Making the most out of limited soil spatial data

MCBRATNEY A.B. (1), **MORAN C.J.** (2) **and** MENDONCA SANTOS M.L. (3)

(1) Department of Agricultural Chemistry & Soil Science, Ross St Building A03, The University of Sydney, NSW 2006, Australia
(2) CSIRO Land and Water, GPO Box 1666, Canberra, ACT 2601, Australia
(3) EMBRAPA Solos, Rua Jardim Bot□nico, 1024, 22.460-000 Rio de Janeiro-RJ, Brazil

Soil scientists in all countries are now called upon to respond to requests from governments and communities for soil and land resource information. The requests are largely to develop plans to manage the environment responsibly and sustainably. In some countries spatial soil and land resource data are dense. In other parts of the world particularly those countries with large land areas (and a large environmental responsibility and imperative), and small populations or limited economies, the data infrastructure is relatively poor compared with Western Europe and North America. Australia and Brazil are such examples.

In this paper we present examples from Australia and Brazil where the data could be thought of as inadequate, because of small sample sizes or unknown or purposive sampling schemes, for conventional pedometric analyses. Nevertheless, in such cases, additional assumptions and modified soil data processing methods allow the estimation of maps and quantities that provide useful information for environmental management. Of course, it is important to understand the (spatial) uncertainties associated with such procedures in order that senisible environmental decisions can be made and further investment into the soil data infrastructure can be justified and further sampling effectively targeted.

Keywords: pedometrics, uncertainty, soil data