

Roundtable on Financing Water

Roundtable on Financing Water 6th meeting, 7-8 December 2020, virtual meeting *Supporting the mobilisation of commercial finance to scale up investment* Background Paper

Background

European member states are facing considerable financing needs for water-related investment now and in the future. Looking at water quality and water use efficiency, only 40% of European surface waters meet EU quality requirements (Trémolet, S. et al., 2019^[1]) and an average of 14% of the total EU territory was affected by water scarcity between 2000 and 2015 (Eurostat, 2020^[2]). While most Europeans have access to basic sanitary facilities, some parts of the population still live in households without a bath, shower or a flushing toilet (26% of the Romanian population, around 9% of the population in Bulgaria, Latvia and Lithuania) (Eurostat, 2020^[2]).

Investment needs in water security in Europe and globally are significant and growing. For example, for water supply and sanitation services (WSS) in EU member states¹, additional investments of EUR 289 billion are required by 2030 (compared to current levels of expenditure) in order to comply with European standards (OECD, 2020^[3]). Globally, financing needs for a broad range of water infrastructure are projected to range from USD 6.7 trillion by 2030 to USD 22.6 trillion by 2050, not covering the development of water resources for irrigation or energy (OECD, 2015^[4]). Current sources of funding only cover 15% of the estimated USD 112 billion needed per year in order to achieve Sustainable Development Goal (SDG) 6 on access to clean water and sanitation for all by 2030 (World Bank, 2017^[5]).

EU member countries face diverse challenges to bridge these financing needs. While in 24 EU member states 95% of the population could pay more for WSS services, increased water tariffs could lead to affordability constraints for 5% of the population in half of the member states. Further, several European countries have limited possibilities to raise funding through public debt (OECD, 2020^[3]).

These findings might need to be reconsidered in light of the COVID crisis, which has negatively affected both public and household budgets. Real per capita income is projected to decline by 8% in 2020 and unemployment has more than doubled between 2019 and mid-2020 in OECD countries. Public debt levels are projected to increase by more than 15 percentage points of GDP in ten European member states between 2019 and 2021 as a consequence of the COVID crisis (OECD, 2020^[6]).

Furthermore, member states have heavily relied on EU funding, which represents 17% of total expenditures for WSS for the EU-13² (and close to 100% of public funding in selected countries), and which will be phased out in the future (see figure 1) (OECD, 2020^[3]). This intensifies the need to transition towards broader financing options, including the mobilisation of commercial finance.

Commercial finance can help to bridge the financing gap and can provide the funding needed for crucial infrastructure and water-related investments. Commercial finance can include public finance (sovereign wealth funds or public pension funds) as well as private finance, which is seeking market rate returns (OECD, 2019^[7]). In the water sector, it ranges from microfinance loans to bonds, which can be offered to

¹ Throughout this paper, "member states" refer to the 27 EU member countries and the UK.

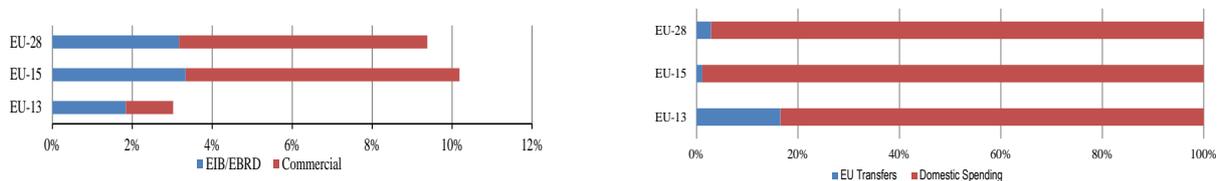
² EU-13 countries are: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.

service providers, local governments, individual users or communities. (World Bank, 2017^[5]; OECD, 2015^[4])

Currently, commercial finance covers only 6% of the total expenditure on WSS (see figure 1) (OECD, 2020^[3]) and a very minor share of all funding on watersheds investments in Europe (Bennett, Leonardi and Ruef, 2017^[8]). Similar figures related to the role of commercial finance for a broader range of water-related investment are not available. In the context of blended finance³, the mobilisation of commercial funds in the sector remains limited. Only USD 2.1 billion out of USD 157.2 billion mobilised through official development finance globally fell into the WSS sector (1.36% of the total commercial finance mobilised by development finance for all sectors) from 2012-17 (OECD, 2019^[7]).

Figure 1. Share of debt and share of EU funding in estimated total expenditures for WSS for the EU-27 and UK

(%, 2011-2015 annual average)



Note: Debt is assumed to be repaid by either (and therefore not additional to) government of household expenditures presented in previous figures. EU cohesion policy funds are channelled through domestic budgets of Member States.

Source: EUROSTAT (for estimated expenditures), European Investment Bank (loan database), European Bank for Reconstruction and Development (loan database), Commercial databases (IJ Global, Thomason Reuters, Dealogic), European Commission Directorate-General for Regional Urban Policy (Open Data Portal for European Structural and Investment Funds)

Public funding can play a central role in creating favourable conditions to unlock commercial finance. For example, in the case of WSS, public funds can be used strategically to increase utilities' efficiency and to promote cost recovery. It can also serve to improve the risk-profile of investments in the form of guarantees or insurance.

This note discusses various approaches that can help to attract commercial investors to the water supply and sanitation landscape as well as to broader water-related projects such as flood protection, water resources management, or pollution prevention, where appropriate. In this context, the importance of a robust enabling environment, including incentives for strengthening the performance of service providers as well as effective water pricing requires attention. In addition, the strategic use of public funding to crowd in commercial finance will be addressed. Lastly, practical examples will provide insights into financing mechanisms in various countries.

³ The OECD defines blended finance as the strategic use of development finance (such as development assistance from donor governments and philanthropic funds) to mobilize additional commercial finance for investments that contribute to meeting the 2030 Agenda for Sustainable Development. While the concept has been developed with a focus on developing countries, the logic applies to consider the general strategic use of public finance (not only development finance) in European countries, including for water-related investments (OECD, 2020^[3]).

