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CLIMATE COMMISSION**  
TOWARDS A JUST TRANSITION

# **The 2030 to 2035 NDC Update Capacity Building Session**

Caveat: These slides do not represent recommendations of the PCC. They are slides intended to explain what an NDC is, why it is important, and how we might structure the logic for the NDC update for the period 2030 to 2035.

# AGENDA

No.	Item	Presenter
1.	Registration and refreshments	• All
1.	Welcome and opening	• PCC
1.	NDC overview	• PCC
1.	Adaptation Overview and Discussion	• PCC
1.	Facilitated Discussion	• All
1.	Mitigation Overview	• PCC
1.	Tea/Coffee Break	
1.	Facilitated Discussion - Mitigation	• All
1.	Overview of Means of Implementation (Climate Finance and Innovation)	• PCC
1.	Facilitated Discussion	• All
1.	Next Steps and Closure	• PCC
	Lunch	



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# The adaptation component of an NDC

# Introduction to Climate Change & Adaptation

"A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere, and which is in addition to natural climate variability observed over comparable time periods."

*UNFCCC*

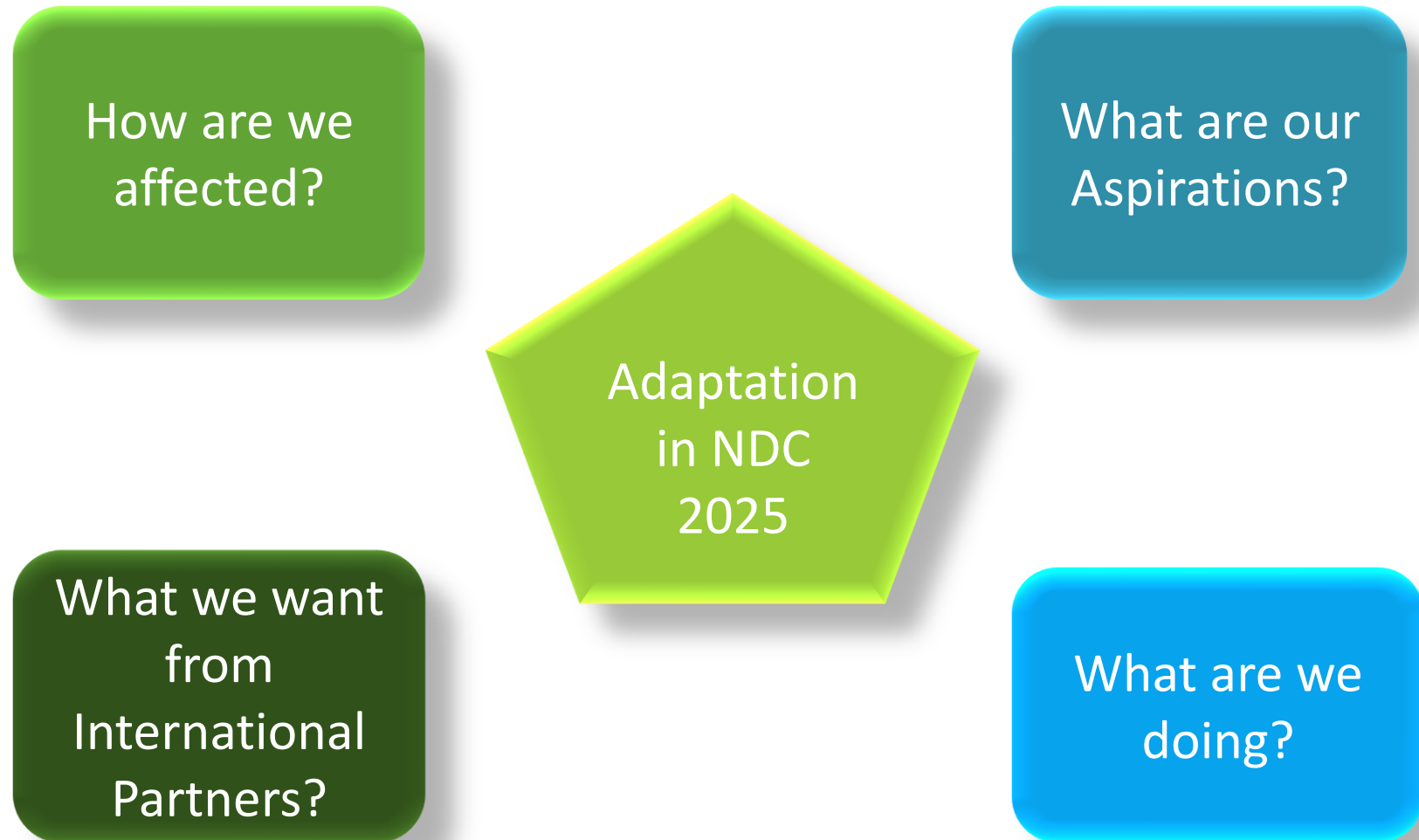
"Adaptation refers to changes in processes, practices and structures to moderate potential damage or to take advantage of opportunities associated with climate change."

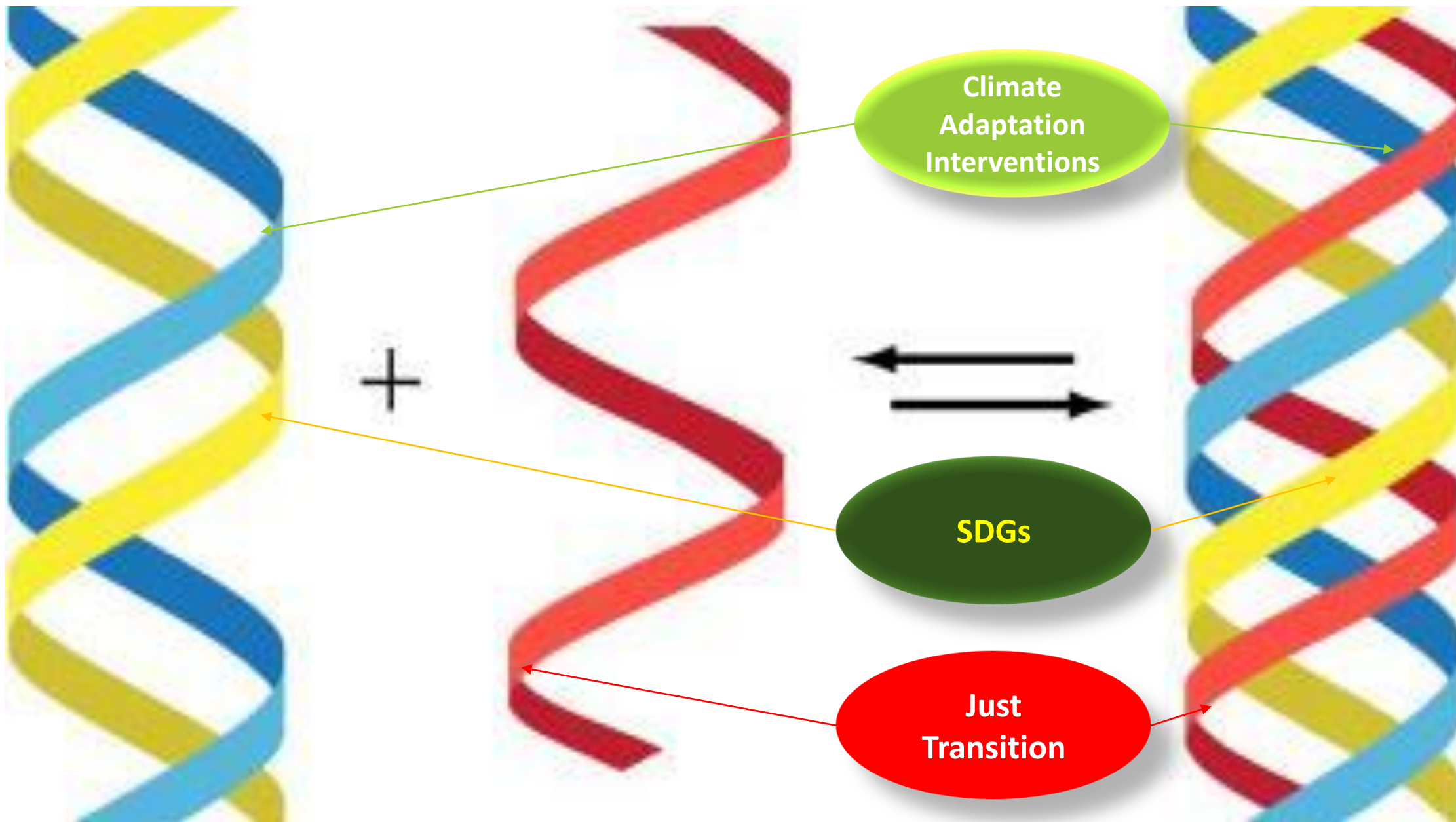
*CityAdapt.com*

# Contents

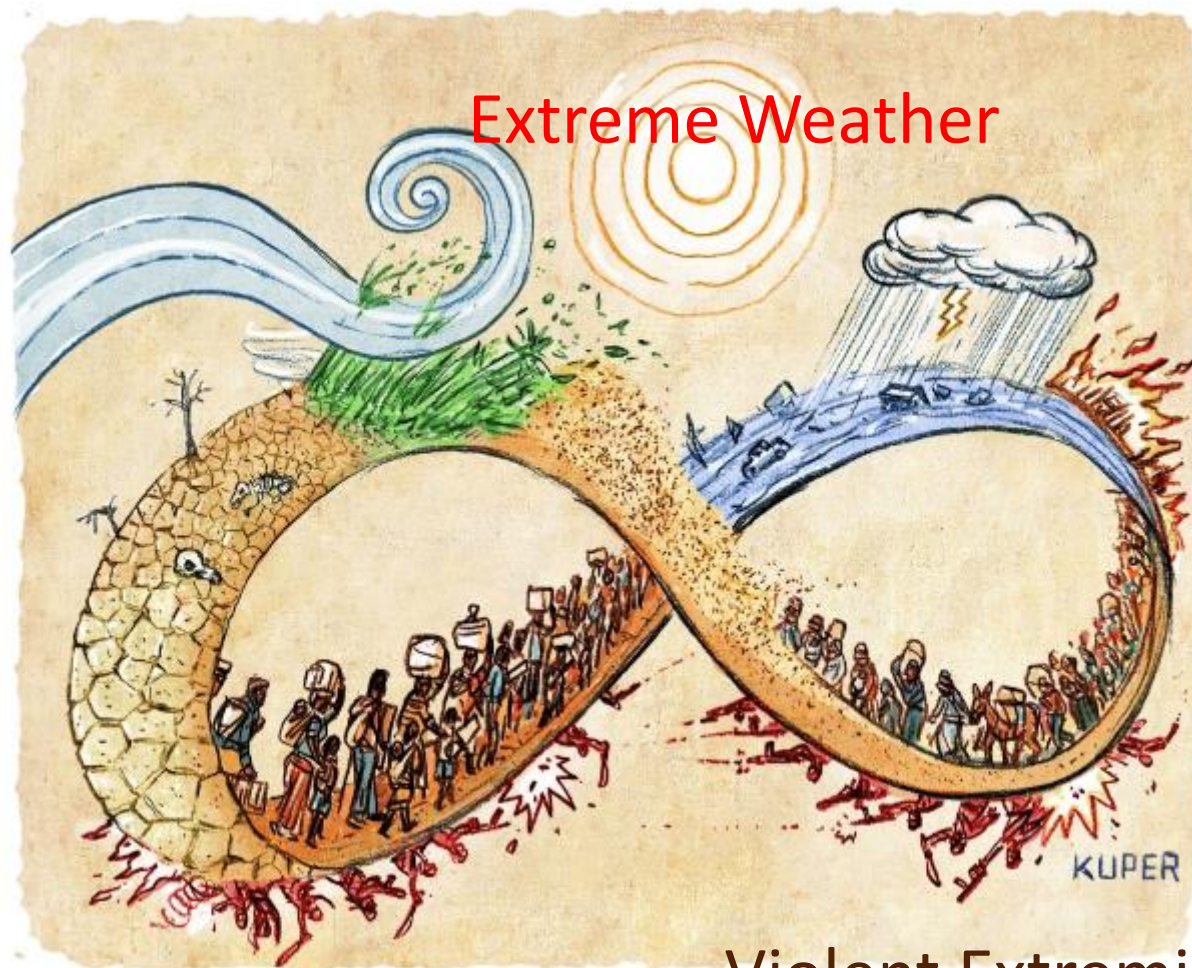
- Introduction to climate change & adaptation
- NDC's Paris to Belem
- Impacts of Global Warming
- Global Scenario Projections
- Outcomes of Shared Socio-Economic Pathway Scenarios
- Local Science & Impacts
- Physical impacts
- Window of opportunity
- Summary of last A-NDC Submission
- NDC Priorities as aligned to the Climate Change Act
- Role of stakeholders

