Feedback written submission of evidence: EFRA Committee Inquiry – Agriculture, Achieving Net Zero Emissions

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Feedback is an environmental charity which regenerates nature by transforming our food system. To move towards a food system that nourishes both people and our planet will require significant changes to our food culture, the food economy and its governance. We are seeking to bring about these changes through a unique combination of campaigning and advocacy, citizen engagement and pilot programmes. For more information visit our website: www.feedbackglobal.org

Executive summary

In this written submission we argue that:

- **Achieving net zero in the agricultural sector by as early a date as possible – ideally 2030 – is vital in order to mitigate the UK's contribution to climate change, and to provide 'head room' for other economic sectors to decarbonise.**
- **Achieving net zero will require large-scale reductions in emissions from the agricultural sector, as well as offsetting and carbon sequestration through approaches such as rewilding, agro-ecological farming practices and reforestation.**
- **Achieving net zero in the agricultural sector will be made much easier by a cross-governmental commitment to the use of 'demand-side measures'.**
- **A comprehensive land-use strategy will be necessary to create the required shifts in practice within the short period of time available to decarbonise our economy and contribute to averting the climate emergency.**
- **There are a number of practical, implementable approaches to achieving net zero emissions, including: halving meat and dairy consumption by 2030, halving food waste by 2030, and reducing the UK's demand for imported and domestically grown animal feed by enabling the use of food surplus as safely-treated feed for pigs and chickens.**

1. How could 20% of UK agricultural land be repurposed to increase forest cover, restore peatlands, implement catchment-sensitive farming and enable agricultural diversification, whilst maintaining current levels of food production?

1. **Large-scale change in land use will be necessary to meet UK climate targets, to ensure resilience of food systems, and to support a shift towards healthy and sustainable diets which drive positive public health outcomes. In making decisions about land-use change, Feedback recommends that the government should be guided by several principles:**

1.1. **Prioritisation of waste reduction at every level of the food system, in order to relieve pressure on food production and make more effective use of resources. The Committee on Climate Change (the CCC) estimates that reducing avoidable food waste downstream of the farm-gate by 50% by 2050 would result in 1.7 MtCO2e domestic emissions reduction (CCC 2019, p. 200). 50% food waste reduction by 2050 is also projected to save up to 941,000 hectares of land (CEH and Rothamsted Research, 2019, p. 28) (although these land savings may be slightly less when combined with other measures, for instance dietary change).**

1.2. **The use of a definition of agricultural productivity as maximum nutritional value produced per hectare, for minimum environmental impact (or maximum environmental enhancement). Nutritional value should be measured by the production of foods which contribute to human health, as defined by the Eatwell Guidelines.**

1.3. **An acknowledgment that land use will play a wider role in mitigating emissions from other UK economic sectors: land and agriculture do not exist within a bubble. Therefore, in addition to some element of carbon sequestration through solutions such as reforestation, the agricultural system will need to actively reduce its emissions.**

1.4. **An acknowledgement of the value of changing demand in driving change in the agricultural system, as well as supply-side policy and innovation. This will include a need to change proportional production of different food groups, rather than necessarily maintaining or increasing levels of production overall (see our response to 1a).**

2. **To fairly and effectively implement UK agricultural land use change, we recommend that the government urgently adopts and implements a detailed land-use strategy for England (in addition to existing Scottish and Welsh progress on land use strategies) with targets to deliver a net zero agricultural sector by 2030.**

3. **This strategy should take into account optimal use of land and soils in order to produce maximum nutritional value with minimal environmental impact, disincentivise overproduction and shrink the overall size of the agricultural system in order to leave space for nature and afforestation. Broadly this means maximising agricultural land devoted to horticultural production, in particular in areas with higher likelihood of 'best and most versatile agricultural land' (Natural England 2017), and reducing the area of land given over to animal agriculture, including the production of animal feed, and reducing the area of land used to produce crops which do not contribute to human nutrition, such as biofuel crops and sugar beet (Feedback, 2019 forthcoming).**

4. **A land use strategy should respond sensitively to the potential and needs of food production, land, soils, natural ecosystems and human communities. In designing a strategy, we recommend that the government explore the value of a 'landscapes approach', as put forward by the Global Landscapes Forum, which seeks to balance competing land use demands in a way that is best for human well-being and the environment.**

