Food and Agriculture Organization of the United Nations

D'a Désertif' actions

2026 6eme édition

# Drought Evolution in the World and their Impacts and Future Challenges on People, the Environment and the Economy

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Co-organisé par

En partenariat avec

Nations Unies
Convention sur la lutte contre la désertification

Observatoire du Sahara et du Sahel

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# Drought ? What are we talking about?

- ***Meteorological drought:*** *prolonged period of low precipitation*

- ***Agricultural (or ecological) drought:*** condition where soil moisture is insufficient to meet the needs of crops and vegetation

- ***Hydrological drought*** when surface or groundwater water levels drop below average over a prolonged period.

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# The growing threat of drought worldwide

***Increasing frequency***
*Since 2010s, multiyear droughts have grown more frequent and severe worldwide (Science, 2025)*

***Climate acceleration***
*Rising temperatures intensify atmospheric evaporative demand, driving self-reinforcing drought cycles (Nature, 2025)*

***Expanding hotspots***
*Drought-affected areas have grown continuously from 2000 to 2025 across every continent (OECD, 2025)*

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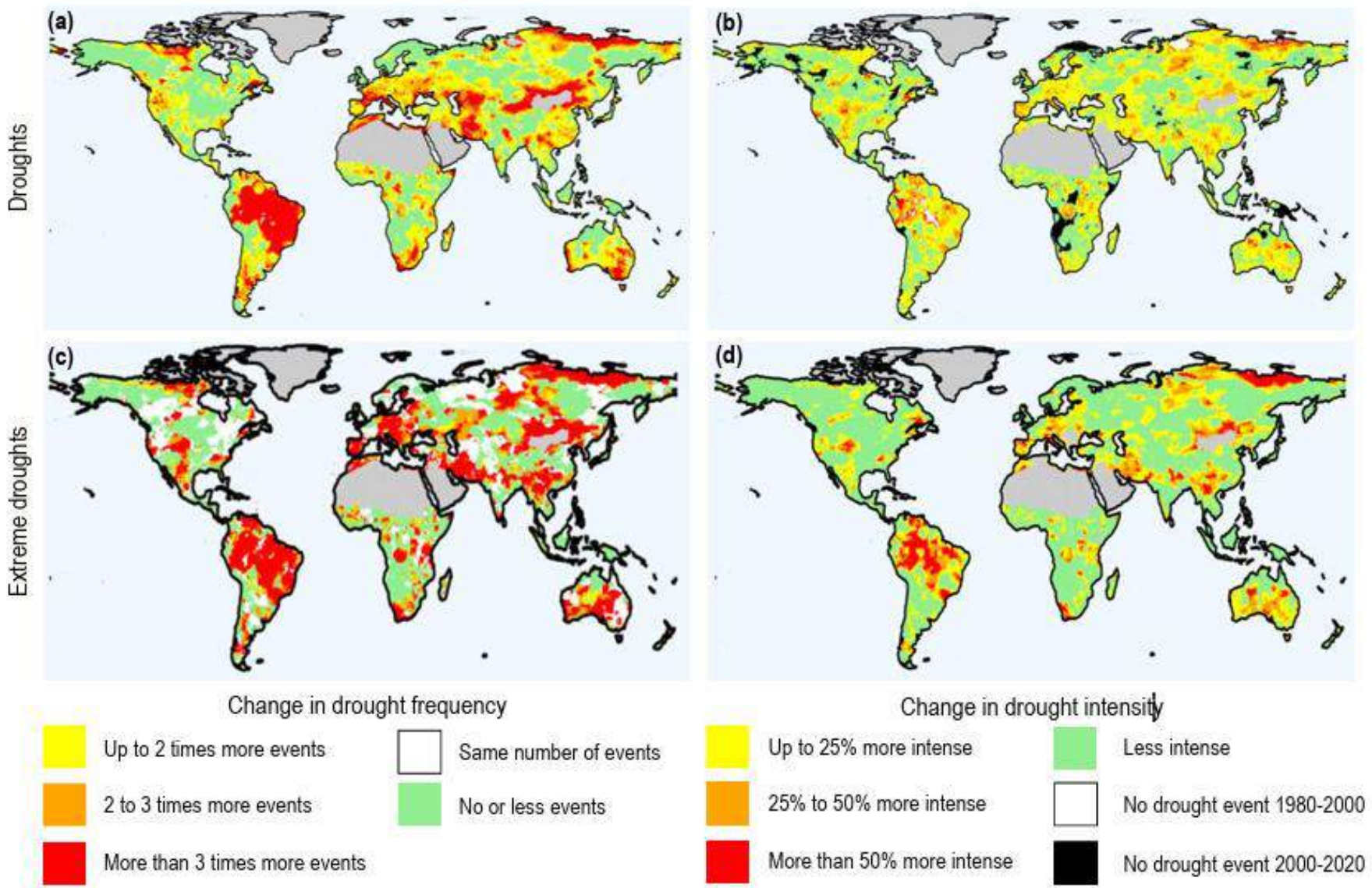
Change in the average number of drought events ((a) and (c)) and their intensity ((b) and (d)) in the period 2000-2020 compared to 1950-2000




