

**GREEN
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How GCF can unlock transformation and decarbonizing paradigm shift in urban-Water areas? leveraging climate and blended finance

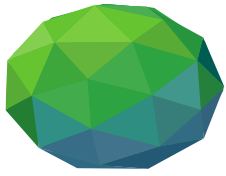
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Chair of Water Security Bureau- International Water Resources Association-IWRA

International Forum on Low Carbon Cities- 2023



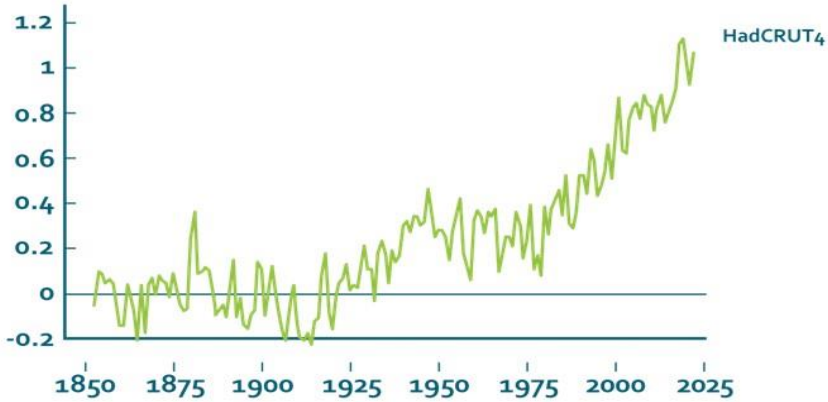
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Why we need Finance

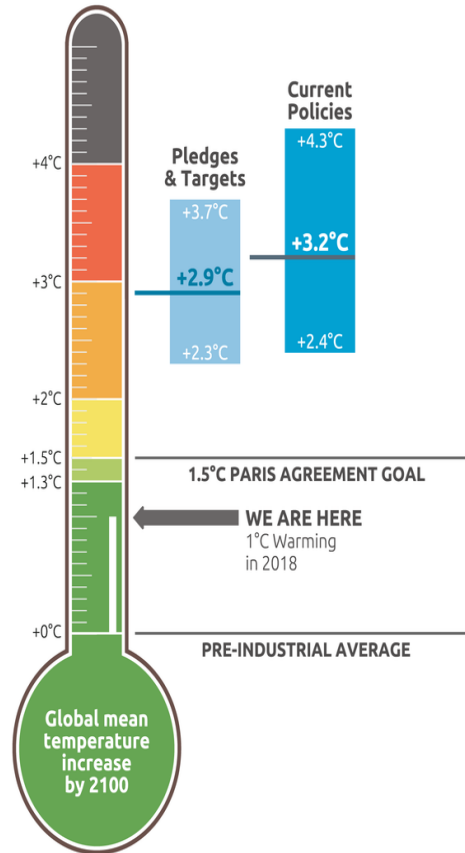
The Climate crisis: Where we are

Temperature rise since 1850

Global mean temperature change from pre industrial levels, °C

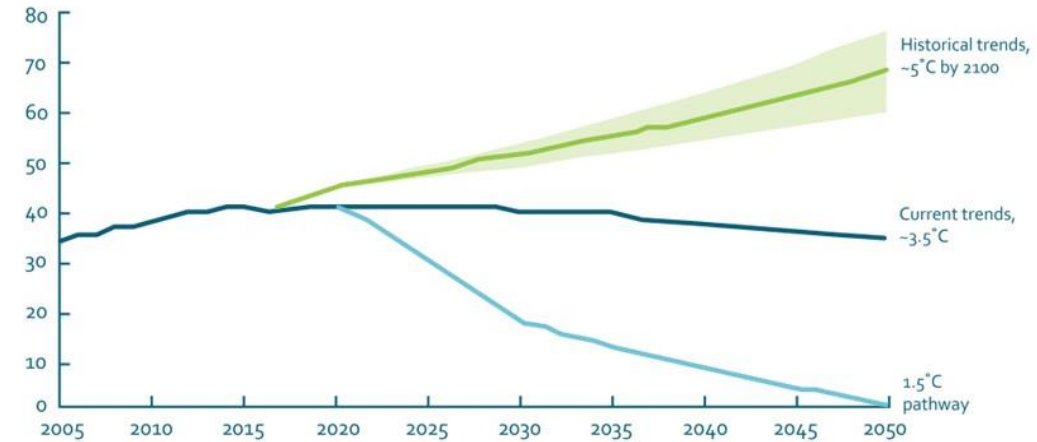


Source: UK Met Office



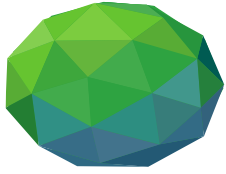
What needs to be done

Projected global CO₂ emissions, billion metric tons of carbon dioxide (GtCO₂) per year



Source: UNFCCC

The world faces **unavoidable multiple climate hazards** over the next two decades with global warming of **1.5°C (2.7°F)**.

