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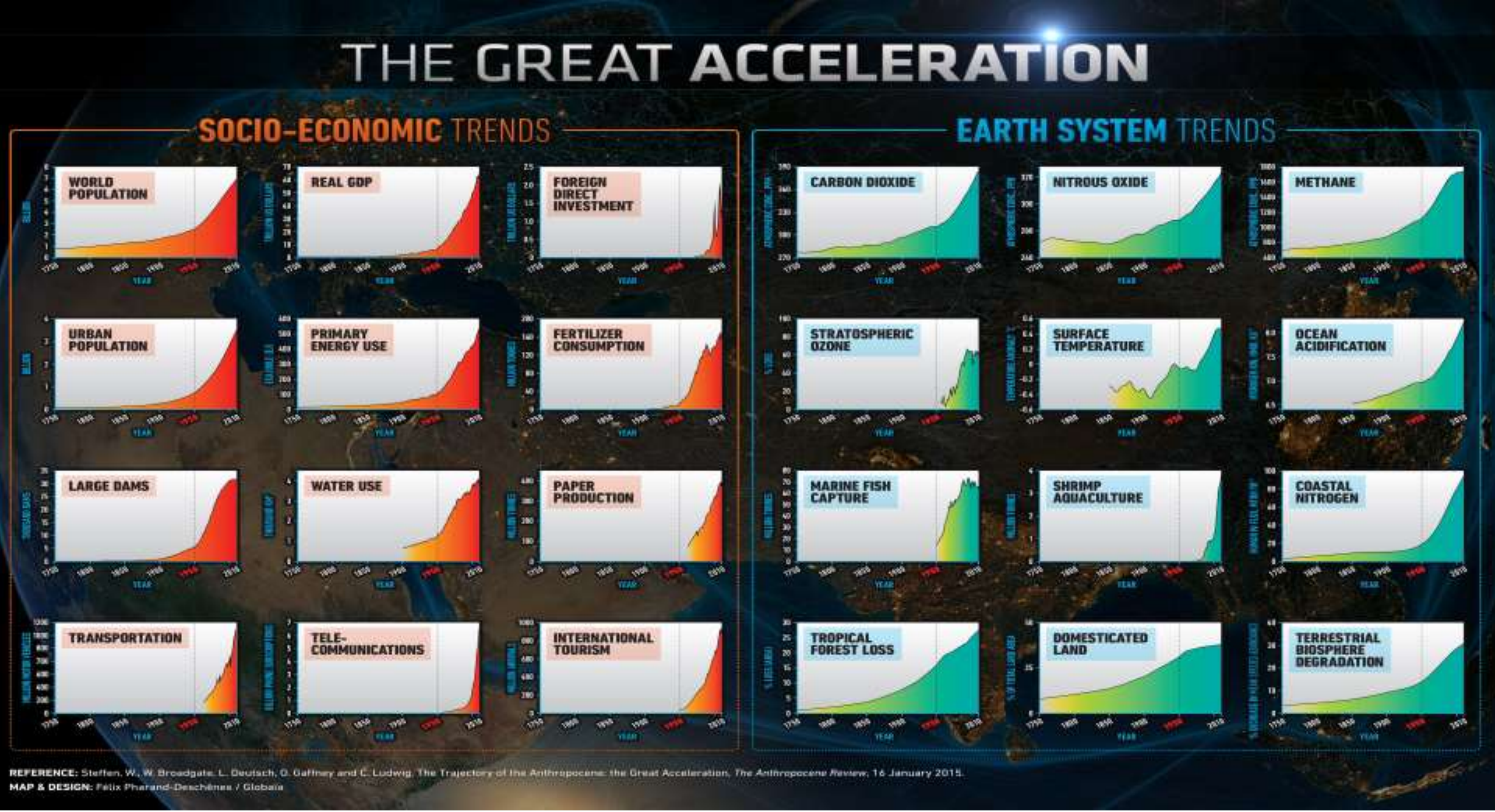