Questions for discussion

1. What are the key actions that should be prioritised to improve the creditworthiness of water service providers and other actors making investments that contribute to water security and sustainable growth?
2. What are the distinctive features of an enabling environment that is conducive to adequate financing for water-related investments in Europe? At domestic level? At European level?
3. Building on the maturity of financial markets and industries in Europe, what can be done to accelerate the diffusion of financing mechanisms that harness commercial finance for water-related infrastructure and services?
4. How can EU funding and domestic public budgets be used strategically to attract additional private investment and avoid inadvertently crowding out commercial finance? How can reliance on EU-funding be reduced over time?

Key elements to support the transition towards commercial finance

A substantial financing gap is one major concern of EU member states in efforts to pursue investments that contribute to water security and sustainable growth, including achieving compliance with the EU *acquis on water*, the ambition of the SDGs and the Paris Agreement. While private finance (commercial debt or equity) is available in all member states, it has only marginally been mobilised to finance investments in water supply and sanitation and other water-related investments. The following section discusses main barriers to commercial finance and how they can be overcome. Further, it will be addressed how public funds can be used strategically to mobilise additional commercial finance. Lastly, approaches and mechanisms will be presented, which allow to derive revenue streams from investments in water security.

A strong enabling environment is vital for the mobilisation of commercial finance

A strong enabling environment for investment is needed in order to provide incentives for the sustainable management of water resources, minimising overall investment needs and reducing the risk of investments failing to deliver expected benefits. A robust enabling environment consists of well-designed policy frameworks, institutional arrangements and information systems (monitoring and data for water abstraction and use, pollution, ambient quality, etc.). Well-designed economic and environmental regulation can be an important driver of investment in water security and generate new markets for innovative products and services. For example, regulation can raise the stringency of water quality standards and wastewater treatment requirements, thus increasing investment in water security and demand for pollution abatement technologies. At the same time, regulatory barriers exist that inhibit investment in water security, such as a lack of a clear regulatory framework for wastewater reuse, regulatory limits on private sector participation, or constraints on foreign investment. The lack of a robust enabling environment gives rise to several barriers, which deter commercial financiers from investing in water security. The following list discusses main barriers and how they can be addressed.

- Investments in water security often deliver a mix of public and private benefits to diverse beneficiaries, which can be difficult to monetise, undermining potential revenue streams.
- Revenues are the main driver of financial sustainability and hence the potential return for commercial financiers and investors. It is hence vital that revenue streams are clearly defined, improving service providers' creditworthiness or the bankability of water-related projects. For water supply and sanitation, revenue streams typically derive from water tariffs and the collection of water

charges. Recent OECD analysis has shown that in most EU countries there is scope to increase tariffs to ensure that they reflect the costs of service provision (OECD, 2020^[3]). These findings might require reconsideration in light of the COVID-19 outbreak and potential impacts on household affordability. During the pandemic, water demand has dropped by 27% for commercial and industrial waters, leading to revenue falls of 15% for utilities (GWI, 2020^[9]). Likewise, real per capita income is projected to decline by 8% in 2020 and unemployment has more than doubled between 2019 and mid-2020 (OECD, 2020^[6]), exacerbating affordability constraints for households and reducing possibilities for authorities to increase water prices.

- Besides water tariffs, innovative approaches can help to convert benefits from water-related investments into revenue streams, e.g. economic instruments reflecting the Polluter Pays or the Beneficiary Pays principles, such as pollution or abstraction charges (OECD, 2016^[10]). These approaches can promote cost-recovery of projects for water security and will be discussed in the section below.
- A lack of clearly defined roles and responsibility and fragmentation of local authorities in the sector undermine the potential to create sufficient revenue flows from water-related investments and hinder efficient decision-making.
- Creating revenue streams requires regulated decision-making processes related to pricing and to the collection of charges, contributing to cost-recovery and the improvement of the financial case for water-related investments. A robust enabling environment with institutional arrangements and clearly defined roles and capacities is essential. Independent economic regulation can separate functions and powers of policy from operations, helping to avoid political interference (e.g. in setting water tariffs) and incentivising greater performance and accountability from local authorities or service providers. Experience in the UK, and more recently in Lithuania, can inspire other countries, where independent economic regulation is missing (e.g. Cyprus). (OECD, 2020^[3])
- Inconsistency of water-related policies across sectors impedes efficient cross-sector planning and possible synergy effects.
- More coherent policy frameworks across sectors pave the way for integrated water resource management, combining water-related investments with objectives from other domains, such as agriculture, energy, urban planning or tourism. This may allow for opportunities to capture additional revenues and can unlock investment by applying a holistic approach across the value chain of water-related investment (OECD, 2019^[7]). The Nature Conservancy assesses that European policies do provide an overall conducive environment for investing in nature for European water security, but improvements are still needed in mainstreaming water policies and in policy coherence between sectors (Trémolet, S. et al., 2019^[1]).
- A lack of experience of lenders with the water sector and the perceived high risks associated with projects or uncertainty regarding returns deter financiers. There is also a lack of analytical tools and adequate data to assess water-related investments, which is especially the case for nature-based solutions (NbS)⁴.
- Distribution of liabilities through innovative solutions - such as performance-based payments - could attract commercial investors. Economic instruments could introduce a shareholding perspective to the provision of financing, allowing the investor to participate in the profit, thus building a profitable business opportunity. In New Zealand, for instance, the Waikato River Authority introduced hybrid bond financing mechanisms that exhibit debt characteristics with a stable – and officially guaranteed - interest payment and at the same time equity characteristics by sharing the gains in land value with the investor (OECD, 2019^[7]). The European Union Natural

⁴ NbS are dynamic systems, hence introducing new sources of uncertainty, increasing the difficulty to develop solid predictions on outcomes. Further, NbS are location-specific and their benefits might need longer timeframes to materialise. (OECD, 2020^[48])

Water Retention Measures (NWRM) platform collects information on NbS addressing flood risks, providing a comprehensive database with technical specifications and over 100 case studies applications throughout the EU (NWRM, 2019^[11]).

