World Bank approach to climate change and adaptation in the water sector

Raimund Mair, World Bank

27. september 2021

EUSDR Thematic Event on Climate Change & Water Management

DANUBE REGION strategy
Prosperity through Diversity

MINISTRY OF INVESTMENTS, REGIONAL DEVELOPMENT AND INFORMATIZATION OF THE SLOVAK REPUBLIC

EUROPEAN UNION

MINISTRY OF ENVIRONMENT OF THE SLOVAK REPUBLIC

Global Water Partnership
Central and Eastern Europe

Globally,
Water is crisis

Too much

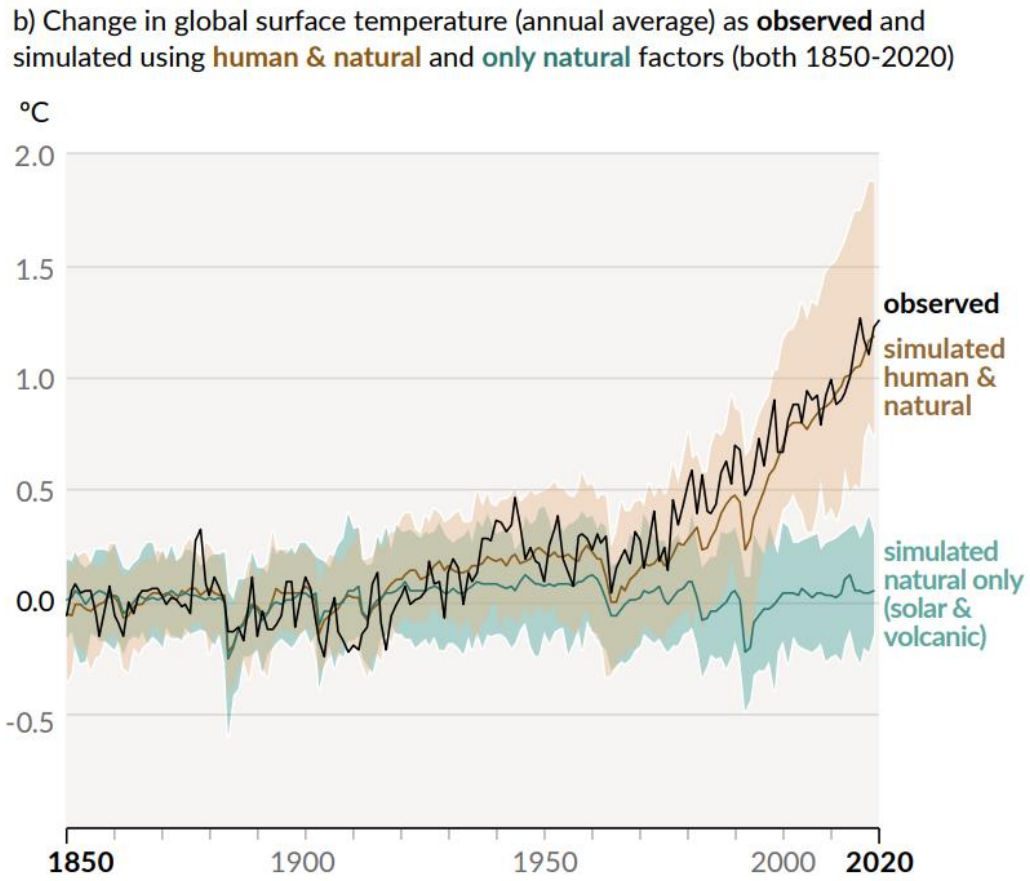
Too polluted

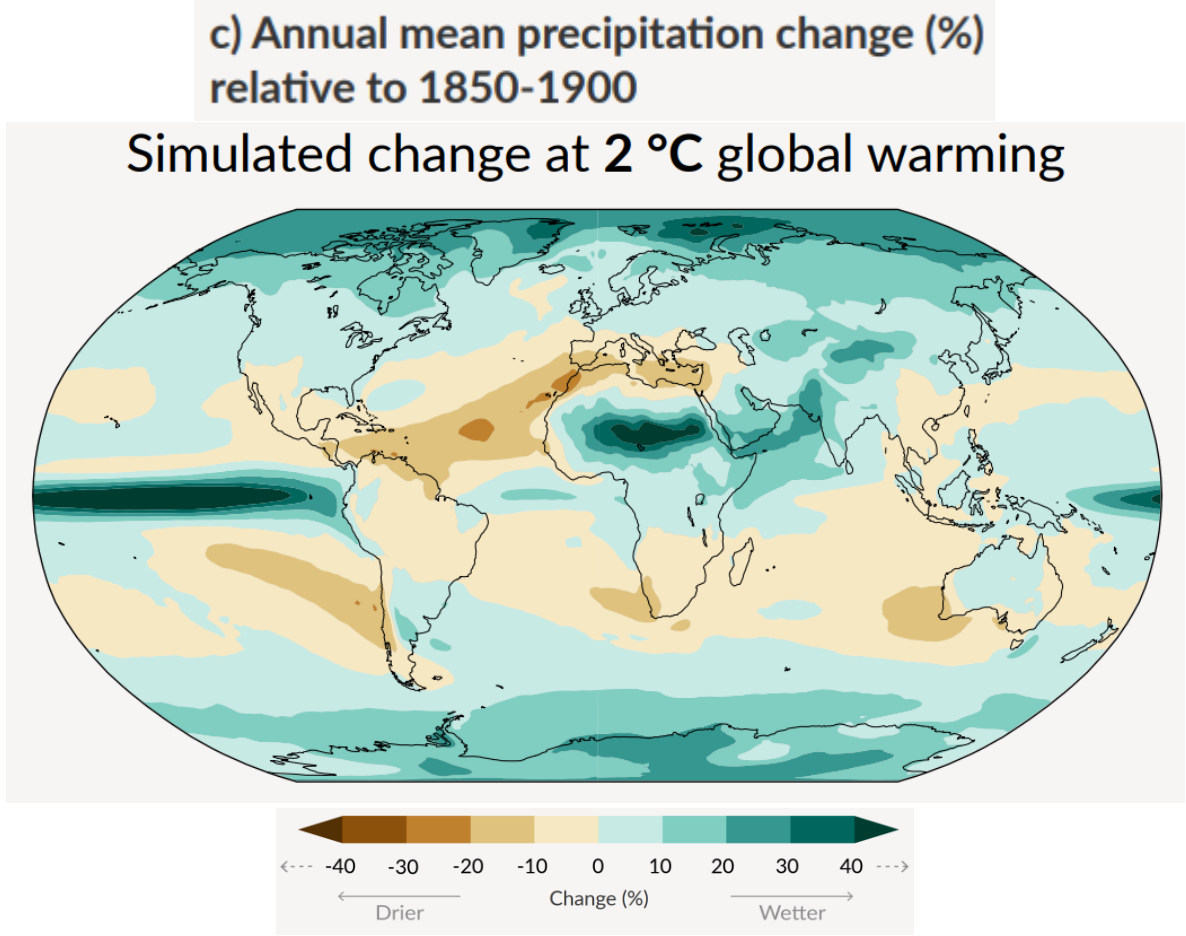
Too little

… and the pressures and extremes are increasing

