

Response ID ANON-EC9R-W6TG-U

Submitted to **Draft Strategy for Environment, Natural Resources and Agriculture Research 2022-2027**

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Research Strategy

1 Are the objectives and priorities set out in the strategy sufficiently clear?

Moderately

If not, what changes would you propose?:

The six objectives set out broadly 'to do good research', although it is not sufficiently clear what the public benefit of that research will be in relation to the specific problems the research will solve. This would be a helpful clarification. While the nature and climate emergencies are seen as a key part of the context, they do not appear to be squarely at the centre of the research programme.

We agree with the priorities as currently set out of climate change; land use; biodiversity; the rural economy; animal and plant disease; water and flooding; food supply. We welcome the addition of Circular Economy as a new area and suggest that this should also be seen as an early priority, given its cross-cutting nature and importance. We would add the proviso that flexibility in the programme will be required in today's highly volatile physical and political environment.

We agree with the identified high-level drivers of global climate and nature crises, EU exit and wellbeing in terms of future Scottish Government's needs for research and evidence during the lifetime of this strategy. Economic growth, having led to the climate and nature crises, should not be a driver and should be replaced by sustainable economic activity with the aim of enhancing people's wellbeing. This requires a thorough shift of perspective, which the wellbeing agenda has started. It is clear however the transformational shift in thinking is not yet complete.

There are some clarifications on the drivers as described that are worth considering. For example action to halt and reverse biodiversity decline is key in tackling both the global climate and nature crises, as is noted, However, with action on the ground now urgent, research that helps define and demonstrate the value of effective large scale action is also needed. Similarly, Scotland needs to go beyond 'net zero' and consider our overall contribution to climate change, by addressing our carbon footprint. On sustainable economic activity and wellbeing: sustainable economic activity needs to be compatible with a transition to a more circular economy with reduced footprints and living within planetary boundaries, both of which result in increased wellbeing and reduced inequalities.

2 The Research Strategy outlines 5 Research Themes. Is this an appropriate way of structuring our work?

No

If not, what alternatives should be considered?:

The 5 themes as set out identify the key priorities, as far as we are aware at this particular point in time. Flexibility, cross theme collaboration and engagement with other funders and stakeholders will be key mechanisms for success. More responsive and flexible research to reflect changing needs should emphasise the benefits of good research in itself, being ahead of the game and helping to create an innovative Scotland. It is also a key element of effective horizon-scanning so that future needs can be predicted and anticipated.

We are concerned that the five themes could reinforce previous fragmentation and silos rather than problem-based themes, which may be a more productive way to structure the work. We would like to see a clearer overall framing of the research programme as supporting the transition to a nature-restoring, zero waste low carbon society. The programme identifies knowledge gaps at different levels, from how to reduce textile waste to developing large scale modelling: however the theme of change runs all the way through the five themes. It would be hugely helpful to have a more explicit theory of change - for example showing how large scale modelling, scenarios and data visualisations can support better cross-cutting policy and broader buy-in from stakeholders in order to contribute to change in, for example, citizens' food choices, land managers' practices and recycling norms.

At the very least, there needs to be mechanisms in place to enable work across and between themes to take place. A traditional approach to research with no mechanism for cross theme collaboration will limit the effectiveness of the results in our view.

3 Do you think the Research Strategy will enable us to get the best research and scientific evidence from the best providers?

Yes

Please explain your answer:

It is a start.

However, in order to ensure it is asking the right questions, continued assessment of priorities and close collaboration with end users and stakeholders will be critical. For example, in Scotland, we are still working to design effective farm support policies and mechanisms, yet key beneficial strategies of soil carbon sequestration, organic production, agroforestry, use of pesticides, nutrient management or biodiversity enhancement are not yet sufficiently detailed. This will be crucial to help that design process, support implementation or monitor progress.

4 Are the proposals for maximising impact appropriate?

No

Please explain your answer:

To maximise the impact of research for food, farming, and the environment to deliver the identified outcomes, there must be synergies in agricultural innovation

within a wider Rural Knowledge and Innovation System (RKIS) in Scotland. The proposed research programme must be an integral part of this system. A proportion of its budget should be ring-fenced to support activities with beneficiaries (farmers, foresters, other land managers, supply chain actors, environmental NGOs, and other relevant stakeholders) that take a participatory, co-design approach to support the innovation implementation. This will enable researchers (with the aid of facilitators) to ensure that innovations are informed by research findings, as well as informing research activities within the programme. A well designed RKIS will enable researchers to create impact with a wide range of rural stakeholders on an ongoing basis, while also identifying research needs.

