

Part 2C

Main Panel C criteria

Main Panel C covers the following sub-panels:

- 16 Architecture, Built Environment and Planning
 - 17 Geography, Environmental Studies and Archaeology
 - 18 Economics and Econometrics
 - 19 Business and Management Studies
 - 20 Law
 - 21 Politics and International Studies
 - 22 Social Work and Social Policy
 - 23 Sociology
 - 24 Anthropology and Development Studies
 - 25 Education
 - 26 Sport and Exercise Sciences, Leisure and Tourism
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The following sections set out the criteria that Main Panel C and its sub-panels will apply in assessing submissions. These should be read alongside the guidance provided in REF 02.2011, 'Assessment framework and guidance on submissions' (hereafter 'guidance on submissions') and the generic statement of criteria and working methods provided in Part 1 of this document.

Section C1: Submissions and units of assessment

Section C2: Assessment criteria: outputs

Section C3: Assessment criteria: impact

Section C4: Assessment criteria: environment

Section C1: Submissions and units of assessment

Introduction

1. The sub-panels of Main Panel C cover a diverse range of content, disciplines and methodologies. The sub-panels anticipate receiving research outputs, impact case studies, and impact and environment templates which reflect that rich diversity, and have no pre-conceptions about where excellent research will be found.
2. Each sub-panel expects to receive submissions whose primary research focus falls within the stated remit of its UOA. Submitting units are encouraged to submit their strongest work, including interdisciplinary work, in the UOA where it is most appropriate.

Unit of assessment descriptors and boundaries

UOA 16: Architecture, Built Environment and Planning

3. **Descriptor:** The UOA covers all forms of historical theoretical, applied and practice-based research relevant to the planning, design, creation, use, management and governance of the built environment in both rural and urban areas. This includes: building engineering, building sciences, communities, construction, construction management, economic development, environment, housing, landscape, manufacture, real estate, regeneration, sustainability, transport, regional and spatial analysis and urbanism. The UOA also covers any other research in which the built environment forms a major field for application or provides the context for research. It expects submissions in this UOA from a broad range of disciplines, research methodologies and forms of output, across the spectrum of fundamental, applied, policy and practice-based research. Much of the submitted research is expected to span disciplinary and methodological boundaries. The sub-panel has wide-ranging experience in this area, and welcomes interdisciplinary submissions.
4. **Boundaries:** The sub-panel anticipates that there may be overlaps with UOA 2 (Public Health, Health Services and Primary Care, such as work that relates to healthy cities and healthy environment), UOA 4 (Psychology, Psychiatry and Neuroscience), UOA 7 (Earth Systems and Environmental Sciences), UOA 11 (Computer Science and Informatics), UOA 13 (Electrical and Electronic Engineering, Metallurgy and Materials), UOA 14 (Civil and Construction Engineering), UOA 17 (Geography, Environmental

Studies and Archaeology), UOA 18 (Economics and Econometrics), UOA 19 (Business and Management Studies), UOA 21 (Politics and International Studies), UOA 22 (Social Work and Social Policy), UOA 23 (Sociology), UOA 24 (Anthropology and Development Studies) and UOA 34 (Art and Design: History, Practice and Theory).

UOA 17: Geography, Environmental Studies and Archaeology

5. **Descriptor:** The UOA covers all aspects of research – conceptual, methodological, substantive and applied – conducted within the disciplines of geography, environmental studies and archaeology, as broadly defined. This research embraces a wide range of enquiries into natural, environmental and human phenomena, and their interrelationships in particular systems, contexts, periods and locations (both in the UK and internationally). In **Geography**, submitted research may include work from all fields of physical and human geography (for example, biogeography, climatology, geomorphology, glaciology, hydrology, environmental change, Quaternary science; environmental geography; development, economic, health, political, population, social, cultural and historical, urban and rural geographies; and geographical information sciences); work that combines any of these sub-fields; and work that uses a wide range of available methods, from science-based to humanistic and participatory, from the abstract to the experimental and field-based. In **Environmental Studies**, submitted research may include work in any area of the field, including some also present in environmental geography (for example, environmental economics, governance, management and policy), and some areas of environmental science (for example, conservation, ecology, environmental pollution, and resource management). In **Archaeology**, submitted research may include work from all fields of the subject (for example, archaeological theory and historiography, archaeological science, the archaeology of human origins, and prehistoric and historic societies worldwide, early civilisations, Egyptology, classical archaeology and related historical studies, medieval and post-medieval archaeology, colonial and industrial archaeology, landscape and environmental archaeology, archaeological aspects of heritage management and museum studies, archaeological conservation and forensic archaeology). The UOA also includes work on the history and theory of geographical, environmental and archaeological enquiry; as well as work on geographical, environmental and archaeological techniques, including remote sensing, geospatial analyses, dating methods, and bio- and geo-archaeology.

6. **Boundaries:** Given the breadth of the subject matter of UOA 17, there are likely to be some overlaps with other UOAs, located both in Main Panel C and in any of the other main panels. The expectation is that submissions in UOA 17 that overlap with cognate fields will normally involve research in such areas that are integral to research programmes and research environments in archaeology, geography and environmental studies. Where a submission's **main** research emphasis lies elsewhere, it should be submitted in a more appropriate UOA. In areas where there is significant overlap between UOA 17 and another UOA, it is expected that whole submissions will be made in the UOA appropriate to the academic context and research environment in which the research was undertaken, and with the most appropriate range of expertise for the body of work as a whole. Possible areas of overlap may include: some physical geography and some environmental studies and archaeology with UOA 7 (Earth Systems and Environmental Sciences); some archaeology and ancient history with UOA 31 (Classics); historical geography with UOA 30 (History); development geography and archaeology with UOA 24 (Anthropology and Development Studies); environmental studies with UOA 5 (Biological Sciences); and archaeological conservation and heritage science with UOAs in several panels including UOA 8 (Chemistry).

UOA 18: Economics and Econometrics

7. **Descriptor:** The UOA includes all aspects of economics and econometrics (including, where appropriate, economic history). Research of all types – empirical or theoretical, strategic, applied, or policy-focused – will be considered of equal standing.

8. **Boundaries:** Submitting units are encouraged to submit their strongest work irrespective of the form of output or the extent of its interdisciplinary nature, even if the research is at the boundaries of the UOA. There could be overlaps with any UOA, including the other UOAs within Main Panel C, particularly UOA 19 (Business and Management Studies).

UOA 19: Business and Management Studies

9. **Descriptor:** The UOA consists of the areas of: accounting and finance; business history; business and industrial economics; corporate governance and risk management; corporate social responsibility; employment relations; entrepreneurship and small firms; human resource management; information management and business systems; innovation and technology management; international business; management education and development;

management science; marketing; operations and project management; organisational psychology; organisational studies; public sector management; public services and third sector; service management; strategic management; and any other field or sub-field aligned to business and management.

10. **Boundaries:** The sub-panel anticipates that work submitted in this UOA may overlap with the remits of UOA 10 (Mathematical Sciences), UOA 18 (Economics and Econometrics) and UOA 36 (Communication, Cultural and Media Studies, Library and Information Management).

11. An anticipated exception to the main panels' preferred approach of the majority of work submitted in a UOA being assessed by that sub-panel, is that significant aspects of submissions in UOA 19 (Business and Management Studies) are expected to fall within the remit of UOA 18 (Economics and Econometrics). These parts of submissions may be cross-referred to Sub-panel 18 for advice, although, in common with any cross-referred work, Sub-panel 19 (as the sub-panel for the UOA in which the work was submitted for assessment) will retain responsibility for recommending the quality profile.

