Water Security Draft Sector Guide Green Climate Fund

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2. Global Context
3. Paradigm Shifting Pathways
4. Country Case Studies

1. GCF and Water Security Sector

GREEN CLIMATE FUND

01

The world's largest climate fund

02

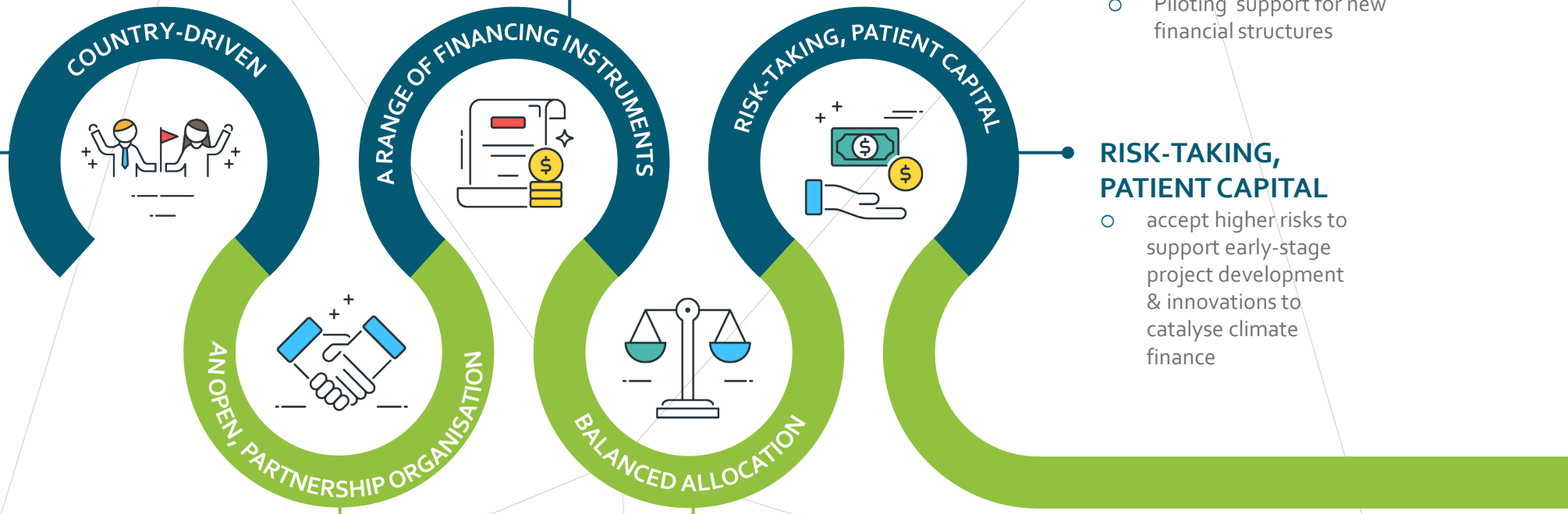
Set up by the UNFCCC, and serving the Paris Agreement

03

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

How we work

Country Readiness: $1 M / country / year
National Adaptation Plan: One-Off $3 M / country
Project Preparation Fund:
- $1.5 million / Proposal



COUNTRY-DRIVEN
- Readiness programme supports country planning
- GCF programming is aligned with country priorities

A RANGE OF FINANCING INSTRUMENTS
- leverage blended finance
- Piloting support for new financial structures

RISK-TAKING, PATIENT CAPITAL
- accept higher risks to support early-stage project development & innovations to catalyse climate finance

AN OPEN, PARTNERSHIP ORGANISATION
- over 200 Accredited Entities and delivery partners

BALANCED ALLOCATION
- targeting 50:50 allocation between mitigation & adaptation

Where we focus

Reduced Emissions from:

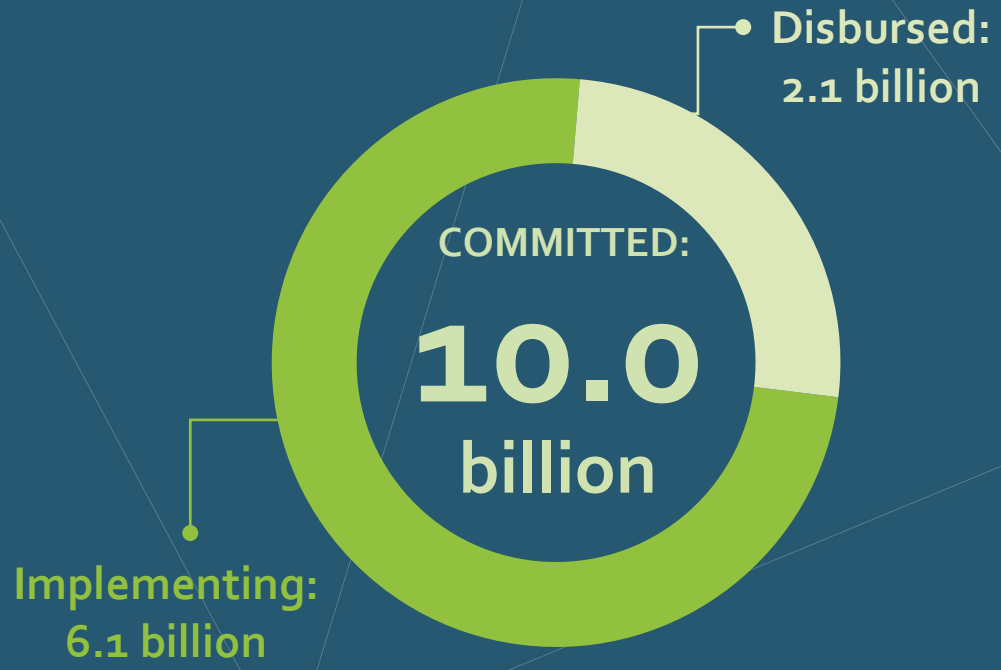
- Energy generation and access
- Transport
- Buildings, cities, industries and appliances
- Forests and land use

Increased Resilience of:

- Livelihoods of people and communities
- Health, food and water security
- Infrastructure and the built environment
- Ecosystems and ecosystem services

GCF in Figures (USD)

TOTAL GCF PORTFOLIO COMMITMENT



WATER PORTFOLIO (06/2021) Excluding CO-FINANCING:

