Science to achieve the 2030 Agenda (SDGs) – Global Perspective

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future ocean
KIEL MARINE SCIENCES

International Science Council

The Global Voice for Science

International Science Council

B.S. Halpern (T. Hengl; D. Groll) / Wikimedia Commons

Legend (population density scale):

7500(<)
17500
27500
37500
47500
57500
67500
77500
87500
97500
107500
117500
127500(>)

1.Shanghai(14608512, China) 2.Buenos Aires(13076300, Argentina) 3.Mumbai(12691836, India) 4.Karachi(11624219, Pakistan) 5.Mexico City(11285654, Mexico)

6.Istanbul(11117257, Turkey) 7.Delhi(10927986, India) 8.Manila(10444527, Philippines) 9.Moscow(10381222, Russia) 10.Dhaka(10356500, Bangladesh)

11.Seoul(10349312, South Korea) 12.Sao Paulo(10021295, Brazil) 13.Lagos(9000000, Nigeria) 14.Jakarta(8540121, Indonesia) 15.Tokyo(8336599, Japan)

16.Zhumadian(8263100, China) 17.New York City(8008278, US) 18.Taipei(7871900, Taiwan) 19.Kinshasa(7785965, Congo (Kinshasa)) 20.Lima(7737002, Peru)
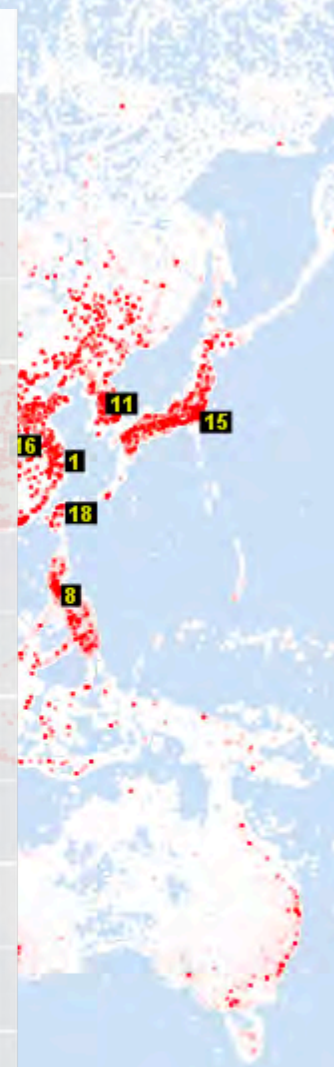
A

World Population Projection

+0.5child

10-12 Billion People (2100)

wpp2012

−0.5child

Total Population (billions)

16
15
14
13
12
11
10
9
8
7
6
5
4
3
2

1950   2000   2050   2100

Year

1.Shanghai(23985512, China)   2.Buenos Aires(13076300, Argentina)   3.Mumbai(12691836, India)   4.Karachi(11624219, Pakistan)   5.Mexico City(11285654, Mexico)
6.Istanbul(11174257, Turkey)   7.Delhi(10927986, India)   8.Manila(10444527, Philippines)   9.Moscow(10381222, Russia)   10.Dhaka(10356500, Bangladesh)
11.Seoul(10349312, South Korea)   12.Sao Paulo(10021295, Brazil)   13.Lagos(9000000, Nigeria)   14.Jakarta(8540121, Indonesia)   15.Tokyo(8336599, Japan)
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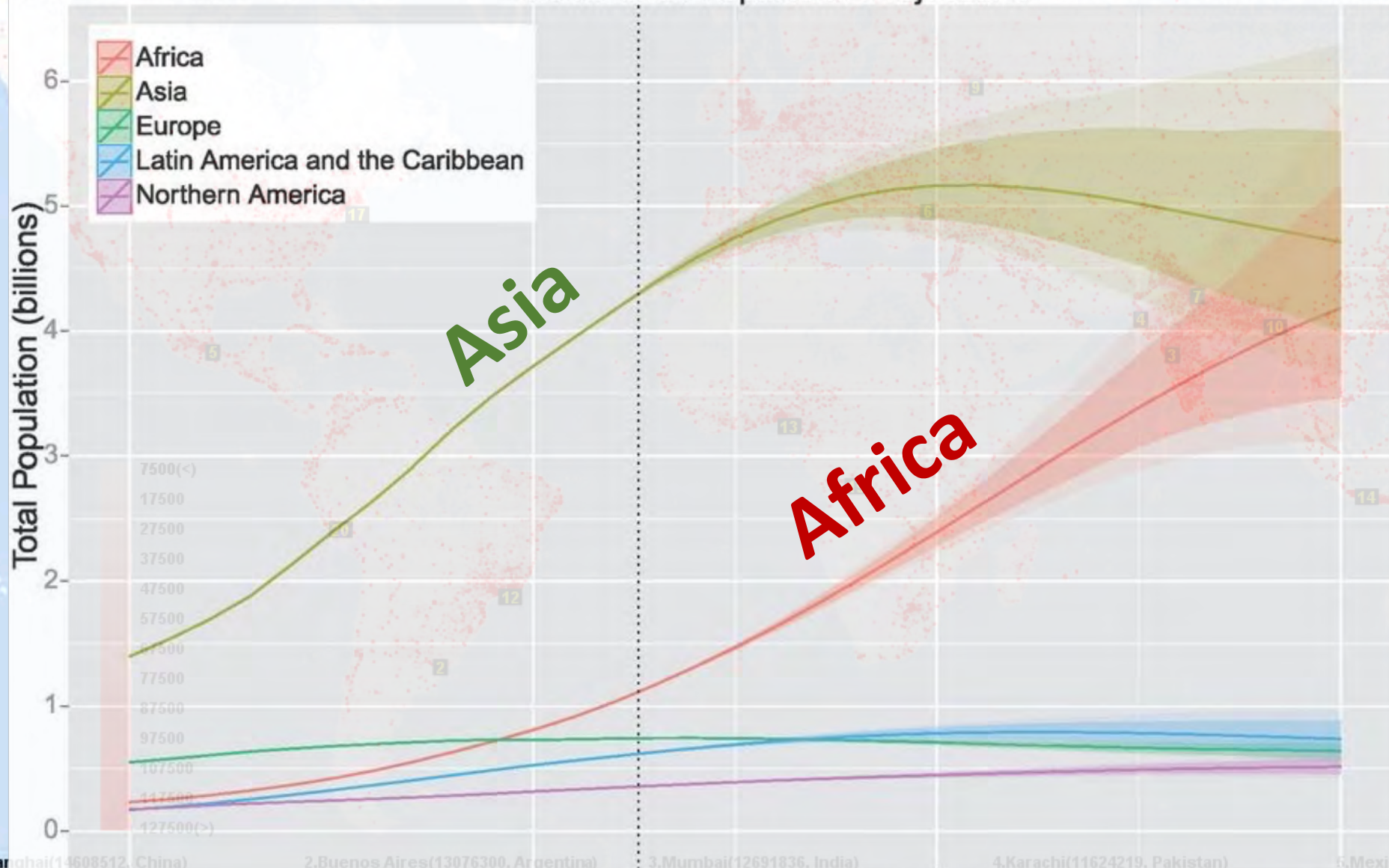
B