# What does South Africa want to communicate on Adaptation?





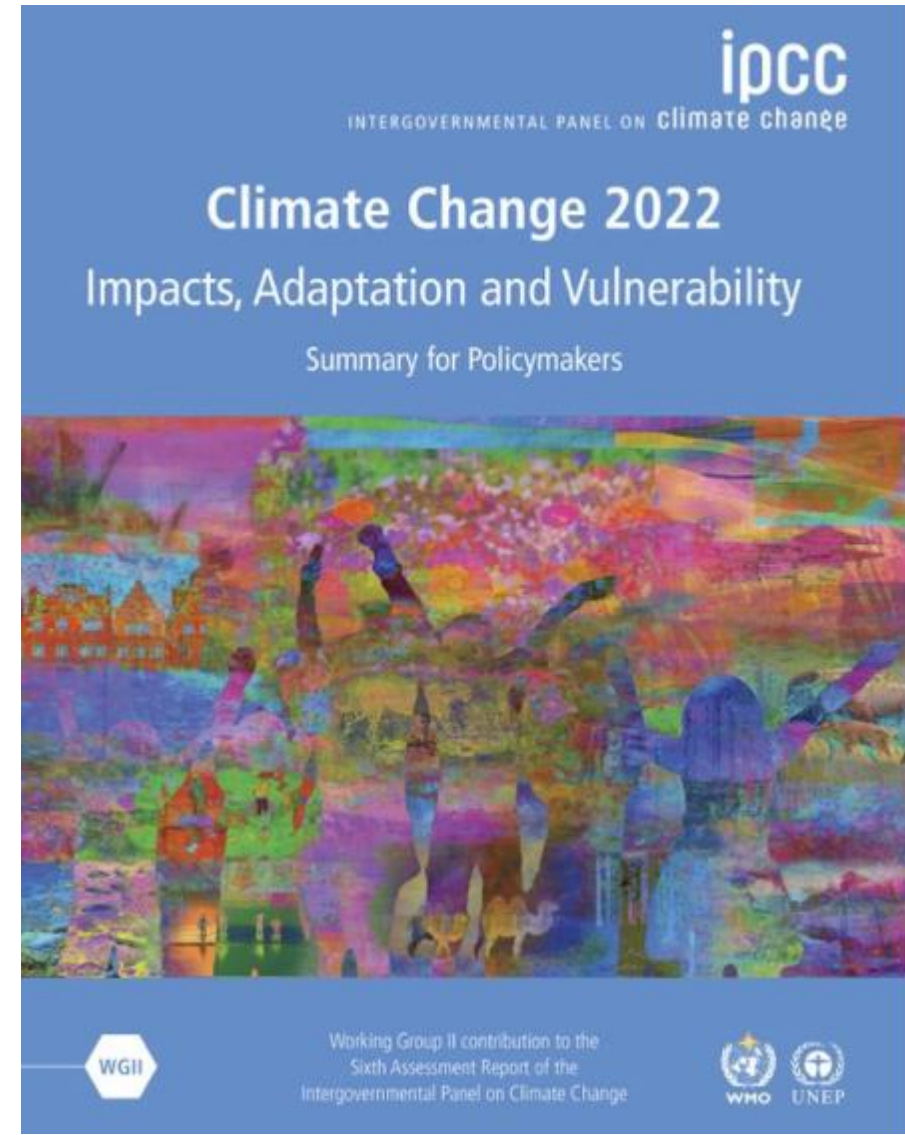
# IPCC 6 Assessment Report



Extreme Weather

ICRC Report

Violent Extremism



# Dimensions of the South African Climate Challenge



Economic



Social Fabric

Environmental

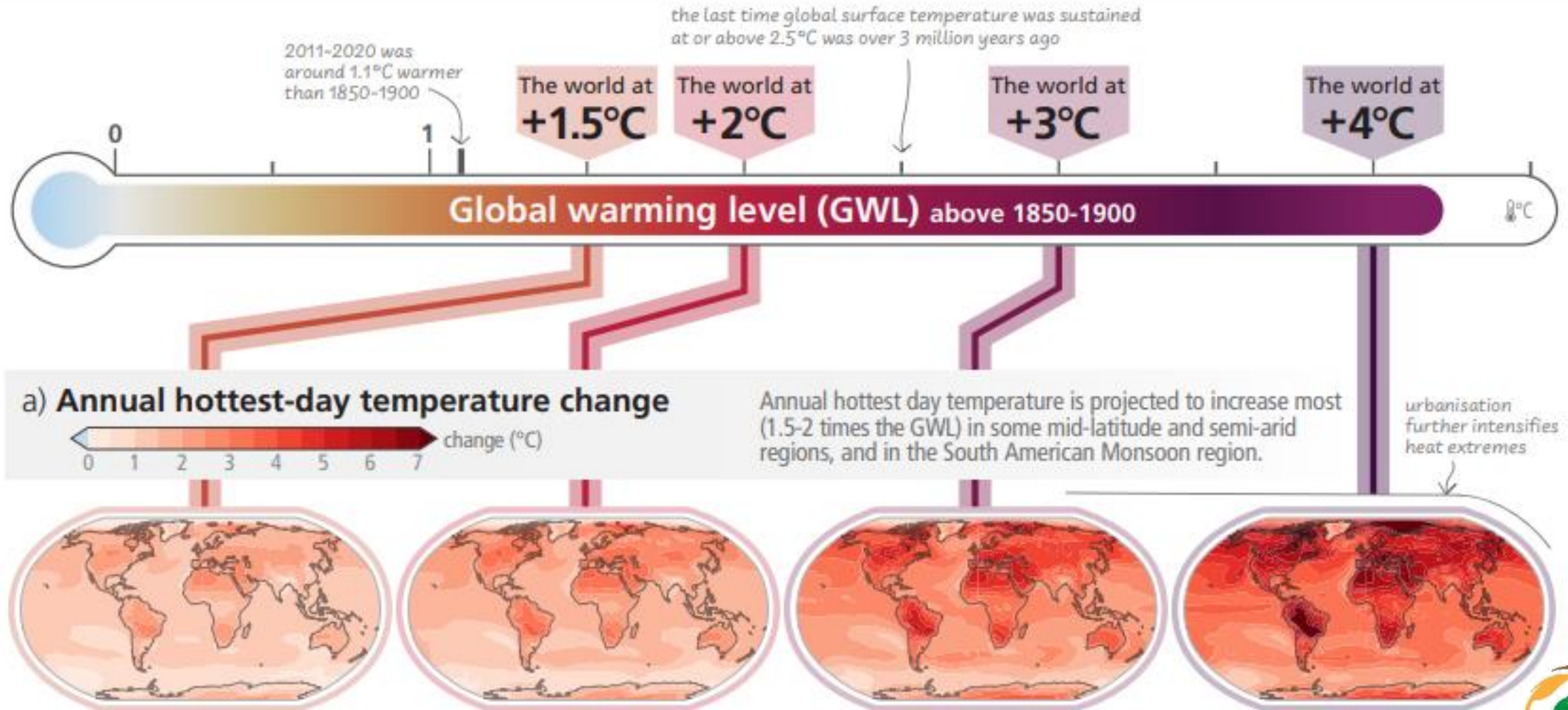


Security



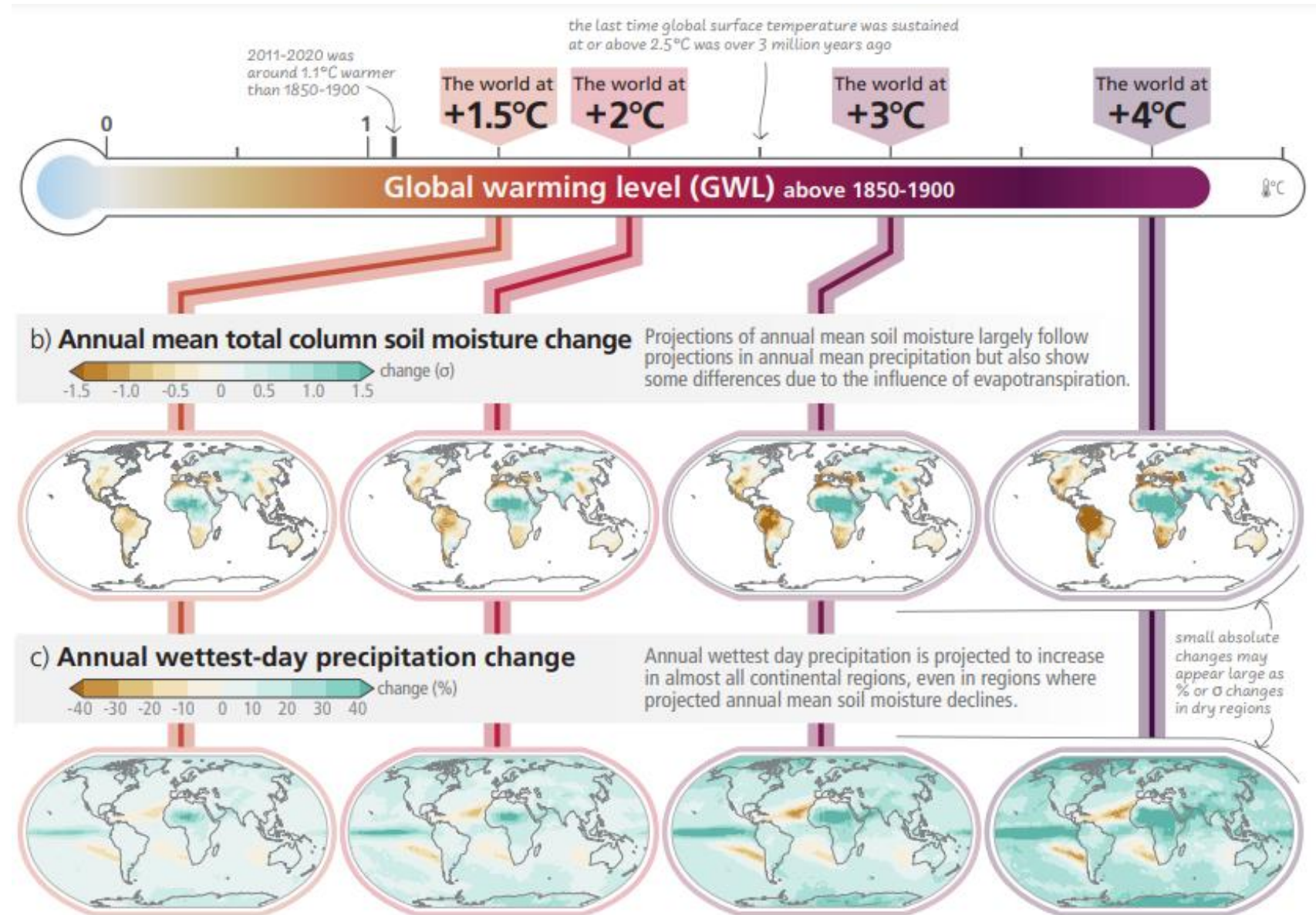
Climate Change

# Impacts of Global Warming – Temperature



(IPCC, 2022)