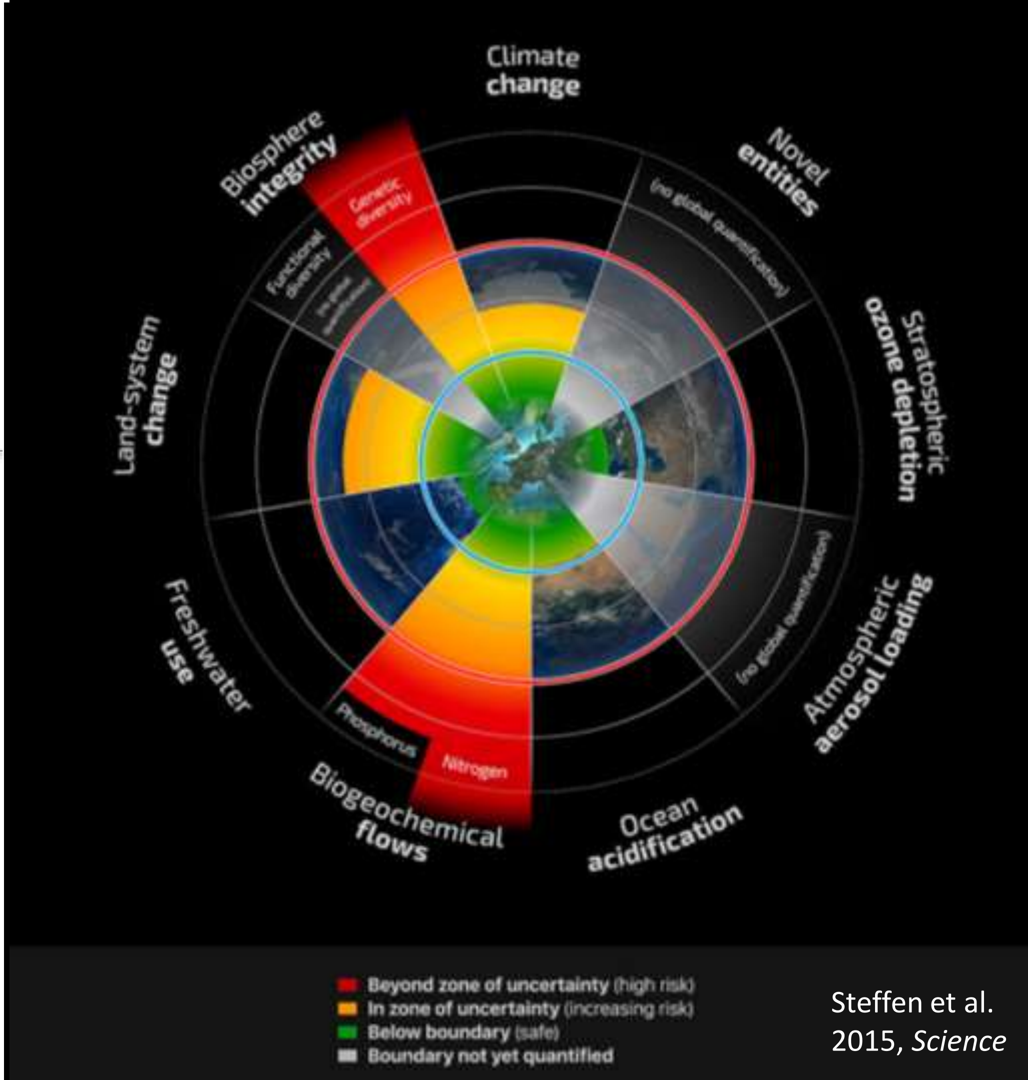
research for global sustainability

