



**BRITISH  
SOCIETY  
OF SOIL  
SCIENCE**

**British Society of Soil Science**

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Friday, 29 October 2010

To whomever it may concern;

**“An invitation to shape the nature of England”**

Please find attached a joint response to the above consultation from the British Society of Soil Science (BSSS) and the Institute of Professional Soil Scientists (IPSS).

The British Society of Soil Science (BSSS) is an incorporated charity whose mission is *“to advance the study of soil and to promote a better understanding of soil, nationally and internationally”*. With ~ 700 members, we represent the interests of soil scientists across all relevant disciplines both within the UK and internationally. Further information can be found on the Society's website at [www.soils.org.uk](http://www.soils.org.uk).

The Institute of Professional Soil Scientists (IPSS) is the professional body of the British Society of Soil Science and aims to promote and enhance the status of soil science and allied disciplines. IPSS prescribes the professional standards accepted by its members and strives continually to advance their competence in scientific and technical matters. IPSS is licensed by the Science Council to award Chartered Scientist (CSci) status to appropriately qualified members. 75% of the membership meets this statement. Further information can be found on the Institute's website at [www.soilscientist.org](http://www.soilscientist.org).

The Strategic Aims of BSSS and IPSS are to:

- Promote the understanding, relevance and use of soil science and the dissemination of research findings
- Enhance soil education and developing soil scientists
- Support standards of practice

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Kathryn E. Allton', is written over a light blue rectangular background.

Dr Kathryn E. Allton  
*Executive Officer*

*For and on behalf of the Institute of Professional Soil Scientists and the British Society of Soil Science*

## General Comments

This is a very worthy document but also comes across as rather bland. There is some confusion in the language, which could make it misleading. The document is England specific but frequently uses the UK as a context. The Society disagrees with the assertion that the country's very best wildlife sites are in better condition than at any point in recent years. We already know that the soils across England are showing significant signs of degradation, for example, in the form of soil organic matter loss and compaction.

### **Question 1 – What do we need to do to embed the true value of our natural resources in decision making at all levels?**

Life Cycle Analysis is needed that can include all ecosystem services and functions, not just carbon fluxes. This would include the value of precious metals used in mobile phones and hybrid cars; the value of water for all its uses; flora and fauna for food but also biodiversity; etc. The Society would like to emphasize the need to consider soil biodiversity – an unseen but vital part of our ecosystem. It is now acknowledged that there is more biodiversity below ground than in a tropical rainforest. The function of soil flora and fauna is as yet poorly defined but it is vital that we research this to ensure that we understand the risk of its loss and maintain at least what is needed for soil function.

#### **a. How can we reflect all the different kinds of value described above?**

Unfortunately 'true value' usually means monetary value. It has proved difficult to take a holistic view without putting a monetary value on, e.g. birds and butterflies. The sustainability of agricultural systems has been assessed using a method called 'Total Factor Productivity' (Glendining, M.J., Dailey, A.G., Williams, A.G., van Evert, F.K., Goulding K.W.T. and Whitmore, A.P. (2009) Is it possible to increase the sustainability of arable and ruminant agriculture by reducing inputs? *Agricultural Systems* **99**: 117-125.). This assigns a monetary value of all ecosystem services and, while the values may be debateable, it permits an informed discussion.

### **Question 2 – Have we identified the right overarching challenges for the White Paper to consider?**

#### **a. If not, what should we focus on?**

Climate and Demographic change are certainly two of the main challenges. We are not sure that the section on Demographic Change clearly sets out the issue of increasing wealth in countries such as China, the demand on the part of the Chinese people for more food, especially more meat, and the consequences for grain supplies for food. As well as the above, a little more could be said in the section on Climate Change about the conflict

between using land to grow food and biofuel crops. The point needs to be made that the land area, especially that suitable for crop growth, is limited.

The Society believes that the importance of biodiversity loss, particularly soil biodiversity loss, and the consequences of this on ecosystem function, is a major challenge that is not adequately addressed in the Paper.

Only two issues are raised in relation to Soil, the degradation of agricultural soils and peat loss. Loss of soil through development, and degradation of “other” soils has been completely ignored. With respect to food security one clear aim must be the safeguarding of our most productive soils.

#### **b. How should we approach these challenges?**

Integrated, holistic policies are clearly necessary but are complex and not easy for governments to develop and deliver. We think it essential that Government and the public(s) understand that not all ecosystem services can be delivered from a single soil type, nor can one necessarily move quickly from one ecosystem service to another: e.g. a peat bog and productive arable land are not compatible or interchangeable; land can be quickly built on, but reinstating it for flood control or agriculture is neither quick nor easy. Current economic models, and political horizons, are unable to cope with the fact that soils may take several years to respond to change or threats (e.g. climatic). Economic discounting cannot account for a loss in service / function in say 20 years time, even if that loss is irreversible in 10,000 years.

Ecosystem services, including those of soils, must be included properly in planning regulations. Much greater consideration of the loss of ecosystem services provided by soils is required at the development stage. Soils support vital services including flood prevention, groundwater recharge, food production and carbon storage. One key example is the development of wind farms on peat soils, there is a gain in renewable energy from the wind but this must be offset against any degradation of the peat. A balance needs to be struck between achieving our climate change mitigation and conservation goals, both of which are legally binding and important objectives. We must deliver these goals in a sustainable way.

**Question 3 – What are the existing policies and practices aimed at protecting England’s natural assets (including but not limited to those set out above on our biodiversity, seas, water bodies, air and soil) that currently work most**

**effectively?**

#### **a. What works less well – what could we stop doing or do differently?**

The Marine Strategies Framework is a good example of developing an integrated approach to resource use and management, The Society would like to see a similar framework for soils either on its own or preferably as part of a terrestrial environment initiative. The UK should support the EU Soil Framework Directive to provide effective protection for soils.

