

Roundtable on Financing Water

OECD-WWC-Netherlands Roundtable on Financing Water

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Session 2. Financiers' expectations and the water security investment environment

Background paper

The investment environment as a driver of investment in water security

Water security is complex and multi-faceted. It can be defined as achieving an acceptable level of water risks, including the risks of shortage, floods, degradation of water quality and freshwater ecosystems (OECD, 2013).¹ These water security risks can also increase the risk of inadequate access to safe water supply and sanitation. Water management inherently involves decisions about the allocation of risk reduction efforts and their associated costs. A risk-based approach makes these judgements explicit and calls for policy responses that are proportional to the magnitude of the risk (OECD, 2013). The approach also recognises that there are multiple drivers of water risks, in particular economic development, population growth and urbanisation. Climate change is also a driver of water risks projected to shift precipitation patterns, increase evapotranspiration, contribute to saline intrusion in coastal aquifers, as well as increase the frequency and intensity of extreme events (IPCC, 2014). There is significant uncertainty about the magnitude and timing of these projected impacts, which requires building resilience and flexibility into approaches to manage water risks.

Countries face varying levels of risks to water security due to climatic conditions, their natural endowments in water resources and geography, as well as socio-economic circumstances. Countries' exposure and vulnerability to water risks is affected by their economic structure (% of GDP from agriculture and other economic sectors that are exposed to water risks), the location of populations and assets vulnerable to water risks as well as levels of investment in water security to mitigate these risks.

Countries also have very different starting points for investment in water security due to differences in important economic and institutional factors that determine the quality of the broader investment environment. These include, for example, the level of economic development (e.g. GDP/capita), macro-economic conditions (e.g. interest rates, public debt/GDP ratio, public deficit, FDI flow), financial market conditions (e.g. access to domestic credit for the private sector; availability of instruments to address foreign-exchange or sub-sovereign investment risks), and the policy and institutional context (e.g. quality of regulatory frameworks, technical capacity and independence of regulatory bodies).

¹ Water security is a broad concept that can be defined in a number of ways. For a review of definitions, see for example, Cook, C. and K. Bakker (2012), "Water security: Debating an emerging paradigm", or Lautze and Manthritilake (2012) "Water security: Old concepts, new package, what value?"

The broad investment environment influences the risks related to investment in water security, and their allocation among public and private actors. It also influences the financing options available and the financial returns generated by investments. A better understanding of how these contextual factors influence investment in water security can illuminate which factors are conducive to investment and which ones create barriers. This diagnosis of barriers and opportunities can then inform the design of tailored solutions for improving the broader investment environment. It can also provide insight for how public or development finance could be effectively deployed to increase its impact on reaching ambitious water-related Sustainable Development Goals (SDGs).

A framework to characterise the investment environment

The OECD Policy Framework for Investment (PFI) provides a comprehensive tool for reviewing and evaluating the general investment environment. It consists of a checklist of key policy issues and questions for governments to consider in order to create an enabling environment for all types of investment and to enhance the development benefits of investment to society. In this way, the PFI also aims to advance the implementation of the SDGs and to help mobilise financing for development (OECD, 2015a).

The economic growth and development impact that investments will have depend as much if not more on the quality of the investment as it does on the quantity. A robust investment climate helps to mobilise factors of production (capital, skills, technology, etc.) to allow firms to expand and helps to channel resources to more productive uses. Enabling a good investment environment is not only about reducing the cost of doing business and raising corporate profitability, it should also ensure that investment brings about the highest possible economic and social impact (OECD, 2015a). The PFI includes the key policy areas that contribute to a healthy investment environment that meets the needs of both investors and of society more broadly (Table 1).

Table 1. Policy areas and selected issues in the OECD Policy Framework for Investment

Policy area	Selected issues
1. Investment policy	<ul style="list-style-type: none"> • Transparency, predictability, non-discrimination • Protection of property rights, contract enforcement and dispute settlement
2. Investment promotion and facilitation	<ul style="list-style-type: none"> • Design, implementation and evaluation of promotion and facilitation activities • Measures to promote responsible and sustainable investment
3. Trade policy	<ul style="list-style-type: none"> • Barriers to trade and compliance with international trade agreements
4. Competition policy	<ul style="list-style-type: none"> • Independent competition authority with necessary enforcement powers • Anticompetitive agreements and conduct
5. Tax policy	<ul style="list-style-type: none"> • Prudent use of tax incentives and ensuring transparency
6. Corporate governance	<ul style="list-style-type: none"> • Corporate governance framework • Accountable and well-governed state-owned enterprises
7. Policies for responsible business conduct	<ul style="list-style-type: none"> • Laws and regulations that protect the public interest • Promoting transparency
8. Developing human resources for investment	<ul style="list-style-type: none"> • Coherent and comprehensive human resource development policies • Education and labour market policies and programmes