Craig Starger

Future Earth Secretariat, Colorado Hub

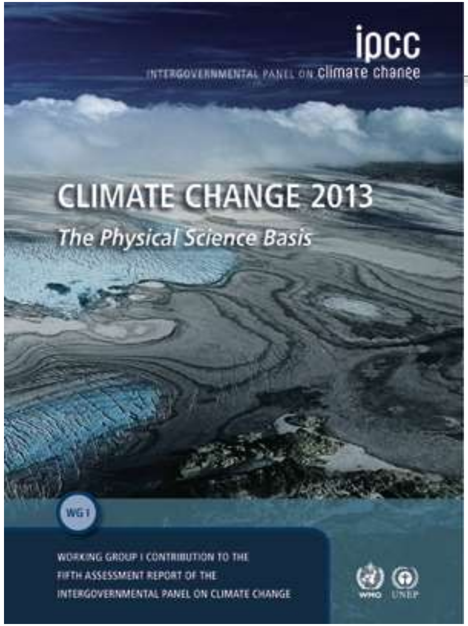

THE GREAT ACCELERATION
SOCIO-ECONOMIC TRENDS
WORLD POPULATION
REAL GDP
FOREIGN DIRECT INVESTMENT
URBAN POPULATION
PRIMARY ENERGY USE
FERTILIZER CONSUMPTION
LARGE DAMS
WATER USE
PAPER PRODUCTION
TRANSPORTATION
TELE-COMMUNICATIONS
INTERNATIONAL TOURISM
EARTH SYSTEM TRENDS
CARBON DIOXIDE
NITROUS OXIDE
METHANE
STRATOSPHERIC OZONE
SURFACE TEMPERATURE
OCEAN ACIDIFICATION
MARINE FISH CAPTURE
SHRIMP AQUACULTURE
COASTAL NITROGEN
TROPICAL FOREST LOSS
DOMESTICATED LAND
TERRESTRIAL BIOSPHERE DEGRADATION
REFERENCE: Steffen, W., W. Broadgate, L. Deutsch, O. Gaffney and C. Ludwig. The Trajectory of the Anthropocene: the Great Acceleration, The Anthropocene Review, 16 January 2015.
MAP & DESIGN: Felix Pharand-Deschênes / Globaia

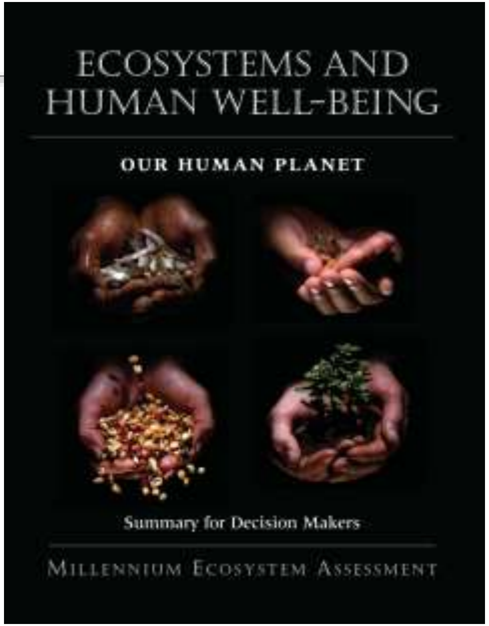
Planetary Boundaries
A safe operating space for humanity



