

# Water Financing in the Transition to the Green Economy

Information brief



*“Investing annually just **0.16%** of global GDP in the water sector could reduce water scarcity and halve the number of people that lack sustainable access to water and basic sanitation in less than four years”*  
UNEP (2011)

*“Providing reliable and sustainable services to people is an essential part of the green economy”*  
Julia Bucknall, World Bank (2011)

## How can water financing contribute to the transition towards a green economy?

### *Greening growth patterns*

In the transition to the green economy, financing means mobilizing more efficiently the funds required to alleviate global poverty; bridging the inequalities between developed and least developed countries; reducing inequality in countries; fostering innovation and new green technologies; creating new job opportunities (green jobs) to compensate the losses in ‘brown economy’; reducing scarcities; and enhancing resource efficiency; and designing ‘smart subsidies’. The financing challenge of the green economy is to promote growth patterns that **internalize environmental costs** and that avoid lock-in effects of unsustainable consumption patterns.

### *Improving water services*

Investments in water can boost growth, cost savings and productivity gains in many sectors of the economy and are a necessary condition for poverty reduction. **Key investments** aimed at improving access to basic services and for improving the effectiveness, efficiency, reliability and resilience of water supply and water use are essential for green growth. Furthermore, investments in natural capital can support the provision of crucial ecosystem services such as water, flood control and water quality regulation. The current lack of investment in water services and treatment aggravates water scarcity. Within 20 years, global water demand could surpass water availability, and limited investment contributes to this trend.

### *Around the world*

In all countries, financing is required for:

- Obtaining **more value, nutrition and jobs** per unit of water while ensuring sustainable levels of water withdrawals.
- Investing in replacing/maintaining old **infrastructure**, improving irrigation systems, and decreasing wastage.
- Investing in **retrofitting** of infrastructure to address the uncertainties and risks of climate change.
- Investing in **sustainable agriculture** and freshwater systems.
- Investing in **technology and innovation**.
- Enhancing investments for **generating knowledge** that is made available as a public good; public sector purchase of relevant technology that is also made freely available; assistance in building technology capabilities; and human capital formation.
- **Improving storage and water quality**, including investing in hard infrastructure (i.e. dams, wastewater systems); and in soft infrastructure (restoration of ecosystems as buffer areas, etc); investments to protect current assets at risk when economically efficient to do so, and retrenchment strategies for other cases.
- **Upgrading management regimes** in order to protect instream flows and protect environmental allocation.
- **Water resources management**, in particular for investing in the institutions and mechanisms needed to allocate water among competing demands in an equitable and sustainable manner.

### *In Least Developed Countries (LDCs) and Developing Countries (DCs)*

In LDCs and DCs, financing is needed to face the following challenges:

- Ensuring **access to basic water and sanitation services** for the bottom billion people whose ability to pay is well below the marginal cost of providing them with basic access to water and sanitation.



- Allowing **agricultural development**, but avoiding the known unsustainable detrimental impacts on the water environment. Investments are needed to increase crop yields, for example through irrigation projects. Funds are also needed to improve the way water is used in the economy, through investments in efficient water transport, distribution and use systems.
- **Increasing security and resilience to recurrent extreme events**, such as floods and droughts, and to the impacts of climate change. This may imply investment in hard water infrastructure, to store water and help mitigate floods and droughts across the river basin; but also in the recovery of natural capital and water tables for water storage, such as the use of floodplains to control extreme rain events, and the use of lakes and aquifers. Infrastructure must take into account its impacts on water quantity and water quality, biodiversity, energy and resource efficiency.
- Collecting and making available **basic hydrological information**.

## What are the challenges for water financing in the green economy?

- The provision of water is both **human and natural capital intensive**. It requires mobilizing considerable amounts of money to obtain the economies of scale for both large infrastructures (such as dams) and valuable water ecosystems (such as rivers, lakes, and aquifers). Mobilizing the financial resources and making the best available use of them is critical for the transition to a green economy. However, countries face severe constraints and that is reflected in the low levels of investments in the sector. Well-managed projects generating financial revenues and with provisions for risk bearing are in a better position to cope with these financial constraints.
- Water projects can produce benefits that are much higher than the involved financial cost. However, those benefits are uncertain and most occur in the long term.
- In LDCs low income levels results in **low saving rates and low investment capabilities**. Breaking this vicious circle is one of the main financial challenges that needs to be overcome in order to begin the economic transition.
- Most of the **benefits** of water investments **are not converted into financial resources** for the immediate repayment of the capital financial cost. In LDCs those benefits are mostly measured in health gains, education opportunities and others that open a window of opportunity for economic development. Repaying the initial investments and generating the revenues to maintain water infrastructures and natural capital in the long term, is only possible if those development opportunities are reflected in income for people and increased ability to pay for services.
- Paradoxically, borrowing is easier for those who need it the least. Poor countries **lack proper financial markets and access to credit**, and the availability of insurance markets and credit access is limited for small firms and practically inexistent for the poor. Credit availability and risk-aversion, **information asymmetries and policy-induced distortions** (e.g. regulation/harmful subsidies) have been also identified as issues of concern. These financing challenges require innovative solutions which can be scaled up and sustained through time.
- **Generating revenue through tariffs** is often difficult for some investments particularly those with characteristics of public good (sanitation, pollution treatment and abatement, biodiversity protection, etc). Furthermore, in most developing countries tariffs structures for basic provision of water supply are insufficient to cover basic operation and maintenance, let alone, capital expansion, environmental externalities, etc. Full cost recovery is an exception rather than a rule.
- The transition towards the green economy requires shifting from 'traditional' to green investments and may potentially lead to **slower economic growth** for a few years, as renewable natural resources are replenished. However, the expectations are that the transition to the green economy will result in net welfare gains in the medium and long term. Sometimes **critical investments are delayed**, leading to deferred benefits and higher investment costs in future. It is therefore important to identify areas for priority investment.