# Impacts of Global warming – Soil moisture & precipitation



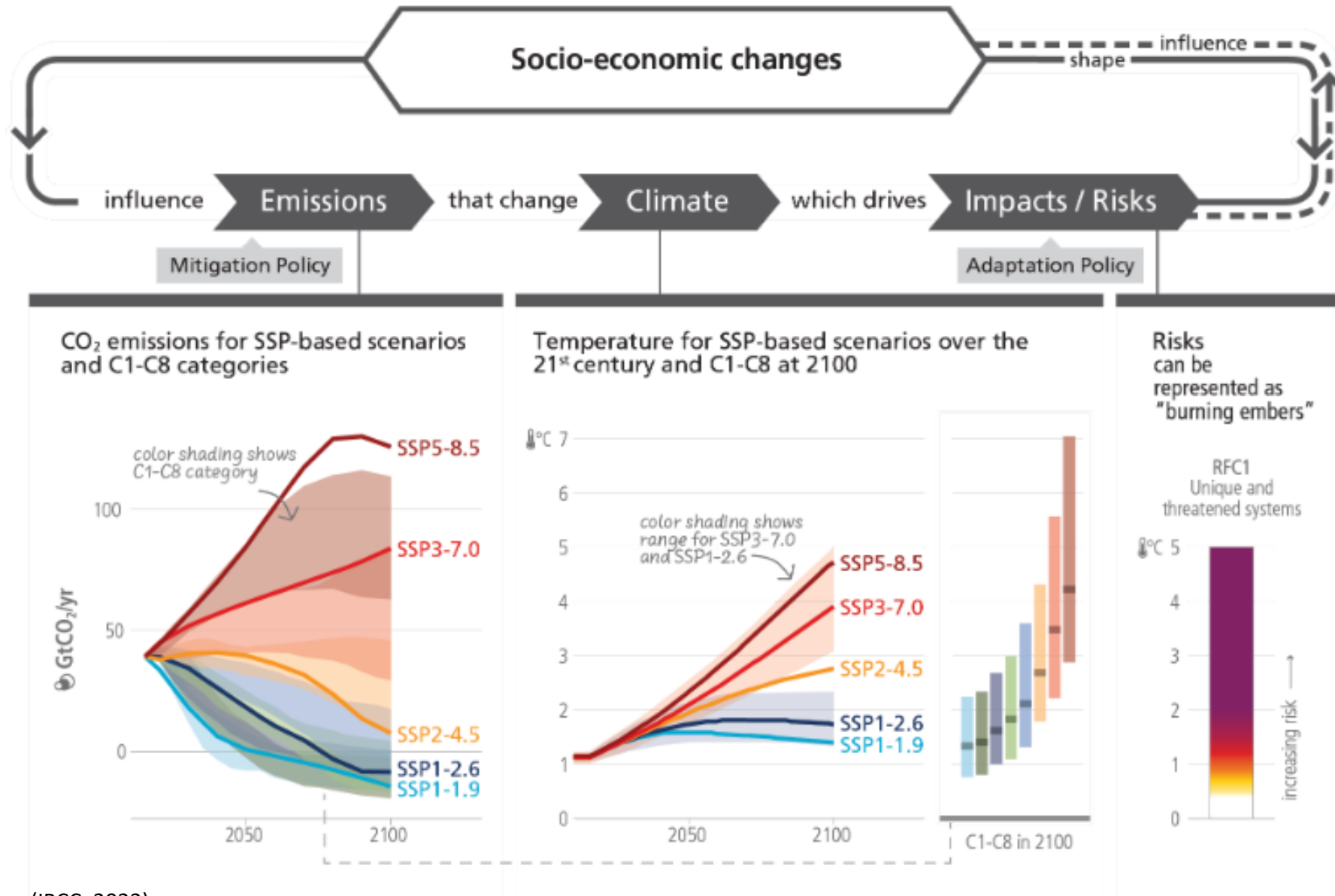
(IPCC, 2022)

# Impacts of Global warming – GDP

	Temperature rise scenario, by mid-century			
	Well-below 2°C increase	2.0°C increase	2.6°C increase	3.2°C increase
	<i>Paris target</i>	<i>The likely range of global temperature gains</i>		<i>Severe case</i>
Simulating for economic loss impacts from rising temperatures in % GDP, relative to a world without climate change (0°C)				
World	−4.2%	−11.0%	−13.9%	−18.1%
OECD	−3.1%	−7.6%	−8.1%	−10.6%
North America	−3.1%	−6.9%	−7.4%	−9.5%
South America	−4.1%	−10.8%	−13.0%	−17.0%
Europe	−2.8%	−7.7%	−8.0%	−10.5%
Middle East & Africa	−4.7%	−14.0%	−21.5%	−27.6%
Asia	−5.5%	−14.9%	−20.4%	−26.5%
Advanced Asia	−3.3%	−9.5%	−11.7%	−15.4%
ASEAN	−4.2%	−17.0%	−29.0%	−37.4%
Oceania	−4.3%	−11.2%	−12.3%	−16.3%

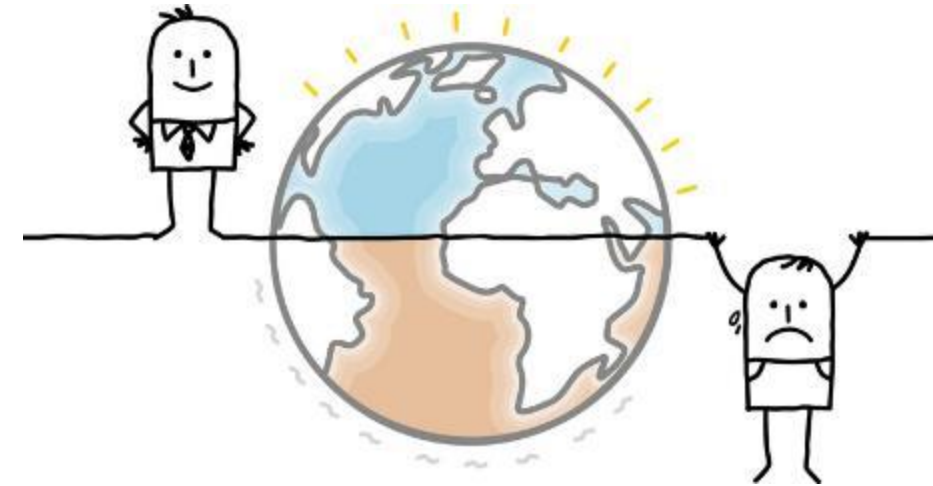
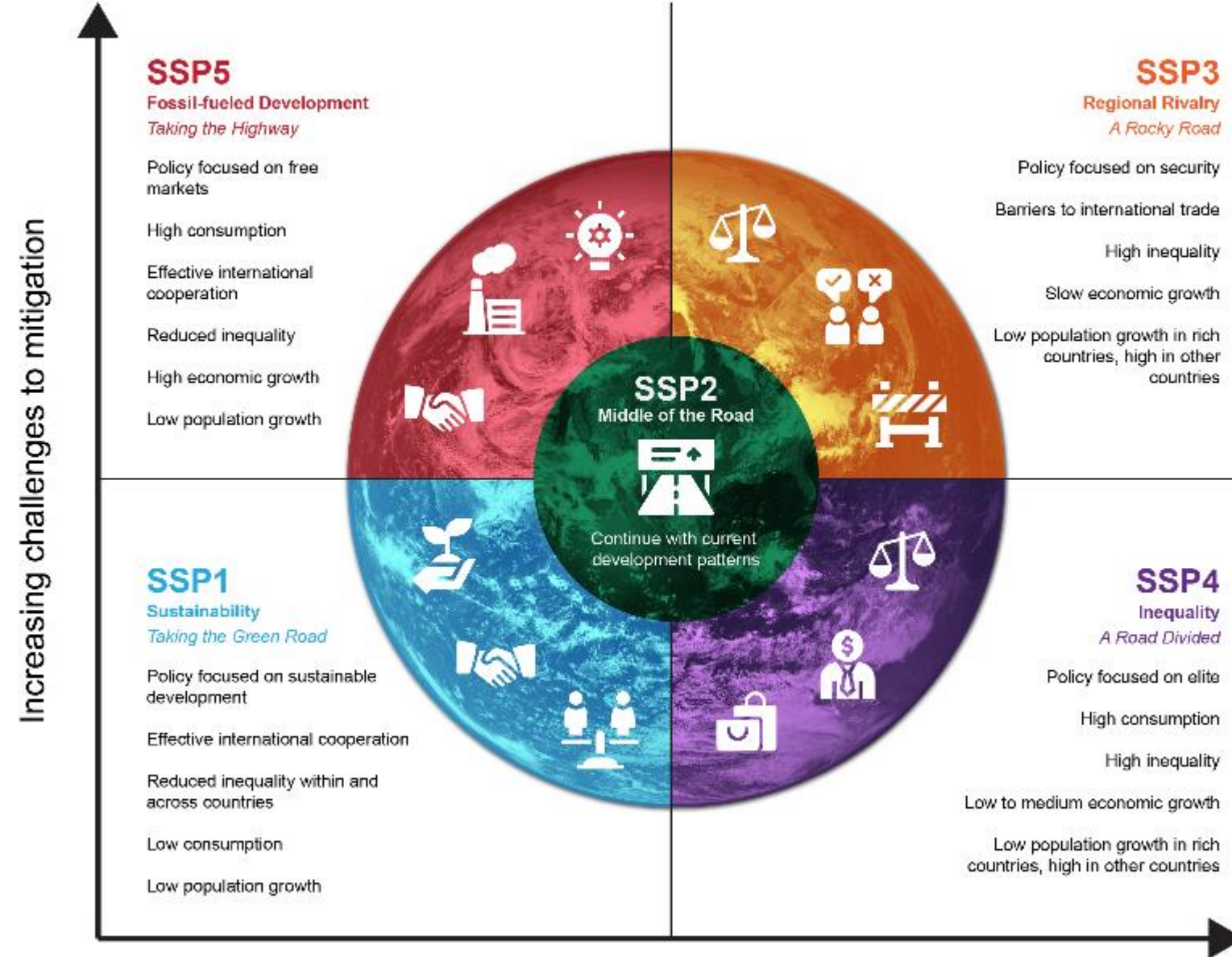
Global temperature rises will negatively impact GDP in all regions by mid-century. Image: Swiss Re Institute: The economics of climate change.

