

Annex A

Consultation questions and response form

1. Responses to the consultation should be made by completing the form below, and returning it by e-mail by **midday on Wednesday 16 December 2009**.
2. All responses should be e-mailed to ref@hefce.ac.uk. **In addition:**
 - a. Responses from institutions in Scotland should be **copied to** Pauline Jones, Scottish Funding Council, e-mail pjones@sfc.ac.uk.
 - b. Responses from institutions in Wales should be **copied to** Linda Tiller, Higher Education Funding Council for Wales, e-mail linda.tiller@hefcw.ac.uk.
 - c. Responses from institutions in Northern Ireland should be **copied to** the Department for Employment and Learning, e-mail research.branch@delni.gov.uk.
3. We will publish an analysis of responses to the consultation. Additionally, all responses may be disclosed on request, under the terms of the Freedom of Information Act. The Act gives a public right of access to any information held by a public authority, in this case HEFCE. This includes information provided in response to a consultation. We have a responsibility to decide whether any responses, including information about your identity, should be made public or treated as confidential. We can refuse to disclose information only in exceptional circumstances. This means responses to this consultation are unlikely to be treated as confidential except in very particular circumstances. Further information about the Act is available at www.informationcommissioner.gov.uk. Equivalent legislation exists in Scotland.

Respondent's details

Are you responding: (Delete one)	On behalf of an organisation As an individual _____
Name of responding organisation/individual	Council for the Mathematical Sciences
Type of organisation (Delete those that are not applicable)	Higher education institution _____ Academic association or learned society Professional body Business _____ Government body _____ Charity/third sector organisation Other type of organisation (please specify): The Council for the Mathematical Sciences comprises the Institute of Mathematics and its Applications, the London Mathematical Society, the Royal Statistical Society, and the Edinburgh Mathematical Society and Operational Research Society. All five members are registered charities and learned societies.
Contact name	Martin Smith

Position within organisation	CMS Secretariat
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Consultation questions

(Boxes for responses can be expanded to the desired length.)

Consultation question 1: Do you agree with the proposed key features of the REF? If not, explain why.

We agree that:

- output quality is the most direct indicator of excellent submissions and should be given the greatest weight;
- research should be assessed against international standards of excellence;
- assessment should be undertaken by an expert panel for each UoA, with the outcomes determined by peer review;
- assessment should focus on the highest quality work produced in submitted units.

Consultation question 2: What comments do you have on the proposed approach to assessing outputs? If you disagree with any of these proposals please explain why.

Comments are especially welcomed on the following proposals:

- that institutions should select research staff and outputs to be assessed
- for the categories of staff eligible for selection, and how they are defined
- for encouraging institutions to submit – and for assessing – all types of high-quality research outputs including applied and translational research
- for the use of citation information to inform the review of outputs in appropriate UOAs (including the range of appropriate UOAs, the type of citation information that should be provided to panels as outlined in Annex C, and the flexibility panels should have in using the information)

and on the following options:

- whether there should be a maximum of three or four outputs submitted per researcher
- whether certain types of output should be ‘double weighted’ and if so, how these could be defined.

We warmly welcome the change in approach to the use of citation data in research assessment and the proposal to allow individual panels to decide independently whether/how to use bibliometrics. Panels should be asked to specify clearly their working practice in advance, with working practice documents subject to consultation with the community (as in 2008).

Citation data is of little overall use in the mathematical sciences,* especially within an exercise which aims to assess work across the disciplinary range. We would expect the mathematical sciences panel to take a very cautious approach to interpreting any bibliometric information provided.

Reducing the number of outputs submitted from four to three would reduce the burden on the panels, although retaining four outputs would give a broader view. Either way, the crucial point is that the mathematical sciences panels will need to read all submitted outputs - this was necessary in RAE2008 to make a robust assessment of quality, and the same will be true for the REF.

* For a detailed treatment of the use of citation data in mathematical sciences see R. Adler, J. Ewing, and P. Taylor (2009) "Citation Statistics", *Statistical Science*, Vol 24, 1-14 (plus discussion and rejoinder, 15-28). Also available from <http://www.mathunion.org/fileadmin/IMU/Report/CitationStatistics.pdf>

Consultation question 3: What comments do you have on the proposed approach to assessing impact? If you disagree with any of these proposals please explain why.