- For WSS, informational instruments such as credit ratings or benchmarking can increase transparency in the sector, conveying clear and standardised information on the creditworthiness of the operators and encourage performance improvement, increasing the efficiency of service providers (OECD, 2019^[7]). As an example, the rating agency Standard & Poor's ranked three of the privately managed water utilities in the UK and Wales with A-, the other 11 ranked companies received rates between BBB+ and BBB- (S&P, 2020^[12]). The International Benchmarking Network for Water and Sanitation Utilities (IBNet) provides access to comparative information on core cost and performance indicators of water and sanitation utilities worldwide (IBNet, 2020^[13]).

These barriers can be overcome by creating a robust enabling environment (policy frameworks, institutional arrangements and information systems) to attract commercial investment. Technical assistance could help project developers to design sound business cases and can support both borrowers and lenders to build expertise in financing investments for water security. Investments in infrastructure should be combined with investments in strengthening of the enabling environment, these “soft” measures usually being small ticket items, but essential to ensure that larger capital-intensive investments deliver expected benefits over their operational lifetimes and reduce the risk of premature obsolescence.

Using public funds strategically can unlock additional commercial finance

Public funds can be used strategically to overcome the several barriers to private investment and can “blend in” commercial finance. Blended approaches aim at mobilising additional capital for investments and in doing so, can serve as a market building role to help strengthen the financing systems upon which investment rely through greater accountability. (OECD, 2020^[3]; OECD, 2019^[7])

Public finance can be used to improve the risk-return profile of water-related projects for private investors and can hence effectively de-risk investments to borrowers. Instruments range from traditional loans and grants to guarantees, securitisation, pooled finance, political risk insurance, etc. Public guarantees are the most effective tools to reduce credit risk. For example, structured funds allow donor governments to use concessional finance in a first loss position to provide a risk cushion for commercial investors. Pooled financing mechanisms can bundle multiple water service providers and diversify borrower risk, allowing the pooled facility to issue bonds. A greater diversification of financing instruments typically employed in the water sector could allow for improving the risk-return profile of investments and result in more commercial resources being directed towards water-related investments. (OECD, 2020^[3]; World Bank, 2017^[5])

Besides financial mechanisms, both domestic public budgets and EU funds could be used for technical assistance. Investment in capacity building for the management of water service providers through training and reporting requirements can increase the efficiency of utilities and improve their creditworthiness. Technical assistance can also support project preparation, provide guidance on project implementation models or on documentation, including cost-benefit analyses and financial statements to demonstrate the level of profitability of the project. It can also support financiers to set up new lending programmes for the WSS sector, thus helping to match supply and demand for water-related finance. (OECD, 2020^[3]; World Bank, 2017^[5])

The EIB and the European Commission offer technical assistance through the joint programme JASPERS or the Project Advisory Support Service Agreement (PASSA), among others. The latter offers case-specific advisory to project teams and local administrations responsible for public sector investments. It aims to accelerate project execution and to expedite EU structural and investment funds absorption. Similarly, JASPERS supports regions and cities to improve the quality of investment supported by EU funds. The programme provides advice for projects related to flood risk management and coastal protection, disaster

management and to achieving compliance with the applicable EU directives including compliance of water supply and wastewater services. In 2019, JASPERS experts worked on 116 water assignments, with an estimated project investment cost of approximately EUR 10 billion. A total of 18 assignments were completed, of which ten were related to major projects. (EIB, 2020^[14])

The European Investment Advisory Hub aims to combine different sources of financing and the signalling effect of EIB lending support helps to crowd in additional finance from commercial banks and other investors. It has also paid particular attention to projects which qualify for financing from the European Fund for Strategic Investment (EFSI)⁵, a joint initiative aiming to mobilise private investment for strategically important projects through EU funding. More than 85% of the requests from local partners in 2019 came from European cohesion countries among which Bulgaria, the Czech Republic, Croatia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia (EIB, 2020^[15]).

Technical support for the design and implementation of reforms in member states is provided by the European Commission's Directorate-General for Structural Reform Support (DG REFORM) with a budget of EUR 222.8 million for 2017-2020. In Romania, for instance, a 14-month support programme has helped developing a roadmap for authorities to strengthen the economic regulator and roll out the regulatory framework for the water and waste water sector at the national level (European Commission, 2020^[16]; European Commission, 2020^[17]). In Latvia and Lithuania, the OECD is facilitating the agglomeration of water utilities, to enhance the efficiency and financing capacity of the sector. In Hungary, the OECD facilitates policy reforms to support the wider use of nature-based solutions. DG REFORM supports and funds these developments.

The European Commission could contribute further fostering the development of activities of domestic financial institutions by encouraging them as financial partners in the disbursement of EU funds, wherever feasible. Support can be initiated by the European Commission, for instance in the context of the Action Plan on Sustainable Finance (OECD, 2020^[3]).

Innovative approaches can create revenue streams from water security investment

While water tariffs provide a stable revenue stream for water supply and sanitation investments, it is more challenging to assess the costs and benefits of other water-related investments, such as for flood protection or water resource management. So far, the costs of compliance with the European Water Framework Directives are well documented, while a robust assessment of their benefits is lacking. In cooperation with OECD, the European Commission is currently in the process of developing a method to quantify the multiple benefits of compliance with the distinct directives to support holistic impact assessment of different policies.

Approaches, such as dedicated economic instruments, could help to internalise externalities and create revenue streams from explicit and implicit benefits of such investments. Specific examples include abstraction charges, pollution taxes, taxes on urban development in floodplains or on impervious surfaces that contribute to storm water run-off, property rights or marketable permits. (OECD, 2020^[3])

The Beneficiary Pays principle can be applied through the integration of stakeholders who benefit from water security investments. One example are water funds, a collective investment vehicle developed by The Nature Conservancy which provides funding for integrated watershed management. Stakeholders, such as corporates with water-intensive activities and utilities, can benefit from improvements in water quality, which reduce their costs of water treatment or improve the quality of their products. They have hence an incentive to provide non-repayable capital into a local water fund that is used for watershed investments in their basin. The brewery Heineken, for instance, invests in the Monterrey Metropolitan

⁵ The EFSI is running out at the end of this year and will be replaced by the InvestEU Programme (2021-2027) which will include a Strategic Investment Facility.

