

## Response ID ANON-XEE5-9TFP-T

Submitted to Delivering our Vision for Scottish Agriculture. Proposals for a new Agriculture Bill  
Submitted on 2022-12-05 18:59:38

### 1. Future Payment Framework

1 Do you agree with the proposal set out above, in relation to the Agriculture Bill including a mechanism to enable payments to be made under a 4 tiered approach?

Yes

Please give reasons:

The 4-Tier approach presents an opportunity for a step change in how agricultural payments deliver the objectives set out in the Vision. The Future Payment Framework has the mechanisms needed to deliver on the objectives. However, we concur with the observation in the Vision that delivery will depend upon the actions of land managers. Business as usual will not deliver the objectives of the Vision. A transformation is needed in land use and its management, along with which land managers will be required to adapt more and better.

We note that, when the post-2020 EU Common Agricultural Policy (CAP) objectives were revised, other issues were highlighted of relevance to rural Scotland. These included the need to rebalance power in the food chain, recognising that this was essential to achieving objectives of all actors receiving fair incomes.

The approach would benefit from placing agricultural support in a wider policy context, informed by the approach of the European Union (e.g. its Farm to Fork Strategy, and alignment of the National CAP Strategies of Member States with the EU Green Deal). Their aim is for the CAP to be "instrumental in managing the transition towards a sustainable food system and in strengthening the efforts of European farmers to contribute to the EU's climate objectives and to protect the environment." (European Commission, 2020). Similarly, Scotland's Land Use Strategy recognises agriculture as one of a number of sectors vital in ensuring land delivers multiple benefits to multiple users. It is unclear whether the 4-Tier approach can address such additional goals that closely link food production and farming.

It is not clear whether the 4-Tier approach is fit for purpose for small businesses. We note that, in 2019, the smallest 50% of businesses received 10% of the funding (from both Pillar 1 and 2). Consideration should be given to enabling participation by these businesses in a simplified scheme while still making positive contributions to achieving the objectives of the Vision, and not being excluded from the full scheme.

Reference -

European Commission (2020). Communication from the Commission to the European Parliament, The Council, the European Economic and Social Committee and the Committee Of The Regions. Recommendations to the Member States as regards their strategic plan for the Common Agricultural Policy. pp. 20. [https://eur-lex.europa.eu/resource.html?uri=cellar:25d60735-4129-11eb-b27b-01aa75ed71a1.0001.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:25d60735-4129-11eb-b27b-01aa75ed71a1.0001.02/DOC_1&format=PDF)

2 Do you agree that Tier 1 should be a 'Base Level Direct Payment' to support farmers and crofters engaged in food production and land management?

Yes

Please give reasons:

We welcome the ambitious nature of the proposals for Tier 1 conditionality, especially those within the Whole Farm Plans. In particular, we support enhancing Good Agricultural and Environmental Conditions (GAEC) to include, for example, peatland and wetland management, and the potential for cross-compliance measures to become statutory management requirements over time. The latter should help ensure that good practice is mainstreamed.

The initial existence of Tier 1 payments (with 50% of current Basic Payment Scheme and Greening funds) is justified mainly on the grounds that the transition from Direct Payments to Enhanced Conditionality needs to function as an on-ramp not a barrier.

An increasing allocation of a majority of funding to Enhanced Conditionality (Tier 2) within the first 5 years of the new payment regime should be considered. This would reflect Tier 2 conditionality as being more convincingly tied to the delivery of the objectives in the Vision.

Given the objectives within the Vision, a question arises of whether eligibility should be dependent on food production OR land management rather than on both. Businesses willing to deliver the outcomes sought via Tier 2 measures should not be excluded solely on the basis of a food production eligibility criteria for Tier 1.

We would encourage consideration of Tier 1 including payments with the aim of offsetting physical disadvantages (and potentially others). The current Less Favoured Area Support Scheme (LFASS) is based on patterns of land management that are several decades old and been widely criticised as being poor value for money. Options for alternative Areas of Natural Constraint payments (regions and payment schemes) were researched by James Hutton Institute and discussed with stakeholders in 2016 (see Matthews et al., 2016; <https://ics.hutton.ac.uk/resources/land-systems-research-team/00502612.pdf>). Continuing LFASS as it stands, in Tier 4 Complementary Support, would not be necessary if adjustments were made to any Regionalisation of Direct (Tier 1 and 2) payments. This approach would have the advantage of subjecting such payments to specific conditionality that will increase over time.

As noted in responses to other questions, some elements identified in particular Tiers may be better relocated. For example, Less Favoured Area payments would be more appropriate in Tier 1 (see response to Q2).

3 Do you agree that Tier 2 should be an 'Enhanced Level Direct Payment' to deliver outcomes relating to efficiencies, reducing greenhouse gas emissions and nature restoration and enhancement?

Yes

Please give reasons:

Tier 2 Enhanced Conditionality (EC) is the key element of this proposal. It is a step change needed for agricultural support payments to deliver net zero and other environmental objectives.

However, the case for supporting efficiency measures (which would be rewarded via the market, e.g. through reduced costs) is less clear and, if implemented, it is important they are accompanied by measures which restrict unintended consequences in relation to production patterns.

The success of Enhanced Conditionality depends upon sufficient funds being in place both sectorally and regionally so that land managers can undertake the necessary measures. It will require allocation of the significant majority of funding, front-loaded, but without causing unnecessary disruption within sectors.

This implies the need for a top-down analysis of how the funds are shared between the objectives and the degree of transformative change needed in farm and land use systems across Scotland (i.e. explicitly quantifying the Vision objectives). Against this top-down background, the effectiveness and uptake of Tier 2 measures needs to be anticipated so that funding per measure can be adjusted to ensure that the mix of measures adopted are sufficient to deliver the objectives. [Note, such an analysis depends upon the decisions of over 19,000 businesses, and thus would have to reflect the associated uncertainty.] The provision of information and advice in shaping these decisions will be crucial, and is recognised in the Tier 4 proposals on Continuing Professional Development and advice.

We propose that agroforestry should be eligible within Tier 2. In the UK, agroforestry has been shown to provide a number of benefits to farmers and land users more generally. With appropriate choices of tree species and land management practices, agroforestry can contribute to multiple benefits of mitigating greenhouse gas emissions, enhancing biodiversity and landscapes from the same unit of land. The UK Climate Change Committee noted the potential of such systems to deliver significant CO2 savings by 2050 (Climate Change Committee, 2020). They form one element of the Climate-Positive Farming Initiative at the James Hutton Institute farm at Glensaugh (<https://glensaugh.hutton.ac.uk/climate-positive-farming/overview>) at which we are compiling evidence to show how integrated land management can deliver on the aims of reducing greenhouse gas emissions and nature restoration and enhancement.

4 Do you agree that Tier 3 should be an Elective Payment to focus on targeted measures for nature restoration, innovation support and supply chain support?

Yes

Please give reasons:

The Tier 3 Elective Payments could play an important role in achieving aims such as nature restoration. However, this requires coordination and collaboration between relevant parties to achieve spatially targeted catchment and landscape level objectives, with concomitant needs for funding.

Achieving aims such as nature restoration will need to be aided by effective knowledge exchange and training (e.g. peer-to-peer learning). Engagement by James Hutton Institute with National Park Authorities and public agencies identifies the needs for training of young adults in the skills necessary for peatland restoration and sensitive afforestation to maximise benefits and minimise negative impact (see e.g. Miller et al., in press).

The need for Elective Payments is clearer for entities beyond those engaged in food production. We anticipate a question arising of how many of the measures which were previously delivered via elective Pillar 2 CAP programmes will remain once Tier 2 is fully implemented.

We would encourage consideration of Tier 3 to provide opportunities to do more ambitious nature restoration activities.

The Innovation and Supply Chain support elements as they relate to food production should be considered under the People Development strand of Tier 4.

Reference –

Miller, D., Legras, S., Barnes A., et al. (in press) Creating Conditions for Harnessing the Potential of Transitions to Agroecology in Europe and Requirements for Policy. EuroChoices. DOI: 10.1111/1746-692X.12374

5 Do you agree that Tier 4 should be complementary support as the proposal outlines above?

Yes

If so what sort of Complementary Support do you think would be best to deliver the Vision? Please give reasons:

Overall the Tier 4 Complementary Support is a good way to highlight where there are aspects of support that focus on capital rather than recurrent expenditure (e.g. tree planting, peatland restoration and agricultural transformation). However, separating tree planting in this way risks perpetuating the

divide between agriculture and forestry, when research would indicate that planting woodlands on higher quality land (e.g. current grasslands and arable land) is essential if the assumed returns in carbon per hectare of woodland are to be delivered (see Matthews et al., 2020, and online mapping accessible at <https://woodlandexpansion.hutton.ac.uk/>).

For higher capital cost Tier 2 measures in which the analysis implies there is a net financial return as well as improvements to, for example, GHG emissions, then there is a case that such investments should be on a loan basis. Measurement tools are essential to provide an evidence base on which to justify the value for money of the expenditure.

The Vision highlights and separates two measures (nature restoration and enhancement, and GHG emissions and sequestration). These are both important but given the potential for trade-offs between objectives it would be desirable to have a single framework of evaluation backed by the best possible data. Such a framework could follow the model of the EU Common Monitoring and Evaluation Framework. In developing such a framework and associated indicators there should be a role for the Scottish Government funded Strategic Research Programmes.

As noted in responses to other questions, some elements identified in particular Tiers may be better relocated. For example, the Innovation and Supply Chain support would be more appropriately located Tier 4 rather than Tier 3.

Reference –

Matthews, K.B., Wardell-Johnson, D., Miller, D.G., Fitton, N., Jones, E., Bathgate, S., Randle, T., Matthews, R.B., Smith, P. and Perks, M. (2020) Not seeing the carbon for the trees? Why area-based targets for establishing new woodlands can limit or underplay their climate change mitigation benefits. *Land Use Policy*, 97, Article No. 104690.

6 Do you agree that a 'Whole Farm Plan' should be used as eligibility criteria for the 'Base Level Direct Payment' in addition to Cross Compliance Regulations and Greening measures?

Yes

Please give reasons:

The proposed Whole Farm Plan has the potential to address a range of significant issues. The Whole Farm Plan should be key to ensuring the long-term sustainability of farming businesses, and for addressing the gender imbalances endemic in Scotland's agricultural sector. Production of a whole farm plan includes long-term business planning, which is critical to the success of any business, enabling farmers to identify the steps they need to take to succeed. It incentivises critical appraisal of current status, and can act as a trigger for change.