Source, OECD, 2025

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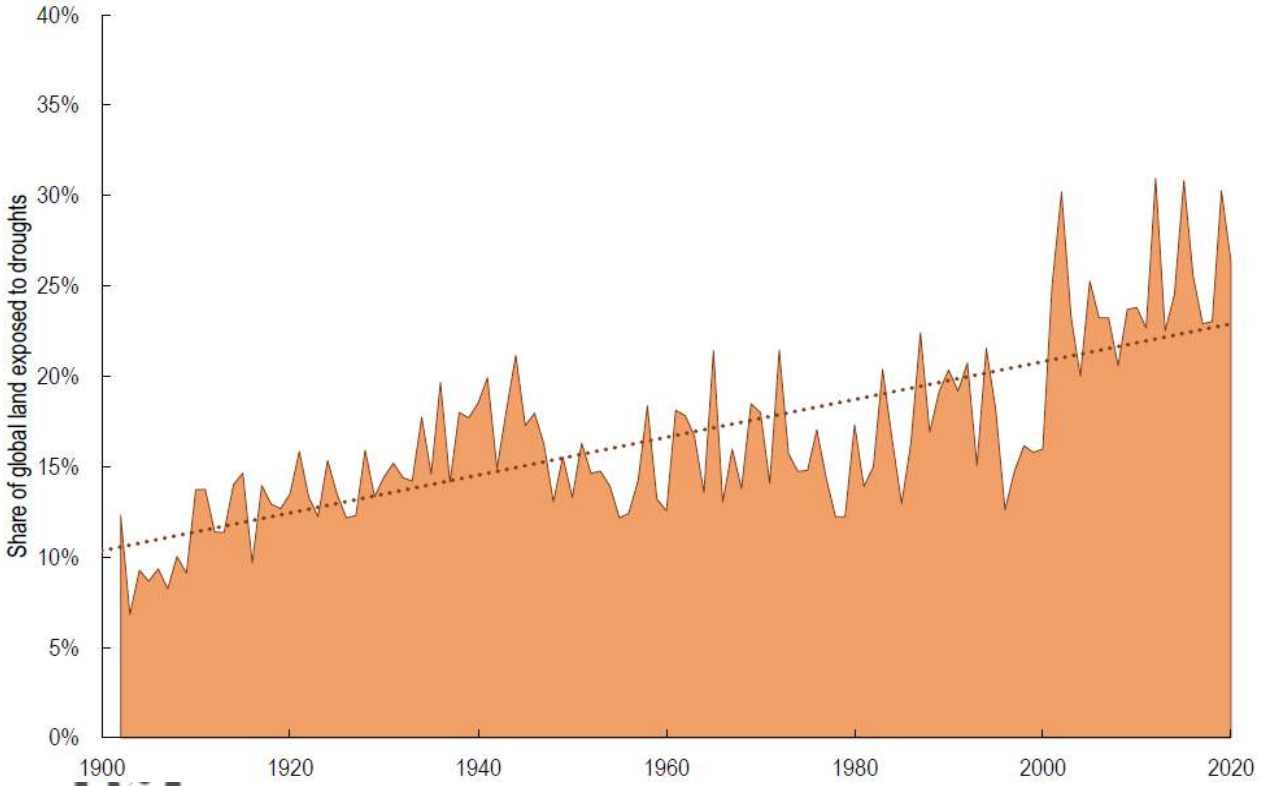
# Land Degradation and soil moisture decline

**Share of global land area affected by droughts (1900-2020)**




**Global Drought Surge**: Land exposure doubled between 1900 and 2020.

**2023 Crisis**: 48% of global land hit by extreme drought (2nd highest since 1951).

**Regional Shift**: In Europe, drought is migrating from the South to Eastern and Central regions.

Longest and most severe soil moisture drought conditions concentrated in **South America and Eurasia**, with developing regions suffering amplified degradation

**Southern Asia:** Acute moisture deficits

**Latin America:** Ecosystem resilience eroded

**Africa:** Chronic water scarcity and food insecurity

Source: https://www.oecd.org/en/publications/global-drought-outlook_d492583a-en.html