Continental Population Projections

Legend:
- Africa
- Asia
- Europe
- Latin America and the Caribbean
- Northern America

Y-axis: Total Population (billions) — 0, 1, 2, 3, 4, 5, 6

X-axis: Year — 1950, 2000, 2050, 2100

Asia

Africa

7500(<)
17500
27500
37500
47500
57500
67500
77500
87500
97500
107500
117500
127500(>)

1.Shanghai(14608512, China)	2.Buenos Aires(13076300, Argentina)	3.Mumbai(12691836, India)	4.Karachi(11624219, Pakistan)	5.Mexico City(11285654, Mexico)
6.Istanbul(11174257, Turkey)	7.Delhi(10927986, India)	8.Manila(10444527, Philippines)	9.Moscow(10381222, Russia)	10.Dhaka(10356500, Bangladesh)
11.Seoul(10349312, South Korea)	12.Sao Paulo(10021295, Brazil)	13.Lagos(10000000, Nigeria)	14.Jakarta(8540121, Indonesia)	15.Tokyo(8336599, Japan)
16.Zhumadian(8263100, China)	17.New York City(8008278, US)	18.Taipei(7871900, Taiwan)	19.Kinshasa(7785965, Congo (Kinshasa))	20.Lima(7737002, Peru)

One Planet
One Ocean
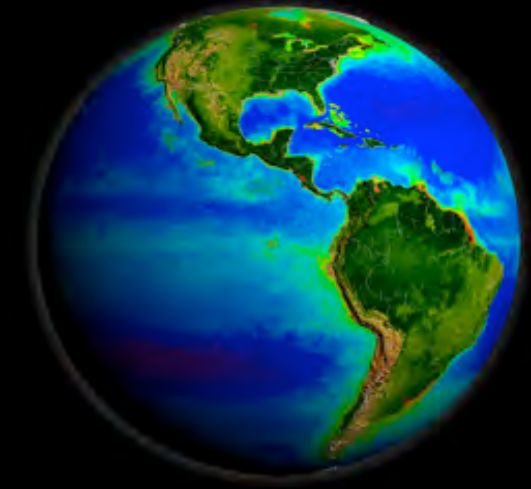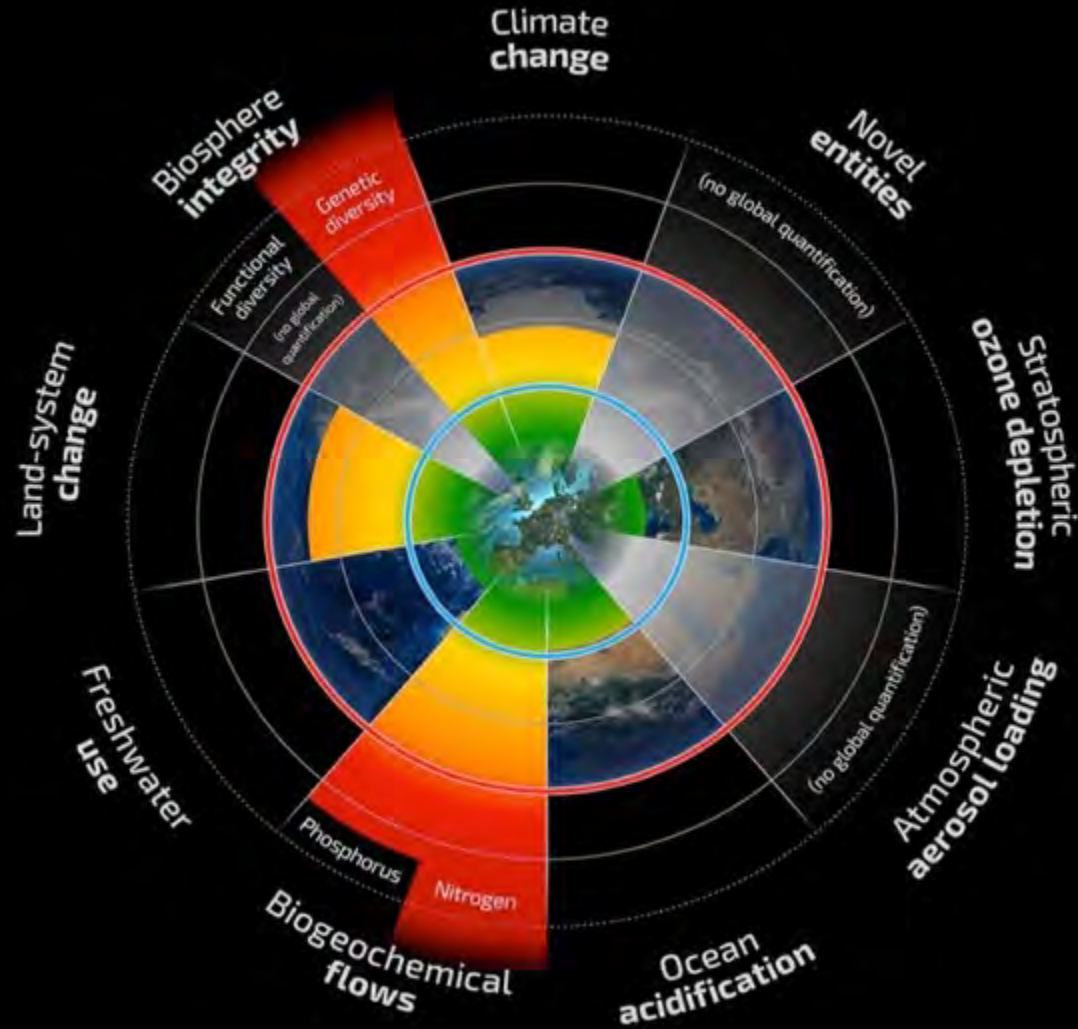
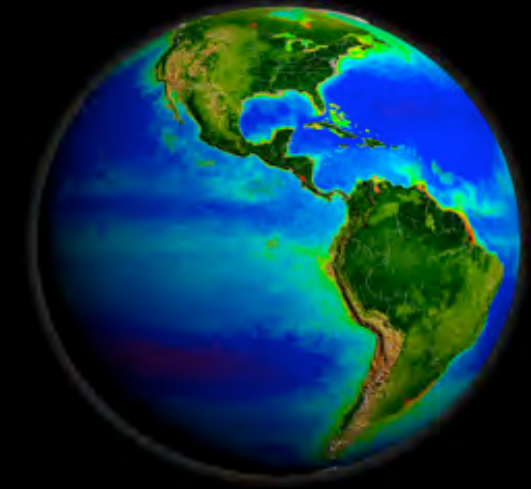# Development needs to respect planetary boundaries
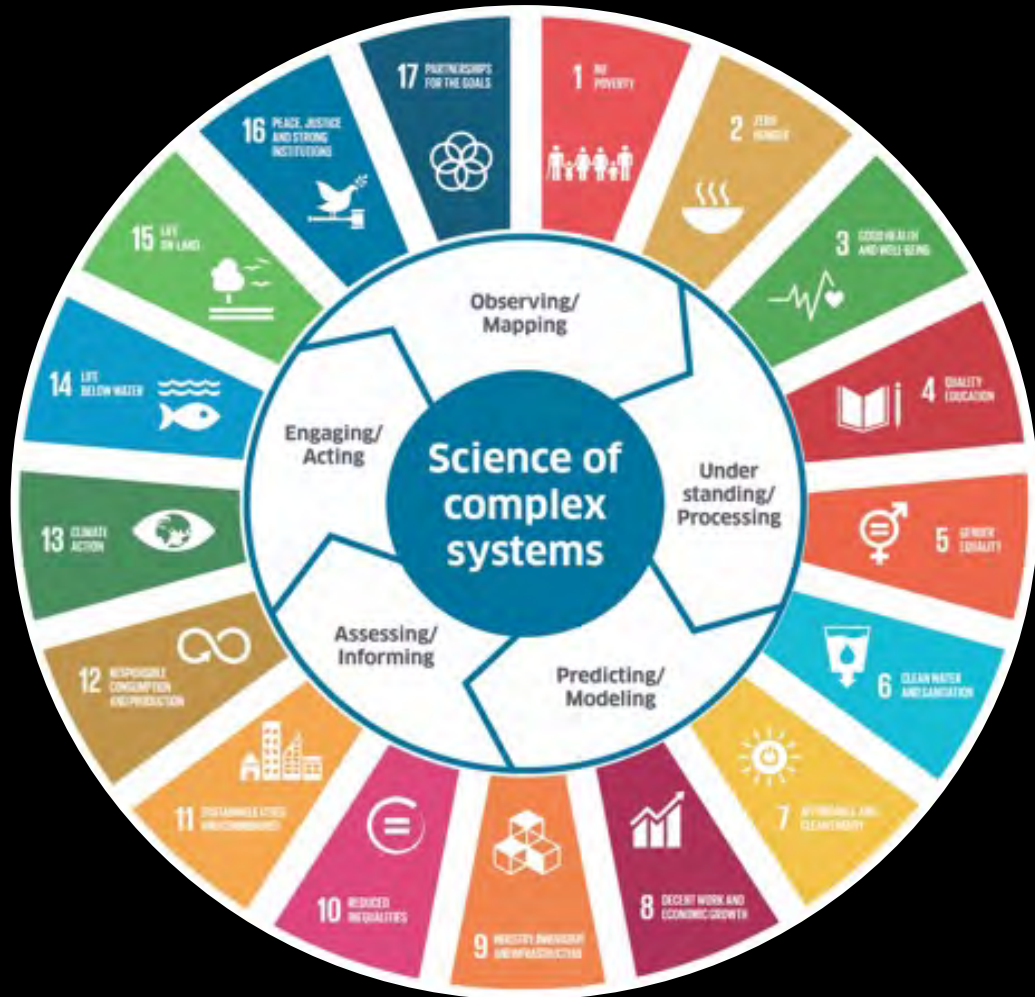