Research at the James Hutton Institute has shown that farms are typically path dependent, reflecting the sunk costs of their existing infrastructure, skills of farm family members and cultural identity of being 'good farmers' (Sutherland et al., 2012). Although farmers are active knowledge seekers, they typically make incremental changes to their farming practices, to which they give limited consideration. Major changes tend to come through active appraisal of their options. The requirement to undertake a whole farm plan should support farmers to actively consider their next steps, and thus incentivise more actively considered and substantive change. These major changes will be important for achieving Scottish Government targets relating to climate change, net zero transition, biodiversity preservation, etc.

The production of whole farm plans is expected to include succession plans. Research has shown that farms with designated successors are more likely to invest in their farms for at least a decade prior to the succession formally taking place. New entrants are important for bringing innovation and global engagement to the agricultural sector (Hopkins et al., 2020; Zagata and Sutherland, 2015).

The process of succession planning is also beneficial to addressing gender imbalances in agriculture: women (e.g. daughters) are more likely to become recognised as potential successors. The requirement for a whole farm plan was a recommendation of Scottish Government's Women in Agriculture Task Force, which drew on research in 2016/2017 into the role of women in Scottish agriculture. Follow-up research at the James Hutton Institute demonstrated that gender imbalances are shifting with the generations i.e. increasing the speed and frequency of farm succession will also address gender imbalances, with more women successors and young male farmers who have positive attitudes towards women taking active farming and farming sector leadership roles (McKee et al., 2022).

There is likely to be merit in supporting the Whole Farm Plan with resources from the People Development strand of Tier 4. This would help ensuring the Whole Farm Plan is more than a nominal exercise. It is worth considering whether all aspects of the Whole Farm Plan should have to apply to smaller businesses (see response to Question 1).

However, we note that the compliance costs of a Whole Farm Plan are not insignificant, some of which may not be fully justified.

References –

Hopkins, J., Sutherland, L-A., Calo, A., Barlagne, C., Wardell-Johnson, D., Barnes, A., Thomson, S., McMillan, J. and Spencer, J. (2020) New entrants: their potential contribution to farming in Scotland by 2023. RESAS project information note. [https://www.hutton.ac.uk/sites/default/files/files/research/srp2016-21/rd242outputs/Research\\_Note\\_New\\_Entrants\\_final\\_RD242\\_published.pdf](https://www.hutton.ac.uk/sites/default/files/files/research/srp2016-21/rd242outputs/Research_Note_New_Entrants_final_RD242_published.pdf)

McKee, A. and Sutherland, L-A. (2021). The Changing Role of Women in Farming, Crofting and the Agricultural Industry 2016-2021. RESAS Policy Brief. [https://www.hutton.ac.uk/sites/default/files/files/publications/Changing-Role-of-Women-in-Farming-final-report-Hutton-24\\_11\\_21.pdf](https://www.hutton.ac.uk/sites/default/files/files/publications/Changing-Role-of-Women-in-Farming-final-report-Hutton-24_11_21.pdf)

Sutherland, L.-A., Burton, R.J.F., Ingram, J., Blackstock, K., Slee, B. and Gotts, N. (2012) Triggering change: Towards a conceptualisation of major change processes in farm decision-making. *Journal of Environmental Management*, 104, 142-151.

Zagata, L. and Sutherland, L-A. (2015) Deconstructing the 'young farmer problem in Europe': Towards a research agenda. *Journal of Rural Studies*, 38, 39-51.

7 Do you agree that the new Agriculture Bill should include a mechanism to help ensure a Just Transition?

Yes

Please give reasons:

In the Vision the focus of Just Transition proposals is on knowledge transfer and skills development and flexibility for measures. The former extends existing initiatives and is welcome and necessary given Enhanced Conditionality measures will require new skills and knowledge for some land managers. If, over time, there is an expectation that more ambitious and complex measures will be undertaken then knowledge transfer and skills development will need to be an ongoing commitment.

The guiding principles of the Just Transition Commission have implications for the implementation of the Vision as outlined below:

Urgency means the need for "evidence of ambition". The contents of the framework for Agricultural Support can be a "step change" but delivery depends on Enhanced Conditionality starting a transformation in land use and then rapidly increasing the rate of changes in land use and management. Avoiding unnecessary disruptive change is desirable, but with only 23 years to the 2045 deadline for net zero there is limited scope for extended periods of transition.

Clarity references objectives, investment and regulation and here there are opportunities to be more specific on burden sharing, with those receiving the greatest shares of public support delivering most. Decisions on where regulation may need to replace incentives need to be made carefully, but where good practice is already well known and widespread then there is a case that regulation rather than incentives may be appropriate.

Credibility references targets and funding / deliverability. For this principle there is the need to be clear that the overall amount of funds, their distribution between the elements of the Framework (Tiers and elements) and the distribution of funds between businesses can credibly deliver the levels of land use transformation needed to achieve the objectives. Credibility will also depend on adequate uptake of a mix of Enhanced Conditionality measures that can deliver the outcomes sought. This means the need to resolve a "policy sudoku" of top down distributions against bottom up uptake.

Coordination references sectoral and regional plans and annual targets. The issue of burden sharing arises, but in this case between sectors and regions in terms of who should and can deliver the outcomes needed. The balance of Enhanced Conditionality measures should vary between regions and sectors to reflect priorities but cross sector and region coordination will be needed to ensure that the sum of the parts can deliver at least the whole required. Consideration is needed of who the actors will be in such coordination and the governance mechanisms. Meaningful targets are also essential that describe a trajectory of transformation.

Justice emphasises reducing inequalities. This entails significant challenges as present systems of allocation of funding mean that large land users have the significant majority of funding (the 50% of Direct Payment recipients have 90% of all funding). Options to reduce this preponderance exist but in terms of the justice principle, Enhanced Conditionality could mean that such businesses must shoulder the greatest burden for delivery of outcomes.

The Just Transition Commission also emphasises the need to engage with wider sources of expertise, in this case this means engaging beyond conventional, productivist agriculture. Such engagement of the wider land use stakeholder communities could be guided by the principles of the Ecosystem Approach (Waylen et al., 2014).

The Just Transition Commission also emphasise the need for improved monitoring and evaluation and this is recognised in the Framework proposals. Where possible it would be desirable to increase the specificity of data available on which evaluations can be founded. Examples would include land parcel level data on land tenure, tillage, fertiliser and crop protection product use and the extent and condition of natural capitals.

A just transition should also include ensuring the inclusivity of work practices. The Scottish Government's Fair Work First guidance is very important for improving the quality of agricultural workforce jobs. Farms are typically family-run businesses, which may employ family members informally, with poor rates of remuneration. Employment of migrant labour on farms can also be challenging in terms of ensuring that employees who are unfamiliar with Scottish laws (e.g. health and safety, minimum wage) are treated fairly. There are also clear gender barriers and a lack of racial diversity amongst farm families which the inclusion of Just Transition mechanisms could usefully address.

Reference -

Waylen, K.A., Hastings, E., Banks, E., Holstead, K.L., Irvine, R. and Blackstock, K.L. (2014). The need to disentangle key concepts from ecosystem approach jargon, *Conservation Biology*, 28(5), 1215-1224. <https://doi.org/10.1111%2Fcoobi.12331>

8 Do you agree that the new Agriculture Bill should include mechanisms to enable the payment framework to be adaptable and flexible over time depending on emerging best practice, improvements in technology and scientific evidence on climate impacts?

Yes

Please give reasons:

Flexibility and adaptability of mechanisms over time will be crucial to the long term effectiveness.

Modifications to measures should be informed by the evaluation of outcomes of measures (e.g. Tier 2). It should also take account of uncertainty which

reflect: i) the range of choices available to land managers and how this interacts with their farming systems and personal preferences; ii) the outcomes of measures and their dependencies upon the environment in which they are implemented and, for some measures, on the actions of other local land managers.

Such uncertainties imply a need for adaptive management, monitoring uptake, evaluating outcomes (where possible) and rebalancing budgets and weightings between measures to achieve the desired mix of outcomes. It is also likely that the range of Tier 2 measures will be influenced by emerging research findings (e.g. soil health, agroecology; see also response to Question B(a)).

It will be essential that the monitoring focus on outcomes not just actions. Research at the James Hutton Institute is demonstrating how GHG emissions can be reported at the field level in near-real time (UKRI RETINA project, <https://gtr.ukri.org/projects?ref=NE%2FV003232%2F1>). This research is aiming to enable assessments of the overall performance of farming systems at regional and national levels.

9 Do you agree that the new Agriculture Bill should include mechanisms to enable payments to support the agricultural industry when there are exceptional or unforeseen conditions or a major crises affecting agricultural production or distribution?

Yes

Please give reasons:

Agriculture is increasingly exposed to extreme weather events. There is a role for support payments to be eligible for the mitigation of impacts of such events. However, precautions are required to avoid public funding inhibiting actions to increase the resilience of the agriculture industry (e.g. anticipating compensation for damage rather than investing in preventative measures to reduce risks of wildfires or nature-based approaches to mitigating flood risk), or of underwriting behaviours which are unnecessarily high risk (e.g. limited diversity in supply chains).

We also note that mechanisms for increasing the resilience of the agriculture industry to wider production or distribution shocks are likely to be linked to wider political decisions (e.g. on trading arrangements).

## 2. Delivery of Key Outcomes: Climate Change Adaptation and Mitigation

1 Do you agree with the proposal set out above, in relation to the new Agriculture Bill including measures to allow future payments to support climate change mitigation objectives?

Yes

Do you have any views on specific powers and/or mechanisms that could support such alignment? Please give reasons:

The nature of the powers described are appropriate for achieving the aims of the Vision. However, It is not clear whether they extend to enabling emergency responses to climate change which require interventions to the use of land as opposed to the management of land.

2 Do you agree with the proposal set out above, in relation to the new Agriculture Bill including measures to allow future payments to support climate change adaptation objectives?

Yes

Do you have any views on specific powers and/or mechanisms that could support such alignment? please give reasons:

We would have expected cross-referencing with the National Planning Framework, noting its strategic overview of spatial planning in Scotland to align "relevant land use, infrastructure and place programmes and strategies from across sectors," aspects of which are associated with climate change adaptation.

Enhanced Conditionality measures should be aligned so as to support climate change adaptation by, for example, including measures identified in River Basin Management Plans that deliver the objectives of the Water Framework and Floods Directive.

Incentives should be designed to instigate change, with larger payments where there is a win - win scenario, such as land management promoting water recharge in areas where there is a demand for high end products (e.g. whisky) that rely on sustainable, high quality water resources.

Areas where geological formations favour groundwater recharge (fault lines/fissures) should be eligible for payment, as should farmers who take land out of production to promote climate change adaptation (e.g. wetlands in receiving areas).

