REPORT ON

FUTURE EARTH REGIONAL WORKSHOP FOR

LATIN AMERICA AND THE CARIBBEAN

3-4 DECEMBER 2012

MEXICO CITY, MEXICO

Acknowledgements

ICSU would like to thank all participants for their valuable contributions during the workshop.

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The workshop was organised and hosted by the ICSU Regional Office for Latin America and the Caribbean, which is supported by the Mexican Academy of Sciences.

Contents

Purpose of this document

This document is a draft report of the workshop organised by ICSU in Mexico City, Mexico, on 3-4 December 2012. This event is part of a consultation process with the regions on a new programme called 'Future Earth – research for global sustainability' launched in 2012.

Context and objectives

Future Earth is a 10-year international programme on Earth system research for global sustainability. The goal of Future Earth is to provide the knowledge required for societies in the world to face risks posed by global environmental change and to seize opportunities in a transition to global sustainability.

Future Earth has been established by a broad Science and Technology Alliance for Global Sustainability including the International Council for Science (ICSU), the International Social Science Council (ISSC), the Belmont Forum of global change research funding agencies, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Environment Programme (UNEP), the United Nations University (UNU), as well as the World Meteorological Organization (WMO) as observer.

While the scope of Future Earth is global, a number of issues require region-specific approaches to provide robust observations and forecasts of regional environmental changes, assess potential impacts and vulnerabilities, explore mitigation and adaptation pathways, etc. Regions, as early witnesses of environmental changes, have therefore a critical contribution to make to assess environmental change and to participate in building a global picture for transitioning towards sustainability. Stakeholders in the region also have a fundamental role to play in the application of sustainability research. This could involve identifying the needs and priorities of researchers and practitioners at national and regional levels, stimulating cooperation and partnerships, and promoting institutional coherence.

As a first step in looking at how to develop a regional engagement strategy for Future Earth, ICSU, on behalf of the Science and Technology Alliance for Global Sustainability, organised a set of three regional workshops for Africa, Asia-Pacific, and Latin America and the Caribbean, funded by the Swedish International Development Cooperation Agency (Sida).

These regional workshops were held as part of a broader consultation process, which started at the Rio+20 conference where Future Earth was launched, and will continue in 2013. These regional consultations were timed to coincide with the final phases of design work on Future Earth led by the 'transition team', including proposals for the research framework and a governance structure. These proposals formed a basis for consultation at both global and regional levels. This consultation process seeks to test and refine the initial design proposal with key stakeholders as Future Earth enters its operating phase from January 2013 onwards.

The common objectives of these three regional workshops were as follows:

1. To develop a common understanding of Future Earth, including its vision, research framework and governance among an initial set of key regional stakeholders;
2. To identify regional research priorities (research questions, required capabilities, etc.) that will help shape the Future Earth research strategy in the different regions;

3. To discuss opportunities and challenges for implementing Future Earth in each region;
4. To explore the best ways of establishing a regional interface for Future Earth.

The main target audiences were scientists and science administrators working in universities, research institutes, government departments, development agencies, research coordination and capacity building networks, and funding agencies. The aim was to gather around 40 participants from these stakeholder groups.

Participation

The Future Earth workshop for Latin America and the Caribbean was held on 3-4 December 2012 and brought together 43 participants, representing 13 countries.

Participants came from a diversity of backgrounds including universities, research institutes, science academies, international and regional science coordination organisations, government departments, NGOs and funding organisations. A few early-career scientists also attended the workshop.

As the workshop took place in Mexico, there was strong local representation. To address this imbalance, an effort was made to look at regional distribution for speakers and breakout sessions.

The list of participants is provided as an annex.

Workshop programme

Building on the lessons learned from the workshops in Cape Town and Kuala Lumpur, the workshop combined information sessions on Future Earth and relevant regional initiatives; roundtable discussions, the regional landscape and potential linkages between the two; and breakout sessions on recommendations for implementing Future Earth in the region.

- Day 1: Overview of Future Earth and regional activities on global environmental change research

The first day focused on providing information on all aspects of Future Earth's development. This included question and answer sessions and a roundtable discussion of the global framework of Future Earth and its research priorities. Coordination mechanisms for GEC research currently in place in the region were also presented. During a breakout session, participants developed a vision for Future Earth in the region, looking at success indicators and areas where Future Earth could add value.

