

Future Earth in Asia

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Abstract

Future Earth is a new international research platform providing knowledge and support to accelerate the world's transformations to sustainability. It brings together 20+ pre-existing global environmental change core projects. To address the unprecedented challenges facing the world, Future Earth pursues a new type of science that links disciplines, knowledge systems and societal partners to support a more agile global innovation system. The initiative is led by a Governing Council and supported by a Science Committee, Engagement Committee and globally distributed Secretariat, as well as Region Centers. This paper briefly outlines the organizational structure of Future Earth, with a special emphasis on Asia.

Future Earth

Future Earth is a new global research initiative launched in June 2012 at the Rio+20 UN Conference on Sustainable Development. It forms an international research platform providing knowledge and support to accelerate the world's transformation to a sustainable world. The international scientific collaboration which Future Earth facilitates (1) enables integrated research on grand challenges and transformations to sustainability; (2) strengthens global partnerships between researchers, funders, and users of research; and (3) communicates science to society and society to science.

Future Earth was launched in response to the realization that the problems the earth and human society are facing are larger and more complex than ever before. It is increasingly clear that humanity is changing the fundamental workings of the earth as a system. Recent research suggests that four out of nine key dimensions identified the boundaries for safe operation of the system have already been crossed. These four "planetary boundaries" are: climate change, loss of biosphere integrity, land-system change, altered biogeochemical cycles (phosphorus and nitrogen). Further deterioration in terms of climate change and biosphere integrity would it is thought be able to drive the earth system into a new state. Researchers have coined the term "Anthropocene" as a new geological era to give expression to this awareness of the new fundamental ways in which human activity is shaping the biophysical existence of the earth.¹

To address these challenges, Future Earth pursues "a new type of science that links disciplines,

knowledge systems and societal partners to support a more agile global innovation system." Both the organization and the overall approach to research are to be overhauled. In organizational terms, Future Earth strives for interdisciplinary integration to overcome the fragmented, disciplinary organization of science. In concrete terms, this means bringing the existing twenty three Global Environmental Change project that were implemented under the aegis of programs such as the World Climate Research Programme, the International Geosphere-Biosphere Programme, DIVERSITAS, and the International Human Dimensions Programme on Global Environmental Change together under one organizational umbrella.

The second integration promoted by Future Earth involves facilitating close collaboration between science and society. This is often referred to as transdisciplinary and summarized as the co-design, co-production and co-delivery of research. There are many different definitions and understandings of "transdisciplinarity," but two elements appear in most. The first is that transdisciplinary research not only integrates different scientific disciplines – the domains of the researchers -- but that it also incorporates other types of "non-scientific" knowledge held by other groups in society. Thus, transdisciplinarity has the function of bridging different knowledge systems (or knowledge cultures) and forging collaborations of the holders of these different knowledge systems. The second element is that transdisciplinary research aims to solve concrete, real-world problems, rather than grapple with "academic" questions and hypotheses.

Organizational Structure of Future Earth

The governance structure of Future Earth embraces the concepts of co-design and co-production of science with relevant stakeholders across a wide range of sectors. It is led by a Governing Council which includes representatives of the Science and Technology in Society (STS) Forum, the Sustainable Development Solutions Network (SDSN) and members of the Science and Technology Alliance for Global Sustainability which brings together science organizations, United Nations agencies, and research funders. Future Earth is further supported by two advisory bodies: first, a Science Committee, which ensures that Future Earth science is of the highest quality, and makes recommendations on new and existing projects, as well as emerging priorities for research and, second, an Engagement Committee, which provides leadership and strategic guidance on involving stakeholders throughout the entire research process from co-design to dissemination, ensuring that Future Earth provides the knowledge society needs.

Future Earth is supported by a Secretariat, which performs day-to-day management of Future Earth, ensuring coordination across themes, projects, regions and committees, and liaising with key stakeholders at regional, national and local levels. The Secretariat comprises of five global hubs which function as a single entity, located in Canada (Montreal), France (Paris), Japan (Tokyo), Sweden (Stockholm) and the United States (Colorado).

Regional Structure of Future Earth

As Future Earth aims to be an inclusive platform, a basic design principle has been to give voice and influence to expertise and institutions across the globe. While this is partly reflected in regional representativeness in the Science and Engagement committees and the globally-distributed Secretariat, there is a need for regional and national entities that can have input into equitable and innovative global priority settings and activities. At the national level, it is expected that, where conditions permit, National Committees are formed that communicate, promote and make relevant Future Earth principles and activities within a country, to encourage participation, and be a bridging-point for the global Future Earth platform with research and societal stakeholders.

In order to facilitate engagement with Future Earth where no National Committees can be formed,

Future Earth is developing Regional Committees and Regional Centers. The role of the Regional Committee is to be an effective advocate for Future Earth in the region and to be an effective advocate for regional interests in the global Future Earth platform. Regional Committees will be aligned to Future Earth Regional Centers, themselves part of the globally-distributed Executive Secretariat. At this stage, Future Earth has designated six regions, subject to review over time: Sub-Saharan Africa, Asia, Latin America and the Caribbean, the Middle East and North Africa, Europe, and North America. The organization of the Global Secretariat in Regions will eventually include a Regional Centre in each Future Earth Region. The Regional Centers will be integrated into the distributed Executive Secretariat, providing capabilities to support Regional work. The current Regional Centers are based in the hubs proposed in the global bidding process that led to the establishment of the Secretariat, but the term Regional Centre is preferred. Each Regional Centre has a somewhat distinct profile, depending on the capabilities and history of each region and their specific functions will be determined in the context of the overall global Secretariat and by the resources available. However, among many other roles, the Regional Centre will support their Regional Committee, and help to articulate the priorities that it identifies.

Future Earth in Asia

The Regional Center for Future Earth in Asia is hosted by the Research Institute for Humanity and Nature (RIHN) in Kyoto, Japan. Over the past 3-4 years, RIHN has actively worked to foster a Future Earth community in the region, among others by hosting an annual Future Earth in Asia Symposium, organizing networking events for young researchers, and actively organizing and participating in other events. It has contributed to the development of a research agenda for Future Earth in collaboration with the Monsoon Asia Integrated Regional Study (MAIRS) and has continued to engage in research agenda-setting activities for Future Earth since then. It also maintains an online presence for Future Earth *via* a website and Facebook.

In addition to the above, the Regional Center has facilitated the establishment of a governance structure for Future Earth in Asia. In particular, by means of an open recommendation process and with the support of an external selection committee,

it has convened a Regional Advisory Committee (RAC). While RAC membership is on a personal basis and should not be interpreted as formally representing organizations, countries, etc., the composition of the RAC is to reflect regional diversity (social, cultural, geographic, age, gender, etc.) as much as possible. The committee will consist of 7-13 members with distinct networks, about half of whom should be non-scientists. Currently, eight members have been appointed to the RAC and further additions, especially of non-scientists and those from regions not yet represented, are expected to be made in the near future. This RAC is expected to evolve into a full Regional Committee in the near future.

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