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9th July 2021

EPA Reference: EPAC-3121

Re: Consultation: National Research and Innovation Strategy, 2021 to 2027

Dear Keith,

The Environmental Protection Agency (EPA) welcomes this opportunity to contribute to the preparation of the next National Research and Innovation Strategy, 2021-2027 (hereinafter referred to as “new National Strategy”). The EPA has been funding environmental research since 1994. It has recently published its new Framework for research programming over the next 10 years, entitled [EPA Research 2030](#). The key purpose of this Framework is to put science and innovation at the centre of environmental protection in Ireland through the development and proactive transfer of knowledge.

The remit and focus of EPA-funded research is to generate evidence that will support the design and implementation of effective and robust policy, evaluate its outcomes, and demonstrate its value. The importance of knowledge generation and robust evidence for public policy in terms of tackling environmental challenges has never been greater and we strongly advocate that research for policy be placed on an equal footing alongside research for knowledge and research supporting jobs/growth in the new National Strategy and in its implementation. In this regard, we welcome the intention of the new National Strategy to strengthening the role of research for policy.

We also emphasise the unique added value brought by individual research funders such as the EPA in informing evidence-based decision-making. In particular, the EPA’s deep understanding of the complex and inter-related environmental challenges facing Ireland, derived from our regulatory, advocacy and knowledge provider roles, places us in a strong position to continue to support the research-policy interface at EU and national level. There cannot be a single voice and a one-size-fits-all approach in the development of research of such scale and importance. If climate and environmental issues are to be truly integrated, they should be considered in the activities of the various bodies, with all providing different aspects and expertise (i.e. science, policy and opportunity/implementation) to solving the challenges facing Ireland. In this regard, the new National Strategy should promote greater co-design of such endeavours ensuring that the perspectives and expertise of the many relevant national actors are captured. This will ultimately enhance the quality, relevance and applicability of the research.

In addition to its role as a research-funder, the EPA also plays a key role in coordinating environmental research in Ireland. In 2014, three networks (the 'National Research Coordination Groups') were set up for this purpose – the Climate, Sustainability and Water Research Coordination Groups. In 2021, the three groups were merged into an umbrella [National Environmental Research Coordination Group \(NERCG\)](#). Sub-groups are considered when and as relevant. The [Climate Research Coordination Group \(CRCG\)](#) was kept as a sub-group in light of its actions under existing national climate policies and plans. A key objective of this group is to advance shared strategic objectives for climate change research and ensure coherence in climate change research investments in Ireland and effective linking of these to European Union (EU) funding streams. It is important that new National Strategy act as an enabler of the activities of, and utilise, the expertise and outputs of the various existing *funders fora* e.g. the National Environmental Research Coordination Group and Marine Research Funders Forum.

While the EPA welcomes the focus on climate as a grand challenge in the current consultation document, there are wider environmental considerations and societal aspects which should be considered and fully incorporated in the new National Strategy. The overall vision and mission of the Strategy should be to enable a sustainable Ireland, as this remains one of the greatest challenges facing society now and into the future. Sustainability should be our guiding principle for action and public research investments should be viewed through the lens of sustainability to ensure that we are enabling Ireland to become a resource-efficient economy founded on a fair and just society which fully respects the ecological limitations and capacity of our surrounding natural environment.

In 2020, the EPA published its quadrennial [Ireland's Environment Report](#) which provides an assessment of the overall quality of Ireland's environment, the pressures being placed on it and the societal responses to current and emerging environmental issues. The environmental challenges that we face are giving rise to complex and systemic issues and they cut across various topics, such as climate, air, soil, water, biodiversity and waste, as well as across organisations and sectors, business and all levels of society. The key messages from this report include the following:

1. We need vision and implementation to protect Ireland's environment and our health and wellbeing;
2. Step up to protect the environment around us as it is under increasing threat; and
3. System change – Delivery on sectoral and societal outcomes needs to be accelerated.