3 Do you agree with the proposal set out above, in relation to the new Agriculture Bill including a mechanism to enable payments to be made that are conditional on outcomes that support climate mitigation and adaptation measures, along with targeted elective payments?

Yes

Please give reasons:

Enhanced Conditionality is necessary so that public funding for agriculture is credibly tied to the delivery of climate change and biodiversity goals. It is crucial that a sufficient share of the budget is made conditional (at minimum the majority of all Direct Payments) and that the measures enacted have verifiable outcomes that meet the expected trajectories of change.

The role of targeted elective payments needs to include funds to support efforts for cooperation and coordination at catchment and landscape levels. This will be essential in ensuring that the most appropriate measures are enacted in the best locations, and that the activities of individual land managers synergise to deliver more than would be possible individually.

4 Do you agree with the proposal set out above, in relation to the new Agriculture Bill including measures that support integrated land management, such as peatland and woodland outcomes on farms and crofts, in recognition of the environmental, economic and social benefits that it can bring?

Yes

Please give reasons:

The proposals rightly recognise that there are limited areas of land, and that these are being required to deliver solutions to a wider range of outcomes than considered previously. Opportunities for better quality integrated land management will be crucial in delivering the outcomes of the Vision.

Reference is made to "... considering optimal management of our land." We note that aspiring to optimality in land management is fraught with conceptual and practical difficulties:

- i) There is a challenge to identify for whom and what the management of land would be considered to be optimal, noting the potential differences between the needs and rights of multiple stakeholders.
- ii) No reference is made to time periods for when land management may be considered optimal. Given the increasing uncertainty over future climate and other drivers means that the aim should be for resilience (i.e. the ability to continue to deliver the same or equivalent mix of goods and services even as specific systems of use and management change).
- iii) How would assessments be made of the aim of optimality and progress towards it being achieved? It is likely that there will be insufficient information to know what is optimal, and whether it had been achieved.

## 2.1 Nature Protection and Restoration

1 Do you believe the new Agriculture Bill should include a mechanism to protect and restore biodiversity, support clean and healthy air, water and soils, contribute to reducing flood risk locally and downstream and create thriving, resilient nature?

Yes

Please give reasons:

For Scotland to achieve its goals for nature, biodiversity, the environment, and Net Zero significant contributions will be required through how its land is managed.

We note the following gaps in the proposals in relation to the topic of nature protection and restoration:

- i) The current proposals do not specify the level of financial commitments in the proposed Tiers.
- ii) No reference is made to incentives to manage land to reduce pollution and protect the quality of soils and water, specifically micro plastics/pesticides/veterinary pharmaceuticals, faecal indicator organisms, or nutrients. Sediment control measures will become increasingly important given the increasing magnitude and frequency of flood events.
- iii) No mention is made in the proposals for managing the risk of environmental transmission of antimicrobial resistance, an issue which should be referenced in the documentation.

Specific points relating to how agriculture and land management systems and practices can contribute to achieving these goals follow, drawing on research in the Scottish Government Strategic Research Programmes (2016-22) and European Union Horizon 2020 Programme.

- i) Diversifying production systems: increasing the diversity of crop and animal species farmed on agricultural land temporally (rotations) and spatially (e.g. intercropping), as well as the genetic diversity within each species (crop varieties, animal breeds). See [www.plant-teams.org](http://www.plant-teams.org) for examples from the EU Horizon 2020 DIVERSify project.
- ii) Diversifying non-productive areas on agricultural land to support biodiversity: these include wooded areas, hedgerows, species-rich margins and uncultivated areas, and their spatial and temporal implementation to maximise ecosystem services such as natural pest control, pollination, water/nutrient retention etc. See [www.framework-biodiversity.eu](http://www.framework-biodiversity.eu) for examples from the EU Horizon 2020 FRAMEwork project.
- iii) The adoption of -
  - (a) land management methods which will slow water and nutrient movement through the landscape (and losses to water courses): cover crops, buffer strips, areas of woody species;
  - (b) farming practices that will minimise release of greenhouse gases: reducing nitrogen fertiliser inputs, methane production from livestock, recycling waste products (manures, composts, anaerobic digestion residues); and that will retain soil carbon and structure: reduced soil tillage/direct drilling,

avoiding periods with bare soil.

vi) Diffuse pollution from agriculture is a significant reason for water quality failures in Scotland (Scottish Environment Protection Agency, 2021). However, to achieve the desired improvements, a systemic change to agricultural production is required (Bieroza et al., 2021). Piece-meal delivery of eco-schemes should be avoided and catchment-scale and catchment-specific targeting and evaluation of a suit of interventions should be adopted.

vii) There should be a presumption for ambitious conditionality for payments in Tier 1 as environmental improvements can only be achieved through wide-scale adoption of environmentally-friendly practices and will not be delivered solely through competitive schemes in higher Tiers covering a small area of land. Significant improvements to water quality will likely only be achieved by reduction in fertiliser use, precision farming and improvement in nutrient management (Bieroza et al., 2021) and by drawing down soil fertility levels to or below the agronomic optimum (Glendell et al., 2022), which requires a detailed understanding of the effectiveness of the agro-ecology, precision farming and nutrient management practices (Bieroza et al., 2021).

viii) Catchment-scale tools should be developed to target and evaluate a suit of measures, integrating farm-scale and catchment-scale analysis of trade-offs in reducing different pollutants and their combined effects (Bieroza et al., 2021). Long-term monitoring of the effectiveness of the implemented measures at farm and catchment scales for multiple environmental benefits will be key for effective delivery and should be implemented in a strategic way.

ix) Societal education and awareness-raising about the impacts of food choices on the land used to produce food and other products: to ensure agricultural land (and those who farm it) is valued by wider society, and consumers understand the ecological footprint of their purchases and associated waste products.

A summary of several of the points noted above is provided in George et al. (2022).

We also note that the new European Union Common Agricultural Policy (CAP) has been criticised for not going far enough to deliver Europe's environmental ambitions (Bieroza et al., 2021; Farand, 2022) and for relying on Member States to raise the level of ambition to adopt plans that would match the objectives set out in the EU Green Deal, including the reduction of nutrient and pesticide losses by 50% respectively (Bieroza et al., 2021). Whilst perceived as a risk, this flexibility also represents an opportunity for Scotland to demonstrate leadership in the area. However, this requires to be reflected in detailed regulations as the draft Agriculture Bill does not enable an assessment of whether the proposed approach will be effective (i.e. there is no indication of the proportion of budgets planned to be allocated to the different Tiers and insufficient detail on the measures included in each Tier).

#### References -

Bieroza, M. Z., Bol, R., and Glendell, M. (2021). What is the deal with the Green Deal: Will the new strategy help to improve European freshwater quality beyond the Water Framework Directive? *Science of the Total Environment*, 791, 148080. doi:10.1016/j.scitotenv.2021.148080.

Farand, C. (2022). EU 's reformed agricultural policy fails its climate goals , say green groups. *Climate Home News*, 1–8. Available at: <https://www.climatechangenews.com/2021/11/23/eus-reformed-agricultural-policy-fails-climate-goals-say-green-groups/>.

George, T.S., Hawes, C., Valentine, T.A., Karley, A., Iannetta, P. and Brooker, R.W. (2022). Harnessing ecological principles and physiological mechanisms in diversifying agricultural systems for sustainability. *Frontiers of Agricultural Science and Engineering* 9 (2), 214-237. DOI: 10.15302/J-FASE-2021437

Glendell, M., Gagkas, Z., Stutter, M., Richards, S., Lilly, A., Vinten, A., et al. (2022). A systems approach to modelling phosphorus pollution risk in Scottish rivers using a spatial Bayesian Belief Network helps targeting effective mitigation measures. *Frontiers in Environmental Science*, 1–22. doi:10.3389/fenvs.2022.976933.

Scottish Environment Protection Agency (2021). The River Basin Management Plan for Scotland 2021- 2027. 26. Available at: <https://www.sepa.org.uk/media/594088/211222-final-rbmp3-scotland.pdf>.

2 Do you believe the new Agriculture Bill should include a mechanism to enable payments that are conditional on outcomes that support nature maintenance and restoration, along with targeted elective payments?

Yes

Please give reasons:

Farmers and land managers are under multiple, sometimes conflicting, pressures to meet land use policy targets while also deriving a livelihood from their land and producing food and other goods for wider society. Payments are needed to support the transition, although ultimately nature maintenance and restoration should become part of the social and economic value placed on the agricultural product by consumers and society (see Brooker et al., 2021 for an example using intercropping to increase agricultural sustainability). It is important that outcomes are demonstrated/quantified through verifiable means. We suggest that results-based payment schemes should be monitored and ground verified.

#### Reference -

Brooker, R., George, T., Homulle, Z., Karley, A., Newton, A., Pakeman, R. and Schöb, C. (2021). Facilitation and Biodiversity Ecosystem Function (BEF) relationships in crop production systems and their role in sustainable farming. *Journal of Ecology* 109 (5), 2054-2067 <https://doi.org/10.1111/1365-2745.13592>

3 Do you believe the new Agriculture Bill should include a mechanism to enable landscape/catchment scale payments to support nature maintenance and restoration?

Yes

Please give reasons:

Such a mechanism is needed to facilitate the implementation of interventions to improve biodiversity and ecosystem processes that occur at scales beyond individual fields, farms or crofts, such as topographic and habitat features that influence pest/natural enemy movement, provision of resources for arthropods, small mammals and birds, or physical barriers and conduits affecting water and nutrient movements.

There are opportunities to incorporate nature based solutions on farms to deliver at scales beyond the farm gate and payments would encourage benefits at landscape/catchment scales. This approach could be taken in areas where there is a specific need for restoration or capacity building for specific function or service. One such example is flood prevention and mitigation. However, high baseline conditionality standards should be set to enable the design of effective eco-schemes supported by scientific evidence and monitor the effectiveness of the environmental outcomes.

A payment mechanism at landscape or catchment scale will need to be designed to recognise the requirement for collaboration between relevant actors at landscape and catchment levels. It also requires a strategic plan for an area into which fit plans and measures implemented at field and farm levels.

To that end it is surprising that there appears to be no reference in the Vision to the Regional Land Use Partnerships (RLUPs) or their pilots. Their remit suggests they could be an option for developing plans at catchment and landscape scale, and to link with the areas of Scottish Government policy in the Agriculture Bill.

The RLUPs are charged with "facilitating natural capital led collaboration on regional land use changes to help Scotland's just transition to net-zero, involving local and national government, communities, land owners, land managers, and wider stakeholders."

