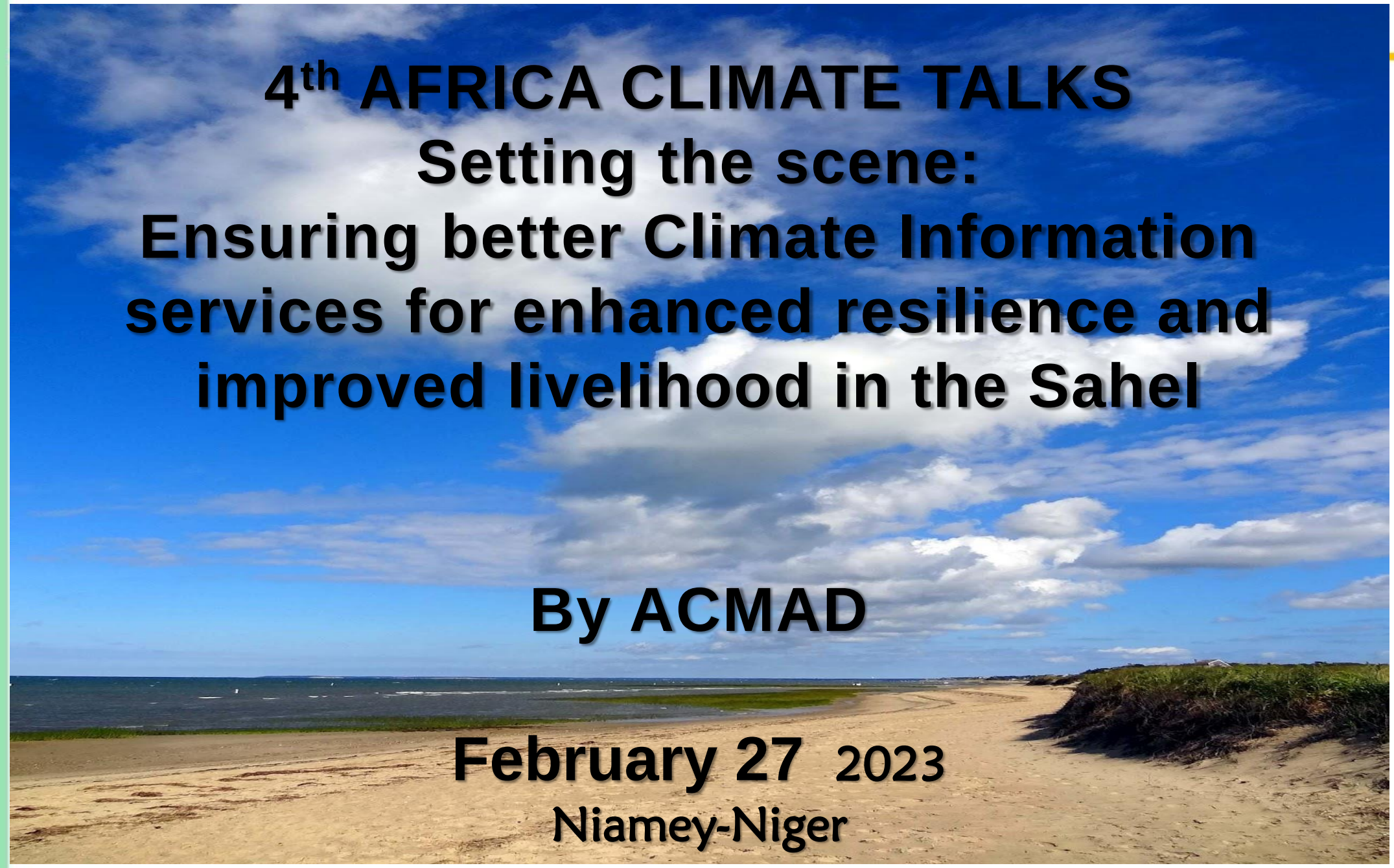


4th AFRICA CLIMATE TALKS
Setting the scene:
Ensuring better Climate Information services for enhanced resilience and improved livelihood in the Sahel

By ACMAD

February 27 2023

Niamey-Niger

OUTLINE

1. User Interface *
2. Observations networks, stations and data management
3. Research, Modelling and Prediction
4. **Climate Services Information System ***
5. Capacity Development8*

* priorities

MOVE FROM CONVENTIONAL TO EMERGING FUNDING PRIORITIZATION

Towards new approach

Conventional Approach	Emerging Approach
Focus on the NMHS system / the public sector	Focus on national hydromet value chain - Public, Private and Academic Sectors as well as NGOs/CSOs
Modernization of infrastructure Institutional Strengthening Service Delivery	**Service Delivery by integrating with sectoral solutions** Institutional Strengthening Fit-for-purpose infrastructure Development
Predominantly national projects	National projects + regional approach

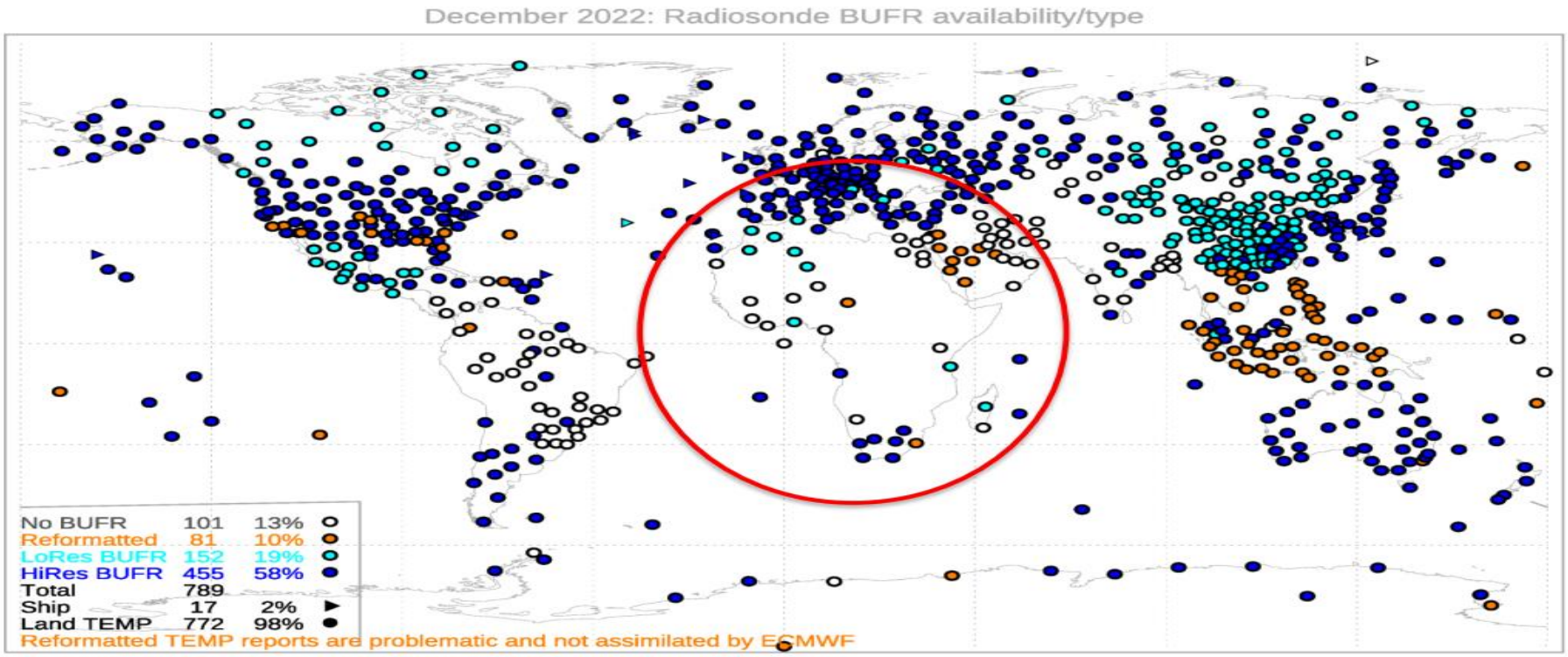
1. USER INTERFACE AND KNOWLEDGE MANAGEMENT

- Identify climate sensitive sectors through experience and surveys
- Assess sector climate vulnerability, impacts and risks
- Discuss vulnerability, impacts and risk reduction options
- Co-design and co-develop required climate services for vulnerability , impacts and risk reduction
- Deliver climate service and collect feedbacks for improvements
- Intermediation between service providers and seekers
- Internalization and externalization of climate information
- Using climate information and knowledge and derive sector climate resilient decisions, plans and actions
- Assess benefits to build trust and sustainability

