



To the Prime Minister of Australia

The National Soil Advocate

Executive Summary

There is no doubt that many agricultural areas of the world are facing substantial soil, water, food and nutrition problems. More than thirty percent of the world's land is moderately to highly degraded, due to erosion, salinisation, compaction, acidification, hot fires and chemical pollution of soils, and much of the land potentially available for agricultural expansion is not suitable.

The combined effects of global insecurities (population increase, finite resource depletion, soil loss and the effects of climate change) mean that protecting and improving the condition of the world's agricultural soils and carefully managing the intensification of agricultural production have become imperatives for global security. This view is supported by the recent submission by the Department of Defence, along with many others, to the Senate inquiry on *Implications of climate change for Australia's national security*, due to report in March 2018.

In my role as National Soil Advocate, many of the thousands I have consulted reminded me that Australian agriculture also faces the global imperative to do more with less (less productive land, less water, lower inputs). They also emphasised the need to address declining levels of soil carbon, increasing soil acidification and loss of soil and nutrients resulting from erosion. Immediate and ongoing action is needed to ensure that Australian agriculture can continue to be productive, clean and profitable, to demonstrate the use of sustainable management practices our trading partners are now looking for, and to build the resilience we need to live with climate change and associated extremes in weather.

The emerging concept of 'soil security' also underpins the world's six existential challenges: food, water and energy security, climate change abatement, biodiversity protection and human health. I believe that soil and water security will increasingly underpin global social stability and security. Soil is a critical national strategic asset, and it is surprising to me that the scientific advances of the last 20 years in understanding the role that soil plays in each of these challenges have only recently been recognised.

Australia leads the world in our approach to water management. While there is more work to be done particularly in respect to excessive evaporation and run off, water policy is an example of a national response that is possible when the public and political importance of a fundamental and finite natural resource is recognised. I believe that along with our water, our soil and vegetation assets are so important, all three should be declared as key national, natural strategic assets, to be managed accordingly and in an integrated way. Mismanaging any one invariably means the other two will also fail.

Australia could play a leading role in showing the rest of the world how inherently infertile soils in a difficult climate can be managed to meet the world's Sustainable Development Goals for land and soils.

Here I draw together the ideas gathered during my extensive consultations as the National Soil Advocate to make 10 recommendations to protect and improve the health of Australia's soil, water and vegetation for the benefit of all Australians

Recommendations

1. **Agree to a national soils policy with the objective of maintaining and restoring the health of the Australian agricultural landscape** through a coordinated and integrated approach involving the portfolios responsible for agriculture, environment, health, education, defence, Australian Aid, Indigenous affairs, regional development and industry.

The policy will recognise Australia's **soil, water and vegetation as key national natural strategic assets, better support our 130,000 farmers as stewards of about 60 percent of the Australian continent, and seek to reconnect urban Australians with their rural roots through establishing school gardens in every primary and junior high school through the National Curriculum.** The policy will support long term research directed at priorities identified through a stocktake of our scientific knowledge of soils and RD&E capacity, and where possible encourage regulatory consistency for farmers.

2. **Establish a permanent role for the National Soil Advocate as an independent advocate for the importance of soil,** its key role in food and water security, and the importance of the agricultural sector. As with other national functions whose managers have been appointed by the Prime Minister, this position is best placed with the Department of Prime Minister and Cabinet. The role has a national focus with a proven potential to contribute to international coordination of good agricultural land management practice.
3. Establish a long term, perhaps permanent, soil, water, vegetation and agricultural knowledge program that encourages collaboration between scientists and successful farmers **to build knowledge, collate the evidence to support successes and improvements, provide improved extension services to share the information and promote the wider use of regenerative farming techniques.** This will inform and educate a broad range of stakeholders about leading regenerative land management practices by expanding an initial 21 Soils for Life case studies which have proven the concept, to 100 best practice and innovative farm sites Australia wide.
4. Ask the Rural Research and Development Corporations to direct funds to expand the work on extension undertaken through the Extension Hub website, and that the Research and Innovation Committee (which advises the Agriculture Senior Officials Committee) be tasked with deciding how best to implement the strategic actions identified in RIRDC's report "Consolidating targeted and practical extension for Australian farmers and fishers".
5. Increase the funds available through the National Landcare Programme to encourage more farmers to adopt regenerative land management practices.
6. Ask Rural Research and Development Corporations to direct a proportion of their research funds to improve understanding of the plant and soil microbiome processes underlying regenerative farming practices.

7. Have Australian government agencies (including relevant portfolio agencies) state and territory governments and the CRC for High Performance Soils agree to contribute funding or in-kind support for an Australian Soil Network endorsed proposal for an Australian National Soil Information Facility.
8. Task the Soil Education Working Group of the National Soil Research, Development and Extension Strategy Committee (The Australian Soil Network), with developing recommendations for national adoption of the Soil Science Teaching Principles, and conveying these for consideration by the Australian Council of Deans of Agriculture, followed by endorsement by Soil Science Australia's Certified Practising Soil Scientist accreditation scheme.
9. Through the Deans of Agriculture, stocktake and where appropriate, improve government owned extension service capacity to guarantee timely, accurate and transparent information delivery to farmers Australia wide, including improving the career planning prospects for potential and current agricultural scientists.
10. Agree to the preparation of an annual alert report to the Australian Government on the global soil, water and food situation from an Australian perspective, through the auspices of Future Directions International and in collaboration with the Office of National Assessment and other relevant organisations.