One aim of the RLUPs, by 2023, is to inform development of Regional Land Use Frameworks (RLUFs) by using a natural capital approach "to identify and agree upon current and potential land use changes across the region that support the delivery of Scottish Government's climate change targets, and other environmental objectives, such as improving biodiversity."

We encourage consideration of the RLUPs and RLUFs as options for supporting nature maintenance and restoration at landscape and catchment scales.

## 2.2 High Quality Food Production

1 Do you agree that the powers in the Agriculture and Retained EU Law and Data (Scotland) Act 2020 should be extended to ensure Scottish Ministers have flexibility to better respond to current, post exit, circumstances in common market organisation and easily make changes to rules on food?

Yes

Please give reasons:

No addition comment submitted.

2 Do you agree that Scottish Ministers should have powers to begin, conclude, or modify schemes or other support relevant to the agricultural markets?

Yes

Please give reasons:

No addition comment submitted.

3 Do you believe the new Agriculture Bill should include a mechanism to enable payments that support high quality food production?

Yes

Please give reasons:

Consideration should be given to eligibility for payments that support high quality food production through non-traditional sources, and thus consistency with other proposals by the Scottish Government. For example, the consultation on a Local Food Strategy (2021) discussed how vertical farming could help Scotland produce more of its own fruit and vegetables.

There is a significant increase in new technologies that could enable an uplift in local food, of which "controlled environment agriculture" (vertical farming) is one. This approach, by the nature of precise environmental control, enables a wide range of crops to be grown throughout the year.

As part of the Tay Cities deal regional development flagship of the Advanced Plant Growth Centre (<https://www.apgc.org.uk/>), the James Hutton Institute is working with two vertical farming companies (Intelligent Growth Solutions and Liberty Produce Ltd.) to develop approaches to food production.

Crucially, regardless of the technology and if powered by renewable energy, these production systems deliver a smaller carbon footprint compared to other production systems. Through this precise environmental control, the grower has the ability to naturally modulate the nutritional elements and compounds underpinning both the nutrient and sensory content of the produce, thereby increasing the potential for healthier and more desirable food.



4 Do you believe the new Agriculture Bill should include a mechanism to provide grants to support industry in the agri-food supply chain to encourage sustainability, efficiency, co-operation, industry development, education, processing and marketing in the agri-food sector?

Yes

Please give reasons:

We support the proposal to provide grants to support industry in the agri-food supply chain to encourage the desired outcomes. Findings from the EU project Understanding and Improving the Sustainability of Agro-Ecological Farming Systems in the EU (UNSECO; <https://uniseco-project.eu/>) reports the importance making transitions throughout supply chains (e.g. Miller et al., 2022). It also identified dependencies and lock-ins within supply chains which can inhibit transitions to sustainability. Proposals for support should link to those in the Agriculture Bill (see response to Questions on Skills, Knowledge Transfer and Innovation) of provision of advice throughout supply and value chains.

Enabling such transitions can be aided by grants, but there should be alignment with private sector and schemes and value chain initiatives to achieve sustainability standards. This would also be consistent with the proposals of the EU Farm to Fork Strategy.

Reference -

Miller, D., Legras, S., Barnes A., et al. (2022) Creating Conditions for Harnessing the Potential of Transitions to Agroecology in Europe and Requirements for Policy. EuroChoices. DOI: 10.1111/1746-692X.12374

5 Do you believe the new Agriculture Bill should include powers for Scottish Ministers to declare when there are exceptional or unforeseen conditions affecting food production or distribution?

Yes

Please give reasons:

We agree that Scottish Ministers should have the types of powers proposed. This would be consistent with our observation under Question 2(a) regarding emergency responses to climate change which require interventions to the use of land.

6 Do you believe the new Agriculture Bill should include powers for Scottish Ministers to provide financial assistance to the agri-food sector and related bodies whose incomes are being, or are likely to be, adversely affected by the exceptional or unforeseen conditions described in the declaration referred to above?

Yes

Please give reasons:

We support the power of Scottish Ministers to provide financial assistance to the agri-food sector and related bodies incomes of which could be adversely affected by the types of circumstances identified.

The provision of such assistance should be subject to clear rules of eligibility. The description does set out criteria of eligibility of recipients, such as community-led initiatives for the production of food (recognised in the Local Food Strategy), or businesses providing services to the agri-food sector in relation to sustainability, education, etc.

It would be beneficial to explore the boundaries of potential eligibility through programmes of horizon scanning and scenario planning of potential emergency circumstances which could lead to disruption to the supply of high quality food, and the intersection with different aspects of the agri-food sector. Support for such horizon scanning and scenario planning could be facilitated by the Scottish Government Strategic Research Programme (2022-27) SEFARI Gateway (<https://sefari.scot/>) or the policy call-down functions of the Underpinning National Capacity.

7 Do you agree that the new Agriculture Bill should include the powers to process and share information with the agri-food sector and supply chains to enable them to improve business efficiency?

Yes

Please give reasons:

We agree that Scottish Ministers should have powers to process and share information with the agri-food and supply chains to improve business efficiency. This would be consistent with the proposals outlined.

## 2.3 Wider Rural Development

1 Do you agree that the proposals outlined above should be included in the new Agriculture Bill?

Yes

Please give reasons:

Rural development needs to be supported through mechanisms that focus on people, harnessing elements of relevant policies such as land use, planning, agriculture, forestry and renewable energy. Lessons could be learnt from the EU Long Term Vision for Rural Areas (European Commission, 2021) which notes their value for food production, management of natural resources, protection of natural landscapes, as well as recreation and tourism, and presents tangible flagship projects and new tools planned to help achieve the goals of this vision.

We welcome the proposal for a 'whole land' approach in the proposals. We encourage interpretation of that approach to be one which closely links land and people, recognising the wider connectivity of people with land (e.g. as consumers of food), as per the Land Use Strategy, not only the empowerment of rural communities.

The increasing and multiple challenges posed by climate change, biodiversity loss, changing demography of rural areas, and impacts of international conflicts are threatening food security and affecting the resilience and sustainability of agriculture and rural areas. Tackling these challenges through the lens of a 'whole land' approach will benefit from transdisciplinary thinking to identify opportunities for enhancing, and threats to existing, natural assets. This will require consideration of the governance structures of most relevance. We would have expected reference to what such structures might be, such as noting the potential role of the Regional Land Use Partnerships in their post-pilot stage, and whether there is a role for the Regional Land Use Frameworks to inform the whole land approach.

Activities in support of public access and understand of land use would benefit from clearer links with the Scottish Government Digital Planning initiatives, including the use of spatial data to support a place-based approach (<https://www.transformingplanning.scot/digital-planning/visualising-the-future/data-driven-policy-making/>), and guidance on the use of spatial data in support of the Regional Land Use Partnerships (e.g. Miller et al., 2022; <https://sefari.scot/document/roles-of-spatial-data-by-regional-land-use-partnerships-report-draft>).

We believe that the research processes of the Scottish Government Strategic Research Programme (2022-27) will be relevant to informing the whole land approach in Scotland's land use and land systems (e.g. project JHI-C3-1, Land Use; <https://landusetransformations.hutton.ac.uk/>), and methodologies and tools of natural capital and ecosystem services valuation (e.g. project JHI-D5-1 in the Natural Capital Topic; <https://www.hutton.ac.uk/research/projects/bringing-participatory-approaches-widen-scope-natural-capital-valuation>).

We are very supportive of the proposal to encourage community led local development. Research by James Hutton Institute into social innovation in the Scottish Government Strategic Research Programme and EU H2020 SIMRA project (Social Innovation in Marginalised Rural Areas), demonstrated the positive impacts of empowering rural communities, with the appropriate structures and support, and their engagement in local development.

That research shows: i) the importance of connecting top-down policy with bottom-up endogenous action and the need to 'get this right'; ii) how and why social capital can contribute positively to rural development; iii) that multi-level policy interventions can strengthen innovation systems; iv) well-designed policy can nurture transitions, using niches as testing grounds, v) that the best solutions are upscaled through multilevel processes, and vi) transformative social innovation can be undertaken by farmers (e.g. Ludvig et al., 2018; Nijnik et al., 2022).

We welcome the specific proposal for an activity in and financial support for public access and the understanding of land use. The current and recent Strategic Research Programmes have produced an extensive set of materials, publicly available, for explaining land use in Scotland and engaging public audiences in debates about alternative futures (e.g. James Hutton Institute Virtual Landscape Theatre, <https://www.hutton.ac.uk/learning/exhibits/vlt>). We are committed to continuing to make such information available, in line with principles of open science and open data (e.g. Scotland's natural assets register <https://openscience.hutton.ac.uk/>), through mechanisms of the Scottish Government Centre of Expertise in Knowledge Exchange and Impact ([www.sefari.scot](http://www.sefari.scot)), and the Institute flagship International Land Use Study Centre.

#### References –

European Commission (2021). A long-term Vision for the EU's Rural Areas - Towards stronger, connected, resilient and prosperous rural areas by 2040, pp29. [https://eur-lex.europa.eu/resource.html?uri=cellar:6c924246-da52-11eb-895a-01aa75ed71a1.0003.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:6c924246-da52-11eb-895a-01aa75ed71a1.0003.02/DOC_1&format=PDF)

Ludvig, A., Weiss, G., Sarkki, S., Nijnik, M. and Zivojinovic, I. (2018). Mapping European policies supporting social innovation for rural settings Forest Policy & Economics Volume 97: 146-152 <https://doi.org/10.1016/j.forpol.2018.09.015>

Miller, D.R., Brown, P., Davidson, J., Dawson, L., Donnelly, D., Harris, R., Hopkins, J., McLeod, I., McVittie, A., McMorrin, R., Matthews, K., Nolan, A. and Tharme, A. (2022). Roles of Spatial Data by Regional Land Use Partnerships: A Report of the SEFARI Gateway Think Tank on Spatial Data, pp57. <https://sefari.scot/document/roles-of-spatial-data-by-regional-land-use-partnerships-report-draft>

Nijnik, M., Kluvankova, T. and Melnykovich, M. (2022) The power of social innovation to steer sustainable governance of nature. Environmental Policy and Governance, <https://doi.org/10.1002/eet.2018>

2 Are there other areas relating to non-agricultural land management such as forestry that you would like considered for support under the Agriculture Bill to help deliver integrated land management and the products produced from it?

Yes

Please give reasons:

We support the aim of integrated land management in which a holistic systems view is taken of the different uses to which it is put, consistent with the Scotland's Third Land Use Strategy and Scotland's Forestry Strategy 2019–2029.