Change in mean temperature and annual mean precipitation

Source: IPCC Report 2021





Change in heavy precipitation

Source: IPCC Report 2021

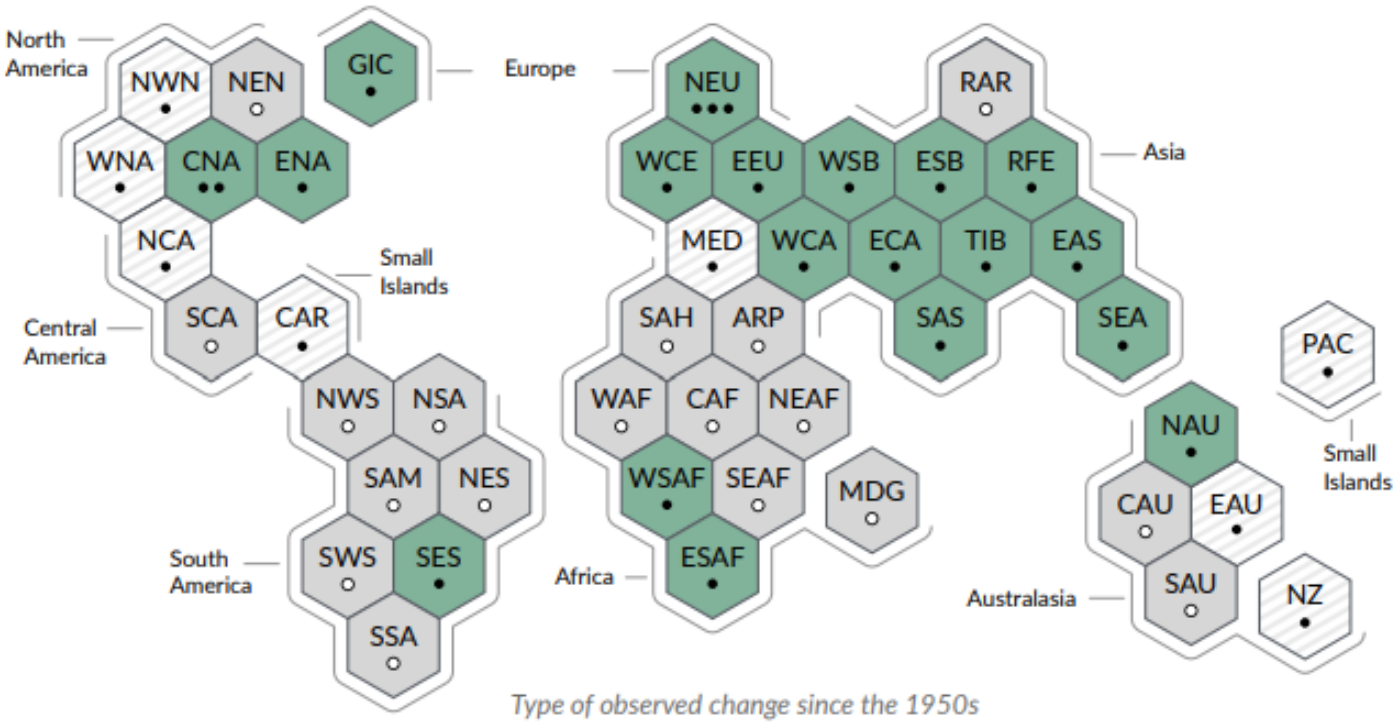
b) Synthesis of assessment of observed change in **heavy precipitation** and confidence in human contribution to the observed changes in the world's regions

Type of observed change in heavy precipitation

- Increase (19)
- Decrease (0)
- Low agreement in the type of change (8)
- Limited data and/or literature (18)

Confidence in human contribution to the observed change

- ●●● High
- ●● Medium
- ● Low due to limited agreement
- ○ Low due to limited evidence