UOA 20: Law

12. **Descriptor:** The UOA includes all doctrinal, theoretical, empirical, comparative, critical, historical or other studies of law and legal phenomena including criminology, and socio-legal studies. The sub-panel would also expect research on legal education to be submitted in this UOA.

13. **Boundaries:** All areas of law as described above fall within the boundaries of the UOA. Research in law may intersect with or draw upon a variety of disciplines and methodologies. The sub-panel has been constituted with a broad spread of relevant expertise to ensure informed assessment of all submissions, and encourages units to submit their strongest work including research which is at the boundaries of the UOA. For the avoidance of doubt, it is recognised that criminological research may fall within the boundaries of Sub-panels 20 (Law), 22 (Social Work and Social Policy) and 23 (Sociology). All three sub-panels welcome such work, which will be assessed in accordance with the arrangements noted above, in particular making use of joint assessors and cross-referral as deemed appropriate by the sub-panels.

UOA 21: Politics and International Studies

14. **Descriptor:** The UOA includes (but is not restricted to) comparative, area, national and sub-national politics; public administration and policy studies; political behaviour and political sociology;

political theory and philosophy, including history of political thought; international relations, including strategic, war and peace studies, international history, international political economy and foreign policy analysis; methods in political studies; and higher education pedagogic research in politics and international studies.

15. **Boundaries:** The sub-panel expects submissions in this UOA from all areas of the discipline in the UOA descriptor, but recognises that some of the outputs submitted will cross disciplines; the sub-panel is confident of its ability to assess a wide range of interdisciplinary outputs.

UOA 22: Social Work and Social Policy

16. **Descriptor:** The UOA covers all forms of research in social work, social policy and administration and criminology, including those in governmental, voluntary and community, private for profit and not for profit areas. Research includes:

- a. Theory, methodology, empirical research, ethics and values, and pedagogy as they apply to social work, social care, social policy, criminology and criminal justice policy, gerontology and substantive issues in these areas of study.
- b. Comparative research and research into international institutions, policy and practice.
- c. Research that uses a range of disciplinary approaches including (but not exclusively) the following: business and management, demography, development studies, economics, education, geography, health studies, history, law, politics, psychology and sociology.
- d. Relevant links with other stakeholders, professionals, service users and carers.
- e. Policy-making processes, practice, governance and management, service design, delivery and use, and inter-professional relationships.

17. **Boundaries:** Social work, social policy and administration, and criminology are essentially multidisciplinary subjects and are closely related to a range of other disciplines within the social sciences and more broadly. Appropriate methods will be used in cases of substantial overlap with other sub-panels, as set out in Part 1, paragraphs 92-100. For the avoidance of doubt, it is recognised that criminological research may fall within the boundaries of Sub-panels 20 (Law), 22 (Social Work and Social Policy) and 23 (Sociology). All three sub-panels welcome such work, which will be assessed in accordance with the arrangements noted above, in particular making use of joint assessors and cross-referral as deemed appropriate by the sub-panels.

UOA 23: Sociology

18. **Descriptor:** The UOA includes empirical and theoretical study of the social structures, cultures and everyday practices of societies, including styles and material standards of living, opinions, values and institutions. It covers all areas of social theory, historical and comparative studies, and social research methodology (including qualitative and quantitative methods and visual methodologies), philosophy of social science, and research on pedagogy in sociology. The sub-panel also expects to consider sociological research in such interdisciplinary fields as criminology and socio-legal studies, media and cultural studies, demography, socio-linguistics, social psychology, psychosocial studies, social studies of science and technology (including science and technology policy), and lesbian, gay, bisexual, transgender and intersex studies.

19. The sub-panel expects submissions in this UOA from all fields of sociological enquiry including, but not restricted to, research on cultures, economies, and politics; class, ethnicity, gender, sexuality, disability, and age, and their intersection; religion, education, health and medicine, family, media, welfare institutions, and work and employment; environment, technology, and climate change; the body, interpersonal and inter-group relations, violence; urban and rural issues; language and social interaction; political sociology, public policy, and social movements; political economy, globalisation, development, migration, and diaspora; comparative studies of societies of all kinds, including work on transnational structures and agencies, the European Union, world systems. The sub-panel welcomes works in social theory and the history of social thought.

20. As in previous research assessment exercises, work in interdisciplinary women's studies may be submitted in this UOA, or may be cross-referred by other sub-panels to Sub-panel 23. Assessors will be appointed to consider the interdisciplinary aspects of women's and gender studies that fall outside the expertise of the sub-panels.

21. Work submitted in this UOA may overlap significantly with the remit of UOA 22 (Social Work and Social Policy). This arises from the large number of academic units that combine the constituent subject areas and that may make a combined submission in UOA 22 or UOA 23. It is anticipated that the use of joint assessors and cross-referral of parts of submissions may be required in order to ensure an appropriate assessment, in accordance with the arrangements in Part 1, paragraphs 92-100. For the avoidance of doubt, it is recognised that

criminological research may fall within the boundaries of Sub-panels 20 (Law), 22 (Social Work and Social Policy) and 23 (Sociology). All three sub-panels welcome such work, which will be assessed in accordance with the arrangements noted above, in particular making use of joint assessors and cross-referral as deemed appropriate by the sub-panels.

UOA 24: Anthropology and Development Studies

22. **Descriptor:** The UOA covers all aspects of research within the disciplines of Anthropology and Development Studies, including research that is conceptual, theoretical, empirical, applied, strategic and practice-based, and that draws on a broad range of methodologies that includes the qualitative, quantitative, field-based, laboratory-based, experimental, participatory, evaluative, visual and comparative.

23. **Anthropology** is understood to include the broad fields of biological anthropology, palaeoanthropology and social and cultural anthropology. Social and cultural anthropology includes, but is not limited to, economic and political anthropology; kinship, gender and relatedness; religion and cognition; medical anthropology; environment, conservation and biodiversity; the anthropology of development; visual anthropology; ethnomusicology and performance; material culture. Biological anthropology includes, but is not limited to, human and non-human primate evolution and adaptation; palaeoanthropology, behaviour, growth and development, health and disease, ecology, conservation, genetics, demography and for forensic applications.

24. **Development Studies** covers issue-driven research concerning the analysis of global to local processes of cultural, demographic, economic, environmental, political, technological and social change in developing and emerging parts of the world, with particular reference to structures and institutions; the changing relationships between developed and developing countries; and the construction and critical interrogation of development theories and methods, and of policy analysis.

25. **Boundaries:** The sub-panel expects submissions in this UOA from all areas outlined in the UOA descriptor, but recognises that some of the work submitted might span the boundaries between two or more UOAs. The sub-panel is confident in its ability to assess a wide range of interdisciplinary work.

UOA 25: Education

26. **Descriptor:** Research in education is multi-disciplinary and is closely related to a range of other disciplines with which it shares common interests, methods and approaches. This diversity of content and methodology requires the sub-panel to be flexible in setting out the boundaries of work relevant to the REF.