As noted in our response to Section A(e), we encourage the inclusion of agroforestry in Tier 2. Such land systems contribute to the integrated

management of land, providing social, economic and environmental benefits for land users, in line with expectations set out in the Land Use Strategy. The James Hutton Institute Climate-Positive Farm initiative at Glensaugh (<https://glensaugh.hutton.ac.uk/climate-positive-farming/overview>) includes an agroforestry experimental site at which we demonstrate the longer-term practicalities of agroforestry management as well as the wider environmental benefits for climate change mitigation and adaptation.

Aligned with Scottish Government policy of woodland expansion, including its progressive integration with agriculture, it is timely to support measures for protecting forest ecosystems, to improve their resilient to climate change, and safeguarding their multiple functions (e.g. climate change mitigation), benefits from non-wood products, and the use of wood for construction. Support should also be given to the co-creation of productive areas that are connected via pathways to communities and promote human health and wellbeing, enabling wider benefits that can enhance rural economy (i.e. part of the One Health Agenda).

Areas which should be eligible for investment include forest technologies, mobilising, processing, and marketing of forest products with an aim of diversification of sources of income, and increasing the sustainability and circularity of the forest-based economy.

We would welcome opportunities to share findings of research by the James Hutton Institute on natural capital and its valuation (e.g. <https://www.hutton.ac.uk/research/projects/bringing-participatory-approaches-widen-scope-natural-capital-valuation>) which is providing new evidence on topics such as the potential of financial incentives associated with the management and use of natural assets (Nijnik et al., 2022a, b).

We note that in supporting integrated land management there is a need to have regulation and adoption of best practices in managing risks to natural capital, such as those relating to biosecurity and damage and losses from wildfires (see, for example, work in Scotland under the EU H2020 FirEUrisk project <https://fireurisk.eu/>). There is also a need for supporting knowledge associated with woodlands, forestry and the wider bioeconomy, including how community-led innovation can contribute to the future of Scottish forestry (Barlagne et al., 2021).

See also our response to Knowledge, Skills and Training.

#### References –

Barlagne C, Melnykovich M, Miller D, Hewitt R, Secco L, Pisani E, Nijnik M. What Are the Impacts of Social Innovation? A Synthetic Review and Case Study of Community Forestry in the Scottish Highlands Sustainability 2021, 13(8), 4359 <https://doi.org/10.3390/su13084359>

Nijnik, M., Martino, S., Martinat, S., McKeen, M., Wang, C. and Miller, D. (2022a). Safeguarding forest natural assets by incorporating participatory approaches to natural capital valuation. Proceedings of the IUFRO Conference Managerial forest economics and accounting as a base for decision making in a changing world, 5-7 September, Hamburg, p. 40-42. Available at <https://iufro2022-div405.thuenen.de/>

Nijnik, M., Kluvankova, T. and Melnykovich, M. (2022b) The power of social innovation to steer sustainable governance of nature. Environmental Policy and Governance, <https://doi.org/10.1002/eet.2018>

Nijnik, M., Secco, L., Miller, D. and Melnykovich, M. (2019). Can social innovation make a difference to forest-dependent communities? Forest Policy and Economics. Volume 100: 207-213 <https://doi.org/10.1016/j.forpol.2019.01.001>

SIMRA (2020). Social Innovation in Marginalised Rural Areas (SIMRA). Project funded by the European Union's Horizon 2020 research and innovation programme. Available online at <http://www.simra-h2020.eu/>

### 3 What other powers may be required to enable rural development in Scotland's rural and island communities?

Yes

Please give reasons:

The spatial scope of policies should avoid the risk of locations being 'left behind' or excluded from attention, while ensuring that policies are 'place-sensitive' (Iammarino et al., 2019) and designed for different 'types' of places within rural areas. Identifying significant local-level inequalities is particularly important in ensuring places do not get left behind: for example, detailed survey analysis has identified considerable differences in experiences and perceptions between residents on the mainlands of Shetland and Orkney, compared with their outlying islands (Wilson et al., 2021).

Current legislation leading to the empowerment of rural communities is strong, particularly with regards to acquiring assets; this is legislation that is looked on favourably and with envy in other parts of the UK. However, from discussions with communities we found it places too much responsibility on rural and island communities facing a permacrisis (Currie et al., 2022). Our research suggests that power could be enhanced through more support for communities making change in the form of intermediary regionally focused organisations (e.g. Highlands and Islands Enterprise, South of Scotland Enterprise, Local Action Groups) and that the emphasis of power needs to be enhanced by better formalisation of processes which support enablement.

Large increases to net migration are critical to supporting populations in sparsely populated areas (Copus and Hopkins, 2018) implying that stronger powers are needed for Ministers in relation to migration. Modelling population using an 'unlikely best case' migration scenario suggests it is possible that some parts of sparsely populated areas have potential for ameliorating population decline which is not currently being realised, although achieving this in south-west Scotland appears more challenging (Hopkins et al., 2022).

Rural and island residents feel they do not have much say in regional and national decision-making, resulting in a sense of too much of a burden on communities to improve aspects of rural and island life themselves, and insufficient empowerment and support to address structural weaknesses that get in the way of achieving outcomes.

The administrative burden of accessing multiple sources of short-term funding should not be undermined and requires high levels of community capital

and determination that may wane over time, with some communities left behind altogether. This pattern has been intensified by the COVID-19 pandemic, during which many communities took on additional responsibilities and volunteers have experienced “burnout” (Currie et al., 2022). The National Islands Plan Survey (Wilson et al., 2021) found that island residents generally perceive they have little influence over decisions made by local and national organisations (13% agreed that they can influence decisions made by the Scottish Government), and more influence over community organisations such as Development Trusts and community groups (36%). In practice, the mismatch between having some sense of control at the community level and little power regionally or nationally means that rural communities are working hard to achieve development aims within a system that does not always align with their needs, resulting in a feeling of “swimming against the tide”. Mechanisms are needed whereby rural community voices are listened and responded to nationally so that there is better support and alignment between national systems/mechanisms and community needs “on the ground”.

#### References -

Copus, A. and Hopkins, J. (2018). Demographic change in the Sparsely Populated Areas of Scotland (1991-2046). Demographic change in remote areas: Research Note 2 – March 2018. Available at <https://www.hutton.ac.uk/sites/default/files/files/research/srp2016-21/RD3.4.1%20Note%20WP1-3%20web%20-%20published.pdf>

Currie, M., Wilson, R., Noble, C. and Gurd, J. (2022). The ongoing impacts of Covid-19 in Scotland's rural and island communities. Summary report for Scottish Government, March 2022. Available: <https://sefari.scot/document/the-ongoing-impacts-of-covid-19-in-scotland%E2%80%99s-rural-and-island-communities>

Hopkins, J. and Piras, S. (2020). Population projections and an introduction to economic-demographic foresight for Scotland's sparsely populated areas (2018-43). Available at <https://www.hutton.ac.uk/sites/default/files/files/research/srp2016-21/rd341briefprojectionsandforesightintro.pdf>

Hopkins, J., Piras, S. and Kapour, G. (2022). ‘Untapped potential?’ Linking regional economic futures and the prospects for demographic recovery in sparsely populated Scotland. Available: <https://www.hutton.ac.uk/sites/default/files/files/research/srp2016-21/rd341prospectsdemographicrecoveryinspas.pdf>

Iammarino, S., Rodriguez-Pose, A. and Storper, M. (2019). Regional inequality in Europe: Evidence, theory and policy implications. *Journal of Economic Geography*, 19(2), 273-298. <https://doi.org/10.1093/jeg/lby021>

Wilson, R., Hopkins, J., Currie, M., Potts, J., Somervail, P. and Stevenson, T. (2021). National Islands Plan Survey Final Report, Social Research Report for the Scottish Government. Available: <https://www.gov.scot/publications/national-islands-plan-survey-final-report/documents/>

4 What potential social, economic or other impacts, either positive or negative, would such powers have on Scotland's rural and island communities?

Please give reasons:

If such powers as detailed in Q(c) are granted, we believe that more positive changes in rural communities could be enabled, although what these are will be unique to the place in which they are situated. Generally, they should lead to enhanced and bespoke access to services and perennial problems such as a lack of available and appropriate housing, depopulation and unbalanced rural and island populations being addressed.

This would support communities accessing funding to achieve development aims in a much more streamlined manner, thereby achieving their aims more quickly and easily. Better support will also mean that communities that are currently left behind will not be forgotten or disadvantaged.

### 2.3.1 Animal Health and Welfare

1 Do you agree that the new Agriculture Bill should include powers to establish minimum standards for animal health, welfare as a condition of receiving payments?

Don't know

Please give reasons:

No response submitted.

2 Do you agree that the new Agriculture Bill should include powers to make payments to support improvements in animal health, welfare and biosecurity beyond legal minimum standards?

Don't know

Please give reasons:

No response submitted.

3 Do you agree that the new Agriculture Bill should include powers to collect and share livestock health, welfare and biosecurity data?

Don't know

Please give reasons:

No response submitted.

### 2.3.2 Plant Genetic Resources and Plant Health

1 Do you agree that Scottish Ministers should have powers to provide support for the conservation of Plant Genetic Resources, including plants developed and grown for agricultural, horticultural or forestry purposes and their wild relatives?

Yes

Please give reasons:

This response is made to only Proposal I (Conservation of Plant Genetic Resources).

Plant Genetic Resources provide a source of genetic, and trait diversity with multiple potential uses. This includes germplasm for improving agricultural, horticultural and forestry plants to help realise more-sustainable land use systems from farm-to-fork. These resources are also an important source of diversity for natural phytochemicals, dietary foodstuffs, organoleptic and biopharma products.

We suggest that additional support is needed for:

- i) the maintenance and characterisation of existing germplasm collections, held at research and advisory organisations in Scotland, which have been underexploited to date (e.g. legumes (pea, bean, *Lathyrus*), wheat (e.g. heritage varieties tested by 'Scotland the Bread'), barley (e.g. Bere landraces).
- ii) the creation of new plant genetic resource collections for plant species (crop, forestry) that will become more suited to Scotland as the climate changes (e.g. lentil, soybean, fruit and nut species) and for symbiotic organisms (*Rhizobium* species, arbuscular mycorrhizae, ectomycorrhizae) that support sustainable land management.
- iii) the development of locally sourced and owned plant genetic resources that can be used in small scale breeding initiatives to develop locally adapted crop types for small scale farming, crofting and forestry (e.g. through participatory breeding programmes).