One Planet
One Ocean

Development needs to respect planetary boundaries
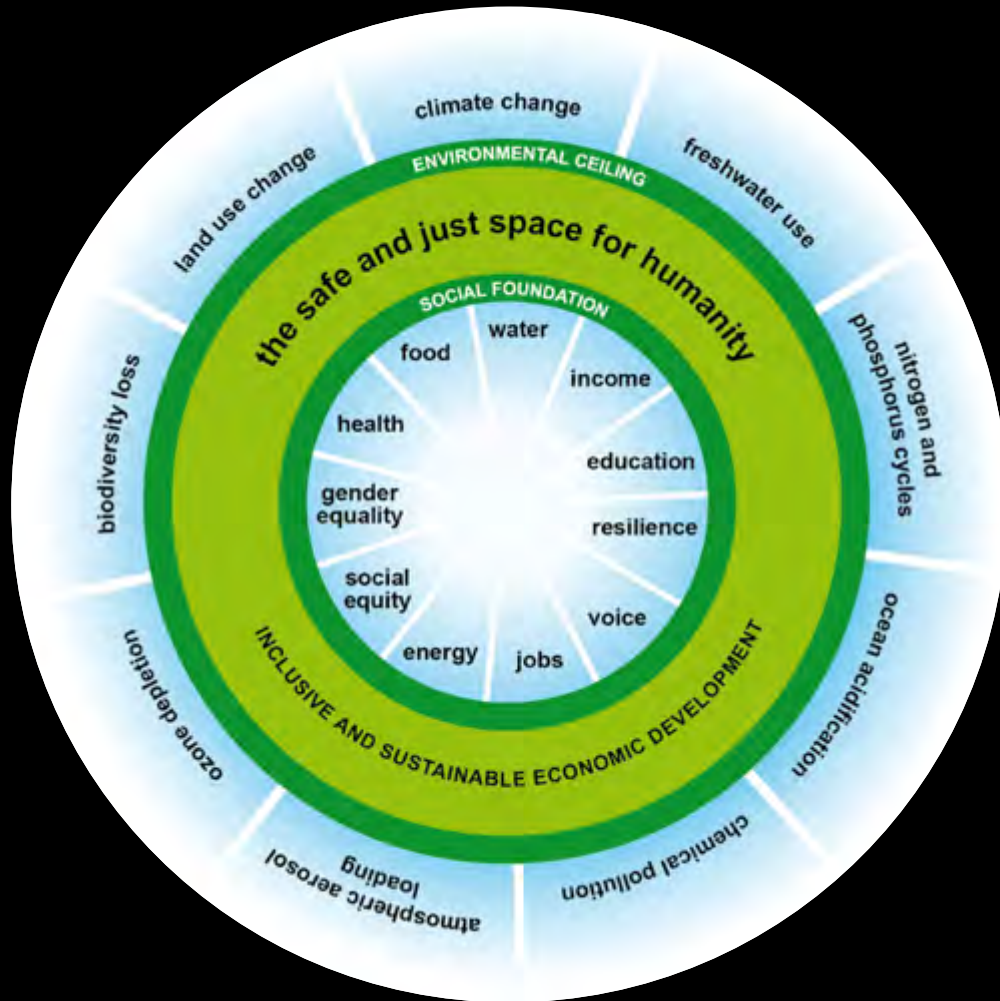
One Planet
One Ocean

What is the safe and just operating space for humanity?

