

Evidence to EFRA Select Committee on Food Security¹

Written evidence submitted by Professor Michael Winter OBE (FS0094)

As requested, I am focussing my evidence on the possible relationship between a land use framework and food security.

What is a Land Use Framework?

"... policies must be coherent and consistent with one another. A basic test of this is whether the sum of the land explicitly or implicitly committed to different uses sums to the total land area of England. Our preliminary analysis suggests that England's land is "overpromised" given existing land-dependent policy commitments with approximately 1.1 Mha of additional land required by 2030 to meet policy targets for net-zero and biodiversity, if current agricultural production, diets and food waste remain static. This rises to 2.3 Mha by 2050 – greater than the size of Wales."²

This quote from the Royal Society makes it abundantly clear why land use has become such an important issue in recent years. The 2022 Government Food Strategy commits to the publication of a land use framework (LUF) in 2023 "to ensure we meet our net zero and biodiversity targets, and help our farmers adapt to a changing climate, whilst continuing to produce high quality, affordable produce that supports a healthier diet". The detail given is relatively modest but includes the following key aims:

- Farmers to broadly maintain domestic production at current levels to deliver climate and environmental goals.
- Environmental Land Management (ELM) to help achieve objectives for Net Zero, biodiversity, and animal health and welfare.
- LUF to reflect all our objectives for English Agriculture, the environment and net zero.
- LUF to reflect and respond to the work of the House of Lords special inquiry committee into land use in England.
- LUF to inform incentives for agri-environment schemes.
- LUF to be a valuable resource for responsible authorities as they prepare their Local Nature Recovery Strategies.

The Strategy does not commit to all the details set out in Henry Dimbleby's National Food Strategy, which recommended a Rural LUF based on the three compartment model of high-yield farm land, low-yield farmland, and semi-natural land. This is more spatially explicit than the Government's Food Strategy which does not explicitly respond to Dimbleby's call for the LUF which argues that it should:

- Set out which areas of land would be best suited to the different functions of the three compartment model
- Inform payments and regulations to incentivise farmers across England.
- Be based on a National Rural Land Map with detailed assessments of the uses to which any given area of land would be best suited.

¹ The Committee may also wish to look at the written evidence I submitted to the House of Lords Land Use Committee: <https://committees.parliament.uk/writtenevidence/108157/pdf/>

² Royal Society written evidence to House of Lords Land Use Committee: <https://committees.parliament.uk/writtenevidence/112154/pdf/>

Nor do current proposals appear to have as wide a scope as those proposed by some environmental and climate NGOs³. At present the detail available on how the Government intends to implement its LUF commitment is relatively modest. In oral evidence to the House of Lords Land Use Committee in July 2022 the then DEFRA Secretary of State, George Eustice MP spoke as follows:

“The delivery will come through two principal routes. One is local nature recovery strategies that local authorities will be required to put together. They will have a funding stream through biodiversity net gain to support that. There will be a role for local government in that context. Then there is the future agriculture policy. In many cases, we will be funding clusters of landowners, clusters of groups, to do either landscape recovery projects or local nature recovery projects. The two key tools will be local nature recovery strategies, which give you the local level, and the landscape recovery and local nature recovery work that we do through the future agriculture policy.

Each local authority will have a legal obligation to create a local nature recovery strategy. That was introduced under the Environment Act. ...

The committee should understand that we are not going to create a rival or parallel system that will think about these things. That is the big difference, I would say, between us and Scotland. We have the Environment Act. We are setting long-term environment targets. We have a 25-year environment plan that draws all these things together. Scotland does not have those things. Instead, it has a series of land use strategies. We will have a land use framework that answers the question of how you deal with competing interests for land use, but it will not drive policy. The policy drivers will be the Environment Act and the Agriculture Act.