5. **Alongside food production goals, a land use strategy should seek to support a shift towards rewilding and reforestation in order to deliver biodiversity and climate goals. Rewilding Britain estimate that "If £1.9 billion of the £3 billion currently spent on CAP payments were allocated to supporting native woodland re-establishment, the restoration and protection of peatbogs and heaths, and species-rich grasslands over a total of 6 million hectare (ha), this could sequester 47 million tonnes of CO2/year" (Rewilding Britain, 2019, p. 4). In some areas, where land is not suitable for either reforestation or crop production, for example some upland areas, sustainably managed**

grassland agriculture, or silvopasture, may be the most appropriate and sustainable use of land.

6. **The UK currently has ~84,000 km2 of permanent pastureland, and ~58,000 km2 cropland of which 55% is used to grow animal feed, meaning that animal agriculture currently occupies 48% of all UK land in total (Harwatt and Hayek, 2019, p. 7). Halving meat consumption by 2030 would result in considerable additional land available for afforestation or growing extra plant-based protein and fruits and vegetables to improve UK food security.**

1a. Are there other practical and economic ways for the agriculture sector to achieve net zero emissions?

7. **We welcomed the Committee on Climate Change (CCC)'s recent report, which called on the government to take action to achieve net zero emissions by 2050. However, we were dismayed that changes to diets, a powerful asset in the Government's toolbox to achieve net zero greenhouse gas emissions and regenerate nature, were not leveraged more ambitiously in the CCC's recommendations.**

8. **Demand-side interventions in the food system to support climate and biodiversity goals have a dual impact. On the greenhouse gas (GHG) emission side, by reducing demand for particularly damaging forms of food production, or for overproduction, they may reduce the overall emissions burden of the food system, leaving great 'room for manoeuvre' for other sectors of the economy in their decarbonisation process (Bajželj, B. et al 2014). On the side of biodiversity preservation and restoration, they may spare land for alternative uses: this is particularly relevant in light of the enormous reliance on carbon dioxide removal to prevent warming greater than 1.5 degrees the IPCC's 2018 report suggests (IPCC 2018), and the reliance on CDR implied by recent work by the NFU on their strategy for Net Zero Agriculture.**

9. **Demand-side measures also provide massive opportunities for coordinated, high-impact policy interventions. For example, diets that are good for the planet are also good for people (Willet et al. 2019), reducing food waste lowers greenhouse gas emissions and can improve food security (IPCC 2019) and shorter, low emission supply chains can boost regional food economies (Searchinger et al. 2018).**

10. **In this light, to widen the suite of potential emissions reducing solutions available to UK agriculture, we recommend that the UK government set cross-departmental, binding targets to:**

    10.1. Reduce UK meat and dairy consumption by 50% by 2030. This is line with the approach of the Eating Better Alliance, a coalition of over 60 civil society organisations passionate about health, environment, animal welfare and social justice. A report commissioned by the Committee on Climate Change (CCC) estimates that a 50% reduction in beef, lamb, and dairy consumption by 2050 would alone result in a 37% reduction in the total UK agricultural sector's domestic emissions by 2050, a reduction of 17.49 Mt CO2e per year (CEH and Rothamsted Research, 2019, p. 29). This would free up vast amounts of pastureland for afforestation and ecosystem restoration.

    10.2. Reduce UK food waste from farm to fork by 50% by 2030. The CCC's report considers 50% reduction of food waste by 2050 as its most ambitious scenario. However, Sustainable Development Goal 12.3, which the UK government endorsed as far back as 2015, sets a global target for 50% reduction of food waste by 2030 (UN, 2016), with WRAP's more recent Food Waste Roadmap encouraging businesses to sign

up to and deliver this target. Champions 12.3 recommend that this 50% reduction should be from farm to fork, including food left unharvested in the field (Hanson, 2017). Greater government leadership could speed the uptake of this target. The Committee on Climate Change estimates that reducing avoidable food waste downstream of the farm-gate by 50% by 2050 would result in 1.7 MtCO2e domestic emissions reduction (Committee on Climate Change, 2019, p. 200) - in addition to emissions reductions achieved overseas. These savings would be greater if the approximately 3.6 million tonnes of food waste and surplus occurring on UK farms (WRAP, 2019) was halved also.

