

A photograph of a desert landscape at sunset. The sky is a warm, golden-orange color, and the sun is a bright, glowing orb on the horizon. In the foreground, there are rolling sand dunes. A small, dark, scrubby bush is visible in the lower-left corner. The text is overlaid on the image in a white, sans-serif font.

The Impacts of Climate Change on Africa

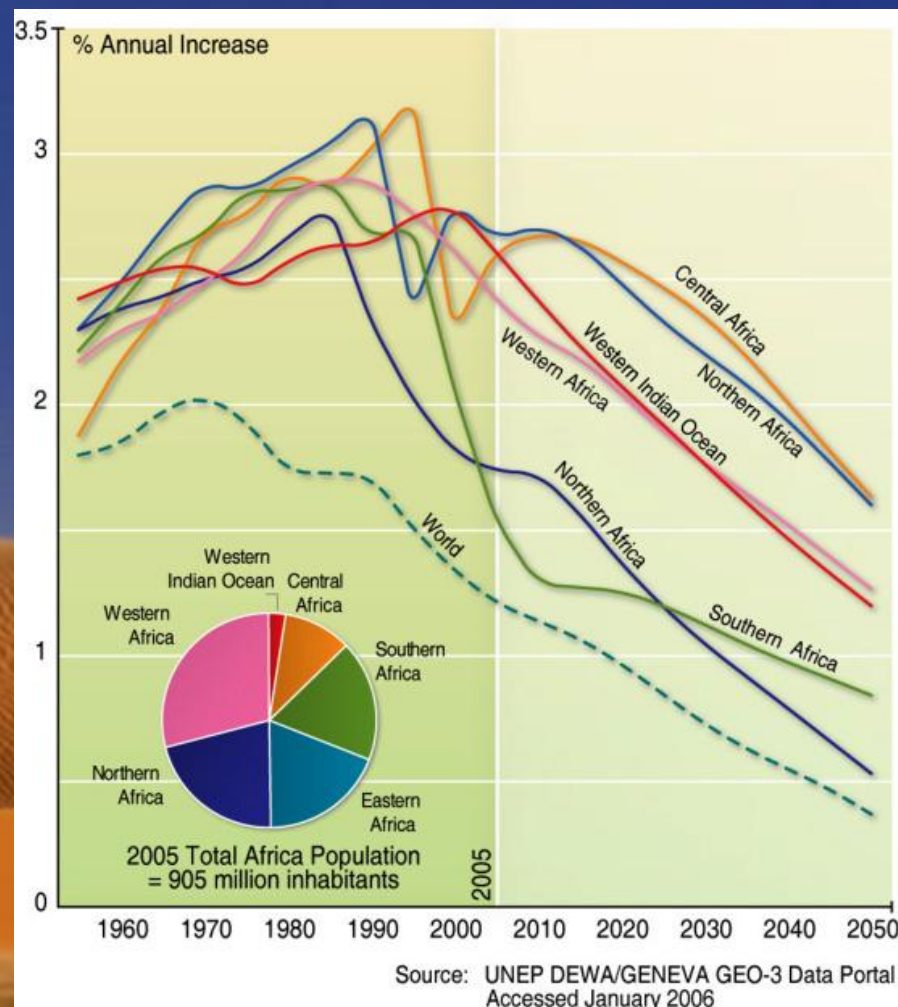
By Daniel Pollak

Africa is one of the most vulnerable continents to climate change. This is a situation aggravated by the interaction of 'multiple stresses.'

Existing Stresses include:

- Endemic poverty
- Complex governance
- Limited access to capital
- Disease
- Ecosystem degradation
- Complex disasters and conflicts.

Highest rate of
POPULATION GROWTH
of any continent



Some Climate Stressors :

- Droughts and floods.
- Increases in temperature
- Rise in sea level pressure

The number of extremely dry and wet years will increase during this century.