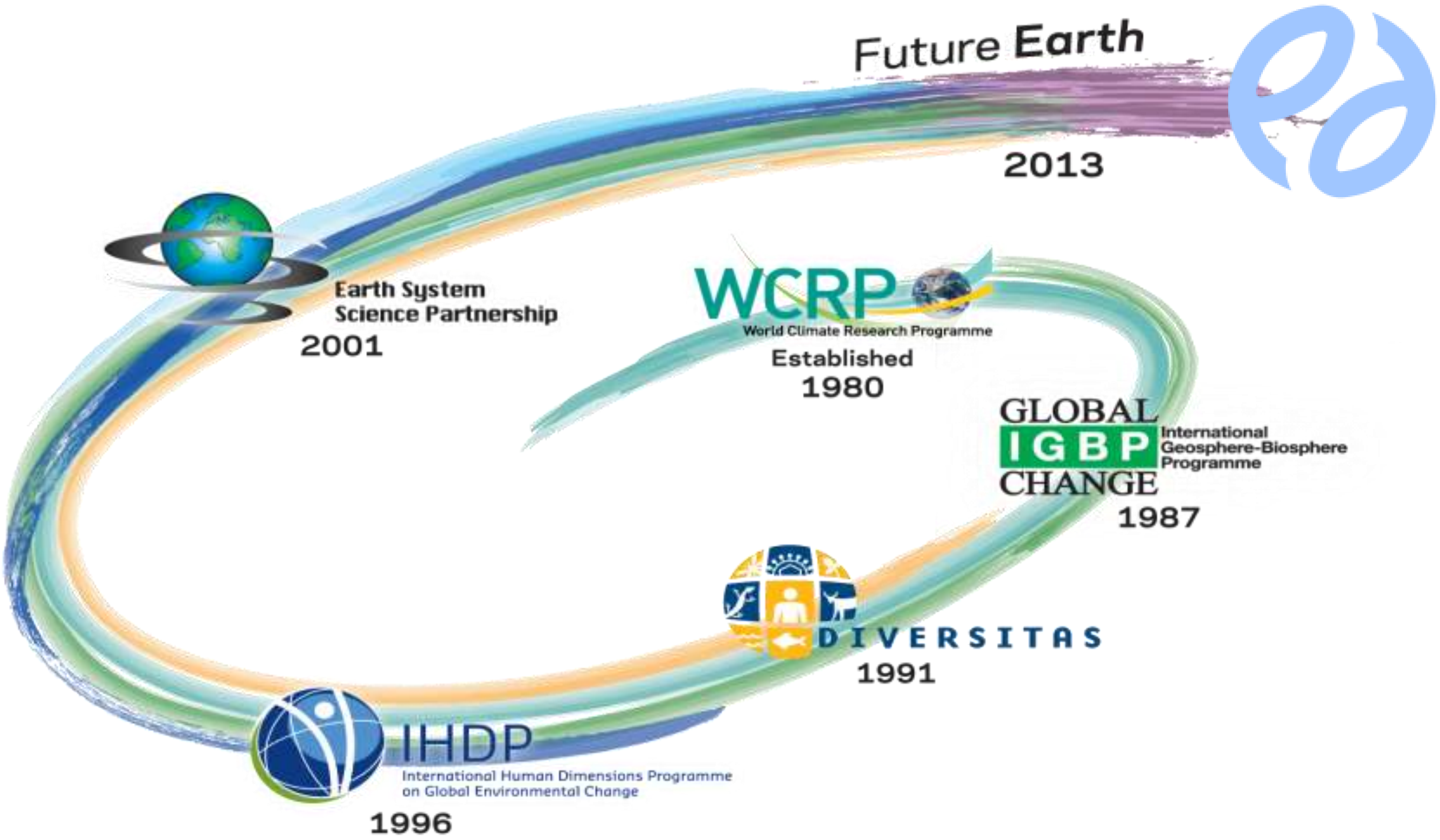
Steffen et al. 2015, *Science*

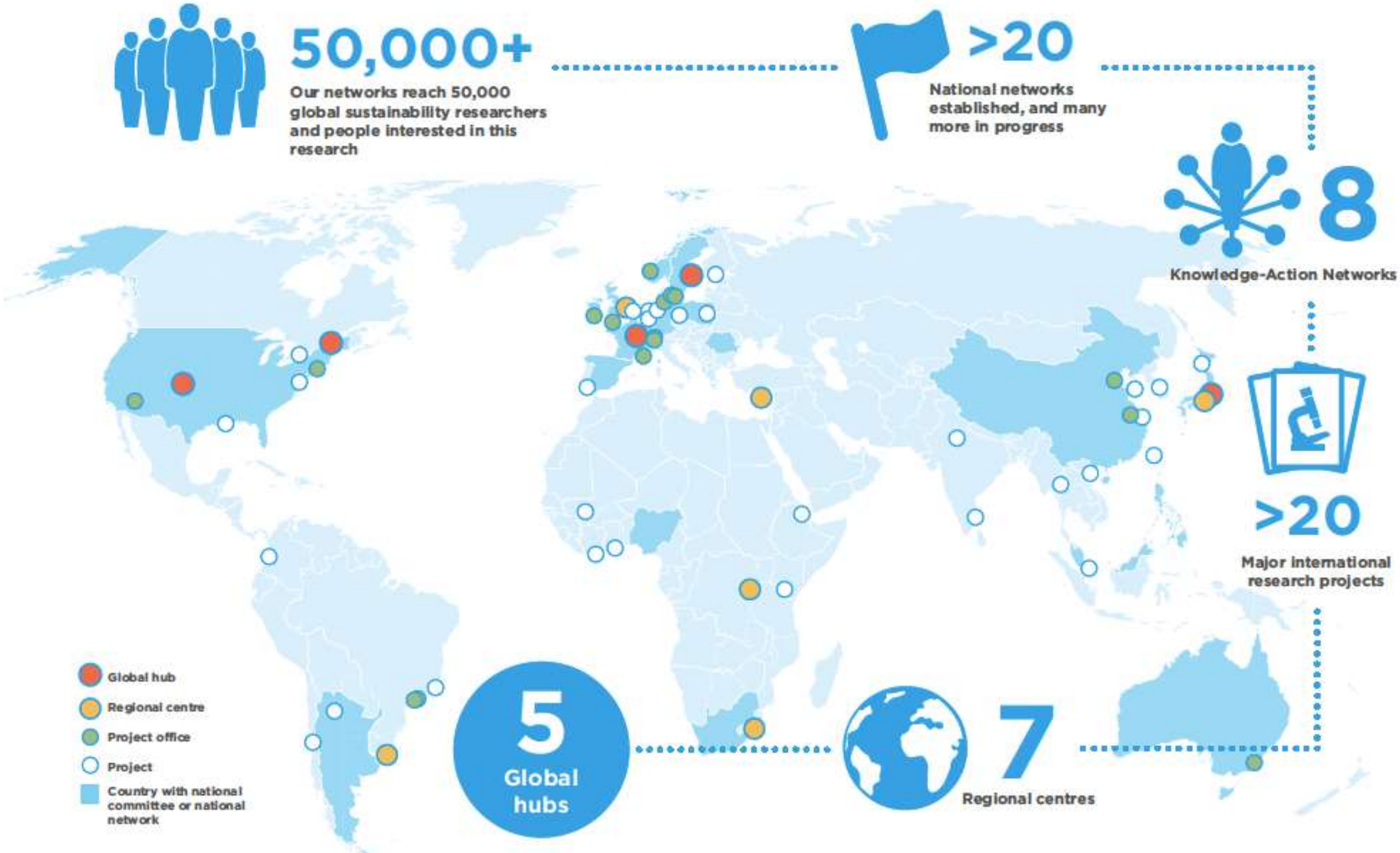
Global assessments





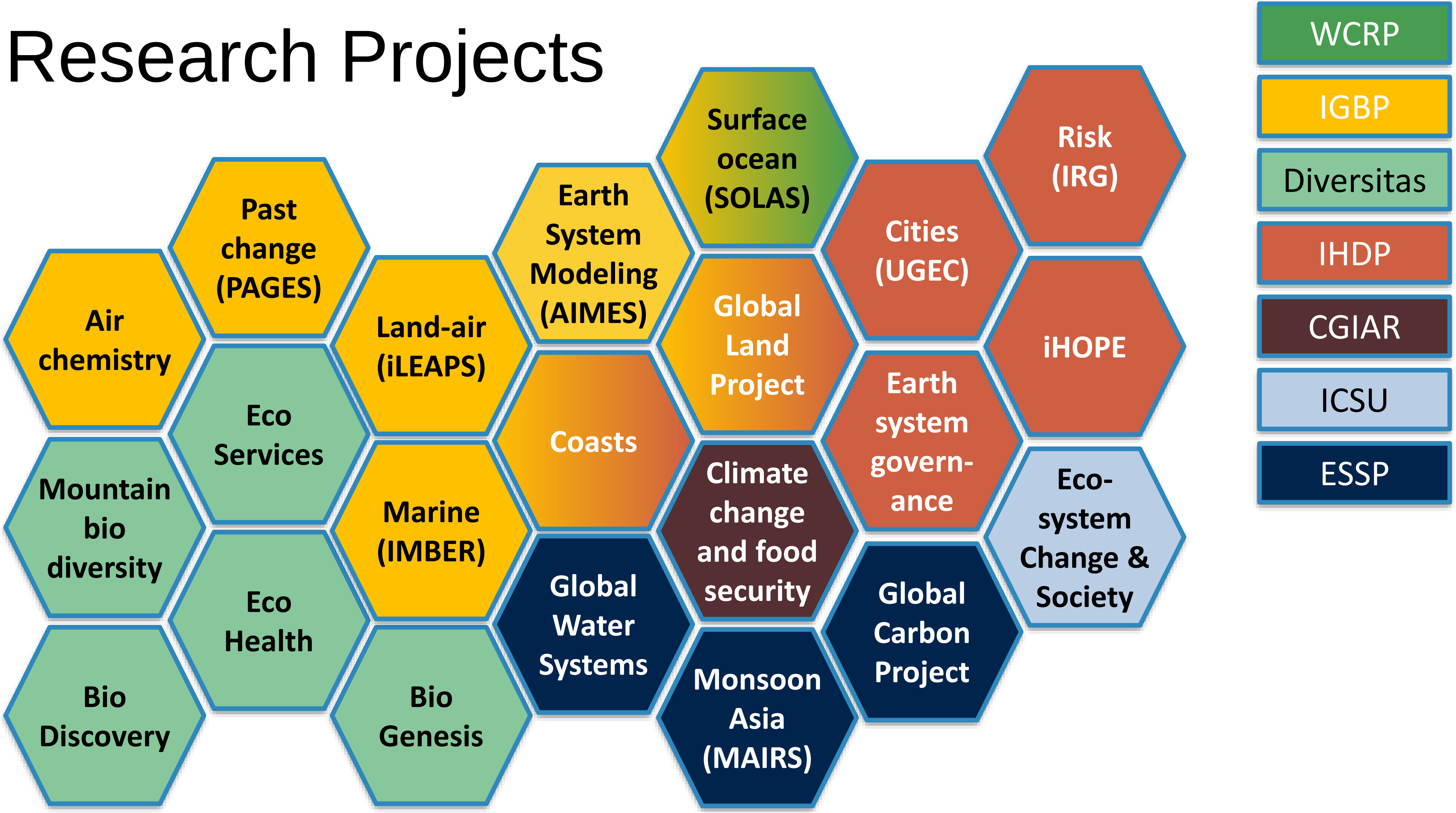
Sustainable Development Goals


Future Earth
2013
Earth System
Science Partnership
2001
WCRP
World Climate Research Programme
Established
1980
GLOBAL
IGBP
CHANGE
International
Geosphere-Biosphere
Programme
1987
DIVERSITAS
1991
IHDP
International Human Dimensions Programme
on Global Environmental Change
1996

