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environmental sciences

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Consultation on the second Research Excellence Framework

Respondent details

Submission of the Institution of Environmental Sciences (IES) and Committee of Heads of Environmental Sciences (CHES)

Note: consultation submissions were by means of an online form. This document contains the answers submitted by the IES and CHES. Questions to which no response was submitted are excluded.

Overall approach

1. Do you have any comments on the proposal to maintain an overall continuity of approach with REF 2014, as outlined in paragraphs 10 and 23?

We support the proposal to maintain continuity of approach with REF2014. However, we recognise the need for adjustments to existing process in some areas, including to ensure that required administration time by active researchers does not further deflect them from research and impact activity. Any adjustments which are made in the next iteration of the REF should consider the time burden which they place on researchers.

Unit of assessment structure

2. What comments do you have about the Unit of Assessment structure in REF 2021?



It is our view that the Unit of Assessment (UoA) system is a reasonable way of partitioning subject areas, given the scale of the assessment exercise. However, as currently applied the UoA structure does not effectively manage the separation of certain disciplines from those they share close or complex links with. In our area, we are concerned that the separation of the environmental sciences from applied aspects of component sciences (biology, chemistry, physics etc.) can at times cause confusion. Amongst many of our academic members there is concern that environmental sciences are included in a UoA which is primarily focused on the Earth Sciences. We argue that full use of the option to refer submissions to other subpanels is essential in ensuring a balanced and well-informed assessment is made in all cases (particularly where research has interdisciplinary aspects), and that researchers have confidence in this process.

Assuming that the UoA system is retained for the next REF period, it is the recommendation of the IES and CHES that the Environmental Sciences are split from Earth Systems, to form a separate UoA. Sub-panel referrals would still be important, but this would significantly enhance confidence that environmental science research will be appropriately assessed in its own right.

Alternatively, if it is deemed that such a division is not possible, we would argue that the UoA structure should be adjusted to more closely reflect the links between earth sciences, environmental sciences and environmental studies, as grouped by the Quality Assurance Agency (QAA) in their [subject benchmark statement](#).

It will never be possible to design a set of 'perfect' UoAs, where every researcher's work has a clear home or close affiliation. Recognising this, it is therefore important that a standardised approach is developed and implemented for cross-panel referrals for assessment of both output and impact. Sub-panels must be encouraged to use this mechanism fully. This will go a long way to ensuring that, whatever categorisation or assessment structure is ultimately adopted, multi- and inter-disciplinary research will be well assessed.

With regard to the assessment of impact, it should be noted that the categorisation system of the REF means that impacts are effectively restricted to individual disciplines when in reality, societal (including policy) problems are very often multi-faceted and complex, requiring insight from a range of perspectives and disciplines. Therefore, the current UoA approach is limiting and insufficient in this regard, and the panel and REF organisers should explore different ways to account for impact across broader themes or challenges, where researchers from multiple disciplines are engaged.

Expert panels

4. Do you agree with the proposed measures outlined at paragraph 35 for improving representativeness on the panels?

Comments:

It is important that assessment panels are reflective of the diverse workforce in UK Higher Education and



research. We support the proposed measures for improving representativeness.

6. Please comment on any additions or amendments to the list of nominating bodies, provided alongside the consultation document.

The Committee of Heads of Environmental Sciences is very pleased to be listed as a nominating body and welcomes the opportunity to continue contributing nominations for the next iteration of the REF.

Collaboration

15. What are your comments in relation to better supporting collaboration between academia and organisations beyond higher education in REF 2021?

It is important that the REF recognises, and supports, the important role of research 'users', non-academic collaborators, learned societies and professional bodies in both the research and impact creation processes. The REF should encourage co-production, where academics engage actively with research users, such as policy makers, throughout the research process. This requires a recognition that research does not always follow a linear progression from idea or question conception to output and impact production, but can evolve in more sophisticated and diverse manner over time.

On the whole, it is the view of our academic members that REF2014 appropriately recognised, rewarded and encouraged inter-institutional collaboration. However, some consider that the REF2014 assessment system has had a negative impact on collaboration between departments within institutions. Many environmental scientists found that the outputs of collaborations with colleagues in other scientific disciplines (such as chemistry, engineering, physics etc.) were submitted under these UoAs, devaluing the contribution of other departments. This potentially has damaging consequences for future collaboration. There is concern within institutions that, if this continues, contributing departments whose research was submitted under different UoAs may receive credit which does not equate with their true contribution to the research output and impact.

Outputs

17. What are your comments in relation to the assessment of interdisciplinary research in REF 2021?

Interdisciplinary research is vital to tackling the major challenges our societies now face. All possible steps should be taken to ensure this type of research is encouraged, including ensuring it is always fairly and



appropriately assessed as part of the REF.

We reiterate our point under question 2 of this consultation: to encourage and properly assess the excellence and impacts of interdisciplinary research a standardised approach to subpanel referral must be developed, and this mechanism must be used fully by all UoA panels.

