

Summary of the 3rd Earth System Visioning meeting

Chateau de Montvillargenne
Chantilly, France
10-11 February 2011

Over forty participants from around the world convened at the Château de Montvillargenne in February 2011 for the 3rd Earth System Visioning meeting. The meeting represented the third step of the [Visioning process](#). The preceding steps had been: i) an extensive consultation, started in early 2009, that led to the identification of the [Grand Challenges for Earth System Science for Global Sustainability](#), and ii) a meeting in June 2010 that considered the institutional framework required to address the *Grand Challenges*. Step 2 had concluded that a new overarching structure was needed to promote integrated research.

The goal of this 3rd meeting was to start to design a new initiative that would mobilise the scientific community, funders, operational service providers and users to address the Grand Challenges (and the related Belmont Challenge). To provide a focus for the discussions, a draft conceptual paper describing key elements of the proposed initiative had been prepared and distributed to participants prior to the meeting.

The meeting was organized by the International Council for Science (ICSU), in close cooperation with the International Social Science Council (ISSC), and the Belmont Forum - representing the International Group of Funding Agencies for Global Change Research (IGFA). Participants comprised Chairs and Directors of the Global Environmental Change (GEC) programmes (DIVERSITAS, IGBP, IHDP, WCRP and their partnership ESSP, as well as START), representatives of affiliated or partner agencies (UNEP, WMO, IOC) and other co-sponsors of the GEC programmes, regional networks (APN), other related international programmes and international experts in both natural and social sciences. The meeting was chaired by Johan Rockström, executive director of the Stockholm Resilience Centre and chair of the ICSU-ISSC Visioning Task Team.

On the first day, ICSU, ISSC and the Belmont Forum introduced their plans to work together in a new Alliance. This partnership was built upon the convergence of the Visioning and the Belmont Forum processes to identify research needs and priorities in Earth system research. Both processes had combined in developing the concept of a major new integrated research initiative. Presentations of the current landscape of GEC research, including preliminary SWOT analyses of GEC programmes, the Grand Challenges, and the conceptual paper on the new initiative, set the context for subsequent discussions. The debate, with active and inclusive participation of the group, was centred on three main areas: framing the initiative, design criteria, and goals. This note summarizes consensus points, in those three areas, that should be taken into account in designing the initiative.

Framing the Initiative

The discussion highlighted a sense of urgency: all together, we need to find a new avenue for science to respond effectively to societal needs, and to accelerate the delivery of the science-derived knowledge that society needs to address pressing environmental changes. The group expressed consensus on the importance of establishing a new Social Contract between Science and Society, with respect to designing the initiative, delivering its results, establishing and maintaining a fruitful dialogue with decision-makers, and investing in capacity building at all scales. The success of such a contract would rely on the commitment to bring together distinct approaches to generating and using knowledge, including social sciences, natural sciences, health sciences and engineering: a challenge and, at the same time, a great opportunity.

To fulfil such contract, we would need to:

- develop a policy-relevant solution-oriented Earth Systems Research for Global Sustainability initiative, addressing:
 - the major global environmental and social risks;
 - how to bend curves for negative environmental and social trends;
 - how to adapt and transform in a rapidly changing world;
 - how to support the development of a green economy;
- create a science-based program with large investments in education, outreach and capacity development;
- explore innovative design options for the initiative that build upon and expand the foundation established by the current GEC structures;
- achieve a step change in research investment (changing the funding landscape, also by looking at new possible sources);
- identify and agree at the outset the (10-20) key questions that humanity needs answered. These questions, galvanizing the research community on pressing societal issues, should be identified involving key stakeholders and taking into account users needs. The questions could then be articulated and addressed within the unifying framework of the Grand Challenges and of the Belmont white paper.

Design criteria

To be effective, the initiative should be designed in compliance with a set of key criteria. Key design issues and criteria that were raised during the discussion are:

- importance of co-designing the process, based on a partnership between the scientific community, research funders, users and knowledge/service providers. Development assistance agencies, business sector representatives, representatives of coordinated global observation programs etc., would also need to be included in the process in order to ensure commitment of all relevant parties to the emerging new initiative.
- need to build on strengths of current structures, as many current projects successfully involve large parts of the scientific community and deliver high level research, analysis and scientific assessments. In particular, the current GEC landscape, as

illustrated by the SWOT analyses, has a sizable number of projects already working on issues relating to the Grand Challenges.

- need to incorporate strong regional components;
- aim to actively engage decision makers (engaging and sustaining dialogues with a variety of users, globally and locally);
- design a cost-effective, cutting-edge network structure;
- involve a wide range of relevant disciplines in a fully integrated way;
- engage a new generation of researchers;
- develop a financially and operationally feasible business plan.

Goals

Human-induced global change is a threat to human societies and well-being, but at the same time is creating new opportunities for innovation. In the next decade, the scientific community must deliver the knowledge that will enable countries to meet their sustainable development needs. The initiative should respond to this challenge, by:

- producing credible scientific knowledge and solutions that respond to the Grand Challenges in Earth System Research for Global Sustainability and to the Belmont Challenge;
- effectively delivering this knowledge to society (all relevant users).

A Joint Integrated Research Strategy

On the second day, an extensive plenary discussion stemming from the key points presented above converged towards the identification of few critical conclusions on the initiative design. A fundamental outcome of the meeting was the agreement on the definition of a Joint Integrated Research Strategy. Its key elements are outlined here:

- governed under one unified framework (steered during the transition period by a Transition Team) on behalf of the Alliance;
- encompassing the four GEC programmes, ESSP and START, and other related activities;
- aiming at strategically integrating the GEC Programmes and ESSP and other needed capabilities/skills into a consolidated and comprehensive effort, a flagship initiative on Earth System Research for Global Sustainability.

It was noted that to achieve its goals, the initiative is expected to unify most of the existing GEC structures (DIVERSITAS, IGBP, IHDP and ESSP), to fully engage START and possibly to integrate strategically some components of WCRP. It is important that the necessary re-structuring is done efficiently and effectively and it is understood that resources will be needed to facilitate this.

Next steps

The next steps proposed by the Alliance to maintain the momentum and move the process forward include:

- setting up a Transition Team and designing a transition plan to start the implementation phase of the initiative. The Transition Team would govern the initiative until a permanent body is appointed. It would be complemented by one or more working groups with specific design purposes (e.g. integration of existing structures, detailed research plan, etc).
- setting up a small Alliance working group, to work with the ICSU secretariat to support the process;
- the presentation of a proposal on the initiative at the next Belmont Forum meeting (April 2011);
- the presentation of a proposal on the initiative at the next ICSU General Assembly (September 2011);
- the formal endorsement of the new initiative by all co-sponsors (end 2011);
- if approved by the respective governing bodies of the sponsors, the formal launch of the initiative in two stages: at the “Planet under Pressure” Conference (March 2012) and at the “Rio+20” UN Conference on Sustainable Development (June 2012).

It was recognised that broad consultation and continued dialogue with key users and stakeholders would be necessary throughout all of these steps.

All participants were thanked for the active discussions, constructive contributions and engagement shown at the meeting. The process builds on the strengths of the current experience in global environmental change research and strong engagement of the community will be essential in designing a successful initiative. The “Rio+20” Earth Summit in June 2012 will provide a unique window of opportunity to present the initiative, its goals and its long-term benefits for our societies, to a wide and influential audience of policy- and decision-makers from across the world.