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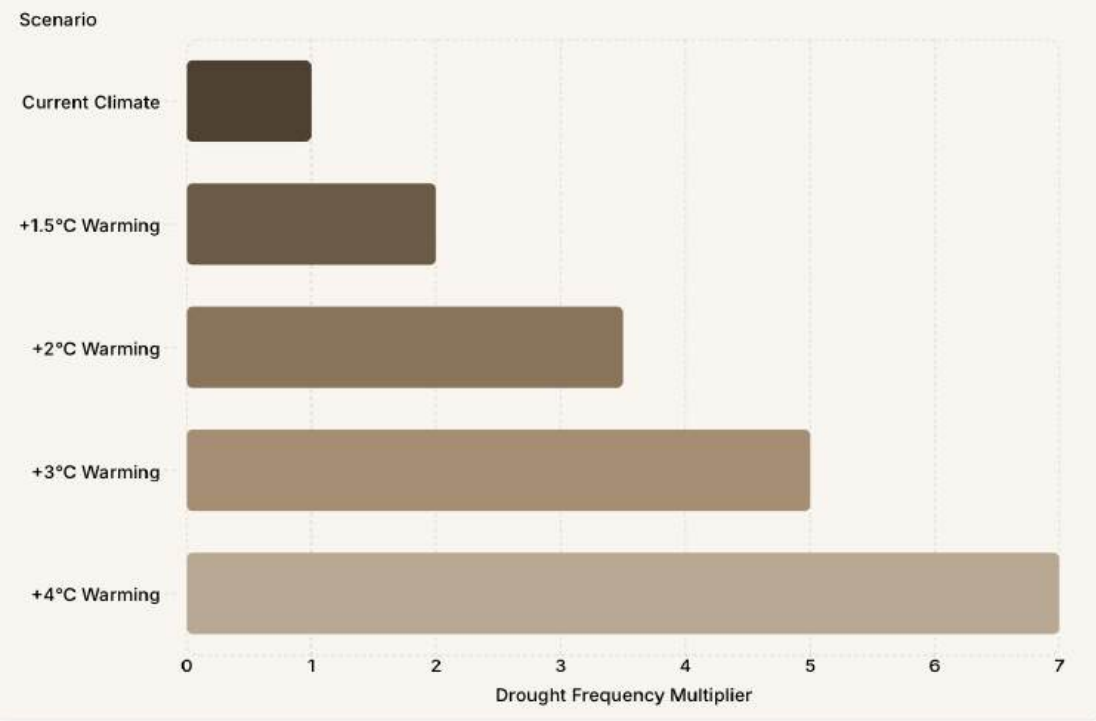
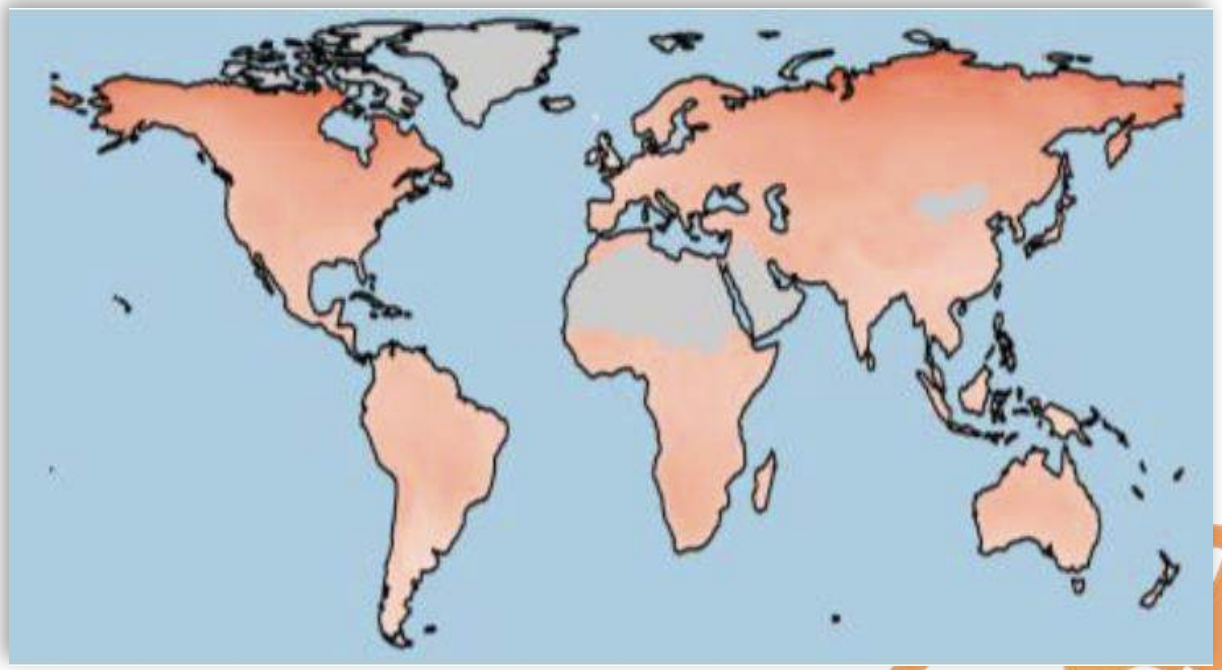
# Climate change amplifies drought risks

## IPCC projections

*Drought frequency could increase up to 7 times under a +4° scenario*




*Extreme heat events likely to increase by 40 times under a high-emissions scenario*



Source: https://www.oecd.org/en/publications/global-drought-outlook_d492583a-en.html

*Climate change is not only increasing drought frequency, but also prolonging drought duration and amplifying its systemic impacts across sectors. (OECD, 2025)*

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# Water Systems under stress

Drought hotspots across **Eastern and Southern Africa, Southeastern Asia & Latin America** are threatening water systems and livelihoods at scale


## River basin systems

Dramatically reduced flows expose fragility of water resources management and governance


## Rice paddies

Saltwater intrusion threatens food and incomes


## Hydropower

Dwindling river flows reduce power generation, triggering economic and humanitarian crises

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# Economic and social impacts

**23 Million**

**Horn of Africa, 2023**

people facing severe hunger during worst drought in 40 years

**40 Billion Euro** **Europe,**

**2022**

for costs related to shipping cuts
(-10% capacity)

**34%**

**Disaster death**

Share of global disaster-related deaths caused by drought (WMO, 2021)

