Changing Extreme Weather

-Droughts-

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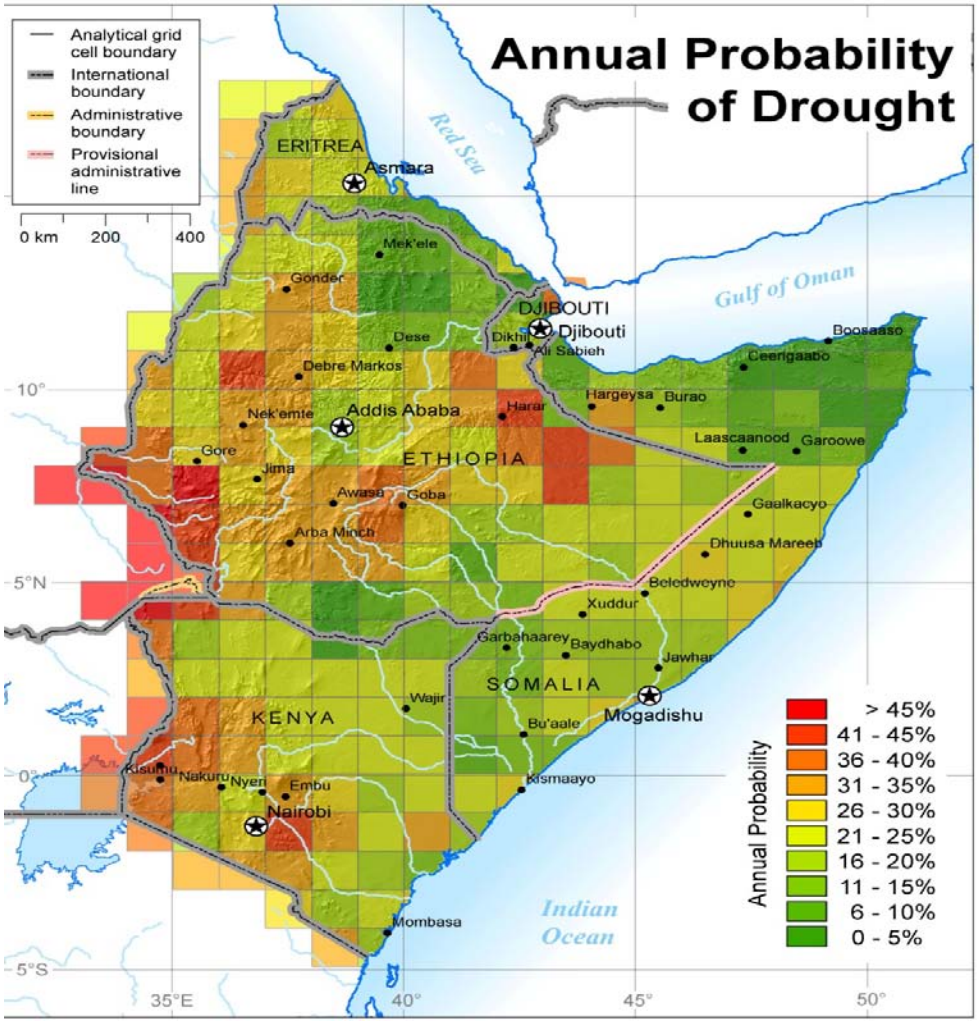
Droughts in NE Africa

The percentage of droughts changing during the period of 1986-2006 of northeast Africa. The annual probability drought map shows land area and drought probability of Djibouti, Eritrea, Ethiopia, Kenya, and Somalia. The land area and drought probability of Somalia is ~37% in green,
~61 percent in orange and ~2% in red.
e.g: • "Current stress on water in many areas of Africa is likely to be enhanced by climate variability and change. Increases in runoff in South Africa (possibly floods) and decreases in runoff and likely increased drought risk in other areas (e.g., eastern Africa) are projected by the 2050s".-IPCC



Source figure adapted from: "Humanitarian Information Unit" historical data (CSU, 2005; Husak, 2005)

