

# Roundtable on Financing Water

OECD-WWC-Netherlands Roundtable on Financing Water  
Inaugural meeting 12-13 April 2017, Paris

## SESSION 1. THE GAP BETWEEN THE ECONOMIC CASE FOR INVESTMENT IN WATER SECURITY AND THE FINANCIAL CASE

### BACKGROUND PAPER

#### Investment in water security helps to drive sustainable growth

The challenge of water security is global, and growing. As populations, cities and economies grow greater pressure is being placed on water resources and the exposure of people and assets to water risks increases. Further, as the climate change, the frequency and severity of extreme climatic events are projected to increase (IPCC, 2014). Rising water stress and increasing supply variability, flooding, inadequate access to safe drinking water and sanitation, and higher levels of water pollution expose a country to a variety of risks and costs, affecting economic growth,

#### Box 1. Water security defined

The OECD defines water security as achieving and maintaining acceptable levels for four inter-related water risks:

- **Too little water** (including droughts): Lack of sufficient water to meet demand for beneficial uses (households, agriculture, manufacturing, electricity and the environment);
- **Too much water** (including floods): Overflow of the normal confines of a water system (natural or built), or the destructive accumulation of water over areas that are not normally submerged;
- **Too polluted water**: Lack of water of suitable quality for a particular purpose or use; and
- **Degradation of freshwater ecosystems**: Undermining the resilience of freshwater ecosystems by exceeding the coping capacity of surface and groundwater bodies and their interactions.

These risks to water security can also increase the risk of (and be affected by) **inadequate access to safe water supply and sanitation**.

Water security affects both developed and developing countries, with the greatest threats from water-related risks falling mainly on developing countries. Many poor countries face high hydrological variability, and hence require greater investment to achieve water security (Sadoff et al., 2015). Although most developed countries are relatively water secure, they must continuously adapt and invest to maintain water security in the face of climate change, deteriorating infrastructure, economic development,

demographic change, and rising environmental quality expectations. It is noteworthy that the economic cost of flooding is higher in developed countries, in particular the US, reflecting the value of assets at risk.

The report *Securing Water, Sustaining Growth*<sup>1</sup> provides estimates of selected economic costs of water insecurity:

- US\$260 billion per year: global economic losses from inadequate water supply and sanitation
- US\$120 billion per year: global economic losses from urban property flood damages
- US\$94 billion per year: global cost of water insecurity to existing irrigators.

Investing in water security reduces the risks faced by society and economic sectors from water insecurity, and can have a positive effect on economic growth, inclusiveness, and the structure of economies. For example, enhancing water security can reduce the price, and the price volatility, of staple food crops, a key priority in the global economy.

### **Investment needs in water security are significant and growing**

While investment in water security makes economic sense, it fails to materialise into individual projects and financial flows at scale. Estimates of current investments in water security are often incomplete and difficult to compare due to different scopes and methodologies (an exception is the water supply and sanitation sector). In addition, we know little about how much users (i.e. farmers, industrial or domestic water users) invest on their own to secure the water they need and to protect against water-related risks.

However, despite incomplete data on investments, two facts are well established. First, current investments are not sufficient to fully capture the economic benefits from further risk reduction. Consider the following facts:

- More than half of the world's hospital beds are occupied with people suffering from illnesses linked with contaminated water (Corcoran et al., 2010)
- Water-related disasters caused economic losses of USD 1.3 trillion between 1992 and 2012 (UN ISDR, 2012)
- More than 400 hypoxic dead zones have been identified in the world's oceans due to eutrophication, covering 245 000 km<sup>2</sup>, the surface of the UK (Corcoran et al., 2010)
- Globally, at least 1.8 billion people use a drinking-water source contaminated with faeces (WHO, 2016) and 2.4 billion people do not use an improved sanitation facility (JMP, 2015).

Second, future investment will need to be significantly higher, if the needs of human beings and the ambition of the global community are to be fulfilled. Hutton and Varughese (2016) estimate that the present value of the additional investments needed until 2030 to achieve the Sustainable Development Goal of achieving universal and equitable access to safe and affordable drinking water for all is approximately 1.7 trillion USD. This is about three times the current investment levels. This is only a fraction of the water agenda: projections of global financing needs for water infrastructure range from USD

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<sup>1</sup> Sadoff C. et al. (2015), *Securing Water, Sustaining Growth*: Report of the GWP/OECD Task Force on Water Security and Sustainable Growth.

6.7 trillion by 2030 to USD 22.6 trillion by 2050 (see Winpenny, 2015, for a compilation). The figures do not cover the development of water resources for irrigation or energy.

### **Barriers hinder investment in water security**

The main reason why investments in water security do not materialise is not due to a shortage of money: there is an abundance of capital available globally, in search of investment opportunities (Winpenny, 2015). Instead, investment in water security faces a number of barriers, which result in a misallocation of risks across financiers and minimal (if any) revenue streams. Some of the main barriers are listed below:

- Water infrastructure is typically capital intensive, long-lived with high sunk costs. It calls for a high initial investment followed by a very long pay-back period.
- Investments in water security often deliver a mix of public and private benefits to diverse beneficiaries. Many of these benefits cannot be easily monetised, undermining potential revenue flows.
- In addition to the usual range of project risks, investments in water security face specific risks, such as financial risks arising from the heavy sunk costs or a poor record of cost recovery. The political sensitivity of water pricing makes the sector vulnerable to political interference, undermining policy makers' willingness to charge for water services or impose pollution taxes.
- Hydrological risk is inherent in all activities dependent on water and is expected to increase and become more uncertain due to ongoing climate change.
- Lack of appropriate analytical tools and adequate data to assess complex water security investments can deter financiers.
- Emerging approaches, such as green infrastructure, lack the clear performance track record needed to assess their risk-return potential.
- Equity firms are deterred from investing in water security because utilities are typically local and small, creating a liquidity risk.