Credit: @FAO

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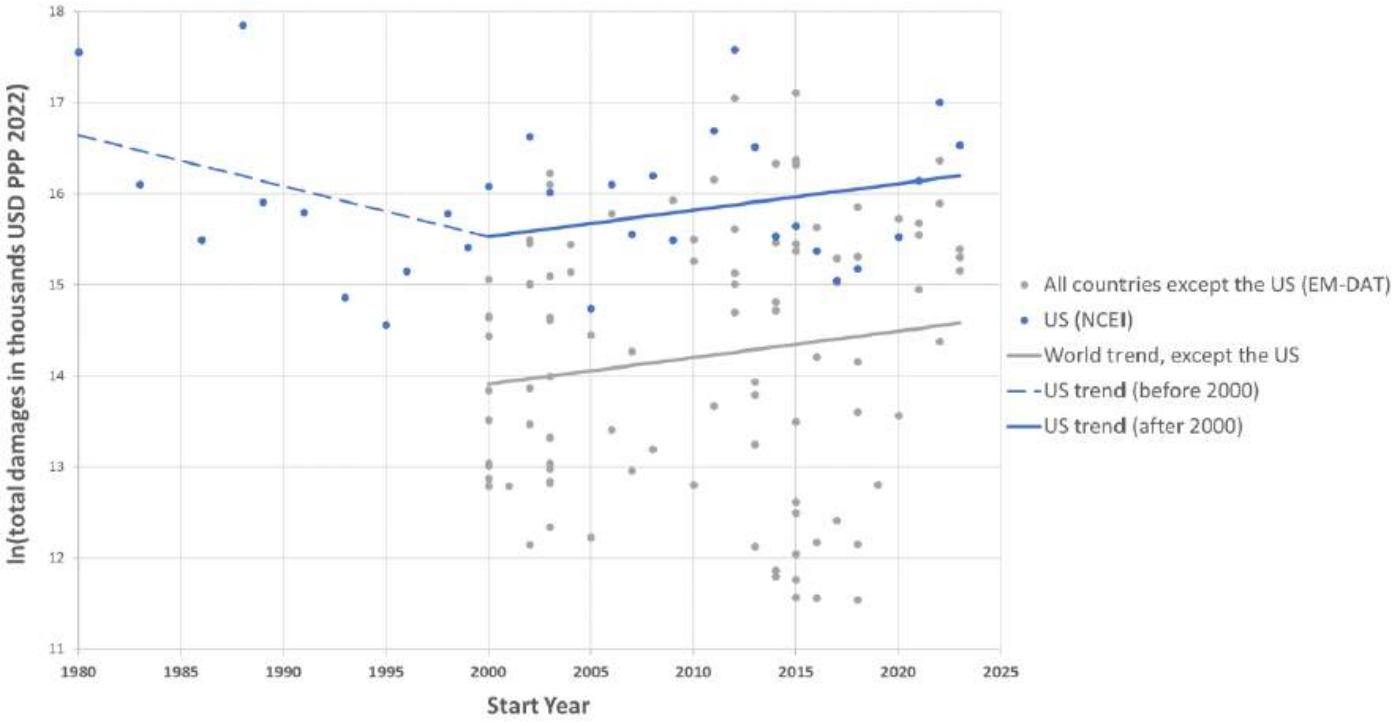
# Rising costs and and economic projects

## The economic costs of drought episodes




Source: https://www.oecd.org/en/publications/global-drought-outlook_d492583a-en.html

Drought losses show a clear upward trend over time, indicating growing and persistent economic exposure.

**Annual loss growth**

Annual economic losses rising by **3-7.5%**

Crop yields can drop by up to **22%** in dry years

**2035 projections**

Drought-related costs projected to be at least **35% higher** within a decade

**Ripple effects**

Trade, energy, industry, social stability impacted, driving displacement and inequality

