



Climate change and water

Finance needs to flood not drip

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Key messages

- Giant leaps and systemic change are vital to avert catastrophic climate change and cope with the unavoidable impacts. Water lies at the heart of the climate change challenge and efforts to galvanise solutions in a coherent way need to be resourced at a higher level and driven forwards with more momentum.
- Billions not millions are needed and in the central climate funds framework it is vital that the governance and financial replenishment issues of the emblematic Global Climate Fund are addressed.
- A complex integrated agenda of actions is needed at different levels in climate and water frameworks to create empowered institutions with supporting legislative and policy instruments. A capacity for change and adaptive management structures are needed. Climate change offers the opportunity to transform both public and private action. Investments do need to be tracked and monitored more effectively.
- National governments in vulnerable countries continue to need support to improve governance and assess current and future water resources. This involves developing options to cope with different futures integrating complex natural and social dimensions and supporting public and private sector involvement in Nationally Determined Contributions and other plans.
- Project developers and programme managers need to reach a sound understanding of the changing roles of actors, flows and sources of finance to blend in private investment that has so far failed to deliver at scale.

Context

Prepared by individual countries ahead of the United Nations (UN) Climate Change Conference in Paris in 2015, Nationally Determined Contributions (NDCs) are a powerful framework for setting out national climate action priorities. Ongoing revisions to NDCs guide national strategies to address the challenges of climate change, with climate-resilient infrastructure – and water – key to the success of these efforts.¹

Under Sustainable Development Goal (SDG) 6, governments have committed to deliver drinking water and sanitation to the 2 billion of the world's population who lack access to safely managed drinking water and the 4.5 billion who are without sanitation services by 2030. The impacts of climate change on water add further burden to the unfinished development agenda on water, sanitation and hygiene (WASH), however, and sit at the crux of many adaptation challenges. Research from the Intergovernmental Panel on Climate Change (IPCC) shows that global water problems have been exacerbated by climate change – unsustainable levels of water are being extracted from many

of the world's fresh water ecosystems and water security is recognised as a major global risk (IPCC, 2018).

The Green Climate Fund is the principal mechanism for the mobilisation of climate funds and one of the financial backbones of the Paris Agreement, yet its future has been in jeopardy (Darby and Mathiesen, 2018), and there are considerable uncertainties about how the necessary increased investments to achieve SDG6 are to be funded.

This research analysed the NDCs of developing countries (see Box 1 below) and assessed flows of climate funds and emerging changes in private investment frameworks to inform key actions for the international community at this critical time.

The challenges

In the UN Framework Convention on Climate Change (UNFCCC) Secretariat's own synthesis of NDCs – which captures the submissions of 161 parties – water emerges as the leading sector for adaptation action and is emphasised by 137 non-Annex I countries. Floods are raised by more than 80 countries and droughts by more than

Box 1 The significance of the term 'developing countries' in the climate convention (UNFCCC) and Paris Agreement

When the Rio treaty was agreed in 1992, countries were broadly grouped into 'developed' and 'developing' countries. Clear obligations were placed in Article 4 on developed countries (listed in an Annex) to support developing countries (known as non-Annex 1) with finance and technology transfer to enable them to fulfil their obligations to protect the climate system and to adapt to climate change. This distinction, routed in the principle of 'common but differentiated responsibilities' has broadly been maintained despite changes in economic development on the grounds that there are historic responsibilities for atmospheric concentrations of greenhouse gases. So the Paris Agreement agreed in 2015 uses the terms 'developed' and 'developing' countries. However, this is now an ongoing contested issue by countries, notably the United States.

See:

Rio Convention (<https://unfccc.int/sites/default/files/conveng.pdf>)

Paris Agreement (http://unfccc.int/files/meetings/paris_nov_2015/application/pdf/cop_auv_template_4b_new__1.pdf)

1 National Adaptation Plans (NAPs) are also being prepared in some countries but these are less instrumental to the implementation of the Paris Agreement.

70, coastal erosion by over 20 countries and saltwater intrusion by over 20. Also mentioned are decreased precipitation and/or changes in precipitation timing by over 40 countries, and increased precipitation intensity by over 30 countries (UNFCCC, 2016). For non-Annex I countries that cover adaptation in their NDCs, water is the priority sector for action.

Proposed actions in the NDC reports include: hard infrastructure and protection measures; conservation measures; groundwater and waste water management, risk assessment and precaution; and institutions, policy and regulations. But every country is different and requires its own package of water actions, and countries classify actions in varying ways depending on their approaches to national planning.

