

Belmont Forum

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2º Workshop Conjunto dos Programas BIOEN-BIOTA-
Mudanças Climáticas FAPESP
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Belmont Forum

- World's major and emerging funders of global environmental change research and international science councils
- Initiated June 2009, by NSF (US) and NERC (UK), building on IGFA – smaller, faster, decision-making



Current Members

- Australia
- Austria
- Brazil
- Canada
- China
- European Commission
- France
- Germany
- India
- Japan
- Norway
- South Africa
- United Kingdom
- United States
- *International Council for Science (ICSU)*
- *International Social Sciences Council (ISSC)*



Belmont Forum

- Aims to:
 - Meet 21st century needs for knowledge to support action on environmental change, building on 20th century understanding
 - Accelerate provision of knowledge for sustainability through increasing international collaboration in research
- Requires an integrated approach across
 - observations, modelling and services that can move between the regional and global scale
 - disciplines while still resonating with traditional research communities
- Development of a collective, funders' vision of priorities – *Belmont Challenge*

Belmont Challenge

To deliver knowledge needed for action to avoid and adapt to detrimental environmental change, including extreme hazardous events.

This requires:

- Assessments of risks, impacts and vulnerabilities, through regional and decadal analysis and prediction
- Information on the state of the environment, through advanced observing systems
- Interaction of natural and social sciences
- Enhanced environmental information service provision to user identified needs
- Effective international coordination mechanisms

Addressing the Belmont Challenge

- April 2011 - BF decision to ‘fast track’ Collaborative Research Actions (CRAs) where members’ existing investments were ‘ripe’ for international collaboration
- 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 (3 countries minimum)
 - Bring together new partnerships of natural scientists, social scientists, and users
- Two of these CRAs are currently open for proposals under the International Opportunities Fund (IOF) for 2012

Belmont Forum International Opportunities Fund

International Opportunities Fund

- Belmont Forum and the G8 Research Councils Initiative on Multilateral Funding have come together in this International Opportunities Fund
 - taking forwards the process developed by G8HORCs
 - delivering against two priority areas of the Belmont Challenge



Development of Themes

- Belmont Forum decided to take forwards two priority areas where there was already a critical mass of investment and were 'ripe' for international collaboration:
 - Freshwater Security
 - Coastal Vulnerability
- Workshops held in November 2011 to fully scope the themes
 - Participants: scientists, members of the GEC programmes and programme officers

IOF Themes - 1

Theme 1:

Freshwater Security

WP1: Identification and characterization of the interactions between natural processes and human practices that govern water budgeting in selected regions.



WP2: Development of approaches that support the evolution of resilient communities/regions through improved seasonal forecasting of droughts, taking into account natural and socio-economic drivers identified in WP1

IOF Themes - 2

Theme 2:

Coastal Vulnerability

- *Synergies with planned EC FP7 Programme ‘Coasts at threat in Europe’ and NSERC Climate Change and Atmospheric Research*
- *Both calls are encouraging projects to consider attributing a specific budget to clustering activities with projects in the reciprocal call*

- WP1: Characterisation of natural processes and human interactions that govern coastal vulnerability and resilience.
- WP2: Development of predictive frameworks and adaptive coastal management strategies that support the evolution of resilient coastal communities.



Multilateral Funding of Research

- 11 countries are contributing to one or both themes of the IOF:

Australia (CSIRO), Brazil (FAPESP), Canada (NSERC and SSHRC), France (ANR), Germany (DFG), India (MoES)*, Japan (JSPS and JST), Russia (RFBR), South Africa (NRF), UK (NERC and ESRC), US (NSF)

- Approximately €20M allocated
- Synergies in Coastal Vulnerability Theme with planned EC FP7 Programme (€6M) and NSERC Climate Change and Atmospheric Research programme
- Countries will fund their own researchers from successful proposals but there will be a *single peer review process* i.e. no double jeopardy

