



# Africa Adaptation Programme



## Examples of experiences, challenges and success stories from implemented and on-going projects and initiatives on climate observations

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**COP 17 side event: Funding for climate observations, Hex River, Durban, South Africa**

*Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa*



# Content



Introduction to approaches and established partnerships to improve access and management of observed climate data/information to support planning and decision making.

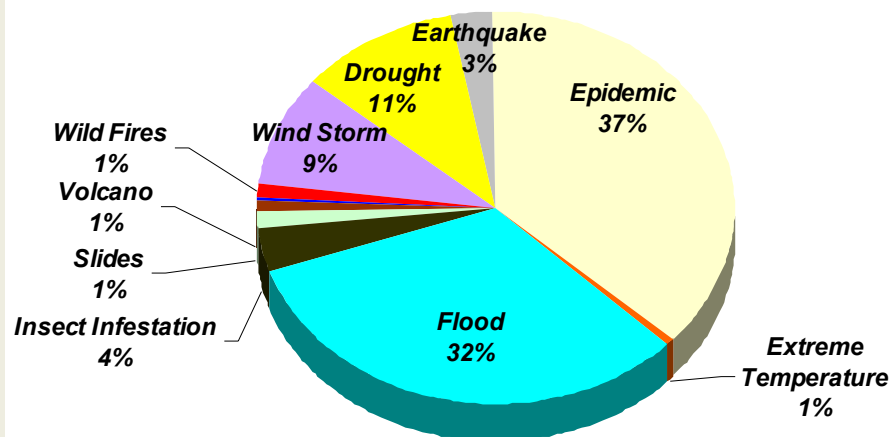
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# Disasters Caused by Natural Hazards and their Impacts in Africa (1980-2007)



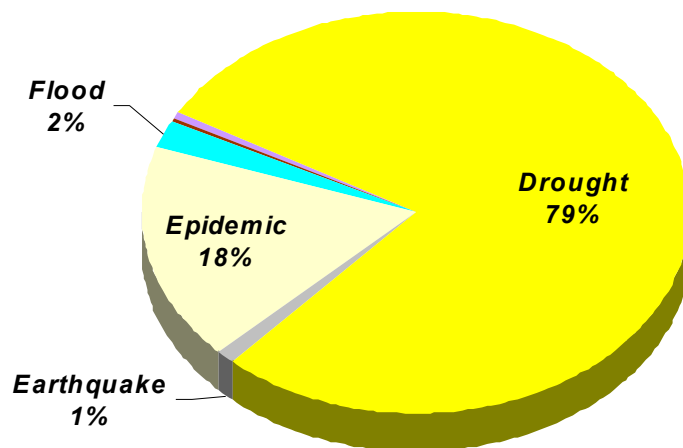
Number of disaster events - 1980-2007 (RA I)



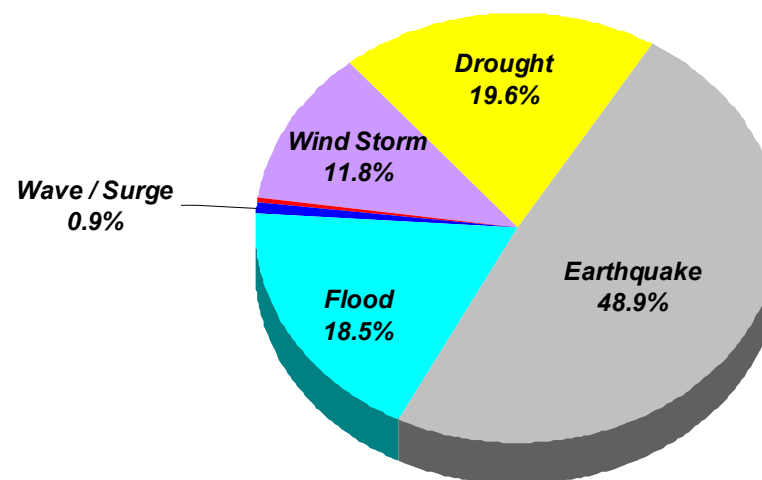
96 % of events  
99 % of casualties  
50 % of economic losses

are related to hydro-meteorological hazards and conditions.

Casualties - 1980-2007 (RA I)



Economic losses - 1980-2007 (RA I)





# Relevance of past climate observations



Long time-series of climate observations provide:

- Basis for identification of climate trends which can add confidence to expected future climate changes.
- Information which allows testing the resilience of e.g. human and natural systems or current and planned infrastructure to current climate variability.
- Enhances the relevance of hydromet services and their observational networks in disaster, development and adaptation activities.



# Data and Information for Climate Risk Management and Adaptation Planning



Short to medium  
term weather  
forecasts

Seasonal to inter-  
annual climate  
forecasts

Decadal  
climate trend  
analysis

Climate  
change  
scenarios

Next hour to  
10 days

Season to year

Decade

Long term  
climate change

- ✓ Short-term planning
- ✓ Emergency Preparedness

- ✓ Medium-term operational planning
- ✓ Risk assessment and management

- ✓ Long-term strategic planning
- ✓ Infrastructures planning, retrofitting
- ✓ Land zoning

- ✓ International negotiations with national policy implications

Decision-making Timelines



## Challenges to the delivery of products and services to support Disaster Risk Reduction



- Over 88 % of NMHS in Africa, are challenged in delivering climate products and services to support DRR
- 92% lack appropriate application software
- 96% need upgrading of operational infrastructure to support DRR
- 92% need technical training on production of climate products and services
- 85% say lack of effective co-ordination with other agencies involved in DRR impacts negatively on operations

Source: 2006 WMO Country-level DRR survey [http://www.wmo.int/pages/prog/drr/natRegCap\\_en.html](http://www.wmo.int/pages/prog/drr/natRegCap_en.html))



## Past and current climate information is required to assess current vulnerability or test climate resilience of development



Often these data are not easily accessible due to lack of technical systems and human capacity with many data not even available in digital form. This requires the following:

- Improved human and technical resources to understand data requirements and enable delivery of relevant information.
- Raised awareness amongst Hydromet services and development, disaster and adaptation practitioners of the value of past and current climate data
- Programmes to rescue, digitise and make available historical observations and merge these with observations from new and improved observing systems.



# **Examples of Innovative Approaches to Data and Information Management for Planning and Decision Making**





# Innovative Approaches



- The statistics show existing mechanisms are inadequate to support national requirements
- Requires supporting developing countries to develop Integrated and Comprehensive Approaches to address Climate Change and its impacts
- Data and information management support to countries to enable long-term planning and decision-making mechanisms
- Building strategic partnerships at all levels (Global, Regional/Continental and National/local) to support African countries to generate, access and apply data/information for adaptation planning



## AAP Data and Information Management Component (DIMC)



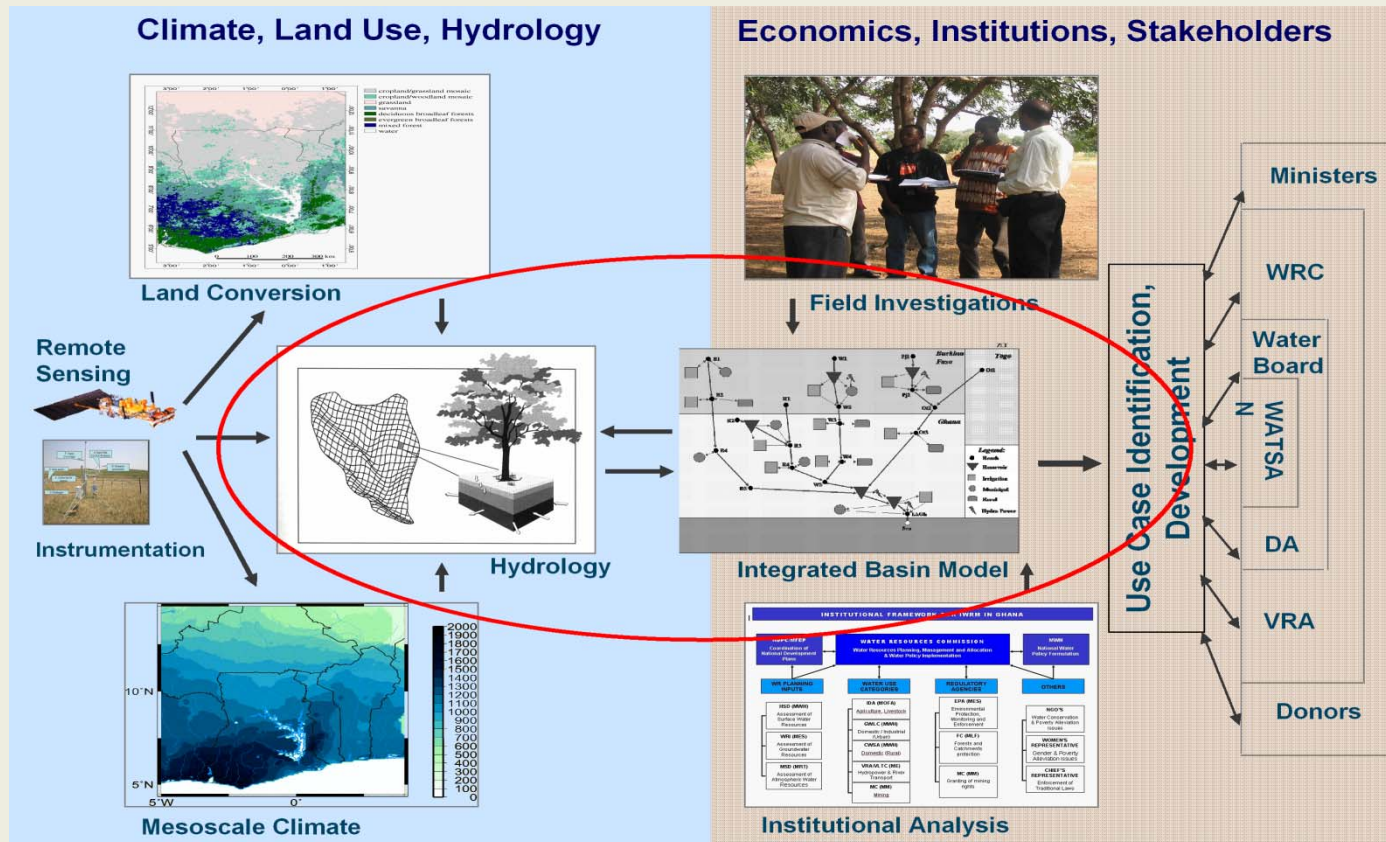
Facilitating access to the best available data and information on climate variability and impacts to support dynamic, long-term national planning and decision-making mechanisms.

Through:

- Assisting in the early analysis and design of national projects and, as those projects are being initiated and implemented.
- Providing assistance to countries in accessing, collecting and analyzing best available data on past and current climate and climate change
- Building capacities of countries - establishment and use of e-infrastructure (ICT, data, tools, network of institutions), early warning systems and decision support tools.

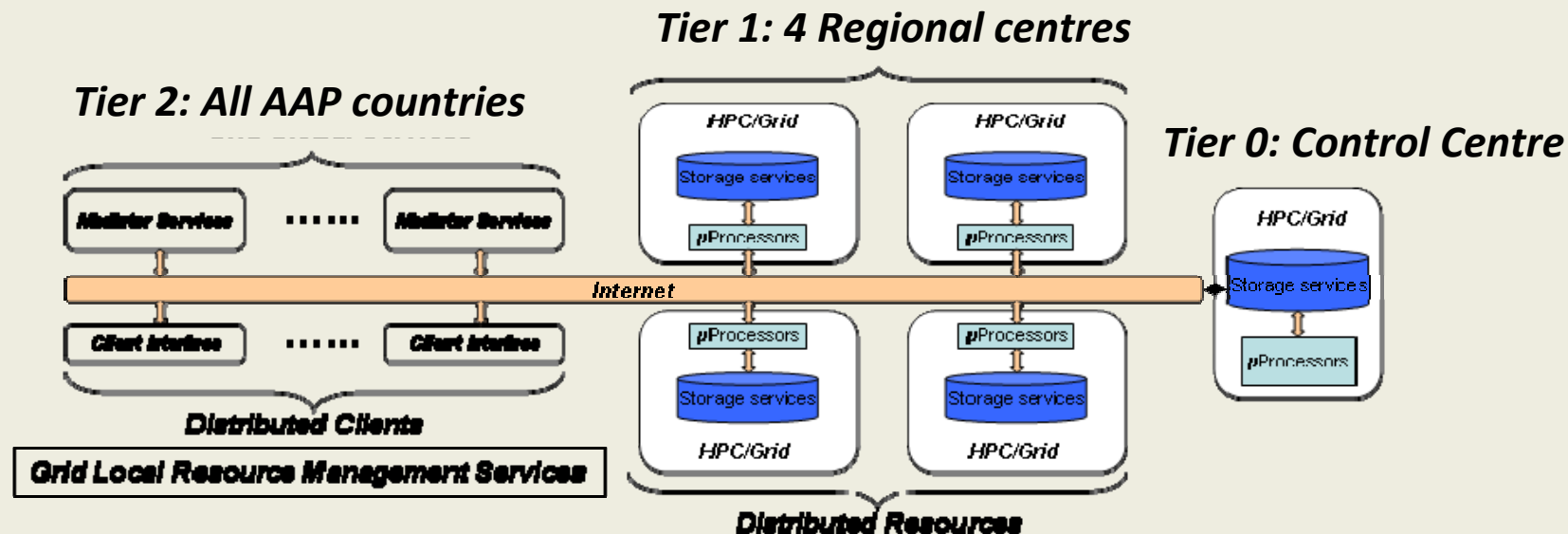


# Building Trans-boundary partnerships for Adaptation Planning



## Integrated Data Collection and Analysis Framework for Adaptation Planning

# AAP Climate Data Storage and Computational Infrastructure



1. Tier 0: A central computer that is large enough to host considerable amount of data (potentially at ICTP)
2. Tier 1: Consist of four African Regional Centres and it will be large enough to guarantee that combined data created and stored is similar to Tier 0.
3. Tier 2: Consist of all AAP Countries that will access the infrastructure by means of an of internet - web interface.



# Establishing and strengthening strategic networks



- Built/strengthened network at different levels:
  - in-country linkages between climate products and services providers, policy/decision makers and end-users
  - strategic networks with key African regional centres (ACMAD, AGRHYMET, ICPAC and SADC-DMC) and International Climate Centres (UK Hadley, Earth Simulator, etc)
  - strategic networks with key international institutions (WMO, UNFCCC, WFP, ACPC, IGAD, ECOWAS, UNEP, IFRC, ICTP, etc).



# In-country technical assistance - mentoring, trouble shooting and advisory services



- Developed a Helpdesk to enable rapid response to problem resolution – established a local network of problem-solvers, mentors and advisors.
- In-country technical support for:
  - services on data and information management: data collection, analysis, e-infrastructure, tools and methods.
  - procurement, use and management of early warning systems and decision support tools.

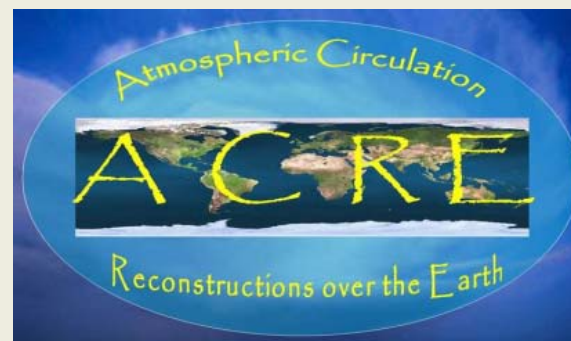
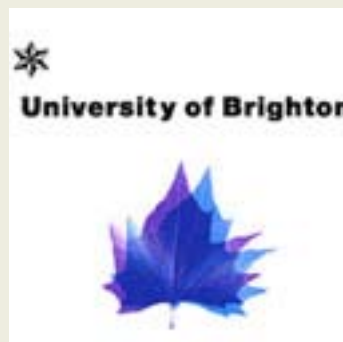




