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Drylands now make up 40% of land on Earth, excluding Antarctica, study says



📷 Desert homestead in Namibia. Africa lost about 12% of its GDP owing to the increasing aridity of land between 1990 and 2015. Photograph Collection/Universal Images Group/Getty Images

An area nearly a third larger than India turned permanently arid in past three decades, research shows

An area of land nearly a third larger than India has turned from humid conditions to dryland - arid areas where agriculture is difficult - in the past three decades, research has found.

Drylands now make up 40% of all land on Earth, excluding Antarctica. Three-quarters of the world's land suffered drier conditions in the past 30 years, which is likely to be permanent, [according to the study](#) by the [UN Science Policy Interface](#), a body of scientists convened by the United Nations.

Africa lost about 12% of its GDP owing to the increasing aridity between 1990 and 2015, the report found. Even worse losses are forecast: Africa will lose about 16% of its GDP, and Asia close to 7%, in the next half decade.

Ibrahim Thiaw, executive secretary of the UN convention to combat desertification (UNCCD), said: “Unlike droughts – temporary periods of low rainfall – aridity represents a permanent, unrelenting transformation.

“Droughts end. When an area’s climate becomes drier, however, the ability to return to previous conditions is lost. The drier climates now affecting vast lands across the globe will not return to how they were, and this change is redefining life on Earth.”

Some crops will be particularly at risk: maize yields are projected to halve in Kenya by 2050, if current trends continue. Drylands are areas where 90% of the rainfall is lost to evaporation, leaving only 10% for vegetation. Two-thirds of land globally will store less water by mid-century, according to the report published on Monday.

Governments are more than halfway through a [global conference in Riyadh, which concludes this Friday, under the UNCCD](#). Saudi Arabia is one of the world’s most arid countries, and is anxious to use the fortnight of talks to gain global agreement on halting the [degradation of the world’s lands](#), and begin restoring affected areas.

Despite hosting the conference, Saudi Arabia has appeared reluctant to talk about the climate crisis, which is the key driver of desertification around the world. Saudi Arabia [played an obstructive role at a key climate summit](#), the UN framework convention on climate change conference of the parties (COP) in Azerbaijan last month.

The world’s [water problems are fast growing more acute](#) as a result of global failure to tackle greenhouse gas emissions. According to the UN SPI (science-policy interface) study, as of 2020, about 30% of the population – 2.3 billion people globally – lived in drylands, up from about 22.5% in 1990.

By 2100, this is projected to double, if too little is done to reduce carbon emissions. Nearly half of Africa’s people already live in drylands.

Barron Orr, chief scientist at UNCCD, said: “For the first time, a UN scientific body is warning that burning fossil fuels is causing permanent drying across much of the world, with potentially catastrophic impacts affecting access to water that could push people and nature even closer to disastrous tipping points.”

[Climate breakdown is “inextricably linked” to the world’s water crisis](#), multiple studies have shown, but poor farming practices, overextraction of water, the erosion of soil and destruction of natural vegetation are also factors.

Praveena Sridhar, chief technical officer of the Save Soil campaign group, said: “Healthy soils are the foundation of life. Drying lands signify degraded soils, and the cause is clear: human activity.

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“Intensive agriculture is the leading driver of land and soil degradation, fuelling biodiversity loss, carbon sequestration decline, and worsening floods, droughts and wildfires – issues rapidly increasing across the globe.”

Experts called on governments to act. Mark Maslin, professor of earth system science at University College London, who was not involved with the study, warned: “This is the land we rely on to produce food. [This] is not only a warning but a call to politicians that there are solutions.

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“First: we can curb greenhouse gas emissions, which will reduce climate change and global aridification. Second, we can acknowledge the world is drying and take measures to slow it down and to adapt to it.

“We now have so many solutions: sustainable agriculture, water management, reforestation and rewilding to education and awareness building. Ultimately good local and national governance is required to deal with the desertification of our precious life-giving planet.”

Kate Gannon, research fellow at the Grantham Institute, London School of Economics, told the Guardian: “Rising aridity deepens poverty, forces over-exploitation of fragile resources and accelerates land degradation, creating a vicious cycle of resource scarcity, water insecurity and diminished agricultural potential.

“These communities, with the least capacity to adapt, face dire consequences to health, nutrition and wellbeing from risks of food shortages, displacement, and forced migration. This is not only a profound injustice, but also a global challenge.”

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