660

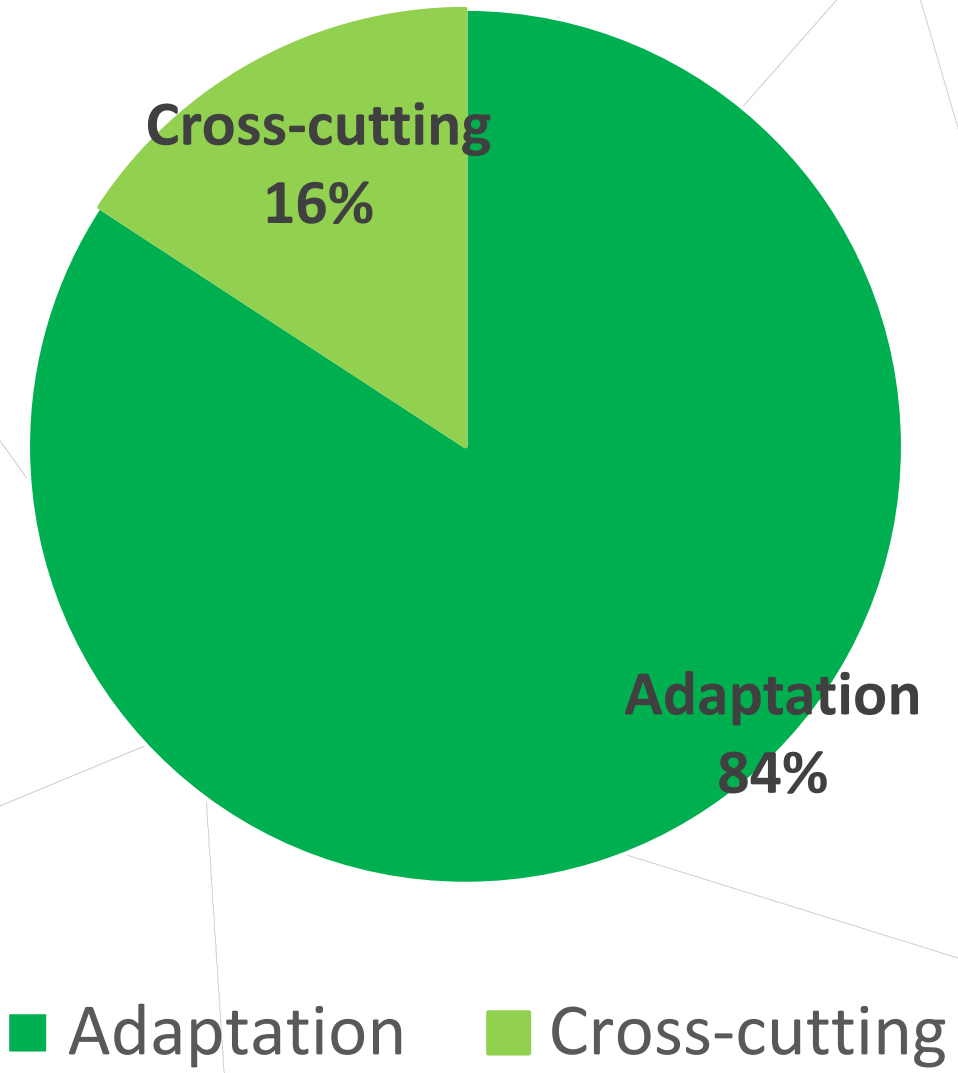
million

Our Water portfolio in focus

"Water is to Adaptation What Energy is to Mitigation"

