

OECD Workshop on International Co-operation to Address Global Challenges – New approaches and Governance Mechanisms for Science and Technology Multinational Co-operation

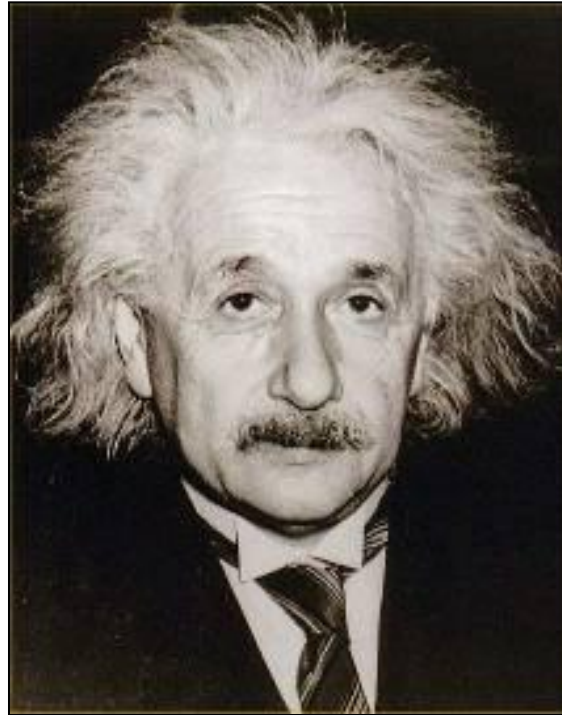
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Climate Change Case Study

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The problems of the world cannot be solved with the
same kind of thinking that created them.
(Albert Einstein)



Outline of presentation

- Unpacking the Science and Technology elements of Climate Change as a global challenge
- Review of some multinational S&T initiatives
- Issues and Priorities for enhancing S&T co-operation

The Climate Change Global Challenge

- Actually a Three-Part Challenge
- *Understanding impacts and vulnerabilities to support response measures*
- *Innovations to Enhance Adaptation*
- *Innovations to Enhance Mitigation*

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Impacts and Vulnerabilities
– more than climate and
more than biophysical

**Innovations include
technology development and
deployment, but also policy
measures and other
responses**



Multinational Initiatives

**Scientific
Under-
standing**

**Technology
Develop-
ment**

**Science into
Policy**

Frameworks

**Earth System
Science
Partnership**

**Group on
Earth
Observation
(GEO)**

**Sector-based
initiatives
(eg.
International
Energy
Agency)**

IPCC

**OECD Global
Forum**

UNFCCC



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Intergovernmental Panel on Climate Change (IPCC)

- Science to policy - provide decision-makers and others with an objective source of information about climate change
- Does not conduct any research nor does it monitor climate related data or parameters
- Assess latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts and options for adaptation and mitigation.
- IPCC reports aim to be neutral with respect to policy, although they need to deal objectively with policy relevant scientific, technical and socio economic factors.



WMO



UNEP

IPCC Plenary

IPCC Bureau

IPCC Secretariat

Working Group 1

The Scientific Basis

TSU

Working Group 2
Impacts
Vulnerability
Adaptation

TSU

Working Group 3

Mitigation

TSU

Task Force
on
National
Greenhouse
Gas Inventories

TSU

Established in 1988

Currently preparing its 5th Assessment Report



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Issues and Lessons

- Agenda setting – participating governments through the IPCC plenary
- IPCC Bureau – climate change experts, currently 30 members
- Funding – Scientists contribute on a voluntary basis. IPCC trust fund to support participation from developing and emerging countries
- Multi-stage review process – experts and governments
- Summary for Policy Makers

Earth System Science Partnership (ESSP)

- Established by the four ICSU-sponsored Global Environmental Change programmes (DIVERSITAS, IHDP, IGBP, and WCRP) for the integrated study of the Earth System, the changes that are occurring to the system and the implications of these changes for global and regional sustainability

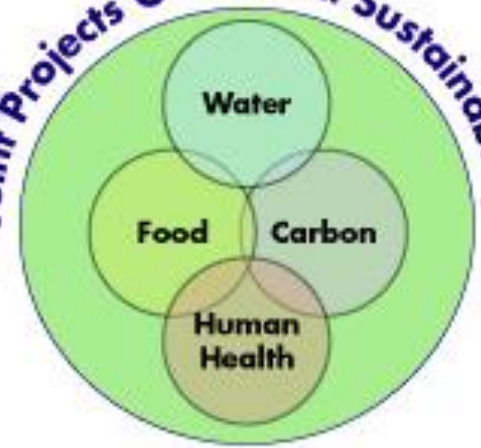
Earth System Science Partnership (ESSP)