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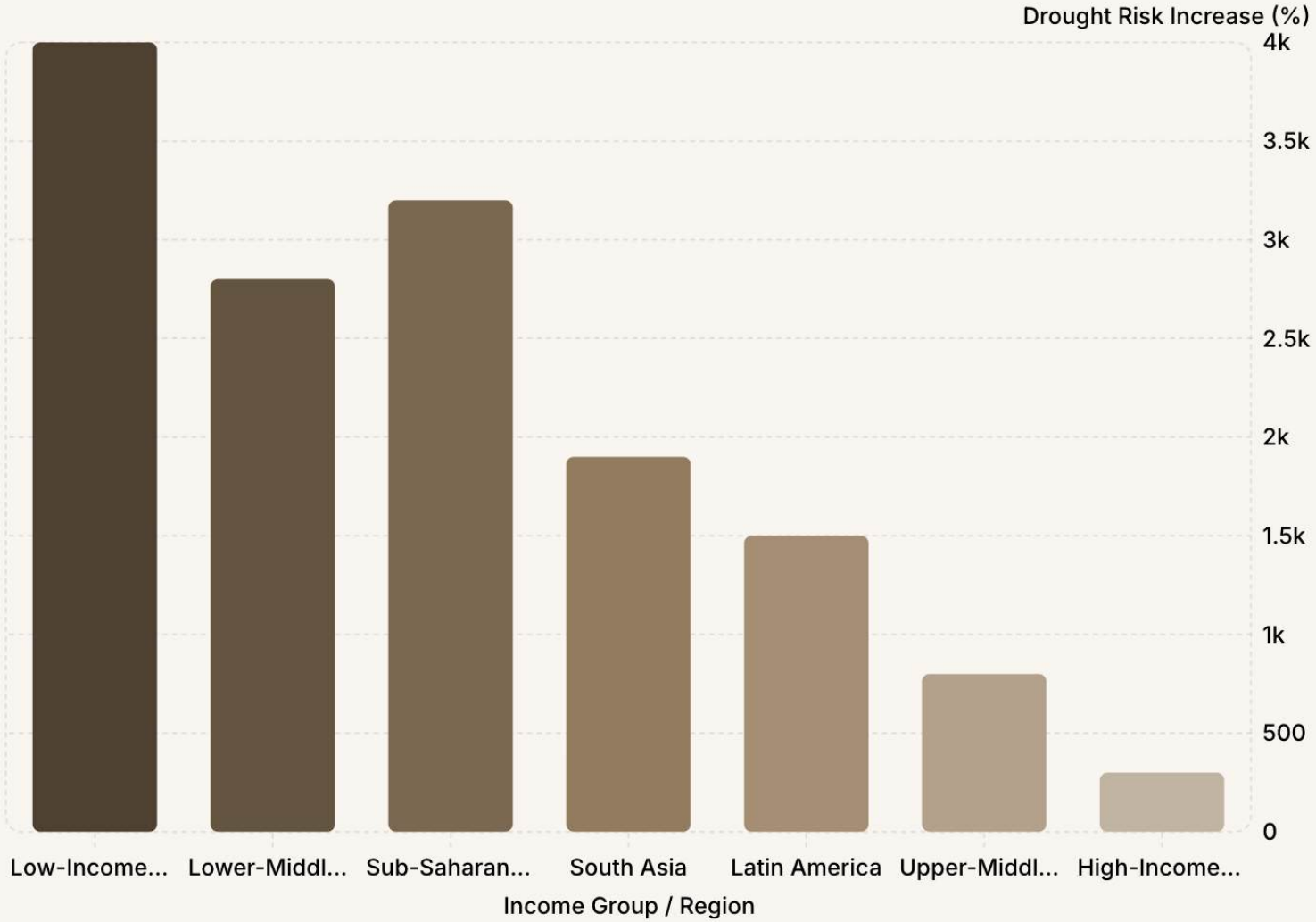
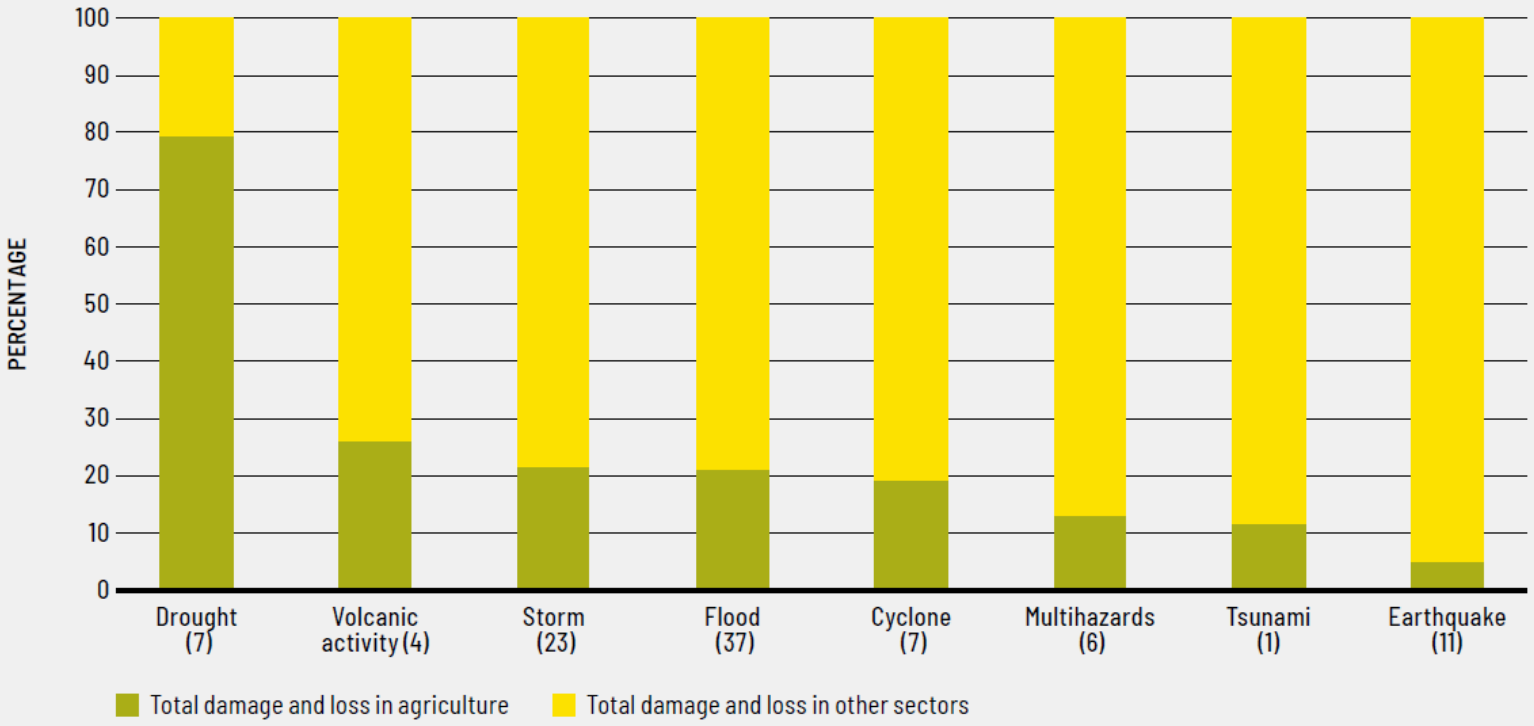
# Unequal impacts on Agriculture and Food Security




**Up to 4,000% increase in drought exposure projected for some lower-middle-income countries**

Agricultural drought intensifies food insecurity, disproportionately hitting economies least equipped to adapt ***(Natural Hazards, 2025)***

## ECONOMIC LOSS IN AGRICULTURE AND NON-AGRICULTURAL SECTORS BY HAZARD TYPE (SHARE)




Note: See **Annex 1** for the methodology. Numbers in brackets represent the total number of recorded events for each hazard type.
Source: Authors' own elaboration based on data derived from PDNAs.

