

Royal Society of Edinburgh Inquiry into the Future of Scotland's Hill and Island  
Areas

Submission from Soil Association Scotland

24th September 2007

Soil Association Scotland warmly welcomes the RSE's Inquiry, and the invitation to engage with it by submitting written evidence.

The development of a vision for the future of our remote and island areas is very welcome. We share the Inquiry's analysis of the forces shaping change: the CAP reform process, forcing a new rationale on agriculture; the ambition to expand Scotland's forest cover; the real and present challenge of climate change – probably the biggest environmental pressure humanity has ever faced; the opportunities presented by information technology and changing work patterns; the opportunities of renewable energy, and of other climate change abatement techniques; the growth of tourism; and increasing expectations regarding public services.

Our response focuses on two specific areas – agriculture, and land use and climate change.

1. Agriculture.

The advent of the Single Farm Payment, the expectations of declining public expenditure on agricultural support, the challenges to direct subsidies under world trade rules, the need to ensure payments are commensurate with delivery of public benefits – these drivers will necessitate a fundamental re-examination of the role of agriculture. The Inquiry members are expert on the pressure facing our existing agricultural support model. We don't anticipate there being much doubt in their minds about the future direction of agriculture in Scotland's remote and island communities.

Volume production of an undifferentiated product is no longer economically feasible, or appropriate. High quality food production, for local and differentiated markets, must be the purpose of the region's agriculture. Our farmers, crofters and growers cannot realistically expect to be able to compete on globalised commodity markets in a world of liberalised agricultural trade.

Meeting these new market opportunities will require both a change of approach by the primary producers, and also heavy public investment in establishing the necessary infrastructure. The weakness of current food processing and distribution structures in Scotland was tragically exposed during the major outbreak of foot and mouth disease in 2001. A food system so heavily dependent on long-distance transport, centralised processing and distribution facilities, and so constrained by ill-conceived and destructive regulation (e.g. on abattoirs, food processing 'hygiene', product standardisation), is not well placed to respond to the new opportunities.

The delivery of multiple public benefits (including high-quality food production) from Scottish agriculture might benefit from a shift away from direct payments based on historic production, and in favour of rewards for other measurable outcomes.

Organic farming provides a practical and rapidly-growing example of how this can be done.

#### BENEFITS OF ORGANIC FARMING

The benefits of organic agriculture in some areas are already well established; in others there is still a notable lack of research results.

With respect to lowland agriculture, please see attached at [Appendix 1](#) a paper recently circulated by Defra on the public benefits of organic agriculture, predominantly in the lowlands.

In its own words, this paper

“discusses the current benefits to society that accrue from farming organically and demonstrates that in the areas of green house gas emissions, biodiversity, nutrient pollution to water, food and nutrition, pesticide pollution, energy use and efficiency, soil protection, environmental pollution, animal welfare and on farm employment, organic farming is on average much better for the environment than conventional farming and argues that there is a clear justification for supporting organic farmers based on the environmental public goods supplied by organic production.

“The paper also goes on to suggest that in order to further maximise on these benefits and deliver them on a significant scale, what is needed is for Government to signal its long term commitment to the sector, and encourage organic production in England on a hitherto unprecedented scale.”

Please find at [Appendix 2](#) a paper from English Nature in 2003.

This concludes, in its own words, that

“English Nature welcomes an expansion of organic farming because there is reliable evidence that it has evolved into a well-defined modern system of agriculture that is broadly beneficial to the environment and to wildlife. Since the late 1980s there have been over 50 documented and authoritative comparisons of the relative impact of organic and non-organic farming systems on wildlife. These have looked at flora, various groups of invertebrates and at birds and bats. There are some consistent results that have emerged. Where differences have been found between the two systems then overwhelmingly:

- There are higher numbers and greater densities of wildlife on organic farms;
- There is a greater diversity of wildlife on organic farms;
- Those wildlife species that have suffered the greatest declines on farmland in the last 50 years do better under organic farming systems.

Within the context of English farming and on the basis of the available evidence there is a clear case that management of organic farms routinely:

- Reduces the negative external impacts of farming systems;
- Enables the range of wildlife traditionally associated with agricultural land in the locality to thrive, thereby helping in the delivery of Government objectives for farmland wildlife.”

With respect to upland farming, little research has been conducted in Scotland. It is remarkable and disappointing how little interest is shown in this area by Scotland’s research institutes, SAC, and Scottish Natural Heritage.

There are nonetheless a number of reasons to anticipate that organic farming is beneficial to biodiversity in Scotland’s uplands – including the following:

a) With the avoidance of the routine use of systematic and persistent anthelmintics and other veterinary medicines, the ability of the dung in organic upland systems to support a wide range of saprophytic species is far higher than in conventional farming.

b) Stocking densities are usually lower in organic systems, reducing risks of over-grazing.

c) Organic farming systems more commonly support mixed grazing of sheep and cattle. Cattle are almost universally acknowledged to be environmentally preferable. In most situations mixed grazing is preferable; if grazing is to be by a single species, cattle are preferable to sheep, and more common on organic systems.

d) The requirement within organic standards for a predominance of forage in the ration is likely to mean organic upland farms support grassland conservation (hay- and silage-making) than conventional farms, so supporting a wider range of habitats. Organic concentrate feed is very expensive, so if the farm has the potential for arable this is more likely to be used on an organic than on a conventional farm. Furthermore organic arable is lower intensity and more wildlife-friendly by comparison with conventional (please see appendixes for further comment on arable systems).

e) To market organic stock, there will be a link between upland farms selling stores and lowland farms finishing stock. The benefits of organic agriculture in the lowlands are now established beyond doubt.

## 2. Land use and climate change

Recent research shows that Scotland's soils contain roughly half of the UK's total soil-borne carbon. The scale of these deposits is such that if roughly half of 1% were to be oxidised and released on an annual basis, Scotland's anthropogenic greenhouse gas emissions would double. Protection of these soils therefore is a high priority.

For further details, please see the [Appendix 3](#). This states that "the carbon flows between the atmosphere and biosphere are broadly in balance over time if human-generated emissions are not added to the equation. Less carbon from earth to atmosphere (lower emissions) and more carbon from atmosphere to earth (higher sequestration) will push the system back towards equilibrium. The arrest of deforestation, restoration of the carbon content of cultivated soils and better management of croplands (less tillage, particularly on organic soils, less fertiliser, less energy use) and an increase in grasslands could together reduce carbon emissions by about 1 gigatonne of carbon a year at under \$20 a tonne. (Better buildings could reduce emissions by 1.25 gigatonnes of carbon a year at the same price per tonne.)

"The reduction achievable through agriculture and forestry could address less than a third of the current problem, which is about 10 GT of carbon entering the atmosphere every year, a figure set to rise at current trends to 25 GT of carbon a year. But making changes in agriculture and forestry is worth it, because they will be relatively cheap and something needs to be done now. Taking organic soils out of cultivation, for example, would be a 'no regrets policy.'"

## 3. Conclusion.

Soil Association Scotland hopes that these comments are of interest to the Inquiry, and would be pleased to elaborate them or discuss them with inquiry team members.