Water Fund in Mexico and the water companies Vittel-Nestlé and Volvic have taken similar approaches in France (Trémolet, S. et al., 2019^[1]; OECD, 2020^[3]).

While most of the water utilities in England and Wales have arrangements with farmers and pay them for environmental services, the European legislative environment still poses barriers to this approach elsewhere. The French water service provider Eau de Paris, for instance, had to seek special conditions from the EU to be allowed to make payments for farmers above a certain threshold (FNE, MEB and CDC Biodiversité, 2016^[18]). While significant funding for nature-based solutions for water security has been made available through the European Common Agricultural Policy (CAP), funding streams are complex and have been fragmented without meaningful improvement in environmental outcomes at landscape scale (Trémolet, S. et al., 2019^[1]). In a report on natural infrastructure for coastal flood protection, the authors also state that institutional structures are often ill-suited to take advantage of existing and emerging opportunities of funding for such investments (Colgan, Beck and Narayan, 2017^[19]). Clarifying regulations and simplifying institutional arrangements to support payments for ecosystem services and funding for NbS at EU level hence require further attention.

Funding for environmental improvements can also be leveraged through environmental offset markets. The US private investment firm Ecosystem Investment Partners (EIP), for instance, manages investments in large-scale ecosystem restoration and conservation in the USA. With committed capital from institutional investors, such as pension funds, they launch projects for flood protection, improving water system operations, etc., which generate credits that can be sold on the environmental offset market. Private entities that wish or need to offset their activities, can buy certificates and hence provide a revenue stream for these restoration projects. In 2019, EIP had USD 885 million in assets under management and has restored 180 km² of wetlands and over 280km of streams. (EIP, 2020^[20])

Lastly, risk-financing instruments are a mechanism to promote the sharing and transfer of risks and losses and reduce the burden on public funds in case of disasters (e.g. floods and droughts). Insurance or catastrophe bonds, for instance, are pre-disaster arrangement coming into play in a post-disaster phase. Insurances also serve as a risk-communication tool which can help individuals to rationalise their land use choices in at-risk areas and can incentivise behaviour to reduce exposure. Mandatory insurance could be required for buildings in at-risk zones for flooding, making it less convenient to live or install business in these areas, while not prohibiting land use. One example of an insurance arrangement is the Barnier Fund in France, a funding mechanism for the protection against natural disaster. It is mostly financed by a 12% levy on the compulsory insurance against natural disasters for residential and commercial buildings and the revenues from the levy cover up to 97% of the total expenditures of the Fund, which is almost self-sustainable. (OECD, 2020^[3])

Financing mechanism to mobilise private finance

The following section presents selected practical examples of mechanisms which mobilise commercial finance for water-related investments, which have been applied within the EU as well as other OECD countries. Different approaches have been taken depending on the specificities of the projects and local conditions.

Use-of-proceeds bonds

Bonds are a fixed income financial instrument to raise capital from investors through the debt capital market. The bond issuer raises a fixed amount of capital from investors, which is paid back after a specific time period with an agreed amount of interest. Bond finance can facilitate the flow of capital for water-related investments with clearly defined revenue streams. Bonds with long tenors, typical of the water sector, can attract institutional investors such as pension funds. Traditionally, bonds have been the asset

class favoured by OECD pension funds and insurance companies, which in 2018 invested on average 45% and more than 50% of their portfolio respectively in bonds and bills (OECD, 2019^[21]; OECD, 2020^[22]).

Investors are increasingly looking for sustainable financing opportunities and show interest in use-of-proceeds bonds. These are bonds whose proceeds are earmarked for particular projects and purposes and which need to meet specified standards, concerning for instance social responsibility or sustainable development.

Green Bonds

One example for use-of-proceeds bonds are **green bonds** which are designated as “green” by the issuer or another entity, whereby a commitment is made to use the proceeds in a transparent manner, and exclusively to finance or refinance “green” projects, assets or business activities with an environmental benefit. There are no universally defined characteristics of a project to be “green”, but the most widely accepted standards are the Green Bond Principles and the Climate Bonds Standards, developed by the Climate Bonds Initiative (OECD, 2017^[23]). In January 2020, the European Commission has announced the establishment of EU Green Bond Standards with a clear taxonomy for sustainable finance, establishing EU criteria necessary for a project to be “green”. These developments and their implications for the water sector will be addressed in Session 4.

EIB was among the first issuers to enter the globally developing green bond market to finance its climate-related projects in 2007, by 2018 European issuances have totalled EUR 122 billion, representing the largest regional market (CBI, 2018^[24]).

The use of green bonds for the water sector remains limited, 15% of European issuances from government-backed entities were dedicated for water management projects, accounting for a smaller share of issuance compared to the energy and transport sectors (CBI, 2018^[24]). A limitation is that green bonds are mostly accessible to large-scale, creditworthy issuers who can provide clear revenue streams associated with their repayment. Leading green bond issuances in the water sector in Europe are The Netherlands Water Bank (NWB) and Anglian Water in the UK.

