

Belmont Forum, Future Earth and JPI Oceans co-branded Collaborative Research Action on Transdisciplinary Research for Ocean Sustainability (CRA Ocean sustainability)

The Belmont Forum, in collaboration with Future Earth and JPI Oceans, is launching a call for proposals on “Transdisciplinary Research for Ocean Sustainability”. The call is aiming at bringing together researchers and other expertise across the globe to innovate solutions to accelerate sustainable use of oceans and minimize the effects from global change.

Background and rationale

The world’s oceans make up 71% of our planet, supplies nearly half the oxygen we breathe and host enormous sources of known and unknown biodiversity and ecosystem services. Further, the oceans contribute to food security and nutrition, maritime trade and transportation, tourism and other ocean-based economies, thus creating work and livelihoods for millions of people around the globe. The oceans form a huge part of the world’s natural and cultural heritage. In addition, currents and temperature gradients of the oceans have a paramount influence on all climate systems on Earth. Due to over-exploitation, insufficient governance and large-scale climate-related changes the oceans are under severe and multiple stresses, creating complex and often unpredictable feedbacks. These stresses not only threaten the oceans and all life forms within the seas, but also the human populations that, directly or indirectly, depend on the oceans.

Defining targets for ocean health and sustainability, establishing an international knowledge base needed to maintain and improve the health of ocean systems, and developing systems to predict and respond to changes and disasters to and from ocean systems, all represent critical research needs. In addition, the capacity to chart a course from the knowledge of ocean systems to the changes in policies, practices, governance, and behaviours that will sustain those systems will depend on transdisciplinary research focused on scalable, integrated approaches and solutions that can speak to decision-makers and citizens around the world.

This Collaborative Research Action (CRA) call aims to contribute to the overall challenge of ocean sustainability by inviting international research teams to address the call topics described below. The UN Sustainable Development Goal no. 14 (*Conserve and sustainably use the oceans, seas and marine resources for sustainable development*) sets the overall framework for this call (as well as other relevant SDGs). Because the challenge is complex, there is a need for integrated, interdisciplinary and cross sectoral approaches, bringing together natural and social sciences, as well as policymakers, resource managers, industries, citizens and other societal partners. The research community will need to integrate models, observation systems, analytics and experiments, as well as communication strategies, to create the knowledge required to map pathways and identify trade-offs in conserving ocean health for the benefit of human societies. There is a pressing need to develop systems approaches in which interactions between multiple complex social and biophysical systems are integrated to inform solutions for a sustainable future.

Call Topics

This is a call for international research projects that address one or more of the following topics:

Topic 1 – Pathways toward a sustainable and equitable use of oceans

This topic focuses on the environmental, social, cultural and economic impacts of living and non-living resource extraction (e.g. fisheries, aquaculture, dredging, mining of sand and minerals), and non-extractive industries (e.g. shipping, tourism). Research in this area should address the impacts of economic activities on ecosystems, human societies including human health and well-being, cultures and economies, as well as the capacities of social systems to respond to these impacts. Proposals may use a range of approaches, but are expected to incorporate or address models, scenarios and pathways that can ensure the sustainability of the use of marine resources, including ecosystem services, and can be used by policy developers and regulatory authorities to assess the sustainability of such use.

Topic 2 – Accounting for and minimizing impacts of global change

Our capacity to sustainably use the oceans depends on our understanding of the multi-scale changes in ocean systems, and the additive or synergistic effects of the multiple causes of these changes. Climate change, rising sea levels, and the increasing complexity of human use of ocean and sub-ocean resources, collectively create a range of factors that vary and interact across space and time.

Applications addressing this topic should include research on the interactions between stressors, such as climate change, ocean acidification, pollution, deoxygenation and food scarcity; biological processes such as range shifts and biodiversity changes; and ocean dynamics, such as circulation, temperature, and sea level changes. The research should include societal models - e.g. how changing patterns of migration, population, and human behaviour act or will act as drivers of global change in ocean systems, and how changes in ocean systems will impact societies. Also, response strategies should be included that demonstrate how vulnerability can be reduced, and how resilience in social systems can be increased. This may include challenges such as migration or reduced accessibility to land, nutrition, good health and safe water and housing for all.