**FIGURE 9** HISTORICAL DROUGHT FREQUENCY ON RAINFED CROPLAND, 1984–2023

## 128 Mha (11%) of rainfed cropland impacted by drought in the past 40 years

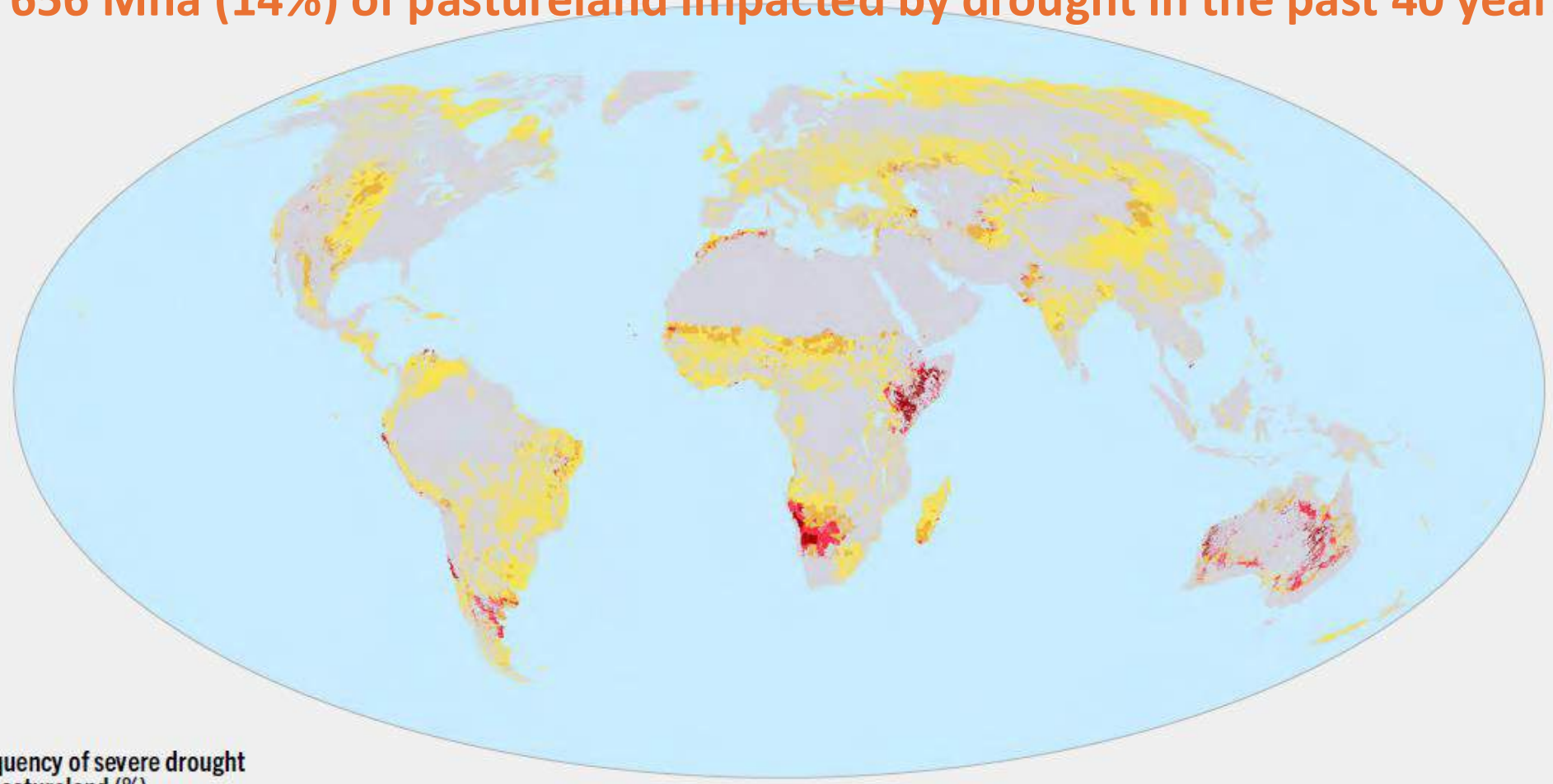

Refer to the disclaimer on the copyright page for the names and boundaries used in this map.

SOURCES: Authors' own elaboration based on the methodology in FAO. 2020. *The State of Food and Agriculture 2020 – Overcoming water challenges in agriculture*. Rome. https://doi.org/10.4060/cb1447en; data from Historic agricultural drought frequency (Global – 1 km) – FAO ASIS. [Accessed on 23 July 2025]. https://data.apps.fao.org/catalog/iso/f8568e67-46e7-425d-b779-a8504971389b. Licence: CC BY-SA 4.0.

