



United Nations Educational,
Scientific and Cultural Organization

International Geoscience Programme



UNESCO Earth Science Research Initiatives

**A platform for development of global
science**

**EGU Town Hall Meeting
4/05/2010**

Robert Missotten



United Nations Educational,
Scientific and Cultural Organization

International Geoscience Programme



IGCP: INTERNATIONAL GEOSCIENCE PROGRAMME

JOINT PROGRAMME OF UNESCO & IUGS

Other Partners:

UNESCO: Water (IHP), Ecology (MAB), Heritage (WHC)

ICSU (Geo-Unions) - IUGG, INQUA, IUSS, IGU,...

IGCP Since 1972: Earth Science in Service of Society



Main objectives:

- ◆ to promote the exchange of ideas, data and techniques among earth scientists around the globe;
- ◆ to encourage and assist the training of earth scientists (capacity building), especially in the less privileged nations;
- ◆ enhance quality control of the world's earth science information and data; and
- ◆ to promote sustainable utilization of earth resources.



United Nations Educational,
Scientific and Cultural Organization

International Geoscience Programme



Uniqueness of IGCP

(1) Bottom-Up operational style:

◆ grass root scientists in the driving seat

- (a) all nations (global scale) - richness in diversity
(at least 20 countries are involvement per project)
- (b) competition- and result-driven projects
- (c) science networks: developing and developed countries

(2) Peer-review quality control:

- ◆ project proposals
- ◆ project's products

(e.g. journals papers, maps, models, databases, web presence)



IGCP 499



United Nations Educational,
Scientific and Cultural Organization

International Geoscience Programme



(3) Cost-sharing practice:

UNESCO/IUGS/Countries seed funding for projects

(US\$ 10K)

(a) UNESCO

(b) IUGS

(c) CHINA, USA, SWEDEN

Multiplying Effect due to the IGCP accreditation

(d) National IGCP Committees: Direct Involvement of Governments
& Geological Surveys range, US\$ 10K to US\$ 1 million

(e) National Research Councils/Foundations
funding research projects

(f) Exploration, Mining and Hydrocarbon Companies
(Private Sector)

(g) In-kind contribution: Universities, Research Centers, Geological
Surveys, Companies, NGOs



IGCP 502

(4) IGCP is the only long-term Research and Capacity Building Geoscience Programme in the UN System.

Involvement of scientists from almost all member states of UNESCO (truly global programme)



Some of the conditions for winning an IGCP project are:

- (a) Involvement of scientists from the developing countries, especially Africa (e.g. utilization of IGCP funds)
- (b) Capacity building programs (i.e. MSc, PhD)
- (c) Conferences and Training Workshops conducted in both the developing and developed countries
(minimum involvement of 20 countries per project per year)
- (d) Sharing of research facilities for producing high-quality data
- (e) Joint publications of journal papers, maps, models

(5) Synergistic practice: Inter-and Multi-disciplinary approach and practice for the study of the Earth System:

(a) across earth science fields

geology, hydrogeology, agro-geology, mineralogy,
gemology, palaeontology, geophysics, geography,
geomedicine, oceanography, etc

(b) across UNESCO's major programmes:

- (i) Water: IOC and IHP
- (ii), Ecology: MAB
- (iii) Social Science: MOST & Culture: Heritage- Geosites & Geoparks





United Nations Educational,
Scientific and Cultural Organization

International Geoscience Programme



(5) Synergistic practice (cont)

- (c) Landslides and Debris Flows (Global Programme), partners are:**
IGCP 425- Landslide Hazards Assessment and Cultural Heritage
UNESCO's Cultural Heritage Division, IUGS
Japan (International Consortium on Landslides)
- (d) Global Geochemical Database, IGCP & ICSU (Geo-Unions, e.g. INQUA, IUSS, IGU) & EU Envir Ag**
- (e) IGCP projects 404 & 459 on Carbon Cycle and Hydrology in the palaeo-terrestrial environment: IGCP and ICSU (Geo-Unions)**
 - ↳ Climate, Environmental & Biodiversity Changes**
- (f) Creation of a International Research Center on Karst, Guilin, China as UNESCO Cat 2 institute**

IGCP & the Developing World: long-term partnership



IGCP 490

Recorded Tangible Benefits for the African Countries and Other Developing Countries:

- (1) Capacity Building
- (2) Databases
- (3) Development of new Earth Resources-large & small-scale operations
- (4) Solving of Societal Problems- poverty reduction
- (5) Science for the Development of national policies and economic growth plans
- (6) African Diaspora: Involvement in IGCP projects



United Nations Educational,
Scientific and Cultural Organization

International Geoscience Programme



New IGCP, 2007 onwards

Thematic Topics

- (1) Earth Resources: Sustaining our Society
- (2) Global Change & Life Evolution:
evidence from the geological record
- (3) Geohazards: Mitigating the Risks
- (4) Geoscience of the Water Cycle
- (5) The Deep Earth:
how it controls our Environment



IGCP 503

Mandate and Functions of the IGCP Scientific Board

- Evaluate project proposals
- Quality assessment of projects in progress and finishing up
- **50 specialized individuals** charged with technical reviews
- Chairperson, Theme Leaders within thematic clusters (members rotate every two years).



