



Finance

Finance is one of the four pillars of IWRM. Ensuring sustainable sources of funding and financing that match the needs for investments is indeed one of the major building blocks of a strong water governance system. The Tools in this Section discuss how to build a water investment rationale and the various funding structures and mechanisms that can be used to increase investments in the water sector.

Estimating the Financial Gap in the Water Sector

A number of estimates have been made to evaluate the size of the financial gap in the water sector ([OECD, 2018](#)):

- Global estimates of investments in the water sector to achieve water security range from US\$6.7 trillion by 2030 to US\$22.6 trillion by 2050 ([WWC-OECD, 2015](#)).
- To achieve the WASH component of SDG 6 by 2030, it is estimated that capital investment needs to triple to reach US\$1.7 trillion, without including operating & maintenance costs ([Hutton and Varughese, 2016](#)).
- 80% of countries reported insufficient financing to meet their national WASH targets, including urban/rural drinking water, sanitation, hygiene, as well as WASH in health care facilities and schools ([GLAAS, 2019](#)).
- By 2030, the annual investment needs for water and sanitation infrastructure will be US \$410 billion for developing countries. This figure contrasts with current investment that barely reaches US 150 billion, leaving a gap equivalent to US \$260 billion ([UNCTAD, 2014](#)).
- US \$200 billion were invested globally in water infrastructure in 2013. However, the world should be spending annually US \$500 billion from 2016 to 2030 only to support current economic growth projections and meet the investment demands for municipal and industrial water and wastewater systems ([MGI, 2016](#)).
- An estimated US\$960 billion of capital investment is needed to expand and improve irrigation until 2050 in 93 developing countries, compared to the 2005–2007 levels of investment ([Koohafkan et al., 2011](#)).

Each estimation above give a snapshot sectoral perspective of the investment needs towards achieving water security, e.g., from the standpoint of rural and urban WASH, water pollution, and disaster management ([ADB, 2020](#)). Water-related investments also connect other sectors and anchor areas, including agriculture, energy, public health, climate, and others ([OECD, 2022](#)). Total investments needed in the water sector are thus difficult to calculate as this would require finding out how much is required to address all challenges that are directly and indirectly interrelated to water.

Financing Water Infrastructure

Water investment needs are not limited to the costs of installing pipes for water and sanitation services or building canals for irrigation; they include other costs relating to operating, maintaining, monitoring, and regulating all water-related services. One way to simplify water governance investments needs is to differentiate between the finance that is required to fund the so-called “hard” and “soft” infrastructure:

- **Hard infrastructure:** Pipelines, dams, treatment works, pumps, distribution systems, hydropower stations, etc.
- **Soft infrastructure:** Administrative overheads, research and development, monitoring and evaluations, regulatory, consumer protection services, legislative consultations, etc.

Infrastructural projects also differ by what services they provide and what functions they perform (WWC-OECD, 2015):

- **Water services for specific users:** Sewers and wastewater treatment plants.
- **Other functions which do not have an easily assigned monetary value:** Water resources management and strategic infrastructure for storage or flood protection in case of multi-purpose infrastructure.

A different typology may be based on (WWC, 2018):

- **Scale:** Centralised system or small-scale providers ([Tool B2.02](#)), as well as household, industrial or institutional customers.
- **Status:** Greenfield or brownfield projects.
- **Function:** Water supply or nature-based solutions ([Tool C3.04](#)) for urban planning.
- **Operating environment:** How the risks are shared in a public-private partnership arrangement ([Tool B2.02](#)) or what kind of regulations are in place.

From a hydrological perspective, for water and sanitation services to be provided sustainably, different types of investments should be undertaken for various infrastructure types (Fig. 1):

- Providing access to WASH
- Up-stream to protect water resources
- Down-stream for wastewater treatment.