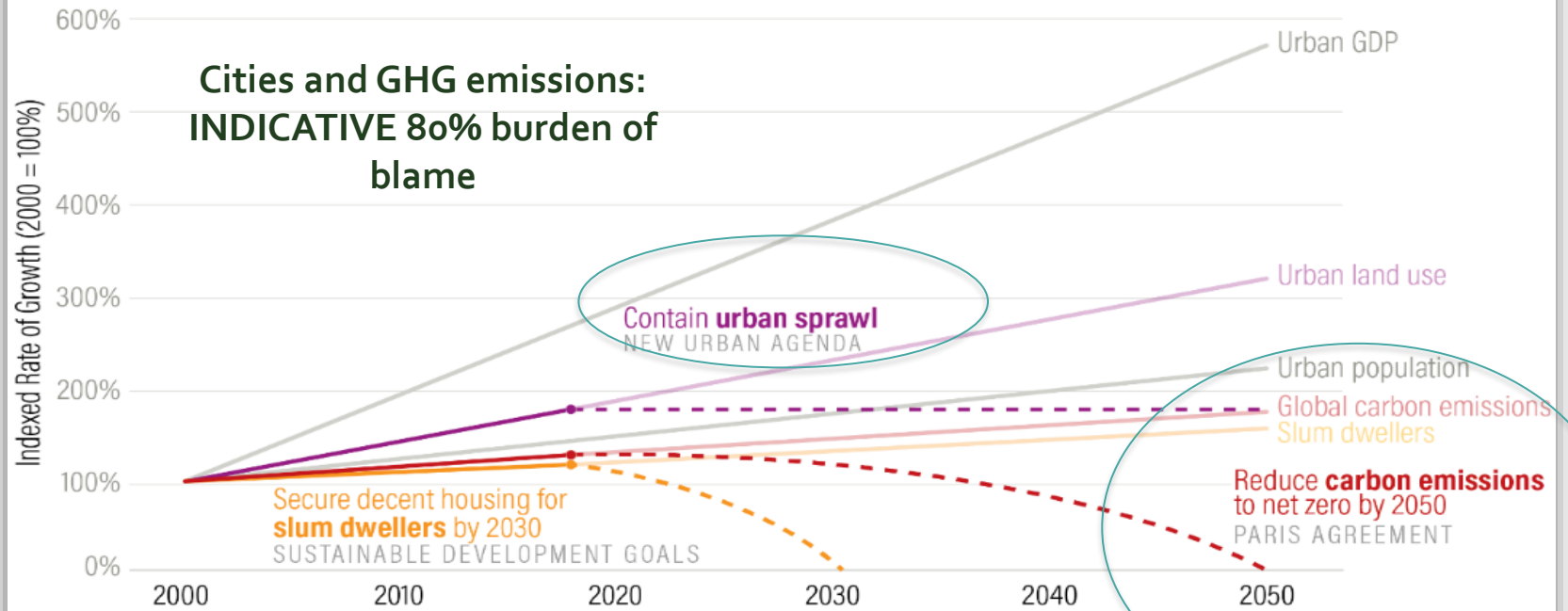


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Challenges to transformative urban adaptation and resilience

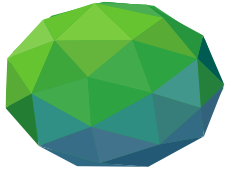


Reaching 3 Global Goals Means Major Change for Cities



Notes: This graph is for illustrative purposes only, showing 2050 trajectories for select indicators and what's needed to reach relevant global goals. **Urban GDP** is for the world's 750 largest cities. An increase in **urban sprawl** is almost inevitable, but should be managed and minimal. **Net global carbon emissions** are used as a proxy for urban emissions. **Slum dwellers** includes developing regions only.

Sources: Angel et al., 2011; Oxford Economics, 2015; UN DESA, 2014; UN Habitat, 2016; World Bank, 2017



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Barriers to achieve paradigm-shifting in the Urban Water Sector

Lack of **enabling** policy frameworks, **integrated** policy and planning systems, and institutional and technical **capacities** at **all levels of government**

Lack of **common standards, taxonomies and WASH project assessment methodologies** to channel resources into viable urban climate investments.

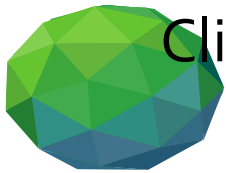
Limited support for **fostering new business models, institutions, technologies and financing structures**

Limited information on **best practice and performance data** associated with **LECR urban WASH infrastructure**, which creates **barriers to replicating successful practices**

Lack of **upfront financing and structures** to cover pre-feasibility studies and project design in order to create a **pipeline of bankable urban WASH projects**

Higher **upfront costs and longer payback periods** of Water and WASH investments, increasing their perceived **risk/reward profile**

Limited access to long-term **finance** at affordable rates and with appropriate **repayment schedules** due to shallow domestic capital markets and financing systems



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Climate finance flows to developing countries

Achieving universal and equitable access to safe and affordable drinking water will cost



Hutton et al (2016)



Estimated financial needs for water infrastructure

Winpenny (2015)

LANDSCAPE OF CLIMATE FINANCE IN 2019/2020

Global climate finance flows along their life cycle in 2019 and 2020. Values are average of two years' data, in USD billions.

653 BN USD ANNUAL AVERAGE



SOURCES AND INTERMEDIARIES

Which type of organizations are sources or intermediaries of capital for climate finance?