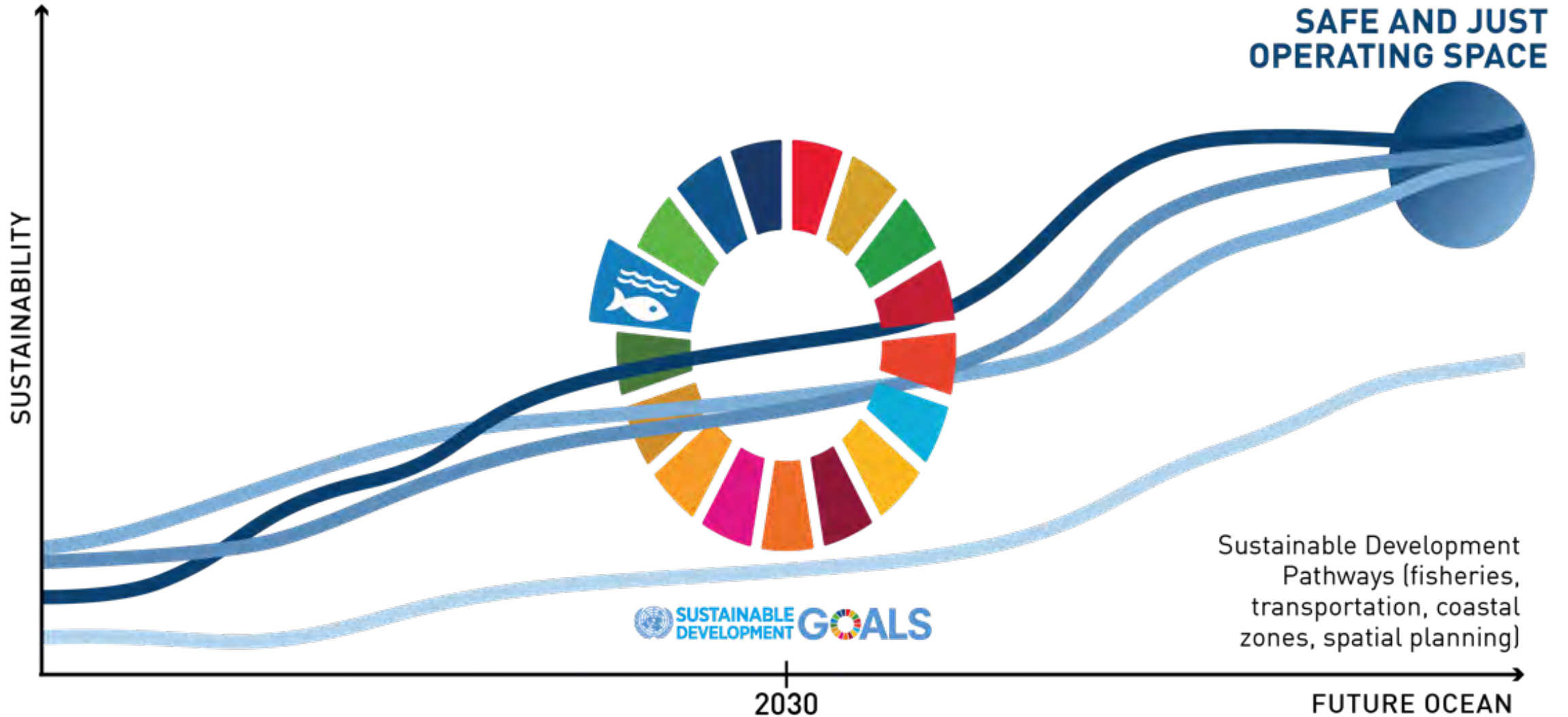# Global Politics (UN) has set ambitious goals

What is the safe and just operating space for humanity?

2030 Agenda for Sustainable Development

2030 Agenda for Sustainable Development

2030 Agenda SDG interaction

Goal Interactions – Nexus – Policy Coherence

GOALS SCORING

The influence of one Sustainable Development Goal or target on another can be summarized with this simple scale.

