

CALL FOR PROPOSALS

Belmont Forum and G8 Research Councils Initiative on Multilateral Research Funding International Opportunities Fund

Theme 1: Freshwater Security
Theme 2: Coastal Vulnerability

OPENING DATE OF THE CALL: 15th April 2012

CLOSING DATE FOR SUBMISSION of “Pre-proposals”: 20th July 2012¹

NOTIFICATION FOR SUBMISSION of “Full Proposal”: 20th September 2012¹

CLOSING DATE FOR SUBMISSION for “Full Proposal”: 20th December 2012¹

Introduction

Belmont Forum

The Belmont Forum is a high level group of the world’s major and emerging funders of global environmental change research and international science councils². It aims to accelerate delivery of the international environmental research most urgently needed to remove critical barriers to sustainability by aligning and mobilising international resources. The aims of the Belmont Forum are detailed in a White Paper³, and encapsulated as ‘the Belmont Challenge’:- “To deliver knowledge needed for action to mitigate and adapt to detrimental environmental change and extreme hazardous events”.

In order to make progress against the Belmont Challenge and help deliver international collaboration the Belmont Forum agreed to develop collaborative research actions (CRAs). The principles of the CRAs are that they will:

- Address the Belmont Challenge priorities (i.e. societally relevant global environmental change challenges)
- Lever Belmont Forum member’s existing investments through international added value
- Bring together new partnerships of natural scientists, social scientists, and users

G8 Heads of Research Councils

At the G8 Heads of Research Councils (HORCs)⁴ meeting held in Kyoto, Japan in May 2008, an initial proposal for a multilateral funding activity was introduced with the understanding

¹ All closing dates will be midnight Central European Time (CET)

² Australia, Department of Climate Change; Austria, Ministry for Education, Science and Research; Brazil, FAPESP; Canada, NSERC and CFCAS; France, ANR; European Commission, DG Research; Germany, BMBF and DFG; Japan, MEXT; India, MoES; Norway, The Research Council of Norway; South Africa, NRF; UK, NERC; USA, NSF; International Council for Science (ICSU); and International Social Sciences Council (ISSC)

³ http://igfagcr.org/images/documents/belmont_challenge_white_paper.pdf

⁴ the Natural Sciences and Engineering Research Council of Canada (NSERC), the French National Research Agency (ANR), the German Research Foundation (DFG), the Japan Society for the Promotion of Science (JSPS), the Russian

that multilateral research projects can address global challenges in ways that are beyond the capacity of national or bilateral activities. The G8 HORCs framework provided the unique opportunity to pilot a new modality for conducting international research.

G8HORCs agreed that research topics would be defined separately for three calls. Following two successful calls the G8 Research Council Initiative on Multilateral Research Funding is now embarking on its third and final call.

Working Together

Belmont Forum and G8HORCs have come together in this International Opportunities Fund, taking forwards the process developed by G8HORCs to deliver against two priority areas of the Belmont Challenge. Partner Organizations are participating under the G8HORCs Multilateral Research Initiative Memorandum of Understanding or the Belmont Forum Collaborative Research Actions Memorandum of Understanding.

Partner Organizations contributing to this International Opportunities Fund				
			<i>Participating in the Theme on:</i>	
<i>Legal Name</i>	<i>Acronym</i>	<i>Country</i>	<i>Freshwater Security M€</i>	<i>Coastal Vulnerability M€</i>
The Commonwealth Scientific and Industrial Research Organization	CSIRO	Australia	In kind*	In kind*
São Paulo Research Foundation	FAPESP	Brazil	1.5	1.0
Natural Sciences and Engineering Research Council of Canada	NSERC	Canada	1.5	X
Agence Nationale de la Recherche	ANR	France	1.5	1.5
Deutsche Forschungsgemeinschaft	DFG	Germany	1.5	1.0
Ministry of Earth Sciences, Government of India	MoES	India	0.5	0.5
Japan Science and Technology Agency Japan Society for the Promotion of Science	JST JSPS	Japan	0.5	1.5
Russian Foundation for Basic Research	RFBR	Russia	1.0	0.5
National Research Foundation	NRF	South Africa	0.25	0.25
Natural Environment Research Council and Economic and Social Research Council	NERC and ESRC	United Kingdom	1.3	1.5
National Science Foundation	NSF	USA	1.0	1.0

* Up to the value provided by other Partner Organizations

This International Opportunities Fund is aimed at supporting excellent research on topics of global relevance best tackled through a multinational approach, recognising that global challenges need global solutions. Funding should support researchers to cooperate in consortia consisting of partners from at least three of the participating countries and must bring together natural scientists, social scientists and research users (policy makers, regulators, NGOs, communities and industry). Where appropriate, some Partner Organizations could also support capacity building in some developing countries.

