Sustainable Finance Brief

earth security

The Finance Sector's Contribution to Water and Peace

Risk management policies and impact investments to support transboundary water cooperation

Content

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This brief has been developed by Earth Security Partnerships C.I.C. a non-profit platform enabled by Earth Security Group to catalyse collaboration between industry, investors, governments and civil society to address critical sustainable development challenges.

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1.0
Executive Summary

Conflicts over water have increased fourfold in the past decade.[1] They are expected to rise sharply in the coming decades due to growing competition over water, environmental degradation and climate change. Around 3 billion people live in river basins that depend on water shared across national boundaries.[2] By 2030 almost half of the world's population will be living in severely water-stressed river basins that span national borders.[3] Transboundary water cooperation is vital to ensuring secure supplies of drinking water and support economic growth.

United Nations agencies tasked with monitoring the achievement of transboundary water cooperation as part of target 6.5 of the UN Sustainable Development Goals (SDGs), recently concluded that progress on transboundary, integrated water management systems is lagging. The target is not on track to be met by 2030.

Financial institutions (FIs) must anticipate the conflict risk scenarios by considering transboundary water cooperation in their risk management processes and policies; and they should look to align their sustainable finance portfolios with the water goal.

In 2017, the Global High-Level Panel on Water and Peace's landmark report: 'A Matter of Survival', analysed the risks of international water conflicts. The panel recommended greater private sector involvement and in particular called on international FIs to support transboundary cooperation in two ways:

— Gradually include transboundary water cooperation in expanded Environmental, Social and Governance (ESG) risk management principles.

— Develop innovative financial instruments such as blue bonds to finance transboundary water cooperation.[4]

This study, conducted with support from the Swiss Agency for Development and Cooperation (SDC), identifies ten ways in which the finance sector can adopt the recommendations of the Global High-Level Panel on Water and Peace and of other international efforts to mobilise private sector finance for SDG 6. It explains how private and public FIs, governmental and multilateral agencies can strengthen the role of the private sector in water diplomacy and sustainable development.

Audience & recommendations

The brief makes 10 recommendations that will enable private financial institutions (FIs) to contribute to sustainable water for peace and security. The scope of FIs covers institutional investors, investment banks, investment funds, commercial banks, insurance companies, foundations and family offices.

The recommendations focus on opportunities to improve risk management policies, develop new investor-facing information tools and systems, mobilise investors through innovation and collaboration platforms, and develop new impact investment products and strategies that are aligned with the UN Sustainable Development Goal 6.5 on integrated water management and transboundary water cooperation.

The brief can also help policy-makers in governmental and international institutions, who are seeking to engage and collaborate with financial institutions on advancing the sustainable management of water resources.

Methodology

The development of this brief has included:

— A review of the ESG policies of 63 private and public FIs that finance or invest in water-related infrastructure, both at project and at corporate levels.

— Interviews with 45 senior people from FIs and information providers to private financial markets, to identify their perspective on gaps and opportunities in current ESG strategies, risk management frameworks and sustainable finance.

— Analysing the landscape, actors and instruments in sustainable finance, identifying impact investment instruments and mechanisms that FIs could use to promote transboundary water cooperation.

SDG 6.5

"By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate."

2.0 Introduction

"The international financial sector should gradually include transboundary water cooperation in expanded Environmental, Social and Governance (ESG) principles."

Global High-Level Panel
on Water and Peace

2.1
Why transboundary water cooperation matters to the finance sector

A public finance focus on transboundary water infrastructure and climate change.

Given the growing risk of international water conflicts, multilateral institutions want to increase transboundary cooperation and finance relevant infrastructure. The UN Economic Commission for Europe (UNECE), which negotiated the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, is working with multilateral development banks such as the World Bank and the European Investment Bank to explore opportunities to direct capital to projects that strengthen transboundary cooperation and resilience to climate change.

Private FIs see transboundary water risks as increasingly material in hydropower, a fast-growing sector that presents significant opportunities for FIs in energy and infrastructure.

Extensive interviews with private FIs suggest that banks, export credit agencies, insurance companies and regional development banks think transboundary water conflicts are increasingly relevant to hydropower investments. Hydropower supplies 71% of all renewable electricity globally and global hydropower capacity grew 40% from 2005 to 2015.[5] Investment in projects is surging: in China, hydropower generation will double by 2035, while in India and parts of Africa it is expected to triple. Private investors are taking larger stakes in projects, often through public-private partnerships supported by regional development banks.[6] The World Energy Council says the key to managing the long-term risk of hydropower projects is to ensure benefits and burdens are equitable, including by compensating and making other concessions to countries that bear sizeable costs compared to any perceived benefits.[7]

Private FIs should consider and promote the joint management of international watercourses in their investment policies.

Where possible, investment projects should be linked with river basin organisations or commissions (RBOs or RBCs) that govern shared watercourses. The World Bank says such arrangements are a key way to mitigate conflict risks because they increase transparency and the equitable use of water across boundaries.[8] Such institutional frameworks will also become increasingly important when it comes to attracting private capital. For example, the Senegal River Basin Development Organisation (OMVS) attracted significant investments for infrastructure projects such as dams, dikes, and hydropower equipment after establishing a legal framework that defines how project benefits will be shared equitably among riparian countries.[9]

Opportunities are growing in sustainable finance for water infrastructure.

Private FIs are increasingly interested in impact investments linked to SDG 6. The report outlines models private FIs can use to increase their impact on the SDGs and to collaborate with public lenders and investors. Water-related investments are considered a promising area of future growth in impact investment. The innovation opportunities include repurposing green bonds into 'blue peace bonds' at sovereign and corporate levels, advancing impact investment instruments that focus on water basins and systems, and pursuing new forms of blended finance with the insurance sector and multilateral lending agencies.