*Awaiting formal approval

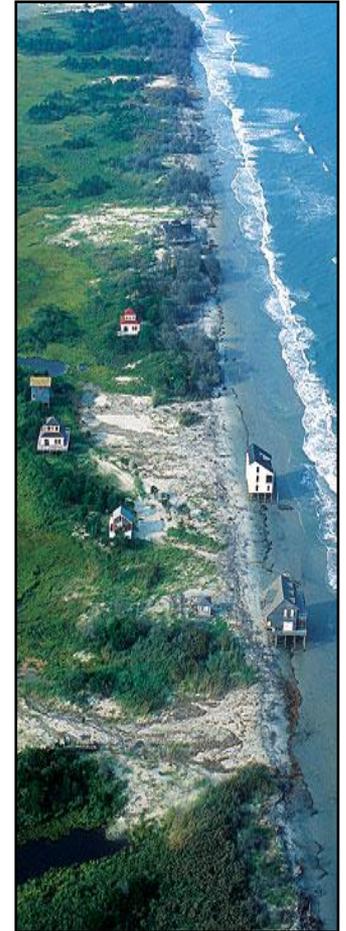


Eligibility Criteria

- Funding will support researchers to cooperate in consortia:
 - consisting of partners from *at least three* of the participating countries
 - that brings together *natural and social* scientists
 - that demonstrates *clear links to research users* (policy makers, regulators, NGOs, communities and industry)
- Applicants must be eligible for funding from one of the Partner Organizations, unless otherwise detailed in the National Annexes
- Some Partner Organizations can support capacity building in some developing countries

Application Process

- Proposals are invited of:
 - 2-3 years duration
 - in the region of €1M - €2M
- Can address either one or both of the WPs in one of the Themes only
- Two step process through online system
 - Pre-proposals
 - Full proposals



Evaluation Process

- Proposals will be selected through a single international peer review process at each stage
- Selection criteria:
 - Scientific quality and intellectual merit (including international added value)
 - User engagement and societal/broader impacts
 - Inter-disciplinarity and Personnel/Quality of the Consortium
 - Resources and Management

Timeline for 2012 IOF

15th April 2012 – Call opened

20th July 2012 – Deadline for Pre-Proposals

20th September 2012 – Notification to submit Full Proposals

20th December 2012 – Deadline for Full Proposals

April/May 2013 – Official funding decisions

For more details see:

www.belmontforum.org/iof



Plans for Future Collaborative Research Actions

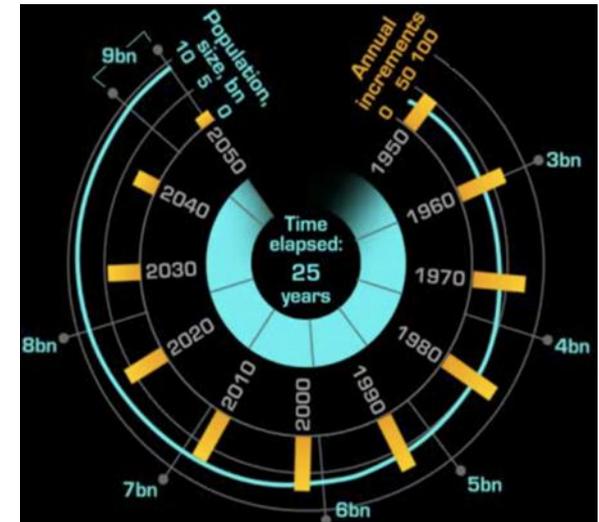


Collaborative Research Actions

- January 2012 Belmont Forum met for the 5th time
 - Approved taking forwards Coastal Vulnerability and Freshwater Security CRAs in the International Opportunities Fund
 - Approved scoping of three new CRAs
 - Food security and energy usage
 - Arctic Science
 - Research and e-infrastructures

Food security and energy usage

- Over the past 12 years world population has grown from 6 to 7 billion, and estimates points that it will top 9 billion within the next 40 years
 - Poses a major challenge to more equitably provide food, water and energy for this growing population that is also exhibiting lifestyle changes
 - To feed such population changes, almost a doubling of world harvest production could be required, and doing so in situations of climate change and increasing demands for water and energy



Population

Most future population growth will happen in the less developed countries, where birthrates remain highest.