**India Naandi Foundation drinking water treatment plants**

An innovative public-private partnership model using cost-effective water purification technology and an Output-based Aid approach.

**Main challenge:** To provide safe drinking water to poor rural families in Andhra Pradesh.

**Approaches**

- As project manager, Naandi secures pre-financing and contracts a private technology provider to build the UV filter water treatment plant and undertake operation and maintenance for eight years.
- The community provides land, a water source, a financial contribution (20% of capital cost) and a pre-agreed electricity tariff.
- Naandi develops education and awareness campaigns on water use and health, mobilizes the community to raise their financial contribution and collects water user fees.
- A performance-based donor subsidy is paid to Naandi upon the delivery of pre-agreed outputs which include three months of billed water services.



- In agriculture, water needs to have a lower cost per unit of commodity because of the large quantities required to grow certain crops. In turn, the **transaction costs** of collecting revenue or making trades are frequently high relative to the resource cost of the water. High income countries have been able to take advantage of investments for other reasons (i.e. GIS, remote sensing) to cut the transaction costs of some interventions (e.g. separate charges for surface water runoff). These strategies have not been available to low income countries where, in addition, farms are typically very small, as are commercial and industrial enterprises.

## What are the opportunities?

- Beneficiaries need to pay for the water services they receive. Subsidies are necessary to help those who cannot afford to pay the full cost. Subsidies have to be carefully designed to avoid unintended incentives to consume too much water or to over capitalize capital investments. Charging for water is a political challenge, but getting the prices right is important in order to **make people aware of the importance of water**; to **make water utilities accountable** for the services they provide to their customers; and to **improve and guarantee the financial sustainability** and the continuous provision of water services.
- The transition towards a green economy does not need to aggravate inequalities between developed and developing countries or in a country. **Achieving long-term sustainability** is also in the long-term interest of the poor. It is usually the poor that suffer most and are least able to protect themselves from environmental problems, such as floods and droughts. For example, when groundwater becomes depleted, poor people who cannot afford a deeper well have to sell their land for a low price to rich people who can afford to build a deeper well.
- Investments in water and sanitation and pro-poor financing can contribute to **poverty alleviation**. The most financially sustainable actions are those that reduce poverty and promote growth at the same time; they promote equality, but not at the expense of growth and they make equity a condition for sustainable growth. These actions are easier to fund precisely because they offer better conditions for cost recovery. It is important to think about the logical sequences of events to get from the intervention to the overall objective, which is reducing poverty.
- There is potential for **stimulating sustainable behavior** through some of the new financing instruments. For example, climate change adaptation work and climate mitigation funds have an important impact on improving water management.

### Small scale sanitation financing in Vietnam

A Sanitation Revolving Fund (SRF) component to provide loans to low-income households for building on-site sanitation facilities was incorporated into the broader World Bank-financed Three Cities Sanitation Project.

- The SRF provided small loans (US\$145) over two years at partially subsidized rates to low-income and poor households for each to build a septic tank or, in fewer cases, a urine diverting/composting latrine or a sewer connection.
- There was also software support (US\$21 per household) for sanitation promotion, hygiene promotion and creation of Savings and Loan groups (which were critical to ensuring repayment of the loans and regular saving contributions). The loans acted as a catalyst for the households to find additional financing and invest.

## Highlighting practice?

There are a variety of innovative and traditional financing mechanisms or modalities that can effectively deliver investments and green growth. Improvement in the efficiency of the public spending, guarantee instruments, results-based financing, environmental funds, are some examples of existing mechanisms.

Organizations participating in the Conference have highlighted several issues that are required to assist countries in transitioning to a green economy:

### *Improving access to and effectiveness of capital at local and community level*

- Small scale projects that are better adapted to the local environment and the low savings rates available.
- Bringing together potential investors, entrepreneurs and local associations to make the best use of scarce but valuable financial resources.
- Make the best use of available capital by reducing capital requirements or substituting capital with other inputs (e.g. voluntary labor).



## Improving the management and collection of charges

- Alleviating the financial burden of capital costs by developing secure revenue collection mechanisms that reduce financial risk and lower loans risk premiums.
- Separate charges for water supply, wastewater discharge, and surface water runoff if the transaction costs are justified by the efficiency gains (e.g. surface water runoff charges in Germany).
- Development of cost recovery mechanisms in agriculture that provide a constant and more secure flow of revenues independent of yield fluctuations. Drought insurances can help stabilize rural income and so secure revenues for water services.

## Supporting the green transition with international financing

- Prioritization of financing programs that generate strong synergies with domestic efforts and avoid raising costs.
- Eliminate the exchange risk premium by allowing multilateral development banks to lend in the domestic currencies of the developing countries and to support the advance of domestic financial markets in these countries.

## Increasing and tailoring public financing

- Prioritization of government investment in areas that stimulate the greening of economic sectors and the reduction of spending in areas that deplete natural capital.
- Governments can play a proactive role in investing in water infrastructures which have relatively higher start-up costs. The benefits of these investments are longer-term with positive externalities, and there are commercial risks related to new technologies.
- Investment in technology innovation, adaptation and adoption as well as capacity building and training.

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