Sharing soil data - Australian/New Zealand leadership in global soil data exchange standards

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Efficient exchange of standardised soil data is essential to support priority issues including climate change adaptation, water quality, food security and a growing world population.
Modern information systems access and integrate soil data from a range of sources. Various initiatives support the need for consistent soil data by defining soil information models and data exchange standards. Examples include: European INSPIRE, e-SOTER and ISO 28258:2013 standards; the GlobalSoilMap , and Australian and New Zealand ANZSoilML projects. The UNFAO Global Soil Partnership (GSP) recognises the value of these projects, particularly for Pillars 4 (Global Soil Information System) and 5 (Harmonization). However due to relatively low capacity for operational uptake, soil data users are still required to individually reconcile multiple sources of data and systems.
The IUSS Working Group on Soil Information Standards (WGSIS) was established in 2010 to merge existing information models into a set of standards for the exchange of globally consistent soil data. The WGSIS demonstrated the value of this work through an Open Geospatial Consortium (OGC) Interoperability Experiment and is working with the GSP to further progress this initiative.
Australian and New Zealand development of a regionally applicable soil data exchange standard, ANZSoilML, provides leadership to the global effort. ANZSoilML has been used to implement a number of soil data services (OGC web feature WFS and web coverage WCS) within Australia and New Zealand. These services provide web accessible data that is being used in a growing number of applications developed by government and agricultural organisations. The OGC Soil Interoperability Experiment and ANZSoilML services show what is technically possible. There is limited capacity to progress this work at a global level, however proliferation of different data standards will not result in data interoperability and the benefits of improved access, sharing and use of soils data will not be realised.