

**DRAFT - INVITATION FOR PROPOSALS**

**FARM-LEVEL INTERVENTIONS TO REDUCE AGRICULTURAL GREENHOUSE GAS EMISSIONS**

**MAIN PURPOSE AND SCOPE**

We are seeking a highly experienced consultant (or consortium) to analyse and review farm-level greenhouse gas (GHG) emission reduction interventions/strategies, considering practicality, economic impact and the GHG reduction capacity of each intervention. The successful candidate(s) would then develop this review into a farmer-facing format.

The purpose of the review is to enhance our understanding of the interventions that farmers in the UK can take to reduce their GHG emissions. In particular, we would like to identify whether, how and at what cost could agricultural GHG emissions in the UK be reduced by 24% by 2030, and 50% by 2050. The review could be used in several ways. For example, the review could influence the requirements of sector-wide assurance standards, it could form part of our policy advocacy, or it could influence Tesco’s own private buying standards. Furthermore, the review would inform the detail of the second aim of this proposal – the farmer-facing guide.

The farmer-facing guide could also be used in a variety of ways. It is likely it would be shared within our existing farm-level networks, such as the Tesco Supplier Network. Given the aim of the Tesco/WWF partnership is to deliver sector-wide transformation in order to reduce the environmental impact of Britain’s (not Tesco’s) shopping basket by half, it is likely we would disseminate the farmer-facing guide across the industry.

When considering GHG emissions on the farm-level, we consider this to be all scope 1, 2 and 3 GHG emissions. The scope of farm-level GHG emissions would include methane, but equally recognise that addressing methane emissions through societal dietary shifts in the consumption of less meat and dairy would not be driven from the farm level (that being said, the farm-level strategies involved in dietary shifts to ‘better’ meat and dairy would be included in the scope of the review and guide). When we describe ‘farm-level’, we consider this to be actions within the direct gift of the farmer/farm manager/land owner/land manager.

It is not our anticipation to consider sequestration opportunities at this stage. We do not want to confuse the need for reductions in agricultural emissions with farm-level Net-Zero aspirations; land use change that delivers sequestration must be considered at an economy-wide perspective. That being said, we are open to persuasion on this point if it can be demonstrated that the line between the need to reduce farm-level emissions and opportunities for farm-level sequestration is distinct. Furthermore, if there is an obvious link between an emissions-reducing intervention and a sequestration opportunity, this can be explored.

**1 – Identifying and reviewing farm-level GHG emission reductions interventions/strategies**

Through a comprehensive review of the available options, we would like the successful applicant(s) to further our understanding of the available farm-level interventions which can contribute GHG emissions reductions on farms in the UK.

Within this element of the project, please answer the following questions:

In order of impact, what actions can a farmer take to reduce their GHG emissions?

How would these actions/interventions impact the financial performance of a farm, or enterprises within the farming business? Furthermore, what are the major practical considerations that would form part of the decision-making criteria for a farmer that was considering implementing a particular intervention?

What is the additional value of innovation in reducing farm-level GHG emissions, in comparison traditional farming practices? Are there any near-term innovations that should be highlighted, promoted or supported?

To what extent could the suggested interventions (aggregated and individually; across farms, farming sectors and agriculture as a whole) achieve WWF’s call for a 24% reduction in agricultural emissions by 2030 (and 50% by 2050)? This target is based on the CCC’s Sixth Carbon Budget papers and background evidence, and a WWF briefing on it is in preparation. Dietary shifts are factored into the 24% target – how would the different dietary shift scenarios and assumptions set out in the Sixth Carbon Budget methodology report impact the contribution of farm-level GHG emissions reductions to the 24% target?

Furthermore, comment on how the farm-level emission reduction strategies contribute to the following three key agriculture/land use milestones (identifying figures if possible)?

1 – The FFCT’s 10 years to transition to agroecology, as set out in the report [“Farming for Change: mapping a route to 2030”](https://ffcc.co.uk/news-and-press/farmingforchange)

2 – The [NFU’s](https://www.nfuonline.com/nfu-online/business/regulation/achieving-net-zero-farmings-2040-goal/) Achieving Net-Zero – Farming’s 2040 Goal

3 – The Committee on Climate Change’s Widespread Engagement pathway for reducing emissions in the agriculture and land use sectors to 2050

Finally, in a more general sense, what are the barriers that prevent the adoption of these types of GHG reducing interventions?

