

**Learning from Experience to Address Complex Science-Related Issues**

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Logos: WCRP, IRDR, URBAN HEALTH AND WELLBEING, futureearth

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**Global Risks Report 2020**

World Economic Forum

A global risk is an uncertain event or condition that, if it occurs, can cause significant negative impact for several countries or industries within the next 10 years.

Need for globally integrated management across issues

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**WEF-GRR 2020 – Evolving Risk Landscape 2007 - 2020**

**Growing Risk in a Shrinking World**

*“If I had to select one sentence to describe the state of the world, I would say we are in a world in which global challenges are more and more integrated, and the responses are more and more fragmented, and if this is not reversed, it's a recipe for disaster.”*

A. Guterres, UN Secretary-General, January 2019

Use international and national assessments to motivate, plan and implement science programs.

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**International Science Council**

Founding General Assembly and inauguration of the International Science Council - Paris, France, 3 - 5 July 2018

- A global voice to advance science as a global public good
  - Mobilizing science for policy and public action on issues of global public concern
  - Shaping policies and practices that enable scientific rigour, creativity and relevance in all parts of the world
  - Safeguarding the free and responsible practice of science
  - Co-sponsoring international scientific programmes, networks and committees

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**International Research Collaboration**

1979 – First World Climate Conference – Geneva

Global Atmospheric Research Program 1967-80

IGY – Int'l Geophysical Year 1957-58  
 Sputnik, CO<sub>2</sub>, O<sub>3</sub>, ...

WCRP: to determine: the predictability of climate; and the effect of human activities on climate

WCRP Established 1980

IGBP: earth system science to help guide society onto a sustainable pathway during rapid global change

GLOBAL CHANGE 1987

DIVERSITAS 1991

DIVERSITAS: integrative biodiversity science, that links biological, ecological and social disciplines; and scientific basis for decision-making

IPCC 1988

2nd WCC - UN Climate Convention

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**World Climate Research Programme**

to determine the predictability of climate; and to determine the effect of human activities on climate.

Co-Sponsored by WMO and ICSU

Joint Scientific Committee - Appointed by WMO and ICSU - Chair - JSC members elect Interdisciplinary - atmosphere-oceans-water-ice-land systems

- Focus on short periods - studies with extended time
- Bring together weather, ... and agencies

WCRP approach - listed - good for project.

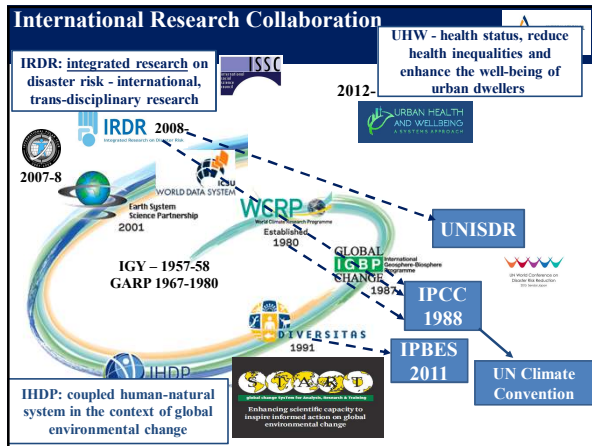
Commitments meetings (about \$800m/year)

Have the Governance-Science Committee-Staff - and project teams - working together for review-implementation.

UNESCO - IOC - solidify ocean components.

Logos: WCRP, SPARC, GEWEX, WOCE, TOGA, IRDR, futureearth

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**Integrated Research on Disaster Risk**

An integrated approach to research on disaster risk through: an international, multidisciplinary (natural, health, engineering and social sciences) collaborative research programme.

Objectives:

1. Characterization of hazards, vulnerability and risk
  - 1.1: identifying hazards and vulnerabilities leading to risks;
  - 1.2: forecasting hazards and assessing risks; and
  - 1.3: dynamic modelling of risk.
2. Effective decision making in complex and changing risk contexts - risk interpretation to action - RIA
  - 2.1: Build partnerships with other expert programs.
  - 2.2: [Diagram showing interactions between WCRP, WCRP, and WCRP]
3. Reduce ICCEs as a model for strengthening the base.
  - 3.1: [Diagram showing interactions between WCRP, WCRP, and WCRP]
  - 3.2: Effective approaches to risk reduction.

International Centres of Excellence (ICCE) (16+)

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**2015 Policy Agenda - 2030**

**Sendai Framework for Disaster Risk Reduction 2015-2030**

The post-2015 development agenda, financing for development, climate change and disaster risk reduction ...

Ensuring credible links, ... between these processes will contribute to building resilience and achieving the global goal of Focussing Event - Outcomes

- 2004 - Indian Ocean tsunami
- 2005 - Hyogo Framework for Disaster Reduction
- 2008 - IRDR
- 2015 - Sendai Framework - SDGs, Climate Adaptation risk;

3. Investing in disaster risk reduction for resilience;
4. Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction.

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**URBAN HEALTH AND WELLBEING**  
A SYSTEMS APPROACH

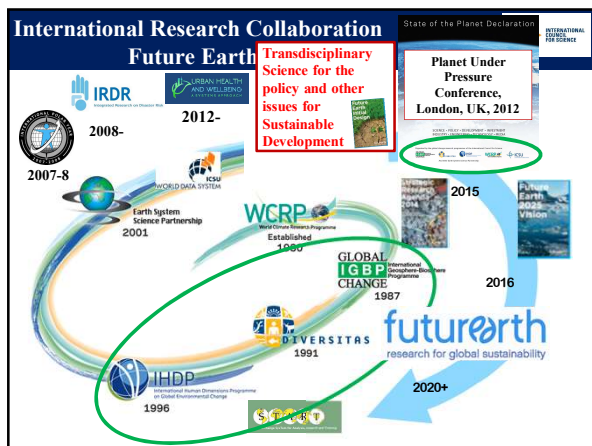
Interdisciplinary research effort whose overall aim is to generate policy-relevant knowledge that will improve health status, reduce health inequalities and enhance the well-being of urban dwellers. It will focus on the integration of natural, social, medical and engineering sciences using systems approaches to address the complexity of urban issues and their influence on health.

**Urban Health - Disaster Risk Reduction - Climate Change adaptation**

How can we - science and service communities - be most effective as urban populations grow?

What integrated information will motivate, guide and result in the "right" actions to reduce loss of life and economic wellbeing?

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**futureearth**

Research, Innovation, Sustainability.

**Goal:**

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

**KNOWLEDGE-ACTION NETWORKS**  
- collaborative frameworks that facilitate highly integrative sustainability research - key focal challenges.

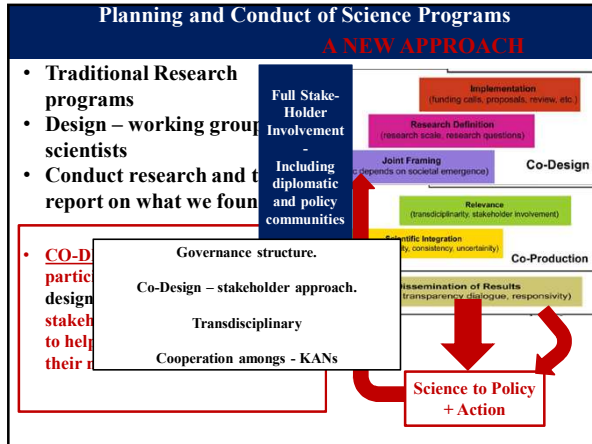
Governing Council  
Co-Sponsors, Funders, Partners  
Advisory Committee

Executive Secretariat

Tokyo, Montreal, Paris, Stockholm, Colorado

- Risk
- Water-Energy-Food
- Transformations
- Sustainable Development Goals
- Cities
- Oceans
- Disasters
- Finance & Economics
- Natural Assets
- Health

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### Address Complex Science-Related Issues

May 24-28, 2020  
Ottawa

**54<sup>th</sup> ANNUAL MEETING**

**BUILDING SOCIETAL RESILIENCE**  
In Ontario's Great Lakes  
Staircase Ecosystems

**BÂTIR UNE RÉSILIENCE SOCIALE**  
En Grande Région des Grands Lacs  
Staircase Écosystèmes

[atmos.ca](http://atmos.ca) / [scmo.ca](http://scmo.ca)

**ACTION**

Comprehensive Actions Needed

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