It is clear that action agendas to tackle these problems need specific finance, technology and capacity-building. A survey conducted for the Global Water Partnership (GWP) (Hedger, 2018) of 80 non-Annex 1 countries' NDCs found that whilst two-thirds of countries outline a general portfolio of projects in their NDCs, only one in ten cite what could be called a detailed project proposal, and these originated either from domestic water planning processes or had emerged from previous climate funding proposals. Very limited costing exercises have been undertaken so far, and generating a pipeline of projects fit for funding is also challenging (Hedger and Nakhoda, 2015, OECD 2015 and Blended Finance Taskforce 2018).² Additional challenges have been identified in terms of a lack of high quality data and analysis, limited technical expertise, inadequate stakeholder commitment, and engagement of political leadership across government with many ministries involved (IPMV, 2016). The survey for GWP revealed that over 80% of countries asked for support to implement their adaptation actions.

Costs of investments

Studies at both national level and at international level show that that much climate spending in countries is domestically financed from national budgets (Bird, 2014). Unsurprisingly, spending in least developed countries (LDCs) is often concentrated on adaptation-related efforts, given the overarching development needs within these countries and their relatively low levels for gross domestic product (GDP) (Bird, 2016).

As part of the Paris Agreement there was renewed commitment to deliver resources (finance, technology and capacity-building) to developing countries to enable them to implement the adaptation actions outlined in their respective NDCs. As a first step, (as part of the Paris Agreement) developed countries have committed to deliver \$100 billion from both public and private sources annually between 2020 and 2025, however there is no agreed formula as to how much of this sum individual developed countries should provide, or indeed what the combination of public and private finance should be. Overall, it is widely recognised that an historic scaling-up of financing flows will be required for countries to deliver their infrastructure requirements (NCE, 2016 and NCE, 2018) and for progress to be made on the SDGs.³

Accurate figures on the costs of addressing the impacts of climate change on the water sector are not available, due to uncertainty about the impacts, what technologies will be used where and when, and the consequent interaction of interventions in ecosystems (see UNEP (2016) for an analysis of these issues). There is great variation in climate models on the impacts on rainfall and seasonality and many countries do not have accurate assessments about current water resources. The situation is further complicated by gaps in existing services

2 And see also the discussions on and reports to Long Term Finance workshops held at the UNFCCC Bonn intersessional May 2018 (<https://unfccc.int/topics/climate-finance/events-meetings/ltf-meetings/long-term-climate-finance-events-in-2018#eq-2tps://unfccc.int/topics/climate-finance/the-big-picture/climate-finance-in-the-negotiations>)

3 See the UN Secretary General's Remarks on Climate Change 18-09-18 (www.un.org/sg/en/content/sg/statement/2018-09-10/secretary-generals-remarks-climate-change-delivered) and the High Level Ministerial Statement of HLPF 2018 (www.un.org/ga/search/view_doc.asp?symbol=E/HLS/2018/1&Lang=E)

and provision – the ‘adaptation deficit’ – which need to be addressed before climate change is factored in (Burton, 2004). The headline story is that billions are required each year according to various assessments:

- For SDG 6.1 and 6.2 on WASH to be met by 2030, it has been calculated that existing annual investments need to increase threefold to \$114 billion. Yet these estimates do not factor in the impact of climate change (Hutton and Varughese, 2016). It is widely recognised that existing infrastructure needs to be made resilient to the impacts of climate change and all planned new investments must allow for resilience, which will add to costs.
- Overall annual costs for adaptation to climate change in all sectors have been variously estimated, with one of the most recent estimates being between \$140 billion to \$300 billion by 2030 (UNEP, 2016).
- The World Bank (2016) has applied a particular approach to estimate the cost of the impacts of climate change on economic growth, which suggests that as much as 6% of GDP will be lost by 2050 as a result of water-