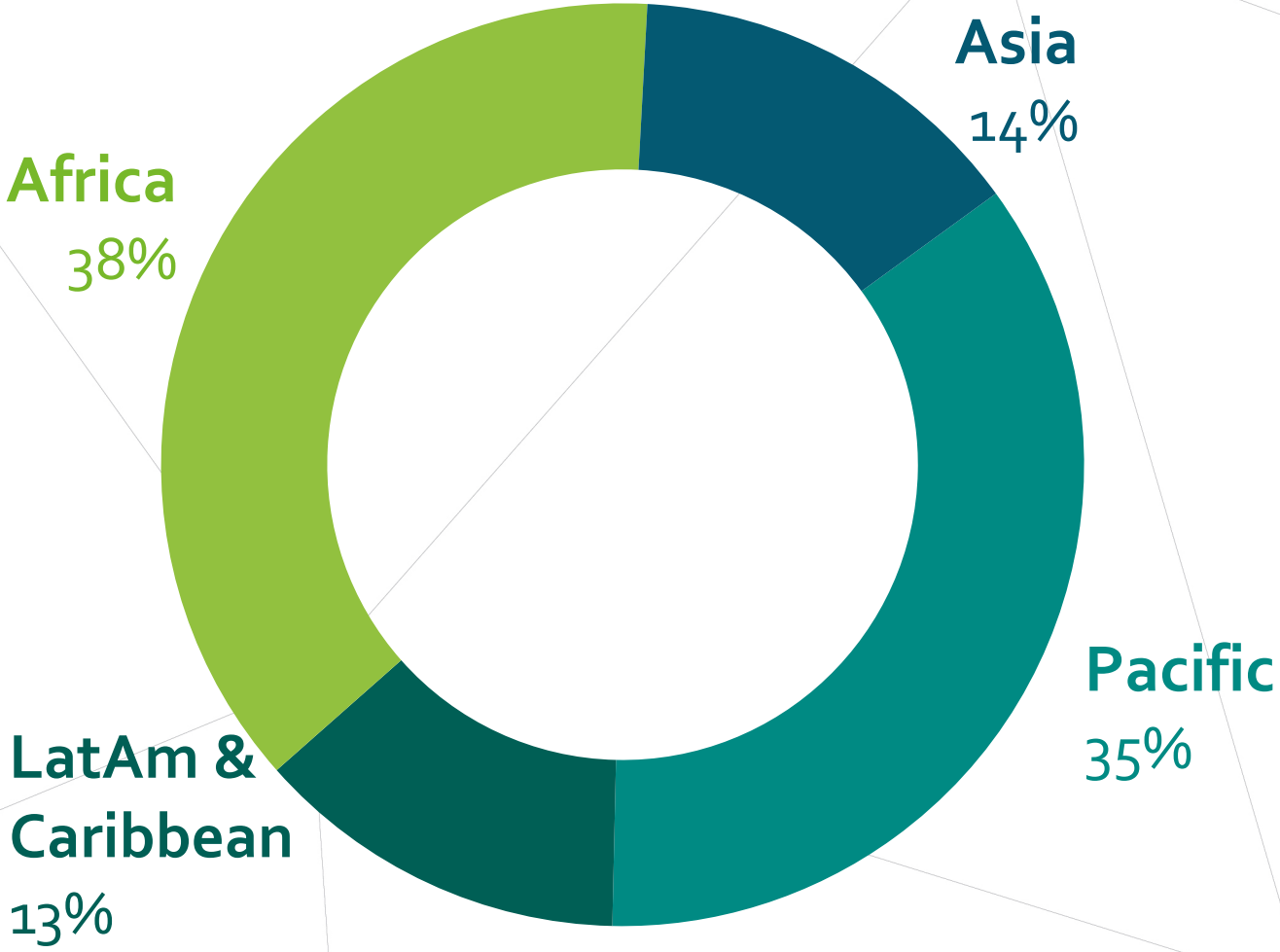
World Bank

Mitigation/ Adaptation Focus



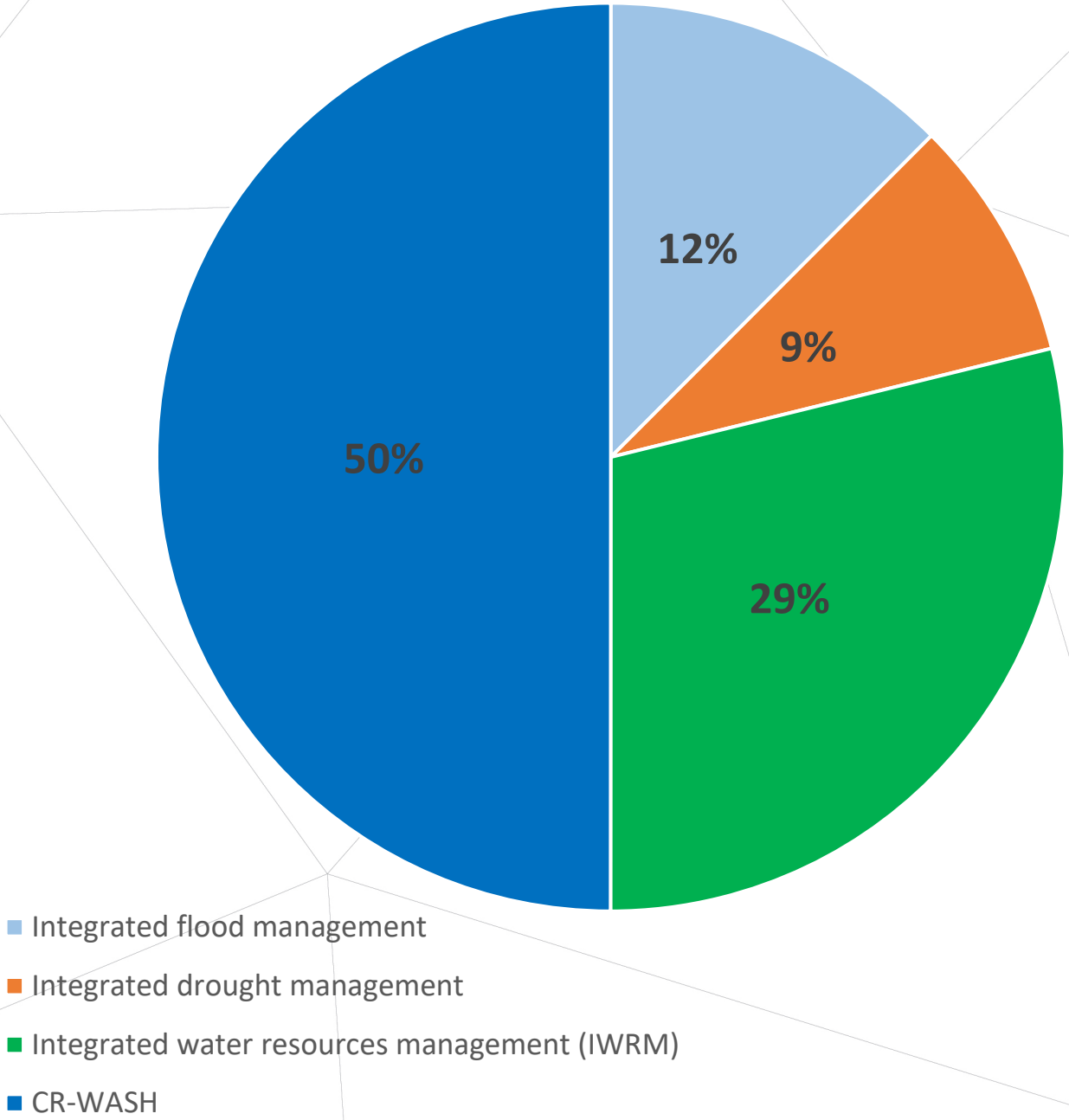
Our Water portfolio in focus

Geographic distribution (by $$$)



Our Water portfolio in focus

Project Amount by sub-sector



GREEN CLIMATE FUND

THE GREEN CLIMATE FUND THEORY OF CHANGE

GCF promotes paradigm shift in developing countries toward low-emission climate-resilient (LECR) development pathways, in line with the goals of the UNFCCC & Paris Agreement

IF the GCF rapidly builds an investment environment and mobilizes resources to enable developing countries to identify, design and implement **transformational climate interventions**

THEN developing countries will **demonstrably shift by 2030** toward LECR development pathways consistent with the well below 2 or 1.5˚C and global adaptation goals

BECAUSE an increasing share of climate-compatible investment will be catalyzed to deliver **systemic change** across the following four critical transition areas:

BUILT ENVIRONMENT
Resilient Infrastructure
Low Emission Buildings
Cities and Transport

ENERGY AND INDUSTRIES
Low emission & resilient power generation / access
Low emission industries & appliances

HUMAN SECURITY, LIVELIHOODS & WELLBEING
Climate information & EWS
Health, wellbeing, livelihoods & water security
Sustainable agriculture

LAND USE, FORESTS & ECOSYSTEMS
Ecosystems and ecosystem services
Forests and land-use

The THEORY OF CHANGE for Water Security Sector

GOAL STATEMENT

IF the GCF creates an enabling investment environment to identify, design and implement public and private funded transformational water security interventions as a new asset class, **THEN** recipient countries can mitigate and adapt to climate change through: (i) water conservation**;** and (ii) preservation of water, **BECAUSE** an increasing share of investment in water security will be catalyzed to deliver systemic change and maximize impact across the GCF four drivers of change.

