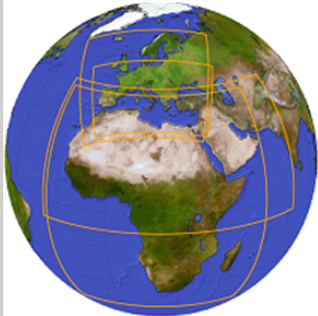
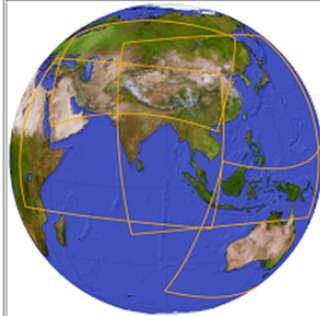


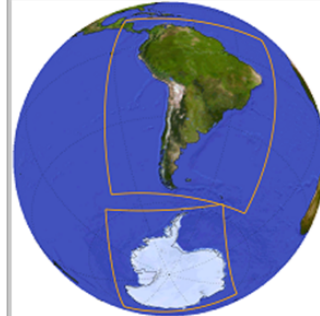
- Arctic CORDEX
- North America CORDEX
- Central America CORDEX



- EURO-CORDEX
- MED-CORDEX
- CORDEX Africa
- MENA-CORDEX



- Central Asia CORDEX
- South Asia CORDEX
- East Asia CORDEX
- South East Asia CORDEX
- Australasia CORDEX



- South America CORDEX
- CORDEX Antarctica



# Coordinated Regional Downscaling Experiment (CORDEX)

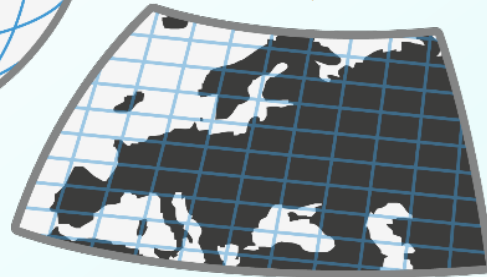
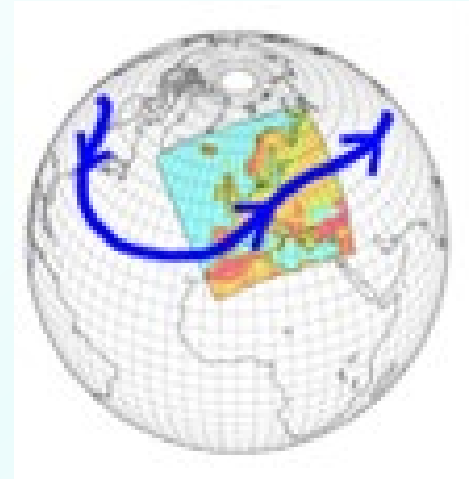
The Living Planet Symposium  
May, 2022

*Irène Lake*  
*Director for the International Project Office for CORDEX*  
*(IPOC) at SMHI*  
[www.cordex.org](http://www.cordex.org)



# The chain from global to local

- from data to knowledge to societal benefit -



**HCLIM 12-25 km**  
**CORDEX standard**

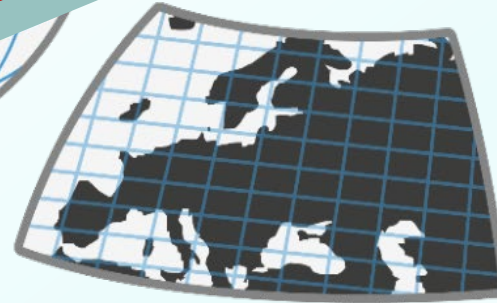
**HCLIM 1-3 km**  
**CPM**





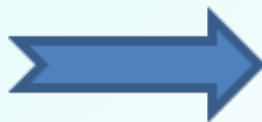
**Platform/facilitator for  
coordination and cooperation**

- Global collaboration
- Coordinated, high-resolution, validated climate information
- Open access, easy to use
- > Informed decisions
- New climate change scenarios for regions coming soon
- Earth System Grid Federation (ESGF)





- ❑ Small scale challenges!
- ❑ Events with large socio-economic impact;
  - Water supply; crops, spreading of diseases, land slides
  - Cities: sewage systems, heat waves
  - Land use; forests, constructions



**Actionable climate information**  
**National Adaptation Plans (NAPs)**





**Understanding/knowledge  
transfer/capacity  
development**



# Earth Observations in CORDEX

Purpose of use?