*(We note in the Key Supporting Material section that Lampkin et al. (2019) considered many of the interventions that can be used at the farm-level to reduce GHG emissions in a Scottish context, and quantified the GHG and economic cost/benefit. We see this proposal expanding the scope of interventions considered in Lampkin et al (2019) to a wider UK context, and then converting the outputs of the review into a farmer-facing form as described below.)*

**2 – Developing a farmer-facing guide to GHG emission reductions**

We would also like to combine this information into an accessible, farmer-facing guide on strategies and interventions that could reduce farm-level GHG emissions.

We recognise that much of this information is available online and via webinars etc. However, we would like to bring it together in one place and have it in a form that suits the nature of farm businesses. Our vision is a simple, concise method of disseminating practical ways farms can reduce GHG emissions, but we are open to ideas on the structure and format of the guide (a John Nix-style hard copy and/or an online platform for example), and would expect this to form part of the tender documents. One source of inspiration could be to look at how the following article - [Kelloggs study shows how arable farms can aim for net zero - Farmers Weekly (fwi.co.uk)](https://www.fwi.co.uk/arable/kelloggs-study-shows-how-arable-farms-can-aim-for-net-zero). We expect the guide to have elements of co-branding, and suggestions on branding should be included in the proposal. Finally, please consider how the guide could be marketed to reach farmers across the UK.

Within the guide we would like to highlight the financial cost/benefit of an intervention. Furthermore, assessment of any practical considerations that may be a factor in the decision-making criteria of a farmer adopting an intervention or changing a practice should be included (such as known risks associated with an intervention, an intervention’s impact on existing operations, or whether it is available via stewardship etc.). We would also like to ensure any other environmental synergies and risks associated with an intervention are highlighted in the guide, such as biodiversity or water quality benefit.

We would like the guide to cover all major sectors of agriculture in the UK, defined as:

* Dairy
* Beef and Lamb
* Pig
* Poultry
* Fresh Produce (Fruit and Veg / Horticulture)
* Combinable Crops and Sugar Beet

However, the format/structure of the guide does not necessarily have to be defined by farming sectors, and indoor and outdoor production may benefit from separate treatments

**KEY OUTPUTS AND TIMELINE**

Report reviewing farm-level GHG reducing interventions, in word and pdf format.

1 x 2 side A4 summary document with key findings and recommendations.

A farmer-facing guide in word and pdf format. (Including suggestions and costs for **A)** marketing (e.g. webinars/videos) and **B)** disseminating the guide (hard copy/online platform) should be included in the proposal **C)** branding options/proposals for the farmer-facing guide.)

When quoting, please also consider time to present the final outcomes internally to the Tesco/WWF Partnership.

**TIMELINE**

Deadline for proposals: 03 May 2021

Kick off meeting: w/c 17 May 2021

Draft report and guide: w/c 28 June 2021

Final report: w/c 02 August 2021

**REPORTING TO:**

Responses and questions should be sent to Callum Weir, Sustainable Agriculture Specialist, [cweir@wwf.org.uk](mailto:cweir@wwf.org.uk).

We recommend that proposals are limited to eight sides in length. In your proposal, please include the following:

* A method statement to explain your proposed approach to carrying out the work. This should include the estimated scope and length of both elements of the proposal, as well as an approach to formatting and structuring the farmer-facing guide.
* A brief project plan, showing key milestones and any interdependencies.
* Details about similar projects you have undertaken or your team’s relevant experience in this field.
* A fee proposal including resource allocations and charging rates for all individuals, and any third-party costs.
* Confirmation that you would be to accept the WWF Standard Terms and Conditions as the basis for contracting.

**BUDGET RANGE:**

We have approximately £30-40k including VAT to support this work.

Thank you for expressing an interest in working with and supporting WWF-UK with this important piece of work.  We look forward to receiving your response.