- Joint projects focusing on:
 - Carbon—Global Carbon Project (GCP)
 - Food—Global Environmental Change and Food Systems (GECAFS)
 - Water—Global Water System Project (GWSP)
 - Human health—Global Environmental Change and Human Health (GEC&HH)
- Capacity building in developing countries—SysTem for Analysis Research and Training (START)
- Monsoon Asia study—Monsoon Asia Integrated Regions Study (MAIRS)
- ESSP Open Science Conferences (OSCs)

Earth System Science Partnership



Joint Projects On Global Sustainability



Issues and Lessons

- International Group of Funding Agencies (IGFA)
 - National level funding agencies, for example, the National Research Foundation (NRF) in South Africa,
 - meet annually to engage with the Global Environmental Change programmes as well as the ESSP
- Important strides in capacity building in developing countries through the START programme

ESSP Review, 2008

- Key findings
 - partnership as a whole is still relatively unknown and even considered marginal
 - A strong scientific focus is necessary
 - ESSP's structure should be driven by the scientific mandate with input from users.
 - Engagement with the wider community is critical.
 - take a strategic and comprehensive approach to capacity building.
 - current funding available to the ESSP to be insufficient to fulfil its mandate

Group on Earth Observations (GEO)

- Exploit the growing potential of Earth observations to support decision making in an increasingly complex and environmentally stressed world.
- Co-ordinate efforts to build a Global Earth Observation System of Systems (GEOSS)
- Member-ship based organisation
- Work guided by work programmes approved by members



Sources:
Country map: ESRI
Members: GEO Secretariat

Article 4.5 of the UNFCCC

‘The developed country Parties and other developed Parties included in Annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties. Other Parties and organizations in a position to do so may also assist in facilitating the transfer of such technologies’

Taking forward article 4.5

- Responsibility was previously given to the Subsidiary Body for Science and Technology Advice (SBSTA)
- SBSTA was advised by an Expert Group on Technology Transfer (EGTT)
- Is now one of five pillars for a post-2012 deal

Long-term shared vision

Mitigation

Adaptation

Technology Transfer and Development

Finance and Capacity-building



Lessons and Issues

- Adaptation technologies neglected
- Issues of competitiveness and Intellectual property significant, new policy instruments required,
 - Creation of technology funds to purchase patents make the patented technologies available globally
 - Approaches to carbon pricing

Revisiting the Climate Change Global Challenge

- *Understanding impacts and vulnerabilities to support response measures*
- *Innovations to Enhance Adaptation*
- *Innovations to Enhance Mitigation*

Understanding Impacts and Vulnerabilities

- Good platforms in place (IPCC, ESSP) and rather focus on building these
- Impacts and vulnerabilities are local level. More concerted efforts to build capacity at local levels through multi-national programmes
- Need new institutions and interventions that pull together multiple policy communities (science and technology, environment, development, sector departments) and multiple knowledge basis (natural and human science)

Innovations for Mitigation

- Balance a focus on strong areas of focus (energy) with other
- Area of neglect is a research intervention that looks fundamentally at how to build a new economic order that is fair and less resource intensive
 - Paradigm for such a intervention is important, for example, the concepts of common but differentiated responsibilities and absolute versus relative decoupling

Innovations for adaptation

- Major need for multilateral co-operation
- Science needs to become a core part of a development strategy
- Need a process that unpack the unique system of innovation that exists in this sector and then design the special measures that are required to support innovation
 - Public goods, lack of a critical mass market, high knowledge content,

Concluding comment

- Vital to unpack what is meant by S&T for climate change
- Preliminary framework highlight significant differences within the different dimensions
- Need for further analysis and engagement

Useful Resources

- Climate Change Mitigation, What should we do, OCED, 2008
- A Strategic European Framework For International Science And Technology Cooperation
(http://ec.europa.eu/research/press/2008/pdf/com_2008_588_en.pdf)
- ICSU-IGFA Review of the Earth System Science Partnership (ESSP)
(www.essp.org)
- “Working Together to Respond to Climate Change”, Annex I Expert Group Seminar in conjunction with the OECD Global Forum on Sustainable Development (www.oecd.org/env/cc/GFSD2006)
- IPCC, 16 Years of Scientific Assessment in Support of the Climate Convention (<http://www.ipcc.ch>)
- 2009 State of the World – Into a Warming World
(www.worldwatch.org/stateoftheworld)
- Jeffery Sachs, The Global Innovation Divide, May 2002

Thank You

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