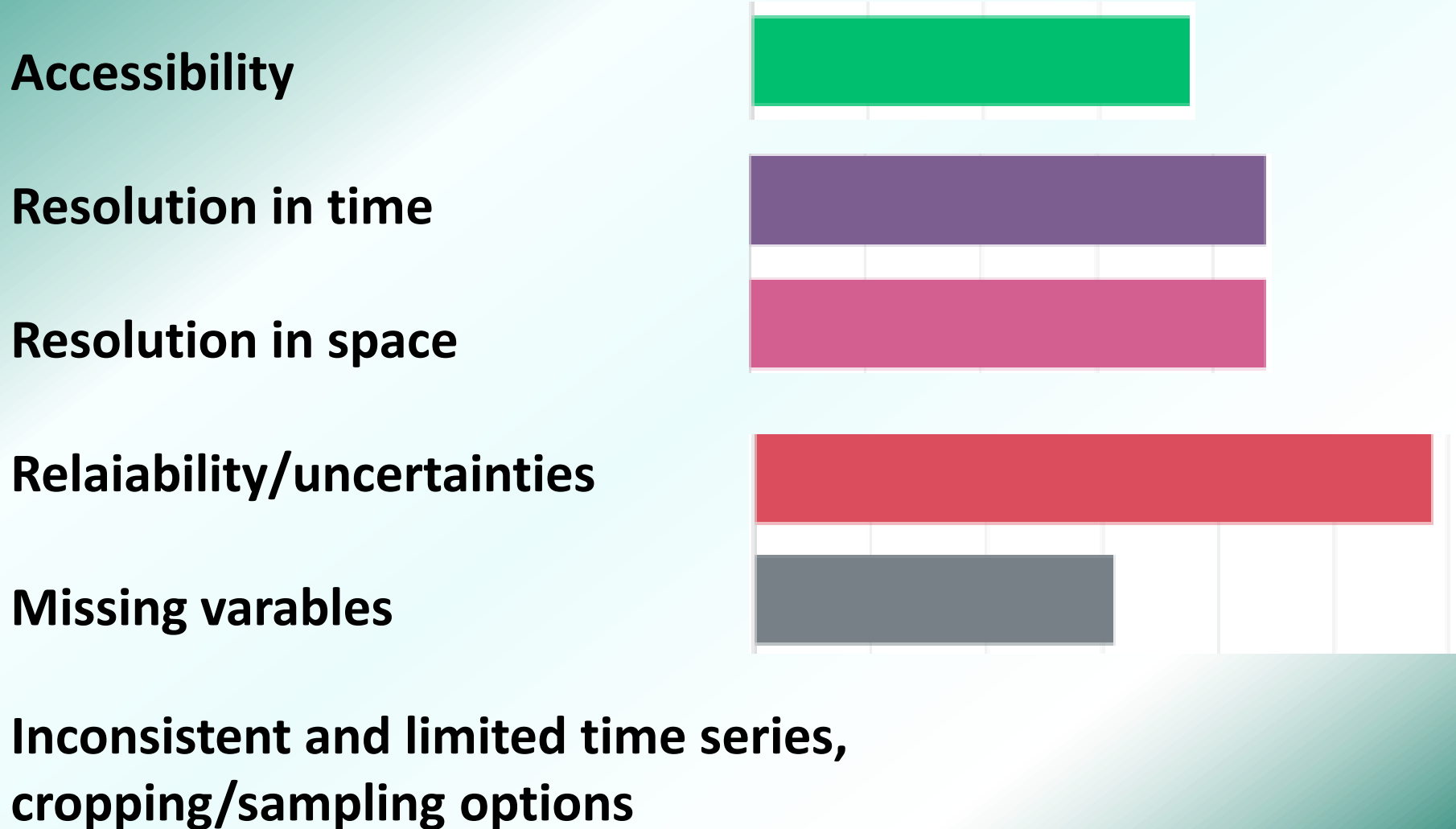
Model validation/evaluation

Land use/land cover change

Bias correction of snow cover

# Earth Observations in CORDEX

Primary challenges with regards to space-based data use?