#### **Question 4 – What mechanisms should we focus on to ensure we manage our natural systems more effectively in future?**

Effective planning controls that include soils.

##### **a. How should we define success?**

In terms of handing over a better environment and better society to the next generation.

##### **b. How can we agree on common goals and assess our progress towards them?**

Only with great difficulty. Some countries such as France agree a goal at a high level and push it through, e.g. major roads and railways. Other countries, e.g. Sweden, have been successful in allowing local communities to decide local priorities. The latter would seem to be the most democratic and to be inclusive and match the current Coalition Government's approach.

#### **Question 5 – How best can we reduce our footprint on the natural environment abroad, through the goods, services and products we use?**

We should maximise our production at home, especially of those products that we can produce well, such as food. Our soils are naturally productive and resilient. Our climate is very favourable to food production, especially for wheat and grassland (i.e. livestock products). We should once again aim to be as self-sufficient as possible using optimal production methods that acknowledge some environmental impact but avoid the often far worse impacts when we 'export' our food resourcing to developing countries.

#### **Question 6 – What best practice and innovative approaches to protecting and enhancing our natural environment do you think should be considered as we develop the White Paper?**

Effective soil management - for which we need to rebuild the research base in soil and water management, as demonstrated by the recent report of the Royal Agricultural Society of England and the advisory/extension system that links agricultural R&D to farmers.

Incentives are acceptable and necessary but will only be as good as the information available to decide what the best way to achieve the ideal outcomes is. Incentives should not distort and lead to greater problems in the future. For example, incentives for wind-farm developments target the “bigger – the better” approach rather than allowing local communities to decide what is an appropriate scale of wind-farm that will contribute to the overall UK target; there are many ways to achieve a target and some ways may be more appropriate than others but incentives can distort.

Expansion at the local level – how will it be resourced? Assuming that the voluntary sector will pick it up is not an option.

The UK is renowned worldwide for its “land capability” mapping. However much of our spatial soils data for planning are now historical / legacy data – most of it collected in the mid 1970’s to 1980’s. Would or should a Government or local authority be comfortable about making decisions based on >30 year old information that may have changed radically in that period? This legacy data is generally too coarse to support local planning. One solution to this would be to fund an integrated approach that will support planning, commercial and research interests.

**Question 7 – How best can we harness and build on public enthusiasm for the natural environment so people can help improve it through local action, as informed consumers or by shaping policy?**

One clear need is to re-connect people to their food supply. ‘Open Farm Sunday’ and the increasing number of farms that the public can visit helps but outbreaks of E-coli and other diseases discourage people from visiting farms.

The expertise and knowledge available through learned societies should be harnessed to create a greater public awareness of what is required to produce food, help mitigate climate change etc.

**Question 8 – What should be our vision for the role of Civil Society in managing and enhancing the natural environment and for engaging individuals, businesses and communities in setting the agenda for that work?**

Engaging civil society can be helpful as long as the engagement is informed. Views are bound to differ, but when they are based on media campaigns and ignore facts, such as the ‘Frankenstein Foods’ campaign against GM products, we will not create a sustainable system.

**Question 9 – How best can Government incentivise innovative and effective action on the natural environment, across England, at the local level?**

**a. How best can local Government and other local partners work together to**

**improve local outcomes on the natural environment, and pursue a more integrated approach linking a healthy natural environment to economic prosperity, sustainable development and a better quality of life, health and wellbeing?**

**b. What are the most effective mechanisms for managing the natural environment where cross-boundary issues are involved, and making the link to other mechanisms for economic growth, transport and planning?**

**c. How best can the value of the natural environment be considered within local planning?**

The Society would recommend using a model similar to those adopted in New Zealand and Australia, which encourage local action by funding regional Landcare groups (in Australia these are often associated with catchments protecting both land and water resources).

**Question 10 – How best could the economy reflect the true value of nature’s services in the way business is done, to drive smarter, greener growth?**

By assigning realistic values to natural capital, e.g. carbon credits. Until that is done there is no incentive to stop using non-renewable resources.

**Question 11 – Responsible businesses are already looking for ways to reduce their impact on the environment. How can we encourage more action like this?**

By making it financially attractive or disadvantageous not to do so, i.e. the ‘Carrot and Stick’ approach.

**Question 12 – What are the barriers to joining up and seeking multiple benefits from our natural assets?**

See Q1. We need to develop an approach that permits holistic assessment but which acknowledges that people will have different priorities and preferences.

**Question 13 – What are the barriers to thinking big and taking a landscape scale approach to managing our natural assets?**

The fact that we live locally and tend to focus on our very close environment.

**Question 14 – What should be the priorities for the UK’s role in EU and international action, to protect and enhance the natural environment at home and abroad?**

Considering the necessities for life, priorities should be air, water, food and habitat, in that order. In this context soils filter and buffer air and water quality and store water; 90% of our food is grown in soils; soils provide a habitat for the vast numbers of soil organisms but also most plants and many animals; soils are the platform on which we build. Thus soil protection has to be a very high priority when seeking to protect and enhance the natural environment.

**Question 15 – If you could choose just one priority action for the Natural Environment White Paper to drive forward locally, nationally or internationally – what would it be?**

Supporting the EU Soils Directive. Raising the protection of our soil resources to the same level afforded for biodiversity, air, waters and the marine environment. We need to establish “good ecological status” for soils to set the standards by which the big society can work to restore services.