


GREEN CLIMATE FUND

Climate-Water-Finance To Progress on Water Related SDGs

Dr Amgad Elmahdi
Water Sector Lead
Aelmahdi@gcfund.org

Arab Regional Preparatory Meeting for the Midterm Comprehensive Review of the Water Action Decade
Beirut, Lebanon, 18-19 May 2022

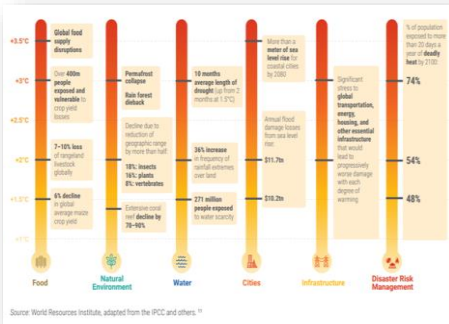
1



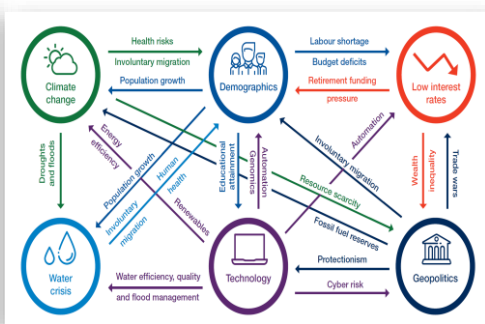
GREEN CLIMATE FUND


Water Sector is the Connector

“Water is the best investment the world can make to improve health, food security, gender equality, and the environment while transforming lives & communities.”



Source: World Resources Institute, adapted from the IPCC and others.™



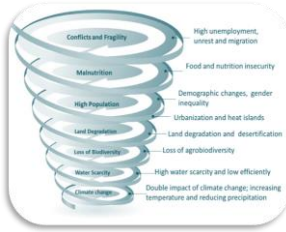


2



We only have 8 harvests

We need to Act Fast



A systemic crisis requires a Systemic approach!!!

3



The Global Water Challenges

Annual economic losses

USD 260 bn due to inadequate water supply and sanitation

USD 120 bn due to urban property flood damages

USD 94 bn due to water insecurity to existing irrigators

Sadoff et al (2015)

Benefit-cost ratios for **investments in water sanitation services** have been reported to be as high as **7 to 1** in developing countries.

OECD (2011)

Poor sanitation, water and hygiene lead to **675 000 premature deaths annually...**

...and **losses of up to 7% in GDP** of certain countries.

WB (2016a)

Water-related losses in agricultural, health, income and property could result in decline by as much as **6% of GDP** by 2050 in some regions of the world

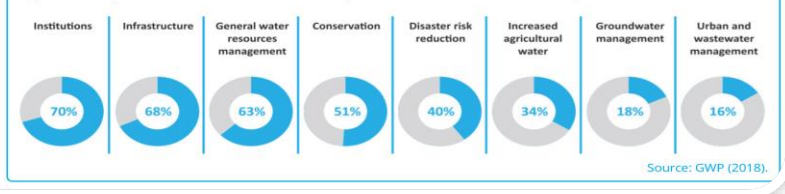
Sadoff et al (2015)

4.5 bn people lack access to sanitation compatible with SDG6 objectives.

2.1 bn people lack access to safe drinking water.

WHO-UNICEF (2017)

Figure 4: Proportion of first round NDCs that prioritised water actions for adaptation



4



Barriers to financing water security infrastructure projects



Under-pricing of water: Water is a public good and generally an under-valued resource, **not properly accounted** for by the government and the investors that depend on or affect its availability in other sectors such as urban development, agriculture, and energy.

Water services are often under-priced, resulting in low cost-recovery for water investments.

Capital-intensive Water resources, irrigation, water supply, and wastewater infrastructures are generally capital intensive, with high sunk costs and long pay-back periods.

