Land Use Framework Consultation Response

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About The Author:

Prof. Eigenbrod is Professor of Applied Spatial Ecology at the University of Southampton. He is interested in understanding how people can better manage our landscapes sustainably to deliver the things we need now (food, low-carbon energy, clean water) while also maintaining the biodiversity that ultimately sustains us all. He sits on DEFRA's Science Advisory Committee as the 'systems' expert as well as the DEFRA's Ecology and Ecosystem Services advisory group.

Response:

1. To what extent do you agree or disagree with our assessment of the scale and type of land use change needed, as set out in this consultation and the Analytical Annex?

Please explain your response, including your views on the potential scale of change and the type of change needed, including any specific types of change.

[strongly agree]

Please explain your response, including your views on the potential scale of change and the type of change needed, including any specific types of change.

It is very clear from both the Committee on Climate Change (CCC) recommendations and the government goals around nature recovery that very large-scale change is needed. As such, the level of ambition laid out seems broadly correct. However, the Land Use Framework Annex provides no break down of what agricultural land should transition to. This seems a bit misleading, as it implies most of it will be for nature and tree planting, while the CCC suggests something like 4% of the UK will need to be covered energy crops by these to offset on-going (mainly aviation) emissions. I think the final Land Use Framework needs to be much more explicit about this (as is the case for the latest Committee on Climate Change report (Feb 2025).

2. Do you agree or disagree with the land use principles proposed?

Please provide any reasons for your response including any changes you believe should be made.

[strongly agree]

The principles are very good. The difficulty lies in how to implement them.

3. Beyond Government departments in England, which other decision makers do you think would benefit from applying these principles?

Please provide additional detail in the text box provided.

Combined and local authorities (including local planning authorities)

Again, the issue isn't the principles, which are good but arguably fairly obvious - the issue is the implementation.

Landowners and land managers (including environmental and heritage groups)

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See above.

QUESTION 4: What are the policies, incentives and other changes that are needed to support decision makers in the agricultural sector to deliver this scale of land use change, while considering the importance of food production?

Government must remember first and foremost that farmers are running businesses, and very often are highly constrained in terms of financial capital, time, and in terms of their skills and hence their overall ability to alter their business model away from agriculture to nature recovery and natural climate solutions (which the kind of land use (LU) change required is effectively asking for). Climate change, and particularly extreme events, and compound events, will further reduce the 'capacity space' of farmers, as reduced yields limit opportunities for financial investments, and can constrain adaptation and LU options (e.g. waterlogging reducing access of machinery to fields). This means that even farmers who are interested in undertaking such land use change (and many will) will often struggle to do so while still maintaining sufficient income to remain viable.

As such, I think policies should be aligned to take advantage of on-going market and demographic trends (so 'pushing on an open door') within the agricultural sector. This might include giving incentives to (for example) older upland livestock farmers (which is generally unprofitable without subsidies) to retire and turn over their farms to individuals and organizations with more specialist knowledge and/or interest in NBS, such as forestry and nature recovery. This is because it will often be much easier to make large-scale changes to farming systems when there is a change in ownership (I'm pretty sure there is lots of evidence for this), whereas many (though not all) farmers nearing retirement are very unlikely to want to make large-scale changes at this stage in their careers. By contrast, if sufficient assistance and incentives were put in place, new owners would have a very strong interest (from a farm economics point of view) to embrace new forms of land management (i.e. forestry, and/or eco-tourism, and/or high end meat/diary production from organic agroforestry systems etc) in such upland areas. Given the demographic structure of UK farmers (mostly 50+), such incentives could potentially lead to large-scale changes quite quickly.

Government must also encourage the on-going trend towards less meat and diary consumption (flagged by the CCC in their update on the 7th carbon budget) to enable further land release and maintain current levels of food self sufficiency. I believe Government has stated an intention to do this by highlighting the health benefits this would have (particularly moving away from red meat) – these sort of efforts need to continue.