PARADIGM SHIFT (Impact)

- A Paradigm Shift in Water Security is achieved by scaling-up climate smart water conservation interventions in demand management, water efficiency and water re-use
- A Paradigm Shift in Water Security is achieved by scaling-up water security interventions supporting integrated water resources management, alternative water sources and water related-hazards

OUTCOMES

- **TRANFORMATIONAL PLANNING AND PROGRAMMING** NDAs will develop a strategic vision to plan and program transformational water security interventions
- **CATALYZING CLIMATE INNOVATION** AEs will build a know-how to design water security projects maximizing climate benefits and generating co-benefits
- **MOBILIZATION OF FINANCE AT SCALE** Financial viability of water security as a new asset class will be demonstrated
- **COALITION AND KNOWLEDGE TO SCALE UP SUCCESS** Governments, businesses and financial markets will mainstream water security concept into their operation

PROJECT RESULTS & ACTIVITIES

- Water security incorporated into NDCs/ NAPs;
- Strengthened transboundary cooperation in water security

- Enhanced water-related approaches adopted;
- EbM mainstreamed into water security interventions

- Water security projects de-risked;
- Blended finance into water security scaled-up

- Behaviour change in water conservation strengthened;
- Access to public data in water security improved;
- New Partnerships established

BARRIERS & RISKS

- Environmental
- Economic and financial
- Cultural and social
- Institutional and regulatory
- Infrastructure and technical

ASSUMPTIONS

- GCF business models are further enhanced to enable water security interventions in priority countries and regions (LDC; SDIS; AFRICA) with sub-national actors (DAEs) with private and public sectors and Civil Society Organizations.
- Conditions enabling acceleration of massive climate finance mobilization, including blended finance by crowding-in private, institutional and commercial finance, are met and prioritized into water security interventions within the NDCs and the NAPs

GCF Investment criteria for Water Security Sector

Impact potential	High-impact areas in water security are countries and project areas with high to extreme water stress
Paradigm shift	Move climate finance from grant funding to concessional finance and then enable private finance for scaling=up
Sustainable development	724 climate actions identified under UN-SDG6 combined with gender and minority sensitive development impacts
Recipients needs	Limitations in institutional support; need for developing capacity; and mechanisms for monitoring compliance
Promote country ownership	Bring together ministries, National Designated Authorities & constituents going beyond climate policies
Efficiency & effectiveness	Project design builds on best practices and lessons learned