PUBLIC **PRIVATE**

INSTRUMENTS

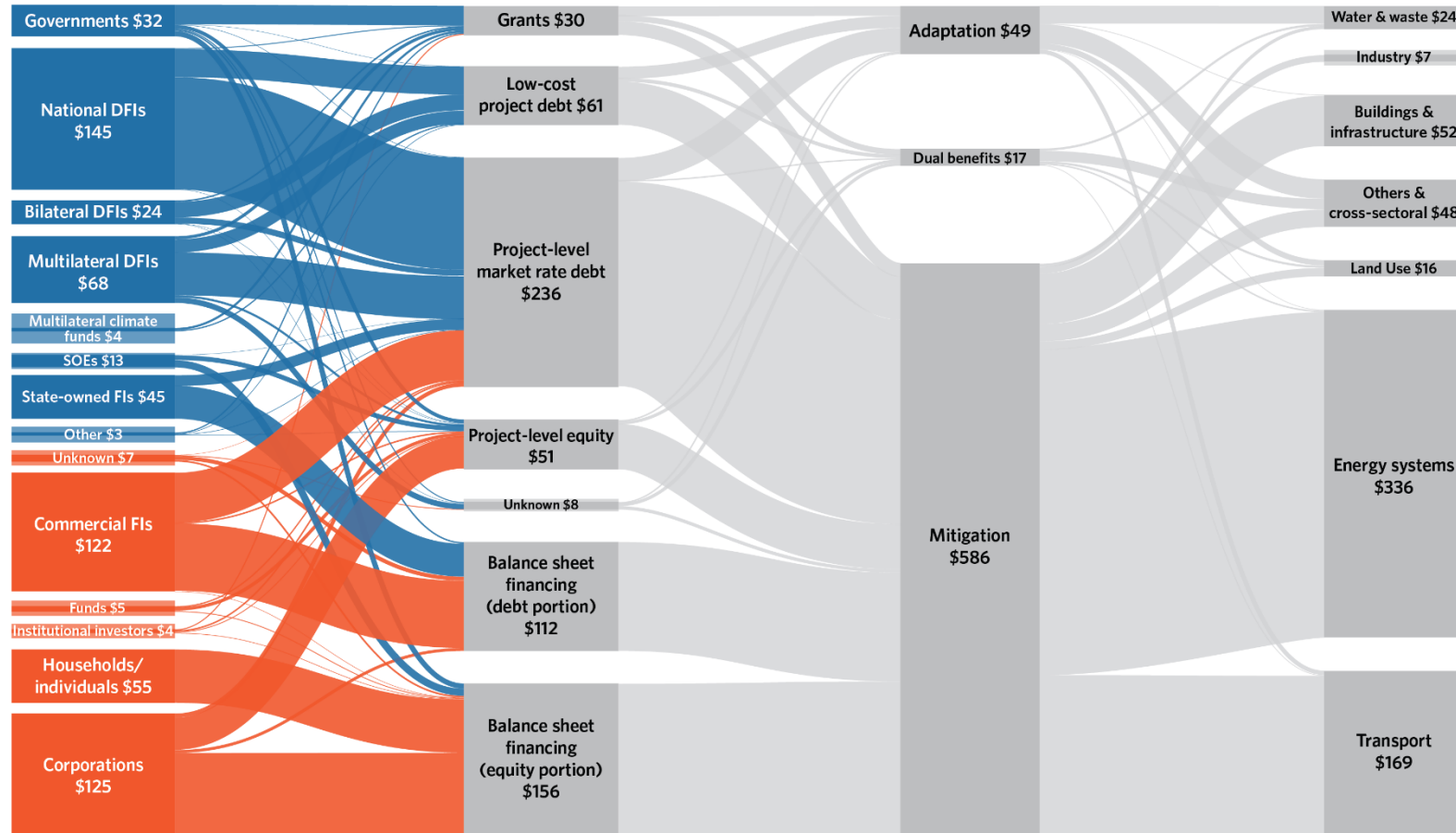
What mix of financial instruments are used?

USES

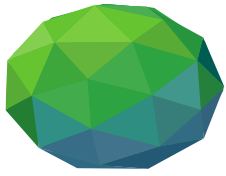
What types of activities are financed?

SECTORS

What is the finance used for?

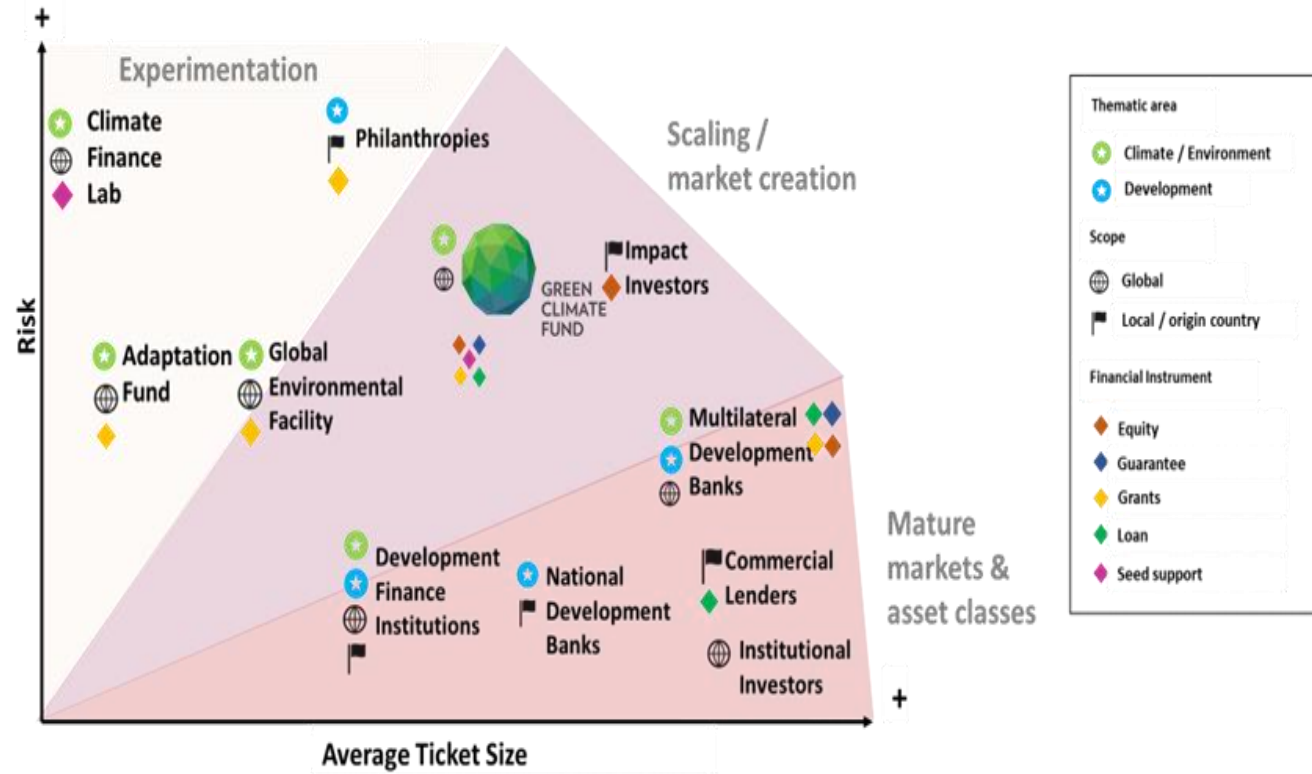
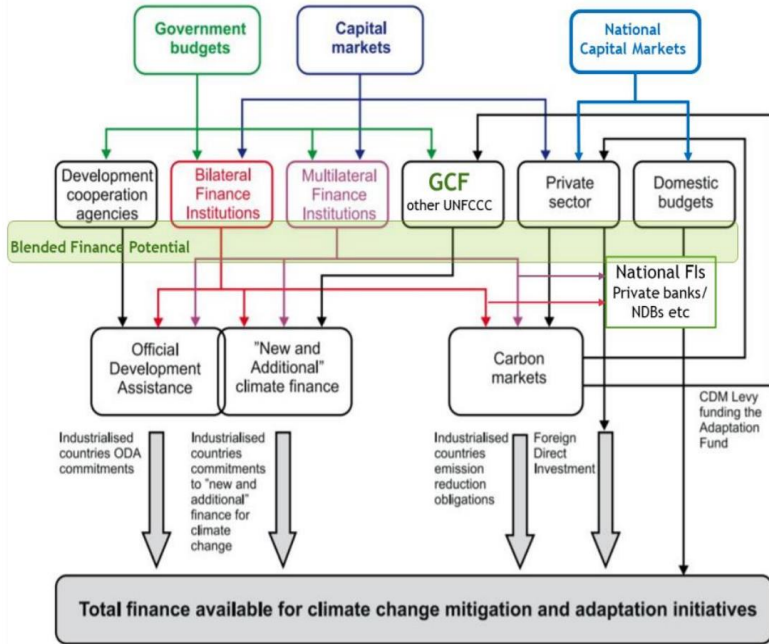