Impact can be maximised by involving the user community at the earliest stage in co-production of the programmes and projects. LINK and its wide eNGO membership is in a unique position to identify both operational and strategic/policy knowledge gaps and to assist in translating them into research needs. LINK would wish to be involved in the proposed Research Portfolio Board (see also Qu.8) but also be offered the opportunity to suggest specific research topics through the appropriate portals.

Knowledge exchange is also key to maximising impact. At least 10% of the budget should be spent on knowledge exchange. 3% - £1.5m – is far too little if the aim is for policy (at local, agency and national level) and practice (farmers, foresters, planners, food businesses, transport operators, housebuilders) to be research-informed. We have a climate and nature emergency: a key priority is to shorten the lag between knowing and doing. As one example, getting more value from the £500m we spend annually on farm support requires much more focus on turning research into advice into practice.

It seems the monitoring of performance is rather restricted to purely operational aspects of the programme whereas performance-monitoring should also be applied to all aspects of the governance, resourcing, relevance, uptake, and user involvement of the programme structure. It is suggested that an external, independent and public review should be undertaken at least once during each RESAS programme cycle.

5 Do you support the proposals on delivering our investment?

Yes

Please explain your answer:

Scotland faces a nature emergency and it is important that all of the available biodiversity research resources across the MRPs be devoted solely to improving our knowledge of how to reverse the current unsustainable negative trends. To this end, we support the creation of a new Centre of Expertise on Biodiversity.

In addition, the MRPs are a strategic and long-term resource for Scotland and as such should be maintained well and further developed. Reduction of the proportion of funding, from 66% to 52%, provided for the strategic programme (see Q6), on top of substantial overall budget cuts for the past decade, does not build and maintain capacity at the MRPs. Continued capital and operational funding allows them to compete within the UK and internationally and to attract the best researchers and also leverage competitive funding from other sources. The budget for underpinning capacity should, in our view, be substantially increased.

6 How do you think the Responsive Research Fund (RRF) should be developed and operated?

Please provide comments in the textbox below:

While we welcome the proposal for a RRF, we note it comes at the expense of a drop in funding to support key longer term strategic research. Long term field studies and maintaining biological collections and the expertise to maintain and build them, is fundamental to ongoing research success and insights that cannot be gained through short term research grants. We understand that funding must be allocated according to need but would warn against cutting longer term research, whose benefits are vital for future success.

A RRF needs to start from the premise that co design and co delivery is fundamental to research whose results are applicable in the wider world. For example, land managers should be involved from the start as co-researchers and co-designers of research.

7 Do you support our aims in working collaboratively with other funding providers?

Yes

Do you have any suggestions for topics to fund?:

Greater clarity on this in this document would be welcome. For example, rural economy and rural decarbonisation are dependent on transforming transport and housing in rural areas. Yet it is not clear where the links are to research work on these topics.

We would also warn that if the intention is to broaden the supply base, that introduces considerable risk to the MRPs unless there is an associated substantial overall budget increase, as has been proposed by the ECCLR Committee. It should be recognised that the MRPs provide a strategic and long-term applied, multi-disciplinary research and innovation resource of great value to Scotland. Providing funding to universities, for example, supports rather short-term, more academic, research groups who may well either close down, or even be relocated outside Scotland, at very short notice. Well-funded MRPs should, of course, be very much encouraged to seek co-funding of topics or projects within the RESAS programme from other sources, such as the Scottish Funding Council or UKRI.

8 Do you support the new structure for Governance set out within the strategy?

Yes

9 Do you have any further comments or suggestions?

Please add your comments below:

Additional to our response under Q8, we would add that LINK (as argued under Qu.4) would very much welcome the opportunity to add value through membership of the proposed Research Portfolio Board.

We agree that Scotland's research programme must be dynamic and responsive to the evolving policy landscape. Flexibility in allocating funding will be vital. However, success is highly dependent on the level of funding available. Cutting that funding into smaller pieces will not be able to support the research required

for the transformational changes in resource and land use that Scotland is facing in the current climate and nature emergencies. Recognition that flexibility must be through better collaboration, stronger relationships and efficient mechanisms for swift changes in direction are key: allocating diminishing funding across multiple priorities will not work.