LOW INCOME LEVEL
\$995 or less a year

1 billion



LOWER MIDDLE
\$996 to \$3,945

4 billion



UPPER MIDDLE
\$3,946 to \$12,195

1 billion



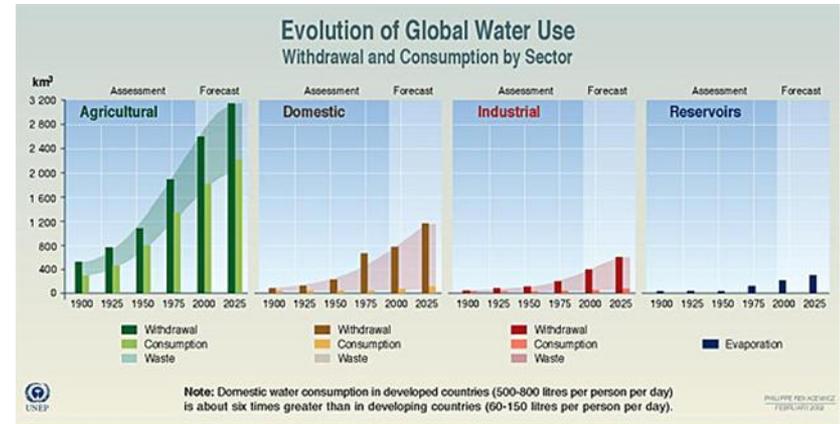
HIGH
\$12,196 or more

1 billion

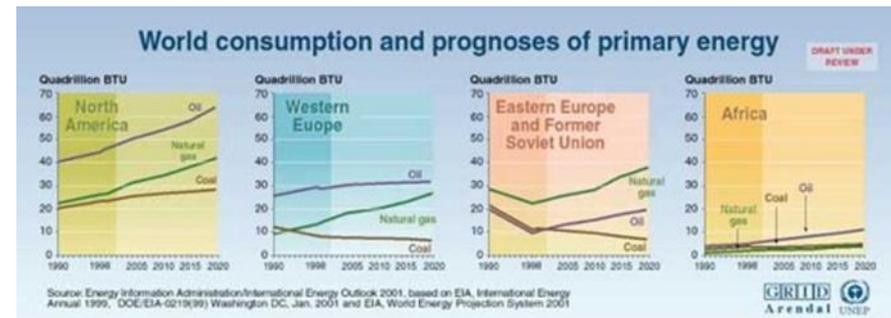


Food security and energy usage

- Accepted that water and energy aspects of food security need to be considered, due to high demands from agriculture, but the broader interaction between meeting energy needs and assuring water availability and quality is less widely recognized
- Major stresses on energy and water availability are already being felt and continuing population growth and changes in human diets and life styles would increase these demands
- Changes in regional hydrological cycles due to climate change will add to the potential for human development crises



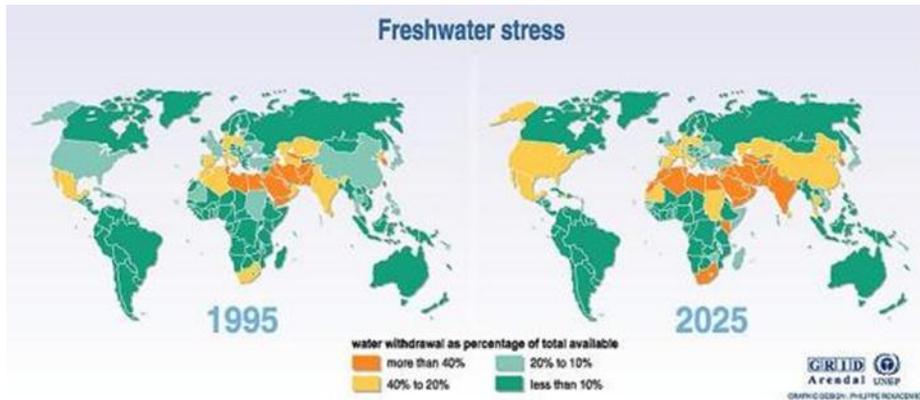
Source: Igor A. Shiklomanov, State Hydrological Institute (SHI, St. Petersburg) and United Nations Educational Scientific and Cultural Organisation (UNESCO, Paris), 1999



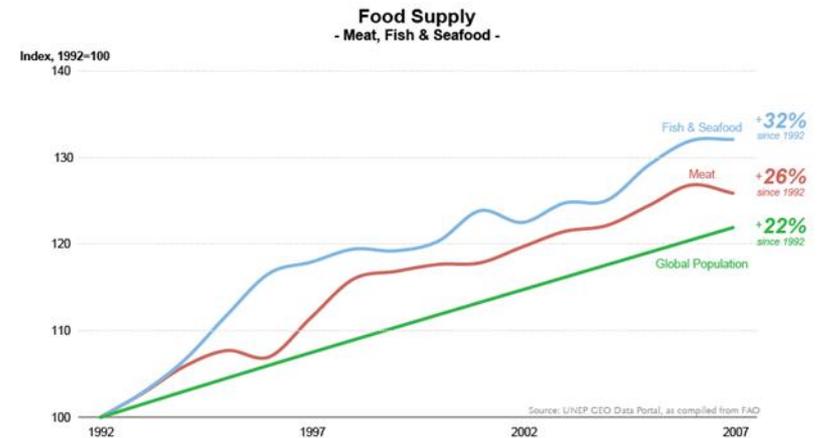
Food security and energy usage

Objective

- increase our understanding of the interplays between food security, energy usage, and climate change, in order to provide the knowledge to cope with the mitigation and adaptation necessary to face the challenge.