Anglian Water was the first utility company in the UK to issue a green bond in 2017 and has raised GBP 830 million in green bonds since then. The company finances projects for water abstraction, water resource management and drought and flood resilience schemes and has segmented its investment plan into 12 categories according to their green and social characteristics. This allows the company to tap into diverse pools of investors with different priorities for financial, social and environmental returns. The debt, that the bank raises through UK-registered companies, is listed on the London stock exchange, their first year bond will mature in 2025 with a return to investors of 1.625 per cent. (Anglian Water, 2020^[25]; Trémolet, S. et al., 2019^[1])

Dedicated financial institutions and water bonds

NWB Bank is a dedicated financial institution helping to raise and distribute funding for water-related projects and other sectors. As national bank, a majority is owned by the Dutch water authorities, with minority shares owned by the Dutch state and provinces. The bank lends to local and regional authorities responsible for water management as well as for the health care, education and public housing sectors. It raises funds on the international capital market and has issued so-called water bonds. Funds raised via these use-of-proceeds bonds are earmarked for projects to mitigate and to adapt to climate change through waterway management and flood protection and to promote biodiversity projects such as water treatment projects. Thanks to a zero-default history, the bank has received its first AAA credit rating in 1996, giving access to finance at affordable conditions, and has received the highest rating for sustainability of their use-of-proceeds issuance from Cicero rating agency in 2019. Last year, the bank has lent EUR 976 million to water authorities and for several years and it has also been involved in financing Public-Private-

Partnerships (NWB Bank, 2020^[26]; NWB, 2020^[27]). NWB is a fairly unique institution in the European context that other countries could use for inspiration.

Sustainability Awareness Bonds

Building on past success of green bonds, the EIB has launched “**Sustainability Awareness Bonds**” (SABs) to raise debt financing focused in particular on water-related projects. Water supply, sanitation and flood protection projects, which contribute to four defined sustainability objectives⁶, can raise funds through this bond. In September 2018, the EIB issued its first EUR 500 million SAB. Throughout 2019, EUR 872 million were allocated to 34 projects in 25 countries, of which 36% went to projects for water access and sanitation, 56% to pollution prevention and control, 4% to projects related to sustainable water resource use and another 4% to natural disaster risk management (EIB, 2020^[28]). The majority of projects (65%) is expected to be located in European member states, 35% outside of the EU (EIB, 2020^[29]). High impact investments will be selected on the basis of performance impact indicators and will be in line with the Green Bond and Social Bond Principles, guaranteeing transparency, reporting and independent audit. While these conditions attract sustainably responsible investors, SABs offer beneficial loan conditions for project developers, such as long maturity and low interest rates.

One example is the Emscher rehabilitation project in Germany, one of Europe’s largest environmental projects. EUR 450 million of the EUR 1 250 million total costs are provided through SAB. In addition to its large volume, the loan has a long maturity of up to 45 years and interest rates can be fixed, allowing to benefit from current low interest rates. The project concerns the restructuring of a regional wastewater system and the restoration of the Emscher river bed, resulting in both social and environmental benefits and the creation of natural and recreational space. (EIB, 2017^[30])

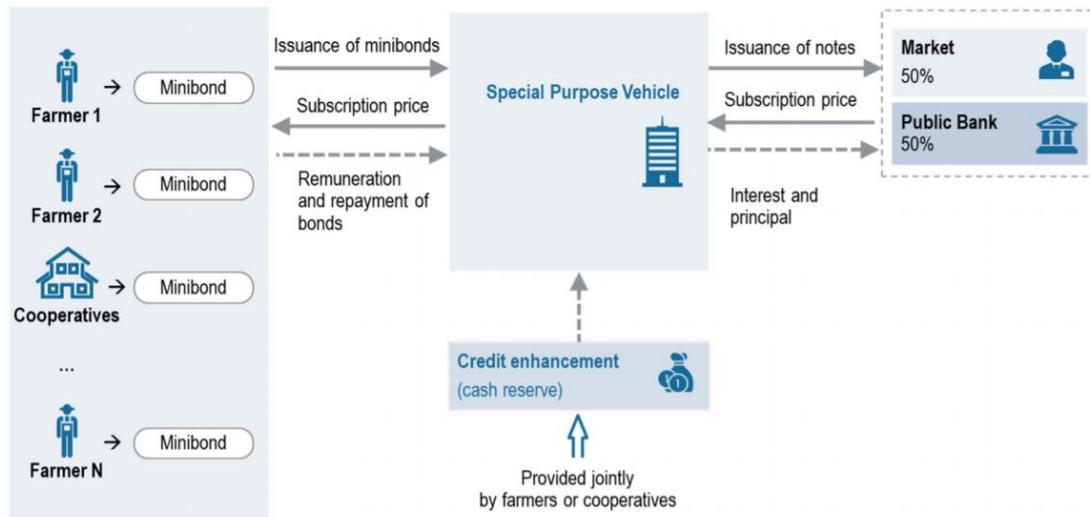
Special purpose vehicles to overcome the small-scale nature of water authorities

As mentioned earlier, different types of green bonds are mostly accessible for large-scale projects with stable revenue streams, while small-scale projects might face difficulties to raise debt financing. The Italian example of “hydrobonds” is a tool to mitigate the fragmented and small-scale nature of Italian water authorities. In 2014, eight water utilities in the Veneto Region (owned by the Vivearacqua Consortium) side-stepped the bank loan market and accessed the capital markets by creating mini-bonds which were then pooled to form so-called “hydrobonds”. A special purpose vehicle (SPV)⁷ was created and fully subscribed to these bonds. This tool enabled the aggregation of small scale needs of a number of players to then be put on the market concertedly. The bonds were structured and brought by the EIB and other financial institutions, allowing the small-scale water suppliers in the Veneto region to raise EUR 500 million for capital expenditure (Rees, 2018^[31]; Gatti, 2018^[32]). SPVs need to be adjusted to local conditions and project specificities, in many cities or regions, a public development bank could take that role. SPVs could also be promoted by special investment funds to be set up by a legitimate and trusted organisation. When accepted by all stakeholders, SPVs can build trust in project implementation both in the short and the long term.

⁶ Eligible projects need to contribute to the following four objectives: 1. Conservation of natural resources, 2. Pollution prevention and control, 3. Access to water and sanitation, 4. Natural disaster risk management. (EIB, 2019^[44])

⁷ An SPV is created as a separate enterprise with its own balance sheet as a holding company for the securitization of debt, assuring repayment for investors. It is a well-known structure to commercial investors (OECD, 2019^[7]).