Scientific Themes

Proposals may address only one of the scientific Themes and can address either one or both of the work packages within that Theme. Proposals of 2-3 years duration are invited in the region of €1M- €2M.

Theme 1: Freshwater Security

We live on a resource-limited planet where pressures on water usage are increasing rapidly and pose mounting challenges for sustainable water management. In addition, climate change is anticipated to cause many water-stressed regions to become even drier and the frequency of extreme events, both droughts and floods, to increase and exacerbate the disaster risk of the society. The capacity of society to mitigate against such problems and, where possible to adapt to them, is currently constrained by the limits of our understanding and knowledge of the complex coupling of natural and anthropogenic systems that operate on the multiples scales of water stress and the unavailability of this science to management decision-making. The global scientific community needs to rapidly evolve the knowledge base that will enhance our capacity to enable communities to become more resilient, and manage the water system more sustainably in the face of the many interacting drivers of water supply and demand.

Water stress is a key component of water security and is influenced both by natural hydro-meteorological processes as well as the many complex facets of our wider societal footprint, such as land-use or water abstraction (for agriculture or industry) which in-turn are governed by patterns of consumption or population change. We currently have an inadequate understanding of the critical interactions between natural processes and human activities over a wide range of temporal and spatial scales, as well as across different regions. Managing regional water security remains challenging as the science enabling confident forecasts of rain-fed water supply over (seasonal) timescales that are most useful in decision-making is also highly immature. Furthermore, we have a limited set of management approaches, both physical and behavioural, that will enable society to become more resilient to water stress in future decades.

To tackle such problems requires a significant directional change in the science we need to undertake. We need to develop novel, transferable, approaches to the delivery of freshwater security in order to facilitate decision making for “wicked” problems that inevitably involve trade-offs (e.g. between ecosystems services and livelihoods or lifestyles). Research is therefore needed to address the coupling of natural and anthropogenic systems operating on the multiples scales of water stress as well as the complexity of the associated decision-making processes.

Recognising this, and the value of interdisciplinary and comparative approaches, the Belmont Forum and G8HORCs are calling for research groups from at least three different countries involving both natural and social sciences to co-design and develop, in conjunction with users, medium sized regionally-based projects that tackle either one or both of the following work packages:

1. Identification and characterization of the interactions between natural processes (physical and biological, including ecological processes) and human (including cultural, social, economic, technological, abstraction, transfer and water re-use) practices that govern water budgeting in selected regions. This will include establishing how these drivers vary over wide-ranging temporal and spatial scales (including extreme events and global scales), their impacts, and determining which are most important in governing the vulnerability of socio-economic and environmental systems to water extremes.
2. Development of approaches that support the evolution of resilient communities/regions through improved seasonal (months to multi-year) forecasting of droughts, taking into account natural (hydro-meteorological) and socio-economic drivers identified in the above work package. Research should clearly couple the complex system science of water stress at multiple-scales to the structure and protocols for decision making. Development of these approaches is expected to involve both model-based and place-based research that makes use of existing observations and existing modelling approaches, and where possible identifies key missing local observations. It will explore utilisation of forecast advice, and will

consider determining how individuals, communities, businesses and governments alter, or not, their habits and practices on the basis of improved forecasts.

Theme 2: Coastal Vulnerability

As the proportion of the world population living near coasts increases during the XXI century, coastal environments may be degraded by multiple stresses arising from local to global scale drivers (e.g. water use, influx of sediments and pollutants, ecosystem degradation, river flooding, shoreline erosion, storms, tsunamis, relative sea level rise, aggregate extraction etc.). Decision making, social adaptation and building governance to enable resilience against coastal risks is difficult because of the complex interactions between these drivers and competing concerns (e.g. human migration, lifestyles, land use, and ecosystems services).

Assessments of what makes a system vulnerable vary greatly from one case to another due to the conjunction of multiple drivers (e.g. type of hazard, environmental context, socio-economic development, social situation, risk management) and local circumstances. This situation often results in the development and use of specific local approaches that are not generic enough to be used elsewhere, and therefore inhibit the wider sharing of knowledge (e.g. between nations).

To tackle such problems requires a significant directional change in the science we need to undertake. We need to develop novel, transferable, coastal vulnerability assessment approaches to facilitate decision making for “wicked” problems that inevitably involve trade-offs (e.g. between ecosystems services and livelihoods or lifestyles).

