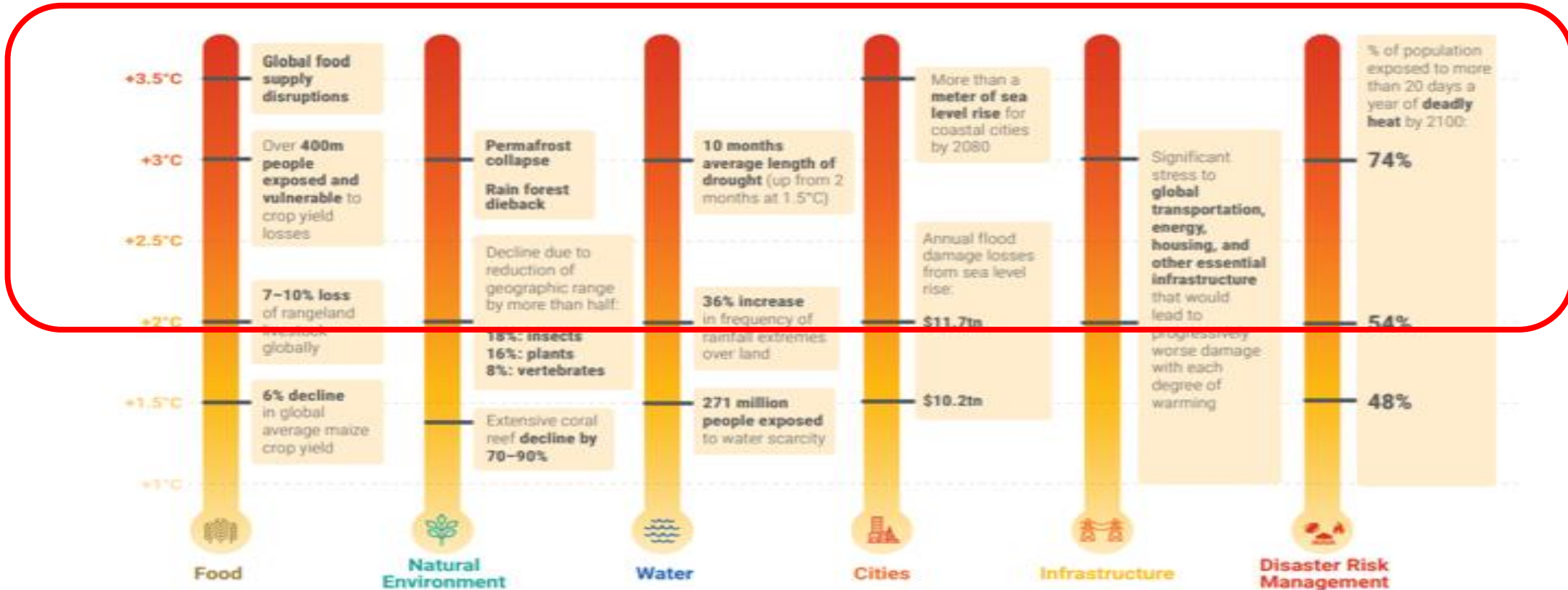


**GREEN  
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**New Paradigm-“No Room for Business as Usual”  
to preserve and provide equitable access to the precious water resources**

