

The British Society of Soil Science and the Institute of Professional Soil Scientists are pleased that the Soil Association report will stimulate debate on good soil management as a method of mitigating GHG emissions and climate change. Yet the simple idea that going wholly organic is the solution is erroneous.

Any benefits from organic systems are not because they are organic but because they involve crop rotations that include leys (usually grass-clover), possibly cover crops, and possibly bought-in composts or other organic 'wastes'. This could be part of any farming system, not just organic.

Long-term experiments around the world show that crop rotations including leys build up soil carbon only if the soil was initially low in carbon or if the ley phase is much longer than the arable phase, which is not economically attractive. Old grassland ploughed up and put into a rotation will still lose carbon.

Crop rotations that use leys to build fertility (specifically to fix nitrogen) cannot deliver the same yields as conventional arable systems that use fertiliser. The use of nitrogen fertiliser with its high energy requirement is an acknowledged dilemma and part of the food security debate: will people willingly change their diet and so permit reductions in yields? The recent report by Reading University's Centre for Agricultural Strategy (CAS Report 18, 'England and Wales under organic agriculture') found that organic systems would deliver much smaller wheat yields. The report also showed that organic systems would supply more red meat and less white meat; the opposite of current dietary recommendations.

Practically, the conversion of the whole of lowland England to organic farming would require massive changes to the structure of UK farming. Without a doubt how we manage our soils in future will have important implications for carbon sequestration. Organic farming is just one method but we must be confident that the results obtained from other countries would lead to benefits not just for carbon but for food production, rural livelihoods and other ecosystem services.

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