These proposals are made because existing germplasm collections (which may not yet have been properly archived and maintained), including (Bere) barley, and faba bean (James Hutton Institute), pea (SASA), *Lathyrus* spp (RBGE), provide vital genetic resources for research and crop improvement. They offer important crop qualities relating to agronomy, improved fitness of plants, adaptation to marginal environments, adaptation to and mitigation of climate change, and reducing reliance on external inputs. Specifically, these qualities could include short flowering and maturation time, water-, nitrogen-, and phosphorus-use efficiencies. An example of the benefits gained from maintaining such resources is the discovery that a Scottish landrace of barley (Bere) has unique abilities to cope with marginal soils with notable micronutrient deficiencies (Schmidt et al., 2019). This is a globally significant finding which would have been impossible if the relevant Bere barley accessions had not been conserved.

There may also be traits that improve harvestability and processing, including for processes such as decortication, milling, extrusion, biorefining. Such genotypes may offer enhanced nutritional qualities, such as high protein and carbohydrate contents, mineral nutrients and secondary chemical (non-nutritional) constituents for humans and farmed animals. These characteristics could extend to including critical ecological and biodiversity provisions. Such provisions are emerging as especially important for the 're-breeding' of crops for 'future-food systems', since such plants should perform well in environments with low levels of synthetic agrochemical inputs (e.g. nitrogen and phosphorus fertilisers and pesticides), increased levels of organic inputs, and natural solutions such as represented by integrated pest management (IPM)-focused approaches and technologies (e.g. Mitchell et al., 2016).

Extending support to include germplasm resources that are not fully developed or are anticipated to become more important under our changing climate and for more sustainable cropped systems is vital to secure future crop production. This includes legume crops, of which only very low levels are cropped in Scotland, and well below the levels expected to achieve higher productivity with less (synthetic-nitrogen and pesticide) inputs. These include peas and field beans, and legume-based cover crops (Iannetta et al., 2016; Squire et al., 2019; Iannetta et al., 2021). One barrier to wider legume growing is their perceived sub-optimal performance, which hints at the need to provide greater use and/or capacities of independent agricultural extension/advisory services as well as appropriate germplasm.

With respect to those crops which carry out biological nitrogen fixation (BNF) (i.e. legumes such as peas, beans, clover), the conservation of those soil microorganisms which are critical to this BNF process must also be considered. As BNF by legumes is pivotal agroecologically, encouraging natural carbon- and nitrogen-cycling, circular economies and so self-sufficiency for critical inputs (e.g. N and P fertiliser) and outputs (e.g. protein), and the mitigation of greenhouse gas emissions to help reduce the impacts of climate change. Specifically, BNF occurs due to a symbiosis between specific soil bacteria, collectively termed 'rhizobia', and the legume. Different legumes species, associate with specific rhizobia species, and much work has already been carried out to isolate strains which are distinct genetically and functionally, including potential to enhance crop growth, and/or persist in specific environments (e.g. soil with low- or high-pH). That is, rhizobia collections should also be conserved.

Collections of other plant growth promoting rhizobacteria (PGPRs) and fungi (e.g. arbuscular mycorrhizal fungi) that already exist among Scotland's research providers should also be conserved as these are also important to help understand and ensure the best performance of non-legume crops, and wild species.

Support for open access germplasm resources (e.g. the Commonwealth Potato Collection, <https://www.hutton.ac.uk/about/facilities/commonwealth-potato-collection>; hosted at James Hutton Institute, supported by the Scottish Government Underpinning National Capacity) is needed to ensure they are available beyond the commercial breeding industry, which typically focusses on germplasm suited to industrial agriculture and associated land management practices (e.g. high input monocultures).

A key barrier to uptake of crop diversification practices, such as intercropping and greater legume inclusion, is the availability of seed from suitable varieties/species (Brannan 2021; Brannan et al., submitted). Support for small scale farmers and crofters could enable the development and preservation of locally adapted genotypes with traits that facilitate low input production through participatory breeding and seed-saving. The potential for this

approach has been discussed in relation to breeding genotypes for improved performance in crop mixtures (Kiaer et al., 2022), as mixtures rely on fewer inputs and typically show greater productivity and higher agrobiodiversity compared with crop monocultures (see outputs of the DIVERSify project at [www.plant-teams.org](http://www.plant-teams.org); Brooker et al., 2021; Brandmeier et al., 2021; Weih et al., 2021).

#### References -

Brandmeier, J., Reininghaus, H., Pappagallo, S., Karley, A.J., Kiaer, L.P. and Scherber, C. (2021). Intercropping in high input agriculture supports arthropod diversity without risking significant yield losses. *Basic and Applied Ecology* 53: 26-38. <https://doi.org/10.1016/j.baec.2021.02.011>.

Brannan, T. (2021). Barriers to Crop Diversification Practices in the European Union: A Narrative Synthesis. MSc Thesis. Norwegian University of Life Sciences, Norway. [https://nmbu.brage.unit.no/nmbu-xmlui/bitstream/handle/11250/2784119/MSc%20Agroecology\\_Brannan.pdf?sequence=1&isAllowed=y](https://nmbu.brage.unit.no/nmbu-xmlui/bitstream/handle/11250/2784119/MSc%20Agroecology_Brannan.pdf?sequence=1&isAllowed=y)

Brannan, T., Bickler, C., Hanssen, H., Karley, A.J., Weih, M. and Tasevka, G.M. (submitted). Barriers to Crop Diversification in the European Union: A Mini Review (submitted manuscript).

Brooker, R.W., Pakeman, R., Raubach, S. and Shaw, P. (2021). Deliverable 5.5 (D37) Meta-analysis and visualisation tools. Developed by the EU-H2020 project DIVERSify ('Designing innovative plant teams for ecosystem resilience and agricultural sustainability'), funded by the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement Number 727284.

Iannetta, P.P.M., Young, M., Bachinger, J., Bergkvist, G., Lopez-Bellido, R.J., Doltra, J., Monti, M., Pappa, V.A., Reckling, M., Topp, C.F.E., Walker, R.L., Rees, R.M., Watson, C.A., James, E.K., Squire G.R. and Begg, G.S. (2016). A comparative nitrogen balance and productivity analysis of legume and non-legume supported cropping systems: the potential role of biological nitrogen fixation. *Frontiers in Plant Science* 7, 1700. <https://doi.org/10.3389/fpls.2016.01700>

Iannetta, P.P.M., Hawes, C., Begg, G.S., Maaß, H., Ntatsi, G., Savvas, D., Vasconcelos, M., Hamann, K., Williams, M., Styles, D., Toma, L., Shrestha, S., Balázs, B., Kelemen, E., Debeljak, M., Trajanov, A., Vickers, R. and Rees, R.M. (2021). A multifunctional solution for wicked problems: value-chain wide facilitation of legumes cultivated at bioregional scales is necessary to address the climate-biodiversity-nutrition nexus. *Frontiers in Sustainable Food Systems* 239. <https://doi.org/10.3389/fsufs.2021.692137>

Kiaer, L.P., Weedon, O.D., Bedoussac, L., Bickler, C., Finckh, M.R., Haug, B., Iannetta, P.P.M., Raaphorst-Travaille, G., Weih, M. and Karley, A.J. (2022). Supply chain perspectives on breeding for legume-cereal intercrops. *Frontiers in Plant Science* 13:844635 doi: 10.3389/fpls.2022.844635

Mitchell, C., Brennan, R.M., Graham, J. and Karley, A.J. (2016). Plant defense against herbivorous pests: exploiting resistance and tolerance traits for sustainable crop protection. *Frontiers in Plant Science* 7, 665. doi: 10.3389/fpls.2016.01132

Schmidt, S.B., George, T.S., Brown, L.K., Booth, A., Wishart, J., Hedley, P.E., Martin, P., Russell, J. and Husted, S. (2019). Ancient barley landraces adapted to marginal soils demonstrate exceptional tolerance to manganese limitation. *Annals of Botany*. 2019 Apr 11;123(5):831-43.

Squire, G.R., Quesada, N., Begg, G.S. and Iannetta, P.P.M. (2019). Transitions to greater legume inclusion in cropland: defining opportunities and estimating benefits for the nitrogen economy. *Food and Energy Security*. <https://doi.org/10.1002/fes3.175>

Weih, M., Karley, A.J., Newton, A.C., Kiaer, L.P., Scherber, C., Rubiales, D., Adam, E., Ajal, J., Brandmeier, J., Pappagallo, S., Villegas-Fernández, A., Reckling, M. and Tavoletti, S. (2021). Grain Yield Stability of Cereal-Legume Intercrops Is Greater Than Sole Crops in More Productive Conditions. *Agriculture* 2021, 11, 255. <https://doi.org/10.3390/agriculture11030255>

2 Do you agree that Scottish Minister should have the power to provide support to protect and improve plant health?

Yes

Please give reasons:

Recognising the cross-border nature of threats to plant health (e.g. most threats come through importation of plants or plant products, in particular via horticulture), the proposal should also reaffirm the current close collaboration of SASA and with UK-wide bodies, and the working of the teams of the Chief Plant Health officers.

The means of supporting the protection and improvement of plant health will require access by the Minister and their advisors to leading edge knowledge and expertise, relevant to Scottish conditions. Ongoing support for the Scottish Government funded Centre of Expertise on Plant Health (<https://www.planthealthcentre.scot/>) will be essential to provide access to, and translation of, such knowledge for the needs of policy and practice in Scotland. Its interdisciplinary approach, led by the James Hutton Institute, brings together sectors of agriculture (led by Scotland's Rural College), horticulture and environment (Royal Botanic Garden Edinburgh), and forestry (Forest Research), and other research partners.

### 3. Skills, Knowledge Transfer and Innovation

1 Do you agree that support should continue to be provided in this area?

Yes

Please give reasons:

We are very supportive of the continued provision knowledge transfer, innovation and skills development. There are unique aspects to Scotland's mix of land, vegetation and soils that mean a Scottish specific approach is necessary.

Access to advice, and facilitation for peer-to-peer learning between farmers is critical to enabling farmers to advance their farm businesses. It is also important for ensuring a just transition. Research undertaken at the James Hutton Institute, as part of broader European networks, demonstrated that skilled facilitation is critical to the success of monitor farms and other peer to peer learning opportunities. The development of hands-on courses targeting the next generation of land managers with practical, skills and technologies to address contemporary issues on the ground (Adamson-Fiskovica, 2021; Zawalińska et al., in press).

More generally, instruments and measures are needed to provide and enhance the knowledge and skills relevant to achieving the Scottish Government priorities of net zero, resource efficiency and biodiversity. We encourage the process of implementing the Agriculture Bill to be viewed as an opportunity to prepare a strategic approach to training, skills and life-long learning which are: i) accessible by all types of current and new actors in land management practices; ii) relevant to each stage of transitions in farming systems (e.g. agroecology transitions); iii) appropriate to stage of life of individual actors; iv) contemporaneous with technical, product and social innovations; iv) can contribute to formal programmes of Continuing Professional Development and professionalisation of land management (Miller et al., in press).