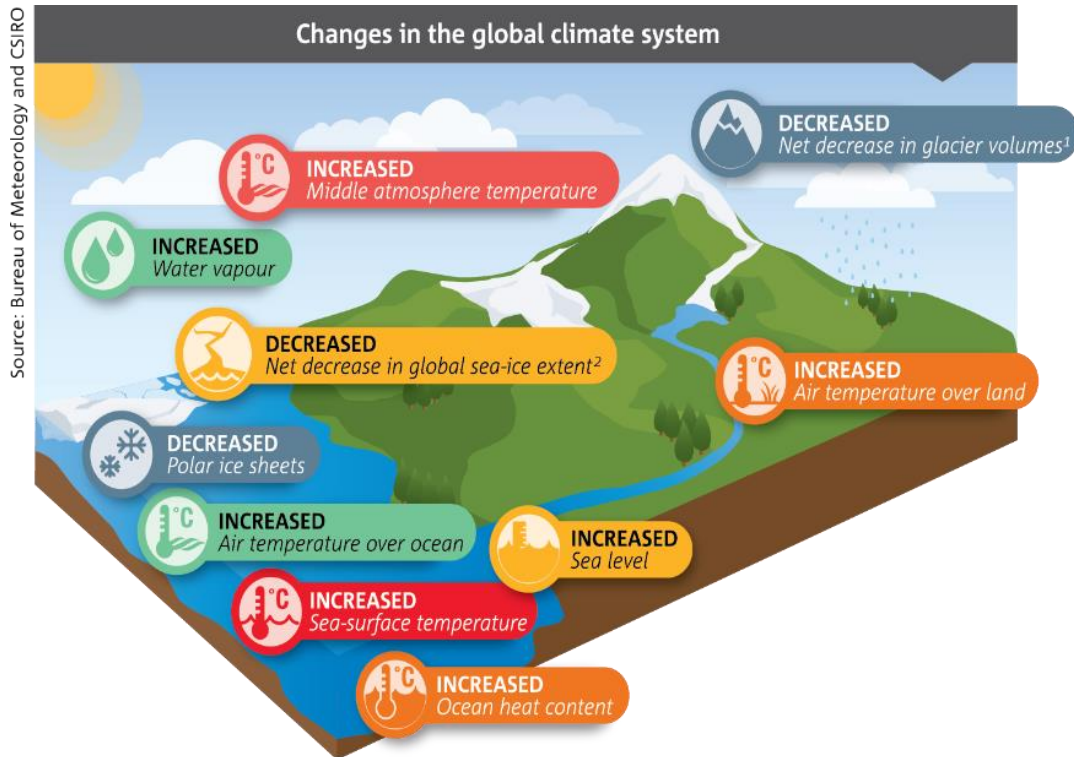
**Dr. Amgad Elmahdi  
Water Sector Lead  
[Aelmahdi@gcfund.org](mailto:Aelmahdi@gcfund.org)**

# GLOBAL FACTS - RISK OF CATASTROPHIC EVENTS INCREASE WITH TEMPERATURE



Source: World Resources Institute, adapted from the IPCC and others. <sup>11</sup>

# Changes in the global climate system

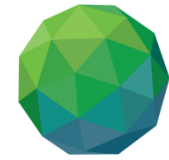


- Global surface temperature increase of  $\sim 1.1^{\circ}\text{C}$
- Frequency and intensity of heavy precipitation has increased since the 1950s
- Flood risks – 3x as many people exposed to the equivalent of a 100-year flood by 2100
- Land under drought projected to double by 2050
- 0.5-3.1 billion more people exposed to water scarcity

# GLOBAL-VIEW

- Globally, only 45% of the population uses a safely managed sanitation service.
- 10% of people migration linked to water deficit
- Urban water supplies are under threat from rising heat stress and water scarcity.
- Rising sea levels could mean 190M people living below the high-water line and 630M people impacted by coastal flooding by 2100.

Access to sanitation is critical to reduce greenhouse gas emissions, adapt to climate change, and increase the resilience of cities.



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## The Global Sanitation Crisis

Unsafe and poor sanitation is a priority to resolve

Globally  
**2.4 billion**

people still live without access to basic sanitation services.

Globally  
**4.5 billion**

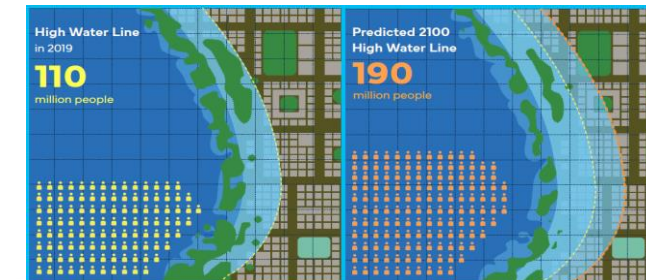
people lack access to safely managed sanitation.