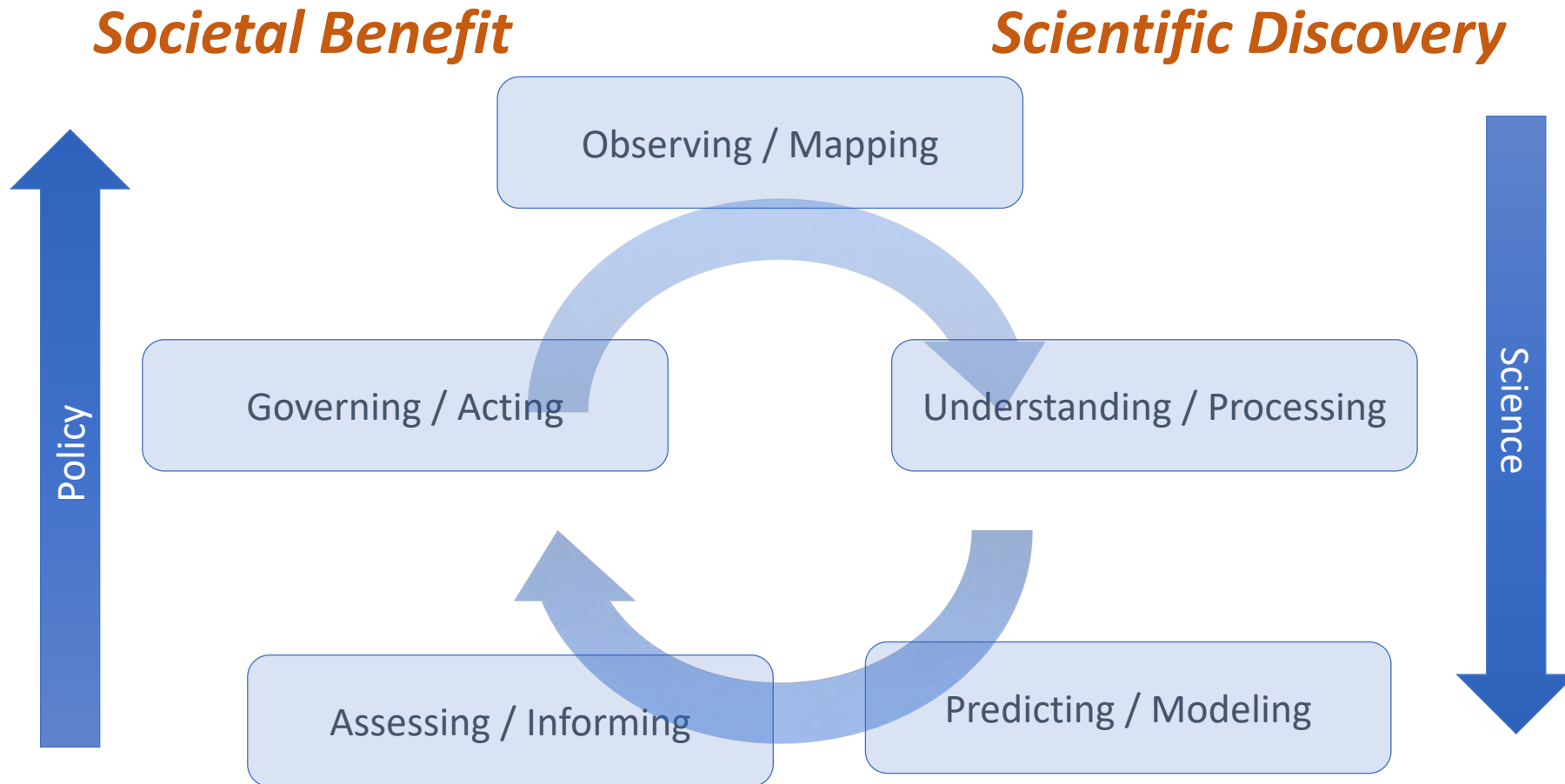| Interaction	Name	Explanation	Example
+3	Indivisible	Inextricably linked to the achievement of another goal.	Ending all forms of discrimination against women and girls is indivisible from ensuring women's full and effective participation and equal opportunities for leadership.
+2	Reinforcing	Aids the achievement of another goal.	Providing access to electricity reinforces water-pumping and irrigation systems. Strengthening the capacity to adapt to climate-related hazards reduces losses caused by disasters.
+1	Enabling	Creates conditions that further another goal.	Providing electricity access in rural homes enables education, because it makes it possible to do homework at night with electric lighting.
0	Consistent	No significant positive or negative interactions.	Ensuring education for all does not interact significantly with infrastructure development or conservation of ocean ecosystems.
–1	Constraining	Limits options on another goal.	Improved water efficiency can constrain agricultural irrigation. Reducing climate change can constrain the options for energy access.
–2	Counteracting	Clashes with another goal.	Boosting consumption for growth can counteract waste reduction and climate mitigation.
–3	Cancelling	Makes it impossible to reach another goal.	Fully ensuring public transparency and democratic accountability cannot be combined with national-security goals. Full protection of natural reserves excludes public access for recreation.

Map the interactions between Sustainable Development Goals

Måns Nilsson, Dave Griggs and Martin Visbeck present a simple way of rating relationships between the targets to highlight priorities for integrated policy.