Even though the call topics are broad in scope, research consortia are expected to describe the vision and potential impact of the project. The consortia shall also formulate concrete pathways, actions or solutions that will enable the project to achieve these goals. Projects are also expected to include communications and dissemination/exploitation strategies and actions (open science).

Project requirements

Eligibility criteria

Development of research consortia, supported financially by at least three participating partner agencies established in three different countries, is a key criterion. We encourage global geographic diversity to increase the scalability and applicability of the project outcomes. Consortium partners that are not eligible for funding from any of the participating funding agencies can participate in the research project at their own expense. Research consortia must address one or both topics described above. Consortium partners shall 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 Theme Program Office, including submission of the proposal.

Given the complexity and scope of the challenges, research consortia must be truly transdisciplinary, thus including researchers from: a) social sciences/humanities/economy and b) natural

sciences/technology, as well as c) societal partners (i.e. citizens, industry, civil society organizations), using a co-design, co-development and co-implementation approach.

Transdisciplinarity of the research consortia and the active input of involved stakeholders (relevant policy makers, researchers, regulators, NGOs, communities or industry) in the research and innovation contents is a key criterion and should be clearly demonstrated in the application, including the allocation of responsibilities, workload and funding among the consortium partners. Please note that funded research consortia will be invited to participate in a transdisciplinary training workshop, arranged by Future Earth (further details under heading Transdisciplinary training).

Communication and connection

All funded projects are expected to attend kick-off, mid-term and end term meetings organized by the Theme Program Office for joint discussions and dissemination. The funders may decide on clustering these meetings with others. All projects will also provide an annual integrated update on their project accomplishments, using the BFgo reporting interface. The lead PI for each award will receive log-in credentials from BFgo to complete these reports. The reports are due each year on June 15th for the lifetime of the project.

All projects are requested to connect with already existing relevant projects in the thematic area of their proposal. The proposal should list known projects and the topics of interactions, how data will be accessible and re-used, and how the project will benefit from the connection with other projects. Consortia should be open to cluster also with relevant projects that start later.

The European Commission supports the CRA through the regular Horizon 2020 calls BG-07-2018-2019 and BG-08-2018-2019 (http://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-food_en.pdf). CRA Proposals are invited to include appropriate Horizon 2020 projects in clusters to ensure appropriate links.

The call is co-branded with the Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans, <http://www.jpi-oceans.eu>). With four member organizations among the funder to this call, JPI Oceans will enable a strategic coupling of the research projects into the JPI Oceans Strategic research and innovation agenda and help deliver integrated knowledge to deliver on the Sustainable Development Goals, as well as addressing knowledge for policy development and implementation at the European level. JPI Oceans will also help with promoting the call, the research projects and the research outputs.

Keeping in mind that these are transdisciplinary projects, communication and dissemination plans for results and outcomes should consider both academic and non-academic outlets for exchange.

Data management

All proposed projects will require a data management plan. If needed, data management plan templates are available from the Belmont Forum website. The plan should include information about types of data, information, models, software, workflows and code, or other digital products being generated by the project. It should outline the accessible archives or other open repository where these products and accompanying metadata will be housed.

Belmont Forum Open Data Principles are intended to improve and promote the dissemination of knowledge, the access to the data and their reuse thereby improving the efficiency of scientific

discovery and maximizing the return on research funding. The funded CRA Ocean Sustainability projects are expected to make their best efforts to ensure open access to data as soon as possible. Awarded projects will be checked for compliance to open data procedures at the mid-term and end-term valorization events using information provided to the BFgo reporting system.

Call procedures

A two-step process will apply, with a mandatory pre-registration of projects at the first step, and submission of invited full proposals at the second step. Pre-registrations and full proposals must be written in English and submitted electronically via the Belmont Forum Grant Operations website: <http://bfgo.org>.

Proposals will be evaluated according to criteria of (i) scientific excellence, (ii) policy relevance and societal impact (which includes stakeholder engagement), and (iii) quality and efficiency of the project implementation.

A total of 16 funders from 14 countries have committed in total *circa* 17 M€ of cash and in-kind resources for this call: Australia, Brazil, France, Germany, Iceland, India, Japan, Norway, Philippines, Russia, Saudi Arabia, South Africa, Sweden, and USA. Through SIDA, also researchers from Somalia, Kenya, Tanzania, Mozambique, Comoros and Madagascar are eligible for this call.