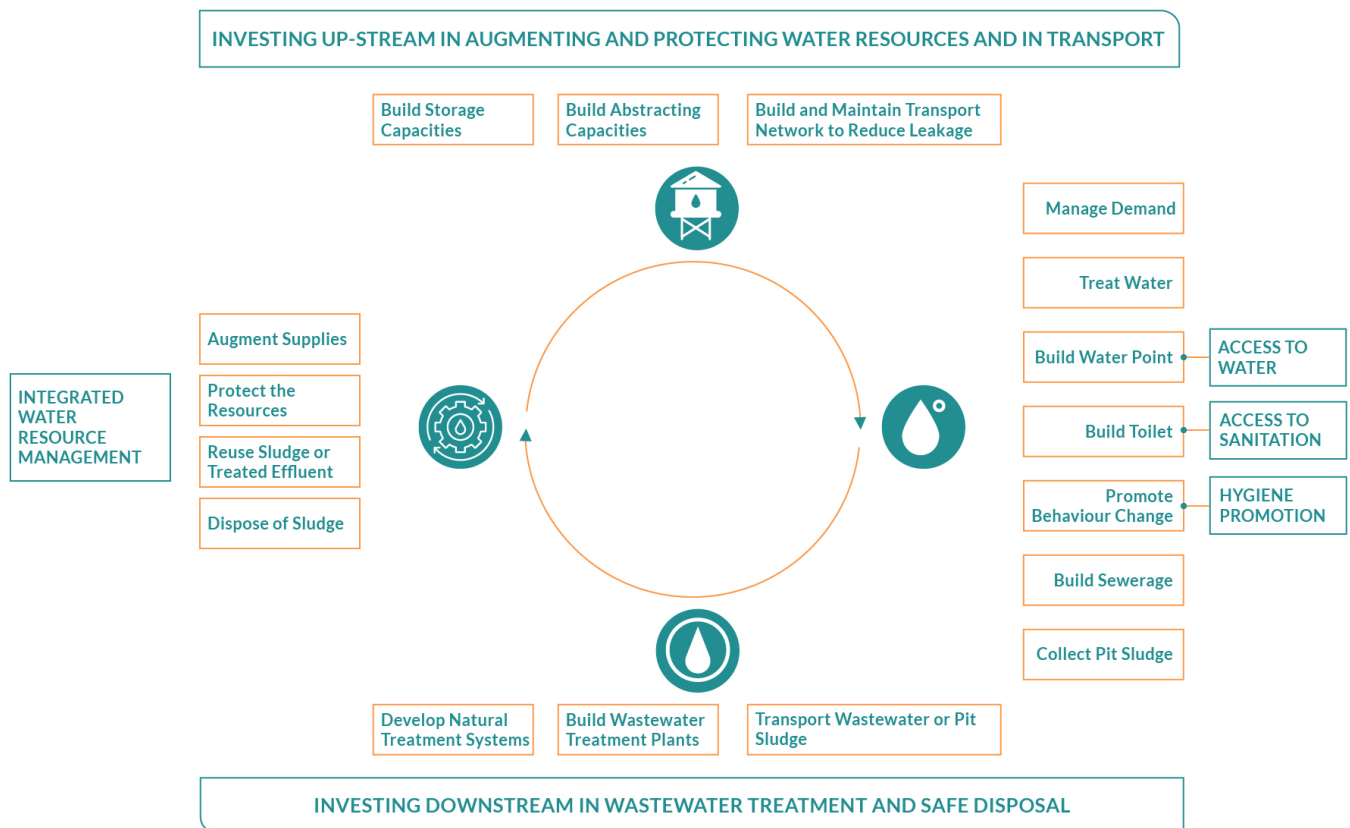


Figure 1. The WASH Value Chain. (Adapted from OECD, 2011).

Linking Water Investments and Good Water Governance

Not restricted to financing infrastructure, water-related investments require providing financial resources for an Enabling Environment (Tools A), Institutional Arrangements and Participation (Tools B), and Management Instruments (Tools C), as they all ensure that the sector operates in an efficient manner and is capable of meeting economic, social, and environmental objectives of sustainable development. The range of water management and governance functions to be financed may include (Rees et al., 2008):

- **Strategy, planning, and policymaking:** Strategy and priority-setting, resource allocation and budgeting, research and data collection, capacity building (Tools B4), and institutional development.
- **Engagement with stakeholders:** Coordination and consultation, public awareness and information, conflict resolution (Tool C6.03).
- **Water resource development, allocation, and management:** River basin management, multipurpose projects, flood control, environmental and ecosystem protection.

Financing water resources management functions will then provide access to finance for other functions and services, which creates the two-way interaction between governance and finance. There is a number of examples: investing in developing hydrological and climatic data provides a solid ground for hydropower and irrigation investments or investing in inclusive policies will stimulate the creation of financing mechanisms benefiting not only

those who already have access to WASH and ensuring that no one is left behind.

Section Overview

To address the financing challenge faced by the water sector, a number of strategies may be undertaken, including making the best use of existing financial resources and assets, minimising future investment needs, and harnessing additional sources of finance (Leckie et al., 2021). The Tools in this section aim to provide answer to these questions. They are organised as follows:

- **Building a Water Investment Rationale** (Tools D1): This links features of water as a resource to building both economic and non-economic rationale for investing in it and lists the barriers associated with water investments.
- **Financing Frameworks and Strategies** (Tools D2): Differentiates between investment, funding, and financing, as well as looks into the concepts of full-cost recovery and governance as pre-requisites for the sustainability of investments. It also lists new opportunities available for water sector funding and financing.

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