OBSERVATION STATIONS, NETWORKS AND DATA MANAGEMENT

- Surface Observing networks, Upper Air Networks, Remote sensing, Aircraft Based Observations to take advantage of digital transformation for monitoring, collecting, exchanging and processing data

Upper Air Observing Networks

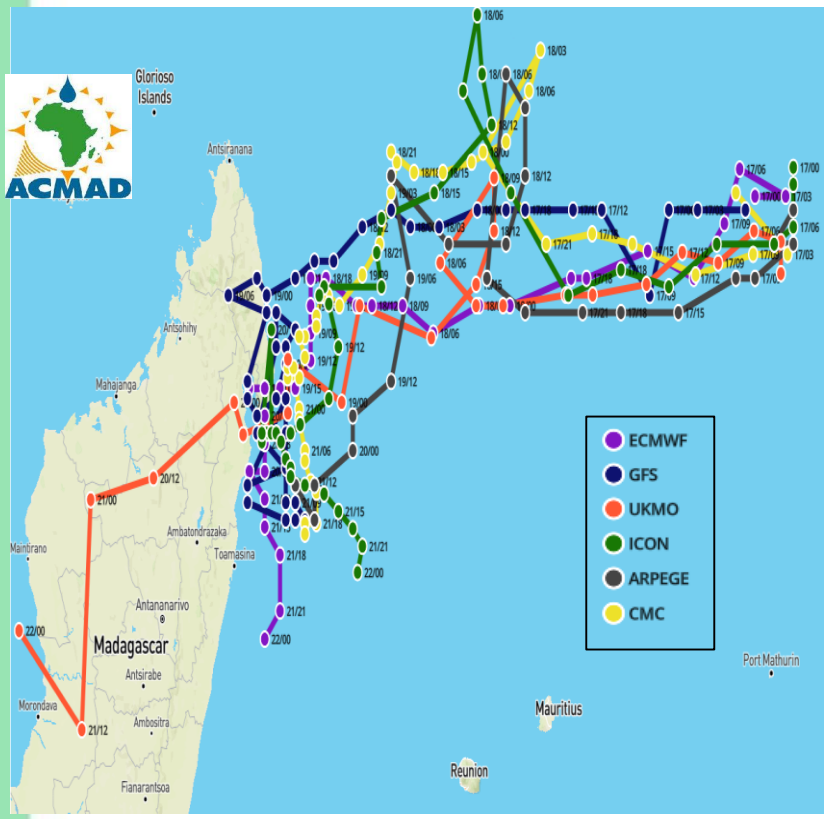


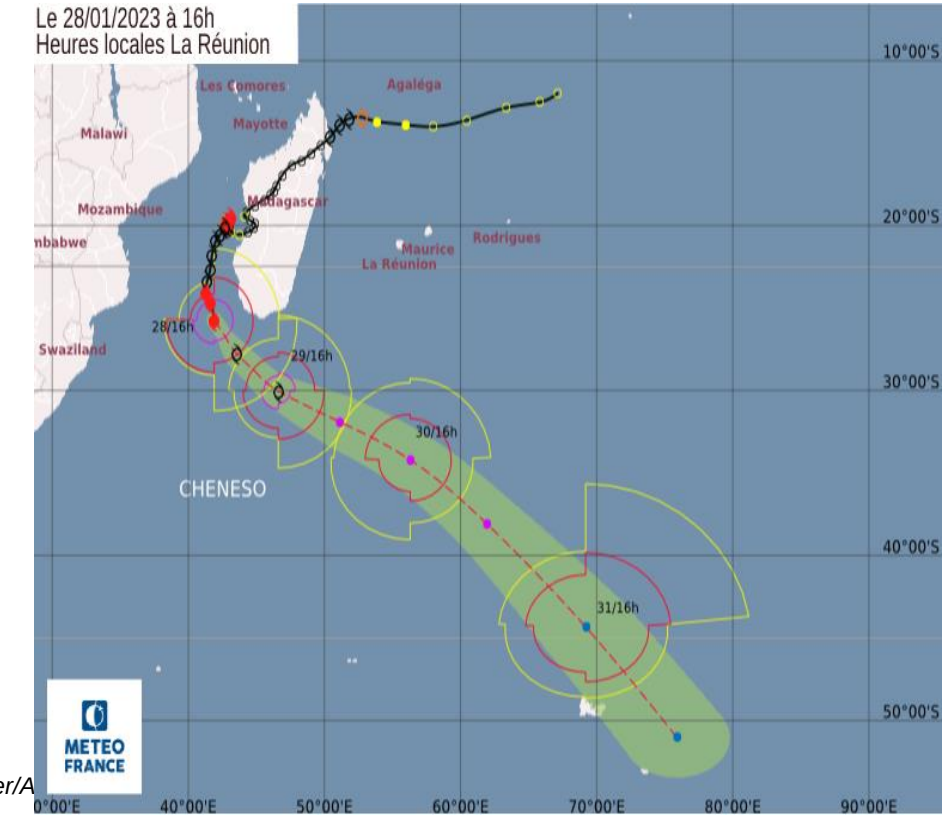
1. RESEARCH, MODELING AND PREDICTION

- Organize targeted field campaigns based on needs (e.g collect observations for research to understand processes and phenomena related to extremes – heat-rains-drought….)
- Undertake research to better understand relationships between hazards and impacts, build impact models (e.g rainfall and water levels in dams and rivers, flood severity)
- Develop, validate and verify hazards and impacts forecasting models
- Develop benefits assessment tools to support sustainability
- Demonstrate climate impact based development planning
- Develop tools generating actionable indicators (e.g start of agriculture season, water levels in reservoirs) (Uclip, CLIMTAG, MyDewetra…)

CLIMATE SERVICE INFORMATION SYSTEM (Global, regional, National , local)

Cyclone tracks from: 17-01-2023, 00UTC to 22-01-2023, 00UTC / Possibility to prepare for cyclone Cheneso





http://sgbd.acmad.org:8080/thredds/fileServer/A
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Example of Research, development, Experimentation, pilot demonstration of products at local level to be transfer trough capacity Development in NMHSs for supporting adaptation and resilience to heat related disasters in cities.

The Urban Climate Information Platform (UCLIP) Outputs

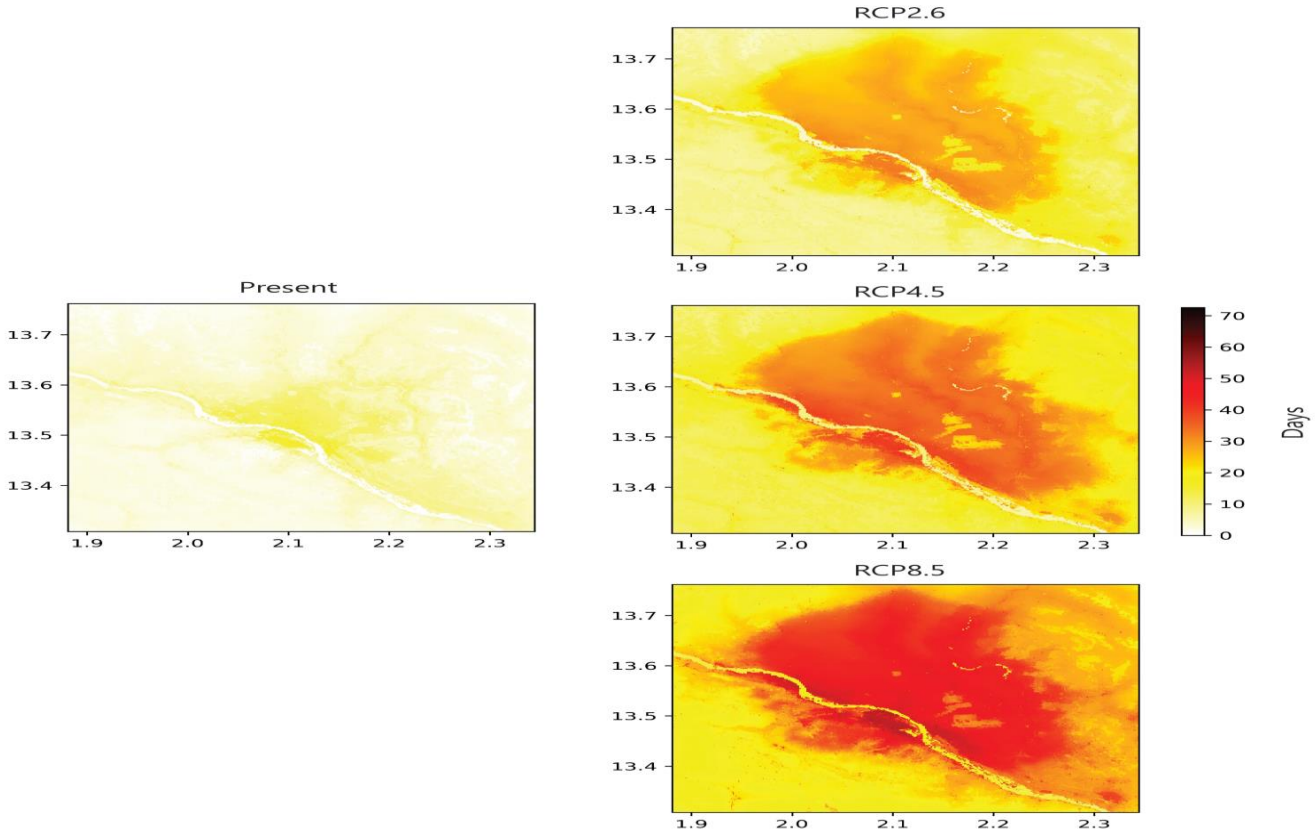


FIGURE 9 Number of heatwave days per year over Niamey in a present (2001-2020) and future scenarios (2041-2060).

