

Specification Document

1. Introduction

Should give a brief introduction to the organisation, including the business that the organisation is in.

The Natural Environment Research Council (NERC) is the UK's largest funder of independent environmental science, training and innovation, delivered through universities and research centres.

The [Belmont Forum](#) is a high level group of the world's major and emerging funders of global environmental change research and of international science councils. It was co-founded by NERC and the National Science Foundation (US) in 2009. It funds research of common interest and shares best practice in funding and managing research.

2. Aims

Should provide details of the main aims and reasons of the tender exercise

Open exchange of data and information is central to understanding and predicting possible global and regional change, and to ensure research is peer-reviewable and reproducible. The skills to exchange the data and information are developing rapidly along with the development of the technology, of which environmental data are some of the largest components of any area of science. It is apparent that the rapid developments in technology mean that e-Infrastructures in environmental science globally lack enough skilled people who understand data management and data intensive methods in cross disciplinary science to drive this area forward effectively. While training exists in a number of domains, it is frequently restricted in scope. In addition, formal training is typically aimed at university students and early career researchers, but there is also a strong need for established scientists to become more data-enabled and data-proficient. Significant progress in building this capability can be achieved through cataloguing, accrediting and enhancing existing training efforts, filling critical gaps in a nascent global curriculum, and sharing methods for interdisciplinary and transdisciplinary exploitation of data. The Belmont Forum is well placed to stimulate new ways of thinking and working amongst distributed and diverse researchers, data and information scientists and data-enabled domain scientists, enabling them to address global change research challenges better.

On behalf of the Belmont Forum, NERC is seeking to support the development of a globally-recognised cross-disciplinary training curriculum to expand human capacity in technology and data-intensive analysis methods for global change research.

The requirement of the Human Dimensions Champion (HDC) will be to coordinate the identification and analysis of existing training provision across all Belmont Forum members and related agencies, and organise a scoping workshop to define an overall curriculum. Further activities will develop from this point and include the production of a 'Belmont Certification' for courses on the curriculum and also ensuring the roll out of courses across Belmont Forum members.

3. Objectives

- Any specific objectives should be detailed here
- Can be broken down to include specific outputs and expectations

Overall objectives include:

1. Investigate resource gaps and best practice, including in data and information infrastructure, related legal and security issues.
2. Identify, promote, or develop relevant cross-disciplinary education and training that needs to be made available across the Belmont Forum
3. Ensure courses to allow Belmont Forum agencies to develop sustainable human resources in data and information management that conform to best practice
4. Consider requirements across all work packages (Action Themes) to identify possible areas where the Belmont Forum could contribute to sustainable training initiatives
5. Develop a cross-disciplinary training curriculum to expand human capacity in technology and data-intensive analysis methods for global change research, and increase the number of scientists with cross-cutting skills and experience in best practice.

4. Background to the Requirement

Provide background information to the project to help the contractor understand how it fits in to the business objectives of the procurement. Consider including issues such as:

- any history relevant to the procurement
- recent developments
- a description of the business activities in the area relating to the procurement
- business functions & processes
- organisation & staffing
- roles & responsibilities

On behalf of the Belmont Forum, NERC, together with NSF, brought together domain scientists, computer and information scientists, legal scholars, social scientists, and other experts from more than 14 countries to establish recommendations on how the Belmont Forum and its members can implement a more coordinated, holistic, and sustainable approach to the funding and support of global environmental change research.

Conclusions were drawn from a series of collaborative scoping activities, including a survey of the global change research community, conducted as part of an extensive 18-month international review on the state of global data management, networking, computing, legal issues and governance.

The Community Strategy and Implementation Plan (CSIP) entitled "A Place to Stand: e-Infrastructures and Data Management for Global Change Research", was released in August 2015. The report explains the recommendations on how the Belmont Forum can leverage existing resources and investments to foster global coordination in e-Infrastructures and data management.