The delivery mechanism will very much be bottom-up, because that will be driven by local authorities through the local nature recovery strategies. This particular framework will be a document that basically answers the question that many people are asking: how can you plant trees and grow food? You cannot have both.”⁴

In the same session, David Kennedy (Defra Director-General for Food, Farming and Biosecurity) said that the LUF would inform local nature recovery strategies (LNRSs) by setting out national priorities for LNRSs to translate into local possibilities and priorities. This would seem to suggest that the National Rural Land Map proposal is not currently within scope, with LNRSs likely to be the vehicle for that level of detail and mapping. I understand from Defra officials that that is the case although Defra is developing a land use data portal alongside the LUF and this portal will be available to those developing LNRSs from April 2023.

This raises some interesting questions about the scope of LNRSs (and the risk of mission creep), given that in statute they are explicitly about nature and linked into Biodiversity Net Gain (BNG). I understand that ministers have confirmed that they aim to roll out LNRSs from April 2023 and that the national policy framework (including the LUF) will be in place ahead of this. The detailed guidelines for LNRSs are currently awaited from Defra but Defra has encouraged local authorities and local nature partnerships to commence preparatory work in advance. Some resources have been deployed already through both Natural England and prospective responsible authorities. I chair the Devon Local Nature Partnership which currently devotes some staff resource to its preparations for the Devon LNRS through a part time (2-3 days a week) LNRS Project Manager, a full time comms/engagement intern, and other capacity through DCC’s Ecology team, including the county ecologist. In addition, Natural England has appointed LNRS officers in each county to advise

³ See for example: <https://ffcc.co.uk/land-use-framework>

⁴ <https://committees.parliament.uk/oralevidence/10634/pdf/>

and facilitate. Moreover, stakeholders, such as wildlife trusts, are undertaking mapping and scoping exercises. I have little doubt that, in the case of Devon, there is the potential for a spatially explicit output from the LNRS process that will help guide local planning authorities in dealing with development proposals and BNG and help Defra in terms of setting priorities for ELM. It also seems not unreasonable to expect LNRSs to contribute to deliberations on where tree planting or renewable energy land uses such as solar panels, should be avoided because of nature conservation/recovery priorities; and where upland or coastal re-wetting schemes might be located (important for both climate change mitigation and adaptation and nature recovery).

But it is perhaps beyond the legislative scope of LNRSs to play a significant role in land use issues not directly related to nature. But this is complicated. Take the example of “best and most versatile” land (BMV), which is land classified as 1 to 3a in terms of agricultural capability. Current planning guidance requires development on BMV land to be avoided, if possible. There are proposals to expand the definition of BMV land to include 3b land. The most obvious implication of that change would be to make around 60% of all agricultural land in England unavailable for solar farms (and potentially for onshore wind turbines). From a food security point of view some would argue that this would be positive but it should be remembered that, given site and infrastructural constraints, solar and wind are unlikely ever to be large users of land. The land take is likely to be much greater from woodland planting and nature recovery which do not require the same level of planning scrutiny but will be covered in LNRSs. Is there an argument for BMV to be excluded from woodland planting and nature recovery schemes? Possibly for Grade 1 land, but even some Grade 1 land might need to be made available for lowland peatland restoration to reduce CO² emissions. There may well be site specific reasons why a parcel of BMV might be suitable for nature recovery, especially where it is in close proximity to land of high nature value and where ‘joining up’ is possible in order to maximise nature outcomes⁵. By the same token, there may be Grade 4 or 5 land that plays an important part in a particular agricultural context, for example on land that offers summer grazing possibilities on farms of higher quality land but prone to drought in dry summers.

In short, local context, which critically also includes the business plans and aspirations of private land occupiers, is important and LNRSs or the LUF cannot be overly prescriptive given the widely varying circumstances and aspirations of land occupiers. However site specific requirements may be necessary in terms of site designations for nature or over-riding national targets for particular land uses. However, I am acutely aware that it is easy to say that but hard to operate in practice. We have seen this over many years in the challenge posed to local planning authorities seeking to implement house building targets. There will likely be tensions in some instances between the aspirations of local stakeholders/publics and national needs, as set out in a LUF. It is unclear how far the LNRSs will be able to resolve tensions related to housebuilding and other development needs, onshore wind power, solar panels, intensive agricultural and horticultural units, and so forth.