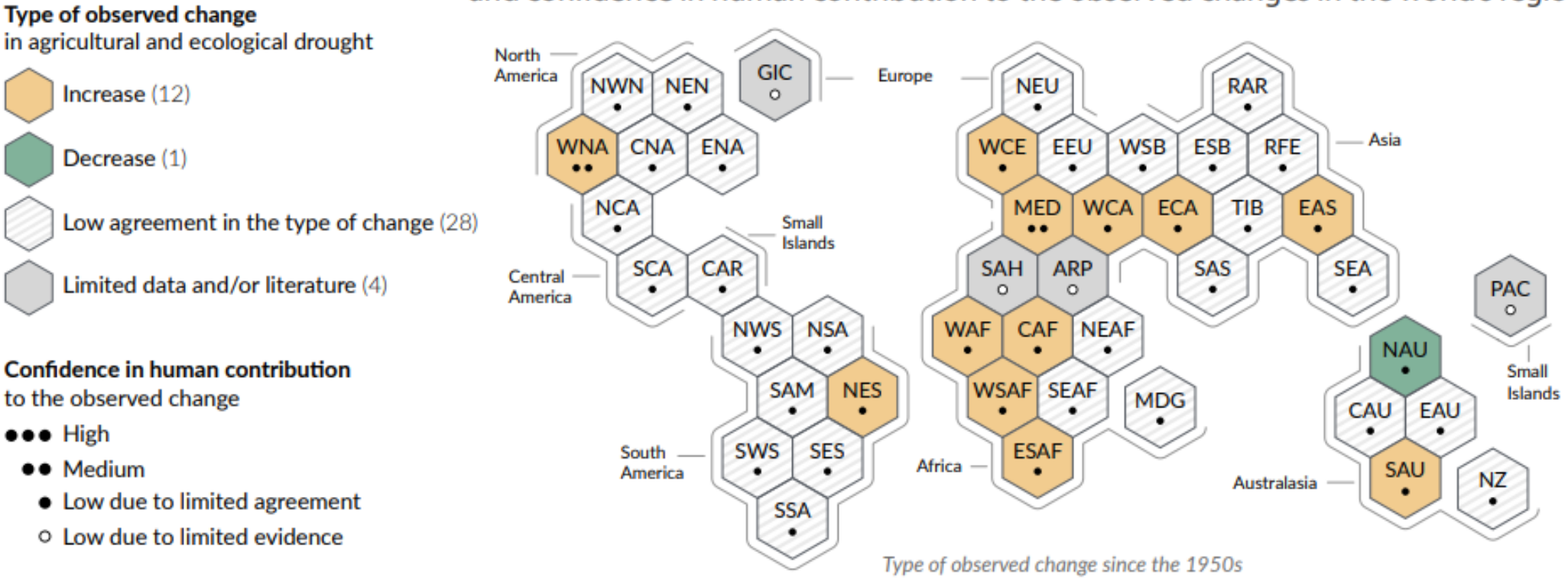


WCE: Western and Central Europe; **EEU**: Eastern Europe; **MED**: Mediterranean

Change in agricultural and ecological drought

Source: IPCC Report 2021

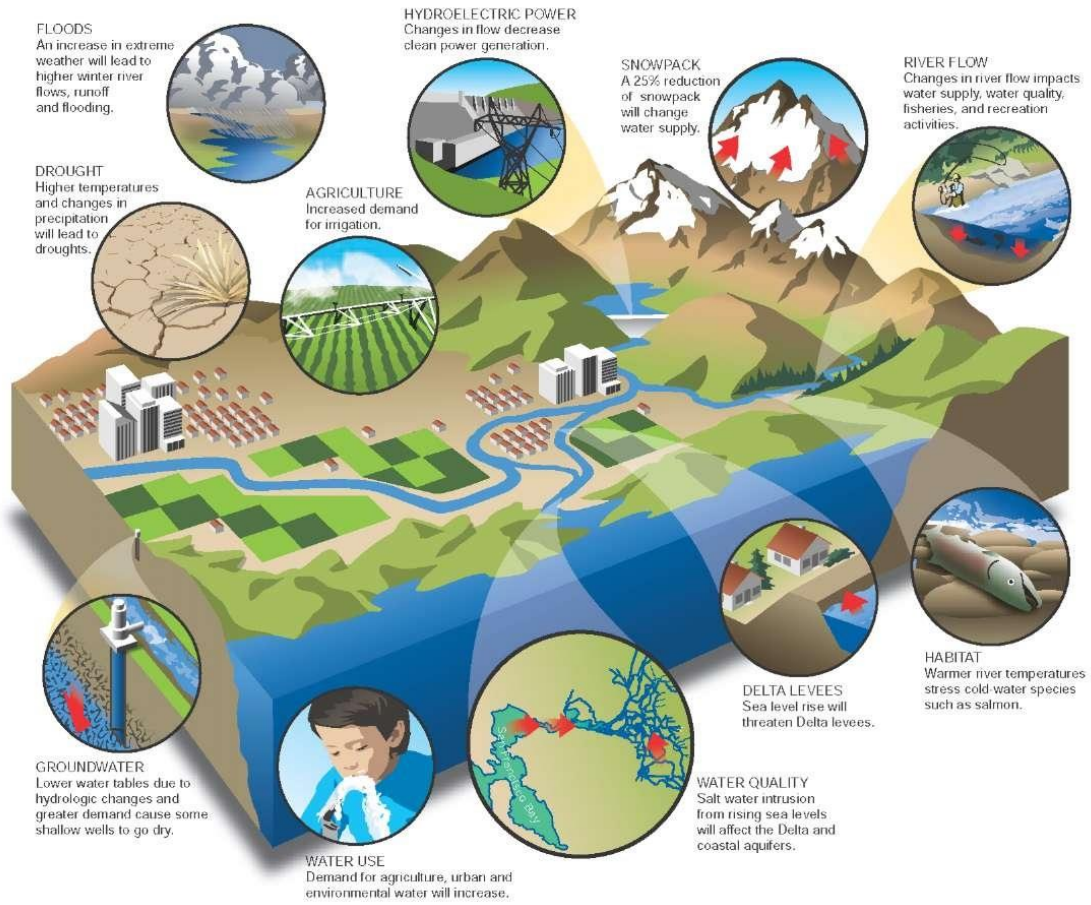
c) Synthesis of assessment of observed change in **agricultural and ecological drought** and confidence in human contribution to the observed changes in the world's regions