Achieving SDG WASH targets by 2030 will require a quadrupling of current rates of progress (WMO & UNICEF, 2021)



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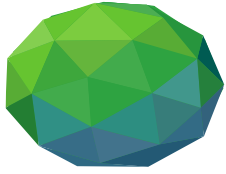
GCF in the Climate Finance Landscape and Potential Collaborators



Source: Adapted from Atteridge, A et al (2009)

Notes: CDM=Clean Development Mechanism, FI=Financial Institution, NDB=National Development Bank, ODA=Official Development Assistance

GCF: scaling transformational solutions and market-creation role, and as accelerator and amplifier for climate action



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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.

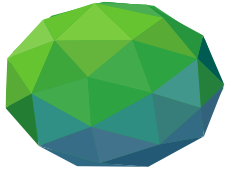
Water services are often under-priced, resulting in low cost-recovery for water investments.

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

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.



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GCF : Investment criteria for Water Security Sector



01

The world's largest climate fund



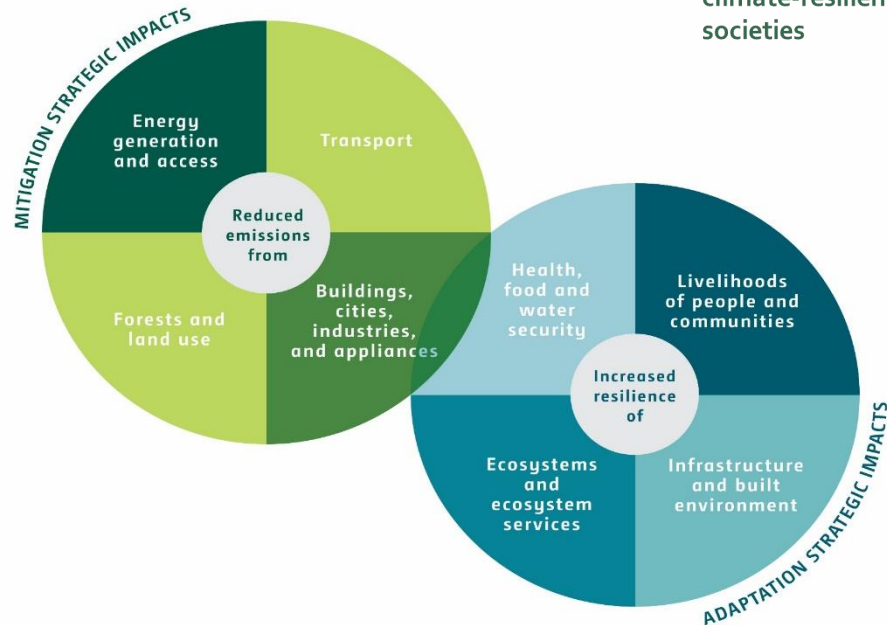
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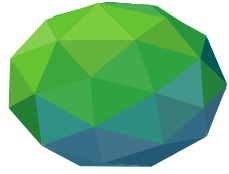
Set up by the UNFCCC, and serving the Paris Agreement



03

Supporting developing countries to transition to low-emission, climate-resilient societies