9. Investment in infrastructure	<ul style="list-style-type: none"> • Enabling environment for investment in infrastructure • Project risk mitigation and ensuring value-for-money • Regulation and pricing of infrastructure markets
10. Financing investment	<ul style="list-style-type: none"> • Macroeconomic and business environment • Legal and regulatory framework for the financial sector • Access to bank lending and availability of risk mitigation tools
11. Public governance	<ul style="list-style-type: none"> • Regulatory framework, compliance and enforcement • Anti-corruption and integrity standards
12. Investment framework for green growth	<ul style="list-style-type: none"> • Policies, laws, regulations and market-based instruments to encourage private investment to support green growth • Incentives for uptake of green technologies and practices

Source: OECD (2015a), *Policy Framework for Investment, 2015 Edition*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264208667-en>.

Lessons from experience with investment in sustainable energy

The PFI has already been applied and tailored to the specific characteristics of investment in related “green investment” domains, such as clean energy infrastructure (OECD, 2015b). The resulting policy guidance can help governments to identify ways to scale up private investment in clean energy infrastructure. It focusses, in particular, on investment policy, investment promotion and facilitation, competition policy, financial market policy, public governance and cross-cutting issues (e.g. PPPs, trade policy) (OECD, 2015b).

OECD analysis of key trends in institutional investment in sustainable energy stress that investors’ willingness to finance major investment projects in a given countries are heavily influenced by perceptions of the country’s sovereign risk, investment climate, policy settings and institutions (OECD, 2015c). This analysis also highlights the importance of interventions that can enable or facilitate private investment in sustainable energy. Risk mitigants to re-assign or re-apportion different investment risks (such as guarantees and insurance products, public stakes and other forms of credit enhancement) increase the attractiveness of investments. In particular, transaction enablers, such as warehousing, prudent securitisation as well as co-investment and collaboration among institutional investors, are shown to reduce transaction costs, while also providing risk mitigation in some cases (OECD, 2015c). Governments can deploy these risk mitigants and transaction enablers through a special-purpose green investment bank, for example, or through other public financial institutions (OECD, 2015c).

Recent empirical work assesses the impacts of climate mitigation policies and broader investment conditions on both investment and innovation in renewable power in OECD and G20 countries (Ang, Röttgers and Burli, *forthcoming*). The study examines more than 70 explanatory variables including (i) climate mitigation policies (explicit carbon prices, feed-in tariffs, public tenders, etc.), (ii) investment environment variables and (iii) control variables (to account for the innovation environment and non-policy factors).

The results confirm the importance of both targeted climate mitigation policies and aligning the broader investment environment to encourage investment in renewable energy. In terms of climate

mitigation policies, results indicate renewables investment from 2000 until 2014 was primarily driven by targeted investment incentives (e.g. feed-in tariffs, renewable certificates and public tenders). Further, results suggest that investment flows also depend on the attractiveness of the broader investment environment. Significant factors across OECD and G20 countries include (Ang, Röttgers and Burli, *forthcoming*):

- the overall ease of doing business;
- investment policy (e.g. registering property and corruption perception; and regulatory quality for solar energy);
- investment facilitation (e.g. licenses and permit system for wind energy);
- competition policy (e.g. direct control of the state over enterprises);
- trade policy (ease of trading across borders in the EU and for solar power); and
- financial market policy (e.g. access to domestic credit for private sector, sovereign credit rating and implementation of Basel III leverage ratio).

Similarities and differences between investment in sustainable energy and water security

A better understanding of the similarities and differences between investment sustainable energy and investment in water security requires further analysis to draw robust conclusions on how the lessons from low carbon, climate resilient investment can be applied to water security. This section does not attempt an exhaustive review of these features, but offers a brief exploration of some potential commonalities and distinctions.

The enabling environment for investment in water security is, in many respects, comparable to one that is conducive to investment in general and investment in sustainable energy, specifically. As the analysis of investment in renewable energy illustrates, a healthy environment for investment in general is a necessary, but not sufficient condition for scaling up investment flows. This general notion would also apply to water security investment. Policies aimed at the broader investment environment need to be complemented by a specific set of policies that promote water security (e.g. water tariffs, abstraction charges) and internalise negative externalities of activities that increase water-related risks (e.g. pollution taxes).