We welcomed and supported the ECLR pre-budget scrutiny 2021 -2022 report recommendation that the revenue budgets of public organisations considered key to responding to the global climate emergency and biodiversity loss are protected in real terms. Furthermore, we welcome the recommendation that the Government should reverse cuts to the Strategic Research Budget. It is vital therefore that the RESAS 2022 - 2027 Research plan delivers the strong science needed for Scotland to build a green recovery. Its budget spend therefore must align with the ECLR pre-budget scrutiny 2021 -2022 report recommendation that 'spend should be aligned to the delivery of strategic goals on green recovery, climate change and the ecological crisis. This is also critical to achieving resilience.' The ECLR Committee report adds that 'a combination of policy, regulatory and financial tools are required to shift behaviour and assist a just transition.' In order for this to be achieved, the RESAS review should ensure that the research supports and builds the foundation for that behaviour shift. We would therefore wish to see more meaningful stakeholder engagement – with farmers, with local authorities, with the rural enterprise agencies and with rural communities as well as with citizens' organisations concerned with environment and climate (see Q8).

To meet the scale of the climate and biodiversity emergencies, it is vital that effective action on the ground is underpinned by strong research and that research informs action through high levels of engagement with land managers. It is equally vital that research is designed to deliver activities in the real world: this means that there needs to be much less compartmentalization of topics and much more focus on cross cutting themes and programmes able to address each research theme with the ultimate result of informing effective and deliverable activities in land management across Scotland. It is not clear from this document how those connections will be made. They are vital for success however.

While 'behaviour change' is referenced in a couple of the programmes, there is no clear wider sense of how research can inform the deep change in culture and values implied by a shift to a nature-restoring, net zero economy. This will inevitably link to actions elsewhere in the Scottish/UK Government research portfolio, in which case the links should be set out.

Equity seems absent from the framing of the research strategy. Rural poverty arises not just from lower wages but also high costs of living including heating, transport and food; and access to affordable housing is a problem in many areas. We suggest equity is a lens through which this research programme should be examined.

The framing of some of the document appears traditional and 'productionist' – "there is an immediate need to produce more food on less land" is presented as a fact, not a proposition. For example, achieving the SDG food waste target of a 50% reduction by 2030 more than compensates globally and locally for the extra demand from population growth: yet there is only a minor mention of food waste in relation to fruit and vegetable production.

We welcome this consultation and the opportunity to respond and would be delighted to work further with RESAS on developing this strategy and on implementing it in due course.

Theme B: Sustainable Food System and Supply

1 Do you support this research priority?

Yes

2 Do you have any further comments or suggestions?

Please add any comments here:

The direction of travel within this research theme is towards crop productivity with very little mention of ecological productivity. For example, we would expect to see more on sustainable diets and limiting and eliminating food waste. The impacts of production and consumption on climate, nature and society should also be referenced through short food chains and the positive impact of these on local economies. Without a market, accessible to all, increased sustainable production of fruit, vegetables, grain and legumes should not be an end in itself.

Part of the requirement is to develop work on behaviour change interventions so that we can understand how to influence consumers to make long-term changes with respect to their diet and food safety. However there seems to be an implicit assumption that reducing health or dietary inequalities is achieved by behavioural change. This is not the case: affordability of a healthy diet is a matter of economics, not skills and knowledge.

3 Would you like to comment on a specific Research Topic? (Please state which in your answer)

Please add any comments here:

We query why organic production and agroforestry is not included in this section. We would expect to see a Theory of Change to enable moves towards sustainable production to take place, supported by research that can be widely adopted and that can make a significant difference. This will depend on identifying what it will take for system change: not just change in farmers and 'consumers'.

Theme C: Human impacts on the Environment

1 Do you support this research priority?

Yes

2 Do you have any further comments or suggestions?

Please add any comments here:

The way we use land has very significant impacts on our environment in Scotland and globally. A key action going forward will be the identification of where ecological networks can achieve maximum value for climate and biodiversity targets and also how they can best be implemented. It would be helpful to recognise the role the SRPs have in supporting this vital work in the Decade of Ecosystem Restoration. A crucial part of this will be large scale modelling and mapping. However the need for this extends beyond climate emissions: large scale mapping and modelling is required in order to link up strategic land use, minimise habitat and species range fragmentation and build resilience into Scotland's ecosystems. The narrow interpretation of large scale modelling is a missed opportunity to define strategic level research input to solutions that reach across Government policies.