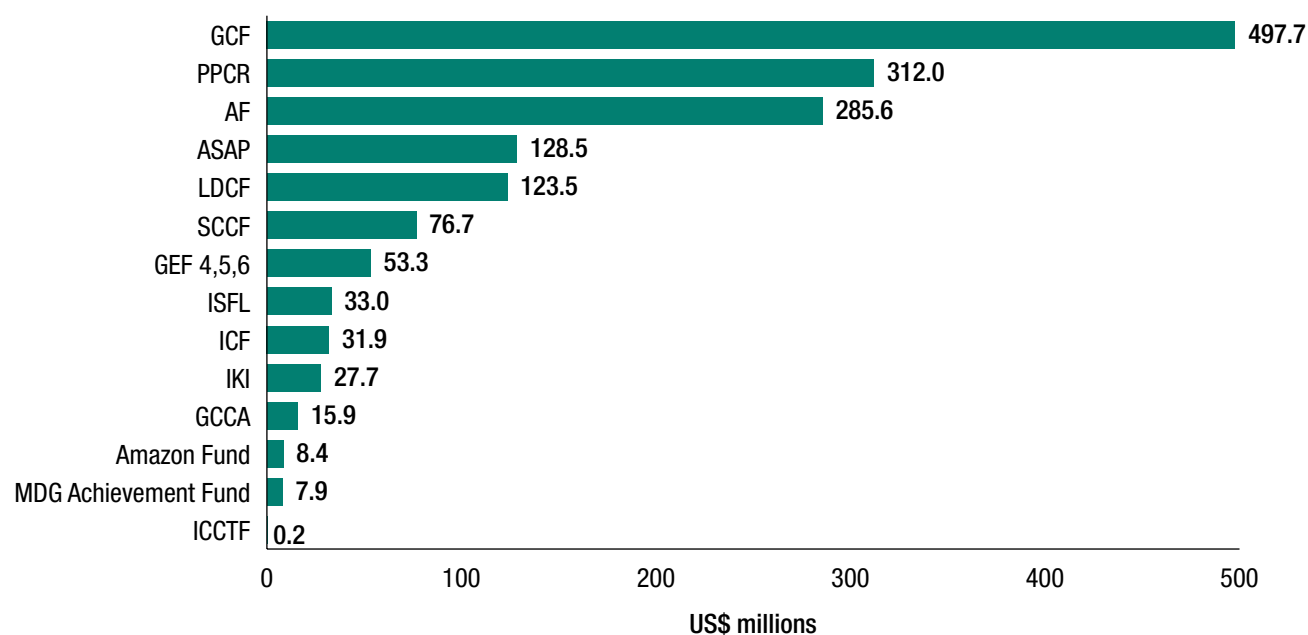
related losses in agriculture, health, income and property.

- More recent work on water insecurity has estimated that global economic losses from inadequate water supply and sanitation could amount to \$260 billion per year and the global economic cost of water insecurity to existing irrigators could amount to \$94 billion per year (OECD, 2017).

Responses to date

There are a number of dedicated climate funds that have specific responsibilities to focus on climate change projects, taking risks and providing innovation (Nakhooda and Norman 2014). The Green Climate Fund (GCF) was intended as the key conduit of climate financing since its conception in Cancun in 2010, but it has taken several years to become fully operational. In 2017, it provided a significant funding boost within the framework of the dedicated multilateral climate funds for the water sector. Looking at the data for the funds in aggregate (see Figure 1) its importance is clear: between 2006 and 2017 a total of \$1.6 billion

Figure 1 Water-related approved spending by fund (2006–2017)



Note: excludes electricity-generating related projects but includes a small number (c30) of projects relating to energy use for irrigation, etc.

Source: Hedger and Patel (2018) from Climate Funds Update 2017.

was allocated to 187 water projects, of which 153 were focused on adaptation.⁴ Two-thirds went through the UNFCCC climate funds, (GCF, the Global Environment Facility (GEF), the Least Developed Countries Fund (LDCF), the Special Climate Change Fund (SCCF) and the Adaptation Fund (AF)) and the rest through a variety of funds such as the German International Fund's International Climate Initiative (IKI), the United Kingdom Department for International Development's International Climate Fund (ICF) and principally the Pilot Program on Climate Resilience (PPCR) (one of the World Bank's Climate Investment Funds) (see Figure 1). Significantly on average, projects funded by the GCF were larger (\$39 million) than other funds, for example compared to the replenished AF (\$8 million).