11. **To be successful, measures to achieve these goals must be implemented as part of a comprehensive range of measures, not in isolation. The transformation of the food system will require a suite of coordinated policy approaches, from a variety of institutions, incorporating both supply-side and demand-side interventions (Schercher & Verburg, 2017; Willets et al 2019). Discussions around relevant potential demand-side policies, for example, tax, have been reductive and damaging precisely because the measures are considered in isolation and not part of a coherent policy platform. Secondly, to maximise their potential, there needs to be coordination across government, finding synergy with health, land-use, climate, rural livelihoods and economic development. The current approaches to food-policy are disjointed, particularly around environmental and health aims.**

2. How important will the financial payments proposed under the Agriculture Bill be to incentivise actions to reduce, capture and store GHG emissions, and how should the payments system be designed?

12. **We support the government's adoption of a public money for public goods approach, and the application of financial payments to incentivise major transitions in farming practice. It is vital in adopting any financial payments related to productivity that productivity is clearly defined as maximum healthy nutritional value produced per hectare, with minimal environmental impact or maximum environmental enhancement (Feedback 2018). By adopting this definition in guiding decisions on incentivising certain types of agricultural production, the government will be able to correctly identify and support approaches to production which minimise waste, carbon emissions, excessive fertiliser use and other negative environmental externalities.**
13. **We have concerns over the use of public money to incentivise carbon dioxide removal through bioenergy with carbon capture and storage (BECCS). BECCS is untested at scale and may have some severe negative effects. Boysen et al. (2017) found that the deployment of BECCS would be "unable to counteract 'business as usual' emissions without eliminating virtually all natural ecosystems". Therefore, Feedback strongly recommends that ecosystem restoration and afforestation, which are readily deployable and have beneficial effects for biodiversity, should be the main negative emissions solution supported financially by the UK.**

3. What support, skills, training and information will land managers need to adapt and thrive; and how should this be provided and funded?

No response – this is not within Feedback's area of expertise.

4. How could innovative technologies and farming practices help the agriculture sector achieve net zero? Are they currently commercially viable or is there a viable path to market for them?

14. **We recommend that the government urgently explore the potential of lifting the ban on using properly treated food surplus as feed for pigs and chickens. This proposal would**

free up land in the UK and overseas from use to grow animal feed, provide a more effective disposal method for unavoidable food waste than Anaerobic Digestion, and reduce farmers feed costs.

15. **New research from EU-funded project REFRESH indicates that surplus food containing meat can be safely fed to omnivorous non-ruminants like pigs and chicken if treated properly in well-regulated off-farm treatment facilities through heat-treatment complemented with acidification (Luyckx, 2018; Luyckx et al., 2019). The UK government should commission further research to determine the exact parameters such as temperature and acidity which are both safe and economic - and then review reforming the law currently banning safely treated surplus food from being fed to omnivorous non-ruminants like pigs and chickens. A REFRESH Life Cycle Costing (LCC) analysis examined operational, energy, labour, transport and other costs for treatment plants in the UK context. It found that using surplus food for animal field could yield net savings of €278 million per year in the UK (using a liquid feeding system) – economically viable without subsidies (Luyckx et al., 2019).**

5. What impacts would large-scale changes in land-use have on rural communities and how should the transition be managed to achieve sustainable and just economic, environmental and social outcomes?

16. **Please see our response to question 1, in particular point 4 recommending an approach to land-use change based on a landscapes approach which balances environmental and climate considerations with other considerations on food, livelihoods and rights.**
17. **Broadly, with only 13% of UK agricultural workers under the age of 44, and 62% over the age of 55 (New Economics Foundation, 2017, p. 19), generational transitions over an opportunity to also shift methods of production and land management. Environmental objectives could be achieved alongside providing good rural livelihoods by subsidising shifts away from livestock to fruit and vegetable production, offering older livestock farmers good financial support to retire, and funding training/retraining for growers transitioning into growing plant-based sustainable foods and forestry management - particularly for new younger producers. This should be linked to the shift towards a system of public money for public goods.**
18. **We also support Sustain's recommendations on ensuring farm diversity and preventing the further loss of small farms (see Sustain's response to this consultation).**

6. What impact would encouraging a shift in diets towards lower red meat and dairy consumption have on agriculture, and how could any negative impacts be mitigated?