vito

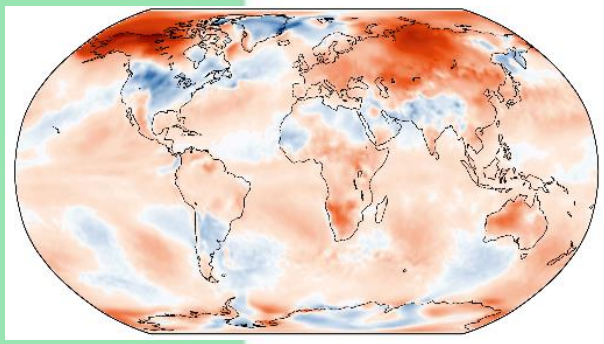
• CLIMTAG

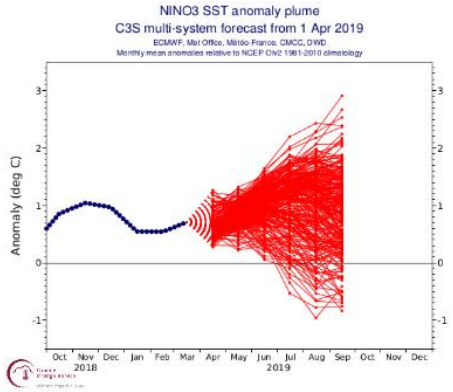
ACMAD

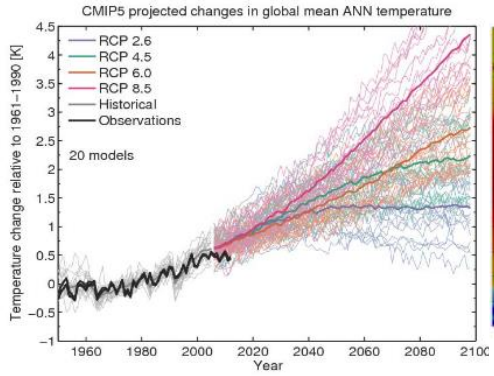
REFLECT

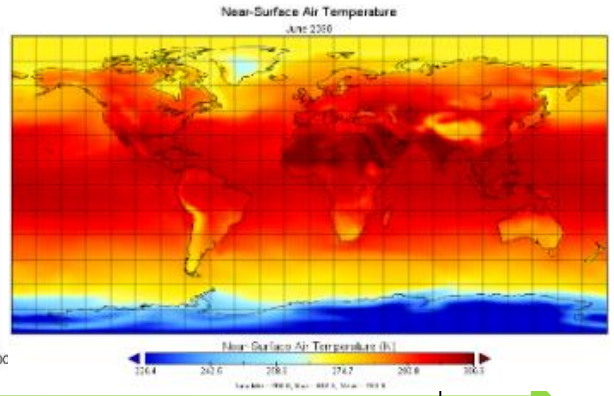
RESPOND

ADAPT









1981 now 2100

Historic climate data 1981-2010

Seasonal forecasts the next 1 to 6 months

Future climate projections 2011-2040, 2041-2070, 2071-2100