# Earth Observations in CORDEX

Primary advantages with regards to space-based data use?

Accessibility



Resolution in time



Resolution in space



Area coverage



Missing variables





# Earth Observations in CORDEX

Challenges with combining different EO data/time series?

Different formats



Different resolutions



Different units



Incompatible algorithms



Incompatible variables



# Earth Observations in CORDEX

Challenges combining space-based and ground based EO data/time series?

Sampling in time



Sampling in space



Formats



Measured quantities



Large data sets



Lack of in situ data/ground-based data the main problem!

# Rate your possibility to influence the planning of new Earth Observations Programmes?

2.4★

average rating

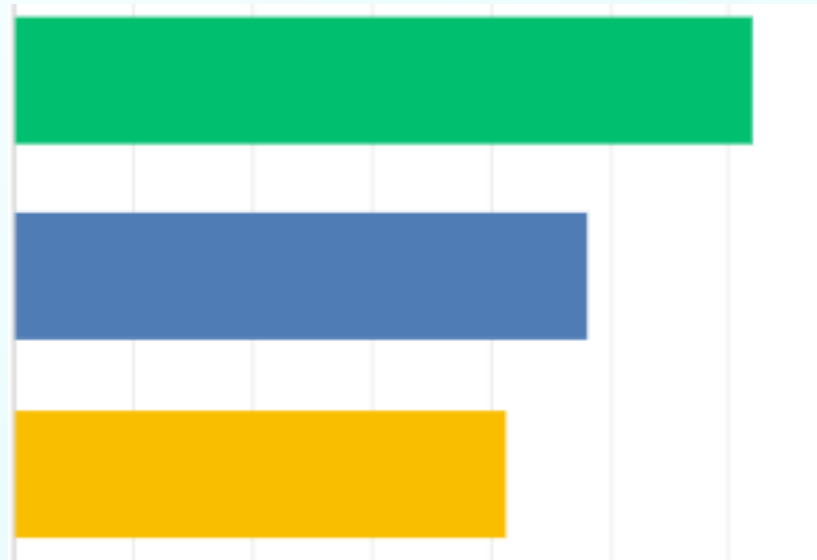


# How would you like to be able to influence the planning?

**Surveys before planning of programmes**

**Information webinars**

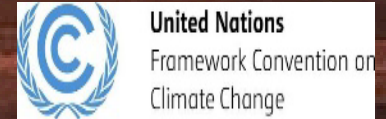
**Calls for reference groups**



# Thank you!!

WCRP  
CORDEX

Coordinated Regional Climate Downscaling Experiment



WORLD  
METEOROLOGICAL  
ORGANIZATION



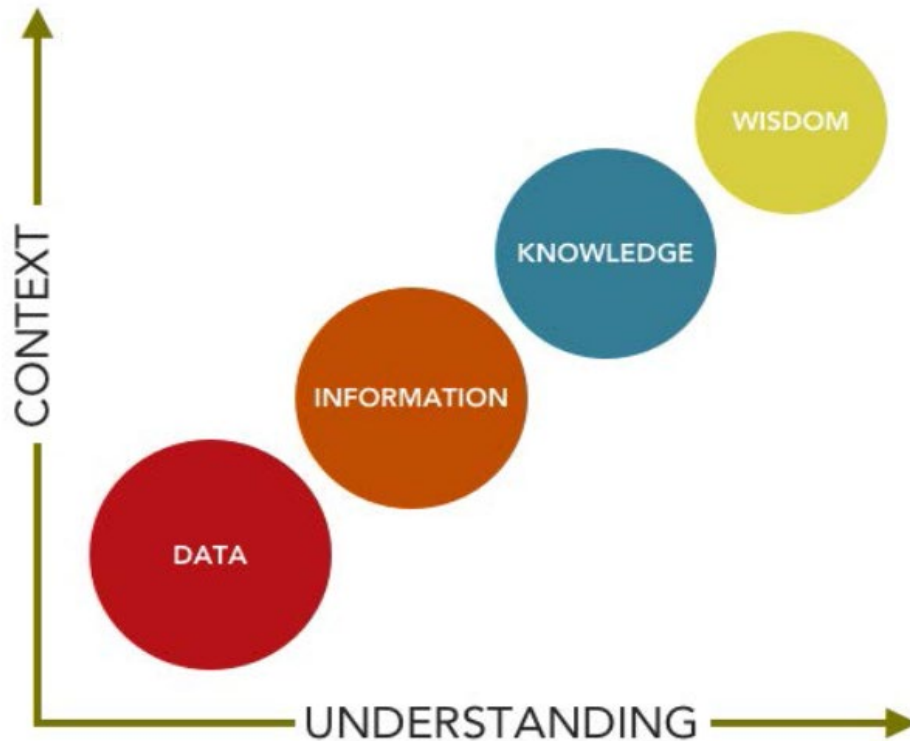
unesco  
Intergovernmental  
Oceanographic  
Commission



International  
Science Council

Governmental  
bodies//local  
decision makers

# Data or information?



- **Climate info = messages relevant to users**
- **... backed by clear, robust physical scientific analyses**

# Investigating the Impact of Projected Timing of Climate Departure on Crop Yield over West Africa

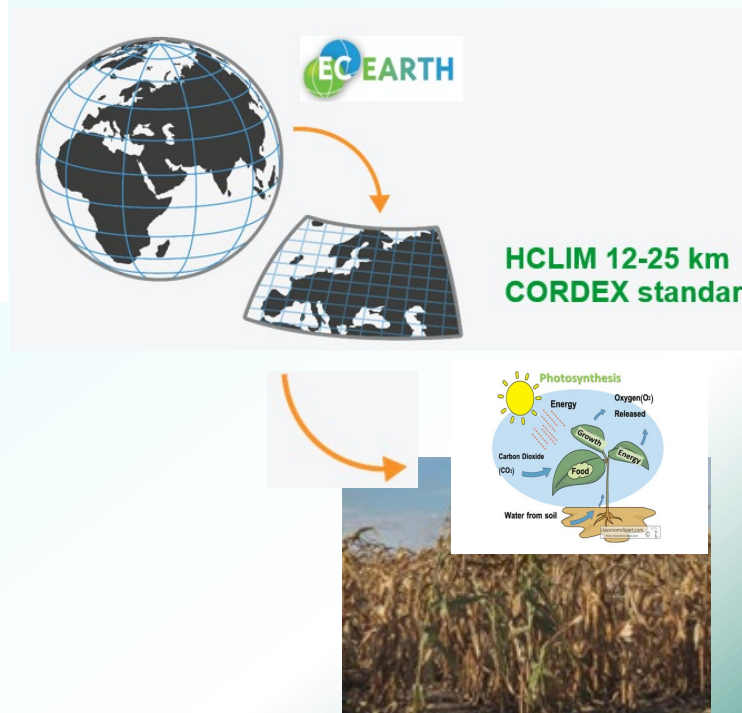


Temitope S. Egbebiyi, Chris Lennard, Olivier Crespo, Modathir Zaroug  
Climate System Analysis Group, Department of Environmental and Geographical Science, University of Cape Town, South Africa  
[tsegbebiyi@gmail.com](mailto:tsegbebiyi@gmail.com)



## Investigating the potential impact of 1.5, 2 and 3 °C global warming levels on crop suitability and planting season over West Africa

Temitope Samuel Egbebiyi<sup>1</sup>, Olivier Crespo<sup>1</sup>, Christopher Lennard<sup>1</sup>,  
Modathir Zaroug<sup>1,5,6</sup>, Grigory Nikulin<sup>2</sup>, Ian Harris<sup>3</sup>, Jeff Price<sup>4</sup>,  
Nicole Forstenhäusler<sup>4</sup> and Rachel Warren<sup>4</sup>