In response to Hefce's specific suggestions:

- We support the appointment of interdisciplinary 'champions' on each sub-panel. Formal networks of champions within main panels could be an effective mechanism for ensuring that interdisciplinary research is assessed equitably and receives appropriate credit. Networks of appropriately experienced, engaged and well organised champions could support and improve the sub-panel referral process, and increase confidence in the assessment of interdisciplinary research.
- In principle, we believe that mandating the 'interdisciplinary identifier' field could assist with the identification and subsequent referral of interdisciplinary outputs. However, this will only be the case if this change is accompanied by clear and freely available guidance to institutions on what constitutes an interdisciplinary output.

Interdisciplinary research is extremely diverse in scale and structure – some projects will be the product of small scale bilateral collaborations, whilst others may draw on the work and expertise of a web of contributors from a large number of different disciplinary and sectoral backgrounds. A definition of what constitutes an interdisciplinary output should not exclude either type, or outputs emerging from other models which do not align with traditional disciplinary boundaries.

- We would welcome revision of the environment template to more explicitly encourage the submission of information on institutional structures and programmes to support and encourage interdisciplinary research.

Impact

19. Do you agree with the proposal to maintain consistency where possible with the REF 2014 impact assessment process?

Comments:

We support Hefce's proposal to maintain overall consistency with the REF 2014 impact assessment process. However, there is a need for adjustments to existing process in some cases, and changes made for the REF2021 iteration should consider the time burden which they may place on researchers and those providing evidence of impact.



20. What comments do you have on the recommendation to broaden and deepen the definition of impact?

Clarification regarding the definition of impact would be helpful. This clarification should recognise the broad range of potential impacts research can have. In the environmental sciences in particular, impact can be very broad and can include, inter alia, direct impacts such as enhancement of air or water quality, reduction in contamination in various systems, and more indirect impacts on, for example, human health or ecosystem services. Impacts may include: informing adjustments in policy at local, regional, national and international levels; assisting in the resolution of conflicts or controversial issues; and/or increasing awareness of environmental issues or promoting behaviour change amongst members of the public, organisations, or other groups of actors. However, it is important to specify that impact is about outcomes: actual change as a result of an intervention. The intervention itself does not necessarily represent impact, but an activity on route to it. For example, public engagement activities, or citation in a policy document may or may not lead to one or more impacts.

It should also be noted that impact in the real world rarely results from the atomised or linear approach assumed by the REF (i.e. where a single piece of research leads relatively simply to a change). As such, a revised definition should enable REF to assess impact through contributions to bodies of knowledge that have more influence.

The clear distinction proposed between academic and wider impact is helpful. It is our view that impact assessment in the REF should focus on those impacts covered by the definition of 'wider impact'. Academic impacts can be better assessed elsewhere.



21. Do you agree with the proposal for the funding bodies and Research Councils UK to align their definition of academic and wider impact?

If yes, what comments do you have on the proposed definitions?

Yes.

We support the proposal for the funding bodies and Research Councils UK to align their definitions of impact.

In recent years, the addition of an 'impact' element to the REF has played a major part in the mainstreaming of the so-called 'impact agenda', which has begun to alter the ways in which individual researchers and HEIs think and make decisions about research. As such, consistency of approach across public research funders and in government policy is highly desirable.

22. What comments do you have on the criteria of reach and significance?

Feedback received by the Institution indicates that participants and assessors were generally comfortable with these criteria. It was noted however, that in one case efforts made by panel members to understand the criteria collectively through 'calibration' exercises were extremely helpful.

Expanding such activities for panel members should be considered. Offering similar guidance to those submitting case studies (perhaps in the form of 'good impact guides', or activities similar to those described above) may also be beneficial in improving understanding and enhancing the quality of submissions.

23. What do you think about having further guidance for public engagement impacts and what do you think would be helpful?

Further guidance on this point would be beneficial. It is important that this guidance clearly explains that evidence of public engagement activities alone do not constitute impact. Public engagement is, rather, a means to achieve impact. Guidance must make it clear that to demonstrate impact from public engagement or dissemination, the outcomes of these activities must be specified and evidenced.

Providing demonstrative examples of the level of specification and evidence required in a guidance document may assist in clarifying this point.

25. Do you agree that the approach to supporting and enabling impact should be captured as an explicit section of the environment element of the assessment?



Comments:

Yes.

We share Lord Stern's conclusion that strategies for impact, and the research environment are closely linked. Institutions should be embedding support for impactful research in their broader strategies. As such, we support the inclusion of approach to supporting and enabling impact in the environment template, which will enable assessors to develop a better understanding of the full scope of an HEI's strategies and policies.

However, it should be made clear in guidance to institutions that holistic high-level approaches to impact are still vital, and will be rewarded in the assessment process. It should be made explicit that the inclusion of this information in the environment section of the assessment, rather than in a specific impact template, is simply to reflect the fact that impact should be considered fundamental to wider institutional strategy, rather than an issue which stands alone.