Lack of sanitation causes an estimated

**1.6 million deaths**  
EACH YEAR

**4,500 deaths**  
EVERY DAY



## The Human Right to Water



Between **50 and 100** liters of water per person per day are needed to ensure most basic needs (1)



The water source has to be within **1,000 meters** from home (1)



Water cost should not exceed **3** per cent of household income (2)



Collection time should not exceed **30 minutes** (1)

# Water Crisis

## Evolution of a typical water security crisis



### Global water shortages

3.6 billion people live in risk zones



Source: UNESCO (2010)

1 Sea surface temperatures change

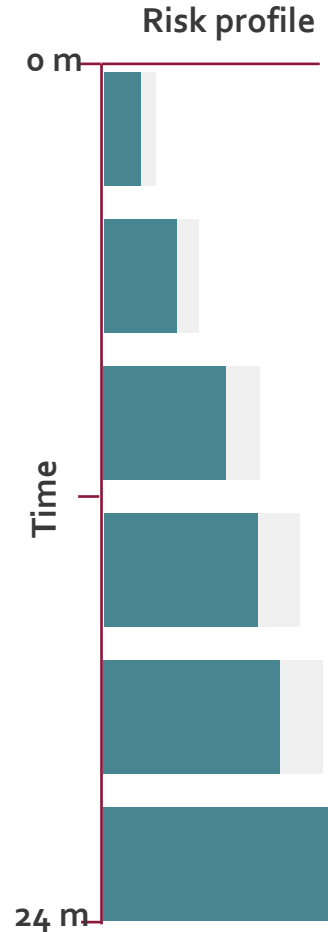
2 Atmospheric circulation changes

3 Rainfall declines, Evaporation increases

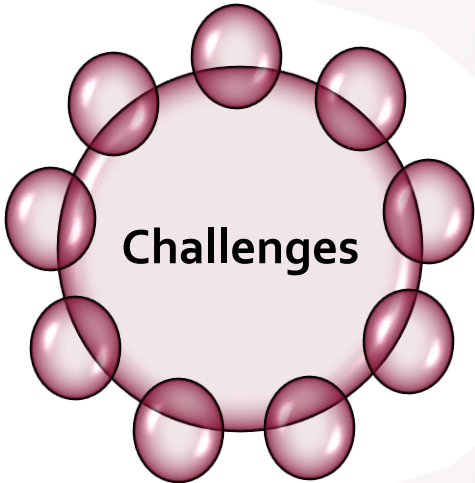
4 Soil Moisture declines, Streamflow decline

5 Water Storage volumes decline

6 Water allocations reduced; Restrictions applied



# REGIONAL CHALLENGES



01

**Limited water for agriculture:** Water scarcity caused by climate change and competition with other activities and sectors - 60% of water in some countries 85% used for agriculture

02

Drought is a major cause of this production variability in countries in CWANA (temperature increase by 4 °C by 2100) leading to 30% yield reduction

03

**Increasing food imports of locally adapted crops:** Dependence on food imports— leaving them vulnerable to sudden price hikes (30-40% of cereal staples are imported)

04

**Population growth:** MENA population annual growth is 1.7% (latest data 2020) - 500 M and is expected to reach 723 M by 2050.

05

**Fragility and conflicts:** numerous countries have experienced declining agricultural production as a result of conflicts

06

**Youth unemployment in the dry areas is the highest in the world**

07

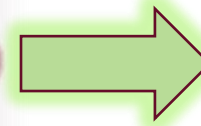
**Gender Inequalities and the Feminization of Agriculture:** While predominantly men migrate, women are left behind