- Day 2: Options for rolling out Future Earth in the region

The second day was implementation-oriented. There were presentations from a development agency (Sida) and a research funder (Belmont Forum) as well as the Inter-American Institute for Global Change Research providing an overview of the regional funding landscape and research infrastructure. The participants were then invited to work in breakout groups on defining potential mechanisms, for example, what might a Future Earth interface for the region look like?) and requirements (key partners, funding, stakeholder engagement mechanisms, etc.) for Future Earth to work successfully in the region.

Two roundtables focused on existing successes in the region delivering transdisciplinary research (including partnerships with non-academic stakeholders) and providing support for effective science-

policy dialogues based on concrete examples. Furthermore, the discussions generated recommendations for Future Earth in terms of design and implementation. A detailed workshop programme is provided as an annex.

Key recommendations and outcomes

Building on existing strengths and promoting knowledge sharing

During the workshop, it was stressed that LAC has areas of strong scientific capacity and that there are many projects and networks already operating on the ground on global environmental change research. In particular, the IAI (the Inter-American Institute for Global Change Research), and social science networks such as FLACSO - the Latin American School of Social Sciences - and CLACSO – the Latin America and the Caribbean Social Science Council foster research collaboration and capacity development across the region.

Participants also mentioned gaps that Future Earth could fill. For example, research projects and institutions tend to operate in isolation, and there are obstacles to international collaboration in the region. Interdisciplinary research is also relatively weak in the region. Few interdisciplinary – or transdisciplinary[1] – research projects and poor communication between disciplines (particularly natural and social sciences) and sectors were highlighted as key concerns. There are also few working partnerships between, for example universities and the private sector, not many examples of policy-relevant scientific research, the level of public understanding of science is low, and there are problems with access to funding and data.

Future Earth should aim to build on existing strengths and capacities rather than start from scratch, and add value to areas of weakness. It provides an opportunity to share knowledge and lessons from successful international collaborative endeavours and demonstrate the potential of linking with other regional mechanisms.

Key overall recommendations for Future Earth

- Future Earth provides an opportunity to share knowledge and lessons from successful regional collaborative endeavours, look at how they can be scaled up and how such endeavours can be strengthened by links with other regional mechanisms. It is important to avoid duplication and keep bureaucracy to a minimum. Lessons from other regions could also be brought in through Future Earth. To this end, mechanisms are needed to allow existing networks and projects to share their lessons learned and provide feedback into Future Earth (workshops, capacity development programme, etc.).

- Future Earth should play a role in enhancing further international research collaboration. In particular, South-North collaborations with the leadership of developing countries should be encouraged in international research projects. This could, for instance, be promoted through increased flexibility in the allocation of funds from developed countries to developing countries.

[1]Interdisciplinary research: Research that involves several unrelated academic disciplines in a way that forces them to cross subject boundaries to create new knowledge and theory and solve a common research goal.

Transdisciplinary research: Research that both integrates academic researchers from different unrelated disciplines and non-academic participants, such as policymakers and the public, to research a common goal and create new knowledge and theory.

ICSU (2010). *Earth System Science for Global Sustainability: The Grand Challenges*. International Council for Science, Paris.

- Future Earth should give support in particular to programmes that are interdisciplinary and collaborative, include outreach and steps to improve the public understanding of science, and make data more widely available.

- Disciplines outside traditional interdisciplinary research should be included, for example, law has a key role to play in shaping societal interactions with the environment.

- The importance of local issues and local scale research should not be ignored when tackling global environmental changes as these major changes have local footprints and actions are implemented locally. Locally derived solutions and knowledge will often be more effective than 'big science' covering the whole region. Therefore engagement with local communities, small-scale research projects and local institutions is essential. Here Future Earth could act as a 'legitimizing institution', providing additional recognition of the value of local level projects and motivating scientists from the region to do more work in the region.

- There is a need to define the overarching purpose of starting this new research. Some participants suggested that it should be especially directed at 'anti-systemic' approaches, moving away from current paradigms that are not sustainable.