Comments are especially welcomed on the following:

- how we propose to address the key challenges of time lags and attribution
- the type of evidence to be submitted, in the form of case studies and an impact statement supported by indicators (including comments on the initial template for case studies and menu of indicators at Annex D)
- the criteria for assessing impact and the definition of levels for the impact sub-profile
- the role of research users in assessing impact.

We do not believe that the methodology for assessing impact is robust enough to identify excellence consistently. We welcome HEFCE's recognition that the impact of mathematical sciences research is often realised through an indirect route (para. 75) and that attribution of impact will therefore be problematic, but we are not convinced that it will be possible to "develop an approach that will give due credit for this", especially since mathematical sciences has (disappointingly) not been chosen as one of the disciplines for the impact pilot study. We are also worried that paragraph 68 appears to directly contradict the sentiments in paragraph 75[†]. The 'underpinning' nature of mathematical sciences research means that it is normal for a quantitative framework to be exploited by another unit without further 'exploitation' work within the mathematical sciences unit itself. It would be helpful if the mathematical sciences community could present some samples of impact narratives for scoring to gain a better impression of what is required.

The mathematical sciences are high-impact subjects[‡] and have nothing to fear from a truly rigorous analysis of performance in this area. They are crucial disciplines for all knowledge-based economies in the 21st century, and have an essential strategic role in underpinning the economic, scientific and engineering base in the UK. All excellent mathematical sciences research has the potential to make a significant economic impact in the short, medium or long term.

The definition of "impact" is overly narrow, and should be extended to include academic impact (both within the discipline and beyond). This would match Research Council approaches to assessing impact.

Despite the high value of mathematical sciences research, we think it extremely unwise to place a weight of 25% of the total profile score on an untested and experimental process, and argue that the impact weighting should be substantially reduced. Impact should be weighted at no more than 15%.

We note that the discriminatory power of the final REF profile depends heavily on the variability of scores within each of the subprofiles; thus, if impact is more variable than research outputs, then impact could dominate the final ratings – this should be avoided.

The timescales are problematic: whilst we agree that impact may only become apparent over the medium or long term, we are not convinced that this results in sensible funding decisions.

The impact proposals will put a serious additional burden on HEIs, and on panels in assessing them. All claims will need to be rigorously assessed, as otherwise there is a risk that this part of the REF will just degenerate into an exercise in fiction writing.

We are not convinced that it will be easy (or in many cases, possible) to find enough appropriate 'user members' for REF panels. Such individuals will need expertise in the academic discipline and its final application in order to assess the claims made between the research and impact, and in many disciplines the potential pool will be small. Also, whilst there are compelling reasons for academics to agree to sit on panels (and for their employers to welcome this), the same is not true for non-academic user members. Nominations for user members should be made by the same bodies as for other members of the panel.

There are secrecy considerations to some high-impact research in defence or other areas; in the mathematical sciences this is most obviously manifest by work carried out at the Heilbronn Institute, but it will be an important issue in many disciplines.

In conclusion, we believe that what has been proposed will be vastly time-consuming (for both HEIs and panels) and will not provide a reliable or robust measure of excellence.

[†] Paragraph 68: *In claiming credit for a demonstrable impact, it will be important to show clearly how the contribution made by the submitted unit grew out of its research activity. We do not envisage that a unit could claim credit for impact which was based on research undertaken in the unit but which was exploited or applied through the efforts of others, without a demonstrable contribution by the unit to that exploitation.*

[‡]A detailed exposition of impact of mathematical sciences research can be found in *Report of the senior assessment panel of the international assessment of the US mathematical sciences* (March 1998), available from <http://www.nsf.gov/pubs/1998/nsf9895/>

Consultation question 4: Do you have any comments on the proposed approach to assessing research environment?

We agree that research environment (especially for postgraduate, postdoctoral and early career researchers) is important and should be a distinct element in the assessment. However we disagree that 'engagement' should be considered under the environment heading. It would be far more appropriate for this to come under 'impact'.

