

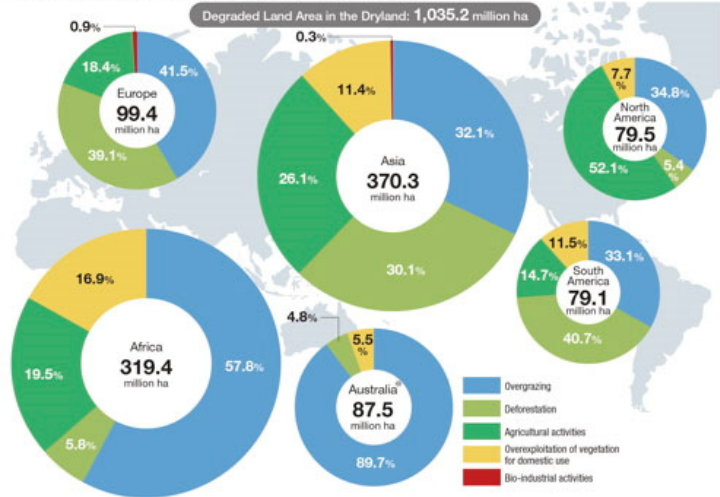


# DESERTIFICATION originally developed by Charlotte Woolliscroft

## What is Desertification?

Desertification is the process by which fertile land becomes desert. Roughly one third of the world's land surface is threatened by desertification, and approximately 24 billion tonnes of fertile soil is lost annually. This puts a large strain on the amount of food that we can provide to the ever increasing population which exceeded 8 billion in 2023.

▼Main Causes of Soil Degradation by Region in Susceptible Drylands and Other Areas



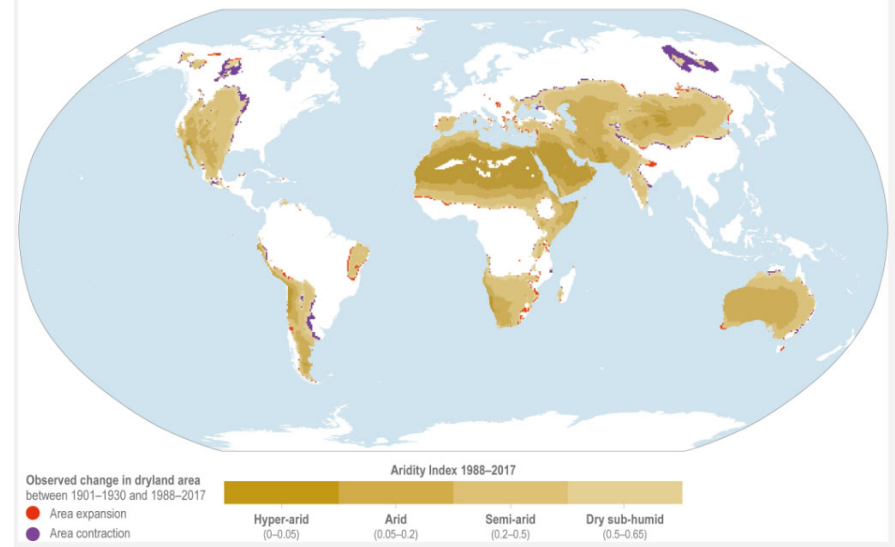
There are multiple causes of desertification of which can be either human or natural. The most prominent cause worldwide is overgrazing. Grazing is imperative for all farmers, from those who are subsistence farmers (who farm to create food for themselves) prominently found in LEDCs; to the richer who rear animals to sell. Overgrazing and deforestation

of the land occurs as the vegetation is removed, meaning that the roots do not hold the structure of the soil, enabling the wind and rain to remove the fertile soil.

Climate change can also lead to desertification; reduction in rainfall, and the increase in wind can spread the sand and the deserts like the Sahara will encroach on previously fertile land. Both rainfall and wind will change as the climate changes. In particular, changes to the way the whole atmosphere circulates and the Hadley Cells will lead to desertification in some sub-Tropical areas.

There are some solutions to reduce the amount of deforestation in areas prone. Firstly, afforestation (the replanting of trees) can stabilise soils— however in arid (dry) areas they are difficult to grow. Secondly, limiting herd sizes reduces overgrazing, however this is problematic for farmers. Neither solution will entirely prevent desertification, but will lead to a reduction in the damage caused.

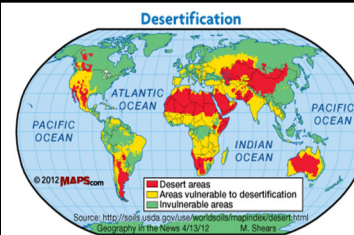
Aridity zone extent and observed changes in dryland areas as defined by the Aridity Index



## FUTURE PREDICTIONS (below)

## (above) DISTRIBUTION OF HAZARD

- One billion people in 168 countries are affected by desertification and this number is steadily increasing as dry-lands are currently inhabited by 2.1 billion people.
- Desertification is costing US\$490 billion per year and wiping out an area three times the size of Switzerland on an annual basis.
- A decrease in the food production, and an increase in population means that food prices will increase



(Left) The areas that are predicted to be affected by desertification. (Centre) Overgrazing is a prominent cause of desertification. (Right) Towns are frequently lost to the Namib Desert as it expands.