Land should not be considered only in terms of its inherent physical and biological capacities and a final point in this section is to speculate how, if at all, LUF/LNRS might take into account the social and cultural dimension. The Royal Society put this well in its evidence to the House of Lords Committee: “landscapes are interwoven with culture, language and history, providing a living for many and a source of enjoyment and wellbeing for all.” In this context, landscape aesthetics are an important consideration that somehow needs to be factored into LUF/LNRS.

⁵ On the importance of joining up nature sites see the 2010 Lawton Review: <https://webarchive.nationalarchives.gov.uk/ukgwa/20130402151656/http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

Food Security, the Land Use Framework and Land Management

I would argue that the LUF, and indeed LNRSs, as currently envisaged are of relatively limited significance to food security, because levels of food production are determined much more by land management, agricultural markets and trade than by land use per se⁶. It is important to note that self-sufficiency is not the same as food security and the UK will remain a trading nation with regards to food. It is equally important to register that trading relations are changing and will change further as a result of geopolitical uncertainty, particularly in the context of the war in Ukraine, the challenge of climate change, the growing global population, and dietary changes across the world. In short, as a trading nation, we should not be complacent about food security, especially in the context of longer-term challenges, but neither should we simplistically equate levels of self-sufficiency with food security, especially if raising self-sufficiency is dependent on increased use of imported inputs.

There is a danger that the current focus on land *use* frameworks will divert attention from the need for appropriate management of any particular land use and indeed from a full consideration of alternative management strategies, farming systems and the need for innovation and investment in the industry. Protection of BMV land for agriculture will only contribute to an appropriate level of food security, or even an increasing level of food security, if production levels and profitability are adequate. Some proponents of LUFs have very little to say on this, seeing LUFs as primarily a means to influence land use allocations. Others, such as the Dimpleby report, do consider farming systems, hence the emphasis on the three compartment model, but it is here that we come up against a confusion that currently bedevils discussions of food security in an agricultural context. For much of the period since the 1970s there were three paradigms for UK broadacre agricultural systems: conventional, integrated and organic, with the latter two emerging as reactions to perceived negative environmental consequences of conventional post-war farming's dependence on pesticides and artificial fertilisers. Integrated farming systems (IFS), championed by LEAF, are based on reducing, but not necessarily eliminating, external inputs. The emphasis is on smart farming, only using sprays and fertilisers when absolutely necessary, and often deploying mixed and rotational methods rather than the mono-cropping that characterised much of the 1960s and 1970s, especially in the arable east and south. LEAF, in particular through its dynamic and inspirational chief executive Caroline Drummond who sadly died earlier this year, was vital both to defining IFS and to its spread. The farming system is relatively well defined⁷ and has been used to help define Quality Assurance Schemes such as the LEAF Marque. It also lies at the heart of much of the thinking about sustainable intensification. Equally well defined, in terms of certification and assurance schemes, is organic farming which has an important and time honoured place in the UK's farming economy and in the retail market. But in recent years this simple segmentation of UK farming systems has been unsettled by the emergence of other terms, such as agro-ecological and regenerative, with considerable uncertainty over definitions and more significantly over the implications of these new systems for levels of production:

“there is a model of farming that we already know to have huge benefits for wildlife. Some people call this model “land sharing”, because it performs two functions simultaneously: producing food and supporting wildlife. Other people call it “high nature value farming” or

⁶ I am focussing on agriculture here but I do appreciate that food security is much broader than farming, with issues of access to food, its nutritional quality, and so forth equally important. See Winter, M. (2018) *Changing Food Cultures: Challenges and Opportunities for UK Agriculture*, Exeter: University of Exeter and Nuffield Farming Scholarships Trust. Available at:

https://politics.exeter.ac.uk/media/universityofexeter/collegeofsocialsciencesandinternationalstudies/politics/research/cpr/2018_SIS_028_-_Changing_Food_Cultures_Report.pdf

⁷ See Morris, C. and Winter, M. (1999) Integrated farming systems: the third way for European agriculture? *Land Use Policy*, 16(4), 193-205.