There have been many ongoing problems in terms of the accessibility and flexibility of the GCF's procedures, however. In 2018 a funding gap is looming and whilst a route has now been opened its replenishment process has been deeply contested (WRI, 2018).⁵ There have also been issues amongst the GCF Board about what is a climate change project and what is a development project.⁶

It should be noted, however, that there are currently a number of different approaches for classifying water projects in these specific climate funds, depending on how far water management extends into river basins, ecosystems, and coastal protection and what the focus is. Under the GCF classification, water security falls within the results area of 'Increased resilience and health and well-being, and food and water security'. An examination of all the GCF approved projects suggests that around half can be seen as relating to water, but only a small percentage relates to

core water management issues for people. The PPCR, meanwhile, seems to closely link water to agriculture, including sustainable water and land management practices. When links to mitigation are included categorisation is all the more complex and these projects are generally labelled as cross-cutting.

Accounting for expenditure on climate related water projects is complex as other databases include a wider range of flows. The Multilateral Development Banks (MDBs) expenditure covers their own accounts and managed external resources: for 2016 it was reported that adaptation constituted 26% (\$7.4 billion) of their total climate spend of which \$2.6 billion (35%) was spent on water and waste-water systems, some 13% of the total on climate (MDBs 2017). Other water-related sectors included agricultural and ecological resources, crop and food production and coastal and riverine expenditure. The OECD DAC database on ODA shows that water supply and sanitation received \$3.2 billion in 2016 of climate-related development finance, (14%). Again this database covers a wider range of funds – bilateral as well as multilateral.⁷ The main point however is that spending on water projects is a small proportion of total climate finance flows in all databases and tracking spending is challenging (Watson, 2016).

The coding systems that do exist do not facilitate analysis of beneficiaries, so it is hard to ascertain who will be provided with greater water security and who may lose out. A focus on projects and the lack of an integrated river basin management approach could also cause issues further down the line, as many water investments occur in isolation without taking the whole basin into account. Furthermore, investments do not systematically account for water allocation

4 See Climate Funds Update (CFU) (www.climatefundsupdate.org) to unpack spending by project type and source.

5 The US has already withdrawn funding and the new Australian Government has also now said it will not provide further funding (www.climatechangenews.com/2018/10/08/australia-wont-give-money-green-climate-fund-says-pm/).

6 This disagreement relates to the long-running issue of additionality – climate finance is viewed by donors as directed to the 'extra' costs of development which are not covered by official development assistance (www.devex.com/news/devexplains-green-climate-funds-91802).

7 https://public.tableau.com/views/Climate-relateddevelopmentfinance/CRDF-Donor?:embed=y&:display_count=no&%3AshowVizHome=no%20#3

issues or the needs of freshwater ecosystems. Given these challenges, there is a definite need for more refined monitoring systems with a coherent methodology to ensure spending can be tracked precisely across all sources of finance.

The role of the private sector

The broader infrastructure agenda, in which the water sector is a crucial part, has been attracting more attention (NCE, 2016). The New Climate Economy Commission (NCE) has now highlighted the opportunities for a new growth story based on massive investments in sustainable infrastructure including ‘wise water management’ if the opportunities are taken in the next 10–15 years (NCE, 2018). The private sector is increasingly engaged, although apart from within the insurance sector, this is largely limited to assessments of the impacts of climate change on the production and supply systems of consumables, as well as the potential for investment in remodelling infrastructure and in the emerging economies such as Brazil. The private sector is not targeting LDCs or core SDG-type needs.

Despite the favourable investment climate in global capital markets, access to long-term finance remains constrained for some infrastructure projects, particular those in developing countries (OECD, 2017). Of \$2.6 trillion total infrastructure financing from the private sector between 2010 and 2016, the vast majority has been invested in the energy sector and much less has been invested in water (ibid.).

The private sector recognises opportunities for investment in water infrastructure, but not principally in the poorest countries where vulnerability to climate change is most acute. The private sector has not favoured the water sector due to uncertainties regarding revenues and the potential for political interference, and instead, water has traditionally relied on the ‘three Ts’: tariffs, taxation and transfers (grants) (World Water Council and OECD, 2015).

Particular constraints to increasing private sector involvement in the water sector include policy uncertainty, the sector’s normal short-term operating mode and the lack of clear

technological packages suitable for investment (Buchner, 2016). Overall, there seems to be a lack of clearly defined products and viable investment opportunities related to climate adaptation and resilience, as well as knowledge gaps about how to incorporate climate change risks into investment or financing decision-making. There are also concerns about variability in funding flows and uncertainties on investments (CPI, 2014;). Countries that have the greatest need for investment are often perceived as risky and as having governance issues. Low-income countries often lack the institutional framework, administrative capacity or political stability to implement appropriate macro-economic policies or adaptation strategies (IMF, 2017).