Research and innovation are both urgently needed to create practical pathways to re-connect, at landscape-scale, Scotland's severely fragmented natural and semi-natural habitats. A specific focus should be on the opportunities for managed wilding to contribute.

In anticipation of Scotland adopting a human right to a healthy environment, it is becoming urgent to understand the full implications and definition of a "healthy" or "fully-functioning" environment. Closely allied to this knowledge gap, it would be strategically valuable to develop tools to assess the ecosystem service provision of farms or larger estates. It seems likely that, in the not too distant future, such metrics will become a component of land valuation and be a necessary element of land transactions, as the national classification of land capability for agriculture is already.

Achieving a circular economy will similarly be vital for Scotland in terms of impact at a national and global level. We welcome the proposals for research to underpin achieving a circular economy, but would suggest this is urgent and could be better integrated across the five themes. For example, in the Rural economy section there is potential for CE innovation in the bioeconomy and in the food section there is CE potential in developing alternative proteins.

The causes of and solutions to the climate and biodiversity crises are part of a complex and inter-connected web. The connection between agricultural GHGs and biodiversity should be recognised in this research topic as many agricultural practices that contribute to GHGs also harm biodiversity and, conversely, practices that reduce emissions can enhance biodiversity. There should be a focus on identifying practices which deliver dual climate and biodiversity benefits (e.g. practicing grass and/or legume crop rotation improves soil diversity, soil fertility and biodiversity as well as supports reduced use of fertilisers which create nitrous oxide emissions).

3 Would you like to comment on a specific Research Topic? (Please state which in your answer)

Please add any comments here:

Research topics we suggest should be included under this theme include:

the need for more research on the elaboration and quantification of footprint reduction targets, developing understanding of how much we need to reduce our consumption of raw materials to be compatible with 'one planet prosperity' and living within planetary boundaries.

research on ecological networks, and in general on spatial planning to achieve multiple benefits from the land should be prominent

Benefits of nature sector and defining nature jobs contribution to local community resilience across Scotland.

Examining the barriers farmers experience and what support they require to change to practices that reduce agricultural GHGs. Both financial and non-financial (e.g. an advisory service) barriers/support should be examined.

Theme D: Natural Resources

1 Do you support this research priority?

Yes

2 Do you have any further comments or suggestions?

Please add any comments here:

We welcome the themes of air quality, water, soil and biodiversity in this theme. We would underline the importance of these given that the consultation clearly states that Biodiversity loss in particular is a growing problem and Scotland has a key role in combating it, especially in relation to fragile upland ecologies, peatlands and coastal and marine ecosystems. Delivering on appropriate and well targeted research on biodiversity status and solutions going forward will be fundamental. Large scale modelling and mapping (see above) will be key.

On natural capital we would add the value of working with stakeholders in, for example, the State of Nature Scotland, in assessing Scotland's natural capital and drawing on wider resources and expertise.

One aim of this research topic is to support the future management of water resources in the face of climate change. This topic should explore the opportunities to use natural infrastructure to adapt and mitigate challenges over grey infrastructure solutions. Investing in natural, blue and green, infrastructure is often more effective and economical than investing in grey infrastructure solutions. It also delivers biodiversity and human health benefits. For example, creating natural infrastructure like ponds and wetlands or permeable pavements in high-risk flood areas would be more economical and effective than investing in grey infrastructure such as combined sewer overflows. It would also create natural habitats and link up existing habitats, thereby increasing biodiversity and creating community greenspace which in turn can promote mental and physical health benefits and increase community cohesion.

The research into flood risk and water management should feed directly into the Regional Spatial Strategies and Regional Land Use Frameworks.

As part of 'develop[ing an] evidence-based solutions that enhance nature and biodiversity', the research topic should specifically investigate embedding a national ecological network in National Planning Framework 4. A national ecological network would enable Scotland to better protect nature, as well as more effectively

plan the enhancement of nature and biodiversity. It should also investigate creating nature recovery targets to enhance, conserve and protect biodiversity.

3 Would you like to comment on a specific Research Topic? (Please state which in your answer)

Please add any comments here:

About you

1 What is your name?

Name:

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3 Are you responding as an individual or an organisation?

Organisation

4 What is your organisation?

Organisation:

Scottish Environment LINK's Green Recovery Group

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

Publish response with name

6 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

7 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?:

Very satisfied

Please enter comments here.:

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

Very satisfied

Please enter comments here.: