

**International
Science Council**

The global voice for science

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Historical Milestones in Organized International Climate Research Cooperation



Bert Bolin

The World Climate Research Programme (WCRP) was established with the goals to determine whether the climate was changing, whether climate could be predicted, and whether humans were in some way responsible for the change.

“Two decades of efforts to develop global research programs in meteorology and climatology led to the formation of the World Climate Research Programme, WCRP, in 1980”, wrote B. Bolin.

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IGY has a special place in the history of international scientific cooperation of the 20th century.

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- **In 1960 the United States launched its first meteorological satellite.** People could view the Earth and its atmosphere from the outside.
- **UN Resolution, 1961:** ‘... members and WMO to study measures to advance the state of atmospheric sciences and technology in order to improve existing weather forecasting capabilities and to further the study of the basic physical processes that affect climate.’

Historical Milestones in Organized Climate Research

- **UN Resolution, 1962:** asked WMO '*... to develop in greater detail its plan for an expanded programme to strengthen methodological services and research ...*' and invited ICSU through its unions and national academies '*... to develop an expanded programme of atmospheric science research which will complement the programme fostered by the WMO.*' The responsibility for developing an expanded programme of research was given to ICSU, and particularly to its International Union of Geodesy and Geophysics, IUGG, as B. Bolin wrote.



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- **IUGG General Assembly, Berkley, USA, 1963:** *'IUGG should launch a truly international effort in order to prepare for the use of satellite technology in studies of the general circulation of the atmosphere and to develop new methods for weather forecasting'*.
- **ICSU General Assembly, Vienna, Austria, 1963:** it was agreed that an interunion committee on atmospheric sciences (CAS) with IUGG as the parent organization be formed by ICSU. COSPAR was asked to join to the efforts. CAS was established in 1964 (Chair: B. Bolin)




Historical Milestones in Organized Climate Research



- **1968: The Global Atmospheric Research Programme (GARP)**, a programme for studying physical processes in the troposphere and stratosphere that are essential for an understanding of changes of weather and climate.
- **1973:** Recommendation from the UN Conference in Stockholm expressed the view that WMO in cooperation with ICSU should *'continue to carry out the GARP, and if necessary establish new programmes to better understand the general circulation of the atmosphere and the causes of climate change and whether the causes are natural or the result of man's activities.'*



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 - **1979:** A first world climate conference was organized by WMO and United Nations Environment Program (UNEP).
 - **1980:** The climate issue had increased the attention from ICSU and WMO. The two parent organizations of GARP agreed to transform GARP into a committee for international cooperation in climate research. **The World Climate Research Programme, WCRP, was born.**
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WCRP's Excellency

- **Since its creation the WCRP has played a pivotal role in advancing international fundamental climate science by initiating and coordinating major collaborative activities which could not have been delivered otherwise** (some examples: WCRP Tropical Ocean Global Atmosphere (TOGA) programme, Global Energy and Water Exchanges (GEWEX) global datasets, Coupled Model Intercomparison Project (CMIP) that have become the backbone of climate research and have served as the basis for every IPCC Assessment Report)

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- **Over the decades, WCRP engaged thousands of scientists from around the world and became a ground-breaking programme of international and interdisciplinary research that has produced some major advances in climate science.** Notable achievements include:
 - ✓ understanding the chemistry and dynamics of the ozone hole;
 - ✓ establishing the physical basis for understanding and predicting El Niño events;
 - ✓ assessing the contribution of glacier and ice sheet melting to sea level rise;
 - ✓ comprehensive field measurements and the development of regional and global observational climatic data sets leading to improved understanding of key climate processes.

WCRP's Excellency

- **WCRP has stimulated persistent attention to climate extremes**, including drought and heat waves, from early detection and description stages to reliable statistic evaluation of climate fingerprints.
- **WCRP designed, coordinated, disseminated and guided the assessments of the climate change scenarios that underpin the IPCC.** Its activities have had a massive impact on climate change science and have enabled a huge community of scientists to engage with the IPCC process. On the basis of this scientific evidence, over 190 countries signed up, in Paris in 2015, to limit global warming to 2 °C and, if possible, 1.5 °C.
- **With the Paris Agreement, it might be tempting to conclude that climate research has provided the scientific answers — the world is warming and it is because of us.** On the contrary, underpinning fundamental climate science, which WCRP helps to deliver, is needed more than ever before, as society seeks solutions to the impacts of climate change (Paris Agreement), to resilience to disasters (Sendai Agreement), and to sustainable development for the planet (United Nations Sustainable Development Goals). Without a strong foundation in climate science and prediction, none of these challenges can be addressed in a robust, cost-effective and durable way. The bedrock knowledge that WCRP provides are critical for delivering the end-products and services.



International Science Council

[since 2018; a merger of the International Council for Science (ICSU)
and the International Social Science Council (ISSC)]

140 Member Organizations

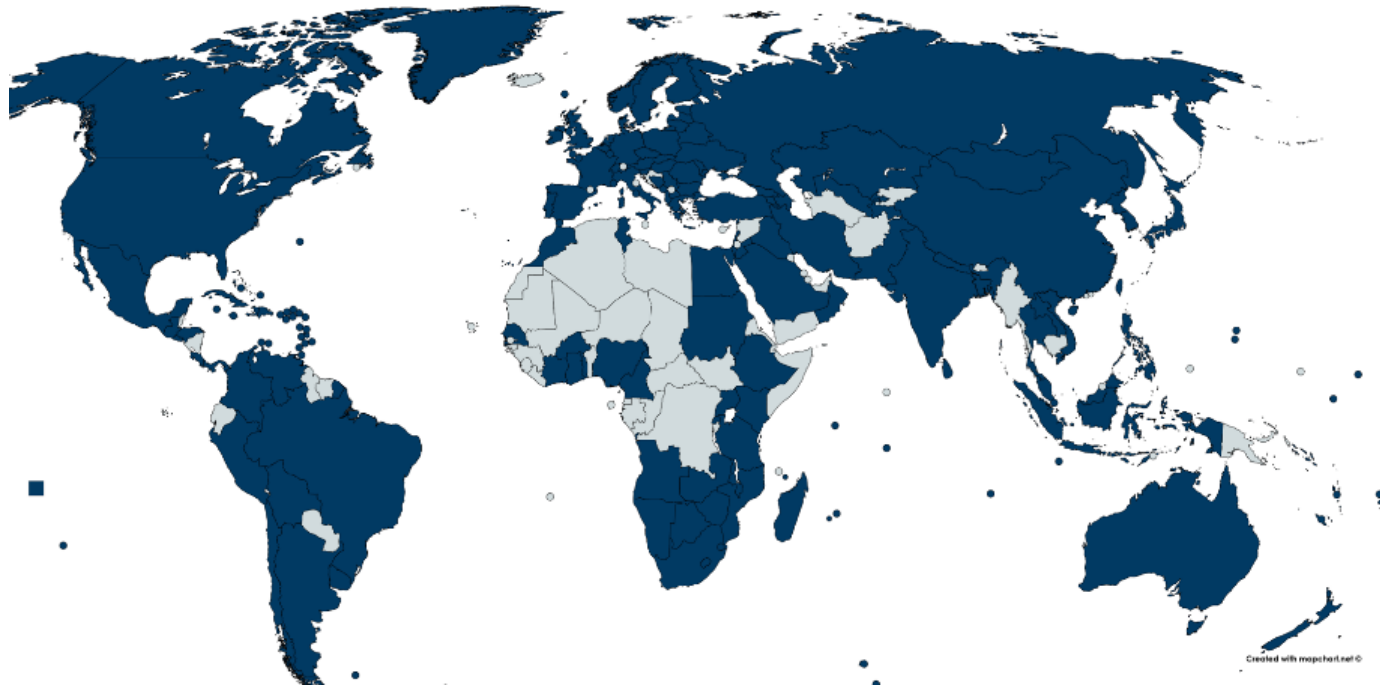
40 International Unions
and Associations

30 Affiliated
Members

16 Major Inter-disciplinary
Programs

**ISC vision is of science
as a global public good**

**ISC mission is to be the
global voice for science**



Existing activities

ISC Programmes and Global Scientific Networks

International Research Programmes

- World Climate Research Programme (WCRP)
- Future Earth
- Integrated Research on Disaster Risk Programme (IRDR)
- Urban Health and Wellbeing Programme (UHWB)
- Comparative Research on Poverty Programme (CROP)

The International Network for Government Science Advice

International Scientific Committees

- Antarctic Research (SCAR)
- Frequencies for Radio Astronomy and Space Science (IUCAF)
- Oceanic Research (SCOR)
- Space Research (COSPAR)
- Solar Terrestrial Physics (SCOSTEP)

Global Observing Systems

- Global Climate Observing System (GCOS)
- Global Ocean Observing System (GOOS)

International Data Bodies

- Committee on Data for Science and Technology (CODATA)
- World Data System (WDS)

Funding Programmes

- Transformations to Sustainability (Sida, Belmont Forum, Norface)
- Leading Integrated Research for Agenda 2030 in Africa (Sida, Bosch Foundation)





Science: Projects and Programmes in 4 Domains of Impact

Integrated science for global sustainability: Complexity and policy coherence
SDG Interactions as a policy driver

The 2030 Agenda for Sustainable Development

Data-driven interdisciplinarity
Global data resources and governance

The Digital Revolution

Science-policy interfaces and advisory ecosystems at the global level
The public value of science
Science and the private sector

Science in Policy and Public Action

Gender equality in science
Refugee and displaced scientists
Regional open science platforms
The future of scientific publishing
Knowledge production and governance as a global good

The Evolution of Science and Science Systems

Existing activities



Representation and participation



Scientific input and advice on request and independently



Involvement in UN Advisory Bodies, incl. Technology Facilitation Mechanisms (TFM) and Climate Summit



Activity-based Agreements with UN Agencies and Programmes



Since 1992: Major Group for the Scientific and Technological Community

Strengthening the demand for and mandate of science in the UN

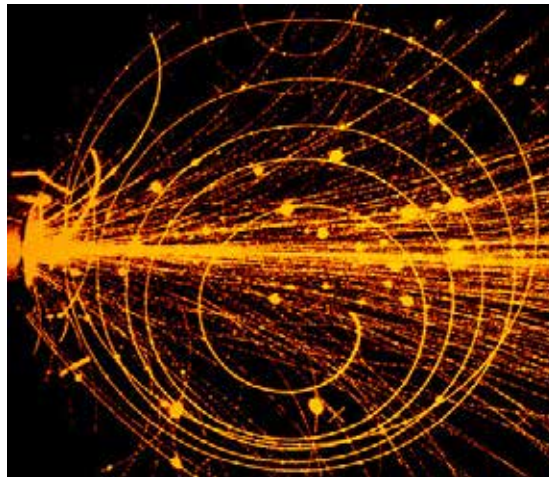


The International Science Council hopes that the World Climate Research Programme (WCRP) will continue its critical work in advancing climate science for the greater benefits of the society, and that the programme will continue to be recognized as an influential collective voice for climate science. And the **ISC is committed to support the WCRP in delivering its strategic ambitions.**



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Congratulations to WCRP!



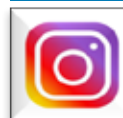
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Work with the ISC to advance science as a global public good