27. Do you agree with the proposal to include a number of mandatory fields in the impact case study template to support the assessment and audit process better (paragraph 96)?

Comments:

On the UoA point in particular, it should be noted that just as the UoA structure can be restrictive in terms of the assessment of research outputs, this can also be the case with regard to impact. The categorisation system of the REF means that impacts are effectively restricted to individual disciplines when in reality, societal (including policy) problems are often multi-faceted and complex, requiring insight from a range of perspectives and disciplines. Therefore, the current UoA approach is limiting and insufficient in this regard, and the panel and REF organisers should explore different ways to account for impact across broader themes or challenges, where researchers from multiple disciplines are engaged. We would recommend that the same structures for sub-panel referral of research outputs are adopted in the assessment of impact case studies, and the submission form should include an interdisciplinary identifier to reflect this.

29. What comments do you have in relation to the inclusion of examples of impact arising from research activity and bodies of work, as well as from specific research outputs?

We strongly support Lord Stern's recommendation and this proposal.

In the real world impact rarely results from the atomised or linear model assumed by the REF (i.e. where



a single piece of research leads relatively simply to a change). As such, we would support revision to the REF2021 terms of reference for impact case studies to enable assessment of impact through contributions to bodies of knowledge that can have more influence.

31. What are your views on the suggestion that the threshold criterion for underpinning research, research activity or a body of work should be based on standards of rigour? Do you have suggestions for how rigour could be assessed?

It is important that research underpinning impact is conducted to rigorous standards. However, feedback received by the Institution suggests that the star system utilised in REF2014 was in many cases found to be unhelpful and unclear.

Instead, a clear definition of research quality, based on standards of rigour, should be developed. These standards should relate to the appropriateness of the research method to answer the research questions, and the quality assurance activities undertaken and embedded in the research itself. Reliance on peer review of research outputs will not necessarily be an appropriate indicator of rigour for all impact submissions.

32. Evaluation of REF 2014 found that provision of impact evidence was challenging for HEIs and panels. Do you have any comments on the following:

32a. The suggestion to provide audit evidence to the panels?

Caution should be exercised in the making of any changes which may place significant extra burdens on researchers and institutions during the REF process. Requiring the submission of all corroborating evidence for the impacts claimed could be such a change, in particular for case studies where impact does not arise from a simple linear model of change, but through more complex series of interactions and activities.

32b. The development of guidelines for the use and standard of quantitative data as evidence for impact?

Although fairness and efficiency in the assessment process is important, we would caution against the increased use of metrics to achieve this in the assessment of impact. Such analytical tools are highly unlikely to be able to capture the nuance in, and broad range of forms that 'excellence' can take in terms of impact in the UK research base. Given the stated proposal to deepen and broaden the definition of impact for REF2021, in practice the development of suggested metrics (or types and standards of data)



could prove counter-productive and unhelpful.

Increased metric use would also inevitably increase 'gaming' of the system and 'targetology', where researchers aim to hit the narrow metrics to the detriment of a wider set of outcomes, and may lead to perverse outcomes.

33. What are your views on the issues and rules around submitting examples of impact in REF 2021 that were returned in REF 2014?

It is important that the REF recognises impacts which emerge over time from long-term research projects. Environmental processes and problems operate at a variety of time scales, and therefore environmental research must often reflect this. As such, it is possible that impacts submitted to REF2014 could have evolved in the subsequent years and again be relevant for submission in REF2021.

Long-term research is crucial to understanding many of the major challenges society faces, and so should not be discouraged. However, if examples of impact which were submitted to REF2014 are to be returned again in REF2021, in order to receive credit these case studies will need to include substantial and robust evidence tracing and explaining how the impact has been delivered, or evolved, over a longer timescale. Clear guidance on this point will need to be issued to HEIs to assist with planning, and in the preparation of case study submissions.

Environment

35. Do you have any comment on the ways in which the environment element can give more recognition to universities' collaboration beyond higher education?

A new section addressing partnerships and collaboration should be added to the environment template. This section should invite evidence and examples of how HEIs engage with, broker and develop partnerships with external bodies and groups.



Institutional level assessment

38. What are your views on the introduction of institutional-level assessment of impact and environment?

There could be significant benefits to assessing impact in particular at the institutional scale.

Many impacts, particularly in relation to environmental and sustainability outcomes, are multi-faceted and emerge from bodies of evidence built up over many years and across many disciplines. As such, encouraging HEIs to adopt and commit to institutional strategies for impact is very important if research is to assist in tackling grand challenges in this area. It is becoming increasingly clear that interdisciplinary and ambitious approaches are crucial to addressing these challenges. Asking HEIs to evidence the approaches they are taking to impact, and the contributions they are making to tackling overarching societal challenges, could therefore be very beneficial.