WCE: Western and Central Europe; **EEU**: Eastern Europe; **MED**: Mediterranean

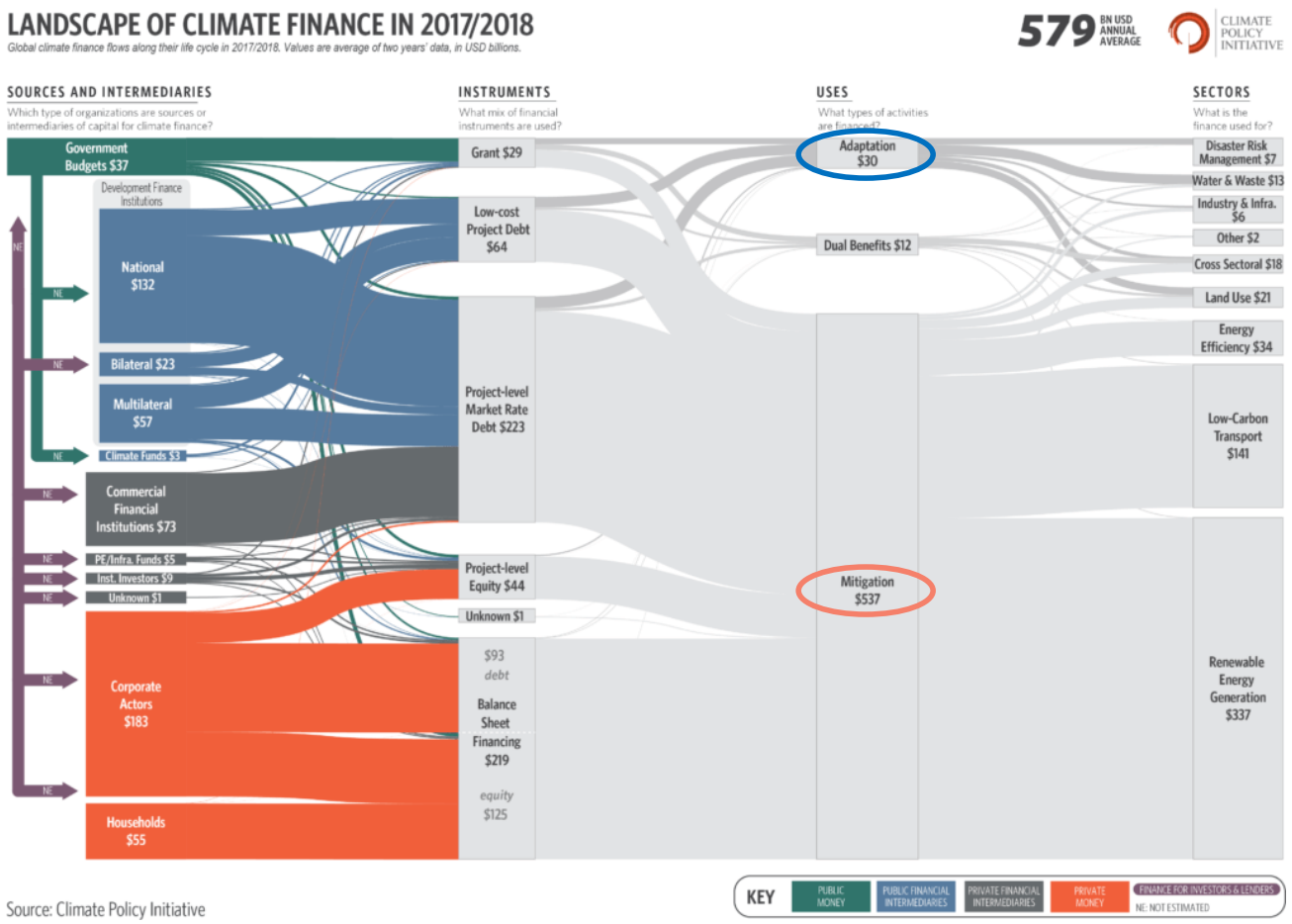
Water is to Adaptation what Energy is to Mitigation

Climate impacts are **channeled through the hydrological cycle**



Landscape of Global Climate Finance

Global climate finance flows along their life cycle in 2017 and 2018. Values are average of two years' data, in USD billions