08

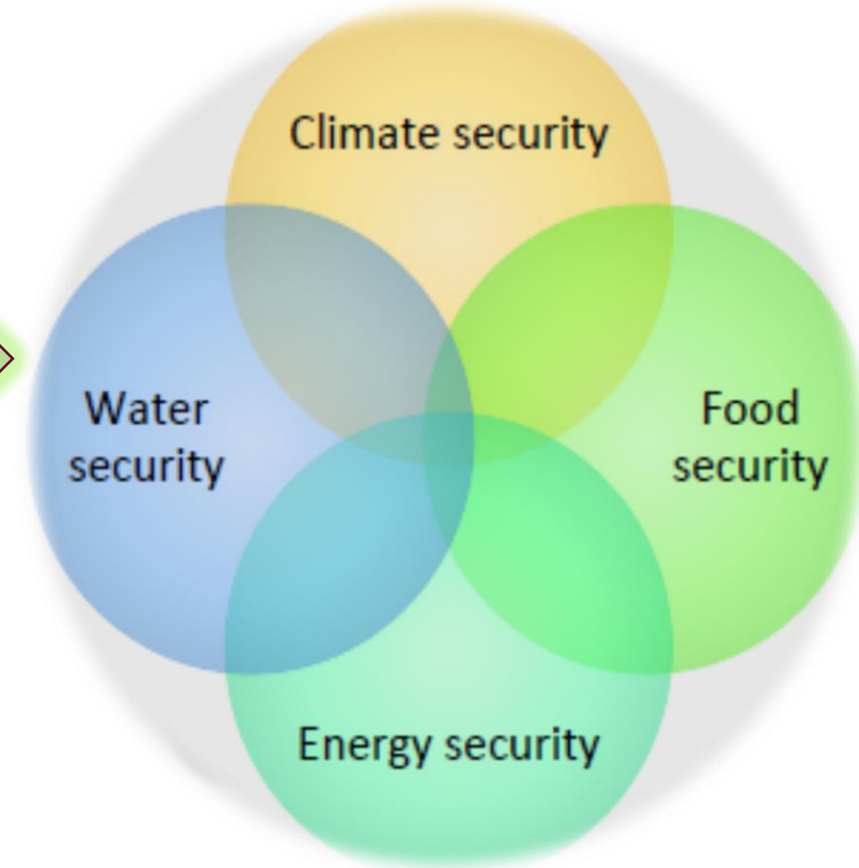
**Weak institutional governance and policy settings:** struggling to access resources to manage risks and are not adequately supported by policies and institutions

09

**Rural-urban divide:** Population is increasing and urbanization is expanding - 60% of the population currently living in rural areas



We only have 8 harvests



**A systemic crisis requires a Systemic approach!!!**

# CLIMATE-RESILIENT WATER MANAGEMENT



- Policy, regulations and institutions Reform and co-design
- Implement a customized multi-level water governance approach
- Apply bottom-up decision making
- Establish inclusion and participation
- Enhance collaboration and cooperative

## Governance and Participation

## Data, Information and knowledge sharing

- Water and Climate information system and monitoring
- Data accessibility and sharing regulations
- Capacity building and learning
- Data validation and accountability

## Climate-Resilient Water Management

- Water Assessment and system analysis
- ICT, IoT, AI tailored and co-design solutions
- Promote dynamic, resilient, and integrated smart management

## Innovations, and technologies

## Water System complexity, infrastructure and convergence with other systems

- Water-ecosystem conservation
- Water system economics, real value and its diversity
- Multi-services and purposes water storages
- Nexus management (beyond water)
- grey-Green infrastructure
- Assess and avoid maladaptive management