Historical agro-**climate** indicators

Agro-**seasonal** indicators

Future agro-**climate** indicators

Empowered by

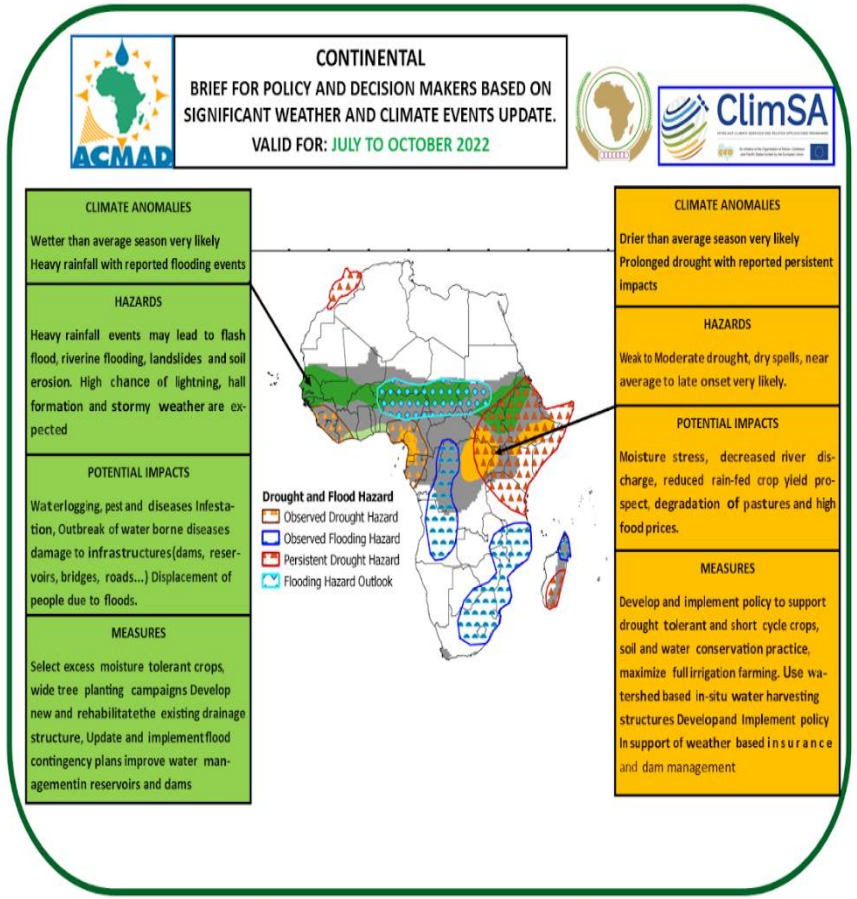
Flanders
State of the Art

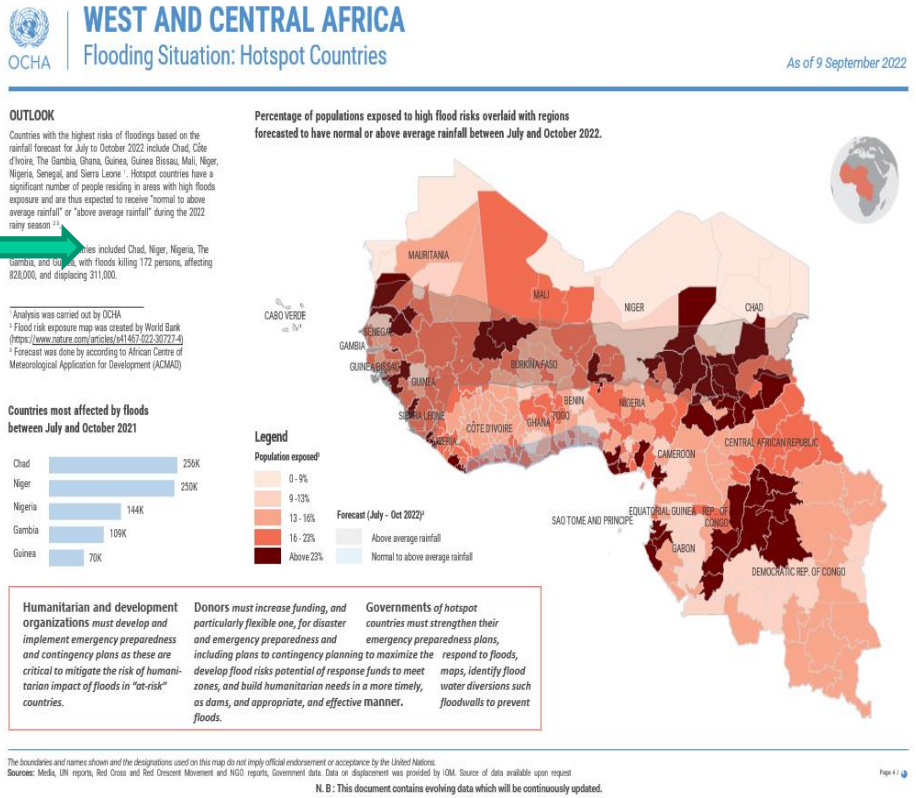
•IMPACT BASED FORECAST-ACTIONALBLE INDICATORS

•ACMAD-UNOCHA West and Central Africa office

