

Alistair Crowle – Written Evidence (LUE0044)

1. What do you see as the most notable current challenges in relation to land use in England? How might these challenges best be tackled? How do you foresee land use in England changing over the long term? How should competing priorities for land use be managed?

Agriculture covers more than 70% of terrestrial land in the UK (Helm, 2019) which equates to around 42.8 million acres under crops or permanent pasture (Cocker, 2018). The area of the built environment is less than 10% of land. The biggest challenge for land use will be to deliver the ambitions of the 25 Year Plan within the existing approach to agriculture in England, that currently operates in a way that is completely at odds with the environmental aspirations of Government.

A warming climate and changes in precipitation and seasonal temperatures are likely to mean that in some areas, certain crops will not be commercially productive. Sea level rises are also likely to impact upon low-lying coastal areas and the climatic envelopes for biodiversity (birds, invertebrates, plants, trees etc) will change. These are not insurmountable challenges, but they will require a policy framework that emphasises working with the environment rather than trying to dominate it. An example to illustrate this concept is development on flood plains. The historic approach has been to canalise rivers and build ever higher flood defences. A more sustainable approach would be to recognise that flooding will occur and to design structures that are not damaged or become uninhabitable in the event of flooding. This allows the continuation of development where it may be needed whilst still allowing restoration of natural processes and biodiversity recovery.

Whilst UK population projections indicate an increase in population in the short to medium-term, policies should also be looking 30 years ahead and anticipate an aging and possibly declining population (increasingly dependent upon immigration to generate economic activity) and what this will mean for transport corridors and population distribution. Consideration of these strategic issues now in the context of changing approaches to land management brought about by either climate change or changes in agriculture, may mean that many areas of potential conflict can be avoided.

Cocker, M. 2018. *Our Place, can we save Britain's wildlife before it is too late?* Vintage, London.

Helm, D. 2019. *Green and Prosperous Land, A blueprint for rescuing the British countryside.* London: William Collins.

2. What are the key drivers of land use change which need to be planned for, and how should they be planned for? What is the role of multifunctional land use strategies in implementing these plans?

Water storage for domestic, industrial and agriculture use. Weather patterns may become more erratic and the ability to store water to ensure adequate provision due to an increased prevalence of drought should be planned for now and the planning should take account of biodiversity restoration and access/recreational use.

To achieve net zero targets, energy efficient transport is likely to become more important so vehicle charging areas with the appropriate infrastructure will be required so people have the confidence to rely upon electric rather than fossil fuel. Public transport between rural and urban areas is currently in decline and viable alternatives to private car ownership need to be offered and this could include driverless buses/trams. Where roads are built or upgraded, separate cycle lanes need to be included to encourage bike use and to keep people safe when cycling either as commuters or for recreation.

4. What impacts are changes to farming and agricultural practices, including food production, likely to have on land use in England? What is the role of new technology and changing standards of land management?

Agriculture covers more than 70% of terrestrial land in the UK (Helm, 2019) which equates to around 42.8 million acres under crops or permanent pasture (Cocker, 2018). The technological advances in the last 120 years have led to a grossly simplified landscape that has been by far, the biggest single cause of loss of biodiversity. Examples of some of these advances are the development and increased use of chemicals that may enhance productivity but have polluted water supplies and impacted negatively upon non-target species (e.g. birds and invertebrates). Farming practices are resulting in erosion of soil and loss of natural fertility to the extent that soils in urban allotments can be in better condition than agricultural soils (e.g. Edmondson, 2014). In recent decades this intensification of land use and simplification of landscape has been driven by subsidies. This is an unsustainable approach to the use of land and is not just confined to Britain (National Food Strategy, 2021). A policy level change in emphasis is required that acknowledges the limited

economic contribution that agriculture now makes to the economy and rural communities in comparison to other activities. For example, the contribution of sheep farms to the Welsh economy was £400m compared to £500m from recreational walking and £1800m generated by all wildlife-based activity, neither of which land uses receives subsidy (Cocker, 2018). Employment within agriculture has also changed from 1.7m men employed in 1881 to 526,000 in 2007, less than 2% of the UK workforce, with half of this number being part time (Cocker, 2018). It is a reasonable assumption that new technologies will result in further reduction in the numbers employed within agriculture. If the modest economic contribution to GDP (around 0.7%, Helm, 2019) by agriculture was recognised, it would encourage a broader assessment of the impacts and opportunities of changes to farming and associated practices and how they could be mitigated.

The UK consumes around 60% of what it produces (Defra, 2021), a re-balancing of agricultural policy would not necessarily result in a change to that figure (and it would likely increase) but it would require policies that encouraged production of what is required rather than what is profitable. This is a key policy area that requires attention if sustainable land use practices are to be put in place.