# The 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



# GCF INVESTMENT CRITERIA



1. Impact Potential

2. Paradigm shift potential

3. Sustainable development potential

4. Needs of the recipient

5. Country ownership

6. Efficiency and effectiveness

# 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

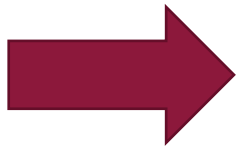


Infrastructure and the built environment



Ecosystems and ecosystem services

Mitigation

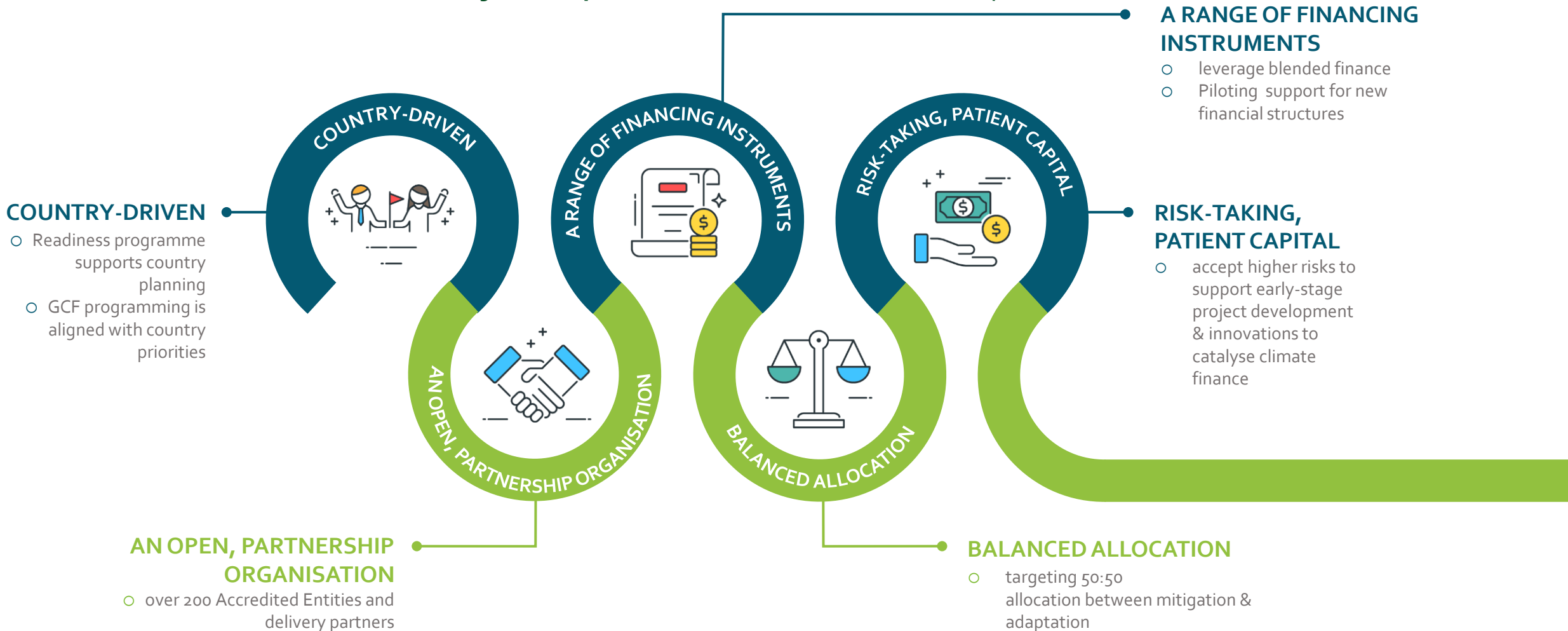


Adaptation

# HOW WE WORK



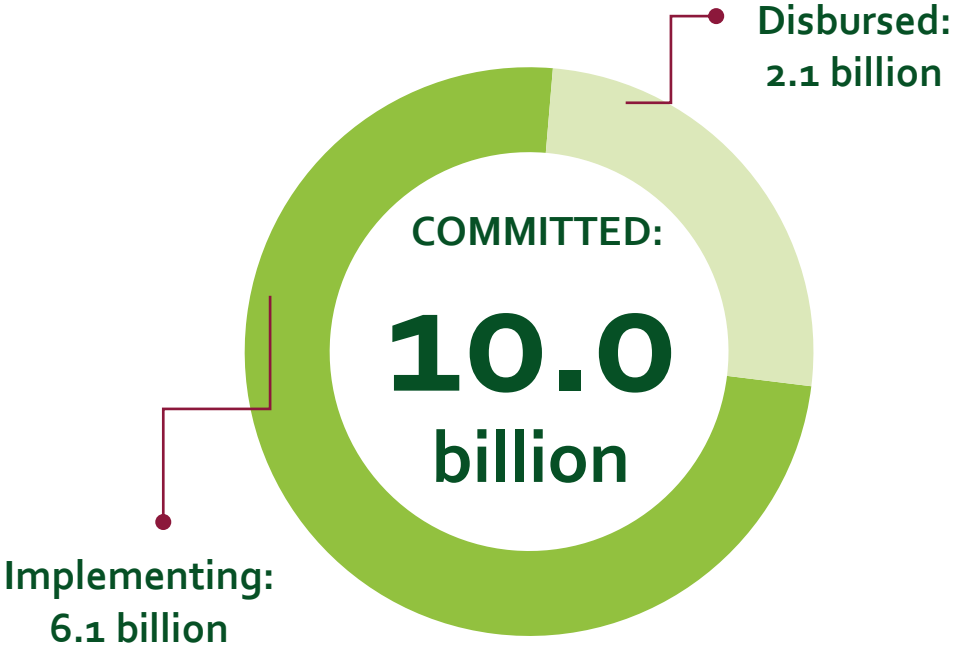
Country Readiness: \$1 M / country / year  
National Adaptation Plan: One-Off \$3 M / country  
Project Preparation Fund: \$1.5 million / Proposal