Figure 2. Illustration of financial structure based on the issuance of mini-bonds



Source: EIB (2019), Feeding future generations, How finance can boost innovation in agri-food.

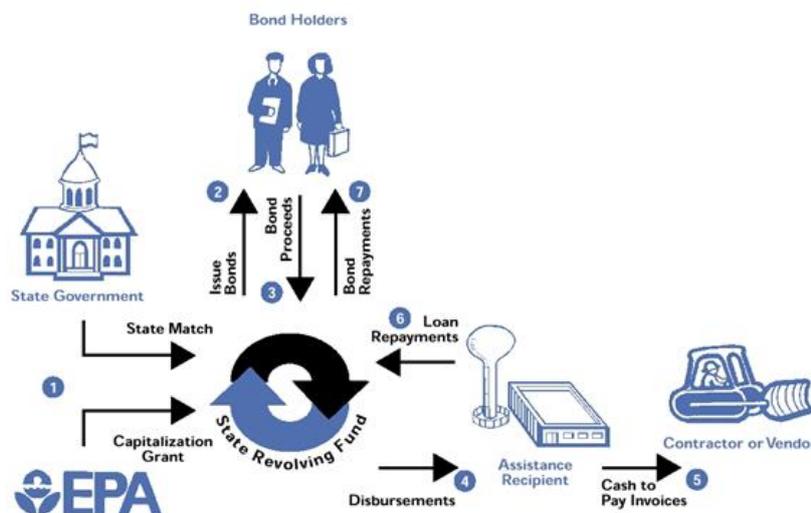
Revolving funds

Revolving funds can be an effective model to attract commercial finance and to ensure available funding for water-related projects in the future. The **Clean Water and the Drinking Water State Revolving Funds (SRF)** in the US are examples how priority water infrastructure projects can be financed through public loans, which leverage non-public sources of finance. The US Environmental Protection Agency has partnered with the states and capitalises the SRFs with annual grants, states provide a 20% match. The states are responsible for the operation of their SRF programs, which function like environmental infrastructure banks: They provide assistance through loans with below market interest rates with periods of up to 30 years, through refinancing, guarantees or purchase of local debt and bond insurance. As money is payed back, the state makes new loans to other eligible high priority water projects; repayments and interest earnings are recycled back into the programme, financing future projects (EPA, 2020^[33]; Gebhardt, 2019^[34]).

A key element of the US SRF model is its integration with the US capital market, where SRFs raise additional capital to supplement their lending capacity. The SRF bond sector has received AAA median rating, which allows SRFs to borrow at the best financing terms from the private capital market. Building on federal investments of USD 66.2 billion, the state Clean Water and Drinking Water SRFs have provided USD 179.1 billion to water systems and communities through 2019 (EPA, 2020^[33]; Gebhardt, 2019^[34]).

This model could find replication where national or subnational governments can concentrate sufficient financial resources to produce stable high credit mechanisms that can offer favourable market terms, independent of a country's own credit strength.

Figure 3. Illustration of US State Revolving Funds



Source: By CWSRF Branch - PD-US Gov-EPA, Public Domain, <https://en.wikipedia.org/w/index.php?curid=19972913>

Dedicated funds to mobilise investment for water

In the European landscape, the recently established **Bulgarian Fund of Funds** in cooperation with the European Bank for Reconstruction and Development (EBRD) generates opportunities to attract commercial capital for creditworthy borrowers to finance water-related investments (OECD, 2020^[3]; FMFIB, 2020^[35]). The Fund of Funds' main activity is the structuring and management of financial instruments (FI), which are co-financed by the European Structural and Investments Funds (ESIF) during the 2014-2020 programming period. The Fund of Funds pools together the FI resources in one national envelope and can hence ensure a more efficient and sustainable management and achieve synergies and economies of scale, catalysing public and additional private resources for investments. Through an agreement with EBRD, the Fund of Funds provides the bank with public resources of EUR 115 million, being matched with the same amount by EBRD. The total amount of EUR 230 million will be made available for long-term lending to water and wastewater operators in Bulgaria (loan term of 15 years with grace period of up to 3 years), as well as loan guarantees for commercial banks to finance eligible projects, and technical assistance for water operators to improve efficiency. (FMFIB, 2020^[35])

The earlier mentioned **European Fund for Strategic Investment** is a further example of a dedicated fund to unlock private investment for strategically important projects through EU funding. The European Commission (EC) provides guarantees to EIB for projects supported by the EFSI. The projects are subject to the normal EIB project cycle governance, in addition to an EFSI specific governance structure, ensuring compliance with EFSI objectives. The residual risk of the lending products are reduced significantly, unlocking additional and affordable private finance. By the end of 2019, additional investment totalled EUR 458 billion. (EIB, 2019^[36]; EIB, 2020^[37])

One example for a water-related project funded by the EFSI has the shape of a **public-private partnership for flood protection in the Netherlands**. The project concerned an upgrade of the Afsluitdijk dyke, ensuring compliance with flood directives in the future, and was awarded through a tender process to the private consortium Levvel, which is responsible for the design, construction, financing and maintenance over 25 years. The EFSI has supported the EUR 550 million project with a EUR 330 million loan. Besides increased flood protection and adaptation to climate change, the project also includes components to re-establish fish migration, the improvement and maintenance of a National Motorway and can boost the local economy through projects on recreation, tourism, nature and innovative sustainable energy sources.

Payments to the consortium are based on the availability of the infrastructure, allowing for potential performance deductions (EIB, 2018^[38]; The Afsluitdijk, 2020^[39]; World Construction Network, 2019^[40]). This example shows how flood protection can be addressed effectively through cooperation between public and private entities as well as through cross-sectoral approaches (flood protection, transport, tourism, environmental protection), allowing for different types of revenue streams.