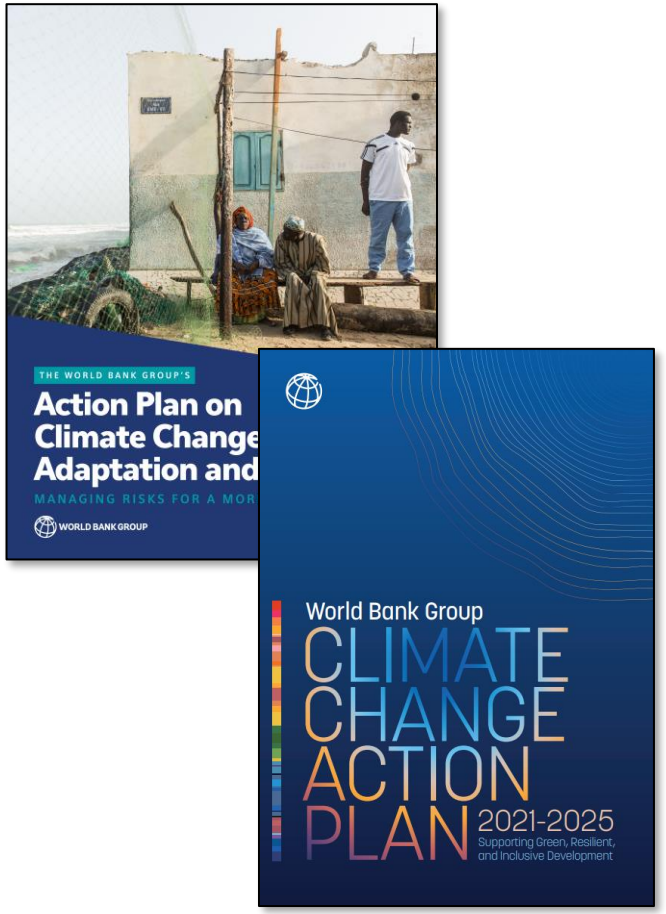
Source: Climate Policy Initiative

- Annual **climate finance flows increasing** over past years
- **Approx. 5 percent** of all climate change investments worldwide went to **adaptation**
- More than **90 percent** went to **mitigation**

World Bank Action Plan on Climate Change

Some key highlights of new Action Plan 2021-2025

- Providing **major increases in climate finance** - commitment to increase delivery to an average of 35% of total World Bank Group financing for climate over the duration of the Plan
- New core diagnostic tool, the **Country Climate and Development Report** (CCDR)
- Boosting support to countries for **implementing and updating Long-Term Strategies** pursuant to the Paris Agreement
- Prioritizing **action in key systems**—energy, agriculture, food, **water**, land, cities, transport



Wold Bank Action Plan on Climate Change

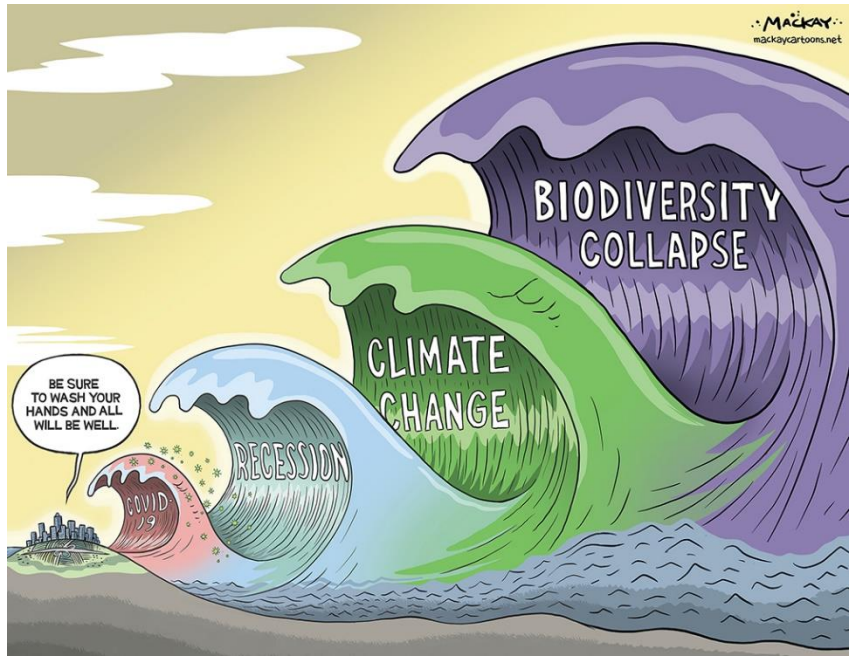
Fostering green, resilient and inclusive development (GRID)

PEOPLE

NATURE

PARTNERS

- Create opportunities for the poor and vulnerable
- Tackle poverty, inequality, and climate change simultaneously
- Scale up interventions to match the urgency of the climate and COVID-19 crises
- Address global challenges through international cooperation
- Tailor to country needs and implement through country programs



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Access points for action? The three 3 I's:

INFORMATION

INSTITUTIONS

INVESTMENT

Typology of interventions to overcome barriers to climate change adaptation (1/2)

A typology of interventions to overcome barriers to climate change adaptation	
BARRIERS	**INTERVENTIONS**
Planning for improved adaptation and resilience	
Needs-driven Adaptation Planning Are country-level climate adaptation needs well assessed?	• Ensure national adaptation planning is evidence-driven and country-owned, whether through the NDCs, NAPs, or Adaptation Communications processes • Adopt multi-stakeholder participatory approaches • Ensure needs of the most vulnerable are defined and met
Climate Data and Information Are decisions guided by relevant climate data and services? Do policy-makers and households have access and sufficient knowledge to use?	• Invest in climate monitoring and forecasting systems, and make climate services available to key stakeholders and the general public • Regularly monitor and synthesize shorter- and longer-term, national and sub-national climate risks and impacts • Launch education or communication campaigns, targeted at all levels
Policies and Institutions Are government institutions prepared to address climate change risks?	• Build institutional capacity for climate risk analysis, planning, and project implementation • Improve cross-ministerial and cross-country coordination • Improve policy effectiveness through transparent monitoring and Compliance
Incentives & behaviors Are incentives in place for appropriate climate adaptation actions?	• Reduce economic inefficiencies caused by poor policies • Internalize externalities (e.g., carbon pricing, risk-based insurance) • Introduce norms and regulations (e.g., land use plans, zoning regulations) • Align taxation system to climate adaptation objectives
Finance Are resources and access to finance too limited?	• Create an adaptation investment plan • Build enabling environments for private sector resilience-building • Provide public support for low-income and vulnerable households, such as cash transfers to protect poor people from regulatory changes, or buy-out programs for houses

Typology of interventions to overcome barriers to climate change adaptation (2/2)

A typology of interventions to overcome barriers to climate change adaptation	
BARRIERS	**INTERVENTIONS**
Implementation	
Decision-making and actions What actions should be implemented ? Is there national / local capacity to implement suggested actions?	• Adopt multi-stakeholder iterative decision-making • Choose robust and flexible solutions • Build necessary capacity, particularly at the local level, to implement projects and absorb funds for adaptation • Regularly revise policies through adaptive learning • Ensure ability to continue identifying evolving adaptation priorities with changing risks • Manage negative side-effects through creation of compensation schemes

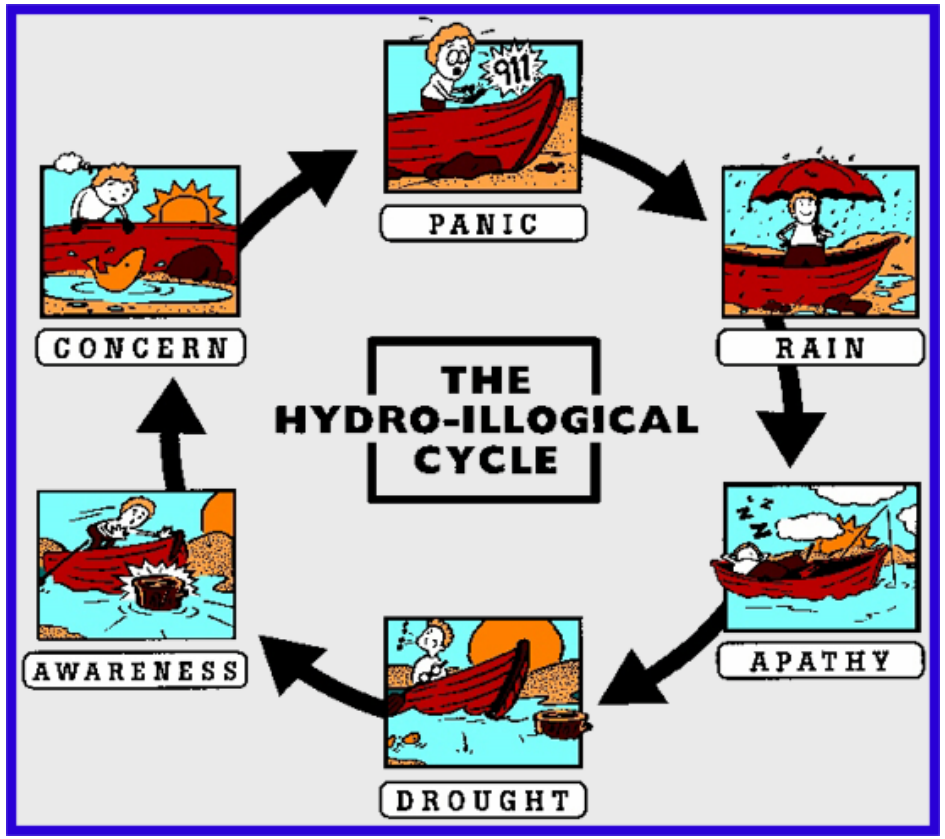
Need of shift
From Crisis Management to Risk Management

Crisis Management

- Post-impact
- Expensive
- Repeats past mistakes
- Treats symptoms
- Rewards poor management
- Increases reliance on governments and donors

Risk Management

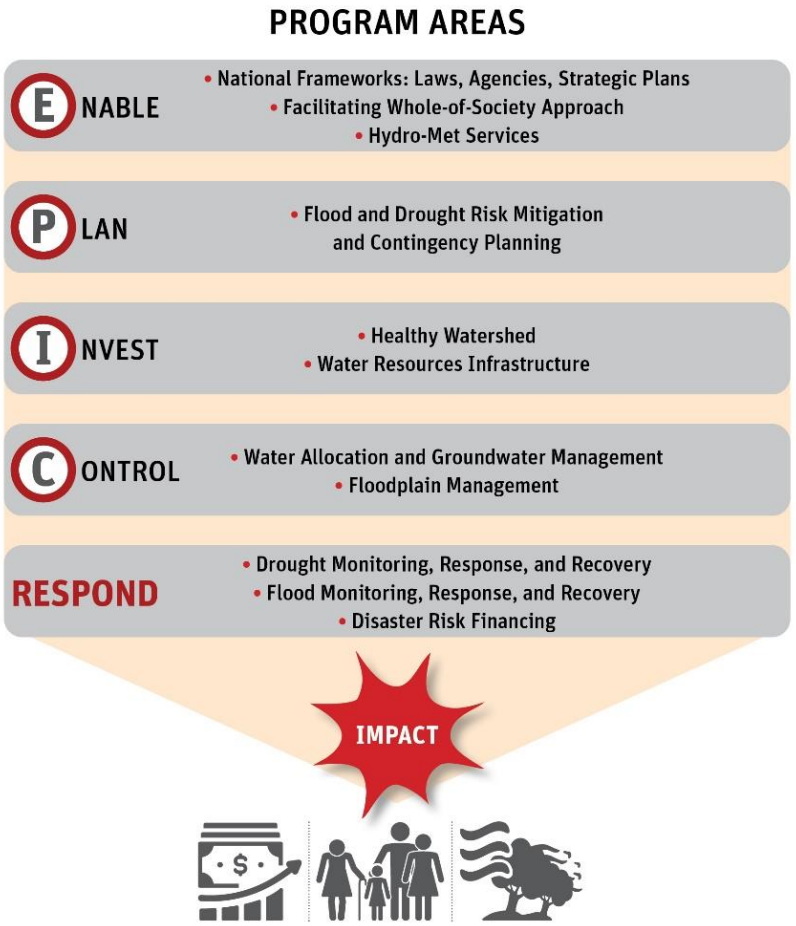
- Pre-impact
- Identifies and treats root causes of vulnerability
- Mitigates and reduces risk
- Short-term: Early warning systems and networks
- Long-term: Institutional capacity, structural adjustments
- Builds self-reliance and reduces vulnerability