The CSIP presents an initial path forward through a number of recommendations, namely;

1. Adopt Data Principles that establish a global, interoperable e-infrastructure with cost-effective solutions to widen access to data and ensure its proper management and long-term preservation. Researchers should be aware of, and plan for, the costs of data intensive research.
2. Foster communication, collaboration and coordination between the wider research community and the Belmont Forum, and across Belmont Forum projects through a Data and e-Infrastructure Coordination Office established within a Belmont Forum Secretariat.
3. Promote effective data planning and stewardship in all Belmont Forum agency-funded research to enable harmonization of the e-infrastructure data layer through enhanced project data planning, monitoring,

review and sharing.

4. Determine international and community best practice to inform Belmont Forum research e-infrastructure policy, in harmony with evolving research practices and technologies and their interactions, through identification and analysis of cross-disciplinary research case studies.

5. Support the development of a cross-disciplinary training curriculum to expand human capacity in technology and data-intensive analysis methods for global change research, and increase the number of scientists with cross-cutting skills and experience in best practice.

These recommendations have the potential to transform the way data are used and research is conducted by accelerating discovery, increasing the value of research in decision-making, and catalysing changes throughout the economy and society that are of value to all citizens.

The first recommendation to adopt data principles and policies was agreed at the 2015 plenary meeting of the Belmont Forum in Oslo.

The remaining recommendations will be delivered through a number of Action Themes, of which Action Theme 4: Human Dimensions (relevant to recommendation 5) will be led by NERC and delivered by the Human Dimensions Champion (HDC).

The overarching objective of action theme 4 is to develop a curriculum that can be replicated and work with the Belmont Forum members to: 1) ensure Belmont Forum researchers incorporate effective data plans into their work; and 2) attract and prepare a new wave of researchers to conduct data-intensive environmental change research to meet global change challenges, and 3) facilitate their ability to develop new opportunities for cross-disciplinary research through collaboration with existing best practice in data management and data-intensive research.

The curriculum should focus on developing skills which support the theory and methods for handling and analysing multidisciplinary science through local and cloud-based tools, data standards and data management best practices for reproducible environmental science, linked to relevant environmental questions. This training will build upon courses delivered in national contexts (such as degrees), and will not only teach the needed skills and ensure common implementation of standards, but will also provide all attendees with a toolkit they can use to deliver and cascade the knowledge and skills through their own communities (both geographical and discipline).

In delivering the main objectives of Action Theme 4 the HDC provider will primarily link into the overall e-Infrastructure activity via the Coordination Office (CO) and the Science Advisory Board. Various aspects of the requirement will be carried out with the support of the CO who will also facilitate communication and coordination between the Action Themes and with the Belmont Forum members. Developments will be taken from action themes 2 and 3 to feed into what's required in the training curriculum and therefore the HDC will need to work with the other theme champions, either directly or through the CO.

The other Action Themes are;

Action Theme 1: Coordination Office –to oversee the wider action and ensure that all activities are carried out in a joined up way, as well as linking the e-Infrastructure action with the Belmont Forum Secretariat and external stakeholders .

Action Theme 2: Data Planning – this relates to best practice in data and information stewardship

Action Theme 3: e-Infrastructure – will look at examples/case studies of the way researchers use data and e-infrastructure in large interdisciplinary investigations to identify best practice.

5. Scope

- be specific on what is to be included
- what is excluded
- what is optional

Included:

FTE and T&S for the HDC requirement. It is anticipated that the HDC will need to attend/hold approximately ten UK stakeholder meetings (including those with NERC) and up to eight International stakeholder meetings (virtual or co-located meetings preferable).

Close liaison with the e-Infrastructure Coordination Office and Science Advisory Board (expected through virtual meetings e.g. tele/video conferencing).

Budgets for staging of the workshop (venue and catering) should be included and the HDC provider should have some ideas on the most efficient/cost effective way of delivering this aspect of the requirement. It is hoped that the HDC provider will make use of leveraged connections, including their own and those of NERC and other BF partners, to deliver the scoping workshop and it is expected that discussions with NERC will take place to finalise this once the HDC provider has been appointed.