Insurance mechanisms

Another instrument to finance flood protection or water-related disaster risk reduction are insurance mechanisms. In Romania, homeowners are legally required to purchase a home insurance covering damages from floods, landslides and earthquakes. Nonetheless, legal clauses exempt some households from this obligation on the basis of socio-economic criteria, leading to a share of on 38% of dwellings covered by insurance (Surminkia and Hudsonb, 2017^[41]).

France has established the natural disaster insurance system CatNat, a public-private compensation system that covers losses that cannot be insured in private markets, such as flooding. Under CatNat, it is mandatory for insurers to extend property and vehicle insurance contracts to cover damages caused by natural disasters. The premiums are not based on local natural disaster risks but are fixed by the Government following a principle of national solidarity. (Poussin, Botzen and Aerts, 2013^[42])

Similarly, the British government has negotiated voluntary agreements with British insurance companies to help households in flood risk areas to find affordable home insurance holders and taxpayers. It aims to provide available and affordable insurance without placing unsustainable costs on wider policy (Surminkia and Hudsonb, 2017^[41]).

These selected examples can serve as inspiration for further development of financing mechanism for water-related investment and the mobilisation of additional sources of finance. Adapting these mechanisms to new contexts will depend on local enabling conditions, the institutional environment and the type of project seeking funding. As described, possible approaches are numerous and vary considerably across the different water-related objectives, which stresses the importance of tailoring them country- and case-specifically.

Notes:

The underlying publication presents time series, which end before the United Kingdom's withdrawal from the European Union on 31 January 2020 at 23:00 GMT. The EU aggregate presented here therefore refers to the EU including the UK. In addition to being included in the EU aggregate, the UK also features in relevant tables and figures, when there is a breakdown of the data by country.

Note by Turkey

The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union

The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

References

- Anglian Water (2020), *Annual Integrated Report 2019*, Anglian Water Services Limited, Cambridgeshire. [25]
- Bank, E. (ed.) (2018), *Netherlands: EUR 330m EIB support under Juncker Plan for Afsluitdijk flood defence works*, <https://www.eib.org/en/press/all/2018-131-eur-330m-eib-support-under-juncker-plan-for-afsluitdijk-flood-defence-works-in-the-netherlands> (accessed on 7 July 2020). [38]
- Bennett, G., A. Leonardi and F. Ruef (2017), *State of European Markets 2017 Watershed Investments*, Forest Trends' Ecosystem Marketplace, <https://www.ecostarhub.com/wp-content/uploads/2017/06/State-of-European-Markets-2017-Watershed-Investments.pdf> (accessed on 21 July 2020). [8]
- CBI (2018), *The Green Bond Market in Europe*, Climate Bonds Initiative (CBI). [24]
- Colgan, C., M. Beck and S. Narayan (2017), *Financing Natural Infrastructure for Coastal Flood Damage Reduction*, Lloyd's Tercentenary Research Foundation, London. [19]
- EIB (2020), *CAB & SAB Newsletter, April 2020*. [28]
- EIB (2020), *European Investment Advisory Hub Report 2019, Seeing the impact*, European Investment Bank, Luxembourg. [15]
- EIB (2020), *European Investment Bank Annual Report 2019 on JASPERS*, <http://dx.doi.org/10.2867/0417>. [14]
- EIB (2020), *Facts & Figures*, European Investment Bank. [37]
- EIB (2020), *Sustainability Awareness Bonds*, https://www.eib.org/en/investor_relations/sab/index.htm (accessed on 22 June 2020). [29]
- EIB (2019), *EIB Sustainability Awareness Bonds (SABs), 41 Alide General Assembly EIB-LTIC Workshop*, <https://www.alide.org.pe/wp-content/uploads/2019/06/Presentacion-WS-Sustainability-Awareness-Bonds-BEI-LTIC.pdf>. [44]
- EIB (2019), *European Investment Bank Financial Report 2018*, European Investment Bank. [36]
- EIB (2017), *Germany: The EU bank provides a new EUR 450m loan for the Emscher rehabilitation project*, <https://www.eib.org/en/press/all/2017-199-450-millionen-euro-eu-bank-stellt-weiteren-kredit-fur-emscher-umbau-bereit> (accessed on 7 July 2020). [30]
- EIP (2020), *Delivering the Value of Nature Restored*, <https://ecosystempartners.com/> (accessed on 22 July 2020). [20]
- EPA (2020), *United States Environmental Protection Agency: Learn about the Clean Water State Revolving Fund (CWSRF)*, <https://www.epa.gov/cwsrf/learn-about-clean-water-state-revolving-fund-cwsrf> (accessed on 3 July 2020). [33]
- European Commission (2020), *Directorate-General for Structural Reform Support, Growth and business environment*, European Union, <http://dx.doi.org/10.2887/49133>. [16]
- European Commission (2020), *Strengthening economic and environmental regulation in the Romanian water and waste water sector*, https://ec.europa.eu/info/sites/info/files/strengthening_economic_and_environmental_regulatio [17]