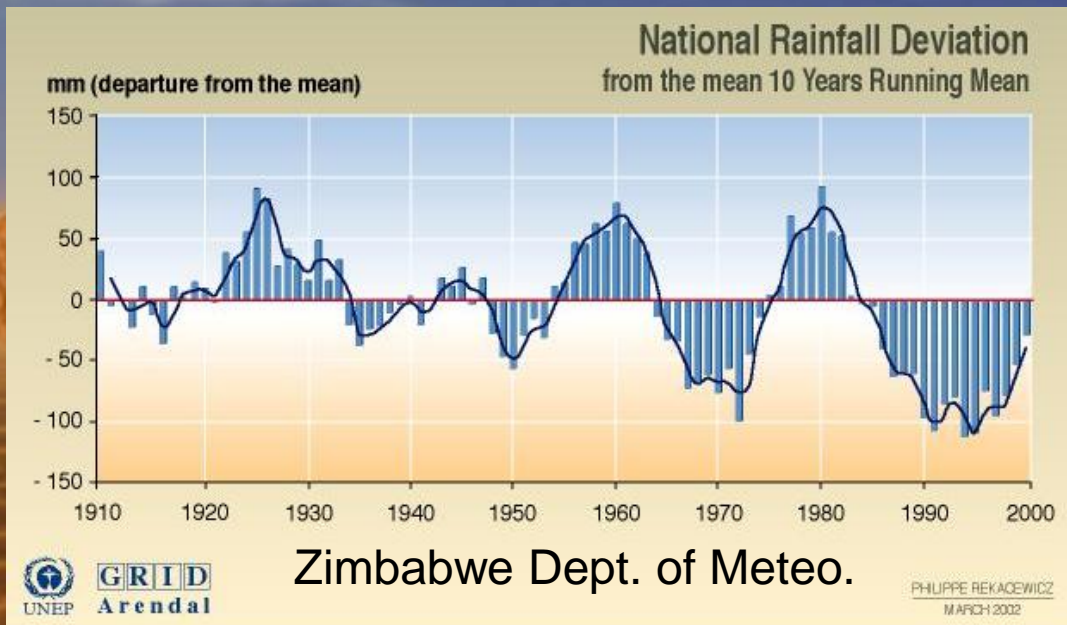
Longer and more extreme patterns.

**Climate Stressors +
Socio-economic factors =
increasing problems**

Desertification:

Many African countries face arid and semi-arid conditions now. With climate change it is predicted that by the 2080s, the area of arid/semi-arid land will increase by 5-8%.

**Equivalent to an area increase of
3,500-10,000 football
fields per day!!**



Impacts on Agriculture and the Economy:

- The contribution of agriculture to the GDP varies over the continent but averages around 21% (10-70%).
- South Africa: net revenues go down 90% by 2100.

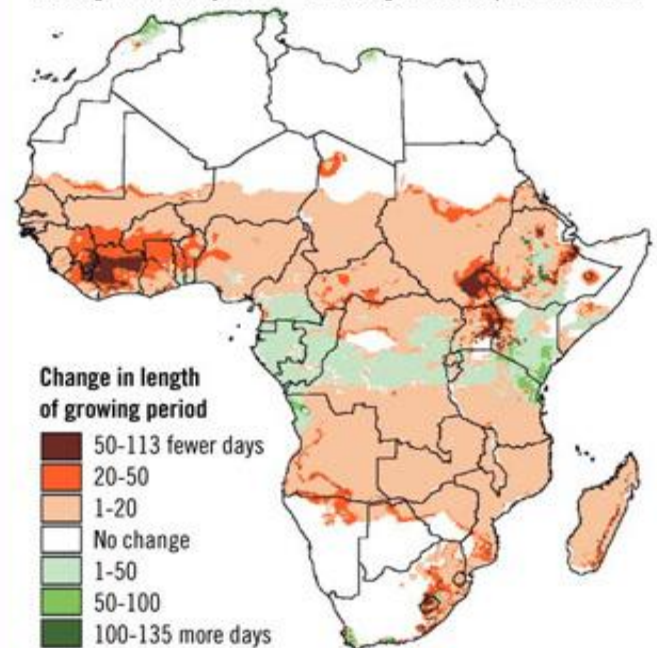
Increased natural resource demand due to increasing population. **COMBINED** with poor soil fertility, pests, and increased floods and droughts = major problem with infrastructure of African Nations.