To globally capitalize on local and national expertise, this CRA is promoting the development and comparison and transfer of coastal scientific approaches which link researchers to decision makers and communities. The focus of this call is on the vulnerability, resilience and adaptation options of coastal societal, managed and natural systems to multiple drivers. This may be within different environments (e.g. estuaries, deltas and bays) and in areas of different societal development (e.g. post-industrialisation, emerging, developing countries or regions).

Recognising this, and the value of interdisciplinary and comparative approaches, the Belmont Forum and G8HORCs are calling for research groups, from at least three different countries, involving natural and social scientists to co-design and develop, in conjunction with users, medium sized projects that address either one or both of the following work packages:

1. Characterisation of natural process and human (including cultural, technological and socio-economic) interactions that govern coastal vulnerability and resilience. This should establish how multiple stresses vary over wide-ranging temporal and spatial scales (including past extreme events), analyse their impacts, and determine the most important factors which govern the vulnerability of socio-economic and environmental coastal systems. Determining what science based knowledge enables people (e.g., individuals, communities, businesses, etc.) to change their habits and practices towards more sustainable management in the coastal zone should be investigated. Particular attention should be dedicated to the comparative reanalysis of highly documented areas, the evaluation of predictive frameworks and the identification of information needs to improve them. This will support international convergence towards a ‘coastal vulnerability and resilience typology’ to enhance decision making.
2. Development of predictive frameworks and adaptive coastal management strategies that support the evolution of resilient coastal communities. In particular, this should be based on jointly-developed natural and social science based scenarios of gradual or abrupt large scale changes and their interactions. It should consider the role of legislative and governance issues, evolving regulatory frameworks, as well as

economic, social and political barriers and opportunities. Probabilistic approaches to assess the uncertainty in coupled models will be welcome.

Research Matching

One of the criteria on which the proposals to the Belmont Forum International Opportunities Fund will be judged is the collaborative nature of the projects, specifically among a diversity of countries and the involvement of a variety of natural and social science disciplines. We recognize that all researchers may not have already established networks of collaborators that cover these types of collaborations. To help facilitate this process we have established a Research Matching web interface on the Belmont Forum page for those researchers interested in the International Opportunities Fund Call for Proposals.

The research matching site is available to all researchers interested in the IOF Call. To register, basic information will be required including discipline, area of expertise, the IOF Theme area of interest, and a 1-2 sentence summary of topical interest within the IOF theme. This database will be available through the Belmont Forum website and searchable for those interested in finding a collaborator with a certain background or within a specific topic area. All researchers should please consider registering for this service.

Further details can be found at www.belmontforum.org/iof

Principles for Applications - for details, please consult www.belmontforum.org/iof

Consortium partners should identify a Leading Principal Investigator (LPI) for each proposal for application, management and communication purposes. The LPI is officially responsible for all communications with the Program Office, including submission (please check National Annex) of the Pre-proposal and, if invited to do so, the Full Proposal. Research projects will be selected in a two-step procedure. Short "Pre-proposals" must be submitted by interested consortia by **20th July 2012**. These will be considered by a scientific review panel that will invite submission of Full Proposals by **20th September 2012**. Full Proposals must be submitted by the **20th December 2012**.

Principles of Funding

Within each selected consortium, funding of the participating researchers is provided by their respective national Funding Agencies according to their normal terms and conditions for project funding. Funding is meant for collaborative research, not merely for networking, mobility or communication. Projects are encouraged to consider attributing a specific budget to clustering activities with other projects within their theme and other relevant activities, such as the planned EC FP7 call 'Coasts at threat in Europe'. A consortium agreement (including International Property Rights) will need to be developed between the participating researchers should their application be successful, and shared with the relevant Partner Organizations.

The total budget for this call is approximately 18 million €. Funding will be provided for 'medium sized' projects lasting between 2 and 3 years. It is expected that approximately 10-15 research consortia will be funded in this call. It is anticipated that awards will be made by July 2013.

Eligibility

Each consortium must consist of at least one academic participant from a minimum of 3 different countries represented by the participating Partner Organizations. Each consortium must show clear links through to users and include collaboration between natural and social sciences, and other sciences where relevant.

All applicants must fulfil national eligibility rules for research grant applications as set by their national Funding Agencies. Additional eligibility rules may be applied by the Partner Organizations involved, such as opportunities to support research capacity building in some developing countries. Please see the relevant National Annex and/or contact the relevant national contact point for more information.

More than one applicant from each country is possible in each consortium. However, consortia should aim for a balanced geographical contribution to the research project.

Researchers from countries not represented by any of the Partner Organizations can participate in the research project at their own expense (unless otherwise allowed by Partner Organizations – please see National Annexes).