Challenges for interdisciplinary and transdisciplinary research

The new interdisciplinary and transdisciplinary research that Future Earth will foster presents a number of challenges and opportunities:

- Engaging stakeholders effectively in the research process takes time and resources. Building trust and good working relationships with many stakeholders requires considerable time and effort. In particular, seed funding to bring relevant stakeholder groups together around projects or research questions is needed.

- A balance needs to be struck between integrating different disciplines and delivering actionable research needs.

- If solutions involve understanding or changing human behavior (e.g. understanding the driving forces of decision-making and consumption choices), then research questions need to encompass a better understanding of human motivation and behaviour. This should involve full utilisation of the knowledge from social sciences from the outset in research projects related to global environmental changes.

- Social scientists also have to become more solution-oriented. Some areas of social science have a reputation for contributing abstract theory and criticism, rather than solutions. They need to become more pragmatic, and more involved.

- There will be a need to assess on a regular basis whether Future Earth is run effectively and successfully, tracking clearly defined goals and indicators, and adjusting the programme if it is failing to meet expectations.

Engaging stakeholders

To deliver successful transdisciplinary research and stakeholder engagement it is essential to:

- Build bottom-up processes for stakeholder engagement and not solely rely on a stakeholder engagement committee at the top of the governance structure. Clear mechanisms should be

identified and guidelines communicated to stakeholder groups on how they can develop projects within Future Earth. Learn from experiences in terms of what has worked or failed in the past. Future Earth should collect case studies and develop methodologies. Some research areas were successful in working with a range of stakeholder groups and local communities, especially in the fields of biodiversity, natural disasters, energy, health, and agriculture. Knowledge sharing workshops and capacity development programmes could help build this knowledge base and promote a new culture among scientists.

- Define where this type of research can be most relevant. It was suggested that inter- and trans- disciplinary research should not be required systematically, but instead careful attention is needed to analyse appropriate disciplinary mixes and which stakeholder groups are particularly relevant to a project.

- Treat stakeholders as active partners, not as passive recipients of scientific information. If they are genuine stakeholders, they should be engaged as working partners in agenda setting, knowledge generation and the dissemination of results.

- Develop a more nuanced vision of stakeholders (including their agendas, asymmetry of powers, conflicts between stakeholder groups, etc).

- Remember that many stakeholders possess scientific expertise, and these are good points of entry for collaboration. For example:

    - There are many scientists already working in business, producing important research. A point of entry into business could also be to engage with chief sustainability officers.

    - Many local authorities and city planners employ scientists.

    - Many politicians have good scientific backgrounds. There is also a good technical policy body sitting in most ministries (often with a longer life span than many ministers).

- Avoid preconceptions of what the problems and solutions are. Engage with local people and encourage local approaches and bottom-up solutions, and look for opportunities to scale up and disseminate knowledge and practices. Clear mechanisms should be identified and guidelines communicated to stakeholder groups as to how they can develop projects within Future Earth. Stakeholder engagement can also be more effective when developed in an opportunistic way, through for instance the formation of coalitions of stakeholders around shared interests.

- Integrate local and indigenous knowledge. Some national protocols are in place for to guide research with indigenous peoples. Good examples of best practice and guidelines could be taken from around the region.

Connecting knowledge and action

While the region has seen the development of a number of science-policy dialogues, better and deeper links between the research and policy communities are needed.

The involvement of researchers in decision-making processes stimulated an interesting debate among the participants. Views differed as to how far researchers should get involved in the decision-making processes, given that past experience has shown that simply delivering knowledge to policy-makers is not enough. Some argued that laying out options with their assessed impacts, which was suggested as a middle ground, was not enough. Scientists make choices when selecting the set of options to be studied and communicated to decision-makers. Some urged that, especially in developing countries where scientists hold privileged positions, they need to be politically engaged. Perhaps a way beyond this question suggested by others could be to reaffirm that scientists have a responsibility to be unbiased in their choices of options, that they need to keep asking questions and that they should be transparent about how the knowledge is produced and what its limitations are.

Communications, outreach and education

- Future Earth should encourage the development of a communications and outreach component in each project within Future Earth, and provide general guidelines and support on how to do this (how to reach out to policy-makers, business, etc.)