This call aims to support medium-sized research projects with 3 to 4 years duration, with a recommended budget of up to 1.5 M€. Note that some contributions are in-kind. See organizational annexes for specific constraints and requirements of your funding organization(s). Projects are expected to start in 2020.

Transdisciplinary training

Background

The challenges that face the oceans are transdisciplinary in nature, but not all research consortia are equally able to confront the complexities inherent in this type of action-oriented research. The capacity of transdisciplinary research to serve decision processes that increase ocean sustainability depends on the linkage between science and action. The ability of a research consortia to produce robust, repeatable, well substantiated results (credibility) that address the critical information at the right time (salience), in a way that is unbiased, respectful of divergent stakeholder views, and fair in its treatment of opposing views and interests (legitimacy), will to a considerable extent determine the impact of science on policy, practice, and behaviour change. In order to advance the ability of the granted research consortia to make the strongest impact possible, transdisciplinary training will be included as an integrated part of the CRA process.

Procedure

For this call, Belmont Forum is cooperating with Future Earth (<http://futureearth.org>), a global research and innovation programme with the mission to accelerate transformations to global sustainability. Future Earth has co-designed the thematic basis for the Ocean Sustainability CRA with stakeholders and the Belmont Forum and will continue to offer value-adding elements throughout the CRA process.

Research consortia will be invited to participate in a skill-advancing workshop on transdisciplinary research. The workshop will be organized by Future Earth and conducted by key boundary experts adept in the transfer between knowledge and action. The thematic focus will be on advancing

principles of co-design and co-production across scientific disciplines and societal sectors that address complex sustainability challenges.

The workshop will be an opportunity to advance skills in transdisciplinary research and inspire ideas that can further strengthen the collaboration within and between consortia. Furthermore, the workshop aims to generally increase aptitude for developing projects with strong transdisciplinary elements, which is a cornerstone of all the Belmont Forum CRAs. The costs for participation in the workshop will be supported.

How to apply

All call documents, including guidelines for applicants and national/regional requirements, and the submission portal can be found at the Belmont Forum Grant Operations website: <http://bfgo.org>.

Details of the call and the application process are presented on the Belmont Forum web site: <http://www.belmontforum.org>, where you can also find links to training modules for proposers on the Belmont Forum YouTube channel.

Before starting to prepare proposals, applicants are advised to contact their National Contact Points as listed in the annex documents for the call.

Call timeline

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| 29 October 2018 | Opening of call for pre-registration |
| 31 January 2019 | Closing of call for pre-registration |
| April 2019 | Opening of call for invited full proposals |
| August 2019 | Closing of call for invited full proposals |

Participating organizations

JPI Oceans, <http://www.jpi-oceans.eu>Future Earth, <http://futureearth.org>

| Country | Funder name, website |
|--------------------------|---|
| Australia | Oceans and Atmosphere, CSIRO https://www.csiro.au/en/Research/OandA |
| Brazil | São Paulo Research Foundation, FAPESP www.fapesp.br |
| France | National Research Agency, ANR http://www.agence-nationale-recherche.fr/RF |
| Germany | Federal Ministry of Education and Research, BMBF https://www.fona.de/de/bekanntmachungen |
| Iceland | Icelandic Centre for Research, RANNIS https://en.rannis.is/funding/research |
| India | Ministry of Earth Sciences, MoES http://www.moes.gov.in/ |
| Japan | Japan Science and Technology Agency, JST https://www.jst.go.jp/inter/english/index.html |
| Norway | Research Council of Norway http://www.forskningsradet.no |
| Philippines | Department of Science and Technology, DOST-PCIEERD http://pcieerd.dost.gov.ph/ |
| Russia | Russian Foundation for Basic Research, RFBR http://www.rfbr.ru/rffi/eng/ |
| Saudi Arabia | King Abdullah University of Science and Technology, KAUST https://www.kaust.edu.sa/en |
| South Africa | National Research Foundation, NRF http://www.nrf.ac.za/ |
| Sweden | Swedish Research Council for Env, Agric Sci & Spatial Planning, FORMAS http://www.formas.se/en/ |
| Sweden/African countries | Swedish International Development Cooperation Agency, SIDA www.sida.se |
| USA/international | Bureau of Ocean Energy Management, BOEM https://www.boem.gov/ |
| USA | National Science Foundation, NSF https://www.nsf.gov/ |