The defined of the map

- The map is shows the Northeast Africa annual probability drought.
- The map shows grid pattern. Each grid shows color that present the percentage of the annual probability. The grid of Bright red is 41-45%. Which means the drought appeared in that area each year is 41-45%. The period of analysis is 1986-2006 because droughts that occur during the agriculturally important rainy seasons are counted.
- According the technical summary by IPCC refer that that decrease run off flood in south Africa and likely increase the drought risk in East African and huge impact on the water system; Great lakes region in Eastern Africa.
- Sources for these assertions:
- 1) Figure: “Humanitarian Information Unit” historical data (CSU,
- 2005; Husak, 2005
- 2)IPCC 2007, WG II, TS
- (Intergovernmental Panel on Climate Change, 2007 report of Working Group II, Technical Summary) pg 59, paragraph 4

Droughts in Australia

Trends in increased drought are already being experienced in southern parts of Australia.
e.g: "Production from agriculture and forestry by 2030 is projected to decline over much of southern and eastern Australia, and over parts of eastern New Zealand, due to increased drought and fire.
Increased fire danger is likely with climate change; for example, in south-east Australia the frequency of very high and extreme fire danger days is likely to rise 4 to 25%by 2020 and 15 to 70%by 2050"- IPCC

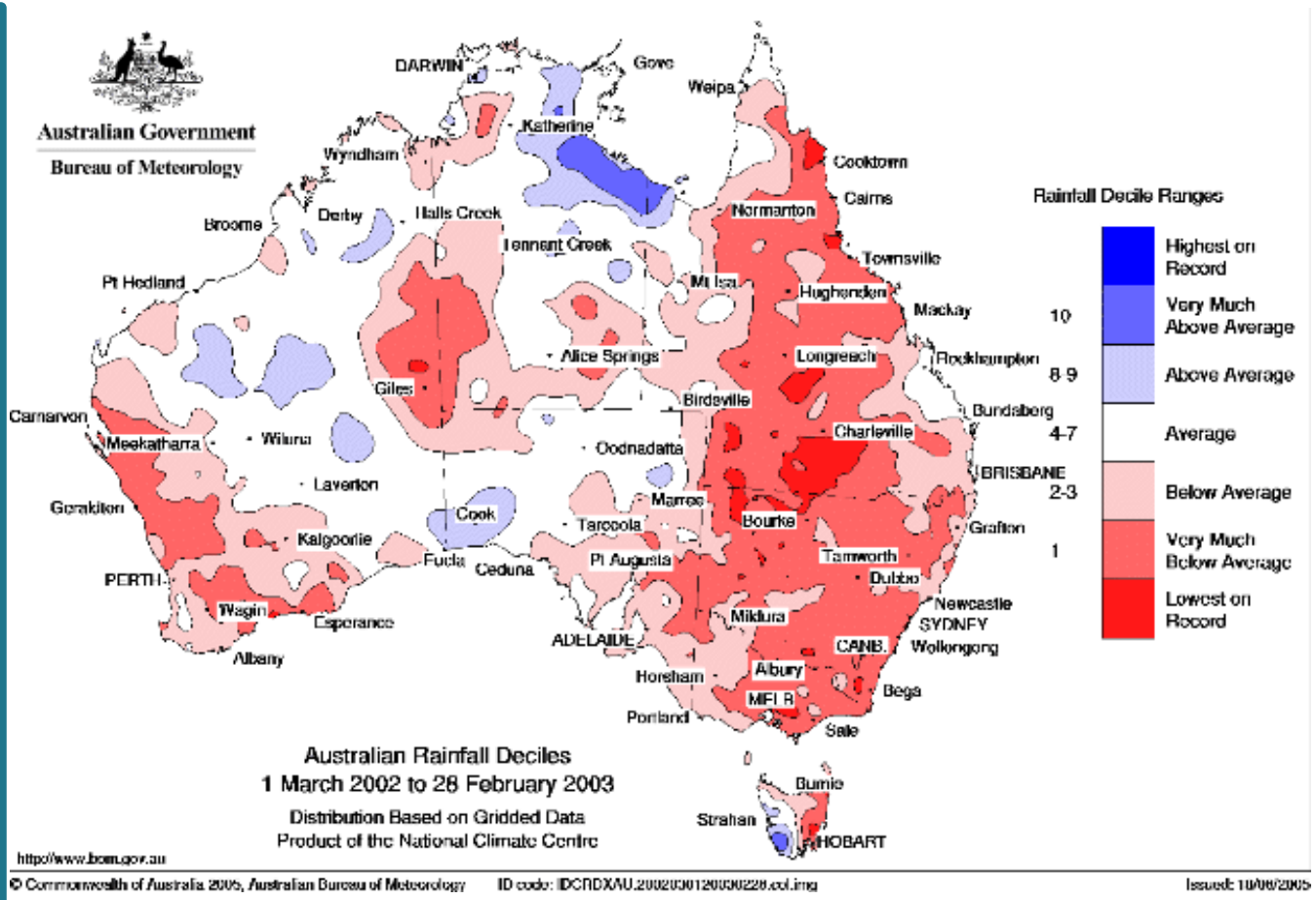


figure adapted from: CommonHealth of Australia 2005, Australian Bureau Metrology

The defined of map

- This map shows the drought in Australia in 2002-2003.
- The area in the white represent the average of rainfall , the red means the below average, blue means above average.
- The right regions on the map were covered by red. It present the rain falling mostly below average. The percentage of rain falling was in the rating scale of one. The rain rarely falling and causing increase the appearance of drought.
- According to IPCC, the extreme hot climate in the south region of Australia and caused the problem of forest burning and fire danger days.
- Sources for this assertions:
- 1) figure adapted from: CommonHealth of Australia 2005, Australian Bureau Metrology
- 2) IPCC 2007, WG II, TS