Costs to Adapt to Climate Change

The cost of adapting to climate change in Africa could amount to at least 5-10% of the GDP. If no action is taken the losses due to climate change could be up to 14% of GDP.

Figure 1.2 Climate change and food security

Changes in Projected Growing Season, 2000-2050



Source: Thornton et al. 2002:89

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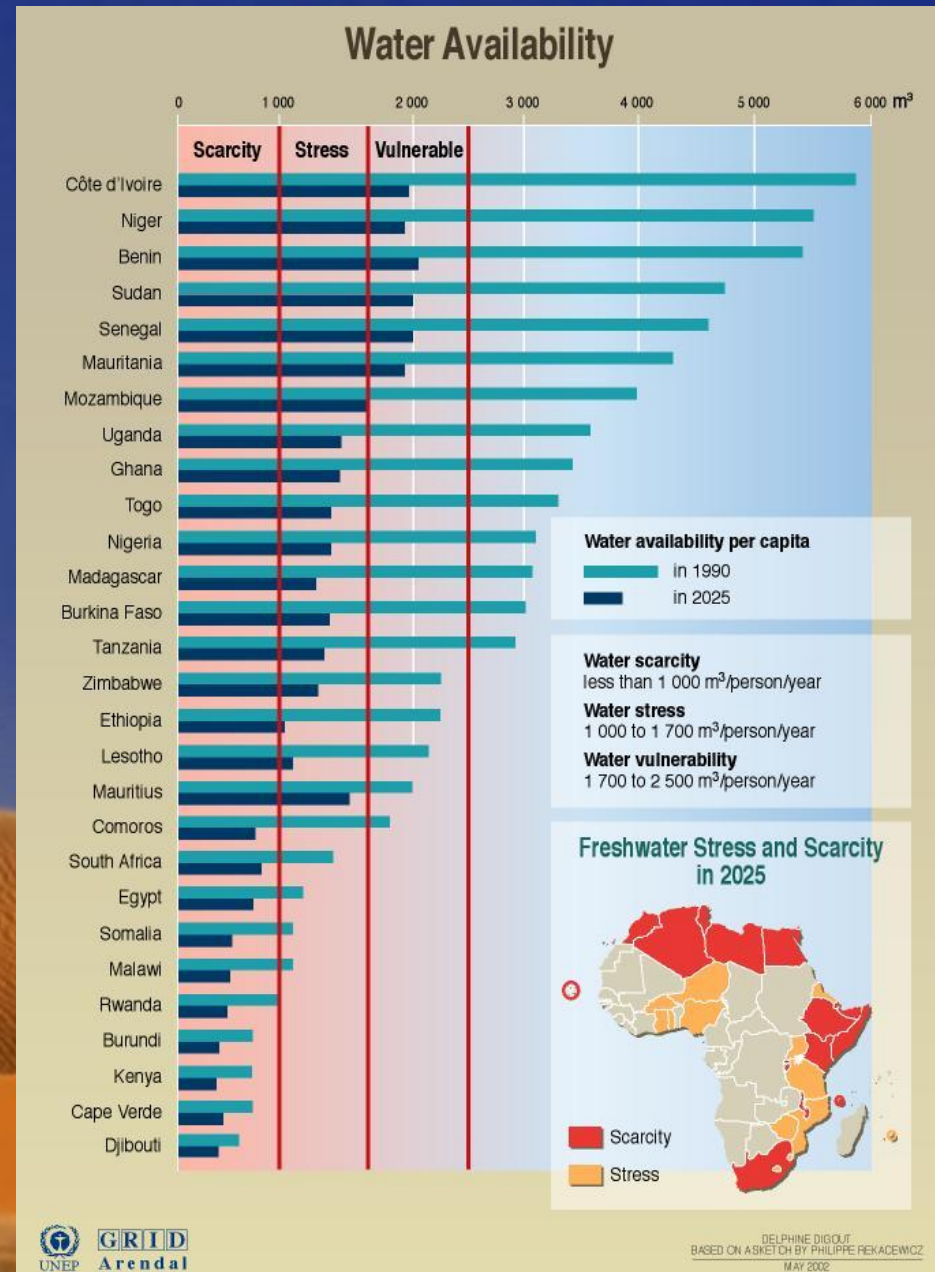
Water Stress in Africa:

•Climate change will aggravate the water stress to the point where the whole continent will experience some sort of water stress.