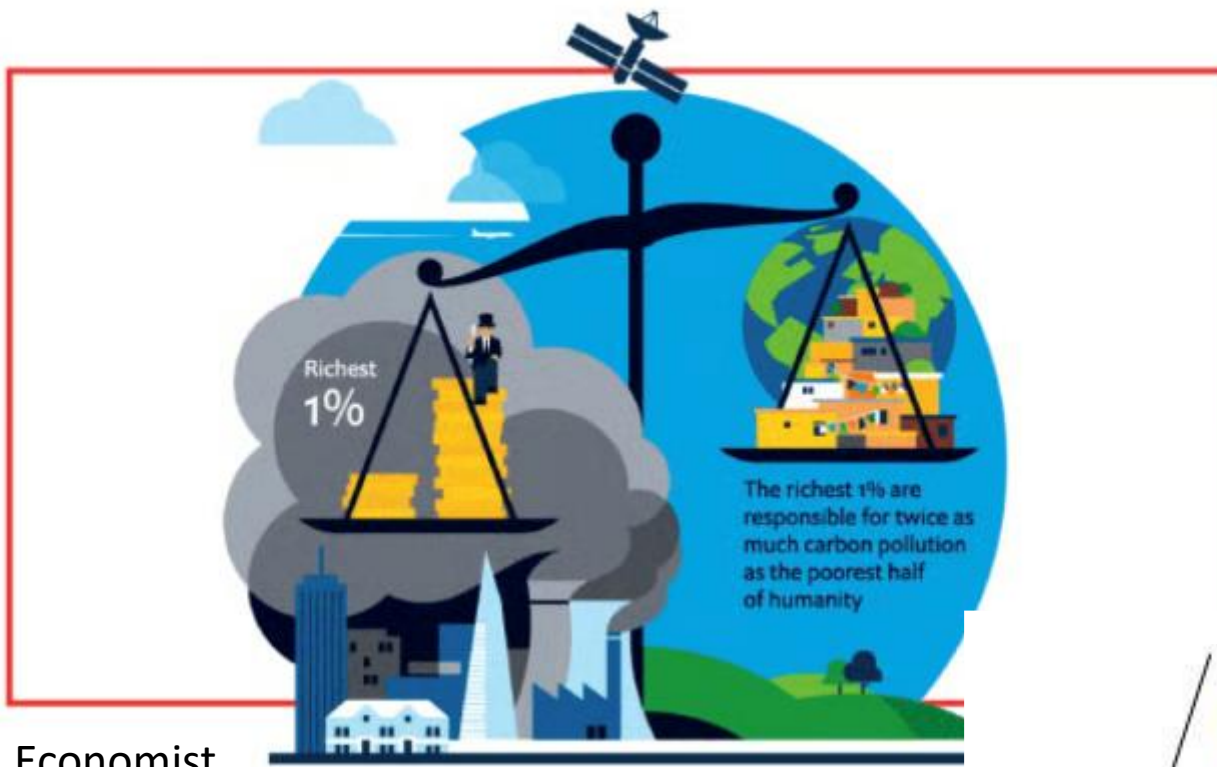
# Global Scenarios Projections



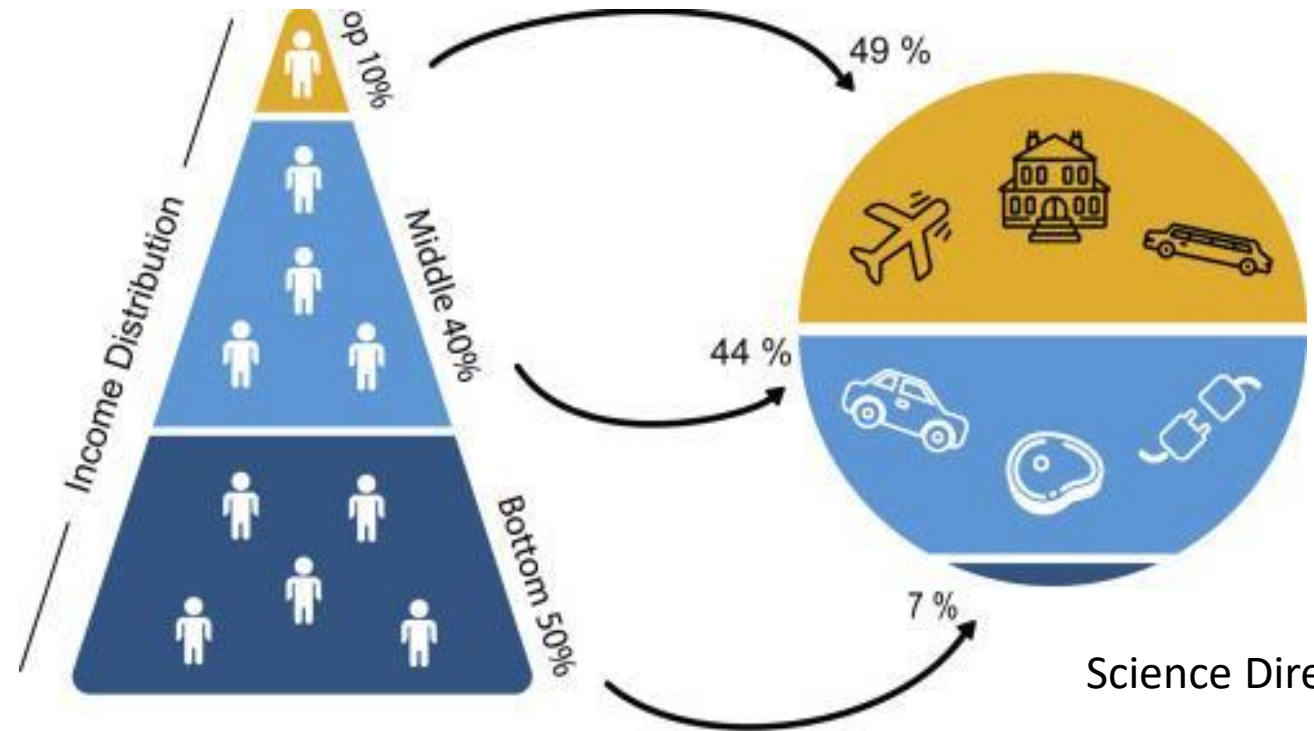
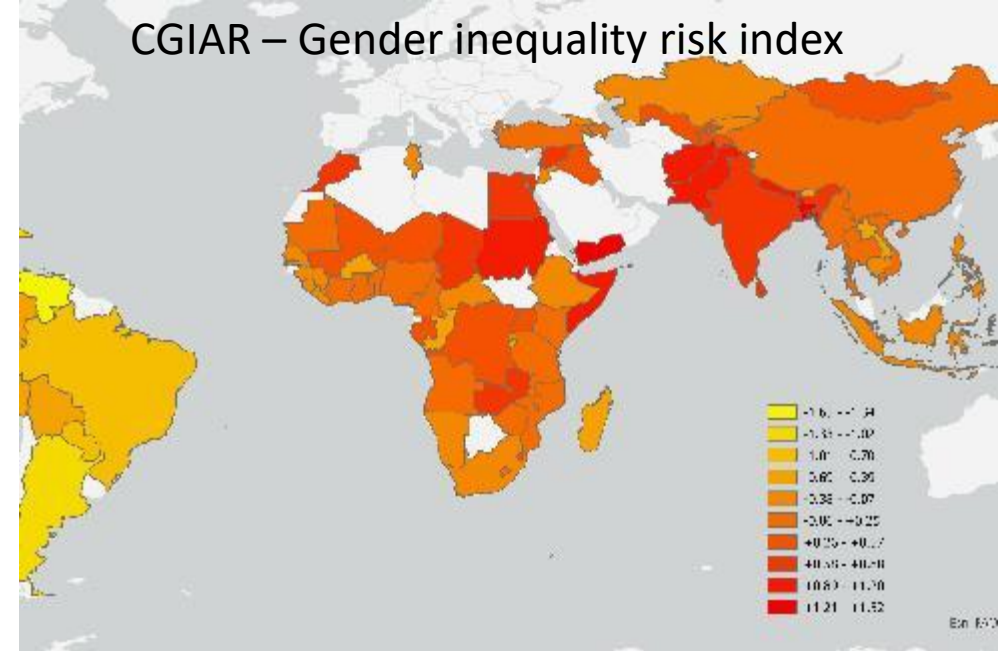
(IPCC, 2022)

# Outcomes of Shared Socio-Economic Pathway Scenarios






Economist



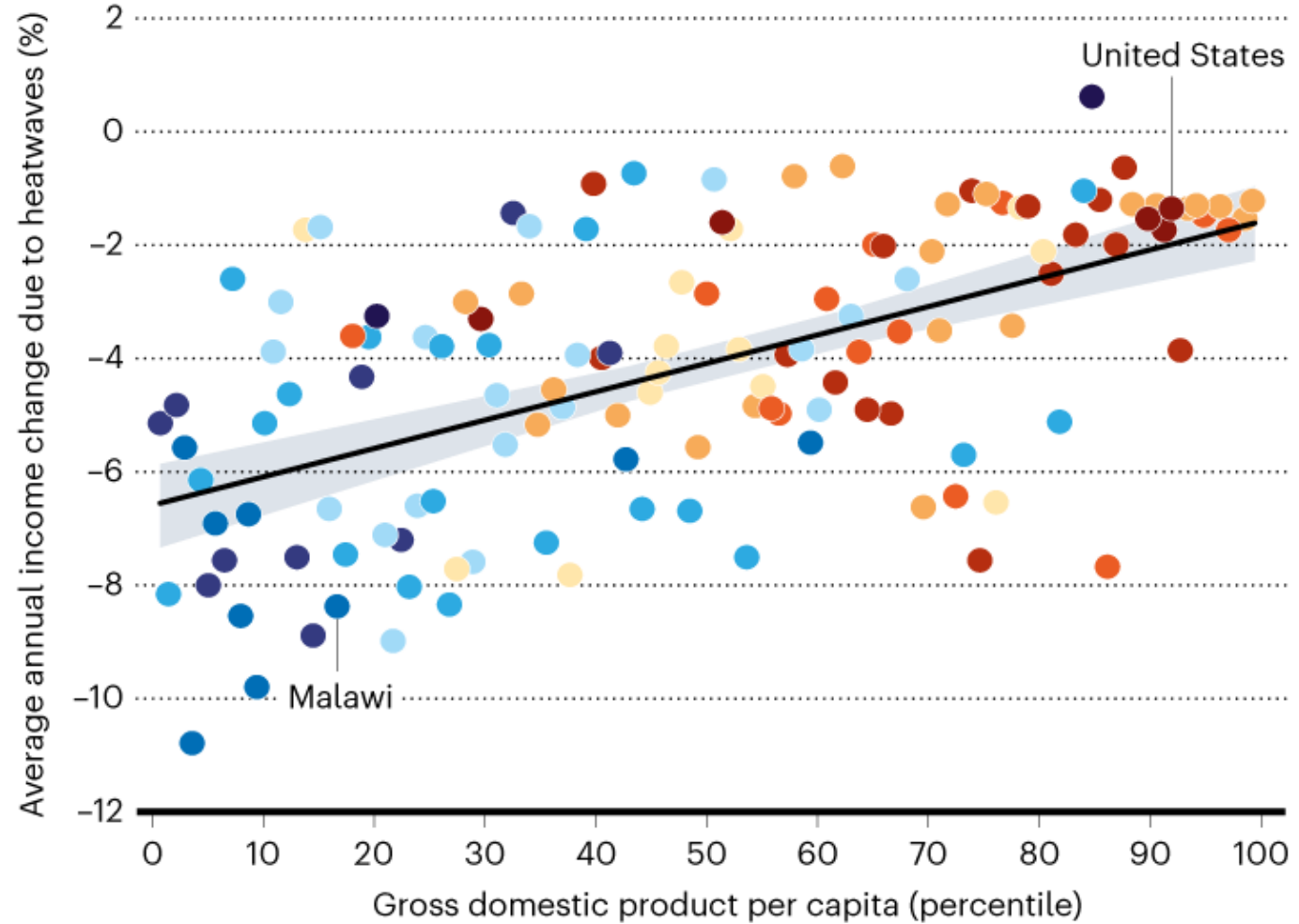


# UNEQUAL BURDEN

Despite contributing least to global emissions, tropical and low-income countries suffer the largest economic impacts as a result of heatwaves.

Less  More

Contribution to global fossil fuel emissions



SIXTH ASSESSMENT REPORT

Working Group II: Impacts, Adaptation, and Vulnerability

ipcc  
Working Group II: Impacts, Adaptation, and Vulnerability

WGIAR2  
WGII

ipcc  
Working Group II: Impacts, Adaptation, and Vulnerability

## Fact sheet - Africa

### Climate Change Impacts and Risks

Africa is one of the lowest contributors to greenhouse gas emissions causing climate change, yet key development sectors have already experienced widespread losses and damages attributable to human-induced climate change, including biodiversity loss, water shortages, reduced food production, loss of lives and reduced economic growth (high confidence). Limiting global warming to 1.5°C is expected to substantially reduce damages to African economies, agriculture, human health, and ecosystems compared to higher levels of global warming (high confidence). (IS-CH2)

#### Ecosystems

African biodiversity loss is projected to be widespread and escalating with every 0.5°C increase above pre-industrial global warming (high confidence). Above 1.5°C, half of assessed species are projected to lose over 30% of their population or area of suitable habitat. At 2°C, 1–9% of terrestrial species assessed are at risk of extinction, and over 90% of reef African coral reefs are projected to be destroyed by bleaching. (ES-CH2, 9.6)

#### Food

In Africa, agricultural productivity growth has been reduced by 34% since 1961 due to climate change, more than any other region. Future warming will negatively affect food systems in Africa by shortening growing seasons and increasing water stress (high confidence). Global warming above 2°C will result in yield reductions for staple crops across most of Africa compared to 2005 yields. Climate change poses a significant threat to African rice and freshwater fisheries (high confidence). Under 1.7°C global warming, reduced fish harvests could leave 1.2–70 million people in Africa vulnerable to net deficiencies, up to 198 million for vitamin A deficiency, and 285 million for vitamin B6 and omega-3 fatty acids mid-century. (ES-CH2, 9.4, 9.6)

#### Key risks for Africa

Figure 1: Heat maps showing increasing levels of impact, damage, and loss (IDL) in Africa under different climate change scenarios. The figure consists of three heat maps for 1.5°C, 2.0°C, and 2.5°C scenarios, showing IDL across the continent. A legend indicates the level of impact: Very High (dark red), High (red), Moderate (orange), and Low (yellow). A scale bar shows the confidence level for the IDL, ranging from Very High to Low. The maps show that IDL increases significantly with higher warming levels, particularly in the north and south of the continent.

Figure 1: Heat maps showing increasing levels of impact, damage, and loss (IDL) in Africa under different climate change scenarios. The figure consists of three heat maps for 1.5°C, 2.0°C, and 2.5°C scenarios, showing IDL across the continent. A legend indicates the level of impact: Very High (dark red), High (red), Moderate (orange), and Low (yellow). A scale bar shows the confidence level for the IDL, ranging from Very High to Low. The maps show that IDL increases significantly with higher warming levels, particularly in the north and south of the continent.

#### Water

Recent extreme variability in rainfall and river discharge across Africa have had largely negative and multi-sector impacts across water-dependent sectors (high confidence). Projected changes present heightened cross-cutting risks to water-dependent sectors, and require planning under deep uncertainty for the wide range of outcomes expected in future (high confidence). (ES-CH2, 9.7)

#### Cities and Settlements

Exposure of people, assets and infrastructure to climate hazards is increasing in Africa compounded by rapid urbanization, infrastructure deficit and growing population in informal settlements (high confidence). High population growth and urbanization in low elevation coastal zones will be a major driver of exposure to sea level rise in the next 50 years (high confidence). By 2030, 128–115 million people in Africa will be expected to live in low-lying coastal zones, increasing to 54 million in 2050, increasing to 150–245 million by 2080 (medium confidence). Under relatively low population growth scenarios, the sensitive populations (people under 5 or over 64 years old) exposed to heat waves of at least 15 days above 42°C in African cities is projected to increase from around 2.7 million in 2010 to 360 million by 2100 for 1.0°C global warming and 480 million for 2.4°C global warming. (ES-CH2, 9.9)

#### Economy

Climate change has reduced economic growth across Africa, increasing income inequality between African countries and those in temperate northern hemisphere climates (high confidence). Across nearly all African countries, gross domestic product (GDP) per capita is projected to be at least 5% higher by 2050 and 15% to 20% higher by 2100 if global warming is held to 1.5°C compared to 2°C. (ES-CH2, 9.6; 9.11)

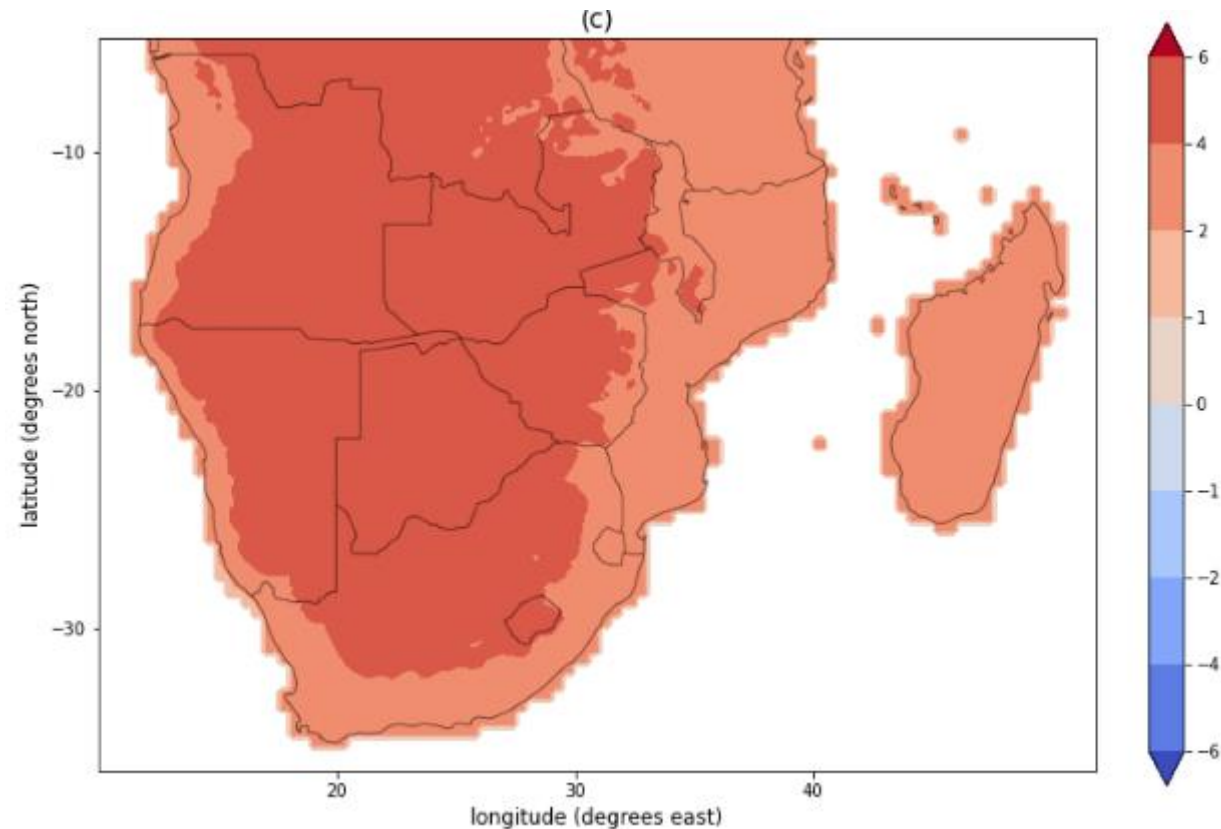
#### Heritage

African cultural heritage is already at risk from climate hazards, including sea level rise and coastal erosion. Most African heritage sites are neither prepared for, nor adapted to, future climate change (high confidence). (IS-CH2, 9.12)

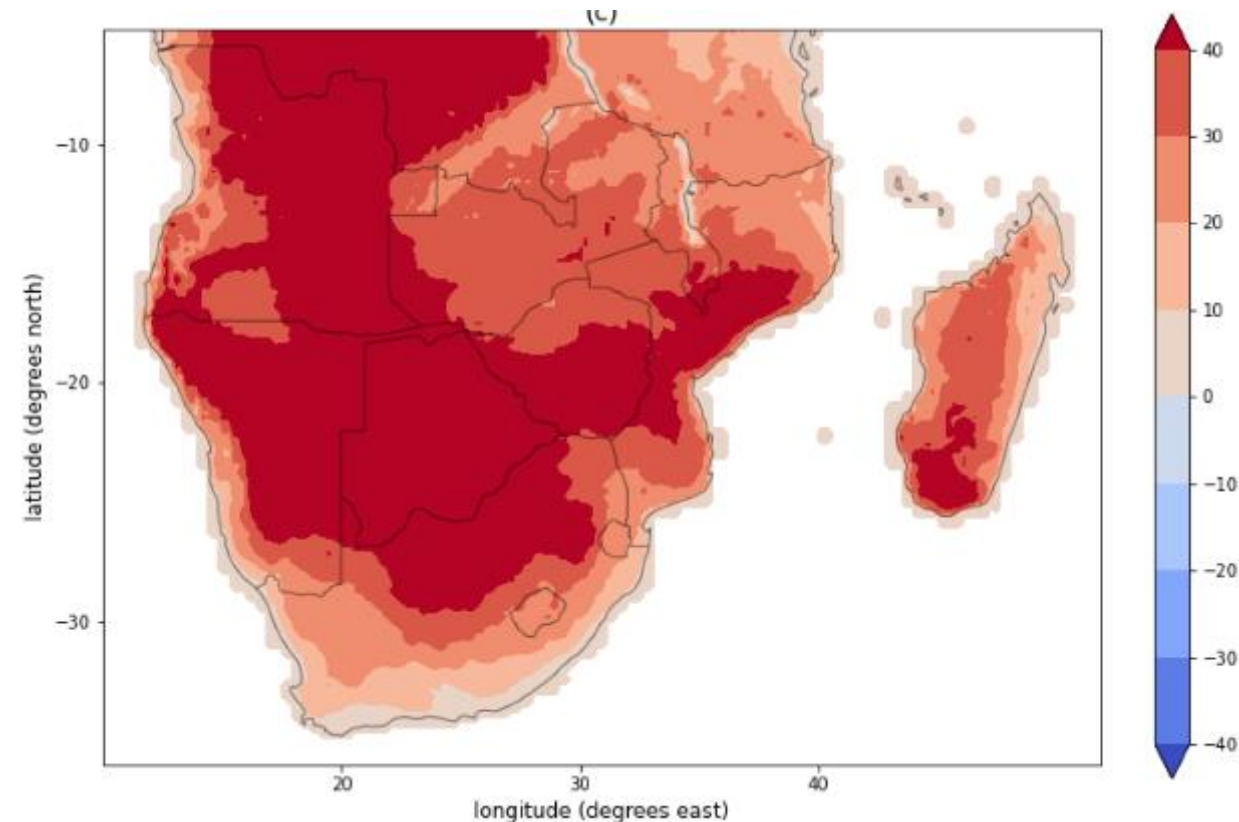
- A further 25 to 75% reduction on agricultural output, depending on crop and scenario
- A 50% drop in South Africa's GDP by 2100 (abstraction)
- With 1.7°C global warming by 2050, 17–40 million people could migrate internally in sub-Saharan Africa, increasing to 56–86 million for 2.5°C