Excluded:

T&S for attendees at the workshop.

Working with other action theme champions on activities unrelated to the goals and objectives of the Human Dimensions action.

Venue hire for international stakeholder meetings.

6. Requirement

This is a statement of what is to be delivered and forms the main body of the specification. The 'golden rule' is that specifications need to be Clear, Concise and Unambiguous. It also:

- details what will be expected of the contractor under the contract
- how you see the contract operating to ensure aims and objectives are met
- details specific tasks, outputs and expectations
- do not embed critical requirements in background information – contractors may miss them
- list the important elements of the requirements first, and work through to least important

Specify requirements as:

- *Mandatory* -essential requirements that must be met
- *Desirable* – requirements that whilst bringing benefits are not essential
- *Information* – requirements that request supplementary detail that may be helpful to the overall picture

Note: As a general rule, no information should be provided about the proposed budget availability. The intention is to ensure enough detail is provided about the scope of the project to enable the contractor to gauge the size of the task themselves given their detailed and specialist knowledge, without leading on price.

Mandatory

Reporting to Matthew Dobson as the NERC lead, with overall responsibility to Katie Tearall, the HDC provider will be required to carry out and deliver the following:

- The identification and analysis of existing provision and gaps across all Belmont Forum countries, work with the Coordination Office to compile a database of these activities (to be maintained by the CO).
- Organise and run a scoping workshop to bring together key stakeholders and experts to define an overall training curriculum
 - Consider at what stages of the “career pipeline” skills and training needs should be addressed
 - Consider how we can better utilize and gain added value from existing training activities across all Belmont Forum members and relevant stakeholders
 - Consider mechanisms for the sustainability of the curriculum going forward
- Produce the final curriculum for delivery to the Belmont Forum.
- Develop a set of recommendations on how Belmont Forum partners can maximize participation in training activities individually and collectively
- Ensure that information about the provision of courses is disseminated widely across Belmont Forum members
- Develop a ‘Belmont Certification’ for existing or new courses under the curriculum
- Coordinate roll out of identified courses by subject/area across Belmont Forum partner countries

Regular contact with NERC will be established in order to ensure that the objectives are being carried out and deliverables are on target. Quarterly review meetings to be held between the HDC and NERC lead.

Throughout the duration of the requirement the HDC will be expected to collaborate and liaise closely with the Coordination Office and other Action Theme Champions as required.

In order to minimise carbon footprint and operate within budget, wherever possible collaborative working and meetings should be carried out through remote contact, e.g. video/tele conferencing, or col-located meetings.

7. Timetable

- Lists key targets and/or milestones expected to be achieved
- can act as a performance indicator to enable stage or interim payments to be made against measurable deliverables.
- be specific on when you expect the outputs to be delivered
- if the completion date is fundamental to the success of the project, then say so

The HDC requirement should start by 1st July 2016 and last for 18 months, but without the requirement of 1.0 FTE effort for the full duration of that period. The expectation would be for approximately 100 days of effort spread over the duration of the contract.

The initial activities up to writing the curriculum are relatively well defined and have some definite timescales for completion. Later activities around the 'Belmont Certification' and roll out of actual training courses are expected to develop as the Human Dimensions Action Theme and wider e-Infrastructure action progresses. Timelines for delivery of these later activities will be discussed and agreed with the NERC lead and once agreed will be expected to be delivered to schedule.

Targets [all dates on calendar year basis]:

1. Identify existing training initiatives and gap analysis: starting from appointment to be achieved by mid Q3 2016
2. Organise scoping workshop to be held in late 2016 (late Q3/Q4 and no later than December 2016)
3. Define curriculum: curriculum to be completed in early 2017 (by end of Q1)
4. Develop a 'Belmont Certification' for existing or new courses under the curriculum – Q2 2017 onwards (to be agreed with NERC as action progresses)
5. Coordinate Roll out of identified courses by subject/area across Belmont Forum partner countries - Q2/3 2017 onwards (to be agreed with NERC as action progresses).