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GCF Overview

Financial Instruments and Programming

A FLEXIBLE RANGE OF INSTRUMENTS



Loans



Guarantees

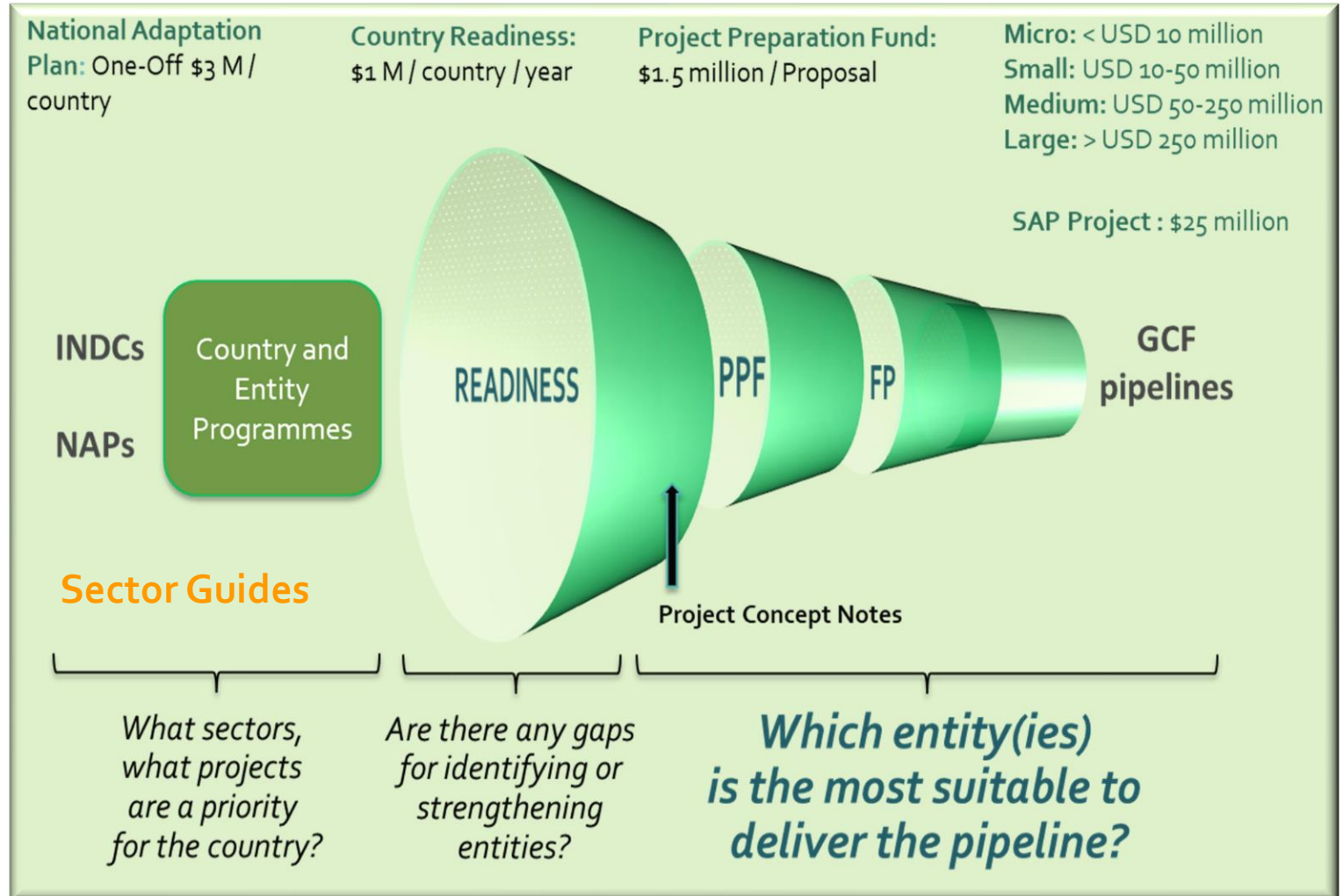
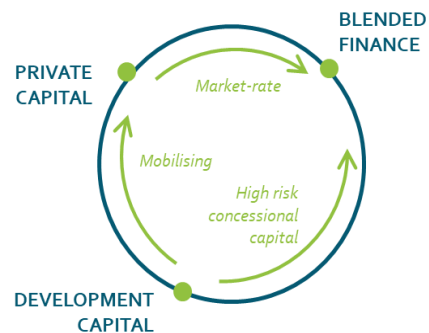


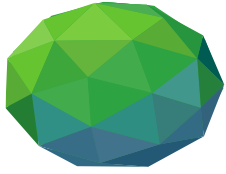
Equity



Grants

TO MAKE BLENDED FINANCE WORK





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Paradigm Shifting Pathways WATER SECURITY: SDG6 meets SDG 13

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



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



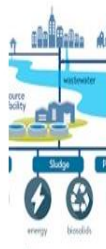
Smart-Digital water Management

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



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.

Pathway 2: Strengthen integrated water resources management – protection from water-related disasters, preserve water resources and enhanced resilient water supply and sanitation (Mostly Adaptation)



Ecosystem-based Management (EbM)

- Reduce flooding impacts
- Mitigate droughts
- Improve water quality



Alternative water sources

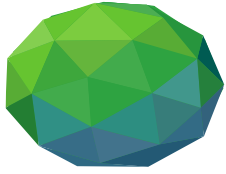
- Water re-use systems can utilize greywater, blackwater, rainwater harvesting, and stormwater harvesting for **non-potable uses**, including Cooling buildings, irrigating landscapes, and flushing toilets



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, water re-use and Desalination



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How we drive change

01

Transformational
planning



02

Catalyzing
innovation



03

Mobilizing
finance



04

Coalition and
Knowledge to
Scale-up Success

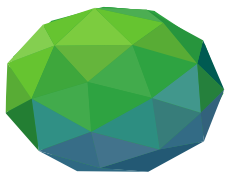


Integrated **climate**
development **policies**
promoting **climate**
finance coherence.

