United Nations
Convention to Combat Desertification

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FACTSHEET: Drought and its socio-economic impacts

Facts about drought[1]

1. Droughts are a global phenomenon and affect countries in every region of the world.
2. Globally, the area affected by drought is increasing every year.
3. Over the Mediterranean region, drying may be increasing.
4. Globally, droughts are also becoming more severe and frequent.
5. Droughts are more frequent over the East Coast of the United States of America, Amazonia and north-eastern Brazil, Patagonia, the Mediterranean region, most of Africa and north-eastern China, but frequency has decreased over northern Argentina, Uruguay and northern Europe.
6. Droughts are more intense over north-western USA, parts of Patagonia and southern Chile, the Sahel, the Congo River basin, southern Europe, north-eastern China, and south-eastern Australia. Eastern USA, south-eastern Brazil, northern Europe, and central northern Australia have experienced less severe droughts.
7. Amazonia, north-eastern Brazil, Patagonia, most of Africa, and north-eastern China have experienced both more frequent and more intense droughts.
8. Droughts that are clearly associated with climate change are those of western Amazon, southern Africa, southern Europe and the Mediterranean, including North Africa, parts of North America, Russia, India and Australia.
9. Climate zones in many regions of the world have already shifted due to climate change, with dry areas increasing and polar areas decreasing. Consequently, changes in the location and range-size of plant and animal species has been altered.
10. Changes in regional climate zones shifts are observable over the Asian monsoon region, Europe, China, Pakistan, the Alps and north-eastern Brazil, southern Argentina, the Sahel, Zambia and Zimbabwe, the Mediterranean area, Alaska, Canada and north-eastern Russia.
11. Increased browning of the land is observable (via Satellite) in northern Eurasia, the southwestern USA, boreal forests in North America, inner Asia and the Congo Basin, largely as a result of intensified drought stress.
12. Drought impacts can be economic, environmental or social and direct or indirect:
    a. Social impacts: loss of life, social breakdown, forced migration/displacement, water scarcity, conflicts, hunger/famine,
    b. Economic: loss of income/livelihoods, competition over shrinking resources,
    c. Environmental: forest fires, tree mortality, insect invasion, land degradation (erosion, land cover, etc), loss of ecosystem functions, water scarcity, decreased carbon sequestration, altered carbon cycles

[1] Unless otherwise indicated, all data is sourced from the 2019 IPCC Special Report on Climate Change and Land.

13. Globally, the impact of rainfall extremes on agriculture is less than that of temperature extremes and drought. But in some regions and for some crops, extreme precipitation influences yield variability, for example, maize in the Midwestern USA and southern Africa.
14. The increase in global mean temperatures will lead to increased global vegetation loss, coastal degradation, as well as lower crop yields in low latitudes (ie, tropics), less food stability and less access to food and nutrition. It may also lead to water scarcity in the drylands. There are high risks of permafrost degradation, wildfires, coastal degradation.
15. Asylum seekers to Europe are forecast to increase as global temperatures rise. As temperatures deviated (colder or warmer) from a moderate optimum of 20 degree Celsius, which supports agriculture, more people migrated and sought asylum in Europe.[2]
16. Drought was the most cited cause by young people who left their homes in the Sahel and moved to Morocco.[3]
17. Drought has been a dominant driver of fires. Fire seasons are getting longer, and climate change, including warmer temperatures, will play an increasingly important role in wildfires, increasing their risk and severity in biomes such as tropical rainforests. The Boreal zones are experiencing larger and more frequent fires, which may increase under warmer conditions.
18. Climate variability, and especially droughts associated with El Nino (ENSO) play a major role in fire upsurges, especially in equatorial Asia due to a reduction in rainfall (precipitation) and terrestrial water storage, but also due to agricultural expansion and deforestation in the humid tropics.
19. Land degradation drives climate change by emitting carbon from the land and the declining ability to store carbon. In turn, global warming exacerbates land degradation, floods, droughts, intensified cyclone and sea level rise.

Data

Impacts on People

Figure	Description	Source
70	Number of countries in the world that are regularly affected by drought	2017, UNCCD. Based on interest expressed by countries to be part of the Drought Initiative
500 million	Population living in the drylands that is impacted by desertification	
80 million	The number of people that could be fed per day for a year with the food lost	2017, World Bank, Uncharted Waters. The New Economics of Water Scarcity and Variability

[2] 2017, Anouch, M. and Schlenker, W, "Asylum applications respond to temperature fluctuations", *Science,* Vol 358, pp1610-1614 https://science.sciencemag.org/content/358/6370/1610,
[3] 2019, IOM and UNCCD. *Addressing the Land Degradation – Migration Nexus: The Role of the UNCCD*.

	during drought	https://openknowledge.worldbank.org/handle/10986/28096
4-6%	Decrease in wheat production for every 1 degree rise in temperature	

Economic Impacts

1.75 trillion dollars	Cost of the 258 droughts that have occurred in the United States since 1980. It has experienced 69 billion-dollar disasters sin the last 5 years (2015-2019).	January 23, 2020, The High Cost of Drought https://www.drought.gov/drought/news/high-cost-drought
9.6 billion dollars	The estimated average cost of drought in the United States for a year	National Climate Data Center, United States: https://www.ncdc.noaa.gov/news/drought-monitoring-economic-environmental-and-social-impacts
80 billion	Estimated cost of drought, globally in 1997	1996, Carolwicz, M. Natural hazards need not lead to natural disasters. EOS 77(16): 149-153

Environmental Impacts

130m sq km	Area of ice-free land globally	
1%	The area affected by drought in the drylands increases by this amount, on average per year	
40%	The land area currently classified as drylands (arid, semi-arid and dry sub-humid)	TBD
50%	The area of land that will be drylands by 2050	TBD
18.7%	Increase in the duration/length of fire weather seasons between 1979-2013	
27%	Projected increase of fire frequencies globally by year 2050 compared to year 2000	