2.2
A new political context for infrastructure investments

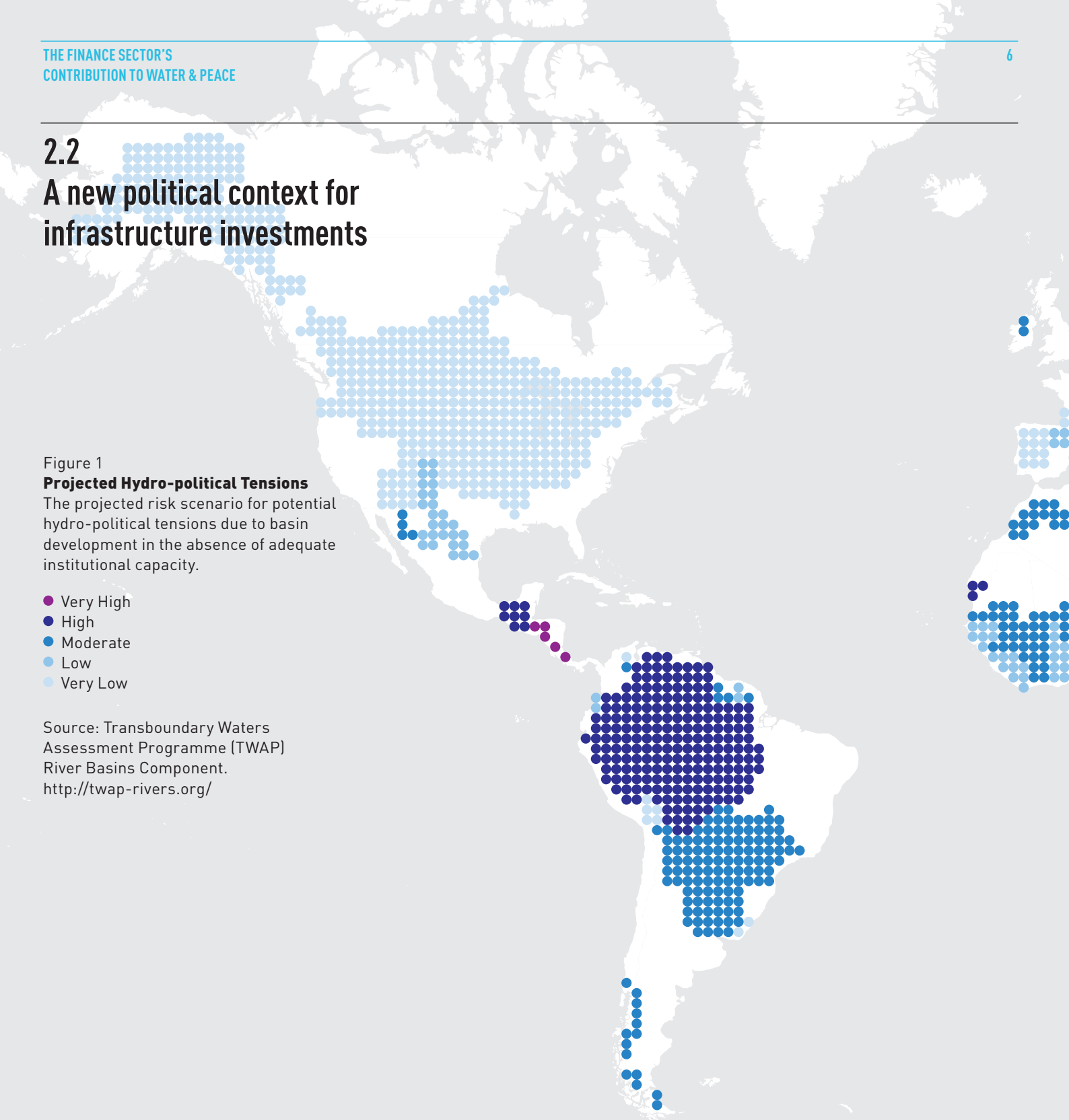


Figure 1
Projected Hydro-political Tensions
The projected risk scenario for potential hydro-political tensions due to basin development in the absence of adequate institutional capacity.

- Very High
- High
- Moderate
- Low
- Very Low

Source: Transboundary Waters Assessment Programme (TWAP) River Basins Component. http://twap-rivers.org/

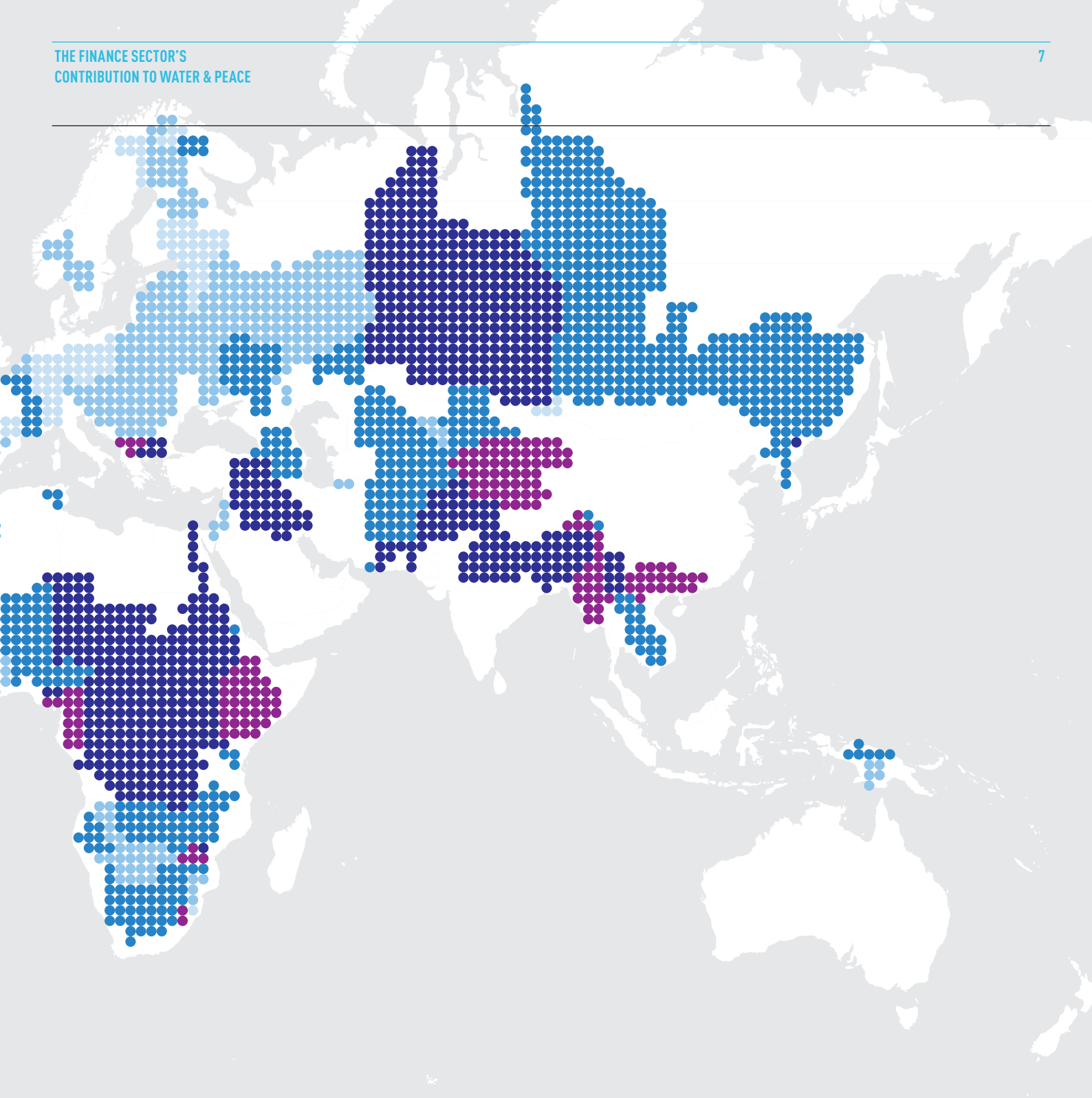
Conflicts over water have increased fourfold in the past decade and are expected to intensify as competition over water increases.[10]

Some 153 countries share rivers, lakes and aquifers. These transboundary resources cover more than half of the Earth's land surface and account for 60% of global freshwater flow.[11] By 2030, nearly half of the world's population will live in severely water-stressed river basins that span national borders.[12]

The risk of transboundary water conflicts is expected to rise sharply in the next 15–30 years.

The Transboundary Water Assessment Programme's analysis shows the risks of water-related tensions are highest in four regional hotspots: the Middle East; Central Asia; the Ganges-Brahmaputra-Meghna basin in South Asia; and the Orange and Limpopo basins in Southern Africa.[13] In the Middle East, the freshwater resources of the Tigris and Euphrates rivers are a source of conflict between Turkey, Iraq and Syria.

The Ilisu dam in southeastern Turkey is particularly controversial, with the Iraqi government claiming that it will reduce water levels in the Tigris river and the availability of water for downstream populations.[14] Increased water scarcity is also predicted to lead to the forced migration of up to 700 million people from arid and semi-arid areas globally in the coming decades, further stoking tensions between countries.[15]



The 'Blue Peace' is a global diplomatic initiative to promote transboundary water cooperation as an instrument of peace.