Technology
development and
transfer with **enabling**
institutional
environments, including
conservation,
preservation, sanitation
asset class, EbM, and
smart utilities

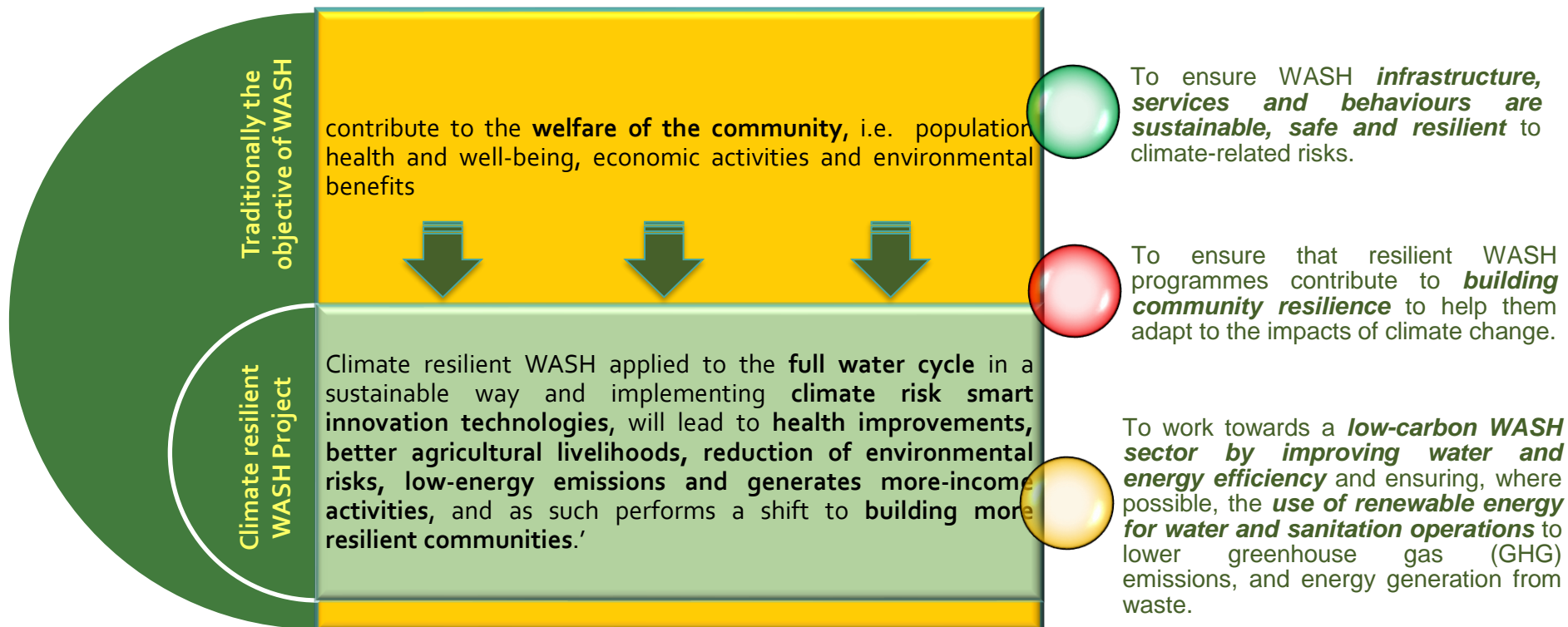
scaling-up successful
climate investments to
de-risk investments
through strengthening
domestic capital
markets and climate
financing institutions

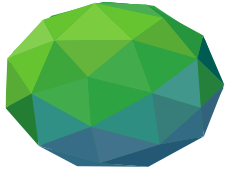
creating and sharing
knowledge to
harmonise valuation
methodologies with
climate risks built into
financial decisions for
sustainable
development.



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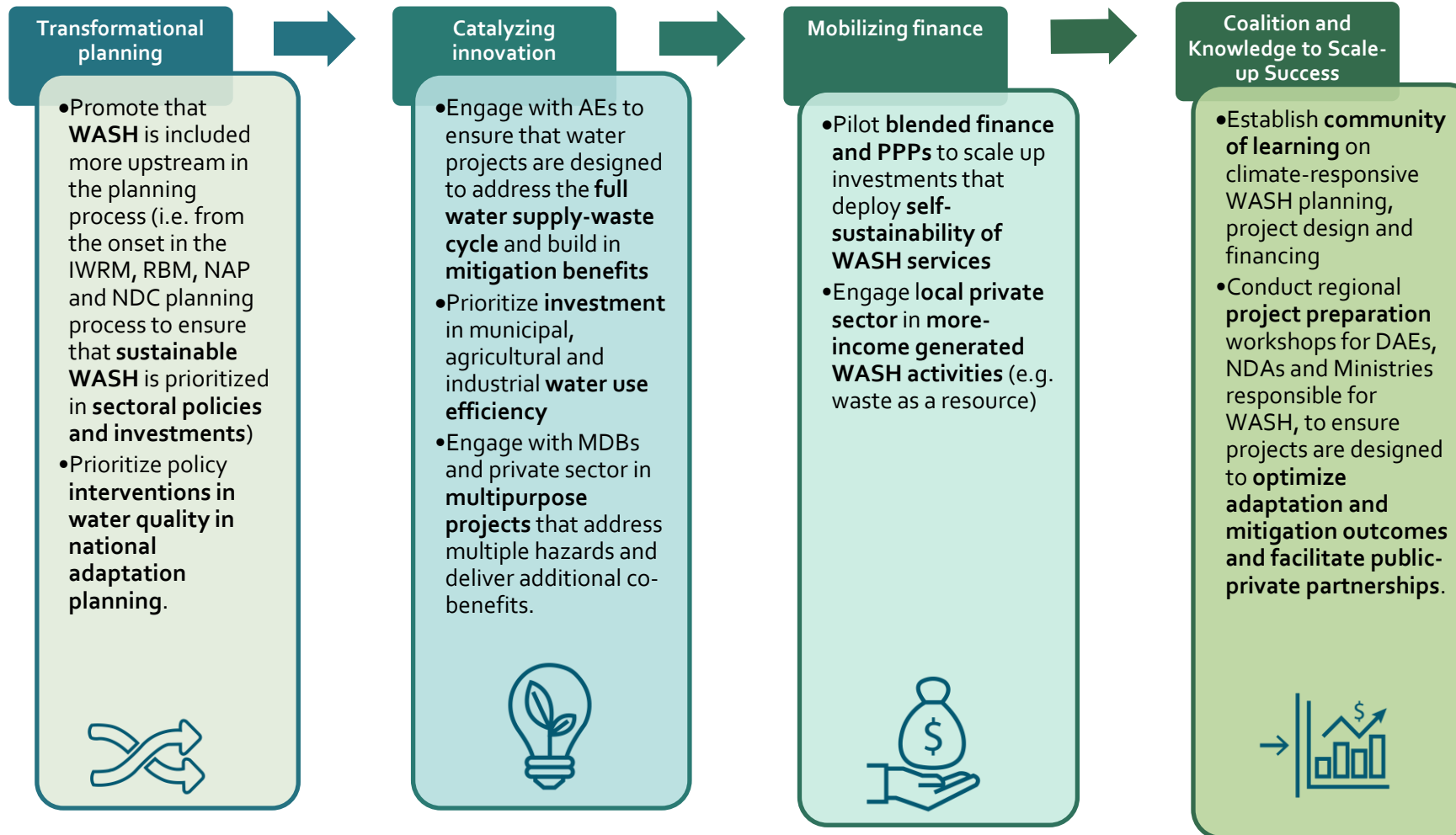
WASH Projects