19. **By adopting a 'less and better' approach, as advocated by the Eating Better alliance, the UK has the opportunity to disincentivise livestock production methods which have the worst environmental impacts – such as intensively reared poultry and pigs, and grain-fed cows – and to incentivise more limited production of sustainably managed livestock.**
20. **In line with the Eating Better Alliance, Feedback would encourage a more holistic approach to diets emphasising a shift towards lower consumption of all meat and dairy, not simply red meat and dairy.**
21. **Policy approaches towards diets should target the more lucrative forms of industrialised production, providing exemptions, or balancing impacts out via subsidies, for smaller producers. For example, implementing a standard rate of VAT on meat products would be one approach that could mitigate negative impacts on smaller producers, as small farms would remain exempt, with many falling below the VAT threshold (£85,000 in the**

UK, for example), enabling them to sell meat to citizens more cheaply than supermarkets or large farms (Feedback 2019).

7. How can any reduction in UK-agricultural GHG emissions be achieved without 'offshoring' emissions to other countries via increases in the consumption of imported foods in the UK?

22. **This is an important question. In part, this can be achieved by making better land use decisions in the UK. We currently produce only around half of the food we consume, and we import £11.1 billion worth of fruit and vegetables (Defra 2017). By taking measures to prevent food waste and shifting away from land uses which do not prioritise nutritional output per hectare (such as biofuel crops), we can provide for a greater proportion of our nutritional needs without relying on imports. For example, the UK uses around 114,000 hectares of prime agricultural land per year to grow sugar beet – a crop with very minimal nutritional value, and of which public health policy is actively seeking to reduce our consumption. This area of land is roughly the same as the area used to cultivate vegetables – 116,000 hectares. The land freed up by sugar beet would produce an additional 17 servings of peas per person per year, 95 potatoes or 370 carrots (Feedback, forthcoming).**

23. **In addition, the UK must take responsibility for reducing food waste in our global supply chains. Currently, UK supply chains generate food waste in other countries through stringent requirements on the visual appearance of fresh produce (cosmetic specifications) and power imbalances in supply chains which allow large buyers to cancel or change orders at short notice, leaving producers without a market for their food (Feedback 2017). The UK could start by extending the remit of the Groceries Code Adjudicator to cover indirect suppliers - including suppliers overseas - to protect them from Unfair Trading Practices like last minute order cancellations by UK supermarkets and middlemen which may lead to food waste.**

24. **A second major way that the UK exports our agricultural emissions is through importing large quantities of animal feed. WWF and the RSPB have found that every year the UK consumes around 3.3 million tonnes of soya, over 75% of which is related to livestock: meeting this demand requires an estimated 1.68 million hectares of land (WWF and RSPB 2017).**

25. **Recent research has found a potential maximum of 2.5 million tonnes of additional surplus food could become available for non-ruminant (pig and chicken) feed if the UK were to change legislation to allow surplus food from catering and surplus food containing meat to be fed to pigs and chickens. This would save an estimated 1 million tonnes CO2e (Luyckx et al., 2019).**

26. **Calculations based on EU-wide data suggests that feeding safely treated meat-containing surplus food to pigs could reduce demand for up to 268,000 ha of soybean production, which could "mitigate ca. 2.6 % of the forecast expansion of soybean, reducing pressure on high-biodiversity tropical biomes accordingly." Feedback calls for the Government to use the opportunity of leaving the European Union to lift the current ban on using catering waste and food surplus that may contain traces of meat from retail and manufacturing as feed for omnivorous non-ruminant livestock, such as pigs and chickens. The current ban on the feeding of safe, well-regulated and treated food waste to pigs has led to a reliance on expensive and environmentally damaging**

conventional feeds. We propose that this ban is replaced with robust legislation regulating the treatment of food surplus not suitable for redistribution for human consumption in off-farm licensed processing facilities so that it can be safely fed to omnivorous non-ruminant farm animals.

References

Bajželj, B. *et al.* Importance of food-demand management for climate mitigation. *Nat. Clim. Chang.* 4, 924–929 (2014).

