

October 2019

National Food Strategy - Call for Evidence *Response by the SSA*

Healthy soil is critical for achieving many if not all of the objectives laid out in the scope of this review. It is a prerequisite for safe and healthy food and a resilient agriculture sector. It is a key component of the natural environment as a home for plant and animal biodiversity, and through its ability to store carbon a critical tool for mitigating – and adapting to – the future shock of climate change. Finally, healthy soils deliver the healthy river catchment systems that are critical for thriving urban and rural economies.

Despite this, soil's significance is often overlooked. While we may understand soil's impact on the quality of the food we eat, what is less well known is the reciprocal impact, namely the way in which we grow, harvest and consume our food impacts upon the health of our soil – and its ability to deliver the long-term productivity and environmental services we depend upon.

We have identified the following three 'themes' and accompanying actions that we believe are critical for achieving widespread understanding and appreciation of soil health:

1. Public Awareness

Defra's 25-year Environment Plan states that England's "*soils must be managed sustainably by 2030*" and "*steps must be taken towards restoring the UK's soils*", including recover from current annual levels of topsoil loss of 2.9 million tonnes and degradation due to soil erosion, salinization, compaction, acidification and chemical pollution.

Despite growing political engagement and the efforts of soil scientists and agronomists, there is a poverty of public awareness of the essential role soils play for humankind, and their contribution to food productivity, ecosystems and environmental health.

This lack of awareness is a significant obstacle towards the achievement of the 2030 target. The recent examples of biodiversity loss and plastic pollution demonstrate how public concern is a driver of policy, investment and corporate behaviour change. A similar, watershed generational appreciation is needed for soil.

- **A nationwide awareness campaign is needed to drive a sea-change in public understanding and appreciation of the importance of soil health - capitalising on the widespread concern about environmental breakdown and the role of our food system within it. Such a campaign should be government funded and driven to deliver results at scale, make use of the creative powers of broadcasters, social media and the arts to tell a compelling narrative, and harness the customer reach of the food supply chain.**

2. Advice and Education

Awareness of the importance of soil health must be accompanied by targeted education about the measures needed to achieve it. While there is the need for universal, improved knowledge, we have identified three groups in particular where the impact would be greatest.

- a) **Under the terms of post Brexit agriculture reforms, the farm advice industry needs to be overhauled to deliver authoritative, consistent, straight-forward and above all independent advice about practices that gradually restore soil health. Critical to this advice must be the message that**

the transition to soil improving techniques can be profitable - both environmentally and in terms of food productivity - if approached with the right blend of agronomic and financial expertise.

- b) The department of education should identify opportunities to incorporate soil health into the school curriculum, specifically:
 - The science and geography curriculum as part of education around climate change. Children should be taught that three times as much carbon are stored in our soils as in the atmosphere, but that this is released by soil-degrading practices.
 - Within initiatives to educate about food such as the Healthy Schools Rating Scheme. This should address food provenance and sourcing, nutrition and the connection between local soil types and crop varieties. To bring the issue to life, we should teach children about the UK's rich geological diversity which generates over 1,800 types of soil, which in turn defines the quality and type of regional produce is grown.
- c) The food supply chain, and major retailers and buyers in particular, can have an impact on soil health by virtue of the choice and timing of produce delivery (e.g. the harvesting of root crops on wet days increases the risk of soil compaction). Those responsible for supplier relations should be made aware of potentially negative environmental impacts - and hence long-term security of supply – and this should be reflected in contractual relations. The Grocery Code Adjudicator should also have a role in disseminating this message.

3. Public health

Healthy and good quality food can only be produced if our soils are healthy. Nowadays there is considerable scientific evidence connecting plant and human health, but very little research that factors in the third critical element - soil health.

Given that an estimated 95% of our food is directly or indirectly produced on our soils, this is a crucial, missing piece of the picture, especially given [that several studies](#) of fruits, vegetables and grains have suggested a decline in nutritional value over time, with speculation that intensive agricultural methods taking nutrients from the soil are to blame.

Whether true or false, the research is limited and, where available, piecemeal and inconclusive – and often focused on international (especially American soils). Conclusions tend to be based on correlation rather than direct causation.

- **As a matter of urgency, greater research is needed into the link between soil, plant and human health with a view to informing future policy development and our post-Brexit agro-environment strategy. This work should combine the expertise of the Scientific Advisory Committee on Nutrition with the leading national soil health institutes, Cranfield, Rothamstead, CEH etc. Where a clear connection can be proven between soil health and nutrient density the outcomes of this research should feed into consumer information, and in due course product labelling.**

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The challenge of soil health is a global one, with countries throughout the world wrestling with the dilemma of balancing food production and environmental concerns. Brexit provides the UK with the challenge and opportunity almost unique to a developed nation to design from scratch an agro-environmental policy that is fit for the 21st Century – combining education, incentivisation, regulation and enforcement that will have a significant impact on the way we grow, harvest and consume our food – and soil should be at the heart of this.

The learnings from this process will be applicable internationally, and an opportunity to showcase how English food production is at the cutting edge of research, innovation and the application of technology – as well as to promote our national food culture, heritage and produce.