Finally, statements in the consultation document that state current yields can continue as productivity gains will offset this seem unrealistic, particularly as climate extreme events are likely to have more and more of negative impact on food production (as was seen in the winter of 2023/2024).

QUESTION 5: How could Government support more land managers to implement multifunctional land uses that deliver a wider range of benefits, such as agroforestry systems with trees within pasture or arable fields?

There is emerging research on what the key barriers are to agroforestry (AF) uptake. UKRI Treescapes Fellow Dr Amelia Hood recently did extensive work in this area, which is not yet published, but should feed into the Land framework. From memory, key barriers include lack of farmer knowledge, but also concerns about the relatively permanent nature of trees, and their potential impacts on yields (i.e. via shading, water loss). Silvopastoral systems clearly have many

benefits, but can also increase biting insect numbers (via increasing humidity) with potential yield and welfare implications for livestock.

QUESTION 6: What should the Government consider in identifying suitable locations for spatially targeted incentives?

As outlined earlier, I think economically marginal upland areas should be targeted for land use change. This will no doubt be controversial, but there is no good alternative. A way to make such changes more palatable may be by having more demonstration farms that showcase mixed nature recovery/reforestation/peat restoration approaches with high value grazing/eco-tourism (e.g. in the Lake District). In addition, lowland peat restoration should be a high priority given the carbon implications this has.

Finally, Government should identify potential risks of highly joined up landscapes around disease spread as well as wildfire (which will both be higher risk under climate change), to enable identification of where mitigation measures need to be put into place. An example of a way to do this is outlined in this paper (Spake et al. Nature Sustainability 2019).

QUESTION 7: What approach(es) could most effectively support land managers and the agricultural sector to steer land use changes to where they can deliver greater potential benefits and lower trade-offs?

See above responses.

QUESTION 8: In addition to promoting multifunctional land uses and spatially targeting land use change incentives, what more could be done by Government or others to reduce the risk that we displace more food production and environmental impacts abroad? Please give details for your answer.

Monitoring land use change or production on agricultural land

Accounting for displaced food production impacts in project appraisals

No. This won't work as it's too 'bitty' – it needs to be done at a national level. The key is reducing demand for meat and dairy.

Protecting the best agricultural land from permanent land use changes

Yes – except if it stops priority lowland peat restoration.

Other (please specify)

As outlined earlier and emphasized by the CCC as well as other analyses (see Finch et al. https://www.cell.com/one-earth/pdf/S2590-3322(23)00444-X.pdf , the scale of the changes required mean we will need to eat less meat and diary. This is already happening, and should be strongly encouraged by Government, with the main argument being for the health benefits of this (see above).

QUESTION 9: What should Government consider in increasing private investment towards appropriate land use changes?

I'm not an expert in this, but clearly a very strong regulatory framework is needed (including funding for long-term monitoring and a mechanism for robust financial penalties for non-compliance) to ensure private investors do not 'game' the system, and that there is true

additionality in terms of biodiversity and climate change outcomes. One thing to keep in mind is that organizations may actually reduce voluntary/incentive funded land use change actions if they think they can get money for doing such actions later under private finance schemes – if this were to be the case, this could actually lead to net deceleration of desired land use change.

QUESTION 10: What changes are needed to accelerate 30by30 delivery, including by enabling Protected Landscapes to contribute more? Please provide any specific suggestions.

Strengthened Protected Landscapes legislation (around governance and regulations or duties on key actors) with a greater focus on nature

This seems like a particularly good idea, as many protected landscapes will have lots of low productivity (i.e upland) grassland in them – nature recovery could be prioritized in such areas.

Tools: such as greater alignment of existing Defra schemes with the 30by30 criteria23

Resources: such as funding or guidance for those managing Protected Landscapes for nature

Other (please specify)

Overall, the priority should be on creating (climate extreme) resilient landscapes and maintaining functional diversity, rather than species diversity. Prof James Bullock at CEH has made this point quite eloquently and strongly – see for example this paper.