Difficulty of monetising benefits: Water management provides both public and private co-benefits, many of which cannot be easily monetised. This reduces potential revenue flows.

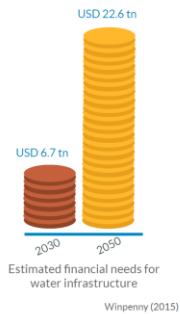
Context-specific projects: Water projects are often too small or too context-specific, raising transaction costs and making innovative financing models difficult to scale-up.

Poor business models: Business models often fail to support O&M efficiency, hampering the ability to sustain service at least cost over time.

5



Estimated Financial Need and Actions



Global systemic risk	Investment gap (per annum)	Transformational investment examples
Climate change	\$2.4 trillion ^a	CleanTech infrastructure, renewable energy, sustainable natural resources
Water security	\$670 billion ^a	Food production, energy production, water quality infrastructure
Geopolitical stability	Cross-trend opportunities	Infrastructure, renewable energy, climate-resilient infrastructure, automated manufacturing
Technological evolution	\$1.7 trillion ^a	Tech-related venture capital, electric vehicles, renewable energy, global connectivity, battery storage, mobile networks, fintech
Demographic shifts	\$1.5 trillion ^{a, b}	Education, healthcare, infrastructure, care of ageing populations
Low and negative real long-term interest rates	Cross-trend opportunities	Venture capital, distressed debt, infrastructure
Total^a	\$6.27 trillion	

^aNot accounting for overlap between trend opportunities.

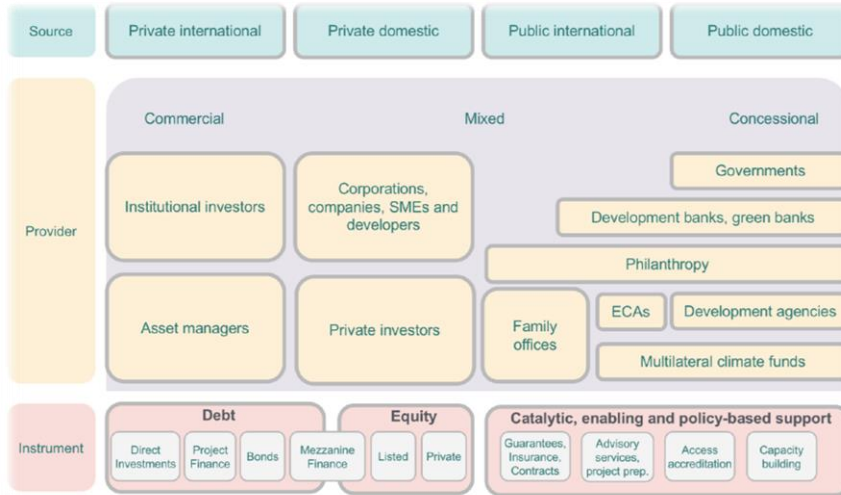
Actions needed

- Investors should put a further **US\$4 bn a year** into national and international R&D, private R&D, and higher research efficiency to approach zero hunger in the Global South by 2030.
- National and international investors should deploy **US\$4.5 bn a year** for climate-smart technical mitigation options in farming to reduce and sequester emissions on a path to less than 2°C of global warming.
- Investors should improve water resource management with **US\$4.7 bn a year** for innovation to rein in agricultural blue water use by 10% in 2030.
- The international community should get **SDG2, SDG6, SDG13 and the Paris Agreement back on track** by closing this investment gap of US\$15.2 bn for agricultural innovation – modest in light of the US\$700 bn spent every year on agricultural subsidies.
- Public and private investors should make complementary investments in finance, agricultural extension and infrastructure, which are also critical to meet the global goals.

