

Access to soil information as a basis for better soil management and policy implementation



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Introduction

Both land managers and government have responsibilities to implement soil-related policies to achieve sustainable soil management. A prerequisite for sustainable soil management is to 'know' the soil and to treat it accordingly. Knowledge of soils is to a large extent based on soil data and information collected by different agencies and research institutes, for example the James Hutton Institute, Scottish Environment Protection Agency, Forestry Commission and Scottish Natural Heritage.

The Soil Monitoring Action Plan¹ is part of the activities being progressed under the Scottish Soil Framework and linked with the CAMERAS Environmental Monitoring Strategy. A report on the Soil Monitoring Action Plan acknowledged that a comprehensive assessment of Scotland's soil data needs will require communication with a range of stakeholders². Consultations and a survey carried out for that report yielded insights on soil data and information needs of some stakeholder groups but other groups were difficult to reach. In response to this knowledge gap, the Soil Focus Group identified a need for a study of specific user groups to shed light on:

Who needs soil information and for what? What specific data and information are needed?

This information was also expected to be useful for the development and further improvement of the Scotland's Soils website³ by providing insights on user groups' preferences regarding the types of soil data and information that should be provided.

As part of the research in the Strategic Research Programme on land manager attitudes and behaviour, a study was carried out to answer the following questions:

1. What soil information and data needs do different users have and what barriers do they perceive to accessing and using soil data and information?
2. How can approaches to provide soil information and its interpretation be enhanced for different user groups, and what is the best format for different users to access soil information?

Research undertaken

We conducted a total of 23 semi-structured interviews with three different groups of 'end users' of soil information and data in October and November 2013. They included local authorities (10), farmers (9) and estate owners/managers (4). The question guideline was similar for all three types of interviewees but adjusted to their respective context.

¹ www.environment.scotland.gov.uk/PDF/Soil_Monitoring_Action_Plan.PDF

² See www.environment.scotland.gov.uk/our_environment/environmental_monitoring/soil_monitoring_action_plan.aspx

³ www.soils-scotland.gov.uk/



Key points

- In local authorities, soil data are most often used by departments of planning or environmental health (contaminated land), with different types of soil data and information required by each, such as Land Capability for Agriculture, or geological and chemical characteristics. The current and future needs of local authorities for data on soils are largely driven by national policy. Predominantly 'broad scale' information is required for planning purposes (including location of carbon rich soils and peat depth), and site specific data on soils is necessary to determine contamination risk and migration of contaminants.
- Members of the farming community expressed needs for detailed and field-scale soil information to make decisions regarding nutrient application and improving soil health. Farmers obtain data on soils through a range of mechanisms mostly provided by commercial companies including sampling and laboratory-based analysis, soil mapping using GPS positioning, and scanning of soil structure. The benefits of an online soil resource were reported, including benchmarking between farms and examples of good practice. However, farmers were doubtful as to whether any further data on soils could be provided beyond that already available, and at the scale useful to them.
- Estate managers explained that they do not directly seek soils data as this is typically the responsibility of the estate agricultural manager or tenant farmers. However, maps of Land Capability are consulted during the valuation, marketing and rent reviews of properties.
- There were examples among all three end user groups where a lack of awareness of the data available on soils and derived products limited the use of such information.
- The provision of soil data and information online was welcomed so long as the requirements of different end user are taken into account.

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Related documents

Prager, K., McKee, A. (2014) Use and awareness of soil data and information among local authorities, farmers and estate managers. Report to Soil Focus Group, RESAS, Scottish Government. Available online at: www.hutton.ac.uk/research/themes/realising-lands-potential/land-manager-attitudes-and-behaviours or <http://www.hutton.ac.uk/staff/katrin-prager>

Policy Implications

These findings highlight:

- the different requirements regarding soil data and information from different users;
- the lack of awareness of what is available from some individuals within the three groups;
- the need to raise awareness of what can be done with the soil data and information available; this needs to be a continuous effort and should clarify costs and means of access;
- the need for data provision to be coupled with contextual information, interpretation of data and possibly training;
- the considerable time and effort needed to provide useful online soil information that caters for the needs of many different users;
- the provision of data on soils tailored for different types of end users should inform the development of the Scotland's Soils Website and relevant parts of Scotland's Environment Web.



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