The report also outlined a number of key challenges which we face over the next decade which should be a guiding reference in the development of relevant national research. These challenges include:

- Halt any further deterioration in our natural environment while supporting our economy and accommodating our growing population.
- Accelerate action to decarbonise and green our economy and society, so achieving climate neutrality by 2050.
- Protect ourselves against the inevitable consequences of climate disruption.
- Start restoring the precious habitats and water bodies that we have lost.
- Leave space for nature as part of a new approach to biodiversity protection.
- Designate more of our marine area as protected areas.
- Protect air quality by switching to cleaner fuels and energy for transport and heating homes.
- Massively reduce our annual one million tonnes of food waste.
- Foster more sustainable agricultural production and land-use systems and management.
- Invest in essential water services infrastructure that protects drinking water supplies and eliminates discharges of raw sewage.

- Achieve greater efficiency in our production and consumption activities when using raw materials.
- Secure the improvements in our natural environment that we have made through regulation and investment.
- Integrate measures to protect against radon into our built environment.
- Leverage a growing public engagement with environmental issues.
- Act on the thematic, sectoral and integrated highlights of the Report.

The need for enhanced transdisciplinary approaches involving co-production should be promoted more extensively in the new National Strategy to drive capacity and practice in the Higher Education Institutions. To meet the requirements presented by real-world problems, in particular environmental problems which are inherently ‘wicked’ in nature, an inclusive approach to knowledge co-production needs to be prioritised to integrate best available intelligence and expertise (both academic and non-academic) relevant to a given problem. As outlined in the recent Royal Irish Academy discussion paper ‘[Better together: knowledge co-production for a sustainable society](#)’, knowledge co-production has the power to enhance the quality of research undertaken, deepen understanding of the research question, enhance collaboration and build trust amongst stakeholders as well as generate more usable and actionable knowledge and solutions thereby increasing the likelihood of its practical application. Importantly, the concept of co-production should not be limited solely to the performance of research; it must be embedded in our research funding process from the outset. In particular, with respect to large-scale endeavours tackling areas of national priority (for example, SFI mission-based funding schemes) there needs to be a more holistic and integrated approach to the development and scoping of these schemes to ensure that all important facets are appropriately captured.

The new National Strategy should also be cognisant of the fact that certain challenges and issues we face do not require additional scientific scrutiny or knowledge; they require the appropriate mobilisation and linkage of existing knowledge with action and implementation. It is key therefore that the next Strategy takes a systematic approach to knowledge transfer ensuring that it is a key requirement in all future research investments. Proactive system-wide action(s) supporting knowledge transfer would effectively embed this practice into the ethos of our research performers.

The new National Strategy should also be aligned with the EU Green Deal as well as the priorities under the Horizon Europe Strategic Plan. These include:

- Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations;
- Restoring Europe’s ecosystems and biodiversity, and managing sustainably natural resources to ensure food security and a clean and healthy environment;
- Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems;
- Creating a more resilient, inclusive and democratic European society, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions.

Taking this strategic approach would represent a triple-win in terms of enhancing our local expertise and knowledge in areas of priority to Ireland, broadening our collaborative network and linkages while also boosting our non-exchequer drawdown to support such research.

Finally, ensuring that there is a protected, sustained and growing national budget for environmental research is also essential. It is well recognised internationally that investment in research and development is a major driver of innovation and can bolster economic growth and competitiveness.

The National Research Strategy should better link the requirement for a growing research budget to the ultimate objective of achieving and maintaining a sustainable Ireland and should aspire to at least meet, if not exceed, the EU average for R&D intensity (i.e. expenditure as a percentage of GDP).

We thank you for the opportunity to contribute to the preparation of the next National Research & Innovation Strategy and are happy to contribute further if required. Individual responses to the specific questions outlined in the Consultation Paper will be submitted separately.

Yours sincerely

A handwritten signature in cursive script that reads "Eimear Cotter .". The signature is written in black ink on a light-colored background.

Dr Eimear Cotter, Director
Environmental Protection Agency