**RELEVANT SUPPORTING MATERIAL**

Erisman, J.W.; J.N. Galloway; N.B. Dice; M.A. Sutton; A. Bleeker; B. Grizzetti; A.M. Leach & W. de Vries. 2015. Nitrogen: too much of a vital resource. Science Brief. WWF Netherlands, Zeist, The Netherlands <https://www.louisbolk.org/downloads/3005.pdf>

Herrero M., Conant R., Havlik P., Hristov A.N., Smith P., Gerber P., Gill M., Butterbach-Bahl K., Henderson B., Valin, H. Thornton P.K. (2016). Greenhouse gas mitigation potentials in the livestock sector. Nat. Clim. Change, 6, pp. 452-461

Independent inquiry on farming and climate change in Scotland. 2020. A Transformation Pathway - [e828e0\_59d8fc00569642acac0b21c1cd83186c.pdf (filesusr.com)](https://40a7f11d-664a-4fd7-a550-78ec00356167.filesusr.com/ugd/e828e0_59d8fc00569642acac0b21c1cd83186c.pdf)

Lampkin, Nicolas; Smith, Laurence and Padel, Katrin (2019) Delivering on net zero: Scottish Agriculture. A report by Organic Policy, Business and Research Consultancy for WWF Scotland, Edinburgh. <https://www.wwf.org.uk/sites/default/files/2019-12/WWF%20Net%20Zero%20and%20Farming.pdf>

Mansholt lecture (2018) “Circularity in agricultural production” by Imke J.M. de Boer and Martin K. van Ittersum.

Soil Association papers: ([Fixing Nitrogen: The challenge for climate, nature and health,](https://www.soilassociation.org/media/21286/fixing_nitrogen_soil_association_report.pdf?_cldee=dHN0dWFydEB3d2Yub3JnLnVr&recipientid=contact-40a786a152deea11818f005056ad0bd4-9bf5d0bf63bf4b508b777c15335410d7&esid=b8182b95-56de-ea11-818f-005056ad0bd4) etc)

**Appendix**

**Tesco/WWF**

“Sustainable agriculture” is one of three components within the “Restoring Nature in Food Production” pillar of the WWF - Tesco Partnership, launched in November 2018 and currently funded to late 2022. The overall aim of the Partnership is to halve the environmental footprint of the average British shopping basket.

Within the Sustainable Agriculture pillar of the partnership, we are seeking to address the environmental impacts that the UK agricultural sector has on soil health, water quality, biodiversity and greenhouse gas emissions. We are aiming to drive the uptake of more sustainable agricultural practices through farm-level advice and engagement, and by advocating for policy-, market- and finance-based solutions, as well as social means to shift behaviour.

**Greenhouse Gas (GHG) Emissions**

Agriculture is a large contributor to the GHG footprint of the UK. According to the Department for Environment, Food and Rural Affairs 2020 Agricultural Statistics and Climate Change report, when compared to total emissions from all sectors, agriculture was the source of;

* 10% of total GHG emissions in the UK
* 70% of nitrous oxide emissions
* 49% of total methane emissions
* 1.6% of carbon dioxide emissions

It is generally agreed that current trends in N20, methane and ammonia emissions are not compatible with even the least optimistic pathways consistent to achieve climate goals, and that urgent action is needed in the coming decade to reduce emissions of both nitrogen- and carbon-related emissions as part of the UK’s strategy to meet net zero.

The dominant source of N2O ([over 70%](https://edgar.jrc.ec.europa.eu/overview.php?v=50_GHG)) and UK ammonia emissions ([88%](https://www.gov.uk/government/publications/clean-air-strategy-2019)), and of nitrate loading to English rivers ([69%](https://consult.environment-agency.gov.uk/++preview++/environment-and-business/challenges-and-choices/user_uploads/nitrates-pressure-rbmp-2021.pdf)) is the agriculture sector, accelerated by growing demand for food and feed for animals. Although an essential requirement of food production, nitrogen (and phosphorus) cycles have been substantially disrupted by excess inputs of fertiliser, exceeding the “planetary boundary” by 2 to 3 times. The UK uses about 1 million tonnes of nitrogen per year as fertiliser and imports around 2-300,000 tonnes of nitrogen via feed, and organic manures which include approximately 1/3 million tonnes of nitrogen across Britain from applied cattle farmyard manure and slurry alone. As a globally significant overuser of nitrogen, the UK and Europe have a particular global responsibility for significant rises in atmospheric nitrogen.

As we leave the EU and host the COP26 climate negotiations, there is a unique opportunity to both define the political, policy and legal frameworks needed to reduce the GHG emissions associated with agriculture in the UK, as well as demonstrate our leadership in agricultural and environmental best practice.