National Archives of Mauritius

## An example of data rescue: THE MAURITIUS PROJECT

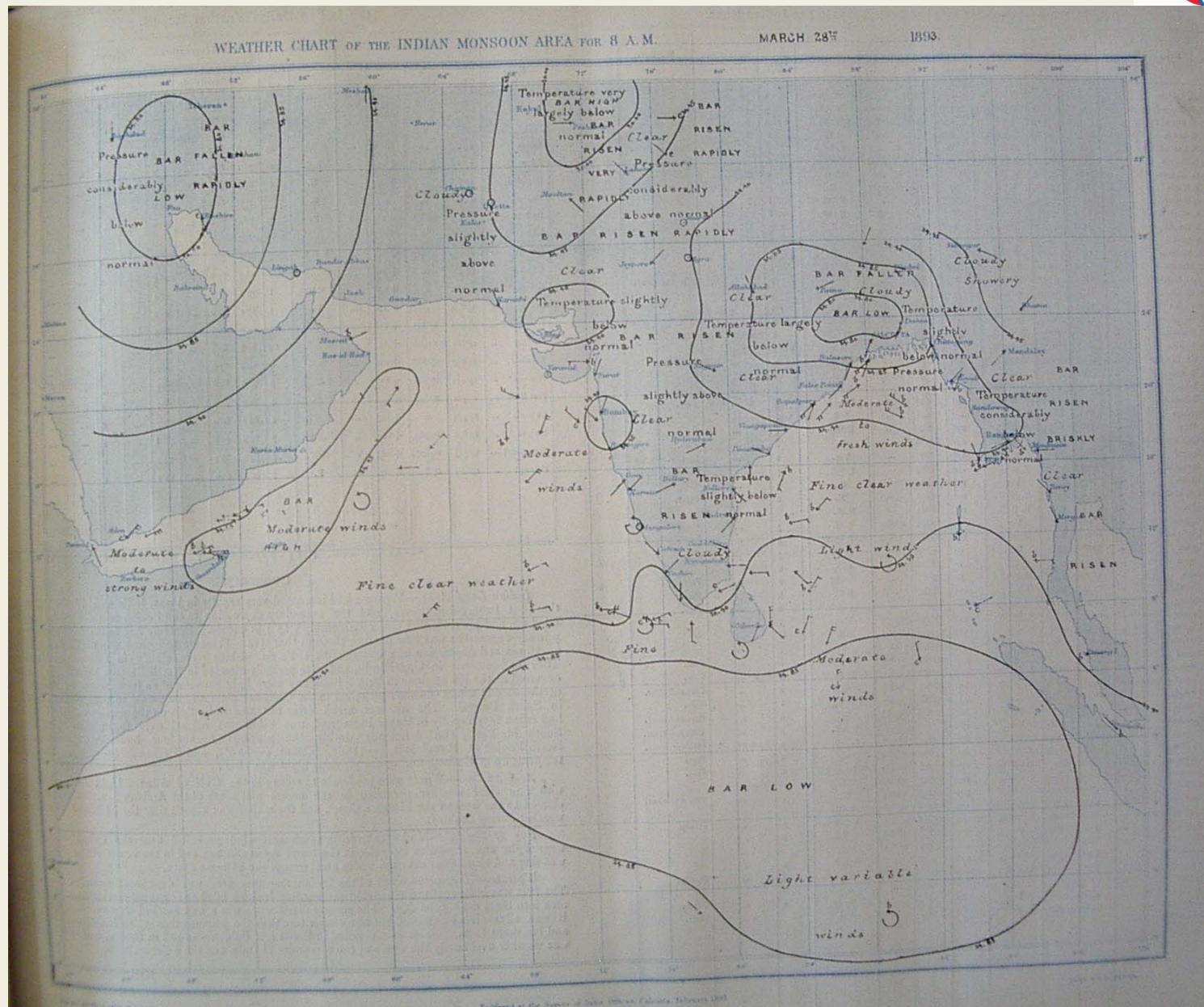
Recovering, imaging, digitising, archiving and preserving of old weather observations extracted from ship logbooks in 188 volumes of Charles Meldrum's 'anemological' journals from 1853 to 1914 held by the National Archives in Mauritius (NAM), and terrestrial weather observations for Mauritius (including data from Colonel Lloyd's Colonial Observatory at Port Louis) from the late 18th to the early years of the 20th century held by the Mauritius Meteorological Services (MMS).



## Old weather data records in Mauritius









# Regional and Continental Level Partnerships



- IGAD Climate Prediction and Applications Centre (**ICPAC**)
- Agriculture, Hydrology, Meteorology Regional Centre (**AGRHYMET**)
- African Centre of Meteorological Application for Development (**ACMAD**)
- African Climate Policy Centre (**ACPC**)
- **CORDEX-Africa**
- University of Cape Town's Climate Systems Analysis Group (**UCT CSAG**)
- African Regional Climate Outlook Forums (**RCOFs**)
- Climate for Development in Africa Programme (**ClimDev-Africa**) through **ACMAD**

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# Global and National Level Partnerships



## National

- National Meteorological and Hydrological Services
- Disaster Management Authorities,
- Government Departments, Local Governments and NGOs
- Universities and Research Institutions
- Private sector

## Global

- International Centre for Theoretical Physics (**ICTP**)
- World Meteorological Organisations (**WMO**)
- United Nations Integrated Strategy for Disaster Reduction (UN-ISDR)
- United Nations Framework Convention on Climate Change (**UNFCCC**)
- WorldBank (**WB**)
- United Nations Environment Programme (**UNEP**)

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# Summary and Conclusion



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- Regional/Global Helpdesk for technical support and services must be established/strengthened
- Data and information management strategy must be developed and implemented (based on GFCS).
- Need activities on improving access to and rescuing data
- Relevant networks and partnerships to support data and information management must be strengthened.
- Unprecedented data availability on Africa through the AMMA, CORDEX-Africa and related partnerships.
- Development of e-infrastructure for data and information management, early warning and decision support tools for adaptation planning.



# Thanks