Several countries in Africa, especially No. Africa will exceed the limits of their economically usable land-based water resources before 2025.

•200 million people in Africa currently experience water stress.

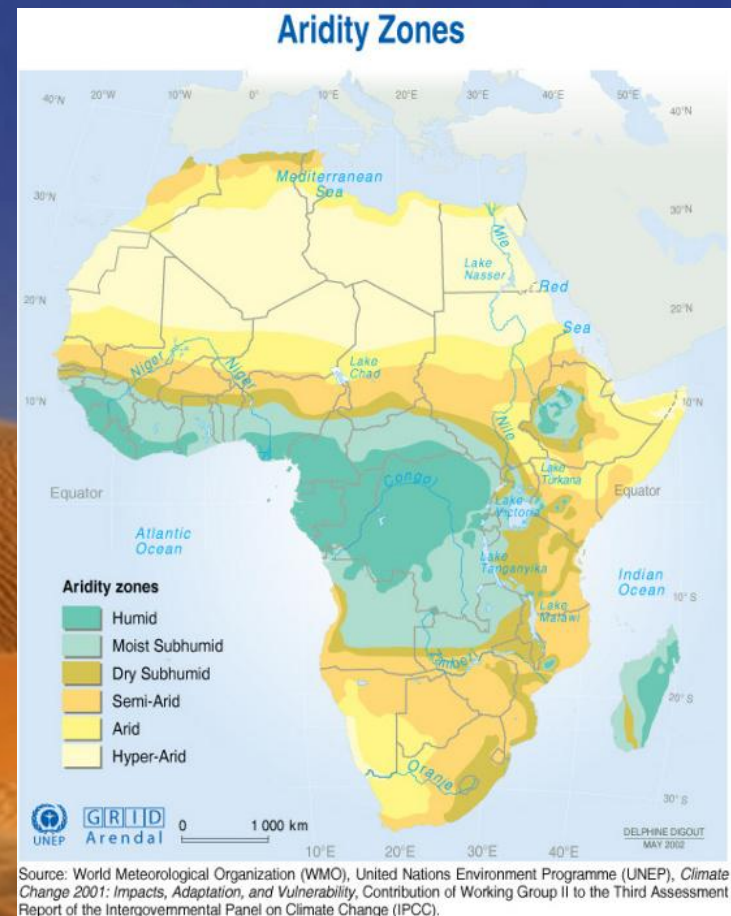
•Increase up to 3X by 2050.



