# Expert warns of climate change aggravating land degradation

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Land degradation is hindering progress towards the UN's Sustainable Development goals, warns Professor Jane Rickson—as the Intergovernmental Panel on Climate Change (IPCC) this week (8

August) publishes its Special Report on climate change and land management. Already, 75% of earth's land areas have been affected, with the figure predicted to rise to 95% by 2050. Professor Rickson anticipates that the IPCC report will provide further irrefutable evidence of the serious impacts of climate change on the world's finite land resources.

## Finite natural resources are under increasing pressure

Professor Rickson is an expert in soil erosion and conservation at Cranfield University, and says that climate change will have significant effects on global land resources.

"Our finite natural resources are under increasing pressure from a growing global population. Climate change will intensify soil erosion, compaction, loss of organic matter, loss of biodiversity, landslides and salinisation—many of which are irreversible.

"It's important that the report considers the effects of climate change on the state of soil quality, and how soil responds to extreme events. Little is known about the effects of rising temperatures and heavier rainfall on soil condition, yet this determines how soils function in producing food. Climate change will affect our ability to grow staple crops where they are grown today—how many days of drought (or flooding) are tolerated by crops before yields start to decline?"

## Land degradation aggravates climate change

"We must also recognise that land degradation aggravates climate change , leading to an escalating crisis—for instance, recent wildfires in drought-prone areas increase$CO_2$emissions in the atmosphere. Greater vegetation

growth may result from higher temperatures due to higher rates of photosynthesis, frost-free seasons and longer growing seasons. While this vegetation growth may take out $CO_2$ from the atmosphere, this may be counterbalanced by increased release of $CO_2$ by enhancing respiration by soil microbes.

## Report must recommend practical responses

"Measures to combat $CO_2$ emissions such as introducing new crops, and changing land use and management will have economic, social, ecological and environmental consequences that must be understood before implementation."

With the IPCC Report likely to focus on the global/national scale, Professor Rickson says the challenge is to propose policies which can filter down to practical local solutions.

"Politicians and land managers should use policies and practices that will reverse, mitigate, and/or adapt to the unprecedented rates of global warming that are causing the climate crisis. The Report should offer effective and feasible policies for the long term—we need joined-up, international co-operation to seriously tackle the challenges in front of us."

Provided by Cranfield University

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