The Blue Peace Initiative was first proposed for the Middle East in 2009 by the India-based think tank Strategic Foresight Group (SFG).[16] In 2016, 15 countries co-convened the Global High-Level Panel for Water and Peace, supported by the Swiss Agency for Development and Cooperation (SDC) and the Geneva Water Hub.[17]

A series of regional Blue Peace processes are active in priority regions such as Central Asia, bringing together riparian countries to talk about shared risks and opportunities.[18] The recent launch of a Blue Peace in the Middle East will focus on increasing cooperation between water experts and decision makers from Turkey, Lebanon, Iraq, Jordan, Syria, and Iran to mitigate the imminent risk of conflict over water resources in the region.[19]

Progress on transboundary cooperation is lagging, undermining the SDG agenda.

The SDGs recognise the need to improve transboundary water cooperation as part of SDG target 6.5. In August 2018, UNECE and UNESCO, the two UN institutions tasked with tracking progress on SDG indicator 6.5, concluded that the world is not on track to achieve target 6.5 by 2030 as cooperation mechanisms are either weak or absent.[20]

3.0
Integration into ESG policies

Investors need to consider international cooperation on water when they finance water-related infrastructures (hydropower dams, irrigation systems, ports and other types of projects) that may significantly affect the availability of water across borders.

This brief is based on a review of the ESG policies of over 60 FIs that either finance or invest in water-related infrastructure projects and companies. This section gives institutional investors, banks, insurance companies, regional development banks, export credit agencies and regulators a view on how to improve integration of transboundary water issues in their ESG investment policies.

We identify two ways in which banks can better incorporate these issues into investment decisions:

— Improve ESG policies that guide an investor's behaviour and due diligence.

— Improve the ESG information available to investors to inform their decision-making.

3.1
Improving ESG investment policies

FIs commonly consider water as a cross-cutting issue within specific industry sector policies. They mostly deal with transboundary water issues as part of energy and infrastructure sector policies.

ESG policy design

FIs use two types of policy approaches to integrate transboundary water issues into their decisions:

Intention to flag cross-border water risks

Due to the transboundary impacts of hydropower projects in particular, many international banks have energy sector policies that require infrastructure financing decisions to consider political risks on rivers that cross national boundaries. For example, Commerzbank's energy sector policy for hydro-projects takes into account potential conflict risks over competition for water resources between neighbouring countries.[21] Swiss Re's Sustainability Risk Framework flags as a main concern in hydropower 'the non-involvement of affected neighbouring states'.[22] Zurich's ESG integration in insurance includes raising risk awareness with clients when projects in dam construction, mining and oil and gas may adversely affect water quality and access to water in neighbouring states.[23]

Intention to encourage transboundary cooperation

FIs can define minimum requirements for their clients, to ensure that transboundary water risks are minimised. For example, ABN Amro's Sustainability Policy for the Energy Sector requires, on hydropower projects, that its clients ensure that issues 'involving international waterways are covered by an appropriate agreement between the beneficiary state and the other riparian. In the absence of such an agreement, the client should assure that the project will not cause harm to the other riparian.' [24]

ESG policy implementation by financial institutions

Investment banks and commercial banks

Banks apply ESG policies during due diligence for financing or raising capital for a specific project. They will typically request an independent review of a project's Environmental and Social Impact Assessment (ESIA) against the FI's own standards or international standards they adhere to. They will require that a client provide an Environmental and Social Action Plan and comply with it over the life of the project. For projects involving potential transboundary water risks, FIs will require those risks to be included in the ESIA, along with additional documentation such as evidence of inter-governmental agreements on the specific river, land acquisition and resettlement plans, or power purchase agreements (PPA) with riparian countries. They will also evaluate the extent of stakeholder engagement in a project. For example, when financing new large-scale hydropower projects, Goldman Sachs will closely evaluate stakeholder engagement; work with the project developer and relevant partners to improve it in areas such as compensation measures and/or community engagement; and, if needed, conduct its own on-site due diligence and community engagement on such issues.[25]

Institutional investors and asset managers

Some investors recognise the importance of assessing water risks in their portfolios and encouraging investee companies to manage water sustainably. Investors can also promote a river basin approach to water management. For example, Norges Bank Investment Management has developed a water management policy for investee companies that asks them to reflect the regional aspect of water challenges. This includes basin-level information where appropriate, and engagement in collective river basin management efforts. The policy is directed at corporate boards and serves as a starting point for its interactions with companies across all its portfolios.[26]

Multilateral development banks:
ESG policies that consider transboundary cooperation are most advanced in regional development banks and could inform the ESG policies of commercial banks and investors. Two approaches offer further input to FIs seeking to improve the integration of transboundary water cooperation into their ESG policies:

— **Promote transboundary cooperation for regional development**
The African Development Bank's Water Management Policy seeks to 'promote and support joint efforts of riparian countries in developing strategies for integrated water resources management on the basis of mutual agreement', and to 'support multinational organisations and river basin authorities that span more than one country'.[27] Similarly, the Asian Development Bank's Policy for Water Resource Management seeks to promote regional cooperation and increase the mutually beneficial use of shared water resources within and between countries. It requires countries proposing projects on international waterways to formally consult the other riparian countries of the proposed project as part of an investment proposal.[28]

— **Reference international laws as a framework for assessing project risk**
In 2017, the European Investment Bank (EIB) updated its water sector lending policies to strengthen its focus on water security. The EIB is strongly focused on an Integrated Water Resources Management (IWRM) framework, referencing the UN Convention on the Law of Non-Navigational Uses of International Watercourses (1997) and UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992).[29] The Asian Infrastructure Investment Bank (AIIB) has defined a Policy on International Waterways, as part of its policy on International Relations.
As part of this policy, AIIB may finance a project that involves an international waterway only if it is satisfied that the project will not have a material adverse effect on other riparian countries; or if all riparian countries do not object to the project.[30] The European Bank for Reconstruction and Development (EBRD) encourages the use of the UNECE Convention on Environmental Impact Assessment in a Transboundary Context for projects that may affect water across international boundaries. The bank may also conduct its own public consultation to gauge stakeholder views.[31]

In addition, the World Bank runs regional transboundary water programmes that support investments, advance dialogue and cooperation processes, and enable a better flow of information. These include the Central Asia Energy and Water Development Program (CAEWDP) and the Cooperation in International Waters in Africa (CIWA) programme. The latter assists riparian governments in Sub-Saharan Africa to unlock the potential for sustainable, climate-resilient growth by addressing constraints to cooperative water resources management and development.[32]

Multilateral agreements and frameworks applicable to ESG policy implementation

FIs must become more familiar with frameworks such as UNECE's Convention on Environmental Impact Assessment (EIA) in a Transboundary Context. This suggests joint environmental impact assessments, joint monitoring programmes and harmonised methodologies to obtain compatible data.[33] The World Commission on Dams guidelines suggest that basin-wide impact assessments should consider the submissions of riparian states and affected communities; and be reviewed by an independent panel agreed upon by all potentially affected states.
The commission further recommends that the impact assessments be seen as part of the joint institutional strengthening activities of riparian countries to provide a common, interactive approach and a basis for political dialogue.[34]

ESG regulation, from voluntary approaches to government requirements

Global FIs increasingly need to develop ESG policies in response to the demands of national regulators. Governments increasingly define ESG requirements in their financial sectors, particularly for investment and commercial banks. The Sustainable Banking Network (SBN) is a voluntary community of financial regulators, banking associations and environmental regulators from emerging markets committed to advancing sustainable finance to prioritise national development, and deepen financial market and stability. Many of the 35 member countries are based in regions likely to experience transboundary water conflicts, where such issues will need to be increasingly considered in ESG banking policies.[35] Nepal — a member of SBN and a country rich in hydropower resources — is a case in point. In 2018, the country published a government ESG guideline for banks and financial institutions that requires hydropower investment projects to consider the impact of projects on downstream populations.[36]

3.2 Providers of ESG information

Banks and investors rely on third-party ESG information and tools to guide their risk analysis in project and corporate financing. The study identified a number of opportunities for ESG information systems to further incentivise investors to consider transboundary water cooperation.