- [n_in_the_romanian_water_and_waste_water_sector.pdf](#) (accessed on 5 August 2020).
- Eurostat (2020), *SDG 6 - Clean water and sanitation*, [https://ec.europa.eu/eurostat/statistics-explained/index.php/SDG_6 -
_Clean_water_and_sanitation#Clean_water_and_sanitation_in_the_EU:_overview_and_key_tr
ends](https://ec.europa.eu/eurostat/statistics-explained/index.php/SDG_6_-_Clean_water_and_sanitation#Clean_water_and_sanitation_in_the_EU:_overview_and_key_trends) (accessed on 20 July 2020). [2]
- Filatova, T. (2014), "Market-based instruments for flood risk management: A review of theory, practice and perspectives for climate adaptation policy.", *Environmental Science and Policy*, Vol. 37, pp. 227 - 242. [47]
- FMFIB (2020), *Fund of Funds, Fund Manager of Financial Instruments in Bulgaria*, <https://www.fmfib.bg/en/> (accessed on 6 June 2020). [35]
- FNE, MEB and CDC Biodiversité (2016), *Paiements pour Services Environnementaux : enjeux, vision des acteurs et perspectives en France*, France Nature Environnement (FNE), Mission de la Biodiversité de la Caisse des dépôts (MEB), CDC Biodiversité, <http://www.mission-economie-biodiversite.com/publication/paiements-pour-services-environnementaux-enjeux-visions-des-acteurs-et-perspectives-en-france>. [18]
- Gatti, S. (2018), *Project Finance in Theory and Practice: Designing, Structuring and Financing Private and Public Projects*, Academic Press, Elsevier. [32]
- Gebhardt, J. (2019), *Background Paper Session 2. of the 4th Roundtable on Financing Water: Blended finance for water-related investment, U.S. EPA Water Infrastructure Finance Models*, U.S. Environmental Protection Agency. [34]
- GWJ (2020), "Water utilities count the cost as COVID-19 hits income from tariffs during pandemic", *Utility Finances, Global Water Intelligence*, Vol. 21/5, <https://www.globalwaterintel.com/global-water-intelligence-magazine/21/5/water-leaders/water-utilities-count-the-cost-as-covid-19-hits-income-from-tariffs-during-pandemic>. [9]
- IBNet (2020), *The International Benchmarking Network*, <https://www.ib-net.org/about-us/> (accessed on 23 July 2020). [13]
- NWB (2020), *NWB Bank*, <https://nwbbank.com/en> (accessed on 7 July 2020). [27]
- NWB Bank (2020), *Annual Report 2019*, Nederlandse Waterschapsbank N.V. [26]
- NWRM (2019), *Natural Water Retention Measures*, <http://nwrn.eu/> (accessed on 11 August 2020). [11]
- OECD (2020), *Financing Water Supply, Sanitation and Flood Protection: Challenges in EU Member States and Policy Options*, OECD Publishing, <https://doi.org/10.1787/6893cdac-en>. [3]
- OECD (2020), *Global Insurance Market Trends 2019*, <https://www.oecd.org/daf/fin/insurance/Global-Insurance-Market-Trends-2019.pdf> (accessed on 7 August 2020). [22]
- OECD (2020), "Nature-based solutions for adapting to water-related climate risks", *OECD Environment Policy Papers*, No. 21, OECD Publishing, Paris, <https://dx.doi.org/10.1787/2257873d-en>. [48]
- OECD (2020), "OECD Economic Outlook, Volume 2020 Issue 1: Preliminary version", [6]

<https://doi.org/10.1787/0d1d1e2e-en>.

- OECD (2019), *Making Blended Finance Work for Water and Sanitation: Unlocking Commercial Finance for SDG 6*, OECD Publishing, <https://doi.org/10.1787/5efc8950-en>. [7]
- OECD (2019), *Pension Markets in Focus*, <http://www.oecd.org/daf/fin/private-pensions/pensionmarketsinfocus.htm> (accessed on 7 August 2020). [21]
- OECD (2017), *Mobilising Bond Markets for a Low-Carbon Transition*, Green Finance and Investment, OECD Publishing, Paris, <https://dx.doi.org/10.1787/9789264272323-en>. [23]
- OECD (2016), *OECD Council Recommendation on Water*. [10]
- OECD (2015), *Water Resources Allocation: Sharing Risks and Opportunities*, OECD Publishing, <https://dx.doi.org/10.1787/9789264229631-en>. [4]
- Poussin, J., W. Botzen and J. Aerts (2013), "Stimulating flood damage mitigation through insurance: an assessment of the French CatNat system", *Environmental Hazards*, Vol. 12/3-4, pp. 258-277, <http://dx.doi.org/10.1080/17477891.2013.832650>. [42]
- Rees, M. (2018), *A sexy name to pay for the pipes (part of the series "a Dictionary of Finance"*, <https://www.eib.org/en/podcasts/italian-hydrobond#> (accessed on 6 July 2020). [31]
- Standard & Poors' Financial Services LLC (ed.) (2020), *Four U.K.-Based Water Utilities Downgraded On Tougher Regulations; Two Put On Watch Negative; Four Outlooks Negative*, https://www.unitedutilities.com/globalassets/z_corporate-site/investors-pages/25-february-standard-and-poors-rating-report.pdf. [12]
- Surminskia, S. and P. Hudsonb (2017), "Investigating the Risk Reduction Potential of Disaster Insurance Across Europe", *The Geneva Papers*, Vol. 42, pp. 247-274. [41]
- The Afsluitdijk (2020), *The Afsluitdijk. Futureproof again*, <https://theafsluitdijk.com/> (accessed on 7 July 2020). [39]
- Trémolet, S. et al. (2019), *Investing in Nature for Europe Water Security*, The Nature Conservancy, Ecologic Institute and ICLEI. London. [1]
- Trémolet, S. et al. (2019), *Investing in Nature for Europe Water Security*, The Nature Conservancy, Ecologic Institute and ICLEI. London. [46]
- World Bank (2017), *Easing the transition to commercial finance for sustainable water and sanitation*, <http://documents.worldbank.org/curated/en/182521503466225465/pdf/119048-WP-REPLACEMENT-PUBLIC.pdf>. [5]
- World Bank Group (2017), *Joining Forces for Better Services? When, Why, and How Water and Sanitation Utilities Can Benefit from Working Together*, <http://documents1.worldbank.org/curated/en/744661504112818630/pdf/Joining-forces-for-better-services-when-why-and-how-water-and-sanitation-utilities-can-benefit-from-working-together.pdf> (accessed on 22 July 2020). [45]
- World Bank and WASREB (2015), *Kenya Water Service Provider Creditworthiness Index Report*, <https://www.wsp.org/sites/wsp/files/publications/WSP-Water-Service-Provider-Creditworthiness-Index-Report-Kenya.pdf>. [43]
- World Construction Network (2019), *Work begins on €550m project to strengthen Afsluitdijk in* [40]

Netherlands, <https://www.worldconstructionnetwork.com/news/work-begins-on-550m-project-to-strengthen-afsluitdijk-in-netherlands/> (accessed on 7 July 2020).