“agroecological farming”. It is an approach that overlaps with organic principles but covers a larger variety of farms. The terminology is unsettled and each of the categories is blurry at the edges. Land-sharing farmers – in all their many guises – farm in a gentler way. They use pesticides and fertilisers in much smaller quantities, if at all; maintain hedgerows, meadows and wild margins; and often deploy ruminant animals in rotations to help churn up and fertilise the soil. The end result is lower yields (typically 20–40% smaller), but a farmland that is much more hospitable to wildlife.” (Dimbleby report p98)

Note in particular the yield reduction compared to conventional high input farming. And yet later in the same report there is a case study of a regenerative farmer who “has reduced pesticide use by 42% and industrial fertiliser by 32%, without reducing yields.” I am not claiming that there are internal inconsistencies in Dimbleby’s excellent report, rather that the evidence on the yield impact of various new methods of farming, that are not necessarily either IFS or organic, remains unclear⁸. It is, of course, the case that there is considerable variability in performance within all farm systems⁹. It is that variability of performance, both environmental and agricultural, which I would argue demands more attention in the context of food security than land use allocation through the LUF. I am one of the co-authors of a recent report (Application of Science report)¹⁰, led by Lord Curry and launched at a House of Lords event on the 23rd November, in which we called for more investment in agricultural research, innovation and knowledge exchange. And not just to boost the fortunes of the farming industry but, rather, to equip it to face up to the challenges of food security and the climate and biodiversity emergencies and to improve productivity and performance for the benefit of society as a whole. There has been a decline in investment and innovation in agriculture resulting in falling productivity. I recommend that the Select Committee considers the Application of Science report in its entirety as it proposes an approach to science and extension of central importance if we are to respond creatively to current challenges. The first two of its nine recommendations are particularly pertinent:

- 1) Food security should be considered by the UK government as a public good and included in the “public money for public goods” approach.
- 2) Because UK carbon net-zero goals are designed for the public good, in light of the urgency of the UK net-zero goals (in response to rapidly progressing climate change) and the biodiversity crisis, and due to the seriousness of food security, additional Government funding should be allocated to extension and the delivery of scientific knowledge.

With a land resource facing multiple pressures and competing demands, our food production methods need to be efficient and regenerative with knowledge and adaptive thinking at the heart.

⁸ The issue is more complicated than yields as it is also about profitability. A paper on the economics of regenerative farming in the US used by the AHDB cites 29% lower grain production but 78% higher profits due to a combination of reduced input costs and market premiums for the grain. See: LaCanne, C. and Lundgren, J. (2018) Regenerative agriculture: merging farming and natural resource conservation profitably, *PeerJ*, doi 10.7717/peerj.4428 & <https://ahdb.org.uk/regenerative-agriculture>

⁹ See evidence from Farm Business Survey data in Winter, M. and Lobley, M. (2016) Is there a future for the small family farm in the UK? Report to The Prince’s Countryside Fund, London: Prince’s Countryside Fund. ISBN 978-902746-36-7.

<https://ore.exeter.ac.uk/repository/bitstream/handle/10871/25485/Is%20there%20a%20future%20for%20the%20small%20family%20farm%20in%20the%20UK%20report%20June%202016.pdf?sequence=1&isAllowed=y>

¹⁰ Lowenberg-DeBoer J., Curry D., Lee M.R.F. et al. (2022) Application of Science to Realise the Potential of the Agricultural Transition, Published by Harper Adams University. The report is available at: <https://www.harper-adams.ac.uk/news/206929/plan-to-boost-productivity-and-innovation-in-uk-agriculture-launched-in-parliament>