Consultation question 5: Do you agree with our proposals for combining and weighting the output, impact and environment sub-profiles? If not please propose an alternative and explain why this is preferable.

We agree that the weighted sub-profiles should be combined, but we disagree with the proposed 60:25:15 split. As noted above we believe that the weighting for impact should be substantially reduced. We also see no good reason that all panels should use the same weightings: there is huge variability in research practice and culture across disciplines, and the subpanels should be free to choose weightings which reflect this.

Consultation question 6: What comments do you have on the panel configuration proposed at Annex E? Where suggesting alternative options for specific UOAs, please provide the reasons for this.

Given the intention to reduce the total number of units of assessment in the REF we accept the creation of one consolidated UoA for mathematical sciences by combining the research previously assessed by the pure mathematics, applied mathematics, statistics & operational research subpanels (UoAs 20, 21 and 22 in RAE2008). This approach will help to moderate the assessment approach within these disciplines and limit the scope for 'tactical' decisions as to which Unit a department should submit to. The combined panel should be labelled 'mathematical sciences' rather than 'mathematics and statistics' though, in order to reflect the inclusion of operational research.

Consolidating UoAs 20, 21 and 22 gives a diverse panel overall, but no other grouping driven by a reduction in the total number of units would make sense[§]. We expect that the subpanel will wish to operate an 'informal sub-group' approach to reflect this diversity as suggested in paragraph 94 in order to compare 'like with like'.

However, the subpanel as a whole must have sufficient expertise to make an assessment across the totality of mathematical sciences and we believe that more than 20 members will be needed. The size of the subpanel should not just depend on the number of submissions received: it also needs to take into account the proportion of outputs which are read, and the average output page-length. In mathematical sciences where outputs are substantial and the density of ideas per page is high we would expect the panel to read them all (as was the case in RAE2008). Far more than 20 panel members will be needed as it is essential that there is a critical mass of expertise in each sub-area.

[§] We assume that History of Mathematics will also be considered by the combined mathematical sciences panel given that it is currently part of UoA 20.

Consultation question 7: Do you agree with the proposed approach to ensuring consistency between panels?

In RAE2008 there were a lot of problems getting consistency between subpanel and panels. In our opinion this was not because of a lack of clear guidance: there were guidelines, but they were not effective. It is difficult to make adjustments near the end of the assessment. What is needed is to allow time for this to be done throughout the process.

Consultation question 8: Do you have any suggested additions or amendments to the list of nominating bodies? (If suggesting additional bodies, please provide their names and addresses and indicate how they are qualified to make nominations.)

No suggested additions or amendments.

Consultation question 9: Do you agree that our proposed approach will ensure that interdisciplinary research is assessed on an equal footing with other types of research? Are there further measures we should consider to ensure that this is the case and that our approach is well understood?

No comments.

Consultation question 10: Do you agree that our proposals for encouraging and supporting researcher mobility will have a positive effect; and are there other measures that should be taken within the REF to this end?

No comments.

Consultation question 11: Are there any further ways in which we could improve the measures to promote equalities and diversity?

No comments.

Consultation question 12: Do you have any comments about the proposed timetable?

The timetable is overly ambitious. In particular, the pilot exercise needs to be concluded and evaluated, and the process clearly established before the REF data collection system is designed and people are nominated to panels.

Given the need to reduce the burden of the exercise we believe that the length of time between successive assessments should be longer.

Consultation question 13: Are there any further areas in which we could reduce burden, without compromising the robustness of the process?

No comments.

Consultation question 14: Do you have any other comments on the proposals?

Descriptions of the grades seem to be quite vague in places, with little tangible distinction between the description of 2* and 3* - this issue could be particularly acute for subpanels that choose to make minimal use of citation data. Academics need clarity so that they can prepare submissions against well-defined criteria and expectations.

One of the unintended consequences of research assessment is the distortion of the academic job market. Spikes in recruitment could perhaps be mitigated by proportional counting of staff according to the proportion of the review period spent at the institution.