# For low mitigation futures, local climate models predict hotter times...

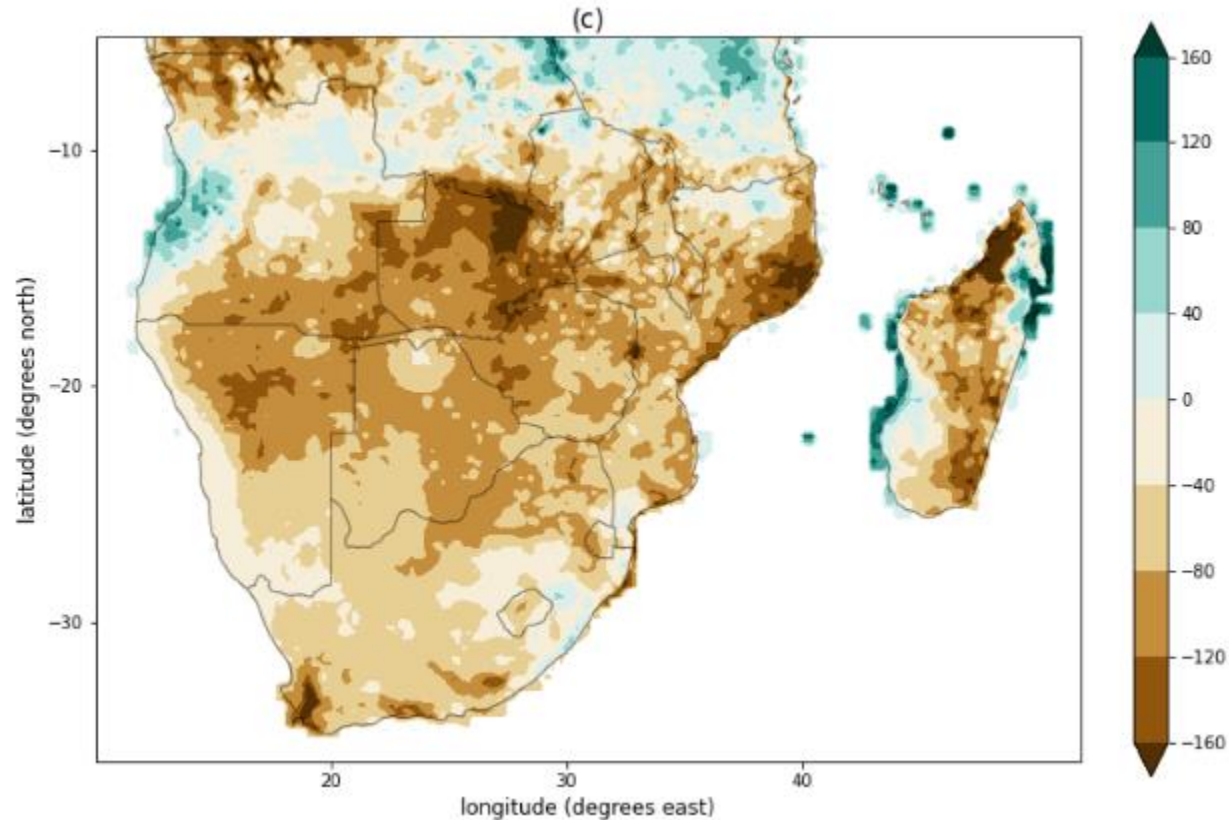


Median projected changes in annual average temperature (°C) for the ensemble of 9 CORDEX core RCMs for 2080 2099 relative to 1981 2000.

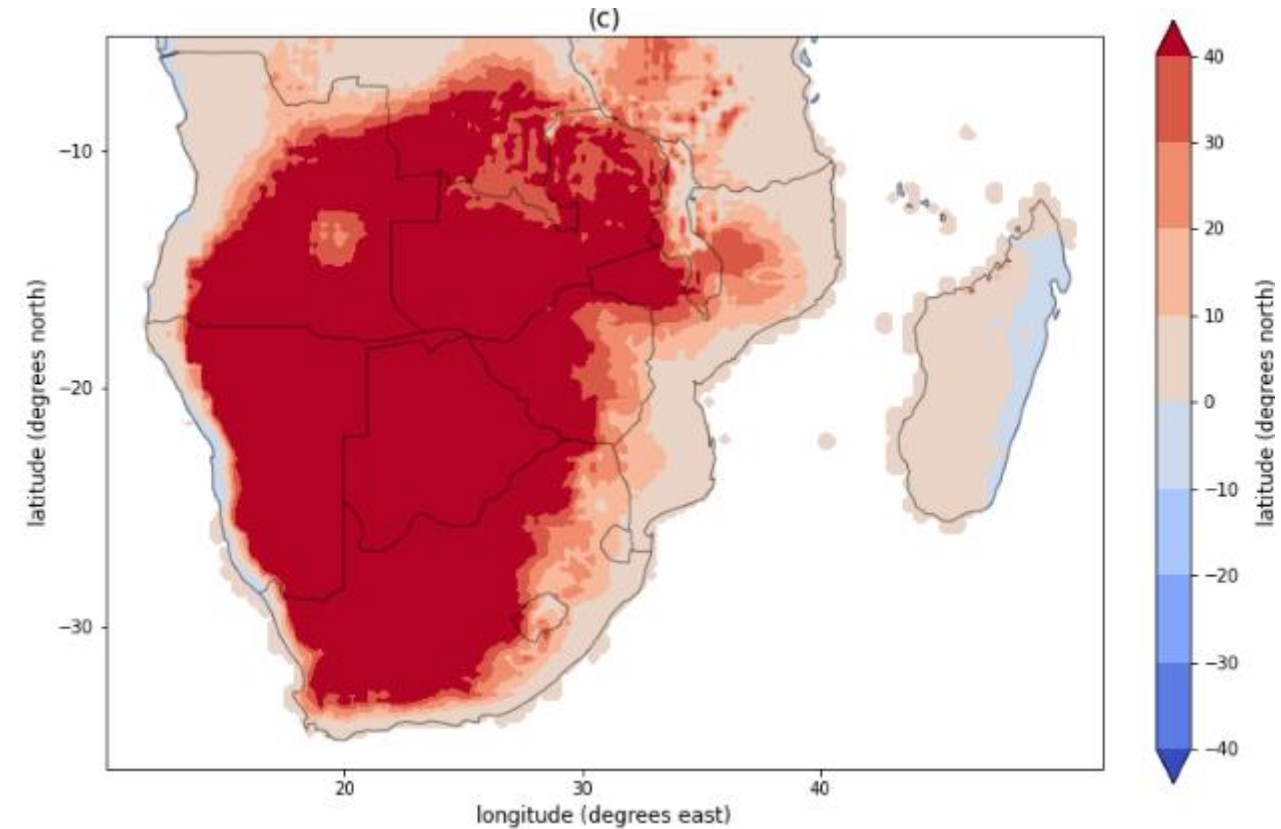


Median projected changes in annual average heat wave days for the ensemble of 9 CORDEX core RCMs for 2080 2099 relative to 1981 2000.

# With lower rainfall and more high fire-danger days...

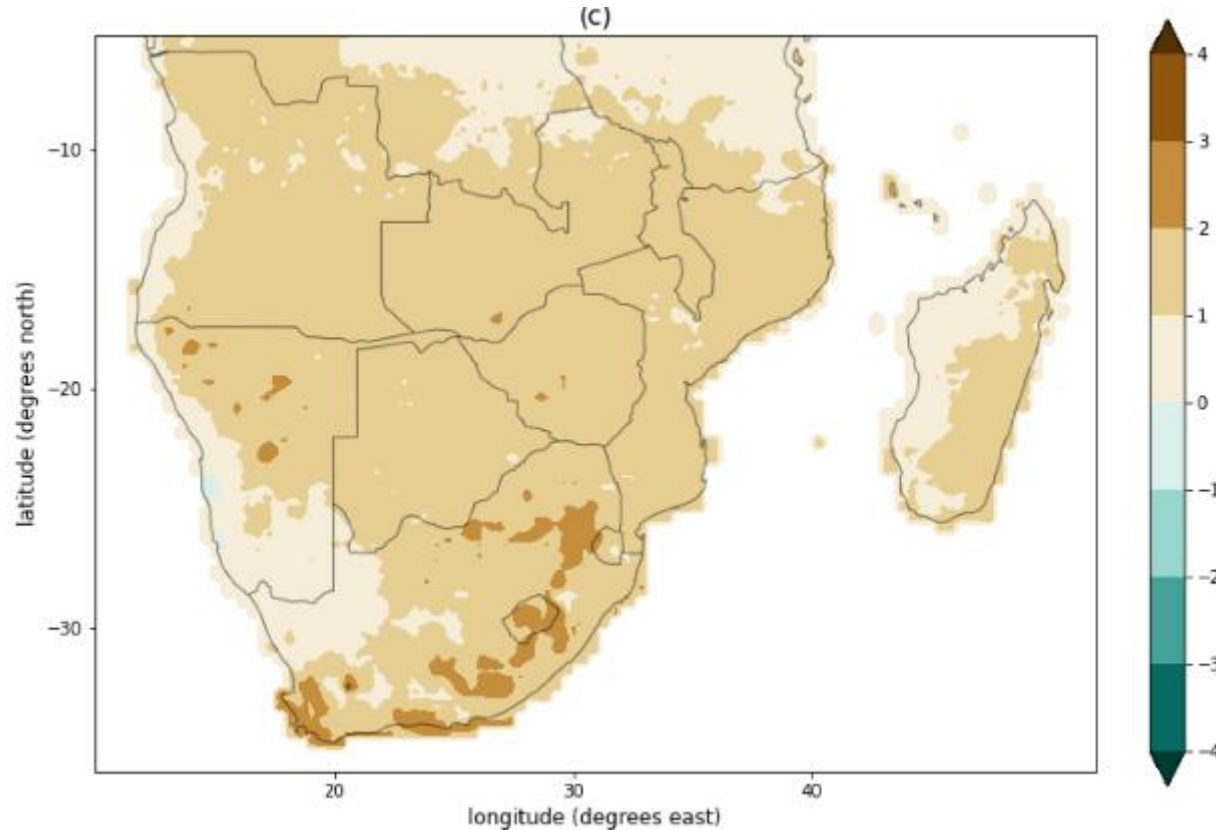


Median projected changes in annual rainfall for the ensemble of 9 CORDEX core RCMs for 2080 2099 relative to 1981 2000.