6



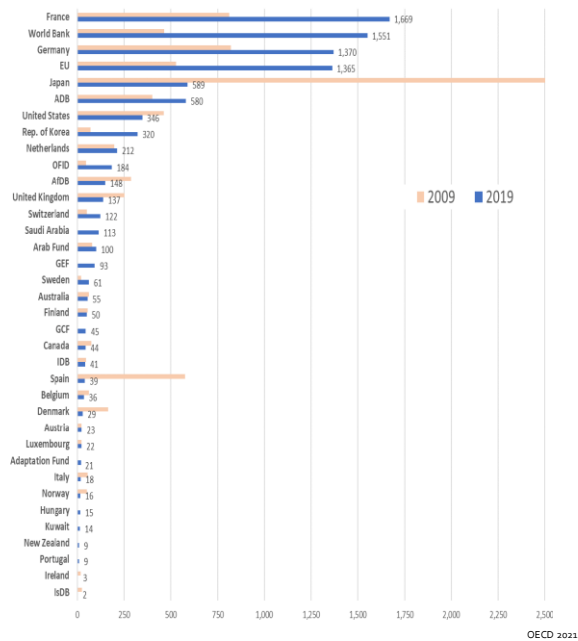
Sources, types, providers and instruments of Climate Finance- Support Water and WASH



7



Top water and sanitation donors



- Increase of quantity and quality
- Disbursement vs Availability

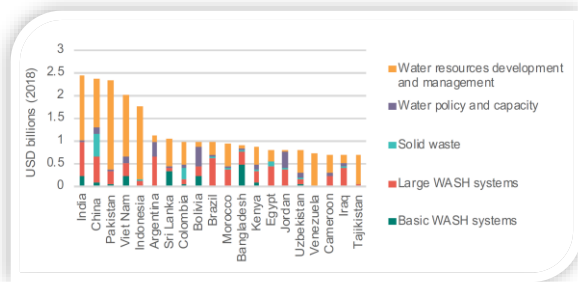
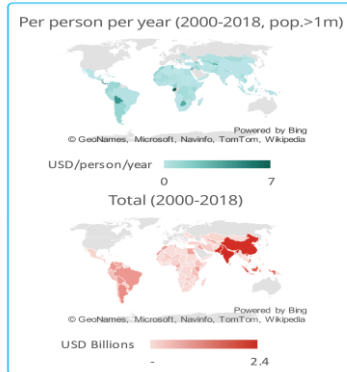
8



Recipients of public, Int climate finance to water 2000-2018



- **Five countries in Asia** - all middle income - received nearly **30%** of public international climate finance to water: India, China, Pakistan, Vietnam and Indonesia.
- The **top 20 recipients** receive the majority of this finance as **loans**, and to large infrastructure for water resources management and WASH.
- **Hydropower** is prominent among the top 20 recipients of mitigation-related finance.



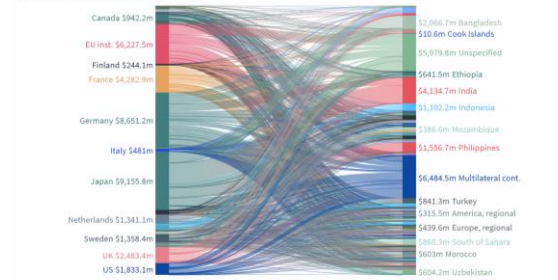
9

Climate Finance



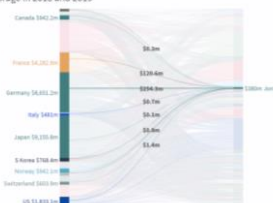
Climate finance flows Yearly average in 2018 and 2019

38 Billion

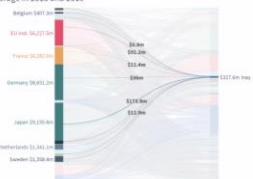


Source: OECD 2019 - Climate finance flows from donor countries to recipient countries. Figures represent the yearly average over 2018 and 2019. Values are rounded to the nearest \$100k. Where values are below \$50k but above \$0 they will appear as \$0.0m in the Sankey. Figures are calculated as an average of country spending and may not combine to give the same total average spending in each chart.