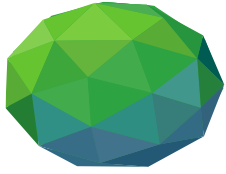




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How we drive change-Paradigm Shift related to WASH





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Developing a climate Resilient WASH project for GCF Funding

What hazards to account for?

- How is the project **vulnerable to climate change** through water related hazards (mechanisms)? Take for this into account both the **WASH cycle and the river basin context** (issues like drought, floods, saltwater intrusion, water stress and other water use(res) like agriculture, environmental flow etc.). What are the **objectives and performance indicators** reflecting the ambition for WASH, especially the **climate resilience building component**?

What are the risks?

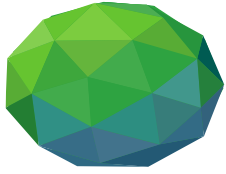
- What are the **impacts of current and future climate** on the WASH sector system for the timeframe under consideration? What is the **likelihood of unacceptable performance** of the WASH cycle due to these impacts based on formulated objectives and indicators for WASH?

How to mitigate?

- How could the **WASH sector contribute to reduce CO₂ emissions?** (by e.g. volume of biogas and biomass that can be recovered from wastewater and used as energy sources, area of reduced deforestation, etc.)

How to adapt?

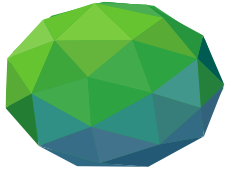
- How could the **WASH sector improve the performance** of WASH under climate induce hazards? How could WASH sector contribute to **build community resilience** to the impacts of climate change?



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Climate Resilient WASH projects for GCF Funding

