

futureearth
research for global sustainability



Future Earth Research for Global Sustainability

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Global Environmental Change Programs

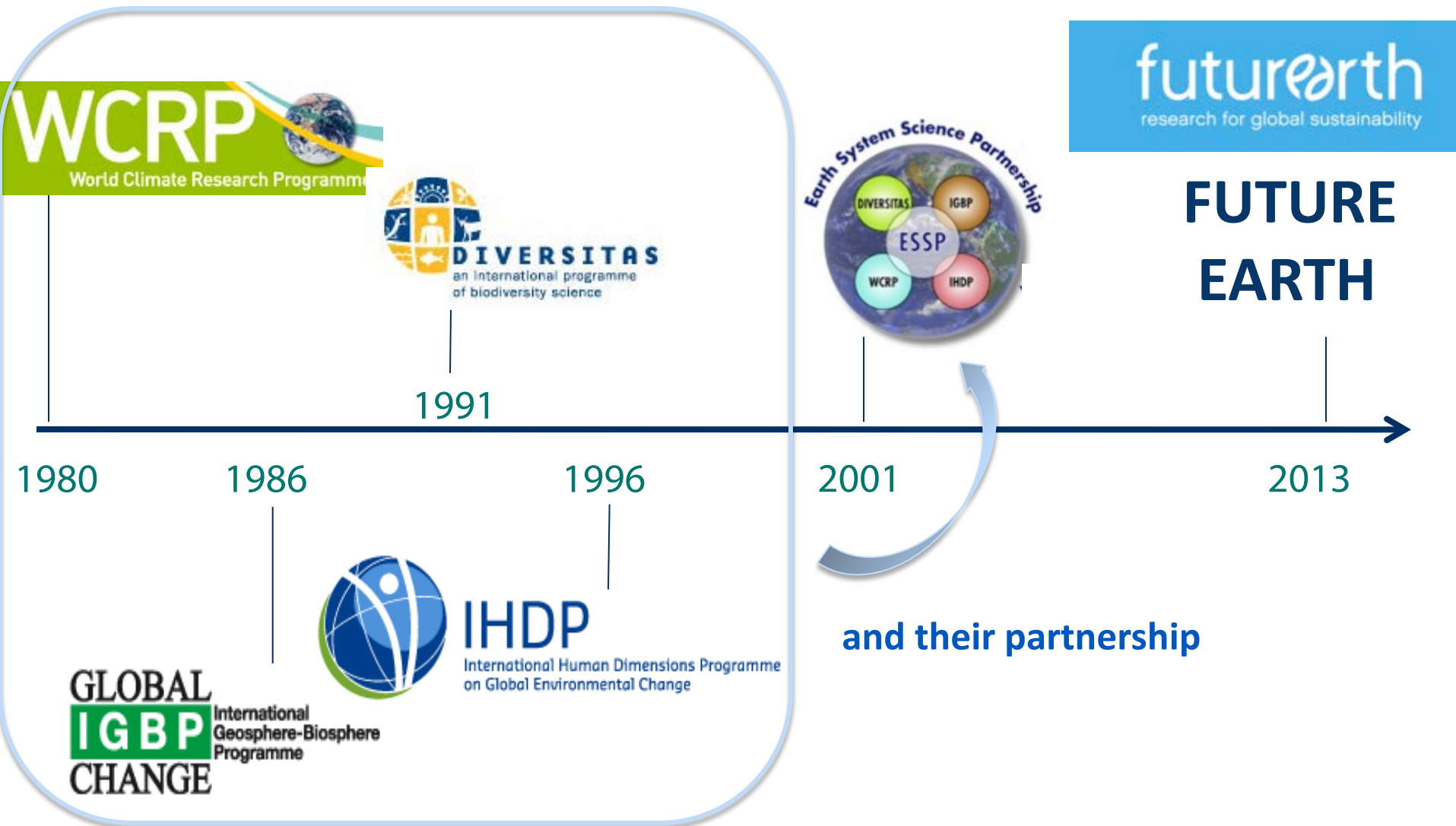


World Climate Research Program's Projects



Future Earth: building from the GEC programmes

Global Environmental Change Programmes and Projects

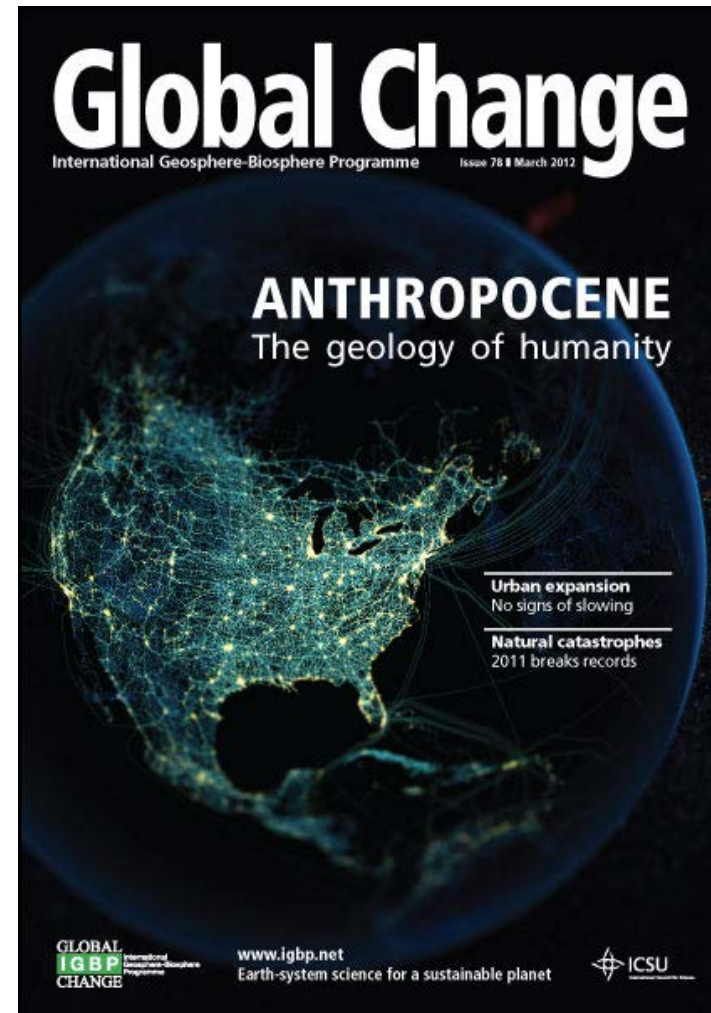


Some of the challenges we face

- Feeding 9 billion people within sustainable planetary boundaries
- Valuing and protecting nature's services and biodiversity
- Adapting to a warmer and more urban world
- Transitioning to low carbon societies
- Providing income and innovation opportunities through transformations to global sustainability
- Reducing disaster risks and build resilience
- Aligning governance with stewardship
- Global scientific capacity building

A Changing Global Environment for Science

- The grand challenge:
 - Planetary stewardship
 - Social equity
 - Human wellbeing and security
- A new sense of urgency and unprecedented pressure to contribute to real-world problem solving



Business as usual is not an option:

We need new ways of organising, supporting
and producing knowledge

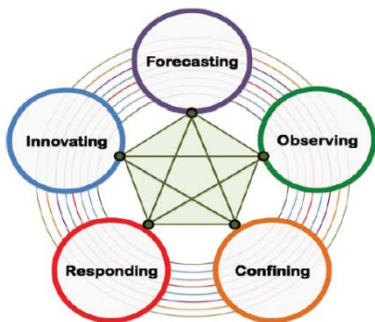
and making sure it gets used



The challenges of global environmental change and sustainable development require some new approaches which are:

- *More international*
- *More integrated*
- *More collaborative*
- *Co-designed with users, funders...*
- *More responsive to society and grand challenges of sustainability*
- *Builds on the success of current international research programmes*