27. The UOA may be broadly described as being concerned with research in the areas identified in the following illustrative lists:

- Research which addresses education systems, issues, processes, provision and outcomes in relation to sectors, **such as:** early years, primary, secondary, further, higher, medical, workplace, adult and continuing education. It also includes teacher, healthcare and other forms of professional education, vocational training; and informal, community and lifelong learning.
- Research which addresses substantive areas, **such as:** curriculum, pedagogy, assessment, language, teaching and learning; children, young people, student and adult learners; parents, families and communities; culture, economy and society; teacher training, professionalism and continuing professional development (CPD); special and inclusive education; participation, rights and equity issues; technology-enhanced learning; education policy; the organisation, governance, management, effectiveness and improvement of educational institutions; education, training, workplaces, industry and the labour market; comparative, international and development education.
- Research which employs a range of theoretical frameworks and methodologies drawn from disciplinary traditions, **including, but not limited to:** anthropology, applied linguistics, economics, geography, history, humanities, mathematics, statistics, philosophy, political science, psychology, science and sociology. Research in the field of education deploys a range of qualitative and quantitative methodologies with structured, exploratory and participatory research designs. These **include, but are not limited to:** surveys, experiments and controlled trials; ethnography, interview and narrative enquiry; action research and case study; evaluation research; critical theory and documentary analysis; analytic synthesis and systematic review.

28. The sub-panel welcomes submissions in pedagogical research in higher education and in professional education (including healthcare), while recognising that such work may instead be submitted in another relevant UOA. The sub-panel will consider submissions in counselling and neuroscience where this work has an educational orientation. However, submissions in these areas may be referred to another sub-panel for advice.

UOA 26: Sport and Exercise Sciences, Leisure and Tourism

29. **Descriptor:** Research in the UOA stems from the natural sciences, social sciences and the humanities. The sub-panel expects to receive submissions from a wide range of disciplines and subject areas that contribute to research in sport and exercise sciences, leisure and tourism. These include (in alphabetical order): adapted physical activity, anthropology, biochemistry, biomechanics, business and management, coaching, economics, education, engineering and technology, event management, geography, history, hospitality, law, medicine, molecular biology, motor learning and control, nutrition, outdoor and adventure education, philosophy, physical education and pedagogy, physical activity and health, physiology, policy studies, politics, psychology and sociology. Research in sport and exercise sciences, leisure and tourism is therefore derived from diverse disciplines and subject areas, and can also be multi-disciplinary and interdisciplinary.

30. The sub-panel expects submissions in this UOA of research of all types, and it expects to consider research informed by a variety of research epistemologies, methodologies and methods. The sub-panel will consider research defined as empirical, theoretical, strategic, applied, or policy-focused as having equal standing.

Interdisciplinary research and work on the boundaries between UOAs

31. The main panel recognises that the UOAs described above do not have firm or rigidly definable boundaries, and that aspects of research are naturally interdisciplinary or multi-disciplinary or span the boundaries between individual UOAs, whether within the main panel or across main panels.

32. The arrangements for assessing interdisciplinary research and submissions that span UOA boundaries – including through the appointment of assessors and, where necessary, cross-referring specific parts of submissions between sub-panels – are common across all main panels and are described in Part 1, paragraphs 92-100.

Pedagogic research

33. Research on pedagogy and educational issues within higher education that relate to the disciplines covered by Main Panel C may be submitted in the UOA to which it relates or in UOA 25 (Education), as deemed appropriate by submitting HEIs. Main Panel C anticipates that individual sub-panels will assess such research where it relates to higher education in the sub-panel's discipline area. Assessors will be appointed with expertise in pedagogic research in those UOAs where the pattern of submission requires it.

34. Research into teaching in other education sectors or on general educational issues should be submitted in UOA 25, or will be cross-referred to Sub-panel 25 as appropriate.

Multiple submissions

35. 'Guidance on submissions' (paragraphs 50-52) sets out the arrangements whereby institutions may exceptionally, and only with prior permission of the REF manager, make more than one submission (multiple submissions) in the same UOA. These exceptions include situations where a sub-panel considers there is a case for multiple submissions in its UOA, given the nature of the disciplines covered.

36. The following sub-panels in Main Panel C consider that there is a case, based on the nature of the disciplines covered by their UOAs, for multiple submissions in their UOAs and would expect to receive requests:

- Sub-panel 17 (Geography, Environmental Studies and Archaeology). It is anticipated that requests proposing separate submissions by discrete geography and archaeology departments would normally fulfil the criteria.
- Sub-panel 24 (Anthropology and Development Studies). It is anticipated that requests proposing separate submissions by discrete anthropology and development studies departments would normally fulfil the criteria.

37. Requests for multiple submissions may be made in other UOAs within Main Panel C but are expected to be a rare occurrence. All such requests will be considered according to the criteria and procedures at paragraph 50 of 'guidance on submissions'.

Section C2: Assessment criteria: outputs

Output types

38. Main Panel C welcomes all forms of research output that fulfil the eligibility criteria for the REF (set out in paragraphs 105-117 of 'guidance on submissions' and in Part 1, paragraphs 43-44 of this document) and recognises that work of the highest quality can be found in a range of media. The sub-panels will assess all forms of output on an equal basis, with no preconception of quality attached to the form or medium of an output. No sub-panel will use journal impact factors or any hierarchy of journals in their assessment of outputs.

39. All submitted outputs must embody original research. Main Panel C expects to receive a wide range of research output including, but not limited to:

- Books, edited works, parts of books, special issues.
- Journal articles (including web-based), including articles in supplements of journals.
- Physical artefacts such as buildings, devices, images, installations, materials, products and processes, prototypes.
- Digital artefacts such as data sets, multi-use data sets, archives, software, film and other non-print media, web content such as interactive tools.
- Temporary artefacts, such as exhibitions and performances.
- Other paper-based outputs such as: case notes; catalogues; conference papers; designs; design codes; monographs; multilateral and international agencies' research reports; outputs from projects commissioned by all levels of government, industry and other research funding bodies; policy evaluations/reports/commissioned reports; primary data reports; publications of development donors; published maps; patents; critical review articles; systematic reviews; teaching, curriculum and assessment materials and textbooks (including those for training and/or for practice) where they embody original research; working papers.

Outputs with significant material in common

40. As stated in 'guidance on submissions' (paragraph 108), where two or more research outputs listed against an individual in a submission include significant material in common (for example, an article reissued as a chapter in a book, or two articles

informed by the same empirical research and which make the same argument), the sub-panels may decide to assess each output taking account of the common material only once, or judge that they should be treated as a single output if they do not contain sufficiently distinct material.

41. Where a submitted output includes significant material in common with an output published prior to 1 January 2008, as stated in Part 1, paragraph 44, submissions should explain how far the earlier work was revised to incorporate new material (maximum 100 words).

Co-authored/co-produced outputs

42. Main Panel C recognises that collaboration is a positive and increasing dimension of research within its remit, and that collaboration results in co-authored or co-produced research outputs. It recognises that collaborative work may be addressing issues of significant concern to today's society. It expects, therefore, that co-authored works will represent a significant proportion of output submitted for assessment.

43. Where a co-authored or co-produced output is submitted for assessment, it must be listed against an individual member of staff who made a substantial research contribution to the output.

44. With the exception of the arrangements for the submission of a co-authored output twice in the same submission, detailed at paragraphs 47-48, the sub-panels do not require the submission of textual information about the individual co-author's contribution to a co-authored output and, if received, will take no account of such statements.

45. Information may be requested through an audit to verify that an author made a substantial research contribution to a co-authored output listed against them, and where this cannot be verified the output will be graded as 'unclassified'. The order of authors will not be taken into account, as conventions in this regard vary between subject areas. Once the sub-panel accepts that the author has made a substantial research contribution to the output, the sub-panel will assess the quality of the output taking no further regard of the member of staff's individual contribution. The quality of each output will be judged on its merits independent of authorship arrangements.

Listing a co-authored output multiple times within the same submission

46. Where two or more co-authors of an output are returned in **different** submissions (whether from the same HEI or different HEIs), any or all co-author(s) that made a substantial research contribution to the output may list the same output.

47. Sub-panels wish to receive the fullest possible picture of a submitted unit's research activity and advise that, if additional outputs of comparable quality will give a wider picture of research in the submitting unit, an item of co-authored work should be submitted only once within a single submission.

48. Nevertheless, sub-panels recognise that there may be circumstances in which institutions wish to submit a substantial piece of co-authored work against more than one member of staff returned within **the same** submission. In such cases institutions should provide a brief statement to demonstrate that each co-author or co-producer's contribution has been substantial and, where relevant, that it has been distinctive (maximum 100 words). A single co-authored output may be listed against a maximum of two members of staff within a submission.

49. Once the sub-panel has determined that each co-author made a substantial contribution to the output, it will assess the quality of the output as a whole, taking no further regard of each individual co-author's contribution. If a sub-panel does not accept the justification for listing the output twice, one occurrence of the output will be graded as 'unclassified'.

Double-weighted outputs

50. The sub-panels recognise that there will be cases where the combined scale of academic investment in the research activity and the scope of the research output is equivalent to two or more single outputs and may, in some cases, have limited the ability of an individual researcher to produce four substantial outputs within the assessment period. The sub-panels want to recognise and double-weight such outputs in the assessment; in other words for them to count as two outputs both in a submission and in the calculation of the outputs sub-profile.

51. Considering the patterns of publication across Main Panel C's areas of activity, and recognising that publication practices vary, the following sub-panels expect that requests for double-weighting would normally be made only for outputs other than journal articles or book chapters:

- Sub-panel 17 (Geography, Environmental Studies and Archaeology)
- Sub-panel 18 (Economics and Econometrics)
- Sub-panel 19 (Business and Management Studies)
- Sub-panel 21 (Politics and International Studies)
- Sub-panel 23 (Sociology).

52. When requesting that an output is treated as double-weighted, institutions should submit a supporting statement, explaining in what ways the output is of sufficiently extended scale and scope to justify the claim (maximum 100 words). Sub-panels will assess the claim for double-weighting separately from assessing the quality of the output, and there is no presumption that double-weighted outputs will be assessed at the higher quality grades.

53. No more than two outputs listed against an individual may be requested for double-weighting. Requests for double-weighting may not be made for co-authored outputs that have been submitted twice in a single submission (as set out in paragraphs 47-48 above).

54. Given the publication practices in Main Panel C disciplines, and in view of the main panel's wish to give full recognition to outputs of extended scale and scope, institutions may (but are not required to) identify one of the remaining outputs as a reserve for each double-weighting request. The reserve outputs will be assessed only if the sub-panel does not accept the request for double-weighting. If no reserve output is included in the submission and the request for double-weighting is not accepted by the sub-panel, the 'missing' output will be graded as 'unclassified'.

55. As the number of outputs submitted for assessment cannot sum to more than four per staff member submitted, no more than two outputs listed against an individual may be requested for double-weighting. In other words, the maximum number of outputs listed against a member of staff will comprise one of the following:

- four single outputs
- two single outputs plus one double-weighted output, plus the option to include one further output identified as a reserve
- two double-weighted outputs plus the option to include a reserve output for each.

56. Given that sub-panels will assess submissions in the form that HEIs have chosen to present their research within the REF framework, they will double-weight outputs only where requested by the submitting institution (and the request is accepted by the sub-panel), and will not double-weight any output for which a request has not been made by the institution.

Submission of outputs

57. To ensure that practice-based outputs are assessed on an equal basis with other outputs, submissions should include an explanatory

presentation of the building, design or intervention in an easily-handled paper-based format, sufficient to allow the panel both to understand the output without visiting it, and to make a judgement of its research contribution.

58. For software and data sets, a full written description should be provided in a paper-based format in order to avoid accessibility problems, including details of how and where the data set or software can be accessed.

59. Where the form of an output makes this essential, the paper-based submission may be supplemented by limited visual material in an accessible format such as DVD.

Additional information on outputs

Information about the research process and/or content

60. For **any** submitted output where the research content and/or process is not evident from the output itself, such as non-text outputs or teaching materials, submissions should include a statement of up to 300 words which identifies the research questions, methodology and means of dissemination.

Factual information about significance

61. Institutions may provide, in REF2, additional factual information about the significance of a submitted output (maximum 100 words). This information **must** be limited to factual, verifiable information and should relate only to nationally or internationally awarded prestigious prizes or similar significant recognition. It must relate specifically to the submitted output, rather than to an author's output in general. Where provided, statements should be succinct. It is expected that in the majority of cases considerably fewer than the 100 words allowed will be required.

62. The assessment of output quality remains one of peer review based on professional judgement, and no negative inference will be drawn from the absence of such additional information.

Other information

63. A summary of all the additional information about outputs required by Main Panel C is at Annex A.

Citation data

64. Sub-panels 16, 17, 19, 20, 21, 22, 23, 24, 25 and 26 will neither receive nor make use of citation data, or any other form of bibliometric analysis including journal impact factors.

65. Sub-panel 18 (Economics and Econometrics) will receive citation data where available, and will make use of the data where considered appropriate.

66. Where available on the Scopus citation database, the REF team will provide citation counts for research outputs submitted in UOA 18, at a pre-determined date and in a standard format. Sub-panel 18 will also receive discipline-specific contextual information about citation rates for each year of the assessment period to inform, if appropriate, the interpretation of citation data.

67. Sub-panel 18 will make use of citation data to inform the assessment as follows:

- a. Citation data will not be used as a primary tool in the assessment, but only as supplementary information, where this is deemed helpful, about the academic significance of an output. Sub-panel 18 will make rounded judgements about the quality of outputs, taking into account the full range of assessment criteria (originality, significance and rigour).
- b. The absence of citation data for any individual output will have no bearing whatsoever on its assessment.
- c. Sub-panel 18 will be mindful that for some forms of output (for example research monographs, or forms relating to applied research) and especially for very recent outputs, citation data may be unavailable or a particularly unreliable indicator. Sub-panel 18 will take due regard of the potential equalities implications of using citation data.
- d. The sub-panel will use citation data only where provided by the REF team and will not refer to any additional sources of bibliometric analysis, including journal impact factors.

Criteria and level definitions

68. This section provides a descriptive account of how the sub-panels in Main Panel C will interpret the generic criteria for assessing outputs – originality, significance and rigour – and will apply them at each of the starred quality levels. This descriptive account expands on and complements the generic criteria and definitions in Annex A of 'guidance on submissions', but does not replace them.

Interpretation of generic criteria

69. The criteria for assessing outputs will be interpreted as follows:

- **Originality** will be understood in terms of the innovative character of the research output. Research outputs that demonstrate originality may: engage with new and/or complex problems; develop innovative research methods, methodologies and analytical techniques; provide new empirical material; and/or advance theory or the analysis of doctrine, policy or practice.

- **Significance** will be understood in terms of the development of the intellectual agenda of the field and may be theoretical, methodological and/or substantive. Due weight will be given to potential as well as actual significance, especially where the output is very recent.
- **Rigour** will be understood in terms of the intellectual precision, robustness and appropriateness of the concepts, analyses, theories and methodologies deployed within a research output. Account will be taken of such qualities as the integrity, coherence and consistency of arguments and analysis, such as the due consideration of ethical issues.

70. Sub-panel 18 (Economics and Econometrics) will use citation information, where available and appropriate, as part of the indication of academic significance to inform its assessment of output quality. These arrangements are discussed at paragraphs 65-67.

Interpretation of generic level definitions

71. In assessing outputs, the sub-panels will look for evidence of originality, significance and rigour and apply the generic definitions of the starred quality levels as follows:

- In assessing work as being **four star** (quality that is world-leading in terms of originality, significance and rigour), sub-panels will expect to see evidence of, or potential for, some of the following types of characteristics:
 - outstandingly novel in developing concepts, techniques or outcomes
 - a primary or essential point of reference in its field or sub-field
 - major influence on the intellectual agenda of a research theme or field
 - application of exceptionally rigorous research design and techniques of investigation and analysis, and the highest standards of intellectual precision
 - instantiating an exceptionally significant, multi-user data set or research resource.
 - In assessing work as being **three star** (quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence), sub-panels will expect to see evidence of, or potential for, some of the following types of characteristics:
 - an important point of reference in its field or sub-field
- contributing important knowledge, ideas and techniques which are likely to have a lasting influence
 - application of robust and appropriate research design and techniques of investigation and analysis, with intellectual precision
 - generation of a substantial, coherent and widely admired data set or research resource.
- In assessing work as being **two star** (quality that is recognised internationally in terms of originality, significance and rigour), sub-panels will expect to see evidence of, or potential for, some of the following types of characteristics:
 - providing valuable knowledge to the field or sub-field and to the application of such knowledge
 - contributing to incremental and cumulative advances in knowledge in the field and sub-field
 - thorough and professional application of appropriate research design and techniques of investigation and analysis.
- In assessing work as being **one star** (quality that is recognised nationally in terms of originality, significance and rigour), sub-panels will expect to see evidence of, or potential for, some of the following types of characteristics:
 - useful knowledge, but unlikely to have more than a minor influence in the field
 - an identifiable contribution to understanding, but largely framed by existing paradigms or traditions of enquiry
 - competent application of appropriate research design and techniques of investigation and analysis.
- Research will be graded as 'unclassified' if it falls below the quality levels described above or does not meet the definition of research used for the REF.

Section C3: Assessment criteria: impact

Introduction

72. This section should be read alongside 'guidance on submissions' (in particular, Section 3, Annex A, Annex C and Annex G), which sets out the generic definition of impact for the REF, the requirements for submitting impact case studies and a completed impact template, the associated eligibility guidelines, and the generic assessment criteria and level definitions. The sub-panels will assess impact in accordance with this framework.

73. This section provides information which adds to and complements, but does not replace, 'guidance on submissions' with the intention of assisting institutions in developing their submissions for this new element of research assessment.

74. Main Panel C wishes to encourage the disciplines submitting in its UOAs to showcase the impact that their research has achieved outside academia during the assessment period. The panel anticipates that impact will have been felt by a wide range of beneficiaries, and encourages units to submit case studies in any sphere consistent with the general guidance in 'guidance on submissions' (Section 3 and Annex C).

75. Since assessment of impact as part of the REF constitutes a new element of the research assessment process, the main panel recognises that institutions will be considering how to ensure that they prepare case studies which represent their strongest extra-academic impacts. In drawing up its assessment criteria and the advice to submitting institutions, the main panel strongly advises institutions that the guidance provided here, particularly regarding examples of impacts and evidence and/or indicators for those impacts, should not be read as exhaustive, prescriptive or limiting. It also recognises that the examples provided may fit under headings other than those to which they have been presented in the tables below. It wishes to encourage the submission of a wide range of types of impact outside academia, as evidence of the strength and diversity of the impact of research from Main Panel C disciplines, and anticipates that extremely strong impact case studies will be submitted which do not relate to any of the examples provided in the guidance. The examples are offered to assist institutions, not to constrain them.

76. The main panel also acknowledges that there are multiple ways of achieving impact. Impact may arise from individual research projects or from collaborations within or between a range of organisations, within higher education and beyond. The resultant impact may be achieved by a variety of possible models: from individuals, to inter-institutional groups, to groups including both academic and non-academic participants.

The relationship between research and impact may be neither direct nor linear. The main panel has determined that no one model or relationship will be considered intrinsically preferable, and each impact case study will be assessed on its own merits.

Range of impacts

77. As noted above, the sub-panels in Main Panel C welcome case studies that describe any type(s) of impact which fulfil the definition of impact for REF (see 'guidance on submissions', Annex C). The main panel acknowledges that impact within its remit may take many forms and occur in a wide range of spheres. These may include (but are not restricted to): creativity, culture and society; the economy, commerce or organisations; the environment; health and welfare; practitioners and professional services; public policy, law and services. The categories used to define spheres of impact, for the purpose of this document, inevitably overlap and should not be taken as restrictive. Case studies may describe impacts which have affected more than one sphere.

78. Impact of any type may be local, regional, national or international, in any part of the world. The beneficiaries of impact may include (but are **not** restricted to) community/ies, the environment, individuals and organisations. The panel will treat all forms and spheres of impact and any beneficiaries described on an equal basis, assessing them according to the generic REF criteria of reach and significance.

79. HEIs are reminded that impacts on research or the advancement of academic knowledge within the higher education sector (whether in the UK or internationally) **are excluded**. Other impacts within the HE sector that meet the definition of impact for the REF **are included** where they extend significantly beyond the submitting HEI. (See 'guidance on submissions', Annex C.)

80. The main panel particularly acknowledges that there may be impacts arising from research within Main Panel C disciplines which take forms such as holding public or private bodies to account or subjecting proposed changes in society, public policy, business practices, and so on to public scrutiny. Such holding to account or public scrutiny may have had the effect of a proposed change not taking place; there may be circumstances in which this of itself is claimed as impact. There may also be examples of research findings having been communicated to, but not necessarily acted upon, by the intended audience, but which nevertheless make a contribution to critical public debate around policy, social or business issues. The main panel also recognises that research findings may generate critique or dissent, which itself leads to impact(s). For example, research may find that a government approach to a particular social or economic issue is not delivering its objectives, which leads to the approach being questioned or modified.

Table C1 Examples of impact⁹

Impacts on creativity, culture and society:

Impacts where the beneficiaries are individuals, groups of individuals, organisations or communities whose knowledge, behaviours, practices, rights or duties have been influenced

- Enhancements to heritage preservation, conservation and presentation; the latter including museum and gallery exhibitions.
- Production of cultural artefacts, including for example, films, novels and TV programmes.
- Public or political debate has been shaped or informed; this may include activity that has challenged established norms, modes of thought or practices.
- Improved social welfare, equality, social inclusion; improved access to justice and other opportunities (including employment and education).
- Improvements to legal and other frameworks for securing intellectual property rights.
- Enhancements to policy and practice for securing poverty alleviation.
- Influential contributions to campaigns for social, economic political and/or legal change.
- Enhanced cultural understanding of issues and phenomena; shaping or informing public attitudes and values.

Economic, commercial, organisational impacts:

Impacts where the beneficiaries may include new or established businesses, or other types of organisation undertaking activities which create wealth

- Changed approach to management of resources has resulted in improved service delivery.
- Development of new or improved materials, products or processes.
- Improved support for the development of 'small scale' technologies.
- Improved effectiveness of workplace practices.
- Improvements in legal frameworks, regulatory environment or governance of business entities.
- Better access to finance opportunities.
- Contribution to improved social, cultural and environmental sustainability.
- Enhanced corporate social responsibility policies.
- More effective dispute resolution.
- Understanding, developing and adopting alternative economic models (such as fair trade).

Impacts on the environment:

Impacts where the key beneficiaries are the natural, historic and/or built environment, together with societies, individuals or groups of individuals who benefit as a result

- Specific changes in public awareness or behaviours relevant to the environment.
- Improved management or conservation of natural resources or environmental risk.
- Improved management of an environmental risk or hazard.
- Operations or practice of a business or public service have been changed to achieve environmental objectives.
- Improved design or implementation of environmental policy or regulation.
- Changed conservation policy/practice or resource management practices.
- Changes in environmental or architectural design standards or general practice.
- Influence on professional practice or codes.
- Changes in practices or policies affecting biodiversity.

⁹ This list is not designed to be prescriptive, limiting or exhaustive.

Table C1 Examples of impact continued**Health and welfare impacts:**

Impacts where the beneficiaries are individuals and groups (human or animal) whose quality of life has been enhanced (or harm mitigated) or whose rights or interests have been protected or advocated

- Development or adoption of new indicators of health and well-being.
- Development of policy and practice with regard to medical ethics, health services or social care provision.
- Influence on CPD.
- Influence or shaping of relevant legislation.
- Influencing policy or practice leading to improved take-up or use of services.
- Improved provision or access to services.
- Development of ethical standards.
- Improved standards in training.
- Improved health and welfare outcomes.

Impacts on practitioners and professional services:

Impacts where the beneficiaries may include organisations or individuals involved in the development and/or delivery of professional services and ethics

- Changed practice for specific groups (which may include cessation of certain practices shown to be ineffective by research).
- Influence on professional standards, guidelines or training.
- Development of resources to enhance professional practice.
- Use of research findings in the conduct of professional work or practice.
- Influence on planning or management of services.
- Use of research findings by professional bodies to define best practice, formulate policy, or to lobby government or other stakeholders.
- Practitioner debate has been informed or stimulated by research findings.
- Research has challenged conventional wisdom, stimulating debate among stakeholders.

Impacts on public policy, law and services:

Impacts where the beneficiaries are usually government, public sector and charity organisations and societies, either as a whole or groups of individuals in society through the implementation or non-implementation of policies, systems or reforms

- Legislative change, development of legal principle or effect on legal practice.
- Forms of regulation, dispute resolution or access to justice have been influenced.
- Shaping or influence on policy made by government, quasi-government bodies, NGOs or private organisations.
- Changes to the delivery or form of any service for the public.
- Policy debate has been stimulated or informed by research evidence, which may have led to confirmation of policy, change in policy direction, implementation or withdrawal of policy.
- Effect on the quality, accessibility, cost-effectiveness or efficiency of services.
- Impact on democratic participation.
- Influencing the work of NGOs or commercial organisations.
- Improved public understanding of social issues.
- Enabling a challenge to conventional wisdom.

Impacts arising from public engagement activity

81. Public engagement is an activity that may lead to the impact of research. Sub-panels will welcome case studies that include impact achieved in this way, either as the main impact described or as one facet of a broader range of impacts.

82. Case studies which include impacts that derive from engaging the public with research must:

- a. At least in part, be based on specific research or a body of research carried out in the submitted unit, and explain clearly which particular aspects of the research underpinned the engagement activity and contributed to the impact claimed.
- b. Include evidence of the reach of the impact. This should extend beyond simply providing the numbers of people engaged and may also, for example, include:
 - information about the types of audience
 - whether there was secondary reach, for example from follow-up activity or media coverage
 - other quantitative indicators such as evidence of sales, downloads of linked resources, and/or access to web content.
- c. Include evidence of the significance of the impact. This should include a description of the social, cultural or other significance of the research insights with which the public have engaged. Examples of the evidence that might be provided for this include:
 - evaluation data
 - critical external reviews of the engagement activity
 - evidence of third party involvement, for example how collaborators have modified their practices
 - user feedback or testimony
 - evidence of sustainability through, for example, a sustained or ongoing engagement with a group, a significant increase in participation in events or programmes or use of resources.

Case studies: evidence of impact

83. Case studies will be assessed in terms of the criteria of reach and significance (see paragraphs 102-104). In assessing impact case studies, sub-panels will consider both the chain of evidence linking excellent research within the submitting unit to the impact(s) claimed, and the evidence of the reach and

significance of the impact. Within their narrative account in the case study, institutions should provide the indicators and evidence most appropriate to the impact(s) claimed, and to support that chain. The sub-panels will use their expert judgement regarding the integrity, coherence and clarity of the narrative of each case study, but will expect that the key claims made in the narrative to be supported by evidence and indicators.

84. The main panel anticipates that impact case studies will refer to a wide range of types of evidence, including qualitative, quantitative and tangible or material evidence, as appropriate. Individual case studies may draw on a variety of forms of evidence and indicators. The main panel does not wish to pre-judge forms of evidence. It encourages submitting units to use evidence most appropriate to the impact claimed.

85. However, submitting units should ensure that, so far as possible, any evidence cited is independently verifiable. Where testimony is cited, it should be made clear whether the source is a participant in the process of impact delivery (and the degree to which this is the case), or is a reporter on the process. While it is recognised that the evidence for many significant and far-reaching forms of impact may be hard to define, greater weight may be placed on evidence of fact over evidence of opinion in determining the significance and reach associated with a claimed impact.

86. The main panel recognises that some of the evidence in case studies may be of a confidential or sensitive nature. The arrangements for submitting and assessing case studies that include such material are set out in Part 1, paragraphs 58-59.

87. The sub-panels in Main Panel C wish to understand how underpinning research activity links to impact or benefit, for which simple descriptions of the activity will not suffice. Acting as an adviser to a public body, for example, does not of itself represent impact. However, providing advice based on research findings from the submitted unit, which has influenced a policy, strategy or public debate would constitute impact if there is evidence that the advice has had some effect or influence.

88. In constructing a narrative account in a case study, there are many different types of indicators or evidence which could be used to demonstrate the links in the chain between the underpinning research and impact, and the reach and significance of the impact. No type of evidence is inherently preferred over another; judgements will be based on the extent to which the cited evidence provides a convincing link between the underpinning research and the

impact claimed, and convincing evidence of the reach and significance of the impact. The examples of evidence and indicators provided below are simply indicative, and are not designed to be exhaustive, limiting or prescriptive. Main Panel C recognises that different types of evidence are likely to be applicable across any or all spheres of impact. The examples provided are therefore in the format of a common list.

Table C2 Examples of evidence or indicators for impact

- Citation in a public discussion, consultation document or judgement.
- Citation by journalists, broadcasters or social media.
- Citation by international bodies such as the United Nations, UNESCO, IMF and so on.
- Evidence of citation in policy, regulatory, strategy, practice or other documents.
- Evidence of debate among practitioners, leading to developments in attitudes or behaviours.
- Public debate in the media.
- Parliamentary or other democratic debate.
- Visitor or audience numbers, or number of participants (for example, in the uptake of CPD).
- Media reviews.
- Measures of improved inclusion, welfare or equality.
- Independent documentary evidence of links between research and claimed impact(s).
- Documented evidence of influence on guidelines, legislation, regulation, policy or standards.
- Documented change to professional standards or behaviour.
- Satisfaction measures (for example, with services).
- Use in scrutiny or audit processes, such as Select Committees.
- Incorporation in training or CPD material.
- Outcome measures, including measures of outcomes for beneficiaries.
- Quantitative data relating, for example, to cost-effectiveness or organisational performance.

Further examples of evidence relating to impacts that derive from engaging the public with research are provided at paragraph 82.

Case studies: underpinning research

Underpinning research quality

89. Case studies must include references to research produced by the submitted unit that underpinned the impact, and provide evidence of the quality of the research. A case study will be eligible for assessment only if the sub-panel is satisfied that the underpinning research is predominantly of at least two star quality.

90. The main panel notes in particular that while the REF is a process for assessing the excellence of research in submitting units, there is a key difference in the assessment of impact: the excellence of the underpinning research for an impact case study is a threshold judgement (a level which has to be met in order for a case study to be eligible for assessment), but the quality of the underpinning research will not be taken into consideration as part of the assessment (or indeed the assigned quality profile) of the claimed impact.

91. Submitting units must ensure that each case study fulfils the threshold criterion on research quality (see 'guidance on submissions', paragraph 160). A sample of the research should be cited that is sufficient to identify clearly the body of work, or individual project, that underpins the claimed impact. Sub-panels do not expect to review underpinning research output(s) as a matter of course to establish that the threshold has been met. The onus is on the institution submitting case studies to provide evidence of this quality level. Some of the indicators of such quality might be (but are not restricted to): research outputs which have been through a rigorous peer-review process; research outputs which are the result of external grant funding that has been peer-reviewed (sources should be specified); end of grant reports referencing a high quality grading; favourable reviews of outputs from authoritative sources; prestigious prizes or awards made to individual research outputs of underpinning research; evidence that an output has been highly cited and has formed a reference point for further research beyond the original institution. It is noted that not all indicators of quality will apply to all forms of research output.

92. Such indicators will allow sub-panels to make an initial assessment as to whether the underpinning research meets the threshold quality criterion to make a case study eligible for assessment. Where there is doubt that the evidence provided confirms that underpinning research meets the required quality threshold, sub-panels may, exceptionally, decide to examine the outputs. This will be at the discretion of

the sub-panel, and submitting HEIs will need to be able to make the outputs available on request.

93. The sub-panels do not anticipate that submitting units will normally need to cite more than five references, and submissions should include references that best demonstrate the quality of the underpinning research.

94. Underpinning research referenced in a case study may also be included in a submission as an output (listed in REF2), without disadvantage. In these situations, the assessment of the impact case study will have no bearing on the assessment of the quality of the output. The assessment of the quality of the output may inform the assessment of the case study, only in terms of assuring the threshold for underpinning research quality.

Contribution of the underpinning research

95. The institution submitting a case study must have conducted research which has made a distinct and material contribution to the impact described in the case study. Sub-panels will expect to see clear narrative evidence of this in the case study. Main Panel C recognises that several groups or institutions may have made distinct research contributions to a given impact, and it wishes to see submitting institutions ensure both that their own contribution is specified clearly and that the contributions of others are acknowledged.

96. 'Guidance on submissions' (paragraph 160) makes clear that case studies should be underpinned by research conducted at the submitting institution. There will be many cases where a researcher has moved to a different institution during the period in which a body of research underpinning a case study was produced. Where this is the case, the submitting institution should make clear that the research undertaken during the period the researcher spent at that institution made a material and distinct contribution to the impact claimed.

Time frame for underpinning research

97. In line with the eligibility definitions in 'guidance on submissions' (sub-paragraph 158c), the research underpinning impact case studies should have taken place between 1 January 1993 and 31 December 2013.

98. For UOA 16 (Architecture, Built Environment and Planning), this time frame will be extended by five years, so that the eligibility period for research underpinning case studies in that UOA is 1 January 1988 to 31 December 2013. The main panel recognises the extended time frame is necessary, in some cases, for changes to the built environment to be delivered in practice, based on the findings of research from some areas of planning and architectural practice.

Impact template

99. The impact template (REF3a) presents submitting units with an opportunity to describe how they have sought to enable and/or facilitate the achievement of impact arising from their research and how they are shaping and adapting their plans to ensure that they continue to do so in the future. This is distinct from evidence provided in the environment template, which should describe how a unit supports the production of excellent research.

100. The evidence put forward should concentrate on how the unit has facilitated the achievement of impact. The main panel recognises that there may be support available to encourage the achievement of impact within the submitting unit's institution, but notes that submissions should specify how any institutional support has contributed to the unit's approach, rather than simply stating its existence.

101. The sections of the impact template should provide explanation of and evidence for:

- **Context.** Submissions should describe the main non-academic user groups, beneficiaries or audiences for the unit's research, the main types of impact specifically relevant to the unit's research, and how these relate to the range of research activity or groups in the unit.
- **Approach to impact.** Submissions should describe the unit's approach and its infrastructural mechanisms to support staff to achieve impact, during the period 2008-2013. This may include (but is not limited to):
 - how staff in the unit engaged with or developed relationships with key users in order to develop impact from the unit's research
 - evidence of the nature of those relationships
 - how the unit has specifically supported staff to enable impact to be achieved from their research
 - how the unit has made use of institutional support, expertise, or resources to provide support to its staff.
- **Strategy and plans.** Submissions should describe clearly stated goals and plans for maximising the potential for impact from current and future research.
- **Relationship to the case studies.** Submissions should describe the relationship between the support for impact described and the case studies (although the main panel acknowledges that impacts may have been serendipitous rather than planned, or may have arisen from research prior to the period 2008-2013). This could include details of

how, for example, particular case studies exemplify aspects of the approach adopted, or how particular case studies informed the development of the unit's approach.

Impact criteria

102. The sub-panels will assess impact according to the generic criteria and level definitions in 'guidance on submissions', Annex A, Table A3. The criteria will be understood as follows:

- a. **Reach** will be understood in terms of the extent and diversity of the communities, environments, individuals, organisations or any other beneficiaries that have benefited or been affected.
- b. **Significance** will be understood in terms of the degree to which the impact has enriched, influenced, informed or **changed** policies, opportunities, perspectives or practices of communities, individuals or organisations.

103. In considering reach, the potential domain for an impact will be taken into consideration. In other words, reach will be not be assessed in purely geographic terms, nor in terms of absolute numbers of beneficiaries, but rather in terms of the extent to which the potential number or groups of beneficiaries have been affected. It is, for example, recognised that a policy issue affecting one region of the UK uniquely has that region as the potential domain for the impact, and that defines the boundaries of the possible reach achievable.

104. Each case study will be assessed in terms of the reach and significance of the impact on a holistic basis, rather than assessing each criterion separately.

Section C4: Assessment criteria: environment

Environment template

105. 'Guidance on submissions' (paragraph 183) indicates the broad categories of information that institutions are required to provide about the research environment. Main Panel C provides more detailed guidance below on the areas which might be addressed, where relevant to the submitting unit, within the different headings of the template for REF5 (see Annex C). Evidence and indicators should be included where appropriate. This part of the unit's submission presents the opportunity to describe how the unit has supported the production of excellent research. This is distinct from evidence provided in the impact template (REF3a), which should describe how a unit encourages and facilitates the achievement of impact.

106. There is no requirement that the environment element of a submission relates to a single, coherent organisational unit.