The changes in agriculture that are currently underway such as the reduction and phasing out of the Basic Payment Scheme – about 40% of farmers depend upon this to make a profit (National Food Strategy, 2021) - offer a once in a generation opportunity for restoration of large areas of the English uplands in particular, but only if these changes are not replaced by a system that merely maintains the status quo.

The changes in agriculture policy based upon “public money for public goods” paves the way for addressing Government targets under the 25 Year Plan. The 300 – 500,000 ha target for restoration of biodiversity habitat outside existing protected areas, is currently unachievable because there are no robust mechanisms to deliver it and the target will remain unachievable until there is agricultural reform that fully integrates policies for production and restoration of biodiversity. However, if a new approach to agriculture were to be enacted, The National Food Strategy (2021) has calculated that £500 – 700 million, around one third of the current subsidy, would be enough to pay farmers for around 400, 000 ha of broadleaved forest, 325,000 ha of restored upland peat and around 200,000 ha of farmland dedicated mainly to nature. This would be a clear win for both agriculture and biodiversity and would likely have additional economic benefits in terms of tourism and recreational use.

Cocker, M. 2018. *Our Place, can we save Britain’s wildlife before it is too late?* Vintage, London.

Defra. 2021. UK Food Security Report 2021

Edmondson, J.L., Davies, Z.G., Gaston, K.J. and Leake, J.R. 2014. Urban cultivation in allotments maintains soil qualities adversely affected by conventional agriculture. *Journal of Applied Ecology* 2014, 51, 880–889 doi: 10.1111/1365-2664.12254

Helm, D. 2019. *Green and Prosperous Land, A blueprint for rescuing the British countryside*. London: William Collins.

National Food Strategy. 2021. The evidence. <https://www.nationalfoodstrategy.org/the-report/>

5. What impact are the forthcoming environmental land management schemes likely to have on agriculture, biodiversity and wellbeing? What do you see as their merits and disadvantages?

Agriculture covers more than 70% of terrestrial land in the UK (Helm, 2019) which equates to around 42.8 million acres under crops or permanent pasture (Cocker, 2018). The technological advances in the last 120 years have led to a grossly simplified landscape that has been the biggest single cause of loss of biodiversity. These advances have included the increased use of chemicals that have polluted water supplies and unintended consequences upon non-target species and practices that are resulting in the loss of soil to the extent that soils in urban allotments can be in better condition than agricultural soils (Edmondson, 2014). In recent decades this intensification of land use and simplification of landscape has been driven by subsidies. This is an unsustainable approach to the use of land. A policy change is required that acknowledges the limited economic contribution that agriculture makes to rural communities in comparison to other activities. For example, the contribution of sheep farms to the Welsh economy was £400m compared to £500m from recreational walking and £1800m generated by all wildlife-based activity. In addition, neither of these land uses receives subsidy (Cocker, 2018). Employment within agriculture has also changed from 1.7m men employed in 1881 to 526,000 in 2007, less than 2% of the UK workforce, with half of this number being part time (Cocker, 2018). It is a reasonable assumption that new technologies will result in further reduction in the numbers employed within agriculture. If the modest economic contribution to GDP (0.7%, Helm, 2019) by agriculture was recognised, it would encourage a broader assessment of the impacts of changes to farming and associated practices and how they could be mitigated.

Agri-environment Schemes, introduced in 1988 (for a review see Condliffe, 2009), have largely failed in their objective of restoring biodiversity. The reasons for this are varied and include:

- Application of inappropriate options
- Establishment of agreements rather than outcomes as the mark of success
- Lack of investment of time in after care visits to identify early on, when an agreement may not be delivering
- That some schemes e.g. CS are not whole farm, and may only be targeted at a small area of otherwise intensive production
- The interest and commitment of the farmer

(Natural England data; Fera, 2018).

However, the main cause of the failure of agri-environment to deliver long-term nature conservation gains (see Natural England SSSI condition data for causes of unfavourable condition) is that they have been outcompeted by subsidy (c.£400 million for agri-environment versus c. £3 billion in other subsidy payments per annum in the years running up to 2019). Not only has agri-environment failed in its primary objective of restoring biodiversity but it has also perpetuated many of the problems through artificially inflating livestock numbers and maintaining economically unviable businesses (Defra, 2020, National Food Strategy, 2021).

A new prescription-based scheme (e.g. Environmental Land management/Local Nature Recovery) is unlikely to alter the existing situation without a fundamental reset of agriculture practice that works with the environment rather than in opposition to it. There is a fundamental incompatibility between intensive farming and restoration of biodiversity, ecosystem services (drinking water, carbon storage, recreation etc) and the development and protection of natural capital.

Around 40% of farms are only profitable because of subsidy (National Food Strategy, 2021). Excessive numbers of farmers, with an ever-increasing average age, artificially increases the value of land and makes it harder for new entrants to the sector to become established. A restructuring of agricultural support that includes restoration of the environment as a core aim, would provide an opportunity to establish a sustainable approach to land use and agriculture within England.