ICSU – ISSC Visioning



Oct 2010

BELMONT
F O R U M



Converging
towards a single,
unified strategic
framework and
architecture

BELMONT
F O R U M

IGFA
INTERNATIONAL GROUP OF
FUNDING AGENCIES FOR
GLOBAL CHANGE RESEARCH



ICSU

International Council for Science

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ISSC

international social science council



**UNITED NATIONS
UNIVERSITY**



**United Nations
Educational, Scientific and
Cultural Organization**

The Science and Technology Alliance for Global Sustainability

To drive and facilitate the co-design,
co-production and co-delivery of knowledge
with relevant stakeholders in order to address
and create solution pathways for
global sustainability problems



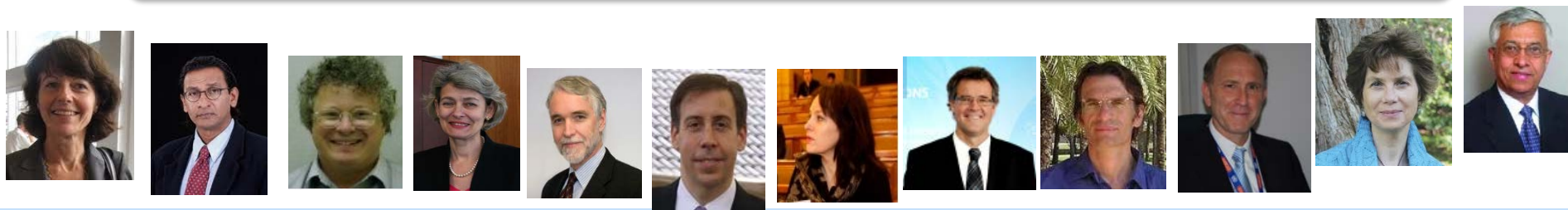
The Transition Team (2011-2012)



Many disciplines, sectors, regions



for a truly new co-design effort



17 individual capacity members, 12 ex-officio (ICSU, ISSC, Belmont Forum, UNESCO, UNU, UNEP) and Global Environmental Change Programme Directors



photos: www.dawide.com

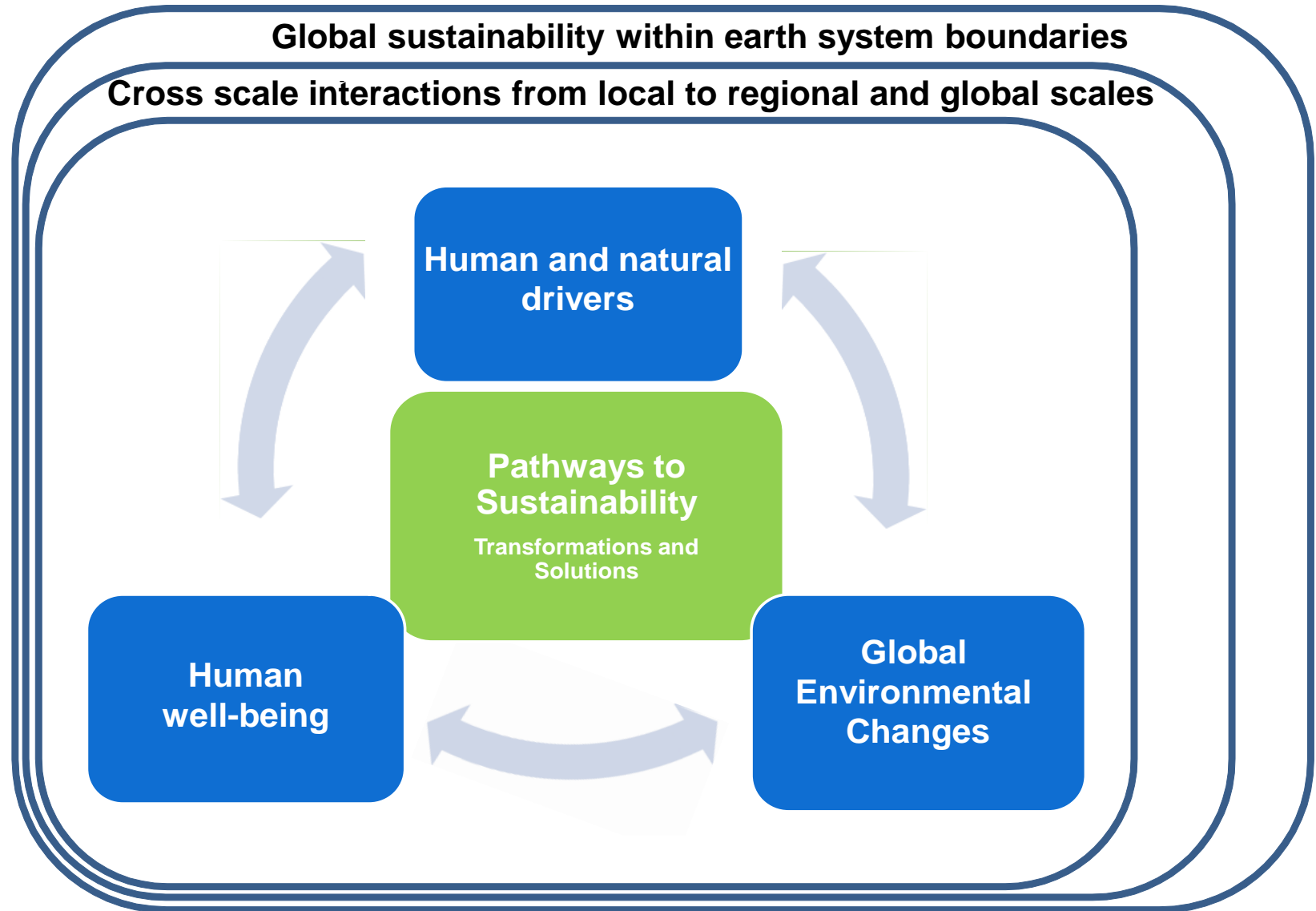
future^{earth}
research for global sustainability