# Impact of climate change on hydropower potential of the Lagdo dam, Benue River Basin, Northern Cameroon

Rodric M. Nonki<sup>1</sup>, André Lenouo<sup>2</sup>, Clément Tchawoua<sup>3</sup>, Christopher J. Lennard<sup>4</sup>, and Ernest Amoussou<sup>5</sup>

<sup>1</sup>Laboratory for Environmental Modeling and Atmospheric Physics, Department of Physics, Faculty of Sciences, University of Yaounde, P.O. Box 812, Yaounde, Cameroon

<sup>2</sup>Department of Physics, Faculty of Science, University of Douala, Douala, Cameroon

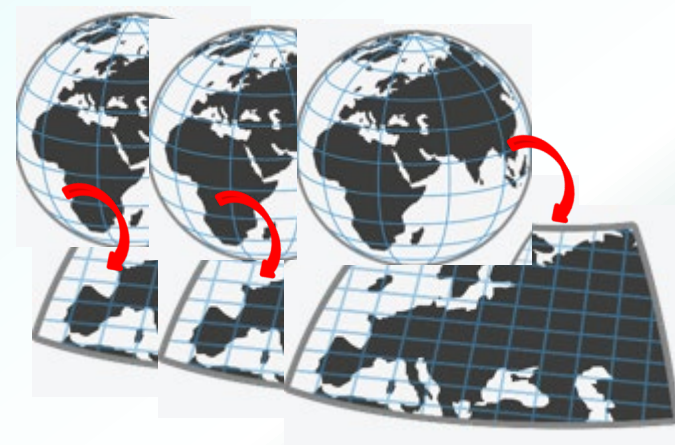
<sup>3</sup>Laboratory of Mechanics, Department of Physics, Faculty of Sciences, University of Yaounde, Yaounde, Cameroon

<sup>4</sup>Climate System Analysis Group, University of Cape Town, Cape Town, South Africa

<sup>5</sup>Laboratoire Pierre Pagny: Climat, Eau, Ecosystème et Développement (LACEEDE), University of Parakou, Parakou, Benin



Lagdo Dam

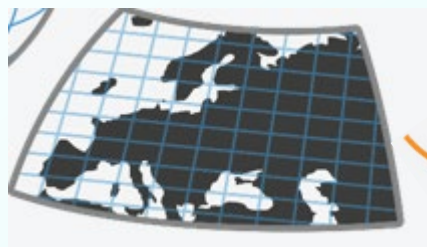




# Impact of future climate change on malaria in West Africa

Ibrahima Diouf<sup>1,2</sup> · Abiodun M. Adeola<sup>3,4,5</sup> · Gbenga J. Abiodun<sup>6</sup> · Christopher Lennard<sup>7</sup> · Joyce M. Shirinde<sup>8,9</sup> · Pascal Yaka<sup>10</sup> · Jacques-André Ndione<sup>11</sup> · Emiola O. Gbobaniyi<sup>12</sup>

Received: 30 December 2020 / Accepted: 1 October 2021 / Published online: 20 October 2021



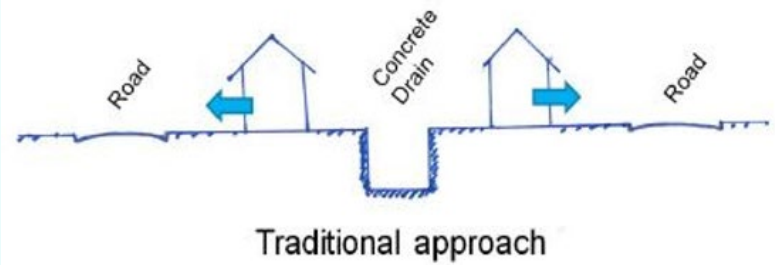
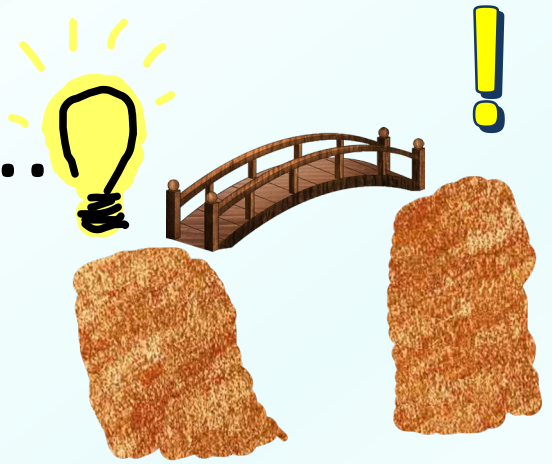
# Spreading of diseases related to climate