2. Global Context

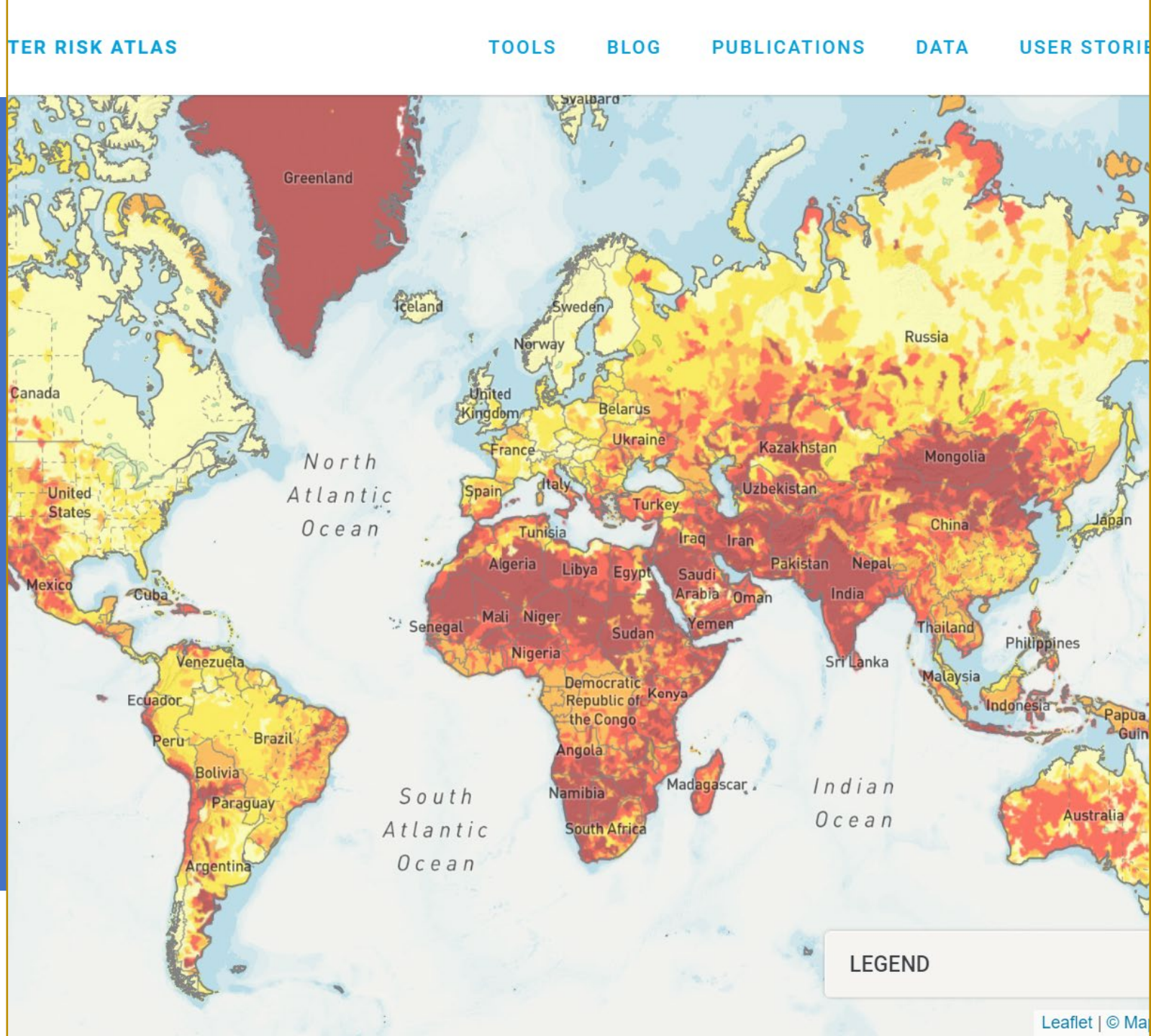
Global Context: Water Security

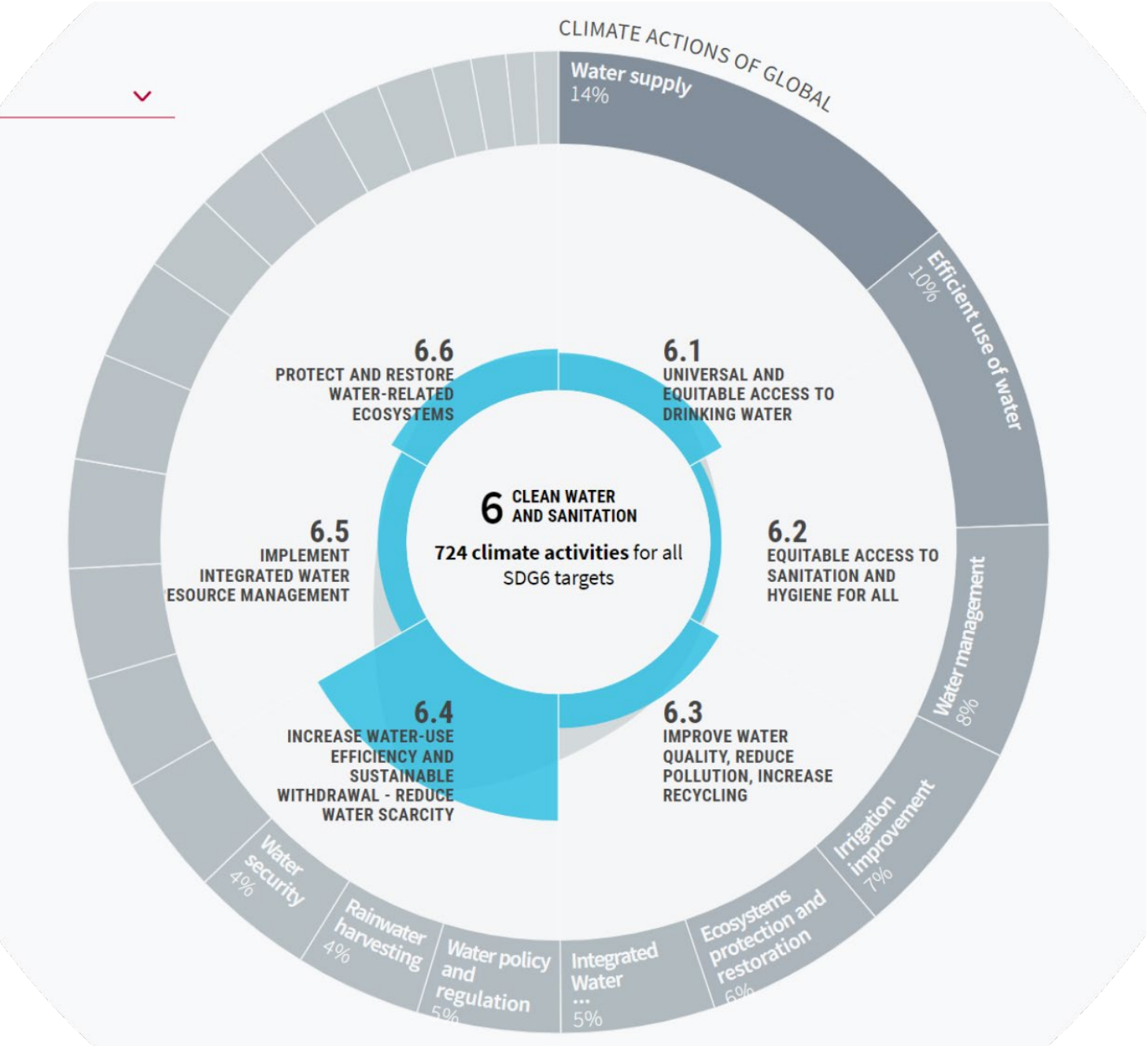
Globally Extreme Water Stress:
MENA & SOUTH ASIA

Over 2 billion people in 61 countries live under high / extreme water stress

Water–Food–Energy Nexus:

- Water Accounting
- Virtual Water





Climate Change Impacts SDG6 & Water Security

- Every 1°C global warming, 7% global population exposed over 20% decrease in water resources
- By 2030, water demand will outstrip water supply by 40% under BAU scenario
- Key water-related impacts from climate change with increase in:
  (i) Water-related disasters;
  (ii) Areas with water stress;
  (iii) Fatalities poor water quality

Cross-sectoral issues addressed in Water Security

- Water use efficiency, including demand management; water conservation; circular economy; water efficiency technologies.
- Preservation of water resources, including rainwater harvesting, groundwater protection; and managed aquifer recharge.
- Wastewater management: sewer network; wastewater treatment on-site, off-site, and decentralised wastewater; water re-use; water recycling.
- Climate Resilient Water, Sanitation and Hygiene (WASH) programmes.
- Integrated Ecosystem-based Management in flood management, including permeable pavements, integrated watershed management.