Corporate water data

CDP Water, which enables global investors to assess water data for over 4,950 companies, is widely used by investors. Each year, participating companies disclose water-related information that is scored and benchmarked by CDP. CDP's scoring methodology currently ranks more highly those companies that:

— Engage with River Basin Management Authorities.

— Assess the business impact on basin actors, ecosystems and communities.

— Evaluate the business impact on basin water availability and quality.[37]

The system can help companies to develop more systemic approaches to water. For example, CDP's 'Thirsty Business' report describes how EDF's hydro dams in Durance in France increased the availability of water and thus hydroelectric power by using a target-based payment scheme to increase local farmers' water efficiency.[38] Companies could apply this kind of integrated water management approach to transboundary issues. The CDP water questionnaire will be revised in 2020, expanding to other financial actors (i.e. banks and insurance); this could provide an opportunity to further consider incentivising companies to assess and support transboundary water governance and cooperation.

ESG industry standards

FIs base their risk assessments on globally-recognised industry standards. The IFC Performance Standards are the leading reference framework for regional development banks, export credit agencies, banks and lenders in applying ESG criteria in decision-making.[39] Industry-specific frameworks provide additional guidance. In hydropower, the most common are the World Commission on Dams (WCD) Framework for Decision Making[40] and the International Hydropower Association's (IHA) Hydropower Sustainability Assessment Protocol.[41] Both have integrated guidance on promoting transboundary water cooperation. The IHA's river basin development programme helps members understand how to design collaborative, adaptive approaches to river basin development. The programme highlights best practices in basin development among hydropower companies and project developers and is convening a River Basin Development Knowledge Network.[42] These tools offer a useful path for policy-makers to communicate opportunities for transboundary cooperation to project developers and investors.

Geo-spatial information on transboundary governance

Investors and banks increasingly rely on geographic water security tools that analyse environmental, regulatory and social conditions in different regions. The main tools that provide investors with geographic risk analyses are WWF's Water Risk Filter[43] and the World Resources Institute (WRI) Aqueduct.[44] Bloomberg ESG has integrated Aqueduct into its geospatial assessment for the mining sector and is likely to expand the service to other sectors.[45] Regional water stress metrics aim to show how much competition exists for freshwater. However, currently there is no investor-facing data that highlights the effective level of transboundary water cooperation at basin levels.

A database and interactive tool created by the Transboundary Waters Assessment Programme (TWAP) could fill this gap. It assesses the world's 286 transboundary water basins for indicators such as hydro-political tension, water stress and water pollution; and clearly identifies the global hotspots where tensions over international waterways could arise over the next 15 to 30 years.[46] The Strategic Foresight Group's (SFG) Water Cooperation Quotient 2017 provides a methodology to rank shared watercourses on their transboundary cooperation. It covers areas such as communications, technical projects, exchange of data and water infrastructure.[47] However, to fully support financial decision making, any tool should give investors and banks an overlap of basin-related issues and corporate activities. Currently this level of data integration does not exist and would require a multi-stakeholder effort to be realised.

Knowledge sharing and capacity building

A growing number of FIs view water scarcity as a major risk to their investments. This has prompted the investor platform Ceres to develop an Investor Water Toolkit. This comprehensive resource, developed in collaboration with over 40 institutional investors, helps investors to evaluate and act on water risks across water-intensive sectors in their investment portfolios. It guides investors to better understand water governance, and industry and regional water risks.[48] Ceres promotes the collaborative engagement of investors on water issues. An Investor Water Hub drives greater consideration of water in investment decision-making and offers a space for investors to discuss transboundary water cooperation issues.[49]

4.0 Sustainable finance and impact investing

"The private sector should be encouraged to develop innovative financial instruments such as blue bonds to finance transboundary water cooperation."

Global High-Level Panel
on Water and Peace

4.1
Water cooperation, a gap in the impact investing market

Our review suggests that the opportunity to positively impact transboundary water cooperation is not well understood in the impact investment market. The agenda is simply not there.

The urgent need to scale up investment in water infrastructure and water security is well documented, most recently by the OECD's Roundtable on Financing Water.[50] Mainstream investors, even if they do not prioritise sustainability, see water scarcity as an opportunity to invest in a precious resource — and define water as a big investment trend to watch.[51]

However, a rapidly growing number of mainstream investors — including pension funds, fund managers and banks — want to increase their portfolios of sustainable finance and impact investing. They see water-related investments as an opportunity to invest in companies and projects that deliver both financial returns and a positive social and environmental impact.[52]

The SDGs have emerged as a universal framework for impact investors to build their investment portfolios.[53] Most impact investments in water-related companies focus either on investments to extend access to clean water and sanitation (SDG targets 6.1 and 6.2) or on improving water quality by investing in water utilities, wastewater recycling and other technologies (SDG target 6.3).[54] The need for investment in these areas is well documented and the impact of companies or investment projects can be easily measured and communicated.[55]

The inclusion of transboundary water cooperation in SDG target 6.5, which focuses on implementing integrated water resources management (IWRM), makes this agenda highly relevant to impact investors. The EU High Level Expert Working Group on Sustainable Finance provides additional guidance for investors to integrate sustainability into policy frameworks and mobilise finance for sustainable growth.[56] However, there is little evidence, if any, of transboundary water cooperation featuring in impact investors' strategies.

Our review suggests that the opportunity to positively impact transboundary water cooperation is not well understood in the impact investment market. The agenda is simply not there.

In this section, we explore a range of financial products that have been used on water-related infrastructure financing and investment and could be used to deploy capital to projects that strengthen transboundary water cooperation. We outline instruments, actors and other elements of the financial ecosystem that could be mobilised to further develop this missing aspect of the impact investment agenda in water.

4.2
Green & blue bonds

The Global High-Level Panel on Water and Peace calls for the development of 'blue bonds' to finance transboundary water cooperation. Below we explore how a range of sustainability-related bonds are used in funding water projects and how they could be applied in a transboundary context.

The Climate Bonds Initiative describes green bonds as instruments 'created to fund projects that have positive environmental and/or climate benefits.'[57] Most green bonds are green 'use of proceeds' or asset-linked bonds. Proceeds from these bonds go to green projects but are backed by the issuer's entire balance sheet. There have also been green 'use of proceeds' revenue bonds, green project bonds and green securitised bonds.