Blended finance that uses a range of instruments and mechanisms to improve the risk profile of investments and leverage contributions from different sources offers a promising approach to bridge the financing gap in developing countries and support the 2030 Agenda. By using public or private funds, including concessional tools, blended finance offers the potential to mobilise additional capital flows to emerging and frontier markets and attract new sources of funding to address the biggest global challenges (OECD, 2018). It could improve access to finance and lower the costs of investment for infrastructure and affordability of services, particularly for the poor (OECD, 2017a). It remains to be seen whether such a financing approach will help low-income countries, however, as it has been estimated that only \$2.9 billion (3.6% of the private finance mobilised using blended finance in 2012–15) flowed to low-income countries, which represents \$728 million per annum (Attridge, 2018).

Conclusions and next steps

Although established systems of climate finance such as the GCF exist, they have provided limited support for water projects to date, with millions of dollars delivered where billions are needed.

To ensure that developing countries deliver on their commitments under the NDCs and meet SDG 6, an integrated agenda of action is needed.

The GCF

It is critical that the GCF Board resolves all issues with its decision-making process and gets the replenishment drive back on track.

The GCF is an important symbol of the implementation of the Paris Agreement. Water needs to have a higher priority within the fund, with more support given to projects that have clear assessments of water resources at basin scale, that account for the impacts of climate change on different users, and that plan for uncertainties.

National-level issues

Countries must decide what their water adaptation needs are and turn their NDCs into concrete action plans and project proposals.

National governments must frame complicated implementation programmes that integrate domestic spend with secure external financial and technical support. Many developing countries and their national and local governments often do not know what makes a project attractive to investors – capacity-building is needed to understand existing water resources and how climate change will impact these, as well as to help countries in project development phases to design climate-resilient infrastructure projects that appeal to funders. Regulatory frameworks are needed to create stronger incentives for investment.

To access funds for NDC implementation requires support itself. This circular process has been formalised as giving support for ‘readiness’ and efforts by the GCF, GIZ, UNDP and the NDC Partnership still need to be accentuated.

International-level issues

Coordination is needed at all levels to implement water-related actions in NDCs, the SDGs and other relevant investment plans, and mechanisms

are needed to mediate between water and climate frameworks.

There is evidence of change at geopolitical level. Water is often included in broader adaptation projects, so the potential exists to work with a broader community of partners involved in agriculture, disaster risk reduction and health. Integrated, holistic approaches fit the agendas of the GEF and the GCF, while resilience features in all four major post-2015 frameworks on development disasters and humanitarian issues.⁸

Greater institutional incentives are needed to reinforce coherence on resilience, however, particularly among UN agencies and national governments (Peters and Tanner, 2016). There is concern within the water community that water is not central to the UNFCCC, despite climate change having a fundamental impact on the global water cycle (OECD, 2017b). Many discussions on water take place at World Water Week and the World Water Forum, but ongoing outcomes from these are not always evident and opportunities or developments emerging from these platforms need to be used in a more focused way to affect change and create linkages across the water world⁹ and to link to the climate community. Much momentum for the Paris Agreement derived from parallel discussions to the UNFCCC, such as the G7, G20 and the Cartagena Dialogue. Linking mechanisms are needed between the different frameworks.

Financial issues

Strategies need to be identified that help deliver blended finance, particularly to the poorest and most vulnerable countries.

New opportunities are opening up with the private sector as it takes the issue of green finance and sustainable development become central to global financial stability.¹⁰ There are encouraging signs that national and international financial systems and actors are beginning to recognise climate change as

8 These four frameworks are: Sendai Framework for Disaster Risk Reduction (Sendai Framework), the United Nations Sustainable Development Goals (SDGs), the Paris Agreement on Climate Change (the Paris Agreement) and the World Humanitarian Summit framework (WHS).

9 See alliance4water.org.

10 See the Taskforce on Climate-Related Financial Disclosures report and the GARI's An Investor Guide to Physical Climate Risk and Resilience.

a core issue that affects risks and opportunities. But much more needs to be done to get climate change into core pillars of the financial system such as credit risk rating, risk assessment and valuation.

It is vital to reach a sound understanding of the changing roles of actors, flows and sources

of finance to scale up private investment. In addition more attention needs to be given to better understand the range of infrastructure required and the contexts in which it will operate for funding packages to be effectively planned, implemented and tracked.

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