A GUIDE TO SDG INTERACTIONS: FROM SCIENCE TO IMPLEMENTATION

INTERNATIONAL COUNCIL FOR SCIENCE

Six transformations towards global sustainability

Digital revolution
Artificial intelligence, big data, biotech, nanotech, autonomous systems

Human capacity & demography
Education, health, ageing, labor markets, gender, inequalities

Smart cities
Decent housing, mobility, sustainable infrastructure, pollution

Consumption & production
Resource use, circular economy, sufficiency, pollution

Food, biosphere, & water
Sustainable intensification, biodiversity, forests, oceans, healthy diets, nutrients

Decarbonization & energy
Energy access, efficiency, electrification, decent services

SDGs:
Prosperity
Social Inclusion
Sustainability

TWI2050
The World in 2050
www.twi2050.org

future ocean
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Transformations to Achieve the Sustainable Development Goals

Report prepared by The World in 2050 initiative

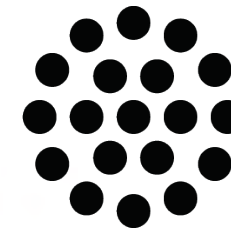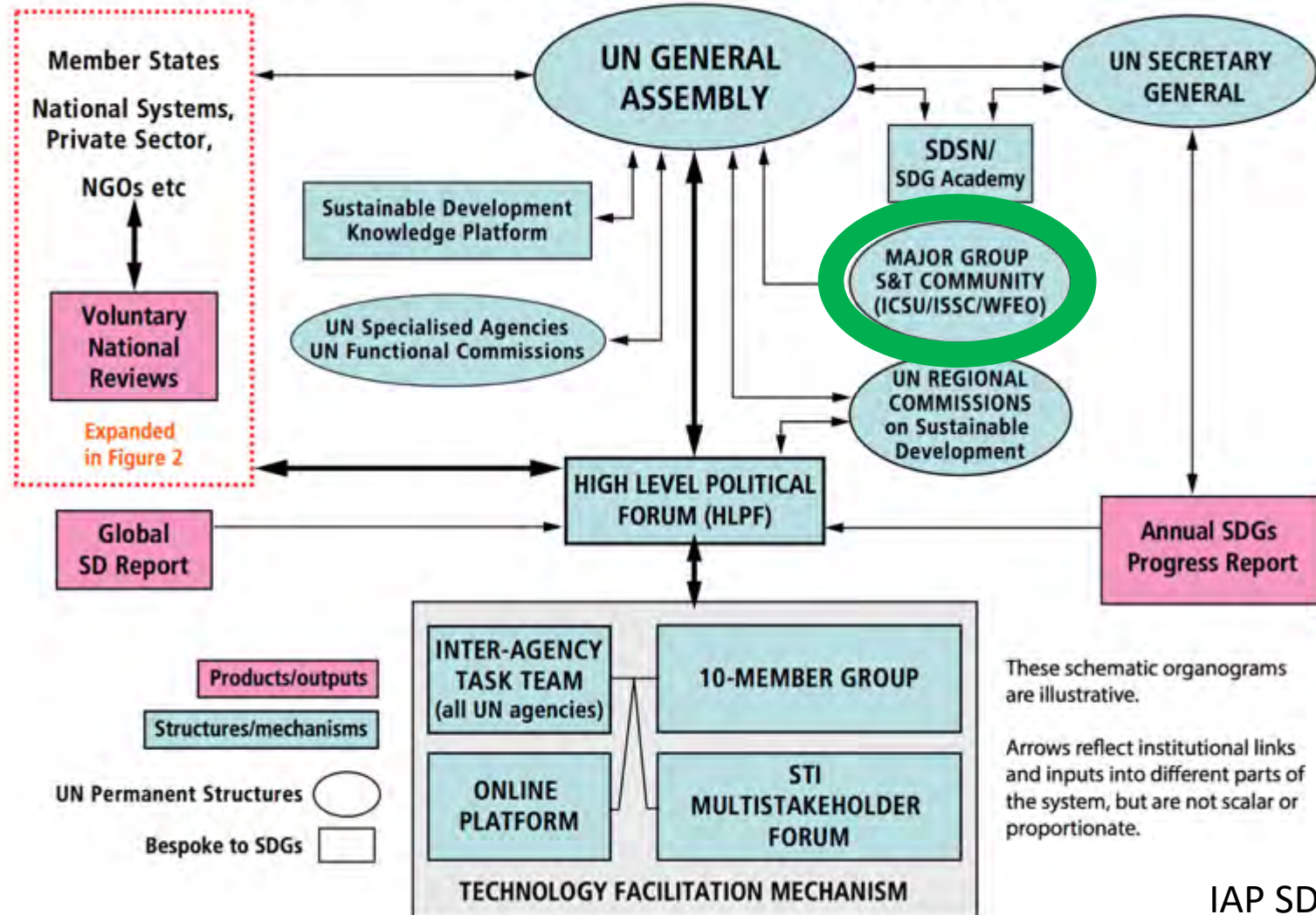TWI2050
The World in 2050