QUESTION 11: What approaches could cost-effectively support nature and food production in urban landscapes and on land managed for recreation?

It should be easier for local government (including parish councils) to get ELMs money to (for example) increase tree planting/enable nature restoration in urban land managed for recreation.

QUESTION 12: How can Government ensure that development and infrastructure spatial plans take advantage of potential co-benefits and manage trade-offs?

It is very good to see that the government is planning on linking the spatial plans for energy with the Land Use Framework and other spatial planning frameworks. This will be particularly critical for bioenergy with CCS (BECCS), as feedstock needs to be near CCS opportunities (see https://onlinelibrary.wiley.com/doi/abs/10.1111/gcbb.12695). However, there may be other opportunities as well – for example, it may be easier to convince farmers in economically marginal uplands to do more land use change if there are more opportunities for tourism (i.e. through improved transport infrastructure).

QUESTION 13: How can local authorities and Government better take account of land use opportunities in transport planning?

See answer to Q12.

QUESTION 14: How can Government support closer coordination across plans and strategies for different sectors and outcomes at the local and regional level?

It would seem to me that linking the Land Use Framework and other national spatial priority frameworks explicitly into planning guidance is the answer, as this could be used to highlight local authorities/parishes that are considered high priority for nature recovery, or indeed for other

nationally targeted options (e.g. the new plan for using BNG money to fund large scale nature recovery. There is some evidence that this can improve environmental and access outcomes (Mancini et al. 2024); note however, that the Mancini paper (like all national scale prioritization exercises) relies on relatively coarse national-scale datasets; there is some evidence that if you use high quality local data, you can achieve good local scale BNG outcomes (so a contrasting finding to the Mancini et al paper).

QUESTION 16: Below is a list of activities the Government could implement to support landowners, land managers, and communities to understand and prepare for the impacts of climate change. Please select the activities you think should be prioritised and give any reasons for your answer, or specific approaches you would like to see.

Providing better information on local climate impacts to inform local decision making and strategies (for example, translating UK Climate Projections29 into what these mean in terms of on-the-ground impacts on farming, buildings, communities and nature)

This seems important. For example the revised Environment Agency flood risk maps should already inform the Land Use Framework – agricultural areas under high risk of flooding could be prioritized for land use change.

Providing improved tools and guidance for turning climate information into tangible actions (for example, how to produce an adaptation plan for different sectors)

This seems important, but does not seem directly relevant to the Land Use Framework

Developing and sharing clearer objectives and resilience standards (for example, a clear picture and standards of good practice for each sector under a 2°C climate scenario30)

This seems of somewhat limited value if done at the UK scale, as impacts will be highly context dependent.

Supporting the right actions in the right places in a changing climate (for example, prioritising incentives for sustainable land uses where they will be most resilient to climate change)

This is clearly critical. It is worth bearing in mind that climate extremes may end up being worse than currently predicted, as extremes are poorly captured by current models, particularly at regional and smaller scales.

QUESTION 17: What changes to how Government's spatial data is presented or shared could increase its value in decision making and make it more accessible?

Updating existing Government tools, apps, portals or websites

Yes – ideally there should be one portal for all government spatial data, and it should all be freely available.

Bringing data from different sectors together into common portals or maps

Yes – see above.

Increasing consistency across spatial and land datasets

Yes – though this is less of an issue as this is relatively straightforward to change the resolution of datasets with any geographic information system (GIS). Indeed, anyone who downloads the GIS datasets would likely be able to do this.

More explanation or support for using existing tools, apps or websites

No – better to work on a single common portal.

QUESTION 20: Which sources of spatial data should Government consider making free or easier to access, including via open licensing, to increase their potential benefit?

Ideally, government should make all data collected using public money free and easy to access.

QUESTION 24: To what extent do you agree or disagree with the proposed areas above? Please include comments or suggestions with your answer.

Agree

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