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Growing the social life of soil

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This is a big week for soils. World Soil Day was celebrated on 5 December at the headquarters of the [Food and Agriculture Organization of the United Nations](#) in Rome, and in a series of nationally-based events [coordinated around the world](#). The theme for World Soil Day – ‘soils a solid ground for life’ – represents something of a culmination of the 2015 [International Year of Soils](#). In the face of the dire warnings of ‘[peak soil](#)’, ‘[peak nitrate](#)’ and ‘[peak phosphorus](#)’ in the declaration of 2015 as the International Year of Soils soil appears as a figure of both concern and hope. Images of soil degradation and desertification that “[continue to pose serious challenges to the sustainable development of all countries, in particular developing countries](#)” are contrasted with an optimism that “good land management”, will contribute to ‘economic growth’, ‘sustainable agriculture and food security’, ‘women’s empowerment’ and ‘addressing climate change’. In the midst of the seemingly inexorable degradation of soils, soil management is increasingly being enrolled in a range of humanitarian, political and environmental projects.

At the same time the relationship between soils and climate change is likely to feature prominently in both the official proceedings of the Paris Conference of the Parties ([Paris COP21](#)) and the diverse range of fringe events organised both in Paris – and around the world. While the world watches the negotiations unfold in Paris – [and perhaps even dares to hope](#) for ambitious multi-lateral efforts on decarbonisation – in the climate science community the capacity of soils to sequester and store carbon is becoming a focus of renewed interest. It is now openly acknowledged that the majority of IPCC climate models and scenarios that predict a better than 50% chance of stabilising to global mean temperatures to 2°C above pre-industrial levels require “[assume the successful and large-scale uptake of negative-emission technologies](#)”, many of which are based on [the direct removal or greenhouse gases from the atmosphere](#) and their [sequestration and long-term storage in soils and agricultural systems](#). While many of these techniques are “[currently at little more than a conceptual stage of development](#)” – with significant concern about the permanence of carbon sequestered in soils, the capacity to ‘scale up’ alternative agricultural practices and whether these techniques should be regarded as genuine form of climate action in the first place – it is notable that [France, the US](#) and [Australia](#) have initiated broad programmes and incentive mechanisms designed to promote changed land used practices that increase soil carbon

concentrations. At the same time coalitions of environmental NGOs and farming associations alongside the World Bank and the FAO are promoting the role that restorative and regenerative agriculture might play in both [‘cooling the planet’ and ‘feeding the world’](#). In what is perhaps a sign of things to come the [Virgin Earth Challenge](#) is currently offering a \$25m (USD) prize of for “scalable and sustainable ways of removing greenhouse gases from the atmosphere” while terrestrial carbon offsetting projects are increasingly being included in [carbon crediting mechanisms and both voluntary and mandatory carbon markets](#).

The ways in which soil conservation and improvement practices are being marshalled in response to concerns over climate change, food security and rural livelihoods – including in Australia’s inaugural [National Soil Research Development and Extension Strategy](#) - is indicative of the deep connections between soil and social processes. While, the connections between soil and society rarely figure prominently in social thought a recurring theme in much contemporary soil thinking is the insistence that soil health and degradation are matters of *both* ecology and politics. Recent work has demonstrated the deeply [social character of soil loss and contamination](#) and the complex ways in which soils feature in an array of [cultural, religious and ceremonial practices](#).

This includes strategies designed to improve carbon concentrations in agricultural soils, which have to be recognised as primarily matters of ‘practice change’ rather than technical innovation. Moreover, simply providing farmers with information on the benefits of seeking to improve soil organic carbon concentrations is unlikely to translate into changed patterns of behaviour and uptake of new agricultural practices. Like soil, farmers are not simply a homogenous substrate in which new ideas will automatically germinate. In this and other ways, the complexity of the relationship between soil and society will be a crucial research need for the [new national soil and water research agenda](#), especially if the [government’s hopes for innovation in agriculture and regional communities](#) are to come to fruition. Combined with the issue of the deepening drought in many regions, the time has clearly come to think seriously about the dirt we live on and off.