- The translation of materials and results into the languages of the region would have to be considered to facilitate engagement and discussion.

- Research centres, the media, and networks of science and technology centres are key partners for science communication. They have their own budgets, but need support in the form of new scientific information.

- A main problem in engagement and outreach is scientific illiteracy in the region. Science education is therefore a crucial long-term component of stakeholder engagement. Currently the scientific community is disconnected from the education community in LAC.

Capacity building

During the discussion on capacity building, some suggested that this need not be a goal in itself, but rather that capacity building could be a natural by-product of well-run Future Earth activities. Others argued that there should be specific programmes on capacity building, or that capacity building should be a clearly defined component of Future Earth projects. Several areas of particular concern were highlighted:

- One priority should be the integration of small islands and small countries into Future Earth projects, as currently most research activity and networks focus on Brazil, Argentina and Mexico. There are some networks that could be used in to enhance island integration in the Caribbean, e.g. the University of the West Indies.

- Gender issues and the weak role of women scientists are a key issue for capacity building in the region. Here IANAS (the Inter-American Network of Academies of Science) and its capacity building programme on women in science would be a key partner.

- There is a need to build capacity in engagement, communications and science education, as well as research on how to build capacity in these fields.

  New incentives need to be developed for scientists. Rewards should be given not just for good papers, but also for involvement in projects that actually solve problems, address key questions, communicate and reach out to stakeholders and include an education

component. Future Earth can help with this by endorsing such projects and highlighting the importance of these issues. Future Earth could promote other mechanisms beyond traditional scientific publications to evaluate and promote sustainability research.

Funding

- Promote dialogue and convergence of funders' (research and development funders) priorities and requirements with the Future Earth research framework.
- Attract additional funding from potential funders including the multilateral development banks, the private foundations, as well as the funds dedicated to the mobility of researchers.
- Future Earth should also play a role in enhancing further international research collaboration and influencing funders and national institutions to remove institutional barriers and improve accountability and transparency, as well as encouraging regional collaboration amongst funding agencies to help fund regional activities.
- In addition, South-North collaborations should be developed as well as leadership of developing countries in international research projects, through increased flexibility in the allocation of funds from developed countries to developing countries.

Data

- Data sharing and access is very weak in the LAC region. There were strong calls for the 'democratization of knowledge' where currently there is a large privatization of knowledge.
- There is a role for Future Earth in clearly defining for whom are we producing knowledge, and making sure that results are publicly accessible.
- Future Earth could help to develop a data information system and common standards, and encourage sharing of data as a key feature of Future Earth projects.
- Data also needs to be translated and presented in ways that can be used by practitioners, who often do not 'speak the same language' as scientists.
- There are some minor examples in the region of data sharing networks, for example OTCA (the Amazon Cooperation Treaty) which commits governments of all countries in the Amazon region to cooperate and share data.

Research areas

The main research areas that Future Earth could address in LAC include:

- understanding past transformations (drivers, impacts on social and natural environments) to provide insights into a transformation towards global sustainability;
- defining what sustainability means in the light of diverse development models in the region (Future Earth could also support the development of an observatory of sustainability for the region);
- conducting further research on issues relevant for the region such as food security, sustainable production and distribution of food, sustainable livelihoods, demographic

transition and urbanisation, sustainable use of biodiversity and understanding of ecosystems tradeoffs, etc.

- establishing sustainability indicators for the LAC region at the relevant scales (human development, economy, technological progress, environment, etc.)

Governance structure

Regarding the definition of relevant governance arrangements for Future Earth in the region, participants emphasised:

- The diversity of the region (in terms of geography, language, culture, political contexts, administrative systems, levels of development, etc.).
- The possibility of establishing hubs or nodes in different sub-regions (Central America, Caribbean islands, Andes, MERCOSUR, etc.), preferably in countries where there are no or only few international organisations at present (international organisations are currently mainly concentrated in Brazil, Argentina and Mexico).
- The need to also consider institutional capacity to collaborate with other countries (rules for administration of funds, conditions for entry into the country, etc.) when establishing these nodes in the region.