Government policy can also raise barriers to investment in water security. For example, a lack of policy coherence (across agriculture, energy, or urban development) can increase the overall costs of achieving water security.

### **An economic framework to foster investment in water security and sustainable growth**

Four sets of actions are required to make the best use of available water resources, infrastructure and sources of finance and ensure that investments in different sectors contribute to water security instead of undermining it:

1. **Maximise the value of existing water security investments.** Investment plans can be optimised by improving the efficiency of existing infrastructure. Better operation and maintenance of infrastructure, demand management measures, and engagement with stakeholders can reduce water-related risks and investment needs.

2. **Select investment pathways that reduce water risks at least cost over time.** The focus of water finance has long been on the development of pipelines of bankable projects. However, not all bankable projects are equally beneficial from a water security and sustainable growth perspective (see Box 2). Investments in infrastructure only deliver expected benefits when supported by the appropriate institutions and information. They are sequenced along strategic pathways (see Box 2). Such sequences consider how pursuing a specific project may foreclose future options and increase path dependency, potentially increasing costs in an uncertain and changing environment. Customary practices and green infrastructure can be cost effective and should be considered.
3. **Ensure synergies and complementarities with investments in other sectors.** Policies outside of the water sector can stimulate water-wise investments when they factor in the benefits of reduced water risks, and deter investments and practices that inadvertently increase water-related risks. A better alignment of policies and investments across urban development, food and energy sectors will enhance water security.

**Box 2. Bankable, investable, beneficial investments in water security**

Investments that benefit water security and sustainable growth share three features:

1. They generate more benefits than costs for the community. Methodologies have advanced considerably, but are still facing a number of complex issues related to the assessment of economic, social and environmental costs and benefits, and their combination at different scales (from local to basin, national, transboundary and global).
2. They combine investments in infrastructures, information and institutions. Well-designed infrastructures only deliver expected outcomes when they are backed by appropriate institutions (for project design, financing, management, accountability), and when they build on best available knowledge and information.
3. They are consistent with well-structured, long-term development strategies that are also dynamic and adaptive with respect to changing circumstances.

Financiers and governments usually focus on the first feature, while analytical tools to assess the last two are lacking. It is not clear which tools are available to: assess the costs and benefits of water investments for the economy and how water risks should be factored in development pathways; value the flexibility (or closure of future options) that derive from specific projects and combinations thereof; or combine individual projects in sequences and compare the benefits of alternative investment sequences.

Source: inspired by Sadoff et al. (2015).

4. **Scale-up financing through attractive risk-return allocation.** Governments can help to attract new investors by enabling public and private actors to earn returns commensurate to the risks they take. Governments may consider providing risk mitigation to long-term investment projects where it would result in more appropriate allocation of risks and their associated returns.

Combinations of public and different types of private finance can make the best use of the capabilities of the two sets of financiers. For example, London have established a novel Government Support Package, to attract private financiers and reduce insurance liabilities to deliver the Thames Tideway Tunnel project – a major construction undertaking to intercept London’s combined sewer overflows for treatment to improve water quality of the River Thames. Blended finance is a promising avenue, where development finance and philanthropic funds leverage private capital flows in emerging or frontier markets (WEF, OECD, 2015). In the US, the Water Infrastructure Finance and Innovation Act (WIFIA) established a new

financing mechanism for water and wastewater infrastructure projects to be managed by the Environmental Protection Agency. The Act provides low interest rate financing for the construction of large dollar-value infrastructure (at least USD 20 million) of national or regional significance. Credit assistance can be in the form of loans or guarantees.

The inaugural meeting of the OECD-WWC-Netherlands Roundtable on Financing Water has been organised to explore these issues:

- **Session 1** sets the scene by highlighting that a strong economic case for investment in water security does not necessarily translate into a good financial case.
- **Session 2** examines the expectations of a diverse range of financiers, and how investment in water security meets, or fails to meet, these expectations. Session 2 also draws lessons from experience with low carbon, climate resilient investment to examine which features of the broader investment environment may encourage or hinder investment.
- **Session 3** explores innovative policies and business models to better convert the economic value of investments in water security into reliable revenue streams.
- **Session 4** explores ways to combine different sources of finance (public and private) and devise effective approaches to allocating risks.

In each session, participants are invited to consider:

- How investment in water security compares with other sectors when it comes to attracting private investment.
- How governments can help stimulate and facilitate investments that contribute to water security and sustainable growth.
- How the Roundtable can contribute to moving this agenda forward.

For more information, please visit:

[www.oecd.org/water/roundtableonfinancingwater.htm](http://www.oecd.org/water/roundtableonfinancingwater.htm)

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