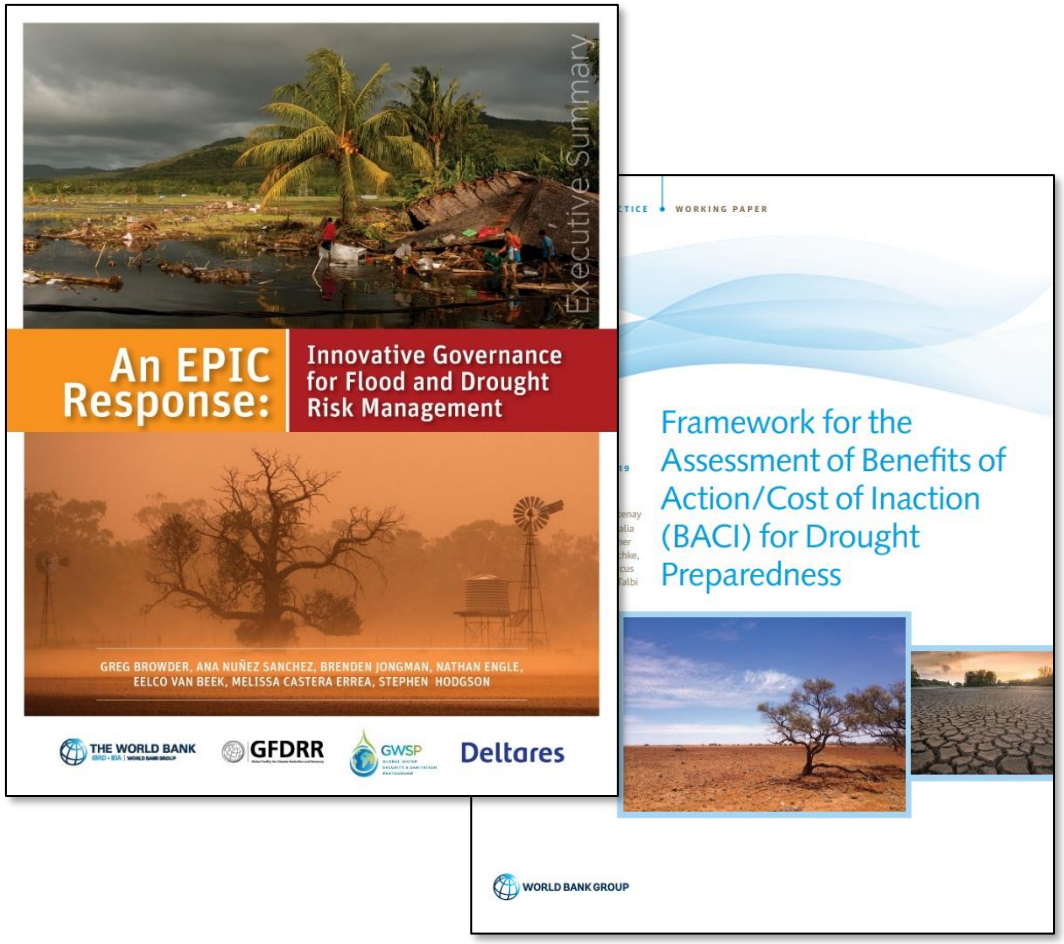


Don Wilhite, University of Nebraska, Lincoln

Example

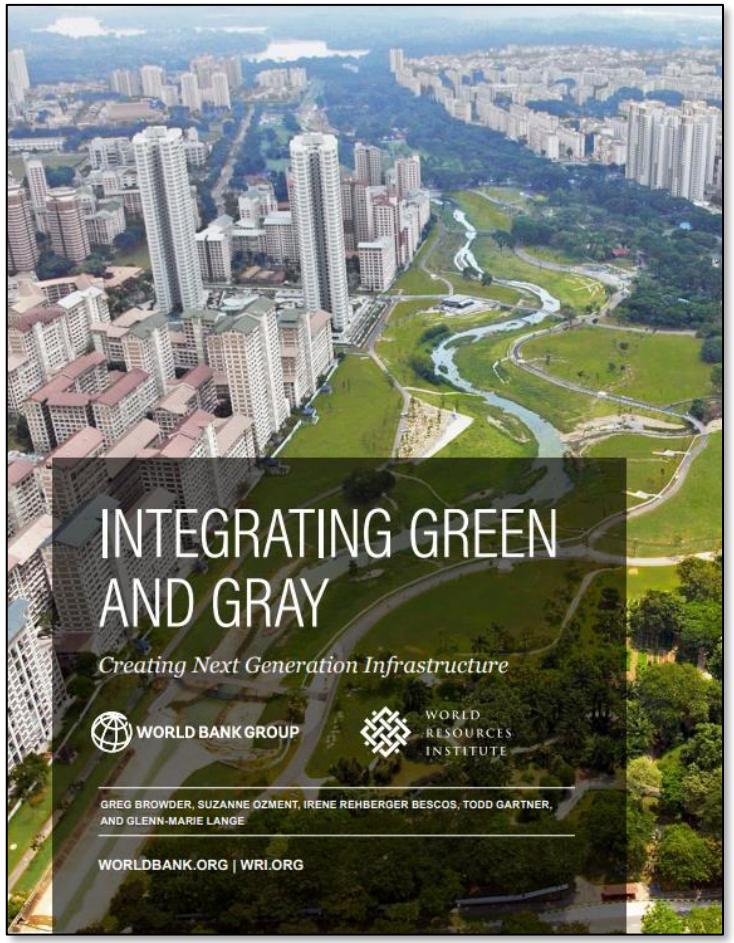
Innovative governance for flood and drought risk management