Initial measures of success

As indicators of Future Earth's impact on the region, participants suggested the following:

- existence of strong alliances and effective involvement of stakeholders in the research process;
- the extent of knowledge dissemination (including availability of scientific data and publications);
- the number of young scientists trained on integrated science and the number actually working in the region;
- impact made by Future Earth research and activities on decision-making processes.

Next steps

A group of participants volunteered to be part of a small discussion group to propose ways forward given the outputs of the meeting; ICSU ROLAC will play a role in the coordination of this group, which will meet physically and via conference calls over early 2013. Other participants or other groups wishing to be engaged are welcome to contact the ICSU ROLAC office.

Annexes

Annex 1: List of participants

Future Earth Regional Workshop for Latin America and the Caribbean

Draft list of participants

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Annex 2: Workshop agenda

Agenda

Future Earth Regional Workshop for Latin America and the Caribbean

Venue: Mexican Academy of Sciences

Mexico City, Mexico

3 to 4 December 2012

Organiser

Partners

Funded by

Supported by

Main goals:

1. To develop a common understanding of Future Earth, including its vision, research framework and governance;
2. To identify regional research priorities (research questions, required capabilities, etc.) that will help shape the Future Earth research strategy in Latin America and the Caribbean;
3. To discuss opportunities and challenges for implementing Future Earth in the region;
4. To explore the best ways of establishing a regional interface for Future Earth.

Expected outcomes:

1. Regional feedback on Future Earth, including its vision, research framework and governance;
2. Identified links with existing regional research plans and priorities:
3. Guidance on the next steps to implement Future Earth in the Latin American and Caribbean region

Meeting co-chairs:

Day 1:

- **Jakob Rhyner** – Director, UNU Institute for Environment and Human Security and representative of the Science and Technology Alliance for Global Sustainability
- **Susana Camargo Vieira** – Professor in Law, Universidade de Itaúna, Brazil

Day 2:

- **Diana Liverman** – Director, Institute of the Environment, University of Arizona and Co-chair of the Transition Team
- **Roberto Guimarães** - Professor e Coordenador do MBA em Gestão do Ambiente e Sustentabilidade - Fundação Getulio Vargas, Professor Visitante do Doutorado em Ambiente e Sociedade - Universidade Estadual de Campinas

Chief rapporteur: Anthony Clayton – Professor, Institute for sustainable development, Mona Campus, Jamaica and ICSU Regional committee member

First day, 3 December 2012:

Overview of Future Earth and regional activities on global environmental change research

7:45 ***Bus leaves the Hotel Radisson Paraiso for the Mexican Academy of Sciences***

08:00-09:00 *Registration*

09:00-09:30 **Opening remarks and aims and structure of meeting**

Steven Wilson – Executive Director, International Council for Science (ICSU)

09:30-10:00 **Future Earth – Background, history and aims**

Roberto Sanchez Rodriguez – Professor, Department of Urban and Environmental Studies, El Colegio de la Frontera Norte and Member of the Transition Team

10.00-10.30 **Future Earth – Global research framework**

Diana Liverman – Director, Institute of the Environment, University of Arizona and Co-chair of the Transition Team

10:30-11:10 **Discussion**

11:10-11:30 *Coffee break*

11:30-12:00 **Future Earth – Governance structure and overview of funding mechanisms**

Peter Liss – Professor, University of East Anglia, United Kingdom

Steven Wilson – Executive Director, International Council for Science (ICSU)

12.00-12.30 **Future Earth – What comes next**

Steven Wilson – Executive Director, International Council for Science (ICSU)

12:30-13:00 **Discussion**

13:00-14:00 *Lunch*

14:00-15:20 **Roundtable discussion**: Current regional research priorities and coordination mechanisms already in place for Global Environmental Change research in Latin America and the Caribbean. How can Future Earth build on these and add value?