Source: Global environment outlook 2000 (GEO), UNEP, Earthscan, London, 1999.



Global dietary patterns have changed enormously over the last decades. "Income growth, relative price changes, urbanization and shifts in consumer preferences have altered dietary patterns particularly in developing countries" (FAO 2008). Diets shifted away from basic foods towards livestock products, as well as oils, fruits and vegetables, increasing the demand for meat by 26% and for fish and seafood by 32% between 1992 and 2007. During that time, for example, global average meat consumption grew from 34 kg per person per year to 43 kg. Nearly all of these increases can be attributed to growing demand in Asia and to a lesser extent, Latin America. Based on different studies and considering the entire commodity chain (including deforestation for grazing, forage production, etc), meat production accounts for 18-25% of the world's greenhouse gas emissions (UNEP 2009, Fiala 2008, FAO 2006).

Food Security and Energy Usage Workshop

For program officers and key researchers of Belmont Forum member countries to:

- fully **scope the science** requirements
- devise and **structure a call** potentially for 2013
- workshop timing: late 2012

- Lead BF member: **FAPESP** (Brazil, São Paulo) in collaboration with NERC (UK) and ANR (France)

Arctic Science

Objective

- To build and sustain partnerships among the international natural and social sciences research communities, northern (Arctic) communities, territorial governments and business communities to address and adapt to the dynamic and rapid changes in the north.

Arctic Science Workshop

For program officers and key researchers of Belmont Forum member countries to:

- develop awareness of one another's systems
- encourage program collaboration
- develop ways to network co-aligned, already funded projects
- identify examples of best practices of member countries as templates for action
- workshop timing: April 2012
- lead BF Member: NSERC (Canada) - Isabelle Blain
Isabelle.Blain@nserc-crsng.gc.ca

Common Themes from Arctic Science Workshop

- Connecting and sharing resources and data
- Coordinating and encouraging collaboration and interdisciplinary research, specifically natural and social sciences
 - Governance and social needs of communities
 - Hazards
 - Systems modeling & national-scale models
 - Coordination of national networks of research stations
- Utilization of research as a tool for education and capacity building in Northern communities, as well as policy making

Research and e-infrastructures

- Belmont Forum White Paper – details need for a framework to:
 - integrate observations and research to overcome critical limits to predictions;
 - link sensors, data preservation and information systems;
 - provide accessible data/information systems linked with decision-making systems
 - improve coordination between existing observational and data systems
- Research infrastructures play a vital role in providing this essential data, information, and services



Research and e-infrastructures

Need for heterogeneous data to be:

- Integrated
- Made interoperable
- Explored and re-purposed by researchers in disparate fields
- Available for a myriad of uses across institutional, disciplinary, spatial and temporal boundaries



Research and e-infrastructures

Objective

- A concerted effort to develop transformative concepts and approaches to create integrated data management infrastructures that can help meet the Belmont Challenge



Research and e-infrastructures Workshop

For program officers and key researchers of Belmont Forum member countries to investigate:

- ways to integrate natural and social science data
- potential for Virtual institutes and sharing of e-infrastructures
- how to build on current collaborations
- Lead BF member: NSF (USA)

Hazard and Extreme Events

- CRA that seeks to catalyze and support co-designed research projects among the natural, social, and engineering sciences that:
 - Improves forecasting and prediction of natural hazards
 - Mitigates the effects of these hazards
 - Enables societies to better prepare, respond, and recover from disasters
- Lead BF members: Japan and USA exploring

Hazard and Extreme Events

- Some expected outcomes may include, but are not limited to:
 - Improved sensing and observational capabilities
 - Integrated earth system models that can help improve prediction and forecasting of events and their potential consequences on natural and "built" systems
 - Development of risk analysis tools and approaches that can support informed community planning and response systems.