Reference -

Adamson-Fiskovica, A., Grivins, M., Burton, R.J.F., Elzen, B., Flanigan, S., Frick, R. and Hardy, C. (2021). Disentangling critical success factors and principles of on-farm agricultural demonstration events. *The Journal of Agricultural Education and Extension*, 1-18.

Miller, D., Legras, S., Barnes A., et al. (in press.) Creating Conditions for Harnessing the Potential of Transitions to Agroecology in Europe and Requirements for Policy. *EuroChoices*. DOI: 10.1111/1746-692X.12374

Zawalińska, K., Smyrniotopoulou, A., Balazs, K. et al. (in press). Advancing the contributions of European stakeholders in farming systems to transitions to agroecology. *EuroChoices*.

2 Is there any particular gaps in delivery that you can identify?

Yes

Please give reasons:

Recent research undertaken in Scotland by James Hutton Institute identified an important gap in the provision of advice on digital technologies, particularly in relation to precision farming. We found that most of the advice available to farmers was offered by technology supply companies (Townsend and Noble, 2022). Farmers did not approach Farm Advisory Service advisors, because they did not believe these advisors had up-to-date knowledge. This is an issue identified across Europe, for a range of digital technologies (e.g. including robotic milking, electronic monitoring systems). Owing to the rate of change in digital technologies, and variety of suppliers, generic agricultural advisors are unlikely to be able keep up to date with recent developments (Sutherland and Labarthe, 2022). However, advisory support is important later in the process of innovation, to embed the technology in ongoing farm development and make the most of its capabilities.

Empirical studies in Scotland (under EU H2020 AgriLink) identified under-represented participants in agricultural advisory services:

- Farmers at the extremes of the age spectrum (young and old)
- Farmers operating small-scale farms
- New entrants to farming
- Women farmers
- Farm employees

Farm advisory services tend to focus on the 'best customers' for advisory services, mainstreaming commercial farmers who are centrally located and likely to be able to afford one-to-one advice, after initial 'free' services have been provided.

Non-commercial or 'hobby farmers' are also unlikely to interact with the advisory landscape, through lack of familiarity with the providers, eligibility and processes. However, recent suggests that these farmers manage at least 13% of Scotland's land is managed by non-commercial farmers; this cohort are therefore important to enrol (Sutherland et al., 2019). They can often be accessed through interest groups (e.g. Facebook, breed societies). Although there has been no research on the topic to date, it is possible that new land managers who are acquiring land for carbon sequestration or rewilding may similarly be disconnected from agricultural advisory services.

Very large farms may not interact with agricultural advisory services because they are working directly with researchers and technology developers. Very small-scale farmers are most likely to identify 'other farmers' as their most common source of advice; they tend to draw on advisory services primarily to complete forms which are required for compliance or to access subsidies (Sutherland et al., 2021). Therefore, it is therefore important that targeted services for small-scale farmers continue to be made available.

Many farmers also get soil analysis and advice from commercial services designed for advising on, or even aligned with sales of, fertiliser products which means they do necessarily get objective analysis of other key soil health measures such as organic matter.

References -

Labarthe, P., Sutherland, L-A., Laurent, C., Nguyen, G., Tisenkopfs, T., Triboulet, P., Bechtet, N., Bulten, E., Elzen, B., Madureira, L., Noble, C., Prazan, J., Townsend, L., Zarokosta, E., Prager, K. and Redman, M. (2022) Who are Advisory Services Leaving Out? A Critical Reflection on 'Hard to Reach' Farmers.

EuroChoices, 21, 50-55.

Sutherland, L.-A., Barlagne, C. and Barnes, A.P. (2019) Beyond 'Hobby Farming': towards a typology of non-commercial farming. *Agriculture and Human Values*, 36, 475-493.

Townsend, L.C. and Noble, C. (2022) Variable rate precision farming and advisory services in Scotland: Supporting responsible digital innovation? *Sociologia Ruralis*, 62, 212-230.

### 3 Are there any alternative approaches that might deliver better results?

Yes

Please give reasons:

The COVID-19 pandemic led to the rapid upskilling of many farmers in digital technologies, with an increasing willingness to meet on-line. Although farmers prefer in meeting face-to-face, more could be made of on-line opportunities. These are particularly beneficial for enrolling women, part-time farmers and farmers who are in remote locations.

The James Hutton Institute is developing a suite of virtual reality tools (the DigiFarm and DigiCroft) for use in training farmers. These were initiated through the EU H2020 PLAID project on on-farm demonstration and are being further developed in EU H2020 DESIRA, EU H2020 FrameWork, EPIC and the Scottish Government Strategic Research Programme Topic Line B3.

The James Hutton Institute will seek to create opportunities to share findings on innovative approaches to knowledge transfer and engagement being developed in its International Land Use Study Centre, and tested with the Institute's Glensaugh Climate Positive Farming initiative.

### 4 Do you have any ideas as to how engagement/participation in advisory services, knowledge transfer or skills development might be improved?

Yes

Please give reasons:

Research in the EU H2020 AgriLink project identified the following recommendations for reaching 'hard to reach' groups:

1. Better integrating farm diversity into advisors' education and training - For example, in France some agricultural vocational schools use pedagogical modules whereby students (and thus potentially future advisors) are required to engage in comprehensive interviews with randomly chosen farmers and describe their farming systems.
2. Continuing professional development and accreditation for advisors - Accreditation of advisors on specific subject areas may increase farmer trust. However, advisors, particularly those running small private businesses, may not be able to afford formally accredited courses for Continuing Professional Development. So, mechanisms should be designed to ensure equality of opportunity to access such accreditation (e.g. vouchers for courses).
3. Enrolling the full array of AKIS actors in innovation support – At present there is an emphasis on the provision of advice to farmers through the Farm Advisory Services on the basis of one-to-one or one-to-many. Such an understanding of the provision of advice should be broadened to include researchers, educational institutions, private advisors, input supply companies and the finance sector.
4. Providing simplified methodological tools derived from social sciences to understand farmers' personal networks. Different models of providing advice, adapted to specific needs, should be considered (e.g. mentoring schemes, including digital options). This would help reinforce information flows beyond the limits of local advisory services.
5. There are situations in which no actors are willing or able to take steps towards including hard-to-reach groups. This might occur when advice is mostly provided by 'linked' advisors, that is advisors who provide their advisory services jointly with other activities (including trade of inputs, outputs, machinery, digital solutions). This is the case in many European regions after decades of privatisation. In such situations, policymakers might consider other options:
  - (a) Make use of compulsory interactions with farmers (bookkeeping, subsidy applications) to understand farmers' situations and needs and propose appropriate advisory schemes.
  - (b) Make use of knowledge about on-farm triggers to identify opportunities when these categories of farmers might be willing to look for advice, such as during farm succession.
  - (c) Support initiatives from trade unions or non-governmental associations to improve training and advice provision for national and migrant salaried workers.

Engagement can be improved by increasing the quality of events. Research at the James Hutton Institute in the Scottish Government Strategic Research Programme (2016-22) and the EU H2020 PLAID project identified a set of principles for increasing the quality of demonstration events: purpose, problem, place, personnel, positioning, programme, process, practicalities and publicity. (Adamsone-Fiskovisa et al., 2021).

Selected findings show that ...

1. Evaluation in the Scottish context found that events are often organised without a clear purpose or set of indicators for evaluating success. Resultant



events are generic and difficult to evaluate.

2. Farmers are more likely to participate in events which address a clear problem or need (e.g. these can be expected to include how to respond to the new measures enacted in this Agriculture Bill, a disease outbreak, commodity price shift, farm succession).
3. The location of events – ease of access should be balanced against reaching diverse cohorts of attendees, avoiding pressures to hold events somewhere considered to be central which typically benefits farmers who are already well-served.
4. Highly skilled facilitators are needed; 'good advisors' are not necessarily 'good facilitators' and require professional training to perform this function. Advisors who primarily offer fee for service advice may be tempted to use events such as monitor farms to promote their own services, rather than to encourage peer learning between farmers.
5. The practicalities of events (e.g. catering, seating, provision of sufficient hygiene facilities) is often overlooked, which can have gendered implications (e.g. where farmers are expected to stand and watch presentations for over an hour; venues with no, or limited, lavatory facilities, may restrict participation by women and elderly farmers).
6. Engagement can be increased by how activities are advertised. It is very important that advertising materials consider the inclusivity of their messages (e.g. through images of different ages, genders; scheduling at accessible times of the day; including childcare where appropriate). Opportunities to access events remotely should also be included.

Guidance on how these principles can be applied is available at:

The Design Guide for on-Farm Demonstrations is available through the [www.farmdemo.eu](http://www.farmdemo.eu) website, and [https://plaid-h2020.hutton.ac.uk/sites/www.plaid-h2020.eu/files/PLAID\\_WP6\\_ISP\\_D6\\_1ValidatedDecisionSupportTools\\_29June2019\(1\).pdf](https://plaid-h2020.hutton.ac.uk/sites/www.plaid-h2020.eu/files/PLAID_WP6_ISP_D6_1ValidatedDecisionSupportTools_29June2019(1).pdf)

Reference –

Adamsone-Fiskovica, A., Grivins, M., Burton, R.J.F., Elzen, B., Flanigan, S., Frick, R. and Hardy, C. (2021) Disentangling critical success factors and principles of on-farm agricultural demonstration events. *The Journal of Agricultural Education and Extension*, 1-18.

Labarthe, P., Sutherland, L-A., Laurent, C., Nguyen, G., Tisenkopfs, T., Triboulet, P., Bechtet, N., Bulten, E., Elzen, B., Madureira, L., Noble, C., Prazan, J., Townsend, L., Zarokosta, E., Prager, K. and Redman, M. (2022) Who are Advisory Services Leaving Out? A Critical Reflection on 'Hard to Reach' Farmers. *EuroChoices*, 21, 50-55.

5 Do you agree that Scottish Ministers should have the power to establish a national reserve and regional reserve if/when required to ensure the equal treatment of farmers and to avoid distortions of the market and of the competition?

Don't know

Please give reasons for your answer:

No response submitted

#### 4. Administration, Control, and Transparency of Payment Framework Data

1 Do you agree that Scottish Ministers should have the power to create a system that provides for an integrated database, to collect information in relation to applications, declarations and commitments made by beneficiaries of rural support?

Yes

Please give reasons:

The administrative systems proposed are consistent with, and essential for, the operationalisation of the Framework.