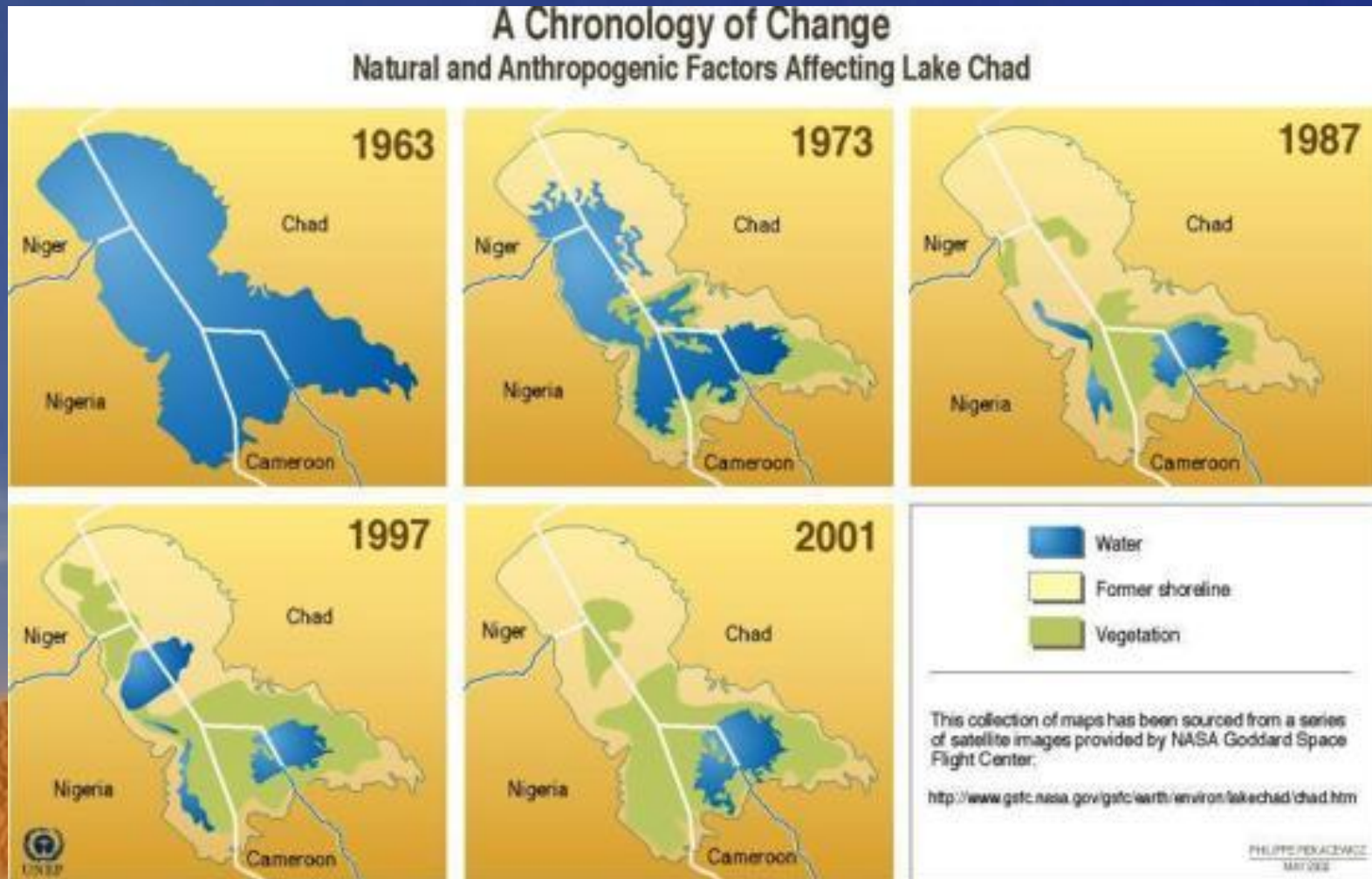
- Poor quality of water when available.
- Diseases can spread rapidly.
- Children and pregnant women are especially susceptible to water-Bourne diseases (mostly malaria).
- 25% of maternal mortality

Structural inequalities, mismanagement of resources and predatory states is the cause of many of the conflicts in Africa. An increasing population and a constant amount of water could cause water wars in the future.

Over fishing and industrial overuse have caused some African lakes to be heavily polluted.