From Science to Societal Benefit
Value-Cycle

Science-Policy Advice to the 2030 Agenda

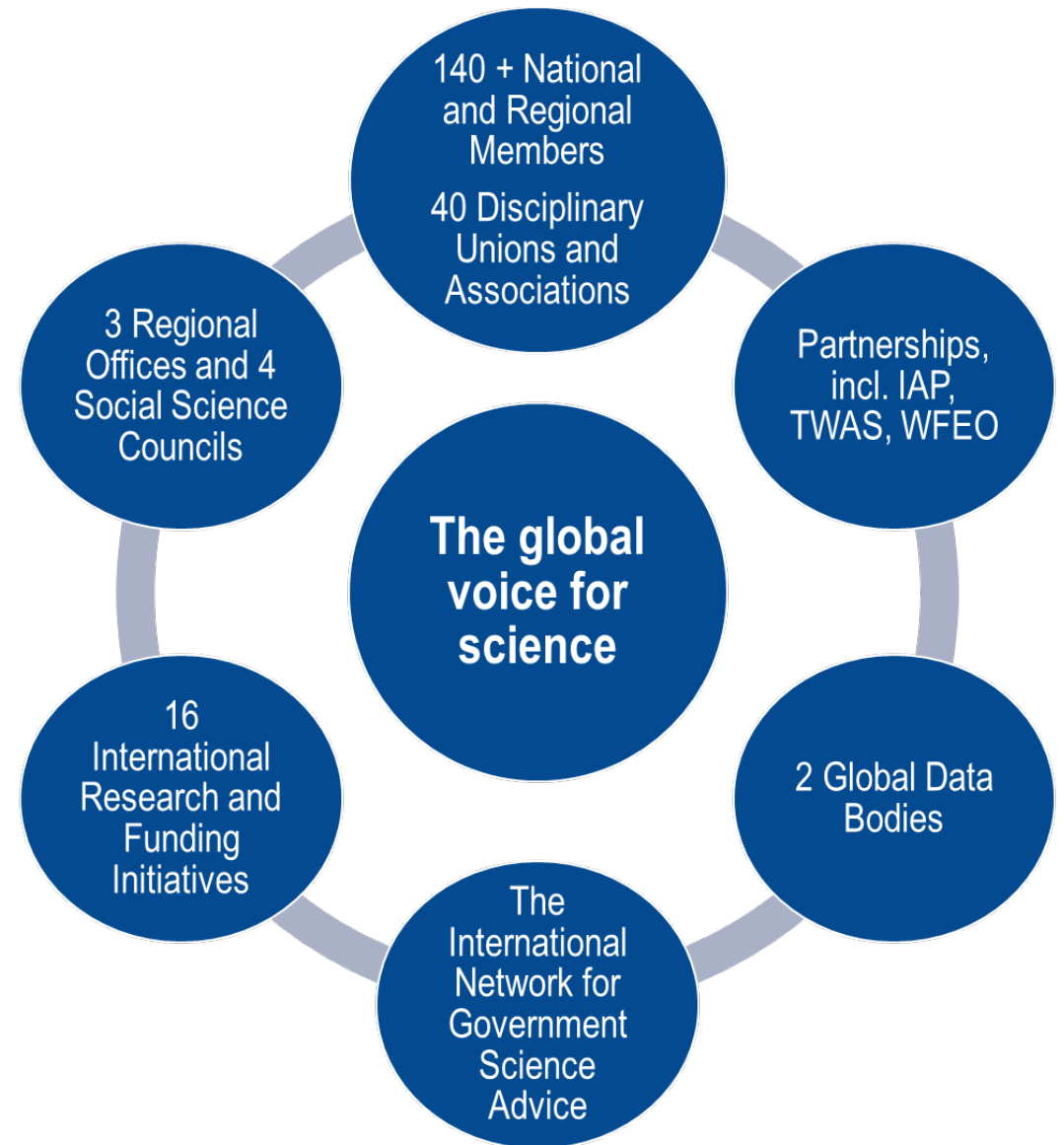Figure 1: Mapping science advice in the UN SDGs process: at the UN level (simplified)

IAP SDG Document 2015

The ISC's Four Domains of Impact

Science in Policy and Public Discourse

Science advice, open science, trans-disciplinarity, the post-truth/post-trust dynamic, science communication, etc.

The 2030 Agenda for Sustainable Development

Synergies and trade-offs; SDG implementation, transformations to sustainability; etc.

The Digital Revolution

Big, broad, linked and open data, AI, transformation of the human, reproducibility of scientific results, etc.

The Evolution of Science and Science Systems

Inequalities in science, the industrialization of science, critical capacities, funding, etc.

International Science Council

International Scientific Initiatives

High profile international scientific initiatives, many of which are co-sponsored by other international scientific partners, include the United Nations Educational Scientific and Cultural Organization (UNESCO) and other specialized UN agencies.

ISC co-leads UN Major Group for Science and Technology

The ISC is a **Lead Coordinator of the UN Major Group for Science and Technology.**

In this role the Council works with the World Federation of Engineering Organizations (WFEO) to secure a mandate for science at the UN and to integrate science in major global policy processes, including the 2030 Agenda for Sustainable Development, the Paris Agreement on Climate Change, the New Urban Agenda and the Sendai Framework for Disaster Risk Reduction.

Increased UN engagement of ISC family

1992

2015 onwards

S&T Major Group

Science in multi-stakeholder Partnership 'Assemblies'

UN Advisory Bodies

Activity-based Agreements with specific UN Agencies

ISC Special Envoy for Science in Global Policy

Strengthening the demand for and mandate of science in the UN

Dr Flavia Schlegel

International Science Council