107. Information is requested in five sections of the environment template:

- a. **Overview:** This section will not be assessed. It should be used to provide brief contextual information, describing what research groups or sub-units are covered by the submission, **and** how research is structured across the submitted unit. Neither the existence of groups, nor their absence, is, in itself, considered significant by the sub-panels.
- b. **Research strategy:** Evidence of the achievement of strategic aims for research during the assessment period, and details of future strategic aims and goals for research; how these relate to the structure described above; and how they will be taken forward. This may include:
 - an evaluation of the strategy or strategies outlined as part of RAE 2008 and subsequent changes, where appropriate
 - an outline of the main objectives and activities in research for five years following submission, and their drivers; methods for monitoring attainment of targets
 - new and developing initiatives not yet producing visible outcomes, or not yet performing at a national or international level, but nevertheless of strategic importance
 - identification of priority developmental areas for the unit, including research topics, funding streams, postgraduate research activity, facilities, staffing, administration and management.
- c. **People:** Staffing strategy and staff development within the submitted unit, including: evidence of how the staffing strategy relates to the unit's research strategy and physical infrastructure; support for early career researchers and career development at all stages in research careers; evidence of how the submitting unit support equalities and diversity. This may include:
 - i. **Staffing strategy and staff development:**
 - staffing policy and evidence of its effectiveness, including: recruitment objectives and successes; the balance between short-term and long-term contracts among Category A staff; the demographic profile of the unit and how it affects current and future management of research activity; the pattern of staff recruitment over the assessment period, noting recent recruits and how departures have affected research; succession planning, with particular reference to early career researchers; the role and involvement of joint appointments and fixed-term appointments; the relationship of staffing policy to strategy
 - prestigious/competitive personal research fellowships held by submitted staff during the assessment period, and how these have contributed to the development of the staff and the submitted unit
 - evidence that equality of opportunity is being effectively promoted and delivered in arrangements for developing the research careers of all staff (including, where appropriate, Category C staff) including: study leave (evidence may include numbers of staff and length of period of leave); opportunities extended to develop the research careers of part-time staff, staff whose research career has been interrupted for any reason, and those seconded from outside academia; the implementation of the Concordat to Support the Career Development of Researchers and evidence of its positive influence
 - where appropriate, the contribution of any Category C staff to the strength, coherence and research culture of the unit, and implementation of its research strategy
 - mechanisms by which standards of research quality and integrity are maintained (for example ethics procedures and authorship policies).

ii. **Research students:** Evidence of the quality of training and supervision of PGR students, which may include:

- prestigious/competitive studentships and how they have contributed to the PGR culture and research environment
- evidence of a strong and integrated PGR culture, indicating the contribution to the research environment of both PhD candidates and those on professional doctorates (where appropriate), including: support offered to PGR students (including employability skills), and the contribution of submitted staff to doctoral programmes.

d. **Income, infrastructure, facilities:** Information about research income, infrastructure and facilities. This may include:

- research funding, including that allocated as part of larger research consortia, links between research funding and high quality research output, and major and prestigious grant awards made by external bodies on a competitive basis
- strategies for generating grant income appropriate to the discipline
- evidence of infrastructure and/or facilities supporting a vital and sustainable research environment could include: the nature/quality of research infrastructure, including major infrastructure funding; university investment and policies to support the research environment; significant equipment; technical support staff; space/facilities available for PGR students and research groups, including library and IT provision.

e. **Collaboration and contribution to the discipline or research base:** Contributions to the wider research base, including work with other researchers outside the submitted unit whether locally, nationally or internationally; support for research collaboration and interdisciplinary research; and indicators of wider influence or contributions to the discipline or research base. This may include:

- interdisciplinary research, where appropriate, including what disciplines are involved, and arrangements to support interdisciplinary or collaborative research
- details of existing networks and clusters and of research collaborations with industry, commerce, third sector and other users of

research, and how these have enriched the research environment

- evidence of national and international academic collaborations including indicators of their success
- seminar series, contribution to journal editorship and preparation, conferences and research-based CPD
- contribution to professional associations or learned societies, and developmental disciplinary initiatives, both national and international
- co-operation and collaborative arrangements for PGR training, including whether these have received formal recognition nationally or internationally.

Environment data

108. 'Guidance on submissions' (Part 3, Section 4) sets out quantitative data relating to the research environment to be included in submissions (REF4a/b/c). Sub-panels will use the data in the context of the information provided in the environment template (REF5), to inform their assessment. Data on research doctoral degrees awarded (REF4a) will be used to inform the sub-panels' assessment in relation to 'research students' (section c.ii). Data on research income (REF4b/c) will be used to inform the sub-panels' assessment in relation to 'income, infrastructure and facilities' (section d).

109. Data on both doctoral degrees awarded and research income will be considered in the context of the narrative provided in the REF5 template, and taking account of the size of the submitting unit, its areas of specialism, its research groups, research strategy and different levels of research funding available in different fields.

110. The sub-panels do not require these data to be presented by research group, and this information should not be provided.

111. For those UOAs indicated below, additional data are requested as part of the environment template (REF5). They are not required by any other sub-panel and should not be provided in any UOA other than those mentioned below.

112. **Sub-panel 19** (Business and Management Studies) and **Sub-panel 25** (Education) recognise the role of professional and other doctoral qualifications and their contribution to the vitality of the research environment. To obtain a clear understanding of the nature of the research environment, units submitting

in those two UOAs are asked to disaggregate the total number of doctoral degrees awarded as reported in REF4a for each year in the assessment period into PhDs and research-based professional doctorates. This information should be included as part of the 'People: research students' section of the REF5 template. The disaggregated data should be presented in tabular format, reported in academic years according to the standard data in section REF4a. The total disaggregated data should sum to the totals reported in REF4a.

113. **Sub-panel 26** (Sport and Exercise Sciences, Leisure and Tourism) wishes to consider whether PGR student research activity is growing in newer units and being sustained or developed further in more established units. The sub-panel recognises that some units that submit work for assessment in this UOA represent relatively 'young' discipline areas. Doctoral degree awards alone may, therefore, not present a full picture of this growing area of research. The combination of the number of postgraduate research student awards and doctoral registrations over the assessment period is therefore seen as a useful indicator of research capacity, sustainability and growth. Therefore, submissions in UOA 26 should include the FTE of postgraduate research students enrolled on doctoral programmes, broken down into the academic years of the assessment period (from 1 August 2008 to 31 July 2013). Only students registered and actively pursuing their research programme should be included (not, for example, students who are writing up their thesis for the whole of the year, or visiting from other institutions). This information should be included in tabular format as part of the 'People: research students' section of the REF5 template.

Environment criteria

114. The sub-panels will assess the environment according to the generic criteria and level definitions in 'guidance on submissions', Annex A, Table A4. The criteria will be understood as follows:

- **Vitality** of the research environment reflects the existence of a thriving, dynamic and fully participatory research culture based on a clearly articulated research strategy, displayed both within the submitting unit and in its wider contributions, and in terms appropriate to the scale and diversity of the research activity that it supports.
- The **sustainability** of the research environment will be understood in terms of the extent to which it is capable in the future of continuing to support and develop such research activity as defined in

the quality levels, both within the submitted unit and the discipline more generally.

115. In assessing the environment element of submissions, panels will apply the criteria in terms of both the research environment within the submitting unit, and its participation in and contribution to its subject discipline and academic community.

116. Sub-panels will develop a sub-profile for research environment, taking account of all of the narrative sections of the environment template, as well as the quantitative data (both standard and sub-panel-specific where requested, as stated in paragraphs 108-113). In forming the environment sub-profile sub-panels will attach equal weighting to the following components within the environment template:

- research strategy
- people (staffing strategy and staff development; and research students)
- income, infrastructure and facilities
- collaboration and contribution to the discipline or research base.

117. The assessment will be carried out in the context of the discipline area and in light of the range of research undertaken by the submitting unit. Having assessed the narrative and quantitative information, sub-panels will use their expert judgement to form an overall view about the graded environment sub-profile for each submission, based on all the relevant information provided in the submission.