have a comparative advantage in catalysing government and private sector investments. They bring together a package of knowledge, affordable financing, and risk-management to provide country-level support. They have a history of working with countries and stakeholders to enable private capital, and credit enhancements to cover public sector risk. Multilateral development banks can attract private sector investment by improving project design and structure, and lowering transaction costs, risk and risk perception, promoting policy and institutional reforms, and providing knowledge solutions (G20, 2016).

Multilateral development banks, regional development banks, and national public development banks can align their efforts around shared regional or national water challenges. To channel public development finance strategically, country platforms can be used to pool, structure, and direct finance towards national and regional water objectives. While countries will own the process, public banks will be crucial to help embed conditionalities so that the efforts of private-sector recipients contribute to those national or regional objectives.

The multilateral-development-bank system can be strengthened in two ways to support investments

needed in the water sector. First, multilateral development banks should shift their operating model away from individual projects towards a country platform approach, where national governments take a lead in identifying multi-year transformations. Factoring in blue and green water can bring consistency across sectoral focuses. A programmatic approach combines procedural and substantive justice (Gupta et al., 2023; Gupta et al., 2024); it should help address socio-spatial inequality that otherwise can be exacerbated by water finance. Strategic planning can better align finance with national water and development priorities, and improve outcomes and benefits for communities.

Second, multilateral development banks should make engagement with the private sector core to their operations. A whole-of-MDB approach is required to co-create investment opportunities with the private sector, develop project pipelines, and mobilise and catalyse much higher volumes of private finance, in line with the conditions for mission-centred finance characterised above. This should be combined with a just allocation of risks and rewards between public and private financiers.

### *Considering debt-for-water swaps*

First introduced in the 1980s (Essers et al., 2021), debt swaps are a partnership-based financial tool that aims to reduce sovereign debt burdens while promoting long-term sustainability (Sing & Widge, 2021). Debt swaps are applied primarily in middle-income countries with high but manageable debt. For countries under severe debt distress, traditional debt restructuring is generally preferable (Chamon et al., 2022).

The new generation of debt swaps frequently involves a buy-back of debt trading favourably on secondary markets, which is reissued under more favourable terms through a de-risked bond linked to environmental performance. A “haircut”, reduced interest rates, and prolonged repayment periods provide partial debt relief and expand the fiscal space of a country, while part of the savings is directed to domestic environmental objectives (Roundtable on Financing Water, 2023).

Since 2020, a new generation of debt-for-nature and debt-for-climate swaps is emerging, restructuring an unprecedented amount of debt, as exemplified by swaps in Ecuador (USD 1.6 billion) (Nedopil et al., 2024), Barbados (USD 295 million),<sup>53</sup> and Belize (USD 553 million).<sup>54</sup> The debt-for-nature swap in Belize reduced the country’s external debt by 10% of GDP. This resulted in Belize moving from a country near default to substantially increasing its fiscal space and improving its credit rating while securing USD 4 million a year until 2041 for marine conservation (African Natural Resources Management and Investment Centre, 2022; Bala et al., 2022).

While debt swaps in the environment traditionally target nature and climate objectives (often benefitting the global hydrological cycle inadvertently), there is an opportunity to finance freshwater-related projects. Debt-for-water swaps can address prominent water financing challenges, such as the need for long timeframes, limited creditworthiness, and a lack of clear revenue streams (OECD, 2022a). Several swap deals have adopted a programmatic approach, funnelling the proceeds to a trust fund, which distributes finance to individual projects.

Significant caveats must be kept in mind, which can undermine efficiency and scalability. These include high transaction costs, the need to ensure that a swap yields substantive debt relief (Nedopil et al., 2024), and a general lack of high-quality water data to enable monitoring (OECD, 2022a). This emphasises the need for careful analysis and tailoring of any debt-for-water swap to the national context and fiscal profile.

### *Establishing Just Water Partnerships*

National and local governments, basin agencies (or new institutional mechanisms to govern evaporation-sheds) would benefit from designing transition strategies that systematically consider blue and green water as drivers and conditions for sustainable development for the territories under their jurisdiction. Just Water Partnerships could be tasked to: (1) consider the new science and economics of blue and green water as a condition or pillar for just economic development; (2) design and implement a transition strategy that articulates the interests of all groups of beneficiaries, including communities whose voices have been often ignored; and (3) develop financing mechanisms to support implementation of the strategy.

In Just Water Partnerships, governing agencies and development finance institutions collaborate to build capacity and enact policies that unlock the right type of investment. By structuring investment opportunities to pool smaller projects for increased bankability, designing guarantees and co-investment arrangements to hedge against risks, and properly regulating the agreements facilitating these investments, Just Water Partnerships can attract finance that might otherwise not have been mobilised to finance water (GCEW, 2023a).

Countries can design Just Water Partnerships tailored to the needs of communities and water-dependent sectors, combining financial and institutional arrangements that serve their context. In the case of Kenya, existing Kenya Pooled Water Fund (KPWF) structures can be combined with other sources of financing to ensure development efforts are coordinated and aimed at specific gaps (Kazimbaya-Senkwe & Mutai, 2021). Innovative financing tools, like environmental impact bonds, can be designed to address the particularities of local and national water systems. They can be combined with other forms of public-value-oriented finance to create bundled investment structures that catalyse water financing.

Financing Just Water Partnerships should involve more active and bolder use of the menu of instruments available to catalyse private

53 [Barbados Debt-for-Climate Swap to Be Backed by European Investment Bank - Bloomberg](#)

54 [Belize Debt Case Study \(nature.org\)](#)

investments. These could include first-loss guarantees, concessional finance elements for lower-income countries, and co-investment arrangements to manage risks – bringing together national or local governments, multilateral or bilateral financing institutions, corporates, and philanthropies. Concessional parts of the financing package can increase technical capacity and absorb broader macroeconomic and programmatic risks, while enticing private investment in project finance. The reforms of multilateral development banks focused on global public goods (for instance the World Bank’s Global Challenge Programs) can support this direction.

Preliminary discussions point to a tentative list of success factors for Just Water Partnerships:<sup>55</sup>

- Ensure ownership by stakeholders in the territory
- Recognise and factor in interdependencies across distant countries (through atmospheric moisture flows or virtual water trade)
- Whatever the geographical scale, embed a national dimension (to enhance agency)
- Adopt (and adapt) the Water System Justice approach characterised in this report
- Empower Indigenous voices and marginalised communities
- Factor in water for a dignified life (Chapter 4)
- Where appropriate, review subsidies that affect the hydrological cycle in the territory, and promote sustainable farming practices

Future work to identify principles that support the development of Just Water Partnerships in various jurisdictions would be appropriate.

<sup>55</sup> The list reflects comments received at a dedicated session convened by Water Aid at the Stockholm World Water Week. The GCEW is grateful to WaterAid for its engagement and support.