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

Criteria for Future Earth Research

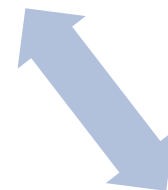
- From fundamental to use-inspired Earth system research for global sustainability
- Answer complex questions that require international collaboration
- Co-design and co-production of knowledge
- Integrates natural, economic, engineering, arts, humanities and social sciences
- Regional to global scale





Research Themes

**Transformations
toward
Sustainability**

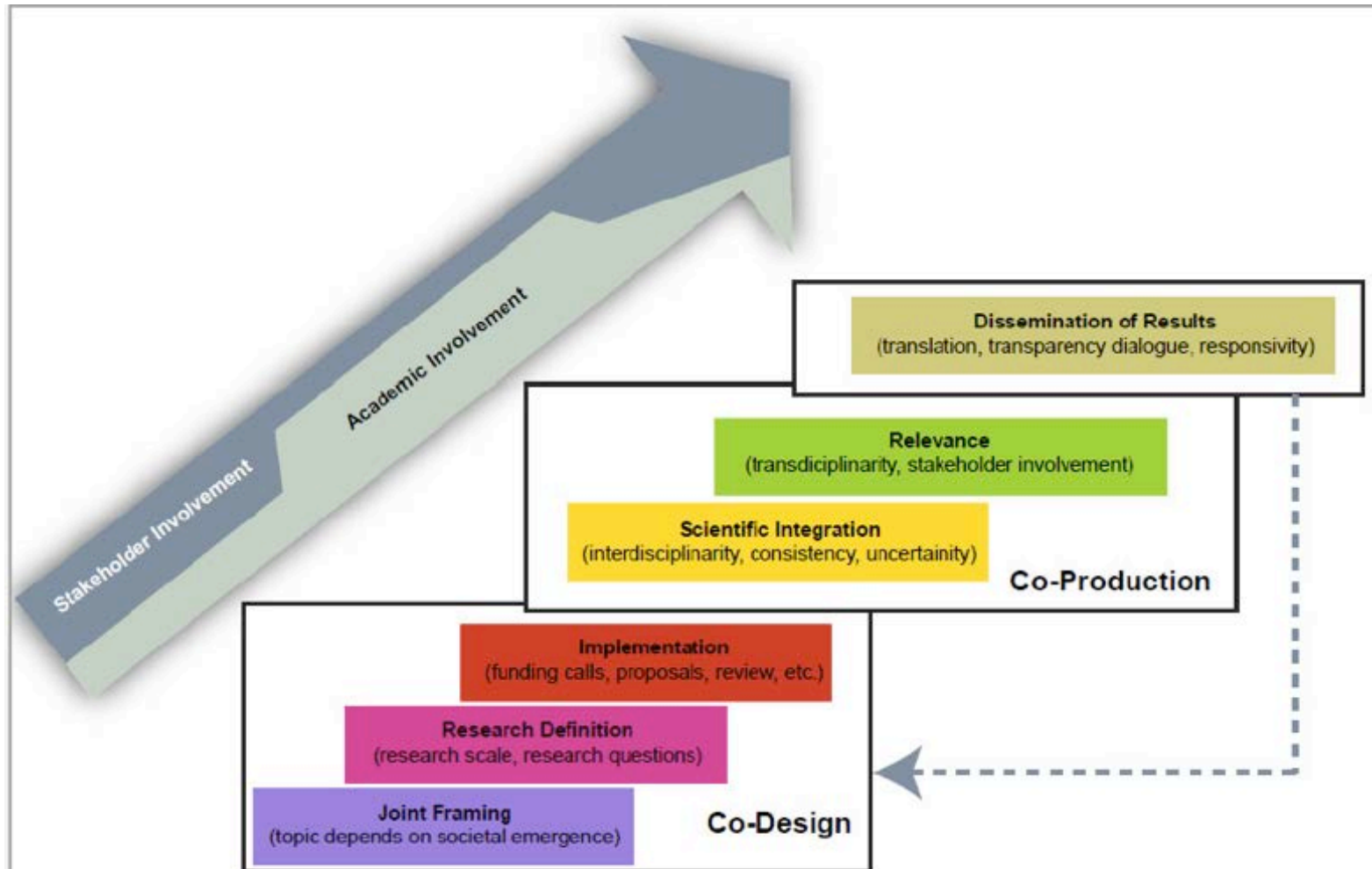


**Global
Development**



**Dynamic
Planet**

Co-designing Information



Dynamic Planet



projecting environment

- **Approaches and Models**

drivers

societal system

observing

- **States and Trends**

explaining

thresholds

understanding

- **Critical Zones**

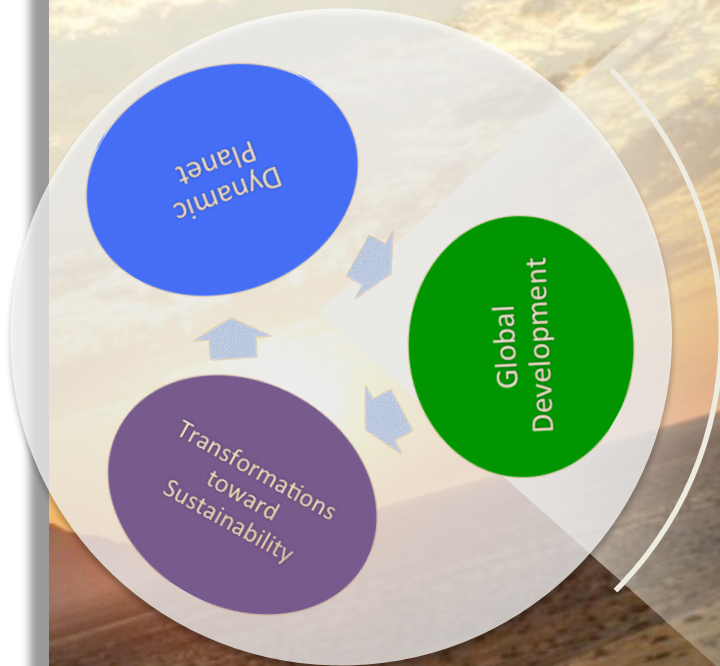
coasts

tropical forests

polar regions

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Global Development



- **stewardship of resources**

clean air

mining

materials

biodiversity

- **ecosystem services**

Trade-offs

climate change

fisheries

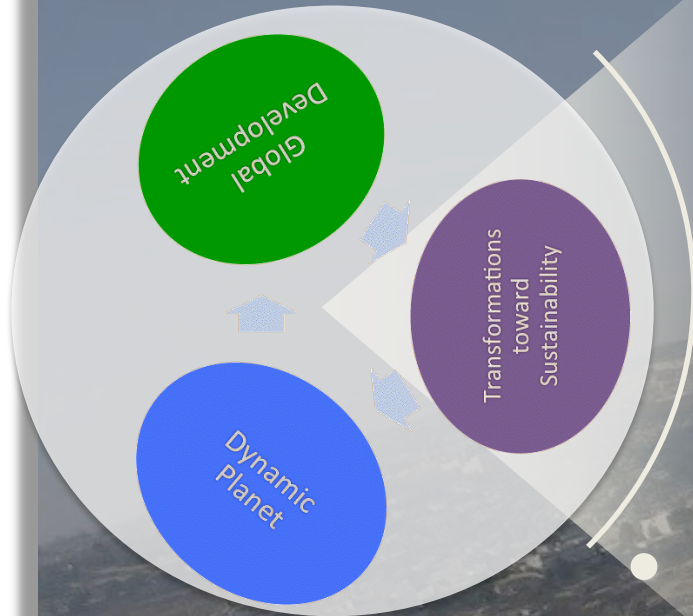
- **equitable access**

food security

