

Australia 'can help solve world soils crisis'

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Around the world a silent crisis in building in the soil that feeds us, putting global food security at risk as demand for nutrition soars in the coming half century.

The Australian Soil Consortium, a group of leading Australian farmers and scientists, today called for Australia to take a leading role in overcoming the threat of land degradation.

Scientists estimate the world now loses about 75 billion tonnes of topsoil a year as it tries to feed itself. This rate is liable to grow as demand for food increases and the climate changes.

"Recent satellite surveys have shown a one per cent decline in the world's farmed and grazed area every year over the past quarter of a century, due to a combination of land degradation and urban sprawl," says soils expert Professor Roger Swift of the ASC and University of Queensland.

"Such losses are not sustainable and must cease if we are to avoid serious risk to food security in the mid-century. At present it appears we are mining the planet in order to feed ourselves."

Members of the ASC say that Australia has a strong track record for reducing [land degradation](#) through the National Soils Program and Landcare movement, especially.

"We need to share the keys to successful soils management globally at a

much faster rate, in order to contribute to global [food security](#) into the future. There is a golden opportunity for Australia to show a world lead on this issue, which affects everyone – farmers and consumers alike."

The Australian Soil Consortium is calling for a re-energised national research effort, focused on:

- Engaging Producers, Consumers and Policy-Makers – new knowledge about the economic and societal factors that will shape consumer preferences, social acceptability and the adoption of innovation by producers.
- Measuring and Monitoring Soil Health – defining appropriate thresholds, methods and technologies for more accurate and rapid monitoring of [soil](#) health to drive productivity.
- Innovative Farm Practices and Technologies – new technology, methods and knowledge that drive input efficiencies within the farming system.
- Novel Soil-Plant Interfaces – new knowledge and models to identify plant traits for increased nutrient and water use efficiency.

"In particular we think there is exceptional potential to improve yields of food from existing farm land through novel technologies which help improve soil fertility and [soil health](#)," says soil researcher Associate Professor Brajesh Singh of the University of Western Sydney.

"For example, rapid and real-time soil-fertility assessment, new spectroscopy techniques used to analyse samples and produce site-specific soil maps for farmers, might help to halve the amount of fertilizer needed to improve food production.

"This can not only reduce costs for Australian farmers and improve their competitive position – but it could at the same time bring food self-

sufficiency to places such as sub-Saharan Africa, where poor farmers can seldom afford to use modern fertilisers.

"Just a small amount of fertiliser in the right place at the right time can lift food output 30-80 per cent in a developing country, making a dramatic difference to issues such as malnutrition and poverty.

"We must also recognise that world supplies of mined fertiliser nutrients are finite and could run low in the mid-century, so techniques like this are vital to avoid wasting them now and to extend their life in a world that may double its demand for food."

Prof. Swift adds that Australia has a distinguished record of improvement in soil management extending over more than half a century. Having a hot, dry climate it has knowledge and experience that could prove vital in sustaining world food supplies, especially in countries with similar climates.

"Australian farmers are masters in raising crop and livestock yields under a highly variable climate that swings rapidly from flood to drought. According to the Intergovernmental Panel on Climate Change that is exactly what we can expect to see more often with two degrees or more of global warming by the mid-century.

"Our knowledge, backed by a reinvigorated research effort, can make a real difference to these issues, which affect the future of all humanity – as well as delivering major economic, nutritional and environmental benefits to Australians."

Provided by Australian Soil Consortium

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