Disappearance of Lake Chad

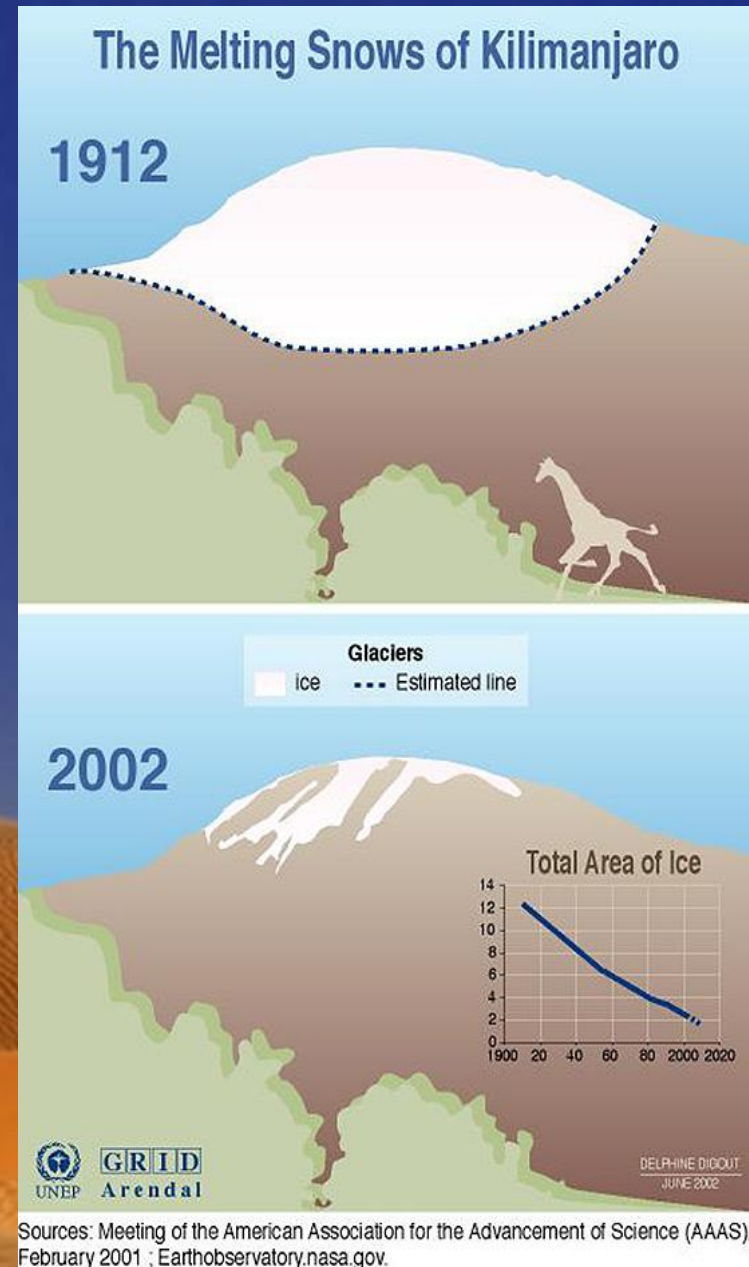


New Borders, Less of a Resource

•Africa's forests: high dependency on fuel woods: 80-90% of residential energy needs in Sub-Saharan Africa. (one of the causes of desertification). BIOMASS

•The melting of the icecap on Mt. Kilimanjaro. Cause of strife for 1 million locals. (2020)

The destruction of many delicate ecosystems will hurt the African economy especially the tourism sector. Decreasing biodiversity.



- 40% of the population in West Africa lives in coastal cities.
- By 2015, there will be three coastal mega cities of more than 8 million inhabitants.

- In some rivers, a 11% decrease in rainfall = saltwater intrusion up to 70km.

- An increase in sea level could cause flooding, spread disease, and destroy delicate coral reefs.

Nile Delta
Potential impact
of sea level rise



Sources: Otto Smonet, UNEP/GRID Geneva; Prof. G. Sestri, Florence; Remote Sensing Center, Cairo; UE/ICRE; Weltwirtschaftsatlas.

•Human Health:

Already compromised by a range of factors, could be further negatively impacted by climate change.

•If a drinking water crisis hits Africa, migration will be necessary, beyond national boundaries.

- The risk of malaria is increasing due to land use changes.
- Previously malaria free highland areas in Ethiopia, Tanzania, Kenya, Rwanda and Burundi. (epidemics).
- .7 – 2.7 million people die / year
- Meningitis. 162 million in risk area. Dryness and low humidity are thought to increase transmission.



Conclusion:

- “Negative impacts of climate change could create a new set of refugees, who may migrate into settlements, seek new livelihoods, and place additional demands on infrastructure” (IPCC 450)
- Africa already has many severe issues on its hands. The addition of climate change is just exasperating the situation. The combination of many existing stressors and climate change stressors is, and will continue to be a major problem in Africa.