Proceeds of green bonds have so far predominantly gone to renewable energy, low-carbon transport and conservation projects.[58] The total value of green bonds doubled from 2016 to 2017, reaching USD161 billion.[59] More than 100 issuers, investors and underwriters have signed the Green Bond Principles developed by the International Capital Market Association.[60] These provide definitions and standards for the instruments, whose positive impact is generally certificated by accredited third party providers. Green bonds could raise substantial capital for water management infrastructure. Green bond-eligible assets relevant to water infrastructure include renewable energy, and sustainable water and wastewater management.[61] However, water infrastructure still represents only 4% of the total USD895 billion investments in the climate-aligned bond market in 2017.[62]

Different shades of bonds

The popularity of green bonds as a way to finance investments with positive environmental returns has led to a wider set of applications. For example, 'blue bonds' have been developed linked to SDG 14, to raise capital to support marine conservation projects.[63] The Republic of Seychelles was the first sovereign state to launch a USD20 million blue bond as a way to tap into capital markets to fund the sustainable management of its small-scale fisheries and other ocean-related environmental projects.[64] The European Investment Bank has invested in Althelia's Sustainable Ocean Fund, which hopes to prove that small-scale fisheries can be sustainable and profitable.[65]

Blue bonds are expected to grow as ocean sustainability, including the challenge of plastic pollution, becomes a high-profile business sustainability issue (see for example the 2018 launch of the UN Global Compact Sustainable Ocean Business Action Platform).[66] In 2018, the World Bank launched an initiative to raise US$3 billion in Sustainable Development Bonds highlighting the critical role of water and ocean resources. The bonds will provide investors with an opportunity to highlight their support for the Sustainable Development Goals (SDGs) that address water and sanitation (SDG 6) and marine protection (SDG 14).[67]

Innovative bond-like financial mechanisms have been also deployed to finance social agendas. Social Impact Bonds (SIB), also known as 'pay for success financing', are contracts with the public sector to pay for improved social outcomes that projects deliver by helping create public sector savings. Such bonds may not necessarily offer a fixed rate of return. Instead, repayment is contingent on achieving mutually agreed results.[68] According to the World Economic Forum, SIBs could be a key way to finance activities that reduce violence in cities.[69] There are over 60 social impact bonds being used in 15 countries, which have raised more than USD216 million in investment.[70] SIBs tend to focus on under-serviced social sectors such as child and maternal health, early childhood development, youth employment, criminal justice reform and domestic violence prevention.

Water-related infrastructure bond issuers

A range of green bond issuers in the water infrastructure sector provide insight into how such instruments could promote transboundary water cooperation criteria:

Companies
Corporate green bonds account for less than a quarter of the climate-aligned bond market.[71] Small- to mid-sized hydropower and water utility companies issue pure-hydro/pure-water green bonds, but large utility companies have only allocated a small portion of green bonds to hydropower.

For example, EDF allocated 7.6% of its USD6.5 billion green bond proceeds to upgrade existing hydropower assets in France. Norway's Nord-Trøndelag Elektrisitetsverk Holding AS (NTE), which issued green bonds of USD110 million to refinance four hydropower projects, ranging from 8MW to 88MW, is an example of corporate bonds issued purely for hydropower projects.[72] Another example is Alperia's EUR225 million green bond, which will refinance the debts used for the partial acquisition of a 944MW portfolio of 27 hydropower assets in Italy.[73] Anglian Water, the UK regional water utility, will use a GBP250 million green bond to reduce the climate footprint of water management and water recycling projects.[74] One reason companies still allocate only a small portion of green bond proceeds to hydropower is because small hydropower projects are not big enough to justify the use of debt financing, while large hydropower inherently carries potential material ESG risks that, if not addressed, may completely negate the positive climate benefit. Enabling the bundling of multiple smaller hydro schemes into one investable instrument would make it more attractive to the corporate and financial sectors.

Banks

Banks have become active green bond issuers with green bond frameworks that commonly include renewable energy and water infrastructure projects, such as irrigation and wastewater. ING allocated 2.2% of its green bond proceeds to water management, including to the UK-based Kelda Water Services, which has identified growth opportunities in converting wastewater into fertiliser and biogas.[75] SEB provided 1% of its loan proceeds to water and wastewater management, including to Swedish drinking water provider Sydvatten.[76] Development banks are also key issuers of green bonds, especially for least developed countries (LDCs) with illiquid markets or limited financial depth. The African Development Bank has distributed proceeds from green bonds to renewable projects in LDCs, including the Buseruka Hydropower Project, a 9MW hydroelectric dam in a rural area of Uganda.[77]

In 2017, the Asian Development Bank (ADB) allocated green bond proceeds of USD26 million to Papua New Guinea to install six small hydropower plants.[78]

Governments

Governments issue green bonds as a way to finance water-related infrastructure, across two levels:

— **States and municipalities** are some of the most active issuers of sub-sovereign bonds to fund energy, water and wastewater management and urban development.[79] Major players are US municipalities, Canadian provinces, and Australian states. The US accounts for 60% of sub-sovereign issuance globally. States and municipalities had issued USD18.5 billion worth of green bonds as of August 2017.[80] Tax incentives mean bond investors do not usually have to pay income tax from municipal bonds in the US.[81] Following the success of the municipal water utility DC Water's USD350 million offering in 2014, other US states and municipalities have issued green bonds for water infrastructure, including Indiana, Iowa and Chicago.[82] Proceeds from these bonds have been used for climate change adaptation projects, such as widening storm water tunnels, as well as efficiency in wastewater treatment. In South Africa, Cape Town issued a green municipal bond for USD76 million to finance water infrastructure including water meter installations and replacements, water pressure management, and upgrade of reservoirs.[83]

— **National governments** use green bonds to raise capital for infrastructure plans in line with national climate targets. According to CBI, 2017 was 'the year of the sovereign' in the green bond market, with inaugural issuances from Poland and France setting a precedent in late 2016 and early 2017, and Fiji and Nigeria becoming the first issuers amongst developing economies.[84] Nigeria is the first African nation to issue a sovereign green bond.[85] It will use the proceeds for new projects that will help it meet its climate commitments and start diversifying its economy from oil-based revenues. Sovereign and sub-sovereign government bonds accounted for 68% of the climate-aligned bond universe in 2017.[86]

From water infrastructure bonds to 'blue peace bonds'

The use of green bonds in water infrastructure is likely to expand, in particular for hydropower. The Climate Bonds Initiative's (CBI) definitions currently limit the application of green bonds to run-of-river and small hydro <15MW, existing large hydro >20MW in temperate zones, and re-powering of existing large hydro systems.[87] Similar criteria have been adopted by investors from China Development Bank and ICBC, to ING, BBVA and SEB. However, CBI has launched a Hydropower Industry Working Group to further develop the criteria on the applicability of green bonds to hydropower.[88] This has implications for transboundary cooperation. As the definition for using green bonds to finance large hydropower projects broadens, the evolving sustainability-related criteria must include transboundary water cooperation.

The thematic labelling of a sustainability-related bond (green bond, blue bond, social impact bond) is used mainly to signal to investors the particular social or environmental purpose of that debt instrument. This affects mandates to invest in sustainability or the SDGs, but it could have wider relevance if these bonds offered a lower cost of capital (i.e. sector or regional incentives, tax alleviation).

In future, a new label such as 'Blue Peace Bonds' could be developed for instruments used to raise financing for water infrastructures projects based on principles of transboundary water cooperation, such as joint management or compensation between riparian states; or that are the result of a joint investment plan developed collectively by a river basin organisation or commission.

4.3
Impact investing

This section explores how impact investments could be deployed to positively impact transboundary water cooperation. According to the Global Impact Investing Network (GIIN), 'impact investments are investments made into companies, organisations, and funds with the intention to generate social and environmental impact alongside a financial return.' [89]

The rapidly growing market for impact investing has moved from a niche area to become a mainstream investment strategy for many institutional investors including pension funds and asset managers and banks. The market provides capital to address pressing challenges in sectors such as sustainable agriculture, renewable energy, conservation, microfinance, and affordable and accessible basic services including housing, healthcare, and education.