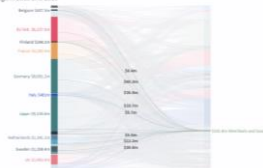
Climate finance flows Yearly average in 2018 and 2019



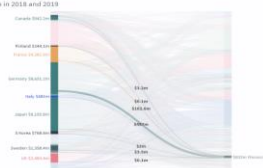
Climate finance flows Yearly average in 2018 and 2019



Climate finance flows Yearly average in 2018 and 2019



Climate finance flows Yearly average in 2018 and 2019



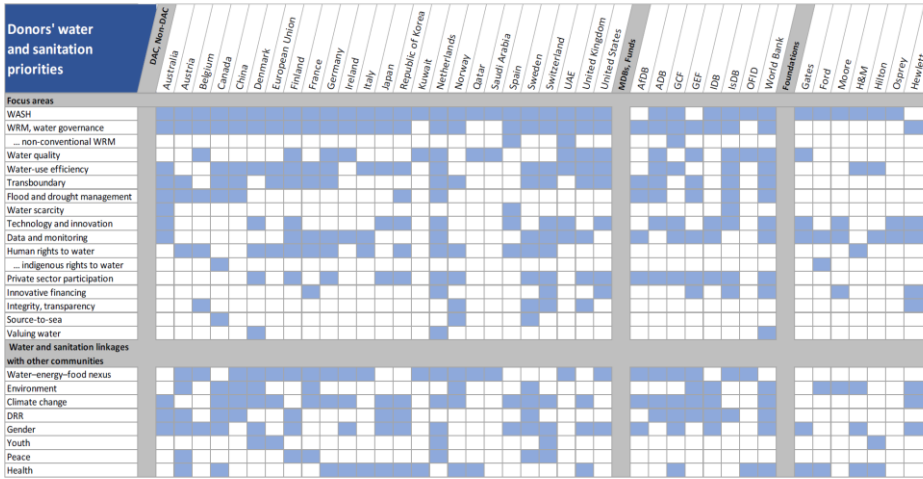
Climate finance flows Yearly average in 2018 and 2019



10



Key Water and sanitation thematic priorities

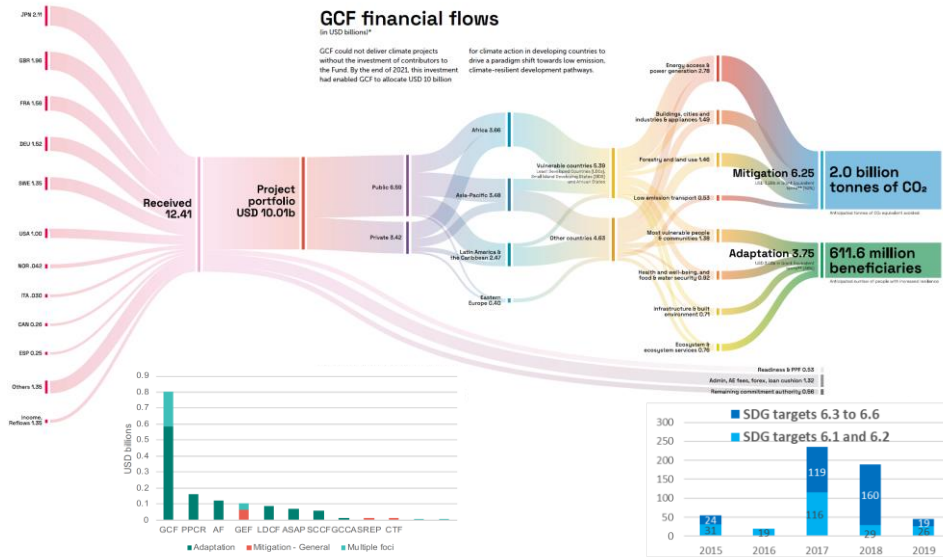


11



Green Climate Fund

89 projects/programmes with USD 2,823 million including 1,338 million GCF funding