water availability

healthy environment

Transformation toward Sustainability



- **transformation process**

economy

mega-cities

development options

- **Innovation and ideas**

trade-offs

emerging technology

assessment of policies

- **global and regional governance**

incentives

International law

regional enforcement

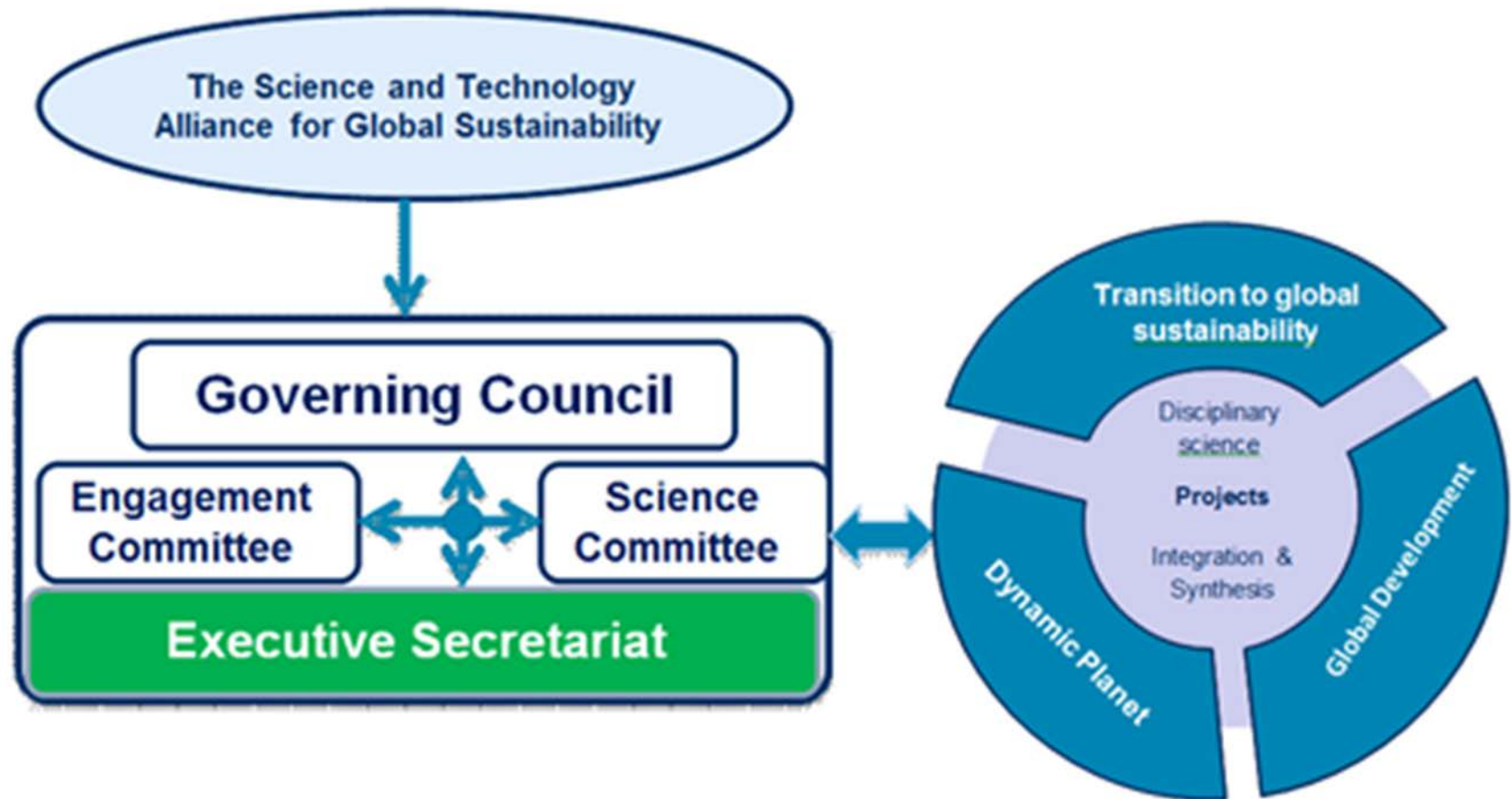
decision making

Cross Cutting Capabilities

To facilitate integration across research themes, science will be supported by a set of cross-cutting capabilities in science and outreach (many delivered through partnerships).

	Activity	Possible Partners
C1	Observing Systems	GCOS, GEOSS, ...
C2	Data Systems	World Data Systems, ...
C3	Earth System Modeling	Modeling Centers
C4	Theory Development	ISSC, Disciplinary unions
O1	Synthesis and Assessments	IPCC, IPBES, AoA, ...
O2	Capacity Development and Education	START, UNESCO..
O3	Communication	
O4	Science-Policy Interface and interactions	UNEP..

Governance and organisation



Engagement



Governance

- Science Committee - imminent
 - c. 140 nominations received
 - decisions taken by ICSU/ISSC
 - to be forwarded to Alliance for endorsement
- Engagement Committee