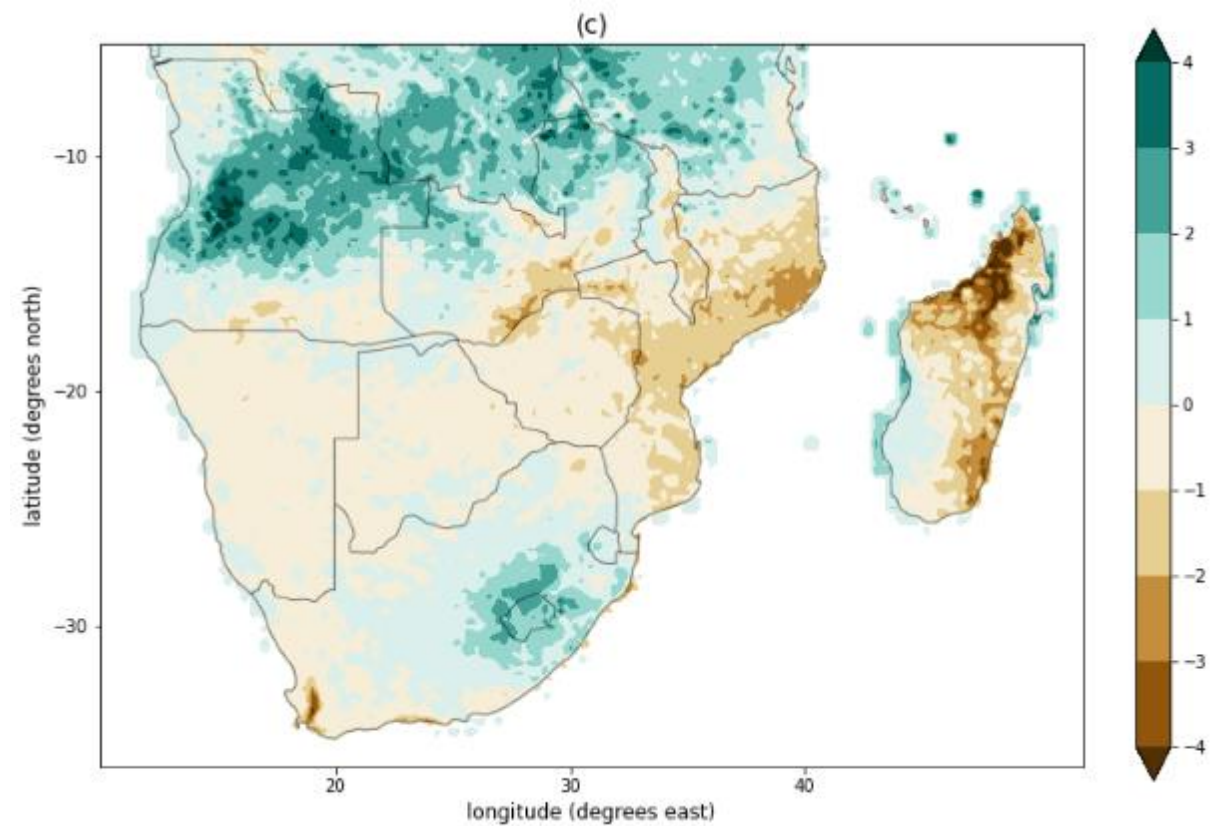


Median projected changes in number of high fire-danger days (shown as number of events per year per location) for the ensemble of 9 CORDEX core RCMs for 2080 2099 relative to 1981 2000.

# Water management becomes increasingly challenging as soil moisture dries and rainfall more concentrated



Median projected changes in soil moisture for the ensemble of 9 CORDEX core RCMs for 2080-2099 relative to 1981-2000.



Median projected changes in heavy rainfall days for the ensemble of 9 CORDEX core RCMs for 2080-2099 relative to 1981-2000.

# Physical impacts

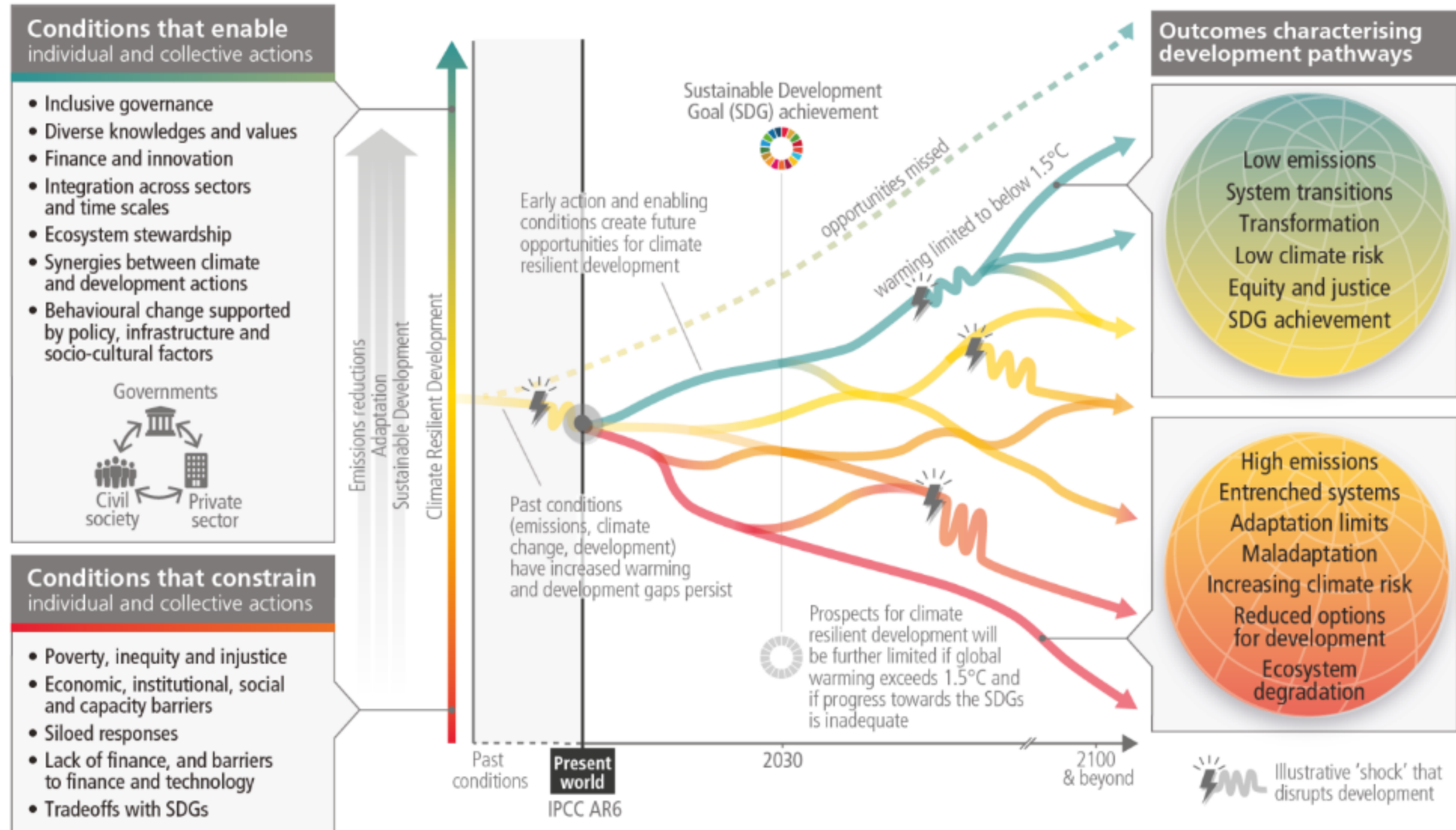


# WITS Global Change Institute identifies dire emergent risks/ tipping points

- 1 **A day zero in Gauteng (the socio-economic and security impacts of Gauteng running out of water)**
- 2 **Collapse of the maize crop in sub-Saharan Africa (with huge impacts on food security and balance of payments)**
- 3 **Category 4 or 5 Cyclones making landfall on the Southern African East Coast (with risks for livelihoods and key energy, rail and port infrastructure, Security)**

# There is a rapidly narrowing window of opportunity to enable climate resilient development

Multiple interacting choices and actions can shift development pathways towards sustainability



(IPCC, 2022)

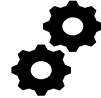
# Global- Adaptation framing

## Cancun Adaptation Framework



- The Cancun Adaptation Framework (COP16) in 2010.
- Seeks to improve adaptation efforts through international cooperation and by addressing the urgent needs of vulnerable countries.
- Principles – Adaptation must be-
  - **Country-Driven:** Guided by national priorities & circumstances.
  - **Gender-Sensitive & Participatory**
  - **Science-Based:** Informed by the best available scientific knowledge, as well as traditional and indigenous knowledge.

## Paris Agreement



- Adopted at COP21
- Includes provisions for adaptation, **emphasizing the need for a global goal on adaptation** to enhance adaptive capacity, strengthen resilience, and reduce vulnerability to climate change.
- Article 7 of the Paris Agreement deals with adaptation
- Annex to decision 9/CMA.1 regarding adaptation communications are:

## Sustainable Development Goals



- **Goal 13 (Climate Action)**, calls for urgent action to combat climate change and its impacts, including enhancing resilience and adaptive capacity

## Loss & Damage Mechanism



- **Warsaw International Mechanism for Loss and Damage.**
  - COP19 in 2013 to enhance knowledge & understanding of loss & damage, **strengthening dialogue and coordination** among stakeholders, & **facilitating support**, including **finance** and **technology**, to address loss & damage
- **Loss and Damage Fund** was established during the COP27 conference in 2022 as a significant breakthrough in addressing the impacts of climate change on vulnerable countries

## Others



- **Talanoa Dialogue:** Assessed NDC progress & informed future NDCs. where we are, where we want to go & how do we get there?
- **Sendai Framework:** primary focus disaster risk reduction but emphasises the importance of integrating climate adaptation into disaster risk management strategies
- **Santiago Network:** Established at COP25, aims to catalyze technical assistance for implementing approaches to avert, minimize, and address loss and damage at local, national, and regional levels
- **Green Climate Fund (GCF):** Fund supports developing countries in efforts to respond to climate change, including financing for adaptation projects.
- **Global Climate Action Agenda:** is a framework aimed at accelerating efforts to combat climate change by engaging both state and non-state actors.