Boysen, L. R., Lucht, W. , Gerten, D. , Heck, V. , Lenton, T. M. and Schellnhuber, H. J. (2017), The limits to global-warming mitigation by terrestrial carbon removal. Earth's Future, 5: 463-474.

CEH and Rothamsted Research (2019) *Quantifying the impact of future land use scenarios to 2050 and beyond - Final Report*. Committee on Climate Change. Available at: https://www.theccc.org.uk/wp-content/uploads/2018/11/Quantifying-the-impact-of-future-land-use-scenarios-to-2050-and-beyond-Full-Report.pdf (Accessed: 13 May 2019).

Committee on Climate Change (2019) *Net Zero: Technical report*. Committee on Climate Change. Available at: https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-Technical-report-CCC.pdf (Accessed: 13 May 2019).

Defra (2019) *Crops Grown For Bioenergy in the UK: 2017*. Department for Environment, Food and Rural Affairs. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/775243/nonfood-statsnotice2017-31jan19i.pdf (Accessed: 30 July 2019).

Farnworth, G. and Melchett, P. (2015) *Runaway Maize: Subsidised soil destruction*. Bristol: Soil Association. Available at: https://www.soilassociation.org/media/4671/runaway-maize-june-2015.pdf (Accessed: 23 July 2019).

Feedback (2019) The Cow In the Room. A call for policy for sustainable diets. Feedback, London.

Feedback (2018). Health and harmony: the future for food, farming and the environment in a Green Brexit - Consultation Response. London: Feedback. https://feedbackglobal.org/wp-content/uploads/2018/05/Feedback_Future-Farming-Environment-Consultation-Response.pdf

Feedback. 2017. Causes of food waste in international supply chains. London: Feedback. https://feedbackglobal.org/wp-content/uploads/2017/02/Causes-of-food-waste-in-international-supply-chains.pdf

Foley, J. A. et al. Solutions for a cultivated planet. Nature (2011). doi:10.1038/nature10452

Hanson, C. (2017) *Guidance on Interpreting Sustainable Development Goal Target 12.3*. Champions 12.3. Available at: https://champs123blog.files.wordpress.com/2017/10/champions-12-3-guidance-on-interpreting-sdg-target-12-3.pdf.

Harwatt, H. and Hayek, M. N. (2019) *Eating Away at Climate Change with Negative Emissions: Repurposing UK agricultural land to meet climate goals*. Harvard Law School. Available at: https://growgreenconference.com/sites/default/files/uploads/Eating%20Away%20at%20Climate%20Change%20with%20Negative%20Emissions.pdf (Accessed: 4 July 2019).

IPCC. 2019. IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems.

Luyckx, K., Bowman, M., Broeze, J., Taillard, D. and Woroniecka, K. (2019) *Technical guidelines animal feed: The safety, environmental and economic aspects of feeding treated surplus food to omnivorous livestock. REFRESH Deliverable 6.7.* Available at: https://eu-refresh.org/results.

Natural England. 2017. Likelihood of Best and Most Versatile Agricultural Land. http://publications.naturalengland.org.uk/category/5208993007403008

Saledeeb, R., zu Ermgassen, E. K. H. J., Kim, M. H., Balmford, A. and Al-Tabbaa, and A. (2017) 'Environmental and health impacts of using food waste as animal feed: a comparative analysis of food waste management options.', *Journal of cleaner production*, 140, pp. 871–880.

Scherer, L. & Verburg, P. H. 2017. Mapping and linking supply- and demand-side measures in climate-smart agriculture. A review. Agron. Sustain. Dev. 37, (2017).

Searchinger, T. *et al.* 2018. *Creating a Sustainable Food Future: A Menu of Solutions to Feed Nearly 10 Billion People by 2050*.

Willett, W. et al. 2019. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. Lancet (London, England) 393, 447–492 (2019).

UN. 2016. *Goal 12*, *Sustainable Development Goals Knowledge Platform*. Available at: https://sustainabledevelopment.un.org/sdg12.

WRAP (2019) *Food waste in primary production in the UK*. WRAP. Available at: http://www.wrap.org.uk/content/food-waste-primary-production-uk (Accessed: 23 August 2019).