**(SOLAW, FAO. 2025)**

FIGURE 10 HISTORICAL DROUGHT FREQUENCY ON RAINFED PASTURELAND, 1984–2023

**656 Mha (14%) of pastureland impacted by drought in the past 40 years**

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SOURCES: Authors' own elaboration based on the methodology in FAO. 2020. *The State of Food and Agriculture 2020 – Overcoming water challenges in agriculture*. Rome. https://doi.org/10.4060/cb1447en; data from Historic agricultural drought frequency (Global – 1 km) – FAO ASIS. [Accessed on 23 July 2025]. https://data.apps.fao.org/catalog/iso/f8568e67-46e7-425d-b779-a8504971389b. Licence: CC BY-SA 4.0.

**(SOLAW, FAO. 2025)**

# Examples : consecutive drought impacts

- Year 2018 drought in Europe caused agricultural losses exceeding EUR 9 billion

- Year 2023 (began with the continuation of a severe multiyear drought across the Horn of Africa)
  - ⇒ over 36 million people affected
  - ⇒ decimating livestock herds

- In Somalia, Ethiopia and Kenya: consecutive failed rainy seasons:
  - ⇒ death of over 13 million livestock
  - ⇒ destroying the economic foundation of millions of households

***Source: FAO, 2025. Impacts of Disasters on Agriculture and Food Security***

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# Drought: impact on human migration

Drought is associated with human migration in agriculture-dependent middle-income countries.

*By Maurizio Mazzoleni 1, GiulianoDi Baldassarre 2,3,4 , AnaHagström5 & Elena Raffetti*

https://doi.org/10.1038/s43247-026-03358-6



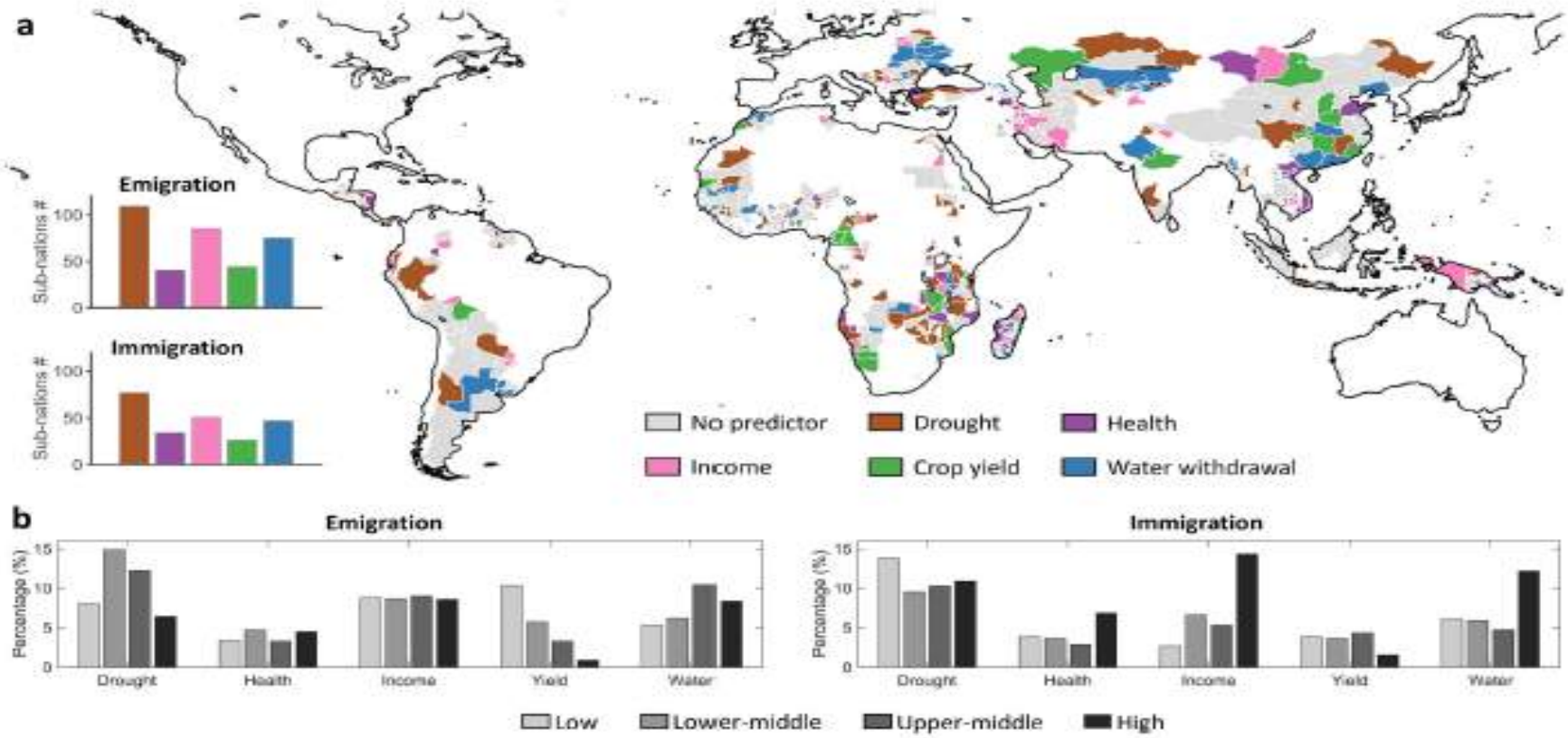


**Fig. 3 | Main predictors of the event coincidence analysis. a** Predictors preceding abrupt migration (for both emigration and immigration) events, with the barplot reporting the total number of subnations characterized by a given predictor. Only for 17 subnations the predictors for emigration and immigration did not coincide. For those cases we visualized in the map the emigration predictors. **b** Percentage of subnations in which certain predictors precede a important migration event, classified by income levels.