The pandemic has confirmed the importance of green space for people. It is paramount though, to recognise that whilst providing green space for our largely urban population to use is important, there will also be a need to recognise that not all wildlife restoration is compatible with the disturbance that comes with access and recreational uses of land.

In addition to changes to the agricultural system in England there needs to be a more honest accounting of economic and environmental costs to society of land use. British agriculture has a turnover of around £9 billion and receives around £3 billion in direct subsidies (Helm, 2019). If the costs of water treatment, loss of carbon, soil, and biodiversity are factored in, along with the various business concessions afforded agriculture (e.g. inheritance tax and business rates) the economic value of agriculture is at best small and may even be zero (Helm, 2019). By comparison, the tourist industry has a turnover of £260 billion (Helm, 2019), some of which will be related in some way to the natural environment, for example in 2017/18, there were 45 million visitors to upland National Parks in England (Glaves, et al. 2020).

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Condliffe I. 2009. Policy change in the uplands. In: A. Bonn, T. Allott, K Hubacek & J. Stewart (eds.) *Drivers of environmental change in uplands*, pp. 59–89. London: Routledge.

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Objective 2: Analysis of scheme uptake. Report to Natural England.

Glaves, D.J., Crowle, A.J.W., Bruemmer, C. & Lenaghan, S.A. 2020. *The causes and prevention of wildfire on heathlands and peatlands in England*. Natural England Evidence Review NEER014. Peterborough: Natural England.

Helm, D. 2019. *Green and Prosperous Land, A blueprint for rescuing the British countryside*. London: William Collins.

6. What do you see as the key threats to nature and biodiversity in England in the short and longer term, and what role should land use policy have in tackling these?

The biggest threat to both nature and biodiversity is the misplaced belief that food security is about what we grow rather than supply chains. The pandemic, Brexit and the war in Ukraine have shown that food security as a concept that drives agricultural production in the UK is non-existent (see also Helm,2019), acknowledgement of this provides an opportunity

to think more widely and sustainably. The challenge is most clearly demonstrated by this statement: *The biggest medium to long term risk to the UK's domestic production comes from climate change and other environmental pressures like soil degradation, water quality and biodiversity (Defra, 2021)*. Policy should require that public money is only provided to producers who grow what is required, in a way that protects and enhances soil volume and fertility, water quality and biodiversity as opposed to paying producers for what is most profitable for the producer. There should not be a choice between food production or protecting the environment. A policy based upon requiring production of what is required would mean that those areas where conditions do not allow the production of relevant crops or livestock can be targeted for biodiversity restoration and development of alternative land use models (see also Crowle et al. 2022). These areas should not be disadvantaged in terms of public payment because they are not producing a conventional agricultural product.

Much of our important wildlife is associated with agriculture but not intensive agriculture. The science around what is required to restore and enhance populations of farmland birds, invertebrates and plants is well established, but farmers are not carrying out the required management in enough numbers and at a big enough scale to make a difference (grey partridge is an example of where the required actions for restoring the populations of this Red List bird have been known for some time, but uptake of the appropriate agri-environment options is considerably less than 10%). A re-setting of agriculture so that restoring wildlife was acknowledged to be as important as producing food and received the same financial support is what is currently missing. It should be noted that this does not necessarily mean additional financial support but rather wiser use of the existing resources (e.g. see National Food Strategy, 2021).

Inappropriate afforestation is also likely to be a key threat to restoration of nature and biodiversity. It will be important to ensure that tree targets should not be used as a justification for planting on existing important wildlife areas, especially those important locally for wading birds. Changes in agriculture practice driven by climate warming and the need to restore the environment, are likely to provide hitherto unrecognised opportunities for tree-planting.

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Helm, D. 2019. *Green and Prosperous Land, A blueprint for rescuing the British countryside*. London: William Collins.

7. What are the merits and challenges of emerging policies such as nature-based solutions (including eco-system and carbon markets), local nature recovery strategies and the biodiversity net gain requirement? Are these policies compatible, and how can we ensure they support one another, and that they deliver effective benefits for nature?

Where Nature-based solutions (including eco-system and carbon markets) are being proposed, a key part of their use should be monitoring an evaluation of outcomes. As these are new concepts, their value needs to be rigorously assessed before they are rolled out widely.

Net gain is important in mitigating development impacts and providing green spaces in urban and developed areas – the pandemic has demonstrated the importance of these for the public. However, the built environment covers less than 10% of terrestrial land (agriculture covers 70-75% of land) and net gain will not deliver the restoration of lost biodiversity on the scale required to meet Government aspirations. Loss of biodiversity is largely a wider countryside issue that is linked to agricultural intensification over the last 120 years and a change in approach to agriculture is required to restore biodiversity at a landscape level.

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