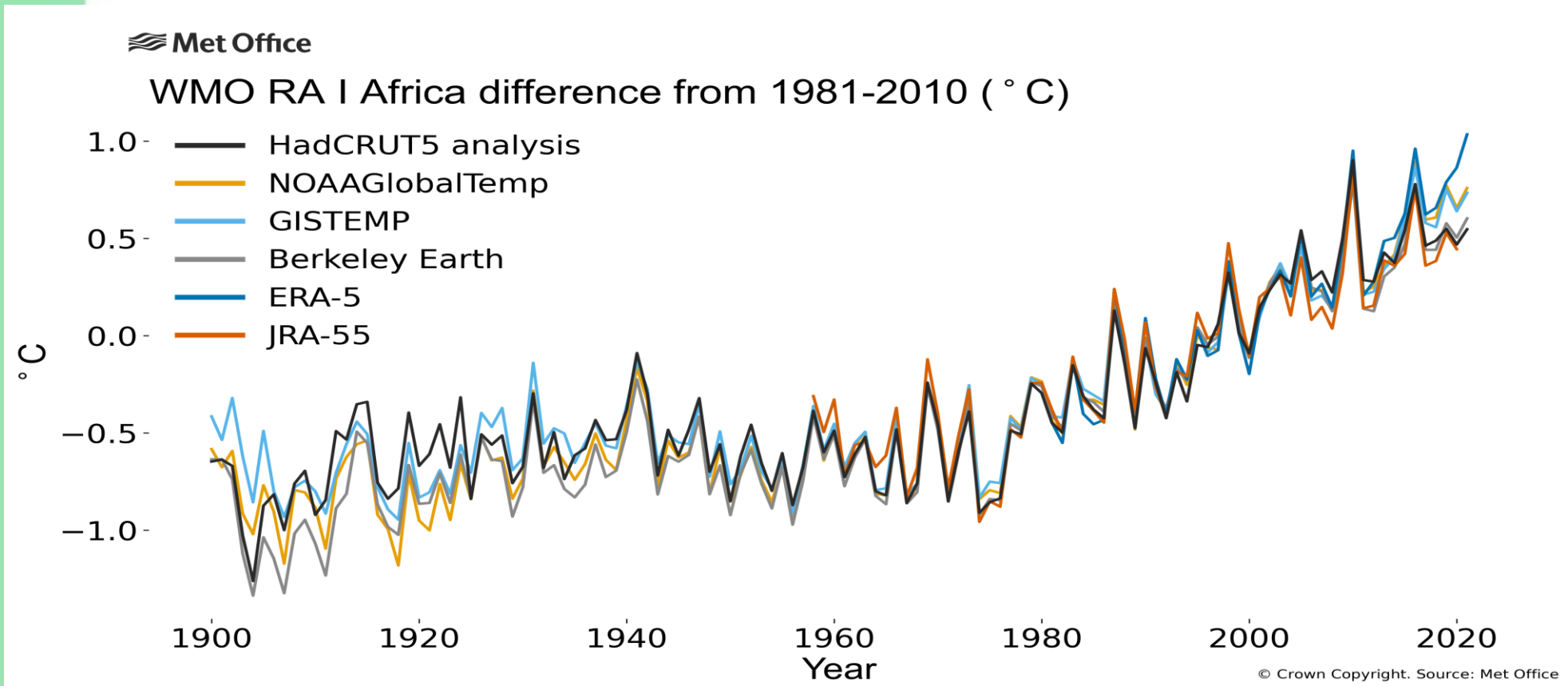
• 02

INTERACTION WITH HUMANITARIAN

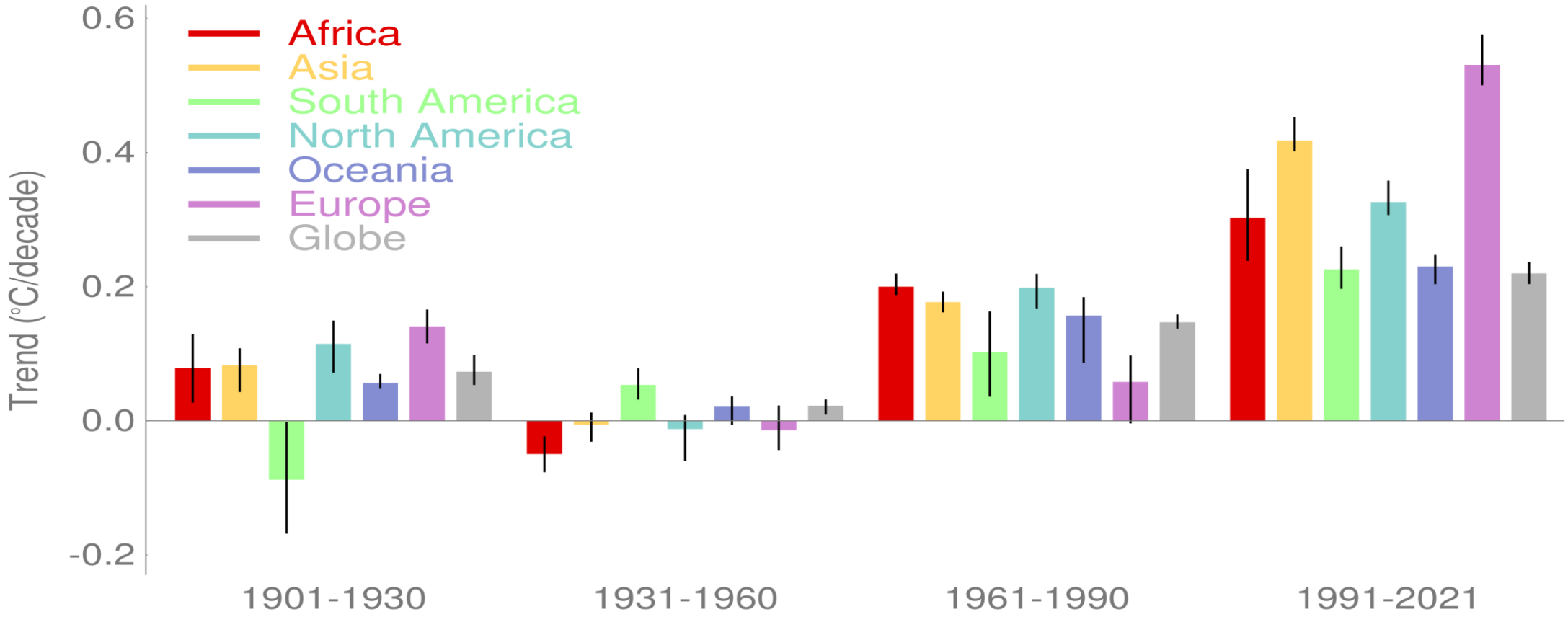




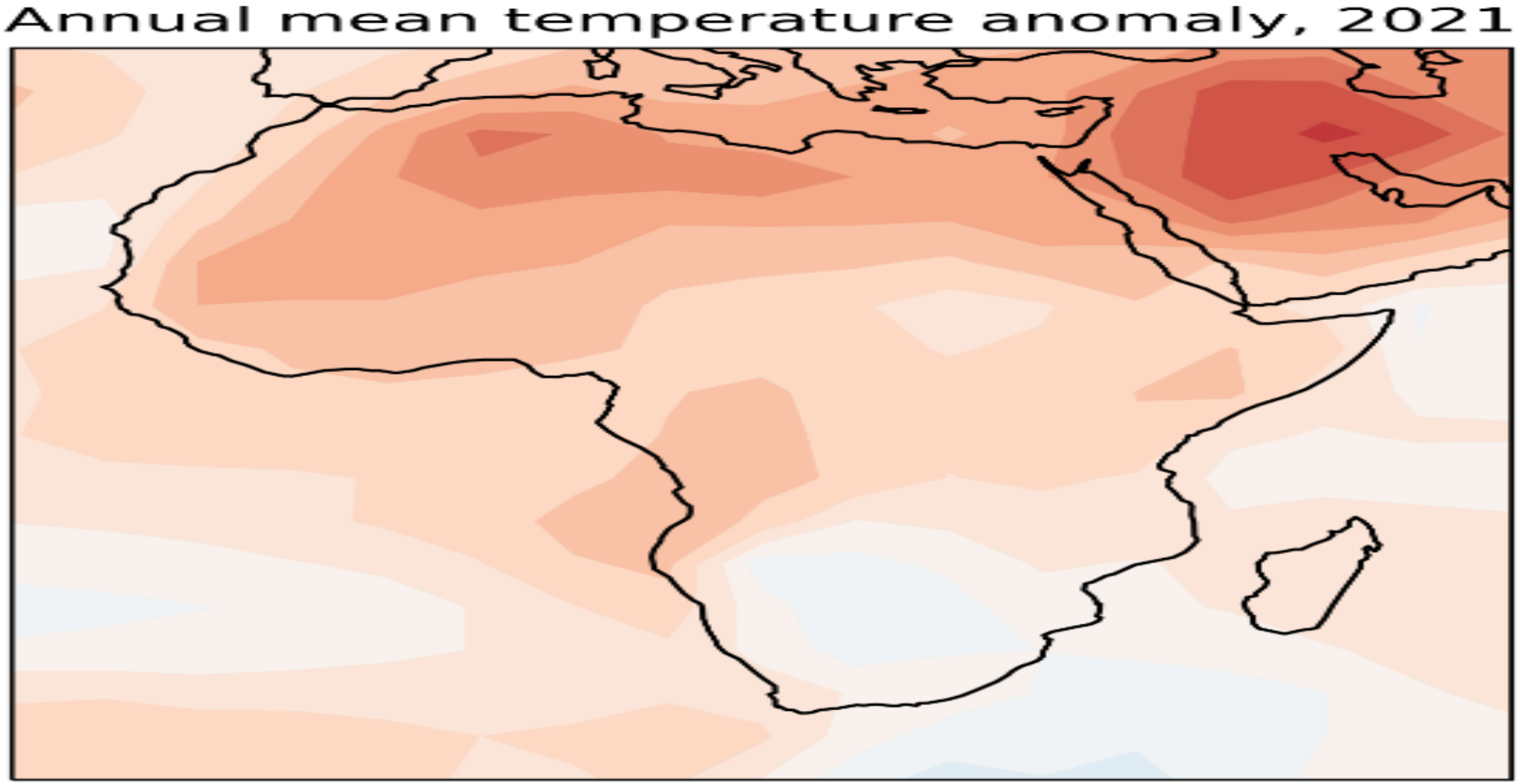
Warming in Africa



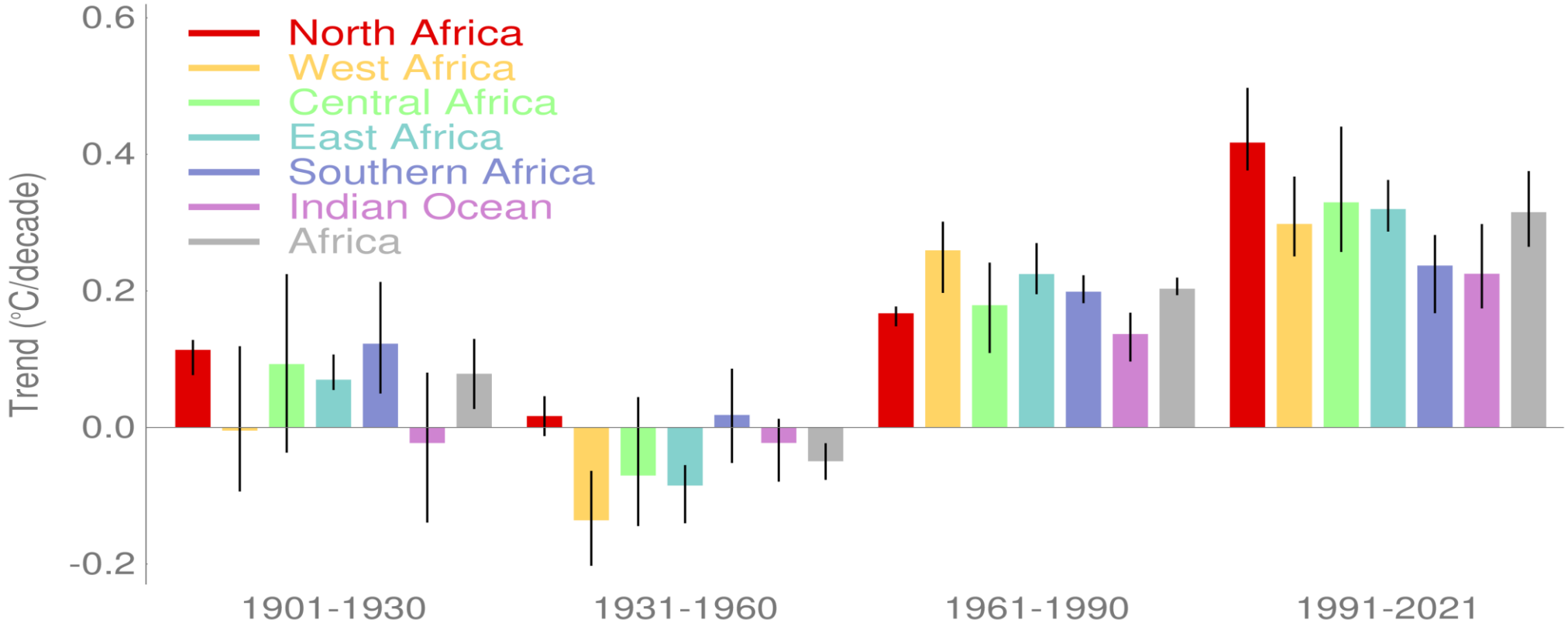
• Warming trends for continents



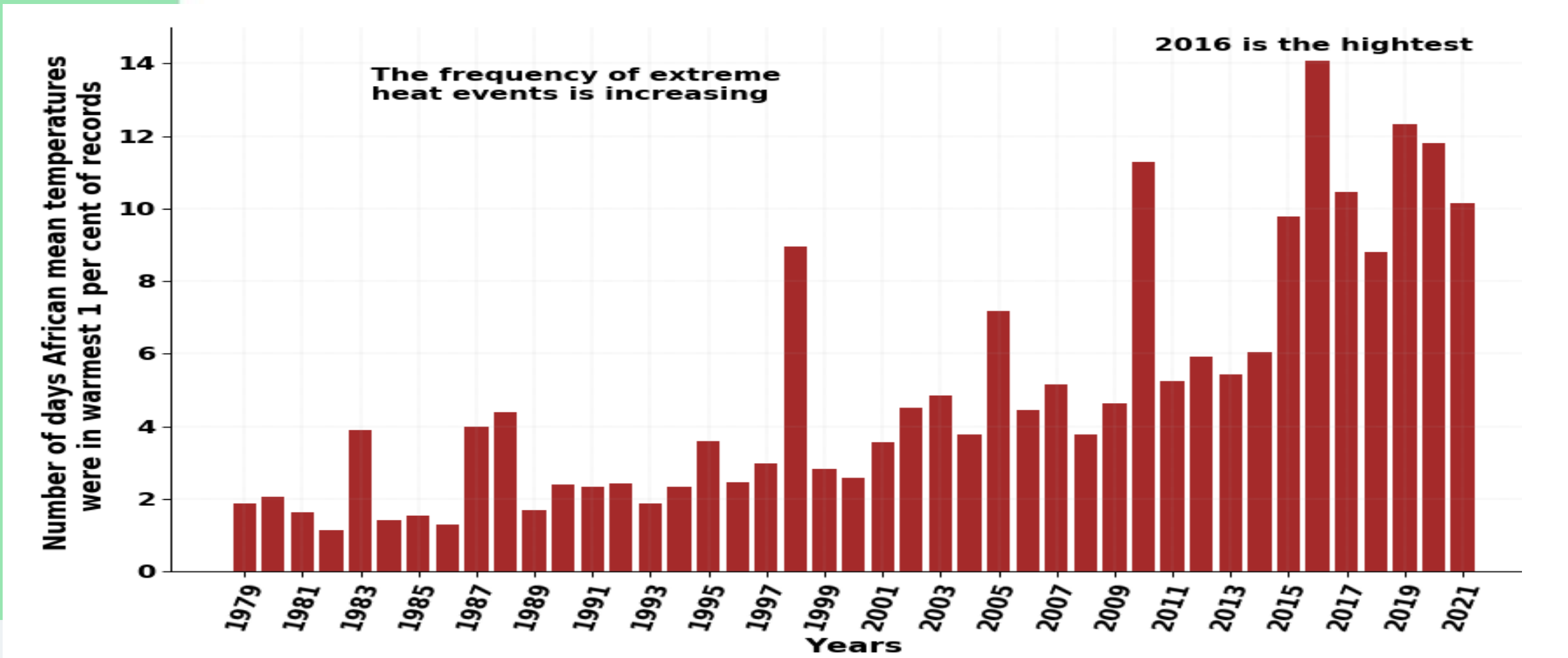
• 03 • 1.1.Temperature anomalies across Africa



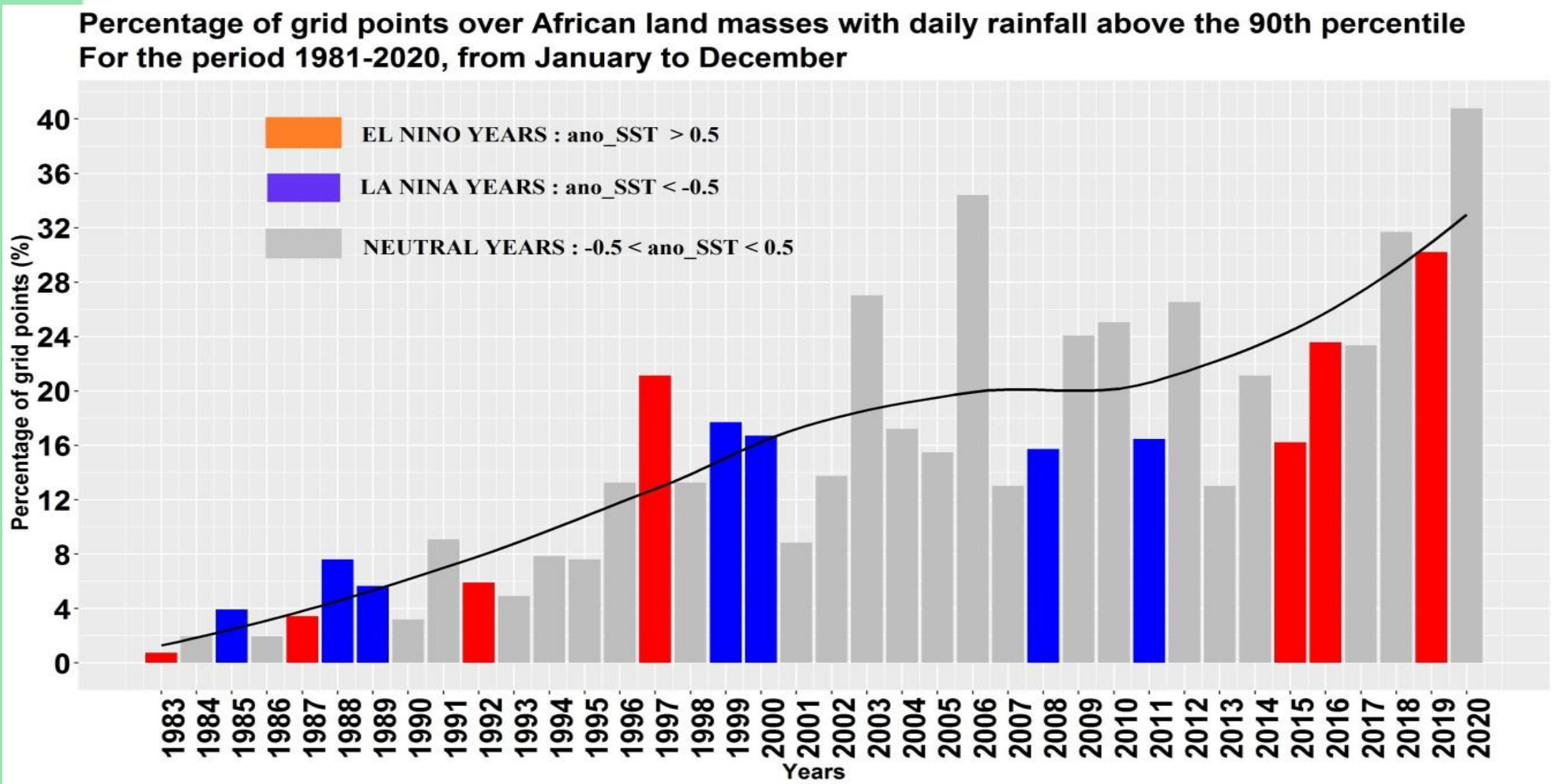
• 1.1.Warming trends across Africa



• Trends on number of extreme hot days across Africa

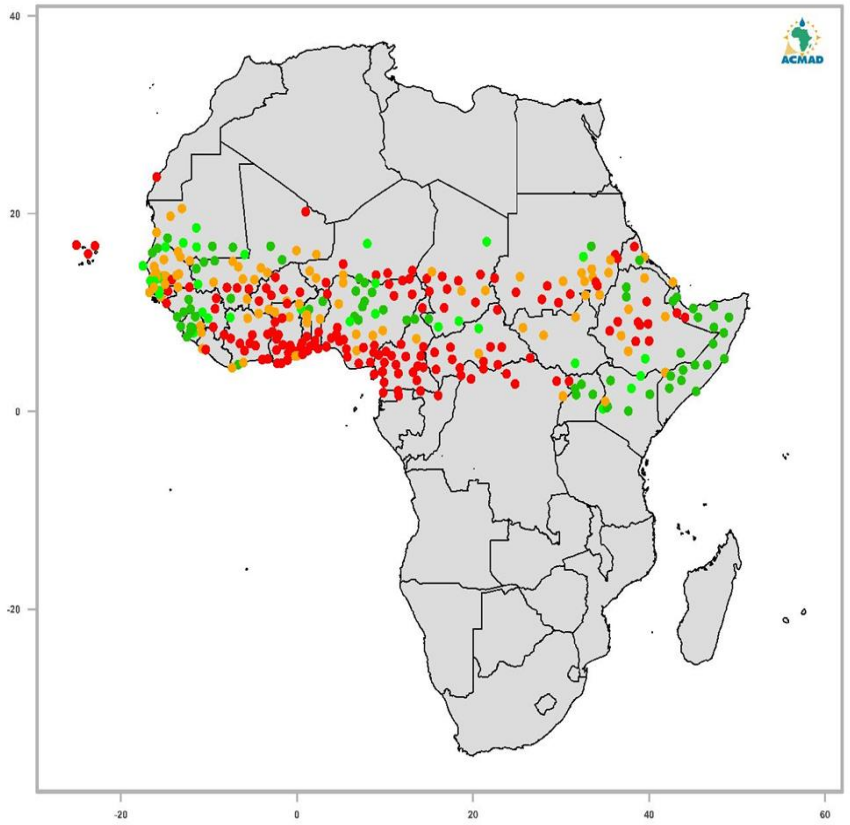


• Trends on the surface hit by heavy rainfall



START OF THE AGRICULTURE SEAON IN 2020 AND 2021

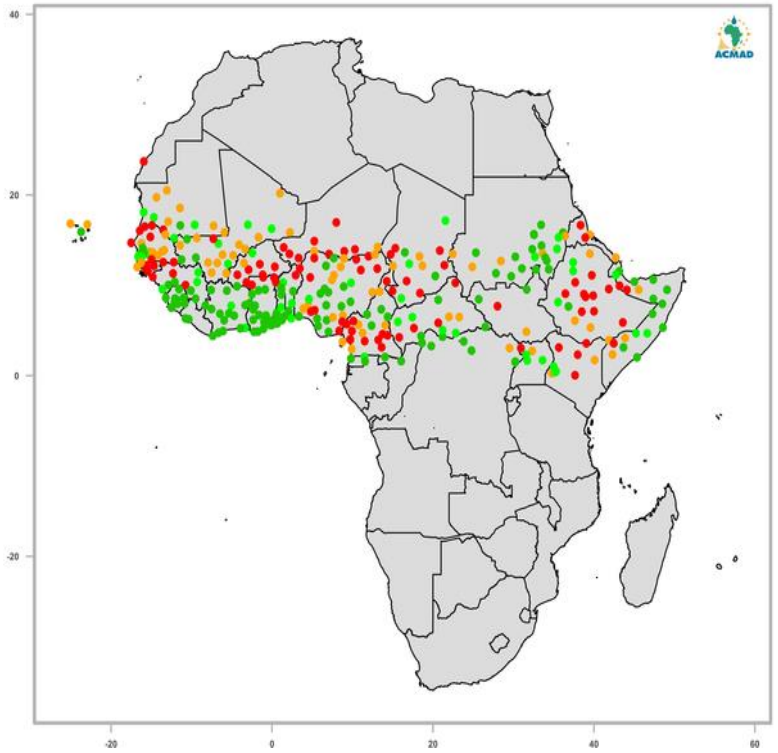
START OF THE AGRICULTURE SEASON FROM JANUARY TO JULY IN 2020 OVER SUB-SAHARAN AFRICA.



Observed start of the Agriculture Season departure from Average.

- LATE
- NEAR AVERAGE TO LATE
- NEAR AVERAGE TO EARLY
- EARLY

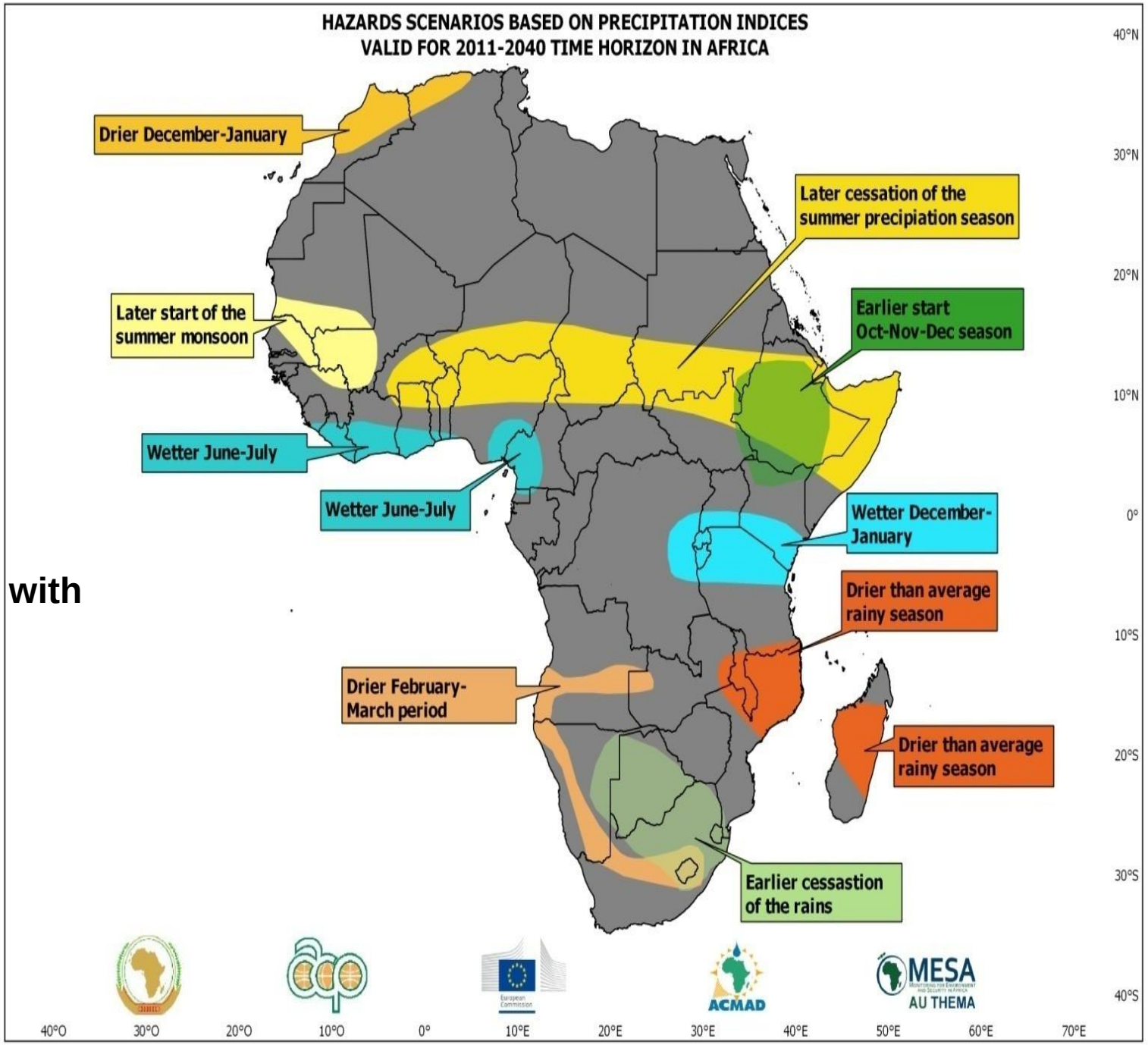
START OF THE AGRICULTURE SEASON FROM JANUARY TO JULY IN 2021 OVER SUB-SAHARAN AFRICA.



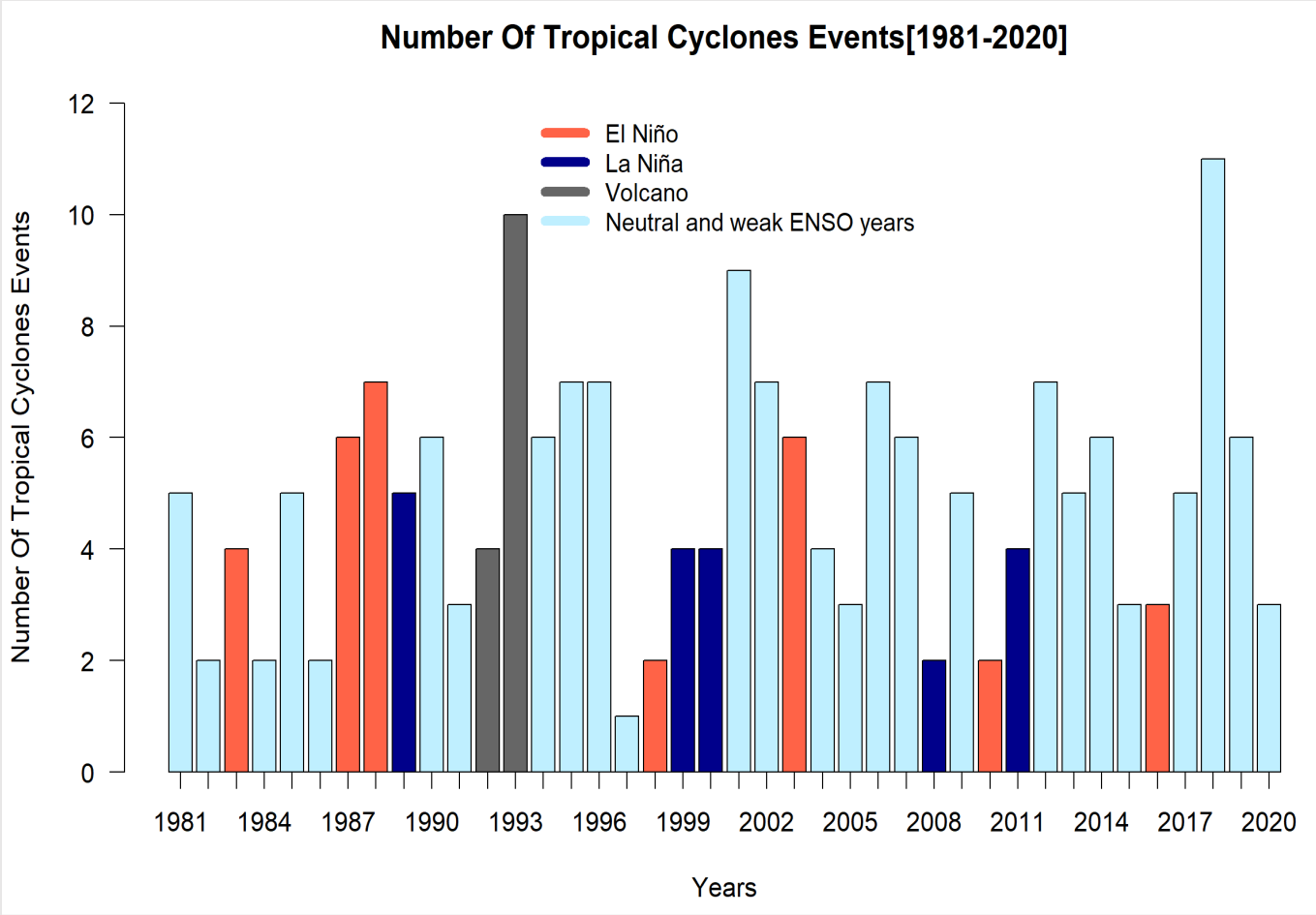
Observed start of the Agriculture Season departure from Average.

- LATE
- NEAR AVERAGE TO LATE
- NEAR AVERAGE TO EARLY
- EARLY

To be regularly updated with WCRP/CMIPs datasets



Tropical cyclones from 1981 to 2020 in South west Indian ocean



Tropical cyclones vary from year to year.