# GCF IN FIGURES (USD)



## TOTAL GCF PORTFOLIO COMMITMENT



## WATER PORTFOLIO (12 /2021) Excluding CO-FINANCING:

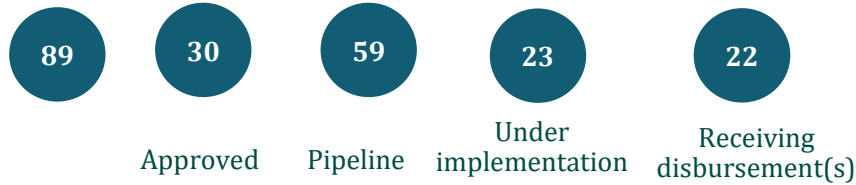
**1,338**   
million

# Water portfolio composition

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



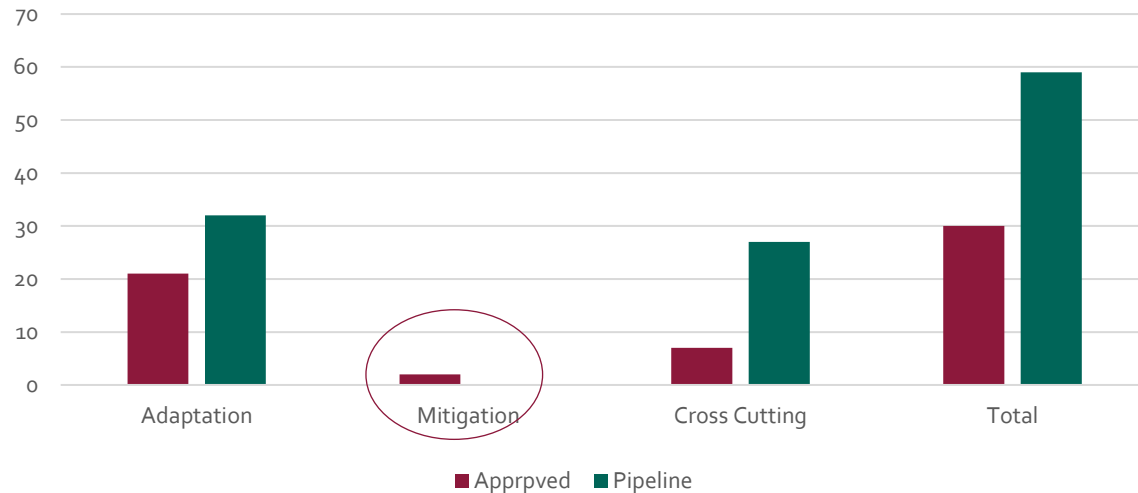
## Total of projects



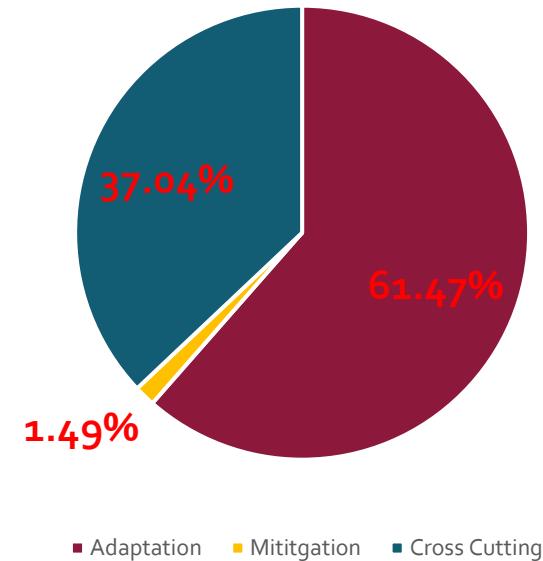
## Expected impacts



## Projects by Theme



## Sum of GCF Financing



# GCF Investment criteria for Water Security Sector



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

# NEW PARADIGM



## Changing minds:

- Move from linear systems of use and dispose to the circular system with zero waste
- Treat water with its economic value.
- water and sanitation is one system, not two separate systems,
- Wastewater is a resource of low quality before it is treated.