Sectoral Guide Name	Cross-sectoral issues addressed
Agriculture and Food Security	• Climate smart agriculture • Enhanced food security through nutrients valorisation
Cities, Buildings, and Urban Systems	• Urban water supply resiliency; decentralised wastewater management • Flood management, including sponge cities
Ecosystems and Ecosystem Services	• Ecosystem based Management
Forest and Land Use	• Forest management to preserve watersheds
Energy Generation and Access	• Low-carbon energy pathways in water security • Biomass from wastewater and sludge • Solar panels in water channels / hydro-dams
Climate Information and Early warning Systems	• EWS: Flood / Drought management • Climate information for water-related issues
Health & well-being	• Water quality; Sanitation; WASH programmes
Energy efficiency	• Efficient pumping

3. Paradigm Shifting Pathways

PARADIGM SHIFTING PATHWAYS WATER SECURITY: SDG6 MEETS SDG 13

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

Demand Management

Smart Digital Water Management

Decentralized models

Resources Recovery

PATHWAY 1: ENHANCE WATER CONSERVATION, WATER EFFICIENCY AND WATER REUSE

Demand management

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

Smart digital water management

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

PATHWAY 1: ENHANCE WATER CONSERVATION, WATER EFFICIENCY AND WATER REUSE

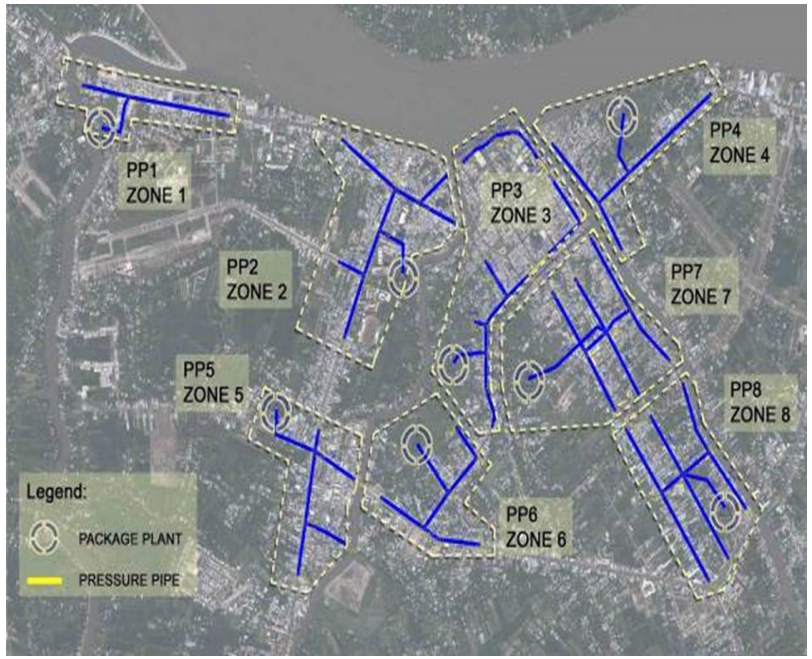
Decentralized models

- 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.

POTENTIAL TRANSFORMATIVE WATER SECURITY PROJECT (PATHWAY 1)



Climate smart water and sanitation projects can reduce water & carbon footprints to promote circular economy:

- **Sanitation**: Innovative projects could develop:
  - Decentralized wastewater management systems;
  - Water re-use systems
- **Water supply**: Innovative projects could:
  - Enhance water and energy efficiencies;
  - Develop water conservation planning & alternative water supplies
- **Irrigation**: Innovative projects could:
  - Develop renewable energy-powered irrigation systems
  - Deploy efficient irrigation systems

⇒ **Create cross-sectoral synergies reducing pressures on water-energy-food nexus, restoring ecosystems & enhancing climate adaptation**

PARADIGM SHIFTING PATHWAYS WATER SECURITY: SDG6 MEETS SDG 13

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

- Ecosystem-based Management (EbM)
- Alternative water sources
- Integrated Water Resources Management (IWRM)

PATHWAY 2: STRENGTHEN INTEGRATED WATER RESOURCES MANAGEMENT & WATER MANAGEMENT

Ecosystem-based Management

- EbM uses ecosystems and their services to enhance IWRM while generating multiple co-benefits
- EbM can be implemented to:
  - Reduce flooding impacts
  - Mitigate droughts
  - Improve water quality
- EbM can be implemented in a wide variety of contexts, including green roofs, urban forests, constructed wetlands, and floodplain restoration

PATHWAY 2: STRENGTHEN INTEGRATED WATER RESOURCES MANAGEMENT & WATER MANAGEMENT

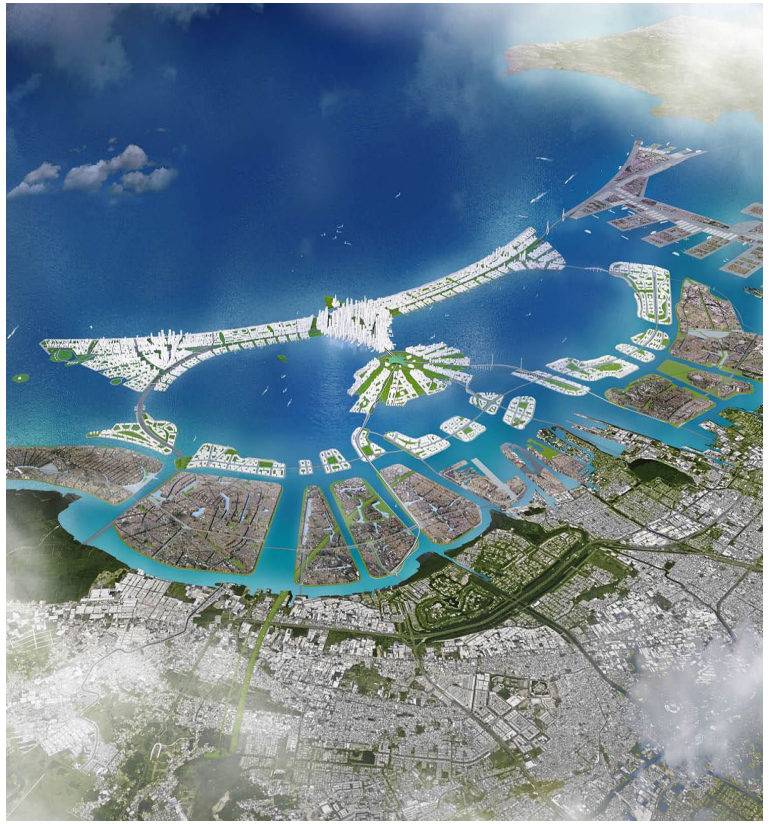
Alternative water sources

- 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

IWRM

- Is the coordinated development and management of water, land and related resources to maximize sustainable development
- It 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

POTENTIAL TRANSFORMATIVE WATER SECURITY PROJECT (PATHWAY 2)



Innovative River Basin IWRM programmes can involve:

- **Climate change adaptation**: Water-Energy-Food initiatives
- **Institutional initiatives**: Adaptive planning; developing water rights across the River Basin
- **Financing**: Payments for Watershed Services; Polluter Pay market-based instruments; targeted subsidies; land value capture
- **Technical**: Municipal, industrial, agricultural pollution and flood control