Year 2018 and 1993 recorded the highest cyclones activities.

Figure 29: Tropical cyclones from 1981 to 2020 in the SWIO region ?. The dark-grey colour are largest tropical volcanic eruptions years and are associated with cooler global temperatures. El Niño is a strong El Niño–Southern Oscillation (ENSO) event typically warmer than usual and cooler with a La Niña. Neutral and weak ENSO years are those events with neither El Niño, or La Niña characteristic; or are years with no moderate or strong El Niño or La Niña events. Data from World Meteorological Organization.

CHALLENGES/GAPS FOR CAPACITY DEVELOPMENT FOR CLIMATE RESILIENCE

- Progress has been made but the following challenges came from surveys, briefings/debriefings discussions, testbeds, outlook fora, workshops…

- Impact based forecasting capacity is low with historical impact data not interoperable with met data
- **Partnerships with Universities and research institutes is weak**

- Risk assessments including risk profiling need upscaling

- Documentation on capacity (institutional, organizational, human resources, technical, operational…) gaps dimensions is fragmented

- Infrastructure (energy, internet, data, tools…) is usually sub standards or under utilized

- Operating procedures or instruction manuals accompanying guidance material are often lacking

- Programs and training materials for specific competency areas not well organized

- **Online material and blended training integrating On the Job, secondment, internships, fellowships, testbeds, briefings/debriefings available in video, audio, text needed**
- **Cloud storage, processing services and partnerships for sharing digital resources are to be upscaled** (e.g sharing HPC and cloud resources)
- Young scientists are to be attracted ,motivated and maintained in research&innovation program

CAPACITY BUILDING ON FOR Example **Impact based forecasting** with

Climate phenomenon – Hazards (location, severity) – potential impacts – consequences- preparation and response- BAMS June 2021

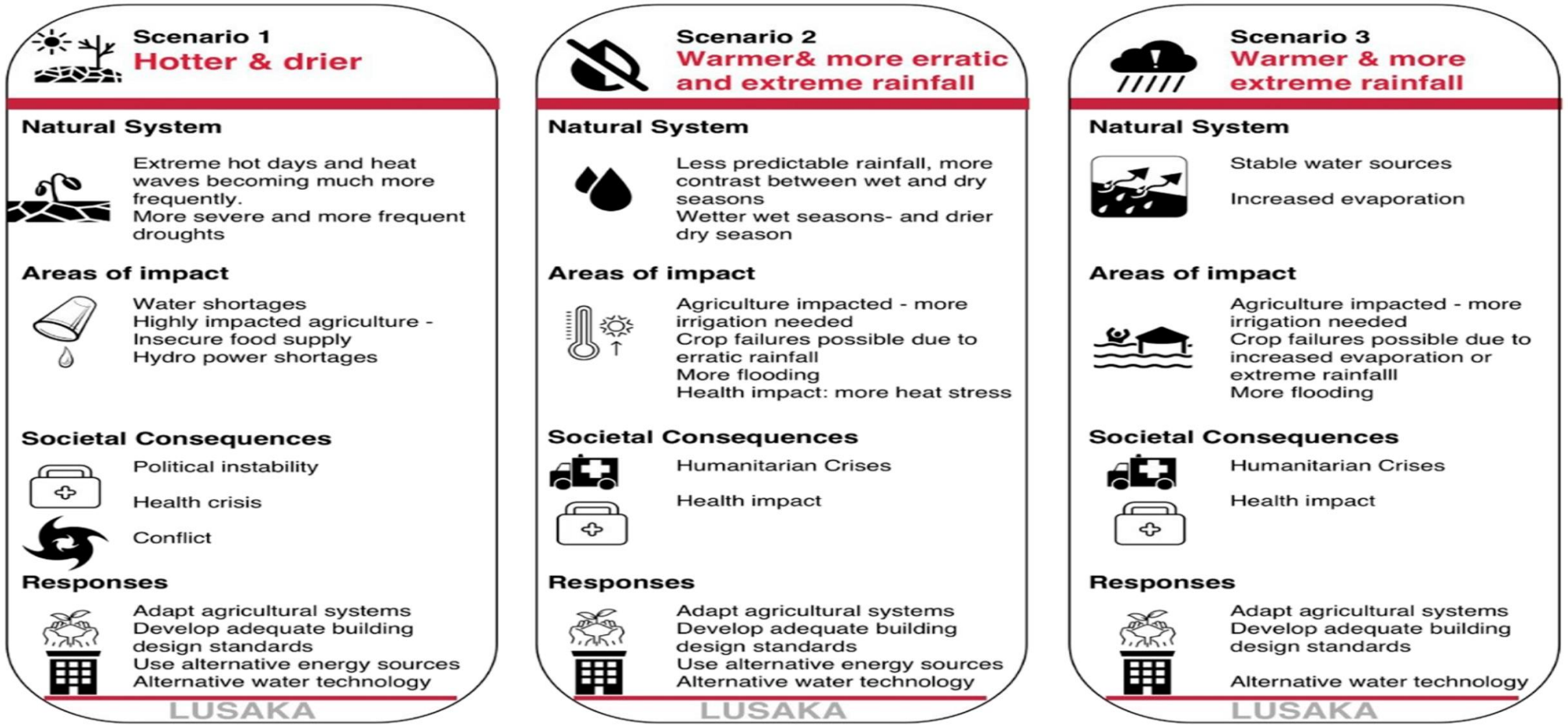
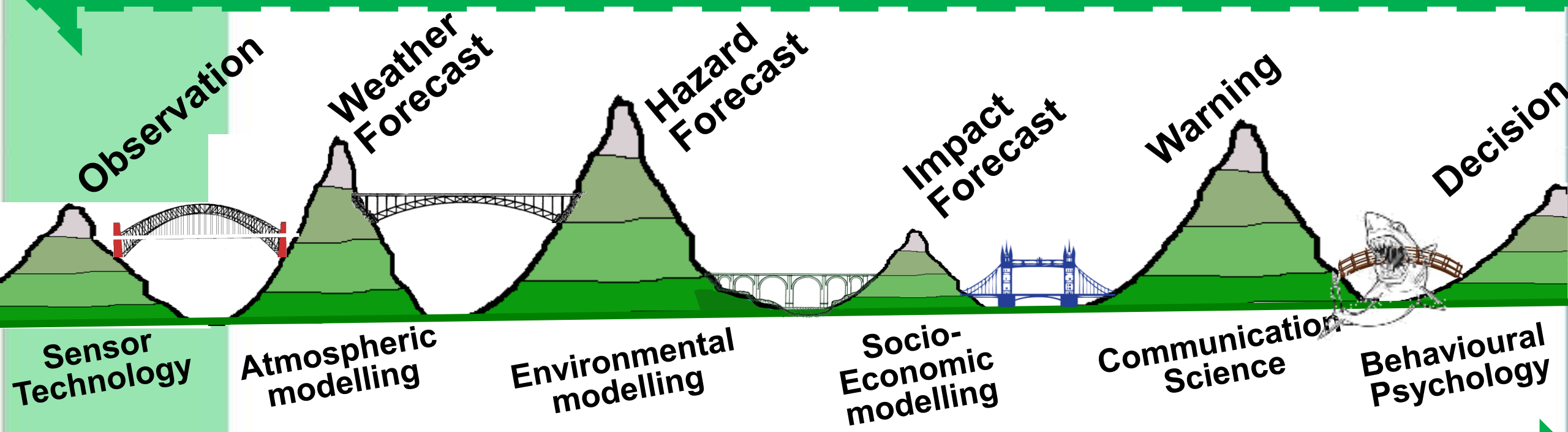


Fig. 5. Infographic summarizing three plausible future climate scenarios for Lusaka along with some key impacts, possible societal consequences, and responses.

Capacity building along the warning value chain

Co-design: slow, iterative



Co-production: fast, direct

Mountains represent expertise

Bridges represent effective partnership

INSTITUTIONAL CAPACITY FOR AMHEWAS

National MHEWS Situation Rooms

REC MHEWS Situation Rooms

- Regional Climate Centers (ICPAC, SADC)
- Regional Conflict Centers
- Regional DRM Unit
  - Regional MHEWS Aggregator
- Regional Health Centers
- Regional Food & Water Security

AU MHEWS Situation Room

- ACMAD
- MHEWS for DRR
- Continental Conflict EWS
- International Organizations
- AU DRM Situation Room
  - AU MHEWS Aggregator
- Surv. & Dis. Intelligence ACDC
- International Organizations

------THE END------

NORWEGIAN CAPACITY
OPERATED BY NRC