- Lilliam Álvarez Díaz – The Academy of Sciences for the Developing World (TWAS) and member of the Academy of Sciences of Cuba

- Holm Tiessen – Director, Inter-American Institute for Global Change Research
- Jose Sarukhán – National coordinator, Comisión Nacional para el conocimiento y uso de la biodiversidad (CONABIO), Mexico
- Alonso Brenes Torres – Professor researcher, Facultad Latinoamericana de Ciencias Sociales (FLACSO)

15:20-15:30 **Introduction to break-out groups**

Co-Chairs

15:30-15:45 *Coffee break and change rooms*

15:45-17:25 **Break-out group session 1: building a regional vision for Future Earth**

3 breakout groups working in parallel on questions including:

1. What would success look like for Future Earth in the LAC region? What would success indicators be?
2. What are the major research priorities for the LAC region?
3. Given the framework presented, how could Future Earth add to existing research priorities?
4. What kind of research activities would you like to see conducted within Future Earth?
5. What kind of outreach or other activities would you like to see conducted within Future Earth? (In areas such as data, education and capacity building, communication, interface with stakeholders, etc.)

17:25-17:30 *Change rooms*

17:30-18:30 **Report back to plenary from break-out groups and discussion**

20:00-22:00 Welcome dinner

Second day, 4 December 2012:
Options for rolling out Future Earth in the region

09:00-09:15 **Synthesis of first day discussions**

Co-chairs of day 1

09:15-10:00 **Funders' perspectives on key directions for sustainability research and recommendations for Future Earth**

- Development funder's perspective: Neda Farahbakhshazad – Research for Development Adviser, Swedish Secretariat for Environmental Earth System Sciences (SSEESS), representing the Swedish International Development Agency (Sida)
- Research funder's perspective: Reynaldo Luiz Victoria – Scientific Director, São Paulo Research Foundation (FAPESP) and Representative of the Belmont Forum
- Regional funding landscape: Holm Tiessen – Director, Inter-American Institute for Global Change Research

10:00-10:15 **Introduction to break-out groups**

Co-Chairs

10:15-10:30 *Coffee break and change rooms*

10:30-12:10 **Break-out group session 2: Propose mechanism(s) for Future Earth to catalyse and further develop GEC research in Latin America and the Caribbean**

Questions to be addressed in breakout groups include:

1. What are current successes and challenges in delivering transdisciplinary research with stakeholders and collaboration across organizations and countries? How can Future Earth build on these?
2. What infrastructure already exists and what is needed to coordinate Future Earth research?
3. How to build on existing activities in LAC in areas such as data, education and capacity building, communication, interface with stakeholders, etc.?
4. What could be the form and functions of a Future Earth regional node/interface?
5. How to get buy-in and engagement in the region?

6. How can the interface between global and regional be improved in the context of Future Earth?

12:10-12:15 *Change rooms*

12:15-13:00 **Report back to plenary from break-out groups and discussion**

13:00-14:00 Lunch

14:00-15:00 **Roundtable discussion**: What mechanisms exist in the LAC region for engaging with policy-makers, business, and other stakeholders? How can Future Earth capitalise on these? Where in the region are there strong examples of a good science-policy interface? Can these be scaled up across the region?

- Carlos Joly – Professor, Department of Plant Biology, Biology Institute, State University of Campinas
- Myanna Lahsen – Associate Researcher, Earth System Science Center at the Brazilian Institute for Space Research (INPE)
- German Poveda – Professor, Universidad Nacional de Colombia
- Astrid Puentes – Co-Executive Director, Interamerican Association for Environmental Defense (AIDA)
- Holm Tiessen – Director, Inter-American Institute for Global Change Research

15:00-16:00 **Roundtable discussion**: Implementation of recommendations and resources required (following from recommendations put forward by breakout groups to look at the ways to operationalise them)

- Arturo J. Martínez – Head of Global Programs at the National Council for Scientific and Technological Research of Argentina (CONICET), Vice President of the Argentine Association for the Advancement of Science
- Roberto Sanchez Rodriguez – Professor, Department of Urban and Environmental Studies, El Colegio de la Frontera Norte and Member of the Transition Team
- Reynaldo Luiz Victoria – Scientific Director, São Paulo Research Foundation (FAPESP) and Representative of the Belmont Forum
- Susana Camargo Vieira – Professor in Law, Universidade de Itaúna, Brazil

16:00-16:30 Coffee Break

16:30-17:00 **Evaluation of the meeting**

Co-chairs

17:00-17:30 **Summary of the two days**

Anthony Clayton

17:00-18:00 **Conclusions and next steps**

Co-chairs and Steven Wilson