12



Paradigm Shifting Pathways WATER SECURITY: SDG6 meets SDG 13

Pathway 1: Enhance water conservation, water efficiency and water reuse (Mostly Mitigation)

Pathway 2: Strengthen integrated water resources management & water management (Mostly Adaptation)

Demand Management

- Reduces energy & emissions from treating less water and developing alternative water supplies,
- Reducing non-revenue water losses
- Promoting water saving fixtures
- Water re-use systems for irrigation

Smart-Digital water Management

- Enhances efficiency of water management,
- Smart water meters for monitoring daily water consumption and real-time leak detection
- Automated irrigation

Ecosystem-based Management (EBM)

- Reduce flooding impacts
- Mitigate droughts
- Improve water quality

Alternative water sources

- Water re-use systems can utilize greywater, blackwater, rainwater harvesting, and stormwater harvesting for **non-potable uses**, including cooling buildings, irrigating landscapes, and flushing toilets

Decentralized models

- Large-scale water re-use / water recycling models can be tailored to meet the water quality requirements of a planned use.
- Agricultural irrigation
- Replenishing groundwater basins (MAR)

Resource Recovery

- From wastewater: Biogas from anaerobic digestion and thermal conversion of biosolids
- Treatment plants also provide opportunities for solar PV, floating solar, wind etc.

Integrated Water Resources Management (IWRM)

- coordinated development and management of water, land and related resources to **maximize sustainable development**
- involves **preserving** water in the water cycle using circular economy-thinking, e.g., water efficiency in agriculture
- Involves **adaptive planning** across land and water to ensure water security for both humans and nature in a changing climate

Innovative Approach for Asset classes in sanitation and water re-use

The new asset class is *“an asset for adaptation and/or mitigation that is developed and funded using credit enhancement to crowd in private sector funding targeted towards developing debt capital market and acceptable financial returns but remain in line with ESG impacts and help to meet the targets set in the Paris Agreement and contribute to UN SDGs (Goal 6 –clean water and sanitation; Goal 3 – Affordable and clean Energy; Goal 13 climate action; Goal 14 – sustainable oceans and Goal 17– Partnerships with the involvement of the private sector) and providing water for domestic, municipal, and industrial purposes and allows municipalities to scale their water reuse projects in partnership with private sector and/or governments purchase a service instead of an asset”.*

13



Credit Enhancement: Concessionally and Affordability

A FLEXIBLE RANGE OF INSTRUMENTS

- Loans
- Guarantees
- Equity
- Grants

TO MAKE BLENDED FINANCE WORK

Financing option 1

Commercial Loan

Senior

Subordinated

Tariffs affordable ✓

No concessional finance required

- Project bankable without concessional or grant funding
- Supported through senior and subordinated debt

Financing option 2

Commercial Loan

Senior

Subordinated

Tariffs unaffordable ✗

➔

Blended Finance

Senior

Subordinated

Concessional

Tariffs affordable ✓

Concessional finance required

- Tariffs unaffordable based on senior and subordinated debt structure
- Project requires concessional finance to make tariffs affordable and ensure bankability
- Blended finance 1: Commercial Finance + Concessional (climate) Finance (no grant capital)

Financing option 3

Commercial Loan

Senior

Subordinated

Tariffs unaffordable ✗

➔

Blended Finance 1

Senior

Subordinated

Concessional

Tariffs unaffordable ✗

➔

Blended Finance 2

Senior

Subordinated

Concessional

Grant

Tariffs affordable ✓

Concessional finance and infrastructure fund (SA Government) grant funding required to make tariffs affordable and ensure bankability required

- Tariffs unaffordable based on senior and subordinated debt structure as well as concessional funding
- Grant funding required to make tariffs affordable and ensure bankability (Grant funding to be provided by SA Government infrastructure fund)
- Blended finance 1: Commercial Finance + Concessional (climate) Finance + Grant Fund (SA Government infrastructure fund)

14



New Asset Class



15



16