The effective deployment of risk mitigants and transaction enablers to improve the attractiveness of investments would appear to be equally important for the water security context as it is in the case of sustainable energy. However, the emphasis on mitigating different types of investment risks may vary. For example, macroeconomic risks, including changes in GDP growth, inflation, interest and foreign exchange rates would presumably be similar for water security and sustainable energy projects. However, commercial risks that affect revenues are likely to arise for different reasons in the cases of water security and sustainable energy. Commercial risks are pervasive in the case of water security due to its poor track record of cost recovery for household water supply, wastewater collection and treatment, irrigation and hydropower generation (Winpenney, 2015). But, commercial risks are also present for sustainable energy, in

particular due to potential retroactive changes in policy support measures, such as feed-in tariffs for low-carbon energy supply.

At the same time, investment in water security poses certain unique challenges, due to physical characteristics and the cost structure of investments. Water investments face hydrological risks that are difficult, if not impossible, to control and can undermine returns on investment. For example, reservoirs may not reach their operational capacity due to lower than expected water availability or an extended drought (Winpenny, 2015). Water infrastructure is exceptionally capital-intensive compared to other public utilities. For example, in the US, the ratio of capital investment to revenues in the water industry is double that in natural gas and 70% higher than in electricity supply (Hanemann, 2006). Many types of water infrastructure are very long-lived, with an economic life that can extend to 80-100 years or more, longer than most other public utility sectors (Hanemann, 2006). Compared to electricity, water is relatively expensive to transport, but inexpensive to store, which requires a different approach to managing shortage. An unexpected electricity shortage can be managed through the grid from sources a long distance away. In the case of water, the resource is bulky and expensive to transport relative to its value per unit of weight (Hanemann, 2006).

Overall, investment in water security and investment in sustainable energy share a number of similarities, but also exhibit differences. A better understanding of these commonalities and distinctive features would provide insight on how the lessons from investment in sustainable energy can be more readily applied to water security. This, in turn, can inform analysis of the factors within the broader investment environment that can encourage or hinder investment in water security and sustainable growth, which would be a prime area for further work of the Roundtable.

For more information, please visit:

www.oecd.org/water/roundtableonfinancingwater.htm

www.oecd.org/water

Session 2: questions for discussion

- Which lessons from experience with low carbon, climate resilient investment can be most readily applied to the water security investment context?
- Based on your experience, which factors (economic, climatic, or institutional) and policies (for water, investment, urban development, agriculture, or other) are the most conducive to encouraging investment in water security and which ones create barriers to investment?
- How can the work of the Roundtable contribute to a better understanding of these contextual factors and policies and their influence on water security investment?

References

- Ang, Röttgers and Burli (2017 *forthcoming*), “The Empirics of Enabling Investment and Innovation in Renewable Energy”, *OECD Environment Working Papers*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/19970900>.
- Cook, C. and K. Bakker (2012), “Water security: Debating an emerging paradigm”, *Global Environmental Change*, (22) 94-102.
- Hanemann, W.M. (2006), “The economic conception of water”, in Rogers, P.P., M.R. Llamas and L. Martinez-Cortina (eds), *Water Crisis: Myth or Reality?*, Taylor & Francis plc., London.
- Intergovernmental Panel on Climate Change (IPCC) (2014), “Climate Change 2014 Synthesis Report Summary for Policymakers”, *Intergovernmental Panel on Climate Change*, www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf (Accessed 22 February 2016).
- Lautze, J. and H. Manthrinthilake (2012), “Water security: Old concepts, new package, what value?”, *Natural Resources Forum*, (36) 76-87.
- OECD (2015a), *Policy Framework for Investment, 2015 Edition*, OECD Publishing, Paris.
DOI: <http://dx.doi.org/10.1787/9789264208667-en>.
- OECD (2015b), *Policy Guidance for Investment in Clean Energy Infrastructure: Expanding Access to Clean Energy for Green Growth and Development*, OECD Publishing, Paris.
DOI: <http://dx.doi.org/10.1787/9789264212664-en>.
- OECD (2015c), *Mapping Channels to Mobilise Institutional Investment in Sustainable Energy*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264224582-en>.
- Sadoff et al, (2015) *Securing Water, Sustaining Growth*, report of the OECD/GWP Task Force.
- Winpenny, J. et al (2015), *Water: Fit to Finance? Catalyzing National Growth through Investment in Water Security*, Report of the High Level Panel on Financing Infrastructure for a Water-Secure World, April 2015, World Water Council and OECD.