

## TO SAVE THE PLANET, WE MUST SAVE THE SOIL

By Major General The Honourable Michael Jeffery, National Advocate for Soil Health



I have been appointed by the Federal Government as Australia's first Advocate for Soil Health. As the Advocate, I raise public awareness of the critical role soil plays in underpinning sustainable productivity, delivering high quality ecosystem services and helping to meet global challenges, including food security and climate change.

2015 has been declared the *International Year of Soils* by the United Nations General Assembly, and I hope that by the end of 2015 we can establish a simple message in the minds of the broader Australian public. That is –

- that soil underpins life as we know it
- that at home and abroad our soils are under threat from degradation, competing land uses and the demands of a booming world population
- that we have the knowledge and means to change the way soils are managed and in so doing to reverse degradation, boost productivity and build a sustainable future
- that now is the time for action.

Fundamentally the world has to almost double its sustainable food production by 2050 to meet a projected population increase from 7 billion to perhaps 10 billion, and it has to do this when the globe is losing around 1 percent of its arable land annually. Soils are becoming less fertile through run-down of nutrients and carbon, eroded through overgrazing and ground cover removal, and wildfires are burning the equivalent of the continent of India every year. Critical aquifer water supply for irrigated agriculture in China, India, Africa, the Middle East and even California is running out, and most of the great rivers passing through populated areas of the undeveloped countries are heavily polluted.

These are indeed very serious and complex challenges. But what I am excited about is that we can equip ourselves to better deal with these impending challenges. By managing our soil, water, vegetation and biodiversity in an integrated way – in our vast agricultural landscapes and even in our own backyards – we can reverse land degradation and support sustainable production.

Fundamentally, we need to ensure that our soils have a healthy structural, mineral and biological balance. An important step in achieving this is to increase the amount of organic matter and carbon in the soil. The carbon content of soil is one of the key indicators of its health and is a master variable that controls numerous processes. It is the carbon content of soil that largely governs its capacity to absorb, retain and supply moisture within the soil. A well-structured soil, high in organic matter and soil carbon essentially acts as a sponge, releasing retained moisture slowly for plants and animals to maintain production over a much longer period. Soil carbon also helps support a healthy balance of nutrients, minerals and soil microbial ecologies, improving soil fertility. Through this, healthy soils promote vigorous plant growth and plant and animal resistance to disease and insect infestation. Diverse vegetation adds organic matter to the soil and provides a protective cover to control evaporation and soil loss through wind and water erosion.

This integrated system turns sunlight energy into the food and fibre we need - and provides the ecosystem services that are fundamental to human survival. We need to support this natural system to perform optimally.

So who is responsible for this management? We all are. In Australia, our farmers and graziers between them manage almost 60 per cent of the landscape, so it is imperative that they all learn, understand and apply good soil management – which many already do. I also take every opportunity to stress that urban Australians need to better understand the importance of rural and regional Australia, in terms of food production, the provision of clean air and water for all Australians, the value of the natural environment and the social contribution made by rural communities.

We can all get involved, be it through the practices we apply in our own gardens and backyards, through volunteering with Landcare, or, a personal favourite of mine, establishing school gardens nationally, such that our young people can be taught about the science underlying food production and landscape processes, including by focusing on soil biology, photosynthesis, the water cycle and the fundamental role that green cover can play in reducing carbon emissions.

It is possible that the impending global food, water and climate crisis may be the most significant challenge humanity faces this century and, ultimately, it all devolves around how we look after our soil.

The 2015 International Year of Soils provides the ideal platform from which to renew our focus on this critical issue. May I suggest, that “to save the planet, we must save the soil”.

[www.soilsforlife.org.au](http://www.soilsforlife.org.au)