## Monsoon getting longer

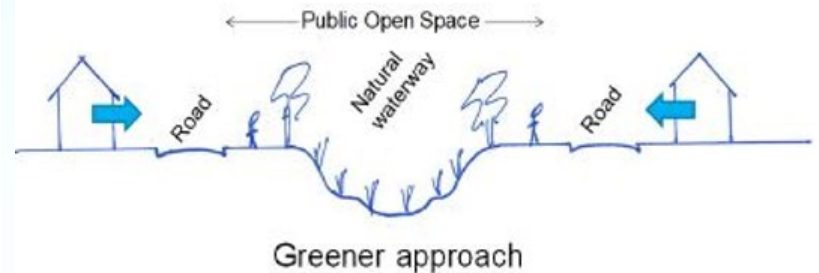
- Wetter and warmer:
  - Respiratory illnesses
  - Waterborne diseases – cholera etc
  - Mosquitos > dengue fever
  - Depression and anxiety



# With/without knowledge...



**Action/future!!!?**





**Hybrid; Physical/online,  
Regional hubs**



**‘CORDEX is very crucial  
for IPCC’, Panmao Zhai ,  
chair IPCC WGI**

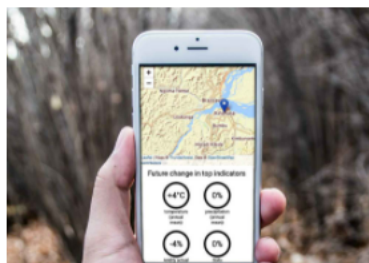


- Help LDCs to get support from the Green Climate Fund
- Methodology for use of climate data – National Adaptation Plans (NAPs) , indicators in web-based



Providing climate science basis for  
climate adaptation and mitigation activities

[View a short intro film](#)



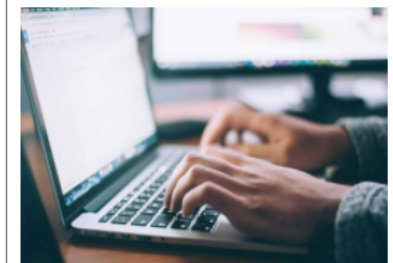
### Site-specific report

Get an instant climate change overview for any location world-wide.



### Data Access Platform

Download pre-calculated climate indicators and explore interactive maps and graphs.



### Climpact

Calculate climate indicators using your own weather and climate data.

[Which climate information and Which tool should I use?](#)



## **Climate Change Adaptation is one of the most important tasks facing us!**

- **Do we know what climate we should adapt to?**
- **There is an illusion by some decision makers that we already know everything about the future climate and can simply focus on “*adapting*”**
- **Assessing and informing on expected climate change in both the near and far future is an on-going scientific process, and must be an integral part of the adaptation agenda**

# Climate impact; hydrology/water supply, land use, (D)urban climate



GETTY IMAGES

Informal settlements have been badly hit by the flooding

# Air quality, extreme temperatures and health





VETENSKAP

# Expensive and deadly – a warmer climate cost money, health, lives

UPPDATERAD 2019-10-27 PUBLICERAD 2019-10-27



Kalhuggen och bränd mark i Amazonas i Brasilien. Foto: Andre Penner

Klimatförändringarna kostar pengar och skadar vår hälsa, och det kommer att bli värre. Avverkning av regnskog i Amazonas sprider malaria, ebola kan nå helt nya områden, och större åldersklyftor mellan stad och landsbygd ökar sårbarheten för värmeböljor, torka och andra klimatrelaterade händelser.





“If you can’t  
measure it, you  
can’t manage  
it”

Peter Drucker