Impact investors' water strategies

Impact investing in water-related companies is a growing area of interest, as water scarcity trends increase long-term investment opportunities. For PGGM, the Dutch pension fund, water scarcity is one of seven focus areas for investment. PGGM prioritises opportunities that address water scarcity such as water purification plants, wastewater treatment; and water-saving technologies, such as water meters, drought-resistant crops and desalination plants.[90] PGGM's water investments were EUR900 million by 2017, with impacts including 350 million m^3 of wastewater treated.[91]

Swiss-based sustainable asset manager RobecoSAM has client assets under management, advice and/or license of approximately USD20 billion. Its water investment strategy is a key pillar of investment and features a well-performing fund, the RobecoSAM Sustainable Water Fund.[92] Its analysis of water trends related to investment opportunities has identified four 'investment clusters': water utilities; capital goods & chemicals; construction & materials; and water quality & analytics.[93]

The SDGs have become an important framework for how impact investors market their funds and investment strategies to clients. For example, a white paper by the Swiss bank UBS earlier this year defined five ways in which wealth managers can support the SDGs. A client survey identified 'clean water' (SDG 6), along with education (SDG 4) and climate action (SDG 13), as top-ranking SDG priorities for UBS clients.[94]

New financing platforms are emerging to focus on the SDGs. The Dutch bank ING, a recognised leader in championing the water agenda within global banking, has joined other banks such as Credit Suisse; the Dutch development bank FMO; and UNDP's Social Impact Fund to establish the Sustainable Finance Collective Asia (SFC Asia), a collaborative finance platform.[95] The platform is innovative because it bundles the financial solutions and capabilities of different types of financing institutions, and will enable the financing of projects in areas such as circular economy — which focuses on water from a resource efficiency perspective — clean energy and impact finance.

Foundations as drivers of finance sector innovation for water

Philanthropists and family offices have been at the forefront of impact investing. They can play a pioneering role in supporting innovative financial mechanisms for sustainable water when such projects offer a lower rate of financial returns and higher social or environmental impact.[96]

For example, the Rockefeller Foundation and the UBS Optimus Foundation have supported the development of the Social Success Note (SSN), an instrument to enable social enterprises to raise financing on a pay-for-success basis.[97] Impact Water is a social business dedicated to scaling up safe drinking water solutions in developing countries.[98] In Impact Water Uganda, it will use low cost, multi-year financing from the SSN instrument to scale up the commercialisation of water purification systems in schools to help limit waterborne diseases among children. By not burning firewood to boil water, it will also reduce CO_2 emissions.[99] Impact Water aims to provide 1.4 million children with clean water over the next five years. The Rockefeller Foundation's Zero Gap portfolio supports R&D and pilots new financing mechanisms to raise the amount of private sector capital invested in achieving the SDGs.[100]

NGOs also play a key role in developing and marketing financial innovations to a range of impact investors. For example, WaterEquity is a social impact investment subsidiary of US-based NGO Water.org. WaterEquity launched a USD50 million fund with capital raised from impact investors, from banks to foundations and a target return for investors of 2% per annum. The fund invests in a range of microfinance institutions, mainly in India but also in Indonesia, Cambodia and the Philippines, which provide small, affordable loans to families for water and sanitation needs. Households have used the loans to connect to piped water networks or install toilets.[101]

How impact investment could be deployed for transboundary water cooperation

As discussed earlier, despite its inclusion in the SDG framework as target 6.5, transboundary water cooperation does not generally feature in impact investors' water strategies. Our review identifies two practical ways in which the impact investing agenda could be applied to transboundary water cooperation, giving basin-level organisations, governments, development banks and other actors a broader set of opportunities to apply private financing:

— **Working with foundations to develop innovative financing instruments that incentivise transboundary cooperation**
A coalition of family foundations has established the Water Funders Initiative (WFI), a bold effort based on a 'blueprint for philanthropy' to collaborate on advancing sustainable water management at a scale never before attempted in the water field.[102] The initiative has two main goals: working at the basin level to ensure basins are brought into balance from an ecosystem, social, and economic point of view; and strengthening the resilience of water systems to climate change, with a focus on hydrological cycles. Improving water governance is one pillar of its innovation strategy, which makes WFI a leading potential partner to co-develop financial innovations that incentivise transboundary cooperation.[103]

— **Using investment vehicles to develop transboundary basin water markets**
The Nature Conservancy has developed the Water Sharing Investment Partnership (WSIP). It raises investor capital to acquire a portfolio of water rights. Most of these rights are either leased or sold back on the market, giving investors a financial return and ensuring farmers and cities have access to enough water. A WSIP can acquire water rights in a water market, or by collaborating with farmers to implement water saving measures in irrigation.[104] Both methods free up water rights allocations to be used for more sustainable water management. These rights can be used to divert water back to nature, restoring water flows in a manner that sustains healthy ecosystems.[105] Innovative impact investment-based vehicles such as WSIPs could be piloted at transboundary basin level, involving basin level organisations, as a way to attract private impact investors to the stewardship of shared water resources

4.4
Blended finance

The private sector often cannot make investments in necessary infrastructure or basic services in developing countries due to the associated project- or country-related risks. The Blended Finance Task Force for the Global Goals says "blended finance" involves the strategic use of development funds to reduce the risk of investments in order to attract private capital that would otherwise not be invested in such projects.[106]

Blended finance tools used for this purpose use public funds to provide partial risk guarantees (PRGs), partial credit guarantees (PCGs), political risk insurances (PRIs), first loss guarantees, trade finance guarantees, currency risk hedging and technical assistance grants. Blended finance usually takes place at a project or fund level. Aggregating investment projects into a fund reduces the overall risk by diversifying geographies, technologies and investee companies covered.

The use of blended finance in water-related infrastructure

Blended finance is a well-established way to help water-related infrastructure projects in high-risk developing countries to attract private financing. Using blended finance to finance hydropower projects is central to transboundary cooperation. Commonly-cited risks addressed by blended finance, which can be associated with potential transboundary water conflicts, may include security risks such as war, civil unrest or terrorism; macroeconomic and investment climate risks, deriving from lack of transparency and accountability in regulatory and legal systems; and political risks associated with the repeal of contracts, expropriation and social conflict.[107] Examples of how blended finance mitigates risks in the energy and infrastructure sector include:

— **The Multilateral Investment Guarantee Agency** (MIGA), a member of the World Bank Group, helps to mitigate non-commercial risks of projects.[108] In 2005, it provided USD91 million in political risk insurance for the Nam Theun 2 hydroelectric project in Lao PDR, covering the risks of expropriation, breach of contract, war and civil disturbance, and transfer restriction in both Lao PDR and Thailand. MIGA's contribution lowered the project's risk profile and enabled it to attract commercial financing.[109] The project — the largest in the country's history — was completed on schedule in 2010.[110] Today, the plant generates 6000 GWh of clean energy per year and has become an important source of revenue for the government through the sale of energy to neighbouring Thailand.[111]

— **The UN Capital Development Fund** (UNCDF) helps unlock public and private resources for investments that support development in the world's 47 least developed countries.[112] In Tanzania, UNCDF supported investments in six hydropower dams by facilitating risk mitigation instruments for the projects, including concessional loans and guarantees, technical assistance, and linking project developers to lenders and equity investors. This support enabled local banks such as CRDB to participate.

— **The Kenya Innovative Finance Facility for Water** (KIFFWA) was started by the Dutch water sector to de-risk Kenyan water projects with a value of over EUR 2 million.[113] KIFFWA provides early stage capital and financial expertise to support the creation of viable water investment opportunities in Kenya and to attract private financing for those projects. The aim is to set an international example of how to co-develop water initiatives in emerging markets.[114]

How blended finance could be deployed for transboundary water cooperation

The Global High-Level Panel on Water and Peace acknowledges the need to create financial incentives for large infrastructure projects that are collaborative in nature, to mitigate the risk of water conflicts.[115] The panel has proposed a possible model 'Blue Fund' capitalised by donor funds or multilateral development banks, which would provide financial incentives to infrastructure projects driven by a collaboration of riparian countries, such as jointly owned or jointly managed hydro-electricity, irrigation, or navigation projects.