Example

Green infrastructure



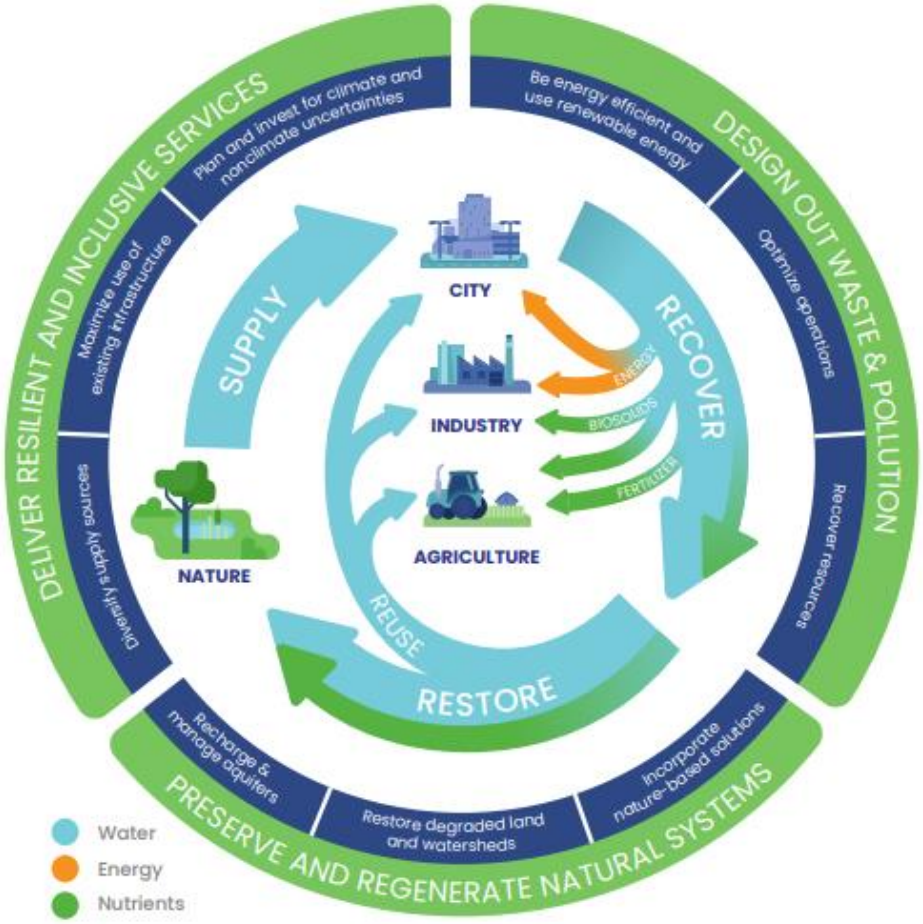
Service	Gray infrastructure components	Examples of green infrastructure components and theit function
Water supply and sanitation	Reservoirs, treatment plants, pipe network	**Watersheds:** Improve source water quality and thereby reduce treatment requirements **Wetlands:** Filter wastewater effluent and thereby reduce wastewater treatment requirements
Hydropower	Reservoirs and power plants	**Watersheds:** Reduce sediment inflows and extend life of reservoirs and power plants
Coastal flood protection	Embankments, groynes, sluice gates	**Mangrove forests:** Decrease wave energy and storm surges and thereby reduce embankment requirements
Urban flood protection	Strom drains, pumps, outfalls	**Urban flood retention areas:** Store stormwater and thereby reduce drain and pump requirements
River flood protection	Embankments, sluice gates, pump stations	**River floodplains:** Store flood waters and thereby reduce embankment requirements
Agriculture irrigation and drainage	Barrages/dams, irrigation and drainage canals	**Agriculture soils:** Increase soil water storage capacity and reduce irrigation requirements

Example water utility sector

Water in Circular Economy and Resilience (WICER)

Applying WICER Framework

- Helps to avoid being locked into linear and inefficient systems
- Provides not only environmental benefits but also social, economic, and financial
- Help water utilities attract the private sector and improve access to various forms of finance
- Brings out importance of cross-sector linkages and multi-scale issues of water
- Need for proper policy, institutional and regulatory framework



Key messages

- **Water is key** for climate change adaptation but also offers potential in terms of mitigation
- Consider climate change **and socio-economic development patterns**
- Need of paradigm shift **from crisis management to risk management**
- Mainstreamed, whole-of-government **programmatic approach** needed covering different institutions and sectors, public and private
- Points for action: The three I's: **Information - Institutions – Investments**
- **World Bank** to provide support with global knowledge activities and at national/regional level, e.g. via **Danube Water Program**

For more information, please consult the World Bank website!

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Thank you for your attention!