 - proposal to form proto Engagement Committee to be considered by Alliance in June
- Governing Council
 - Alliance as interim
 - discussion on permanent arrangements in June

Secretariat

Interim

- Interim Director - imminent
- Interim secretariat
 - ICSU team and dedicated recruitments
 - Alliance
 - GEC programme secretariats
- 18 months

Permanent

- Director, HQ and regionally distributed secretariat
- 3 stage process starting June
 - expressions of interest
 - bidders conference
 - full networked bids
- Proposals
 - must be resourced
 - innovative solutions to the requirements

Programme and project transition

- Programmes merging into Future Earth
 - Diversitas, IGBP, IHDP
 - from mid 2014 onwards
- GEC projects invited to become part of Future Earth through phased approach and asked to consider:
 - scientific readiness
 - strategic benefits
 - stability
- Next projects conference – July / September

Early activities



Sustainable development goals for people and planet



International Symposium on Future Asia

13-14 December 2012

RIHN Lecture Hall, Kyoto, Japan



5. Nationales Kolloquium des NKGC

Approaches to organizing Future Earth research



Co-design integrated research
Build on current strengths



Regional and National Engagement

Regional - building from existing regional networks

- to implement the vision of Future Earth and adapt it to regional specificities
- to shape global priorities
- to define how to carry out and fund Future Earth activities in the regions

National — benefiting from national committees

- to link to national communities and planning
- to support integration





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	<i>Proposed Research Themes</i>
1	Dynamic Planet: Observing, explaining, understanding, projecting earth, environmental and societal system trends, drivers and processes and their interactions; anticipating global thresholds and risks.
2	Global development: Providing the knowledge for sustainable, secure and fair stewardship of food, water, biodiversity, health, energy, materials and other ecosystem functions and services.
3	Transformation towards Sustainability: Understanding transformation processes and options, assessing how these relate to human values, emerging technologies and economic development pathways, and evaluating strategies for governing and managing the global environment across sectors and scales.