*Climate  
Consideration in  
all SDGs*

# Local- Adaptation framing

## NCCAS Strategic objectives

### National Adaptation Plan (NAP)

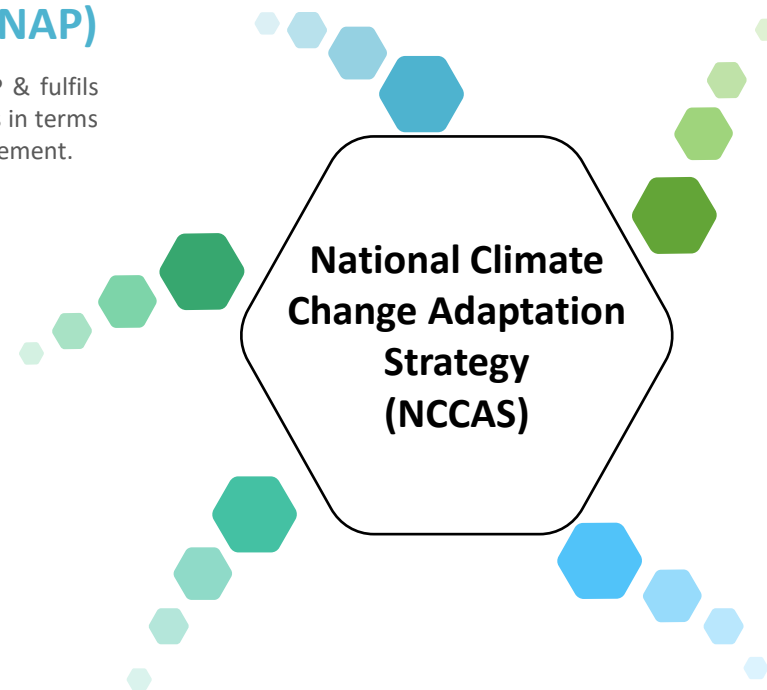
- NCCAS will serve as SA's NAP & fulfils commitment to its obligations in terms of Article 7.9 of the Paris Agreement.

### Alignment to country legislation

- Grounded in the South African Constitution, particularly Section 24, of the Bill of Rights which includes, the right to a safe and healthy environment.
- National Climate Change Response Policy (NCCRP) (DEA 2011a), National Development Plan (NDP) (NPC 2011), National Strategy for Sustainable Development (NSSD) (DEA 2011b), sector adaptation strategies/plans, as well as provincial and municipal adaptation strategies/plans.
- The Climate Change Act 22 of 2024 provides legislative basis for the implementation of the NCCAS, fostering institutional coherence & enhancing climate change adaptation governance across the spheres, national and sub-national layers of government in South Africa.

### A-NDCs

The NCCAS is the key domestic policy instrument to guide implementation & informs this update to the A-NDC.



### Sectors for Adaptation Response

The key sectors identified by the NCCAS include:

1. Water: Addressing water security & management
2. Agriculture & Commercial Forestry: Enhancing resilience in food production systems & forestry practices to cope with climate variability.
3. Health: Strategies to manage climate-related health risks, including the monitoring of climate-induced diseases.
4. Biodiversity & Ecosystems: Protecting and managing natural ecosystems that are vulnerable to climate change impacts.
5. Human Settlements: Ensuring that urban, rural, and coastal planning incorporates climate resilience measures.
6. Disaster Risk Reduction and Management: Strengthening capacity to manage and respond to climate-related disasters.
7. Transportation & Infrastructure: Developing climate-resilient infrastructure to support economic activities & community safety.
8. Energy: Enhancing the resilience of energy systems to climate impacts.
9. Mining: Addressing the vulnerabilities of the mining sector to climate change.
10. Oceans & Coasts: Protecting coastal communities & ecosystems from the impacts of sea-level rise & extreme weather events

Strategic objectives to which sectoral responses need to be aligned:

1. Reduce human, economic, environmental, physical and ecological infrastructure vulnerability and build adaptive capacity.
2. Develop a coordinated Climate Services system that provides climate products and services for key climate vulnerable sectors and geographic areas.
3. Develop a vulnerability and resilience methodology framework that integrates biophysical and socio-economic aspects of vulnerability and resilience.
4. Facilitate mainstreaming of adaptation responses into sectoral planning and implementation.
5. Promote research application, technology development, transfer and adoption to support planning and implementation.
6. Build the necessary capacity and awareness for climate change responses.
7. Establish effective governance and legislative processes to integrate climate change in development planning.
8. Enable substantial flows of climate change adaptation finance from various sources.
9. Develop and implement a monitoring and evaluation (M&E) system that tracks implementation of adaptation actions and their effectiveness.

# Summary of last A-NDC submission...

Focus	Goal
National circumstances, institutional arrangements and legal frameworks	Goal 1: Enhance climate change adaptation governance and legal frameworks
Impacts, risk & vulnerability	Goal 2: Understanding of the impacts on SA of 1.5 & 2o C global warming & the underlying global emission pathways
National adaptation priorities, strategies, plans, goals and actions	Goal 3: Implementation of NCCAS adaptation interventions for the period 2021 to 2030.
Implementation & support needs of, & provision of adaptation support to SA	Goal 4: Mobilise funding for adaptation implementation through multilateral funding mechanisms
Implementation of adaptation action & plans including (ii) Adaptation efforts of developing countries for Recognition	Goal 5: Quantification & acknowledgement of the national adaptation & resilience efforts

# Summary of last A-NDC submission

- South Africa aims to limit global warming to 1.5°C and achieve net-zero CO<sub>2</sub> emissions by 2050, as outlined in its NDC. This aligns to the international frameworks including the Paris Agreement.
- NDC alignment with National Climate Change Adaptation Strategy (NCCAS)
- Aimed to promote collaboration across various stakeholders
- Highlighted the funding need particularly grant-based funding to support adaptation efforts.
- Emphasises the need to leverage private sector investment into mitigation efforts.
- Monitoring and reporting to track progress and ensure accountability

# Review of previous A-NDC submission



**Goal 1:**  
Enhance climate change  
adaptation governance and  
legal frameworks

**Goal 2:**  
Understanding of the  
impacts on SA of 1.5 & 2° C  
global warming & the  
underlying global emission  
pathways

**Goal 3:**  
Implementation of NCCAS  
adaptation interventions  
for the period 2021 to 2030.

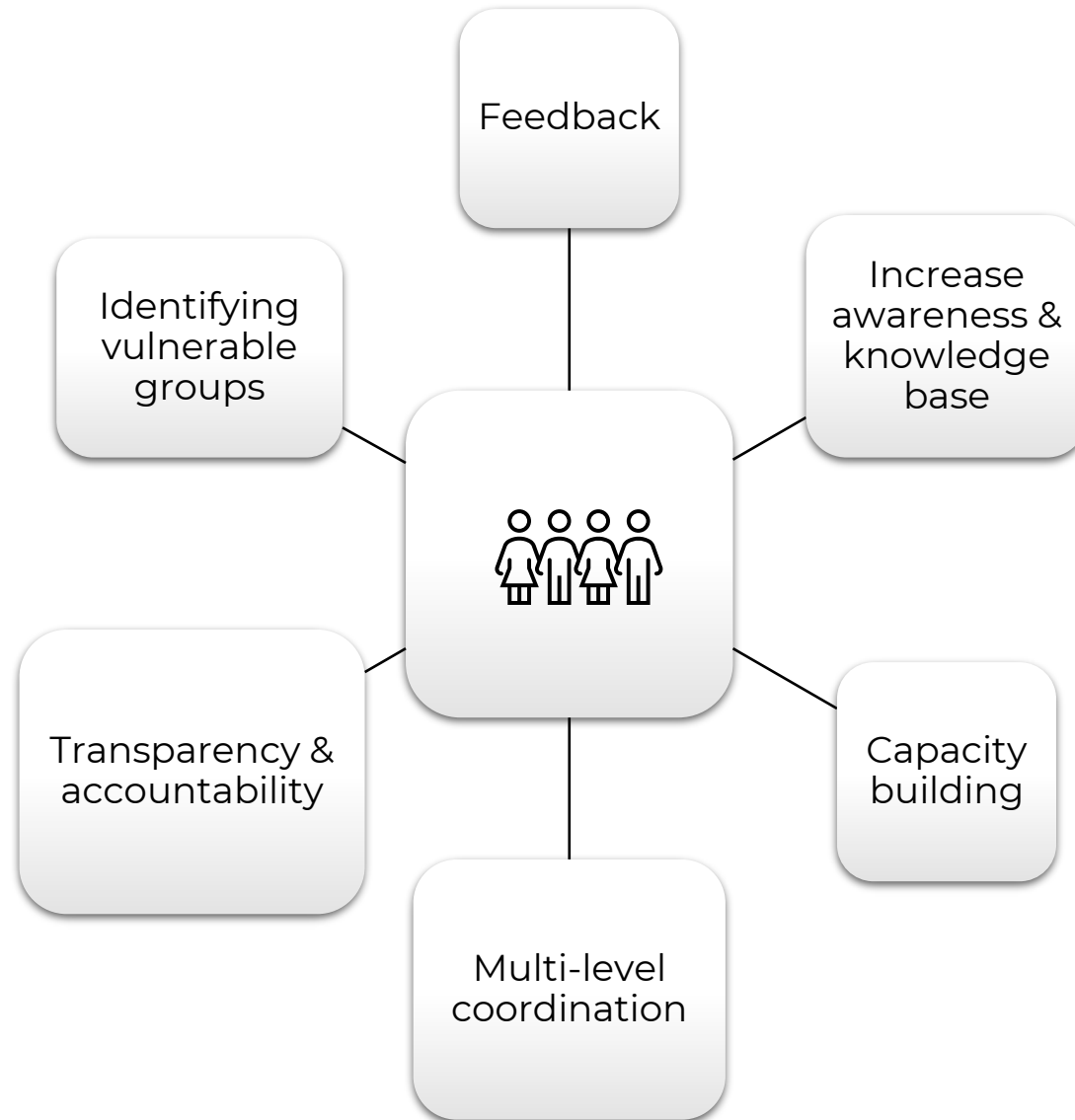
**Goal 4:**  
Mobilise funding for  
adaptation implementation  
through multilateral  
funding  
mechanisms

**Goal 5:**  
Quantification &  
acknowledgement of the  
national adaptation &  
resilience efforts

# Climate Change Act #22 of 2024 and the NDCs

- Promotes formalisation of adaptation processes through policy interventions.
- Mandates clear adaptation road map based on scenarios to assist with planning and resourcing.
- Promotes coordination through different tiers of Government.
- Allows for sectoral-specific interventions which focuses on interventions particularly for vulnerable sectors.
- Encourages mainstreaming of climate adaptation through policy and planning tools.
- Aims to facilitate effective resourcing through the establishment of financial mechanisms to support response.
- Encourages stakeholder engagement in planning to tap into local knowledge and create buy-in.
- Supports South Africa's international obligations under the Paris Agreement, ensuring that national adaptation efforts contribute to global climate goals.
- It establishes mechanisms for tracking progress on adaptation actions, to provide feedback mechanism for future planning and decision-making.

# Role of stakeholders



# Investment is required across the spectrum of anticipation to adaptation to recovery

Resilience: pre-empt and withstand variability in social, economic & environmental conditions

Early Warning

Adaptation

Recovery

Scenario  
Development/  
Forecasting

Early Warning  
System and  
Outreach

Autonomous  
Adaptation

Planned  
Adaptation

Disaster  
Management

Emergency  
Response

Rebuilding



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