

A new scientific paradigm for SDGs?

International Research Network for
Low Carbon Societies - 8th meeting

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The science of climate change

A long journey...

- 1988

The UNEP and WMO establish the Intergovernmental Panel on Climate Change (IPCC), *It is the international body for assessing the science related to climate change.*

- 1990

The first IPCC report is published, the link between climate change and human activities is confirmed, two are the main identified causes; use of fossil fuels and reduction of natural carbon sinks...The UN

- 1995, 2001, 2007, 2014

The Second, Third, Fourth and Fifth Assessment report are published

...the AR6 Synthesis Report will be finalized in 2022



The role of IPCC

- 1990 → the UN General Assembly notes the First IPCC report findings and decides to initiate the negotiations for a framework convention on climate change!
- 1992 → During the UN Conference on Development and Environment (UNCED) held in Rio de Janeiro members countries sign the UN Framework Conference on Climate Change (UNFCCC).
- 2007 → The IPCC shares the Nobel prize, which is awarded for its “efforts to build and disseminate greater knowledge of man-made climate change and to lay the foundations for the measures that are needed to counteract such change”
- 2015 → At the Paris climate conference (COP21), 195 countries adopted the first-ever universal, legally binding global climate deal. The agreement sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C.
- April 2016 → During the 43th session of the IPCC (Nairobi, April 2016) the Panel decided to accept the invitation from the UNFCCC to provide a Special Report in 2018 on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, and to prepare it **in the context of strengthening the global response to the threat of climate change, sustainable development and efforts to eradicate poverty.**



SDGs and Climate Change or Climate change and SDGs?



With the Paris Agreement, the world has an equitable, durable yet flexible global framework for reducing emissions, strengthening climate resilience and providing support to developing countries to build low-carbon economies and adapt to inevitable climate impacts. This global climate agreement will accelerate the growth of clean energy and help us achieve the Sustainable Development Goals and will strengthen international stability and security, save lives and improve human well-being, *Ban Ki-moon, September 3rd, 2016*



The 2030 Agenda for Sustainable Development

- Adopted by the UN General Assembly on September 2015
- It seeks to build on the Millennium Development Goals and complete what they did not achieve.
- 17 Sustainable Development Goals and 169 targets to demonstrate the scale and ambition of this new universal Agenda. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental.



Goal 13: Take urgent action to combat climate change and its impacts

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Integrate climate change measures into national policies, strategies and planning

Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible

Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

** Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.*



One science for two global challenges ???

At the 1992 Earth Summit, the international community adopted Agenda 21, an unprecedented global plan of action for sustainable development.

In the same Conference, members countries signed the UN Framework Conference on Climate Change (UNFCCC).

Sustainable development and climate change: two global challenges linked since the beginning.

Can we shift from a climate change science paradigm to a broader sustainability science ???

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Universities have departments, society has problems

- Traditional reductionist model insufficient

- Stresses from the world have pushed scientist to consider messy, multidimensional problems.

- Emergence of new technologies that have the potential to empower many different fields

- Pressure against traditional disciplinary barriers is increasing



Convergence

Convergence is the merging of distinct technologies, processing disciplines, or devices into a unified whole that creates a host of new pathways and opportunities. It involves the coming together of different fields through collaboration among research groups and the integration of approaches that were originally seen as distinct or even contradictory. It is a broad rethinking of how scientific research is done.

– MIT White Paper



**A program for the young researchers
next 30 years**