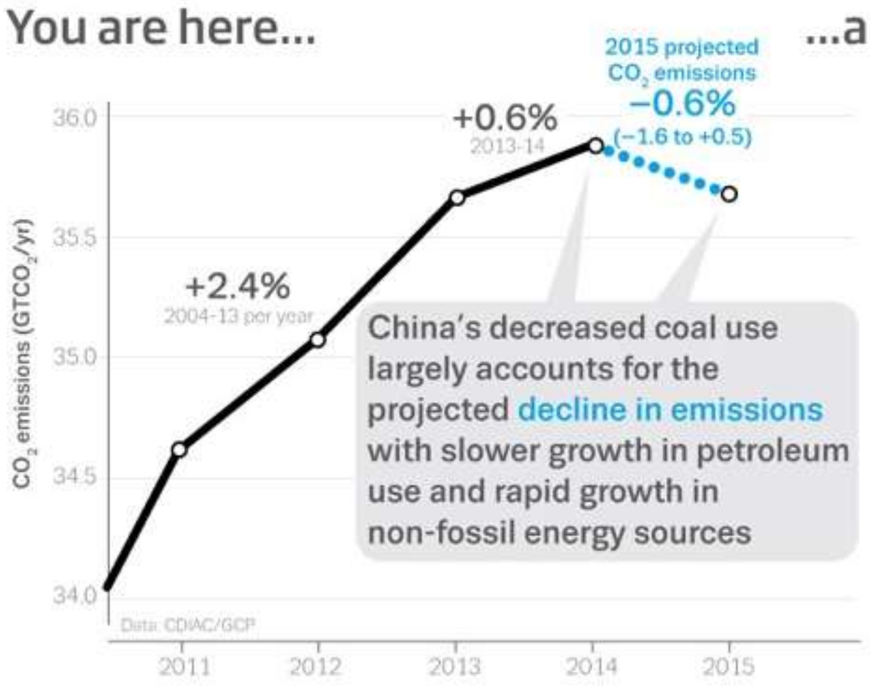

50,000+
Our networks reach 50,000 global sustainability researchers and people interested in this research
>20
National networks established, and many more in progress
8
Knowledge-Action Networks
>20
Major international research projects
7
Regional centres
5
Global hubs
Global hub
Regional centre
Project office
Project
Country with national committee or national network

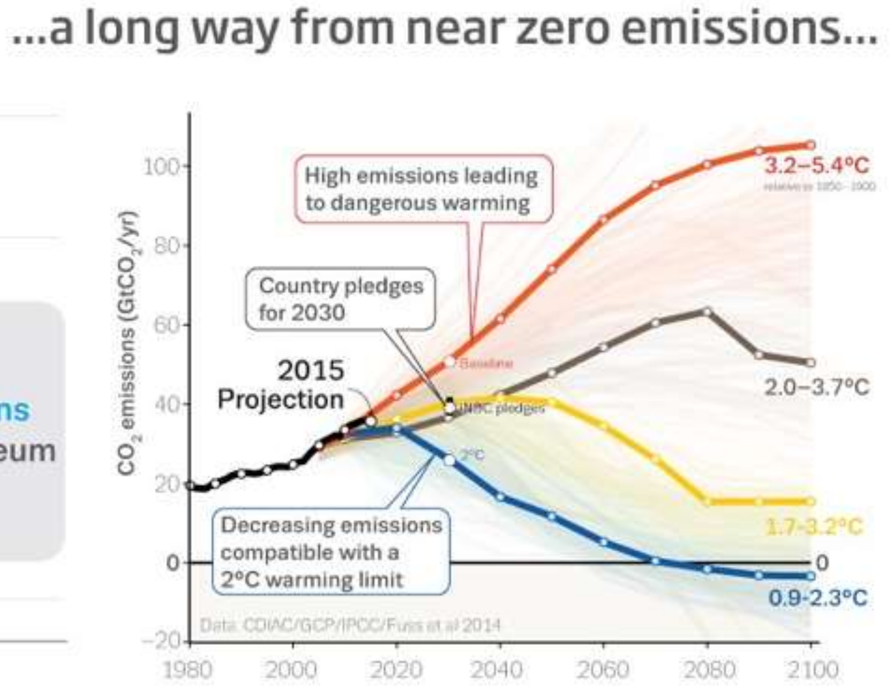
Alliance creating Future Earth morphed into the Governing Council