The fund could use concessional financing to subsidise a mix of interest, insurance and feasibility costs. It would focus on developing countries most in need of assistance and on substantial infrastructure projects involving capital costs above USD100 million, related to shared fresh watercourses between nations, such as lakes, rivers and aquifers. The fund would not directly finance infrastructure projects, but ensure that interest rates and other related costs of such projects are covered.

A first pilot case is the Congo Basin Blue Fund, agreed to by 10 riparian countries. The fund will create assets related to improved river navigation and transport, including dredging and small ports infrastructure, hydro-electric projects/small dams, irrigation projects to increase productivity of existing arable and agricultural land, and wastewater treatment, among others.[116]

This fund's annual target is EUR100 million for project costs, including full costs for some cases and interest subsidies for others. By increasing capital leverage, enhancing impact and delivering risk-adjusted returns, blended finance can play a very important role in encouraging private investors to finance water-related infrastructure that contributes to transboundary cooperation.

4.5
Sustainable insurance

Insurance and reinsurance are uniquely positioned to help the financial sector to address sustainability challenges. Thanks to global leadership platforms such as the UN-backed Principles for Sustainable Insurance, insurers and reinsurers are starting to take into account sustainability issues other than climate change and disaster risks, which centrally affect their future business. These include issues such as water scarcity, famine and migration, and resulting political and social unrest.[117]

Three types of innovation are happening in sustainable insurance that are relevant to a future insurance agenda of water and peace:

— **Innovative insurance products**
Companies are investing in greener assets, as well as insuring them. For example, Allianz Sustainability Solutions has created a range of emerging business focus areas on sustainability issues, which include products to support electric mobility and sustainable housing.[118] Most of the sustainability innovation in insurance products and strategies have been related to climate change. For example, Munich Re has advanced micro-insurance for small-scale farmers in developing countries.[119] Macro-level, sovereign insurance schemes such as Africa Risk Capacity (ARC) are meanwhile helping countries to cope with increasing climate volatility and inter-connected crises of epidemics, food security and water shortages.[120]

— **Regulatory action and ESG integration in insurance**
Sustainable insurance has also become an emerging agenda for regulators and banking supervisors, who are beginning to incorporate sustainability into their oversight of the sector.[121] For example, in 2016, China released guidelines for a green financial system, which included efforts to advance the framework for environmental liability insurance.[122] Regulators in the Philippines have developed micro-insurance regulation and are helping advance disaster risk insurance mechanisms at the local government and sovereign levels.

— **Risk transfer via the insurance sector**
The risks of climate change, water, food and energy are becoming increasingly interconnected, with serious consequences for developing country fiscal budgets. A key area for insurance sector innovation is the opportunity to help to transfer weather and catastrophe risks from government to private sector risk takers. For example, in Uruguay, which relies largely on rainfall for its hydroelectric plants to produce power, drought conditions have pushed the government into deficit because it has had to buy electricity on the international market. In 2013, the World Bank partnered with Uruguay to provide a landmark USD450 million weather and energy insurance policy, using rainfall data and oil prices for settlement, insuring the government for the combined risk of drought and higher energy prices. Swiss Re Corporate Solutions has taken a significant portion of the risk from the World Bank Treasury.

How the insurance sector could innovate for transboundary water cooperation

The insurance sector's ability to build new business propositions based on risk transfer mechanisms make it a key player in incentivising infrastructure projects that can contribute to transboundary cooperation.

As discussed earlier, on the ESG integration side, Swiss Re's sustainability risk policy already flags transboundary water conflicts as a key concern in the hydropower sector and monitors the possible 'non-involvement of affected neighbouring states.'[123] Similarly, as part of its ESG integration policies in insurance, Zurich is raising risk awareness with clients when projects in dam construction, mining and oil and gas may adversely affect water quality and access to water in neighbouring states.[124]

The next step is for insurers and reinsurers to build incentives for transboundary water cooperation into the insurance premiums they offer to large water-related infrastructure projects such as dams, reservoirs, irrigation schemes, and other projects. They could discount their political risk insurance premiums for dam projects that can prove they are integrating principles of transboundary water cooperation, such as joint management or compensation between riparian states; or that are the result of a joint investment plan developed collectively by a river basin organisation or commission.

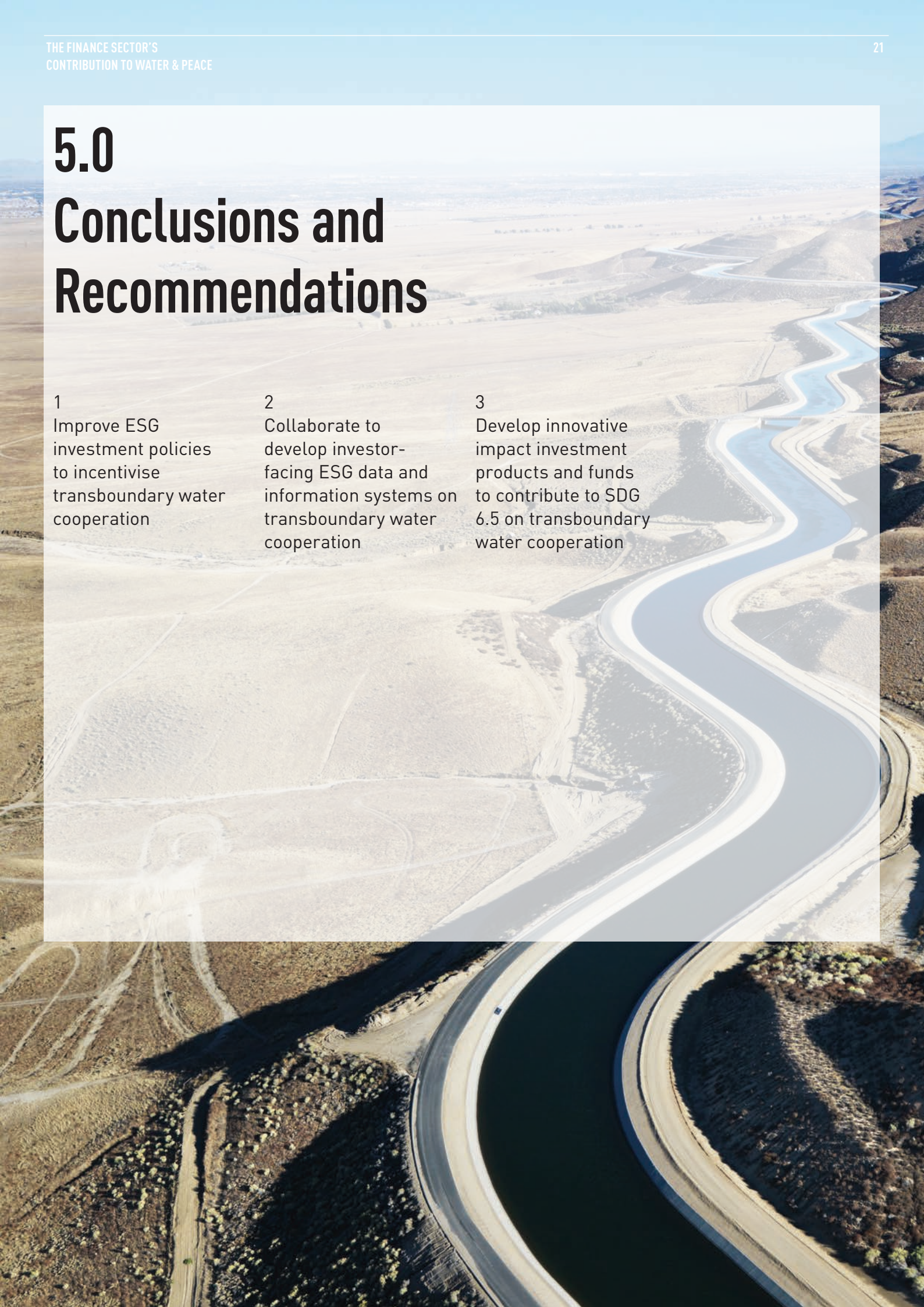
In banking, the Dutch bank ING actively encourages sustainable lending and offers lower interest rates to clients who provide sustainability solutions and outperform their sector on environmental and/or social performance, based on an independent ESG rating agency. For example, ING and Philips collaborated on a sustainable loan of EUR1 billion with an interest rate coupled to Philips' sustainability performance, as measured by rating firm Sustainalytics, with ING acting as the sustainability co-ordinator of a syndicate of 16 banks. If the company's rating goes up, the interest rate will go down.[125] This could serve as a model for how insurance products for water infrastructure projects could help to incentivise transboundary cooperation.