2 Do you agree that Scottish Ministers should have the power to create a system that collects and shares information for the purposes of carrying out management, control, audit and monitoring and evaluation obligations and for statistical purposes, subject to General Data Protection Regulation (GDPR) requirements?

Yes

Please give reasons:

No additional comment.

3 Do you agree that Scottish Ministers should have the power to share information where there is a public interest in doing so, and subject to complying with the General Data Protection Regulation GDPR?

Yes

Please give reasons:

Data sharing enables the integration of administrative and research based data that is an essential component of both policy development and policy evaluation, for example via the James Hutton Institute Land Systems Research Team (<https://ics.hutton.ac.uk/research/land-systems-research-team/>).

4 Do you agree that Scottish Ministers should have the power to create a system that provides a mechanism that aligns with the principles of the Scottish Public Finance Manual?

Yes

Please give reasons:

No additional comment.

5 Do you agree that Scottish Ministers should have the power to create a system that provides the data required to undertake administrative checks on applications / claims made by beneficiaries for rural support?

Yes

Please give reasons:

No additional comment.

6 Do you agree that Scottish Ministers should have the power to create a system whereby on-the-spot-checks should be undertaken to further verify applications / claims made by beneficiaries for rural support?

Yes

Please give reasons:

No additional comment.

7 Do you agree that Scottish Ministers should have the power to create a system that would provide for cross compliance, conditionality that covers core standards in relation to sustainable environment, climate, Good Agricultural and Environmental Condition (GAEC), land, public and animal health, plant health and animal welfare, Soil health, carbon capture and maintenance?

Yes

Please give reasons:

No additional comment.

8 Do you agree that Scottish Ministers should have the power to create a system that provides a mechanism to support the delivery of practices aligned to receipt of elective payments, for targeted outcomes?

Yes

Please give reasons:

No additional comment.

9 Do you believe that Scottish Ministers should have the power to monitor and evaluate outcomes to ensure they meet the agreed purpose and help better inform future policy?

Yes

Please give reasons:

Monitoring and evaluation will be essential to assess progress towards the challenging objectives set out in the Vision. The uncertainty in the mix of Enhanced Conditionality measures that are taken up, and their effectiveness (and additionality), will depend upon where they are enacted and interactions with the decisions of other land managers. This means that more specific monitoring of both actions and their consequences are needed across the population of land management businesses. This can then support the evolution of payments or weightings for measures such that they can be adapted over time to deliver the land use transformations needed.

10 Do you believe that Scottish Ministers should have the power to seek independent assurance that outcomes are delivered appropriately?

Yes

Please give reasons:

The principle of "extended peer review" has had value in the governance of complex and contested issues, recognising the value of reason-based deliberation and the varied sources of knowledge and experience that are relevant (Functowicz and Ravetz, 1993; Stirling, 2015). Independent assurance is one form of review but consideration should be given to how best such an extended peer review could be implemented for the Framework and its components over time.

## References -

Funtowicz, S.O. and Ravetz, J.R. (1993). Science for the post-normal age. Futures, 1993. 25(7): p. 16.

Stirling, A. (2015). Developing 'Nexus Capabilities': towards transdisciplinary methodologies. University of Sussex, Brighton, UK, 2015: p. 38.

11 Do you agree that Scottish Ministers should have the power to enable the publication of details pertaining to recipients who receive payments including under the future payment model (outlined above) and set a level above which payment details will be published?

Yes

Please give reasons:

The principle of publication seems appropriate, but it would benefit from clarity on the forms of funding received and not only the totals. Except where this might compromise commercial confidentiality, the publication of (for example) Enhanced Conditionality measures undertaken should be useful in assisting the cooperation and coordination of the measures being enacted in local areas for improved delivery to local priorities.

12 Do you agree that technical fixes should be made to the Agriculture and Retained EU Law and Data (Scotland) Act 2020 to ensure Scottish Ministers have all requisite powers to allow CAP legacy schemes and retained EU law to continue to operate and be monitored and regulated and also to ensure Scottish Ministers have flexibility to better respond to current, post exit, circumstances?

Yes

Please give reasons:

No additional comment.

## 5. Modernisation of Agricultural Tenancies - please read before answering 5.1- 5.5

### 5.1 Agreement to Diversification

1 Do you agree that Scottish Ministers should have a power to be able to determine what is an acceptable diversification?

Yes

Please give reasons:

It would be desirable for policies to align proposals relating to agricultural diversification, revisions to Schedule 5 with the proposals for a Land Use Tenancy in the Scottish Government consultation on 'Land Reform in a Net Zero Nation.

2 Do you think that if this power is given to Scottish Ministers that the Tenant Farming Commissioner should have the ability to issue guidance to assist tenant farmers and landlords understand this.

Yes

Please give reasons:

We support the proposal for guidance from the Tenant Farming Commissioner.

### 5.2 Waygo and Schedule 5 of the Agriculture Holdings (Scotland) Act 1991

1 Do you agree that Scottish Ministers should add new activities and items onto Schedule 5 of the Agriculture Holdings (Scotland) Act 1991; to enable tenant farmers to support biodiversity and undertake climate change mitigation and adaption activity on their tenant farms?

Don't know

Please give reasons:

No response submitted.

2 Do you agree that Scottish Ministers should have a power to amend Schedule 5 of the Agriculture Holdings (Scotland) Act 1991 by secondary legislation to enable Schedule 5 to be changed to meet the future challenges?

Don't know

Please give reasons:

No response submitted.

3 If you do not agree that Scottish Ministers should have the ability to vary the activities and associated items listed on Schedule 5 of the Agricultural Holdings (Scotland) Act 1991 please explain why, including any alternative approach you have to address this issue.

Please give reasons and alternatives:

No response submitted.

4 Do you agree that when an agricultural tenancy comes to an end a tenant farmer should have certainty about the timescale by when they will receive any money due to them, and their landlord should also have a similar certainty?

Don't know

Please give reasons:

No response submitted.

### 5.3 Amendment to Rules of Good Husbandry and Good Estate Management

1 Do you agree that the Scottish Ministers should be able to amend the rules of good husbandry and good estate management defined in the Agricultural Holdings (Scotland) Act 1948 to enable tenant farmers and their landlords to be able meet future global challenges?

Yes

Please give reasons:

The concept of good husbandry has significantly changed since 1948, which should be reflected in the legislation. Good husbandry is no longer only about keeping land to maintain its productive capacity, it is also about the delivery of the wide range of other benefits that good land management delivers. These benefits include protecting water from pollution, protecting and enhancing soil carbon stocks and providing habitat for different plants and animals. The rules should be amended to reflect all of society having a stake in how land is managed, and that tenants need empowering to deliver the multiple benefits good management can bring.

The measures of the Agriculture Bill that relate to good estate management should also align with those of the Scottish Biodiversity Strategy and Scotland's Climate Change Plan (e.g. planting 18,000 hectares of new woodland each year by 2024, and a commitment to restore at least 250,000 hectares of peatland by 2030) to ensure coherence in the management of Scotland's uplands.

### 5.4 Rent Reviews

1 Do you agree that adaptability and negotiation in rent calculations are required to meet the global challenges of the future? Please explain why.

Don't know

Please give reasons:

No response submitted.

2 Are there any other relevant considerations that should be included in part of a rent review? Please explain why including any practical examples.

Yes

Please give reasons:

We note that other relevant considerations in a rent review should align with implementation of the Land Rights and Responsibilities Statement, in particular noting the land management plan proposals in the Land Reform Bill consultation.

### 5.5 Resumption

1 Do you consider that Scottish Ministers should amend the resumption provisions on compensation for disturbance to include a new valuation formula? And if you agree with this proposal, what do consider to be the appropriate method of valuation?

Don't know

Please give reasons :

No response submitted.

## 6. Scottish Agriculture Wages (Fair Work)

1 Do you agree that Fair Work conditions, including the real Living Wage, should be applied to all Scottish agricultural workers?

Don't know

Please give reasons:

No response submitted.

2 What do you consider the implications would be on individual businesses and the Agricultural sector more broadly, if the minimum wage for agricultural workers was to align with the real Living Wage?

Don't know

Please give reasons:

No response submitted.

## Assessing the Impact

1 Are you aware of any potential costs and burdens that you think may arise as a result of the proposals within this consultation?

Please give reasons:

No response submitted.

2 Are you aware of any examples of potential impacts, either positive or negative, that you consider that any of the proposals in this consultation may have on the environment?

Please give reasons:

No response submitted.

3 Are you aware of any examples of particular current or future impacts, positive or negative, on young people, of any aspect of the proposals in this consultation? Could any improvements be made?

Please give reasons :

No response submitted.

4 Are you aware of any impacts, positive or negative, of the proposals in this consultation on data protection or privacy?

Please give reasons :

No response submitted.

5 Are you aware of any examples of how the proposals in this consultation may impact, either positively or negatively, on those with protected characteristics (age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation)?

Please give reasons :

No response submitted.

6 Are you aware of any examples of how the proposals in this consultation might have particular positive or negative impacts on groups or areas experiencing socioeconomic disadvantage? These could be households with low incomes or few resources; families struggling to make ends meet; people who experienced poverty while growing up; or areas with few resources or opportunities compared with others.

Please give reasons :

No response submitted.

7 Are you aware of any examples of how the proposals in this consultation might impact, positively or negatively, on island communities in a way that is different from the impact on mainland areas?

Please give reasons :

No response submitted.

## About you

1 What is your name?

Name:  
David Miller

2 What is your email address?

Email:  
david.miller@hutton.ac.uk

3 Are you responding as an individual or an organisation?

Organisation

4 What is your organisation?

Organisation:  
James Hutton Institute

5 What is your occupation?

Other

6 The Scottish Government would like your permission to publish your consultation response. Please indicate your publishing preference:

Publish response with name

7 We will share your response internally with other Scottish Government policy teams who may be addressing the issues you discuss. They may wish to contact you again in the future, but we require your permission to do so. Are you content for Scottish Government to contact you again in relation to this consultation exercise?

Yes

8 I confirm that I have read the privacy policy and consent to the data I provide being used as set out in the policy.

I consent

## Evaluation

1 Please help us improve our consultations by answering the questions below. (Responses to the evaluation will not be published.)

Matrix 1 - How satisfied were you with this consultation?:  
Slightly satisfied

Please enter comments here.:

The consultation covers the topics of most relevance to the topic of the Agriculture Bill. The documents was written clearly with links to other areas of poicy.

Matrix 1 - How would you rate your satisfaction with using this platform (Citizen Space) to respond to this consultation?:  
Slightly dissatisfied

Please enter comments here.:

The platform would be improved by enabling the inclusion of hyperlinks to external sites of evidence that supports the comments submitted.