

A quarter of the world's population depends on degrading land

March 20 2009

A new study published in the journal *Soil Use and Management* attempts for the first time to measure the extent and severity of land degradation across the globe and concludes that 24% of the land area is degrading - often in very productive areas.

Land degradation - the decline in the quality of soil, water and vegetation - is of profound importance but until now there have been no consistent global data by which to assess its extent and severity. For nearly thirty years the world has depended on the Global Assessment of Soil Degradation (GLASOD) based on the subjective judgement of soil scientists who knew the conditions in their countries. GLASOD indicated that 15 per cent of the [land area](#) was degraded, but this was a map of perceptions, rather than measurement of [land degradation](#).

The new study by Bai et al. measures global land degradation based on a clearly defined and consistent method using remotely sensed imagery. The results are startling. The new assessment indicates that 24 per cent of the land has been degraded over the period 1981-2003 - but there is hardly any overlap with the GLASOD area that recorded the cumulative effects of land degradation up to about 1990.

One of the authors, Dr David Dent of ISRIC - World Soil Information explains: "Degradation is primarily driven by land management and catastrophic [natural phenomena](#)."

Our study shows the extent and severity of land degradation measured in

terms of loss of net primary productivity, making allowance for climatic variability. Overall, a quarter of the world's population depends directly on these degrading areas. The worst-hit areas are Africa south of the Equator, SE Asia and S China. The worst-affected countries, with more than 50 per cent of territory degrading are, in Africa, the Congo, Zaire, [Equatorial Guinea](#), Gabon, Sierra Leone, Zambia and the most affected (95 per cent degrading) Swaziland; in Asia, Myanmar, Malaysia, Thailand, Laos, Korea and Indonesia. In terms of the rural population affected, the greatest numbers are in China, with nearly half a billion, India, Indonesia, Bangladesh and Brazil. The usual suspects, such as the African Sahel and around the Mediterranean are much less affected."

The resulting loss of carbon fixation from the atmosphere over the measured period amounts to a thousand million tonnes. At a shadow price of \$50 per tonne, the loss of carbon fixed amounts to \$50 billion - and the real cost is far greater in terms of emissions to the atmosphere through loss of soil organic carbon.

Comparison with land use reveals that 19% of the degrading area is cropland and 43% forest. Cropland occupies 12% of the land area and forest 28%, so both are affected disproportionately.

The study found only weak correlations between degrading land and rural population density and with biophysical factors such as aridity. The researchers conclude that more detailed analysis of land use history is needed to uncover the underlying social and economic drivers of land degradation.

Source: Wiley ([news](#) : [web](#))

Citation: A quarter of the world's population depends on degrading land (2009, March 20)

retrieved 10 April 2024 from

<https://phys.org/news/2009-03-quarter-world-population-degrading.html>

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