To address the GHG emissions associated with agriculture, WWF recognises the importance of developing its advocacy to contribute to effective policy. At the same time, in line with our Triple Challenge [approach](https://www.wwf.org.uk/triple-challenge), we recognise that as we adjust how we live our lives in order to address climate change and biodiversity loss, we must support people in that transition. This includes supporting British farmers through knowledge-transfer and capacity-building in low carbon, biodiversity friendly (a.k.a agroecological) farming practices.

One area where we feel WWF can support change is with regards to nitrogen-related emissions. Nitrogen-related emissions have a significant global warming potential (GWP), impact most sectors of agriculture and have direct impacts on biodiversity loss, human health, air quality and water quality. We feel there are a variety of policy and practice levers than can be used to address the impact of nitrogen-related emissions and we would like to understand these further. (When we discuss nitrogen-related emissions, we consider this to be N2O, NOx, NH3 and CO2 emissions related to the manufacture of fertiliser).

**Policy**

With regards to policy, we are strengthening our advocacy approach to addressing the impacts of nitrogen overuse, focussing on what the UK can do to reduce impacts domestically and through its food supply chains. We are calling on the UK Government to produce a comprehensive, economy-wide approach and delivery strategy to the nitrogen problem, including budgets and reduction targets. This would cross-cut across multiple areas of government, including commitments to meet net zero, the need to reduce pollution and improvements to human health and nutrition. A separate tender for work to help scope out this work is currently available [here](https://www.contractsfinder.service.gov.uk/notice/d539bb0a-61fd-463e-8089-fcee39d14120).

**Practice**

Equally, however, we recognise that policy and practice must move forward in tandem. Specifically to agriculture, without effective farm-level knowledge of how to shift practices to reflect the desired outcomes of policy, policies which seek to adjust the status-quo are likely to be ineffective. Likewise, without effective policy, the incentives to change practices are rarely there.

Therefore, to go alongside our Call for Proposals on economy-wide policy and regulatory interventions related to nitrogen-related GHG emissions, we are seeking an experienced consultant, or consortium to help us develop our understanding of the practical interventions that can have meaningful reductions to GHG emissions at the farm-level in the UK.

The successful candidate(s) would provide a review of farm-level GHG emission reduction strategies/interventions, which would consider, and aim to quantify, the practical and economic impact of these interventions, as well as the GHG impact.

*(We note in the Key Supporting Material section that Lampkin et al (2019) considered many of the interventions that can be used at the farm-level to reduce GHG emissions in a Scottish context, and quantified the GHG and economic cost/benefit. We see this proposal expanding the scope of interventions considered in Lampkin et al (2019) to a wider UK context, and converting the outputs of the review into a farmer-facing form.)*

The successful consultant/consortium would then develop this review into a farmer-facing guide that would bring the information on the most impactful farm-level interventions into a single space. We recognise that much of this information is available online and via webinars etc. However, part of our thinking on this element of the proposal is to reflect the fact that not every farmer is on social media or can access webinars. There are varying estimates on how many farmers use social media with one [study](https://marketingtofarmers.com/understanding-farmers-use-social-media-can-improve-marketing/#:~:text=According%20to%20a%20study%20by%20Successful%20Farming,%2070,is%20YouTube,%20followed%20by%20Facebook,%20Pinterest%20and%20Twitter.) suggesting 50% regularly use platforms such as Twitter and YouTube (with only half of those using it for business, as opposed to entertainment purposes), and another [source](https://redstagmedia.co.uk/agriculture/social-farmers-farmers-use-social-media-engage-online/#:~:text=While%20estimates%20about%20the%20number%20of%20farmers%20using,is%20the%20way%20in%20which%20they%20use%20it.) suggesting the range could be higher. Since Covid-19, there has been a large, welcomed, increase of knowledge transfer on these platforms. To complement this, we feel that a simple one-stop-shop guide could have value in supporting farmers to transition to lower impact farming, particularly farming audiences where recent advancements in technology may not have reached (especially if we decided to convert the guide into hard copy, which may be the intention).

We see the potential for action spanning across all main agricultural systems and are particularly keen to understand the interventions that are replicable across multiple systems and have wider benefits, such as for biodiversity.

We would welcome and encourage proposals that seek to forge links between our Call for Proposals on GHG emissions policies and this Call for Proposals on GHG emissions practices.