## Integration and Connection:

- Water is not a sector but a connector
- The water goal SDG6 is also interconnected with all SDGs.
- Water policies and planning is an integrated action by all actors
- Shift from social production to productive production system
- Shift from centralized to decentralize water management and governance

## Circular economy and Inclusive gender Business model:

- go beyond water supply actions into demand management
- Circular economy and inclusive gender business are offering alleviation and support sustainability for future generations.
- Introduce water recycling into established businesses.
- Shift from more production per drop to more per drop and Kilowatt
- Engaging private sectors in water and agriculture sectors.
- Shift to water as economic goods
- Introduce service delivery cost

***“Wastewater is an untapped resource to close the gap of supply of demand”  
Dr Elmahdi (2020)***

# NEW PARADIGM



## Digital transformation and technology for saving water:

- Allow equal access to water data to improve the ability to respond to growing water challenges and to meet the SDGs.
- Open the shell for data sharing and technologies for data collection
- Seize the potential of the increased availability of water data and big data tools to catalyze change.
- Enhance knowledge of decision making and investors by identifying how to channel multiple streams and sources of data into products

## Localizing SDGs goals:

- implementing global agendas at the local level to achieve local and global goals.
- Achieving the SDG6 relies on a responsive approach to farmers and the community
- Empowering people and end-users
- Shift from state-run institutions to the water user organization
- Expanding more inclusive partnership
- Fostering adaptation

## Planning and sustainability:

- *change the way the water system is managed 'from linear system to circular system'*
- *turning risks into opportunities,*
- *shifting from infrastructure delivery to more resilient services, and*
- *shifting from silo to integrated and holistic policies with integrated actions.*

***“Sustainability is a collective of integrated actions, and can be secured in the MENA region, only if each country plays its role”  
Dr Elmahdi (2021)***



# 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**



# PARADIGM SHIFTING PATHWAYS

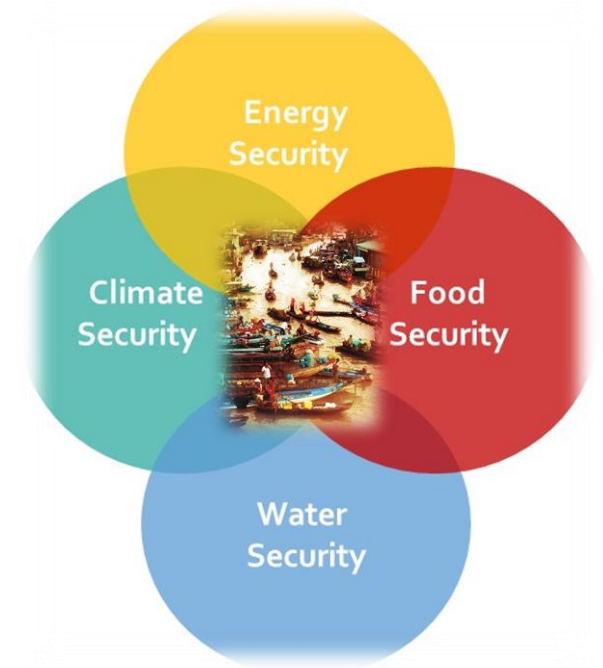
## WATER SECURITY: SDG6 MEETS SDG 13



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



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



# HOW WE DRIVE CHANGE



**01**

Transformational  
planning



**02**

Catalyzing  
innovation



**03**

Mobilizing  
finance

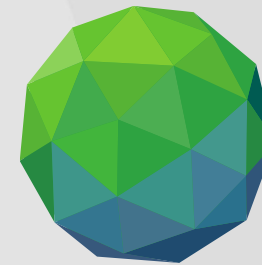


**04**

Coalition and  
Knowledge to  
Scale-up Success



# Thank You



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**Dr. Amgad Elmahdi**

Water Sector Lead

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