5.0 Conclusions and Recommendations

1
Improve ESG investment policies to incentivise transboundary water cooperation

2
Collaborate to develop investor-facing ESG data and information systems on transboundary water cooperation

3
Develop innovative impact investment products and funds to contribute to SDG 6.5 on transboundary water cooperation



5.1
Catalysing an emerging agenda with financial institutions

The likely increase in transboundary water conflicts will affect financial institutions (FIs), in particular in project-related financing in infrastructure and energy. Development FIs — such as multilateral development banks, which finance the lion's share of large-scale water infrastructure projects — are already focused on this agenda.

However, our review of the private sector, in which we analysed more than 60 ESG investment policies and interviewed over 40 financial sector decision-makers, suggests that while FIs are increasingly considering water risks such as water scarcity and drought in their investments, transboundary water issues are not well understood or prominent in decision-making. We have highlighted the few notable exceptions in this brief so as to provide the majority of FIs with strategic guidance.

On the other hand, impact investment has also seen a growing focus on water — favouring equity and debt investments in companies that help to increase water access, sanitation and water quality in line with SDG 6. On the whole, impact investors have not yet considered ways of increasing transboundary water cooperation through finance. We identify three areas of opportunity with specific recommendations to support private FIs to make progress on this agenda:

Improve ESG investment policies to incentivise transboundary water cooperation

Recommendation 1
Enhance the definition of materiality
Identify transboundary water issues as a material risk for water-related infrastructure financing; and for investments at project and corporate levels where basin-wide, transboundary water impacts are likely to be material.

Recommendation 2
Ensure ESG policies consider transboundary water cooperation
For projects that can affect the availability of water across borders, strongly encourage or require the development of international agreements among riparian countries on sharing benefits (for example, where a hydropower dam involves the sale of electricity to riparian countries); implement compensation measures or joint management of assets by riparian countries; and favour investment projects based on a joint investment plan developed by river basin organisations.

Recommendation 3
Learn from regional development banks
Draw on regional development banks' ESG policies for reference, including the African Development Bank's Water Management Policy[126]; the Asian Development Bank's Policy for Water Resource Management[127]; the European Investment Bank's policy on water security[128] and the Asian Infrastructure Investment Bank policy on international relations.[129]

Recommendation 4
Align due diligence with international conventions
On transboundary due diligence, consider referencing the UNECE Convention on Environmental Impact Assessment (EIA) in a Transboundary Context, which guides the undertaking of joint environmental impact assessment, joint monitoring programmes and harmonisation of methodologies with a view to rendering the data and information obtained compatible.[130] The European Bank for Reconstruction and Development is one bank that encourages the use of such guidelines.[131]

Collaborate to develop investor-facing ESG data and information systems on transboundary water cooperation

FIs are unlikely to expand and strengthen their policies unless they can access meaningful data to guide their decision-making. Currently there is no source of investor-facing information on trans-boundary water cooperation that FIs can integrate into investment or lending decisions. This market gap can be addressed through the strategic collaboration of investors and data providers that have developed standards or intelligence tools to map water and transboundary water risks. Collaboration recommendations for FIs and other stakeholders:

Recommendation 5

Partner to provide investor data on transboundary cooperation

Develop a multi-stakeholder partnership to stream information to investors on transboundary water cooperation, so that this criterion can be included in investment analysis and decision-making. Such a partnership would include interested FIs and investor networks like CERES, development agencies, leading ESG water tools such as WRI Aqueduct and WWFs Water Risk Filter and institutions developing data and analysis on transboundary governance (such as the interactive tool developed by the Transboundary Waters Assessment Programme (TWAP) and the SFG's Water Cooperation Quotient 2017).

Recommendation 6

Create learning platforms for FIs to engage with basin-level outcomes

Partner with the International Hydropower Association's (IHA)'s River Basin Development Programme working with project investors, developers and companies to understand how to design collaborative, adaptive approaches to river basin development.[132] A partnership between IHA's River Basin Development Knowledge Network and leading investor networks interested in water, such as CERES, could offer a practical way for investors and FIs to gain access to knowledge on how investments can promote more integrated management of water resources at the basin level.

Recommendation 7

Support basin-level corporate water data for investors

Collaborate with CDP Water as its corporate water questionnaire is revised in 2020, and expanded to other FIs, to explore ways in which CDP's reporting process can inform and incentivise companies and investors to integrate transboundary water governance and cooperation into investment decisions.

Develop innovative impact investment products and funds to contribute to SDG 6.5 on transboundary water cooperation

The inclusion of transboundary water cooperation in SDG target 6.5, which focuses on implementing integrated water resources management including through transboundary water cooperation, makes it highly relevant to the sustainable finance agenda. We have identified three areas for FIs to further develop innovation and financial mechanisms to contribute to transboundary water cooperation:

Recommendation 8

Develop Blue Peace Bonds

Green bond issuers, investment funds developing SDG-aligned bonds, government agencies and standards-setting organisations like the Climate Bonds Initiative can collaborate to develop 'Blue Peace Bonds'. These would finance infrastructure projects in water and energy that are based on principles of transboundary water cooperation, such as joint management or compensation between riparian states; or that result from a joint investment plan developed collectively by a river basin organisation or commission. Blue Peace Bonds are a way to diversify and create new instruments for the growing market for sustainability-themed bonds at corporate, sovereign and sub-sovereign levels.

Recommendation 9

Partner on blended finance for transboundary cooperation

New financing mechanisms are being proposed by donors and multilateral banks to support transboundary cooperation, including vehicles such as Blue Funds.[133] They aim to provide financial incentives for collaborative infrastructure projects in industries such as energy, water, agriculture and navigation.

Private sector investors such as foundations and family offices could seed impact capital or provide guarantees at a lower rate of return in order to attract other investors; new private investment vehicles can be created to involve private investors linked to such funds or basin organisations, drawing on models such as Water Sharing Investment Partnerships.[134] Insurance companies can develop mechanisms to transfer risk between private and public sectors. Linking public and private actors is necessary to identify and broker new opportunities for blended finance.

Recommendation 10

Experiment through a Blue Peace Finance Incubator

Developing further financial innovation opportunities will require experimentation, creativity, cross-fertilisation between current innovation trends in sustainable finance and a structured innovation process. Immediate opportunities to apply financial innovations to this agenda could include insurance and reinsurance companies providing clients with a lower risk premium if a company or project will positively contribute to transboundary water cooperation. This is similar to how banks operate green loan practices, providing cheaper capital to companies that demonstrate a higher ESG performance. The model of a finance innovation incubator, which is well developed in the industry, could be explored and developed by a group of stakeholders focusing on the issue of integrated water resources management.

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