If an applicant is found to not be eligible, the proposal will only be evaluated if the remaining elements of the proposal remain viable and meet the eligibility criteria.

Selection criteria

Each proposal must combine significant contributions by scientists from at least three of the participating countries and must bring together natural and social scientists in addressing the workpackage(s) within the scope of the described call Theme. The proposal must demonstrate clear links to users and conform to program aims and the designated research fields addressing **either** the Theme of Freshwater Security **or** Coastal Vulnerability.

The Panel of Experts and individual External Reviewers will review the proposals under the following selection criteria:

1. Quality/Intellectual Merit

- *Scientific quality and innovativeness of the goals and objectives of the joint research plan*

- *Added value to be expected from the international research collaboration*

How well does the activity advance knowledge and understanding within its own field and across different fields?

Does the proposal contribute to scientific excellence and significant progress toward the state of the art?

To what extent does the proposed activity suggest and explore creative, original concepts?

If these partnerships currently exist what does this new funding allow them to do that they could not do otherwise?

What is the added value of the international cooperation? Where appropriate this should also include the extent to which Partner Organizations' existing investments are leveraged in the proposed project.

2. User Engagement and Societal/Broader Impacts

- *Engagement of research users (relevant policy makers, regulators, NGOs, communities or industry) and the effectiveness of proposed knowledge exchange activities*

- *Expected impacts: e.g. societal, policy related, economical*

What may be the benefits of the proposed activity to society, policy-development or economies?

How have users been engaged and how effective are the proposed mechanism for knowledge transfer to decision makers?

Does the project involve early career researchers?

Does the research collaboration focus on global challenges for which solutions can only be achieved by global scientific approaches?

3. Inter-disciplinarity and Personnel/Quality of the Consortium

- *Collaboration between natural and social sciences, and other sciences where relevant*
- *Competence and expertise of team and complementarities of consortium (inter-disciplinary / inclusion of all necessary expertise)*

How strong is the collaboration between the natural and social sciences?

How well qualified are the proposers (Leading Principal Investigator and team) in terms of science knowledge, expertise and experience to conduct the project?

What is the quality of previous work in terms of past or potential contributions to, and impact on the proposed and other areas of research?

Is the Leading Principal Investigator team (including any identified Co-Principal Investigators) able to lead the project, e.g. having strong management and leadership skills, or having complementarity of expertise and synergy of the members of the team?

4. Resources and Management

- *Appropriateness of resources and funding requested*
- *Balanced cooperation*

How well conceived and organized is the proposed activity?

Is there an operational plan with well defined milestones in place?

Is the coordination plan adequate?

Is there sufficient access to resources?

Are the requested investments well justified and relevant?

Are the scientific and financial contributions requested of the Partner Organizations from each country well balanced?

Pre-proposals

The selection of projects to be funded follows a two-stage peer-reviewed selection process. In the first step, the LPI (or LPIs Institution as appropriate) are required to submit a Pre-Proposal electronically to the Program Office through the online system. Applications must be completed in English. For details, please consult www.belmontforum.org/iof.

For each Theme the Pre-proposals will be evaluated by a Panel of Experts (PoE). The PoE will encompass the necessary expertise to cover the call Theme in the natural and social sciences and include members with expertise in the field of policy and decision-making (public and private). The PoE will establish a pool of high-quality applications based on the above-mentioned criteria that will be invited to submit Full Proposals.

All LPIs will receive the result and a short written summary from the Theme Program Office on their Pre-proposals.

Full Proposals

The Full Proposal must be closely based on the successful Pre-proposal and substantial changes to the proposed program of research or consortium membership is not anticipated.

The LPI (or LPI's Institution where appropriate) should submit their proposal electronically to the Program Office through the online system. There may be additional national application requirements - please see the National Annex of your respective Partner Organization. Further details on submission will be provided at www.belmontforum.org/iof.

Peer review will be coordinated across the participating Partner Organizations using external and panel review, sharing a common review form. Each proposal will be peer-reviewed ideally by three experts.

Full Proposals will be discussed and recommended for funding by the PoE based on the selection criteria and the assessments of external reviews, with Quality/Intellectual Merit being the primary criterion in selection.

The final award decision will be the responsibility of the Partner Organization. Upon the final decision a list of funded projects will be published on the Belmont Forum website.

All LPIs will receive the result and a short written summary from the Theme Program Office on their Full Proposals.

Reporting

LPIs of successful proposals will be requested to submit a report to the Theme Program Office upon completion of the research project. Each PI must also fulfill the national reporting requirement(s) of the respective Partner Organization.