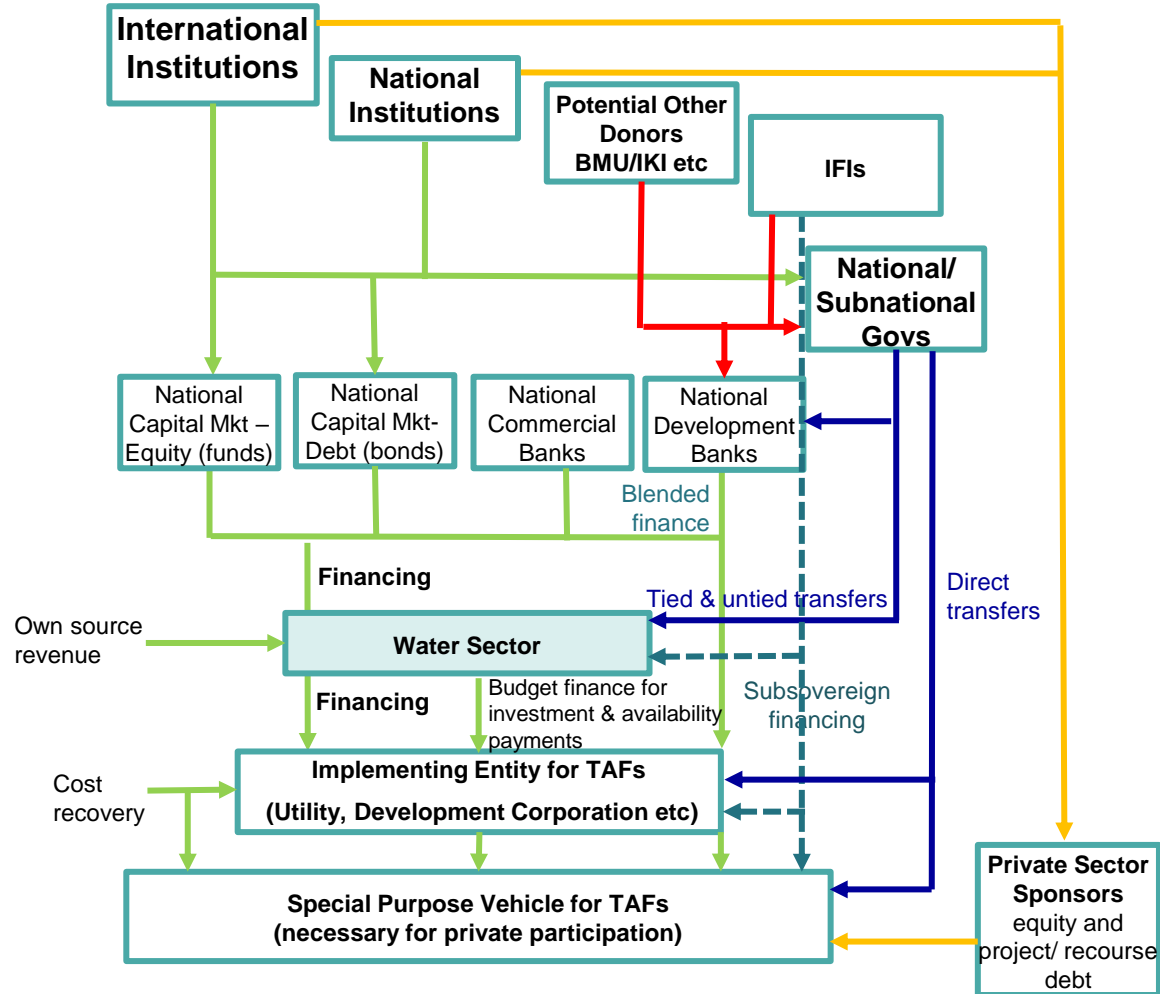




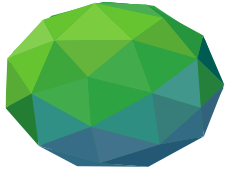
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Take home Messages

Finance landscape and GCF Action Areas



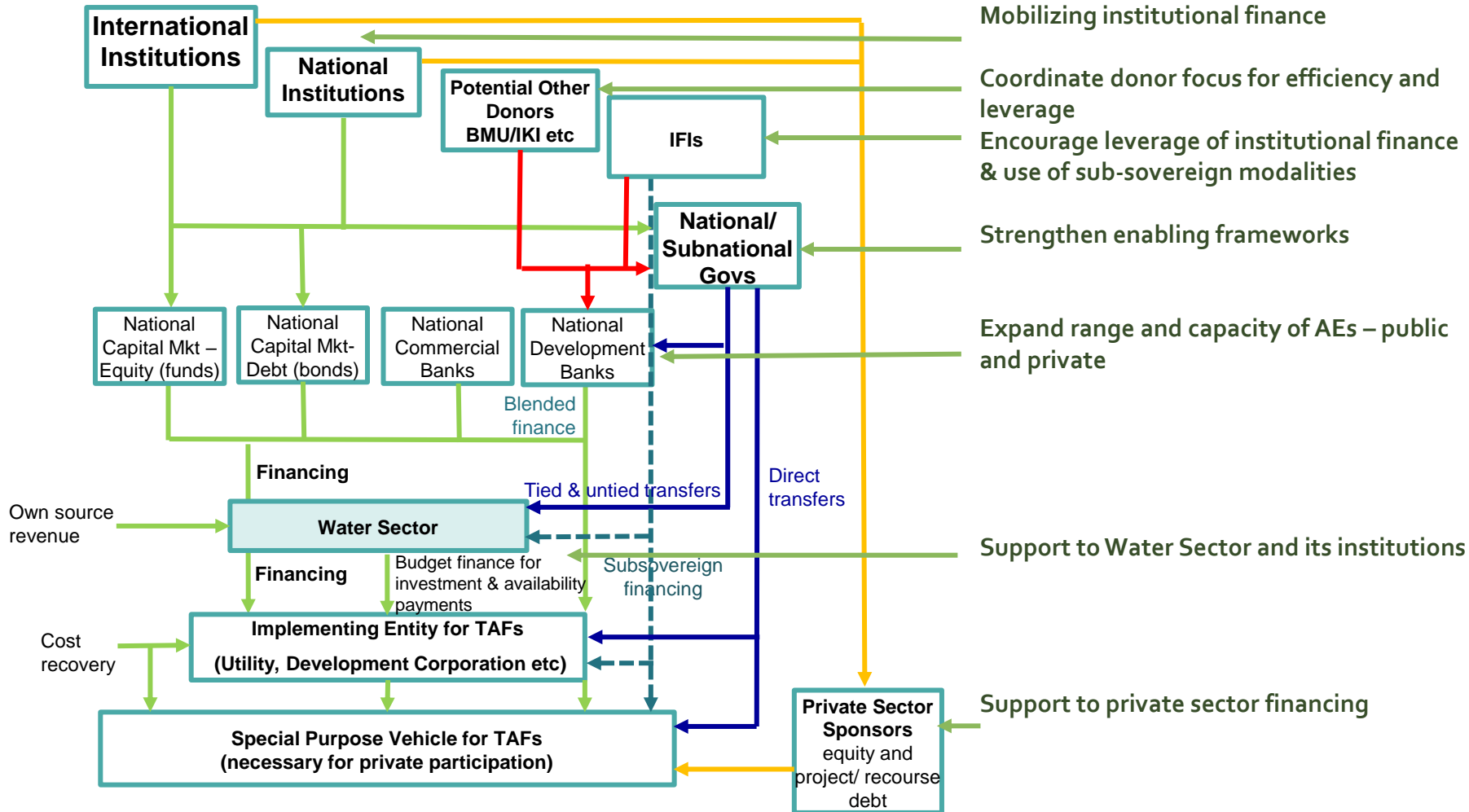
- Increase of quantity and quality
- Disbursement vs Availability
- Bankability and Affordability



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Take home Messages

Finance landscape and GCF Action Areas



- *GCF can support countries develop, adapt policies and legislation to create an **enabling investment environment** to identify, design, and implement public and private **funded transformational water security interventions as a new asset class***
- *GCF can finance the transition and de-risk private investment in **address financial market barriers and ensure affordability and bankability** to unlock water reuse and desalination investment,*
- *GCF can support a **range of finance mechanisms** that will leverage institutional change and linkages .*
- *Supporting new financial models accompanied with **acceptable revenue** in line with Paris agreement targets and SDG*



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