For example, Sponge Cities; Flood Management; Coastal Zone Management programmes to enhance resilience

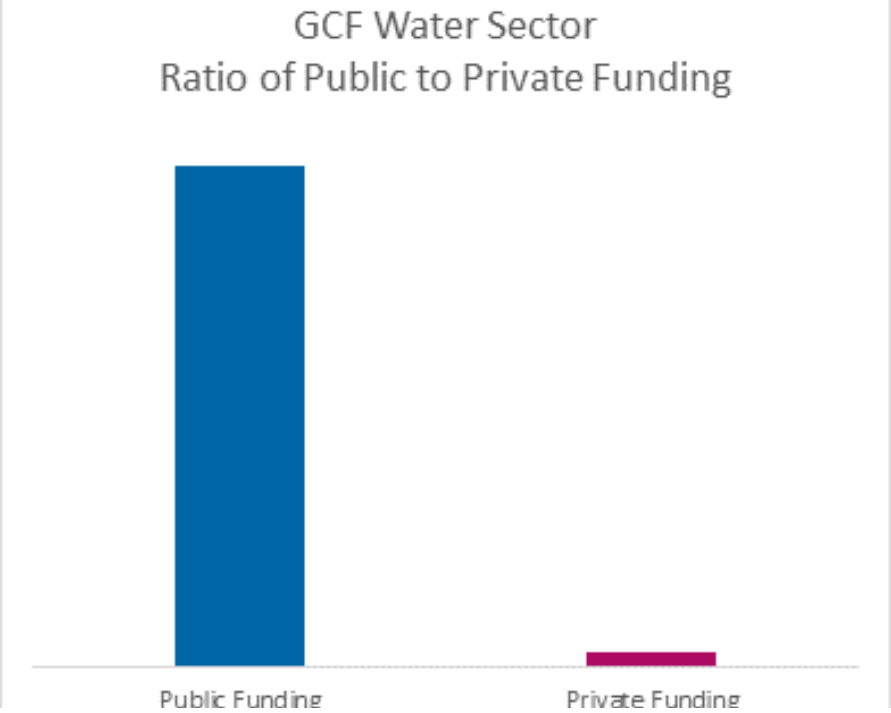
Water: Human Right (UN 2010) ➔ SDG6

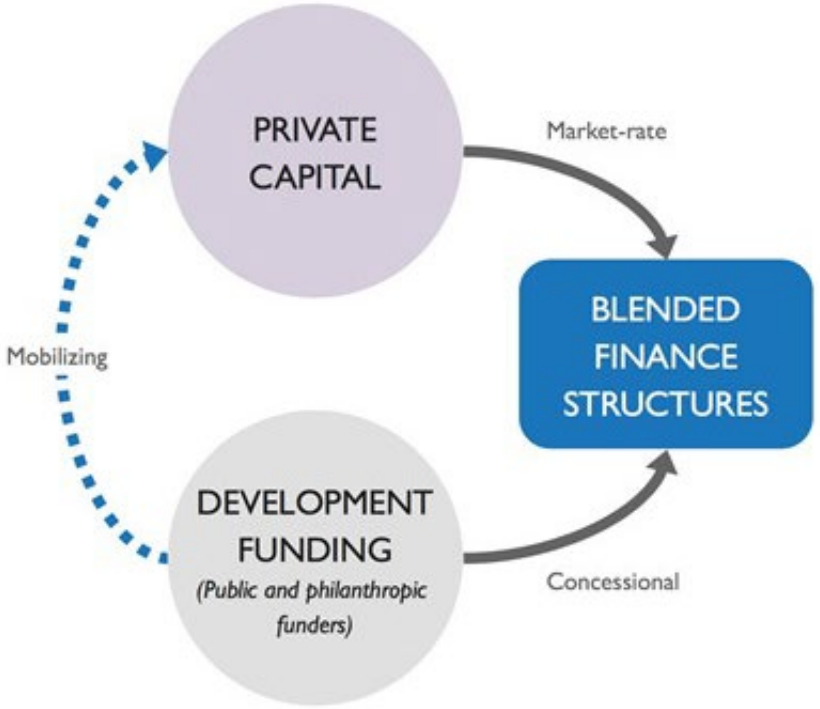
Public good with opportunity to crowd-in private $$$ to address financing gap:

- High socio-economic benefits to justify public funding & targeted subsidies
- High CAPEX for regional water resources (IWRM)
- High performance gains from private sector (Skills)
- Interest from private & commercial financing (PPP)

GCF Opportunity:

- Deploy GCF $$$ to foster NDC / NAP for water-related climate mitigation and adaptation
- Expand blue and blended finance solutions & Revive PPP to maximize water-related co-benefits
- Create a new asset class: (Wastewater & Re-use)