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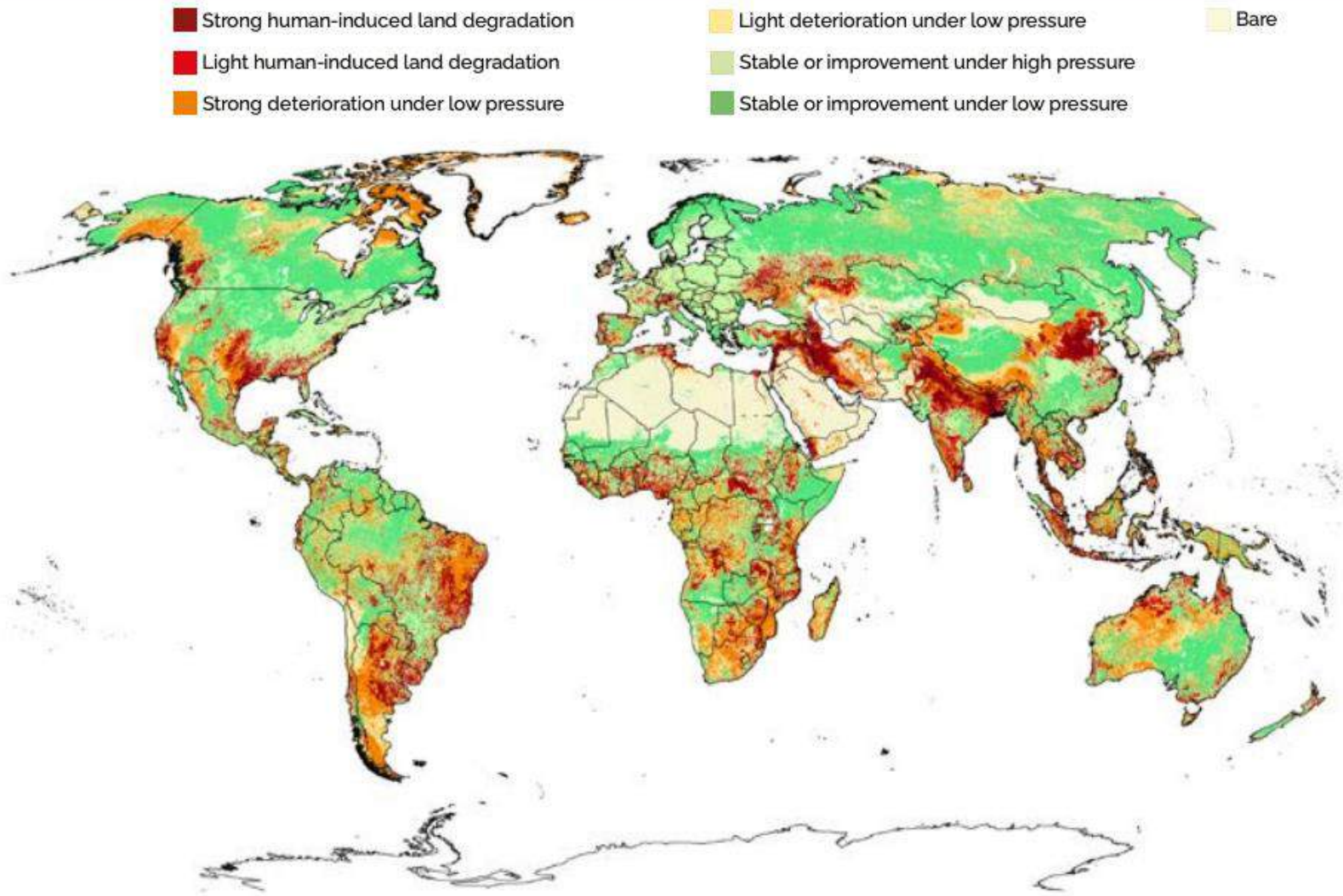
# Human-induced degradation of agricultural lands

1.04 billion ha of agricultural land affected

- 480 million hectares of cropland
- 560 million hectares of permanent meadows and pastures.

**MAP S.7** LAND-DEGRADATION CLASSES BASED ON SEVERITY OF HUMAN-INDUCED PRESSURES AND DETERIORATING TRENDS, 2015




*Note: Global distribution of land degradation. Overall trend combined with cumulative pressure by direct human drivers. Human-induced land degradation refers to a negative trend, which is caused by human activity. Deterioration refers to a negative trend caused by natural phenomena, or by human action where status is low.*

*Source: Coppus, forthcoming, modified to comply with UN, 2021.*

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# RESOURCES

FAO Drought Portal https://www.fao.org/in-action/drought-portal/home/1/en

FAO Drought Finance Tracker https://www.fao.org/in-action/drought-portal/drought-finance-tracker/en

FAO I&V Compendium https://www.fao.org/in-action/drought-portal/preparedness/vulnerability-and-impact-assessment/compendium-page/en

FAO drought publications https://www.fao.org/in-action/drought-portal/learning-resources/publication/en

OECD Global Drought Outlook https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/global-drought-outlook_28488e98/d492583a-en.pdf

*Additional information is available on the **FAO Drought Portal.***

***www,fao.org/land-water***

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# Pour des territoires résilients face aux sécheresses : agissons dès maintenant !

*Du 25 au 28 mars 2026 à Djerba (Tunisie)*

Co-organisé par

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Avec le soutien financier de