- (Intergovernmental Panel on Climate Change, 2007 report of Working Group II, Technical Summary) pg 60, paragraph 5
- 3)IPCC 2007, WG II, SPM (Intergovernmental Panel on Climate Change, 2007 report of Working Group II, Summary for Policymakers), p. 12, paragraph 3.

Issue s

- Extreme drought increasing from 1% land area to 30%
- Mid- latitude regions affected by pole ward migration of Annular modes seriously affected.

Main Risk

1. Food, Fiber and forestry
2. Water resources
3. Human Health
4. Industry, settlement and society

Sources adapted from the chart:
IPCC 2007, WG II, TS
(Intergovernmental Panel on Climate Change, 2007 report of Working Group II, Technical Summary) pg 74

how to help?

- 1)Food, fiber and forestry
- Crops: irrigation and hydroponic farming; water harvesting; crop residue retention
- Livestock: changing in stocking rate: diversification of income
- 2)Water resources
- Leak reduction; water demand management through metering and pricing
- 3)Human Health
- Grain storage and provision of emergency feeding stations; access to international food markets
- 4)Industry, Settlement and Society
- Improve adaption capacities; incorporate climate change in development programmers.
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There are a lots of main issue during droughts. But the major issue are the Food, Fiber and forestry, Water resources, Human Health, and Industry. Drought already increasing by increase the frequency/intensity drought in mid-latitude continental areas, especially Africa, Austria and SE Asia. The IPCC working group II tried to help to reduce the risks of Climate change to nature and society. Droughts is natural disaster. The only thing scientist can help to reduce the risk as soon as possible.

Sources:

- IPCC 2007, WG II, TS
- (Intergovernmental Panel on Climate Change, 2007 report of Working Group II, Technical Summary) pg 70
- IPCC 2007, WG II, SPM (Intergovernmental Panel on Climate Change, 2007 report of Working Group II, Summary for Policymakers), p. 15, paragraph 4.

  IPCC 2007, WG II, TS
- (Intergovernmental Panel on Climate Change, 2007 report of Working Group II, Technical Summary) pg 74
- IPCC 2007, WG II, TS
- (Intergovernmental Panel on Climate Change, 2007 report of Working Group II, Technical Summary) pg 69, paragraph 2