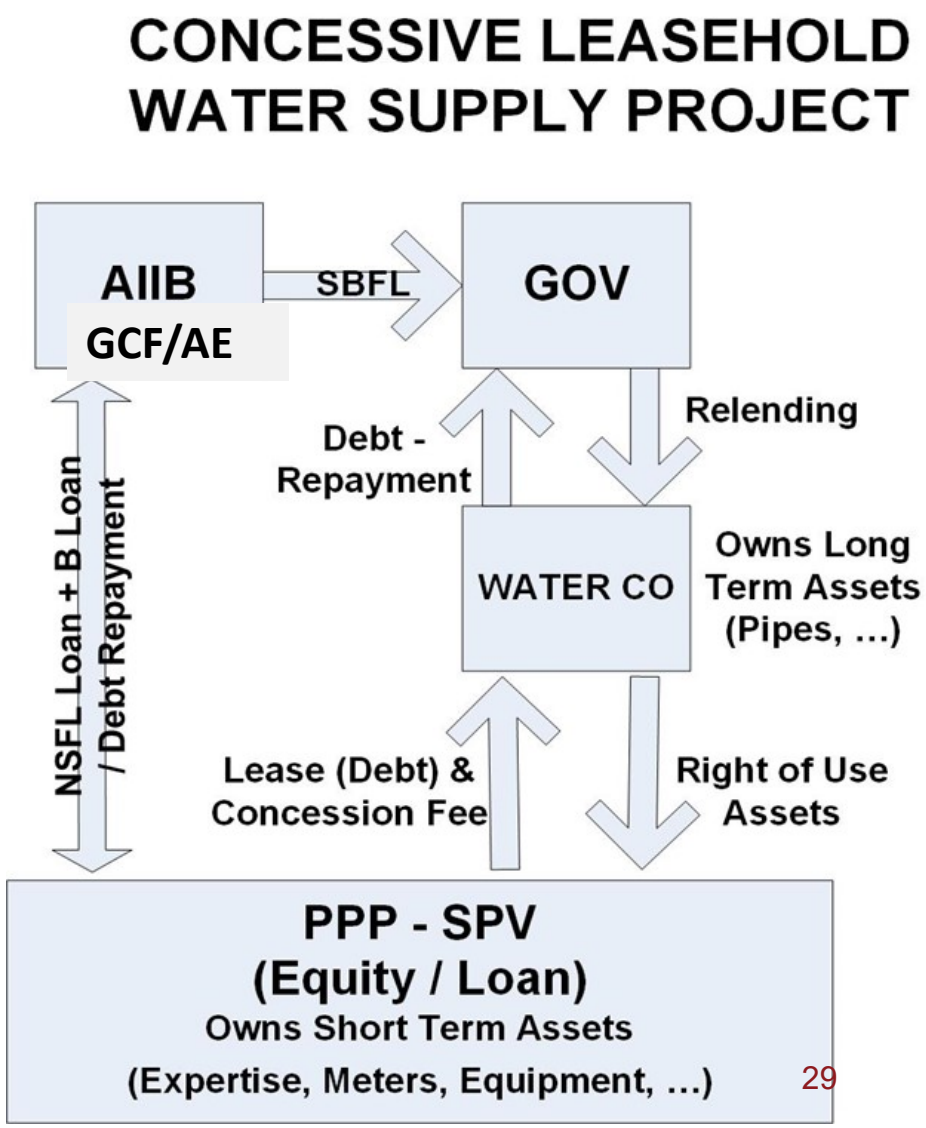




POTENTIAL TRANSFORMATIVE WATER SECURITY PROJECT (PPP)

Water Security PPP Programme:

- Support Private Sector Participation for both financing & skills to Improve Service Delivery
- Regulator vs. Regulation by contract (Benchmarking)
- PPP structure in line with Government regulations
- Service Contract (Skills) & Concessive Leasehold (Blended Financing) for NRW; ASM; Wastewater Reuse; Biomass; FSM: Efficiency Fund / Facility
- Standby Credit Loan
- Water Stewardship (WWF)



4. Country Case Studies

How we drive change

GREEN CLIMATE FUND

01
Transformational planning

02
Catalyzing innovation

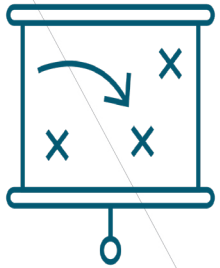
03
Mobilizing finance

04
Coalition and Knowledge to Scale-up Success

01. Transformational planning:

Background and GCF Support

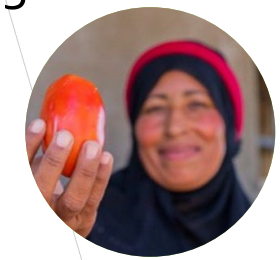
- Jordan is one of the most water scarce countries in the world with climate change
- Further exacerbating aridity due to increasing temperatures and more erratic rainfalls.



Promoting integrated strategies, planning and policymaking

FP155: JORDAN – FAO

- Title: Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector



- Beneficiaries: 212,416
- Funding: $33.25 m (GCF: $25 m)
- Solution: The combination of demand management and the adoption of new water sources such as water re-use and recycling and rainwater harvesting.
- Approach to paradigm shift : Regional recognition of wastewater recycling facilities as an asset class for private investment in arid countries.

02. Catalyzing innovation

Background and GCF SUPPORT

- It is estimated that Palestine will experience a water deficit of 271 million m^3 per year from 2020
- Fresh water level in the coastal aquifer in Gaza rapidly declining resulting in saltwater intrusion
- Agricultural inefficiencies lead to overuse of water and high evaporation, pressure on aquifer

Investing in new technologies, business models and financial instruments and practices to establish a proof of concept.

FP119 – PALESTINE - AFD

- Title: Water Banking and Adaptation of Agriculture to Climate Change in Northern Gaza
- Beneficiaries: 223,553
- Funding: $52.5 m (GCF: $27.9 m)
- Solution: Reducing vulnerability of the Gaza's coastal aquifer through the water recovered from the wastewater treatment plant and infiltrated into the aquifer.
- Approach to paradigm shift : Innovative re-use of treated wastewater is reducing the impact of climate change and enable sustaining agriculture.

03. Mobilizing finance at scale

Background and GCF SUPPORT

- Kiribati is one of the most remote and least developed countries in the world.
- The quality and quantity of underground water in South Tarawa are seriously threatened by climate change-induced inundations and prolonged drought.

Loans

Equity

Guarantees

Grants

FP091 – KIRIBATI - ADB

- Title: South Tarawa Water Supply Project
- Beneficiaries: 62,298
- Funding: $58.08 m
- (GCF: $28.63.9 m)
- Solution: Supply a climate-resilient water through constructing a desalination plant powered by a solar plant and rehabilitating the water supply network infrastructure
- Approach to paradigm shift : Mobilizing finance and cooperation with ADB and World Bank which are key players in the eventual replication of desalination in the Pacific SIDS.

04. Coalition and Knowledge to Scale-up Success

Background and GCF SUPPORT

- Ethiopia is very vulnerable to the impact of climate change given low level of economy
- Climate change is mainly continued rainfall variability with more frequent extremes and changes in key seasonal rainfall in some areas

Readiness programme: providing capacity building grants to over 140 countries

FP058 – ETHIOPIA – MoFEC

- Title: Responding to the increasing risk of drought: Building gender-responsive resilience of the most vulnerable communities
- Beneficiaries: 1.3 million
- Funding: $49.96 m (GCF: $45 m)

- Solution: Providing rural communities with critical water supplies for drinking and small-scale irrigation through IWRM and integrated drought management.
- Approach to paradigm shift : Scaling up nationally and uses a design adapted from another project such as institutional partnership research and partnership implementation model.

THANK YOU!

Questions & Comments