Research Projects



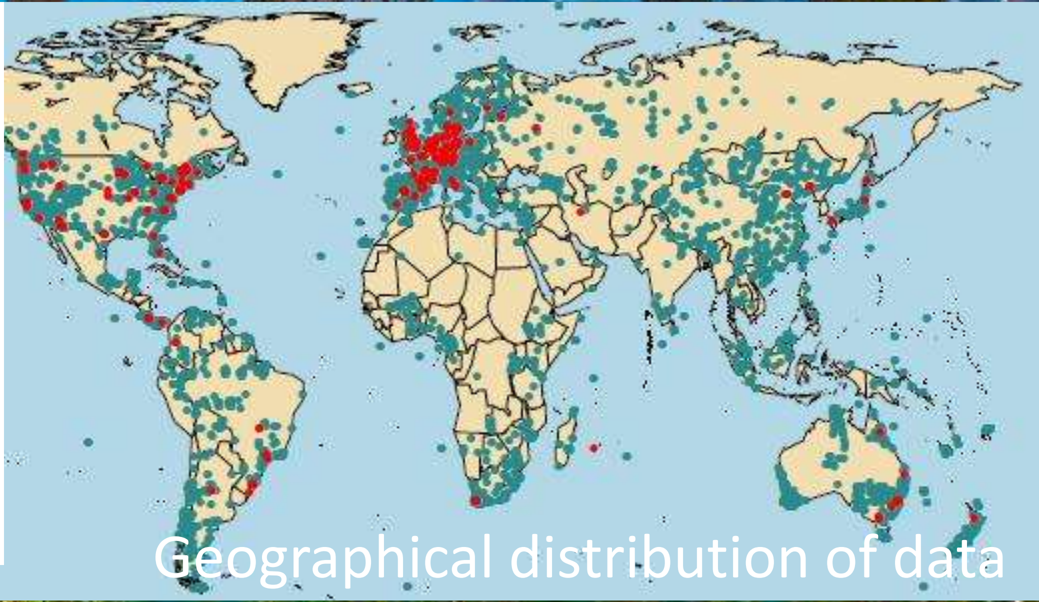
2015 Global Carbon Budget





Le Quere *et al* 2015 Earth System Dynamics
Jackson *et al* 2015 Nature Climate Change

Plant trait database (TRY)



Diaz *et al* Nature (2015)
Levine Nature (2015)
Kunslter *et al* Nature (2015)

8 Focal Challenges to society

- Deliver water, energy, and food for all
- **Decarbonize socio-economic systems to stabilize the climate**
- **Safeguard the terrestrial, freshwater and marine natural assets**
- **Build healthy, resilient and productive cities**
- **Promote sustainable rural futures to feed rising and more affluent populations**
- **Improve human health through the improvement of human-environment interactions**
- **Encourage sustainable and equitable consumption and production patterns**
- **Increase social resilience to future threats**

Knowledge Action Networks

SDGs

Finance

Transformations

Oceans

Sources:
Photo: Fishing in the Mekong © Tan Someth Bunwath / WWF-Cambodia

The Future Earth Open Network

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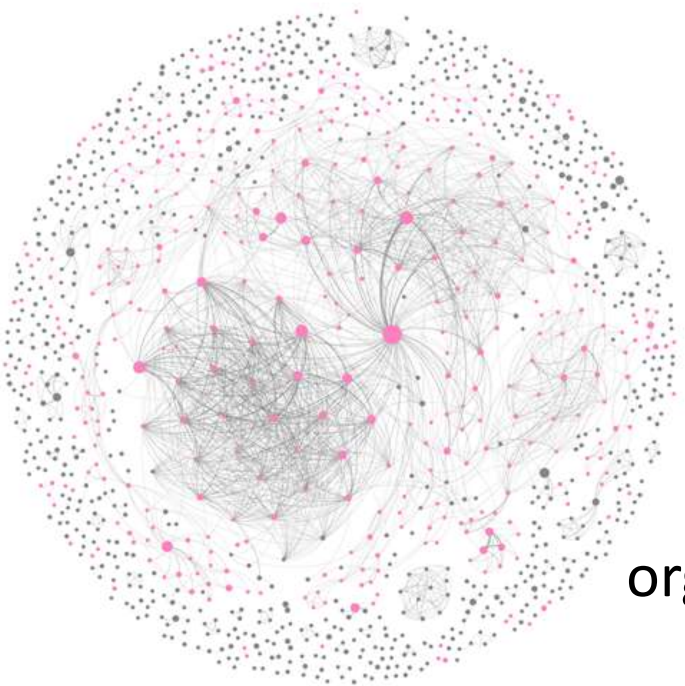

people
projects
events
institutes
organizations

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Website www.futureearth.org
Twitter @FutureEarth
Email: craig.starger@futureearth.org