IGCP 470



United Nations Educational,
Scientific and Cultural Organization

International Geoscience Programme



IGCP National Committees

- **Advisory role**
- **As broad as possible; representative of national bodies and organizations.**
- **Reflect basic and applied sciences**
- **Open to all IUGS and UNESCO member countries**
- **May attend open sessions of IGCP Sc Board**
- **Vehicle to link scientist with policy maker**





United Nations Educational,
Scientific and Cultural Organization

International Geoscience Programme



European IGCP Meeting at the Celebration of the 35th Anniversary of the Spanish IGCP National Committee **Caravaca, 15-18 September 2010**

www.ugr.es/~mlamolda/congresos/geoevents/



United Nations Educational,
Scientific and Cultural Organization

Earth System Science in practice



Geology in Climate Conversation

NATURE | Vol 454 | 24 July 2008

CHINA NEWS FEATURE

THE THIRD POLE

Climate change is coming fast and furious to the Tibetan plateau.

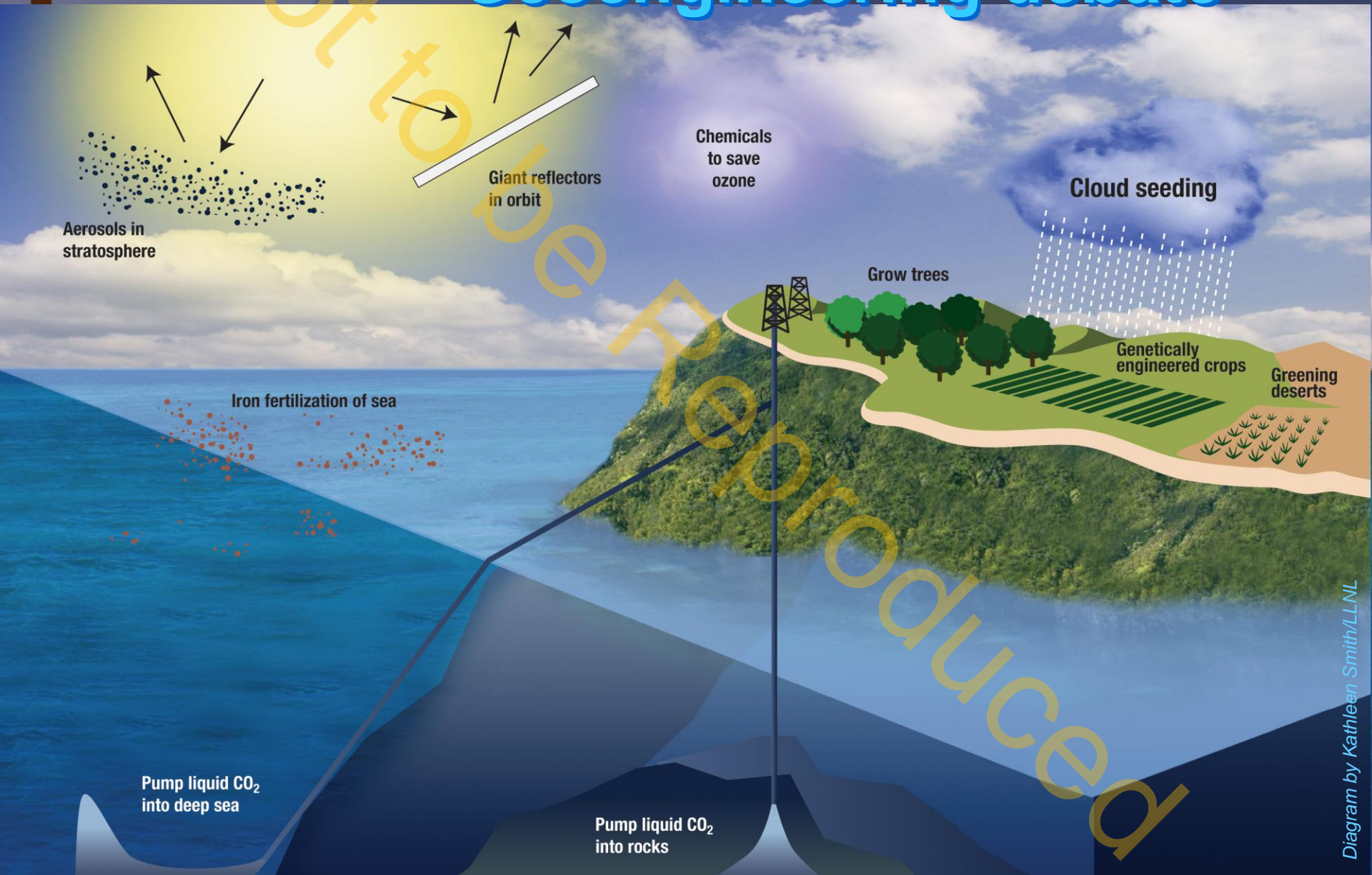


United Nations Educational,
Scientific and Cultural Organization



Earth System Science in practice

Geoengineering debate





United Nations Educational,
Scientific and Cultural Organization

International Geoscience Programme



Joint Global Initiatives

International Conference

TRANSBOUNDARY AQUIFERS

Challenges and new directions

First announcement and Call for abstracts

**6–8 December 2010
UNESCO, Paris (France)**

**Convened by
UNESCO IHP and IGCP Programmes,
IAH and UNEP**

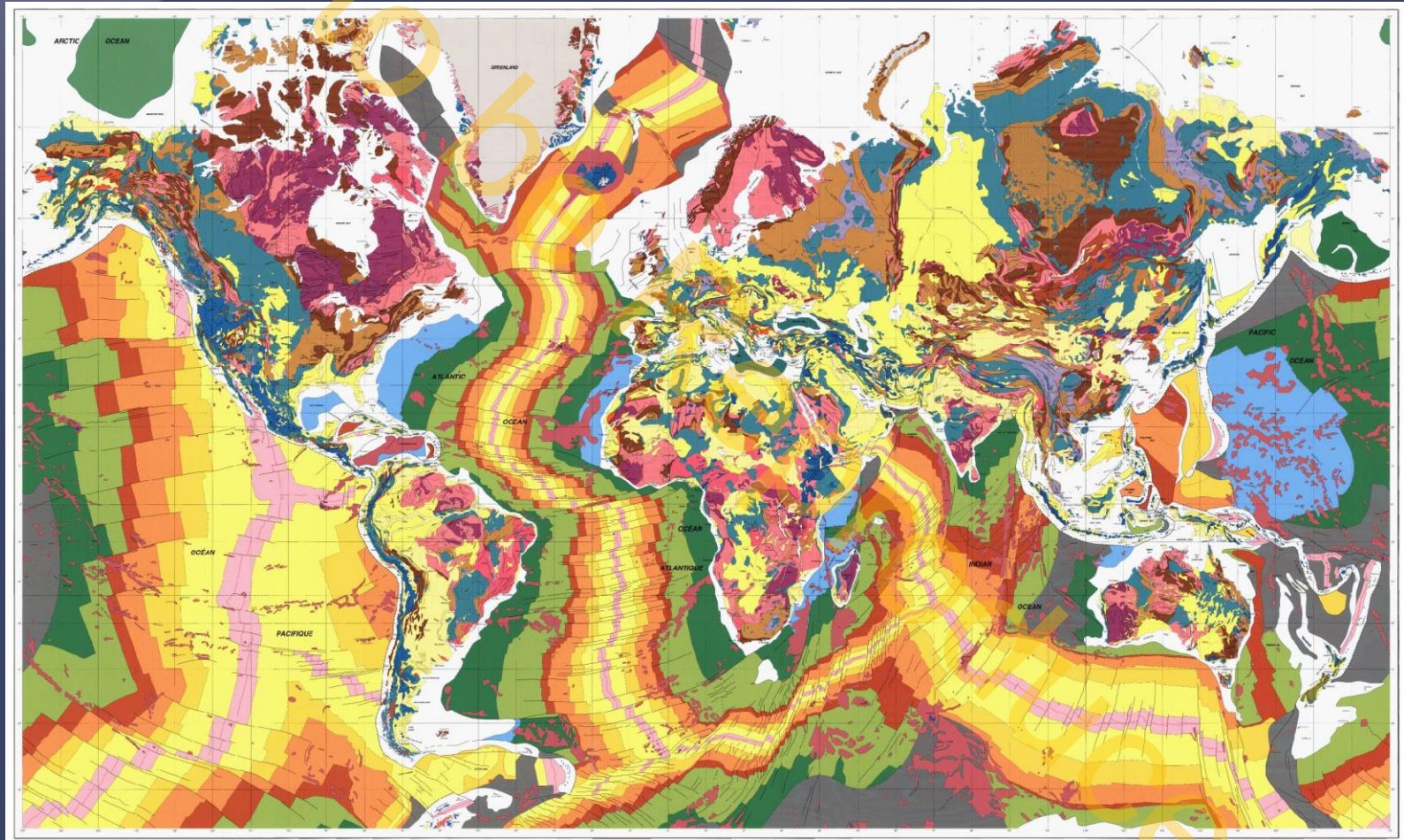


United Nations Educational,
Scientific and Cultural Organization

Earth Sciences & Earth Observation



CGMW Commission for the Geological Map of the World



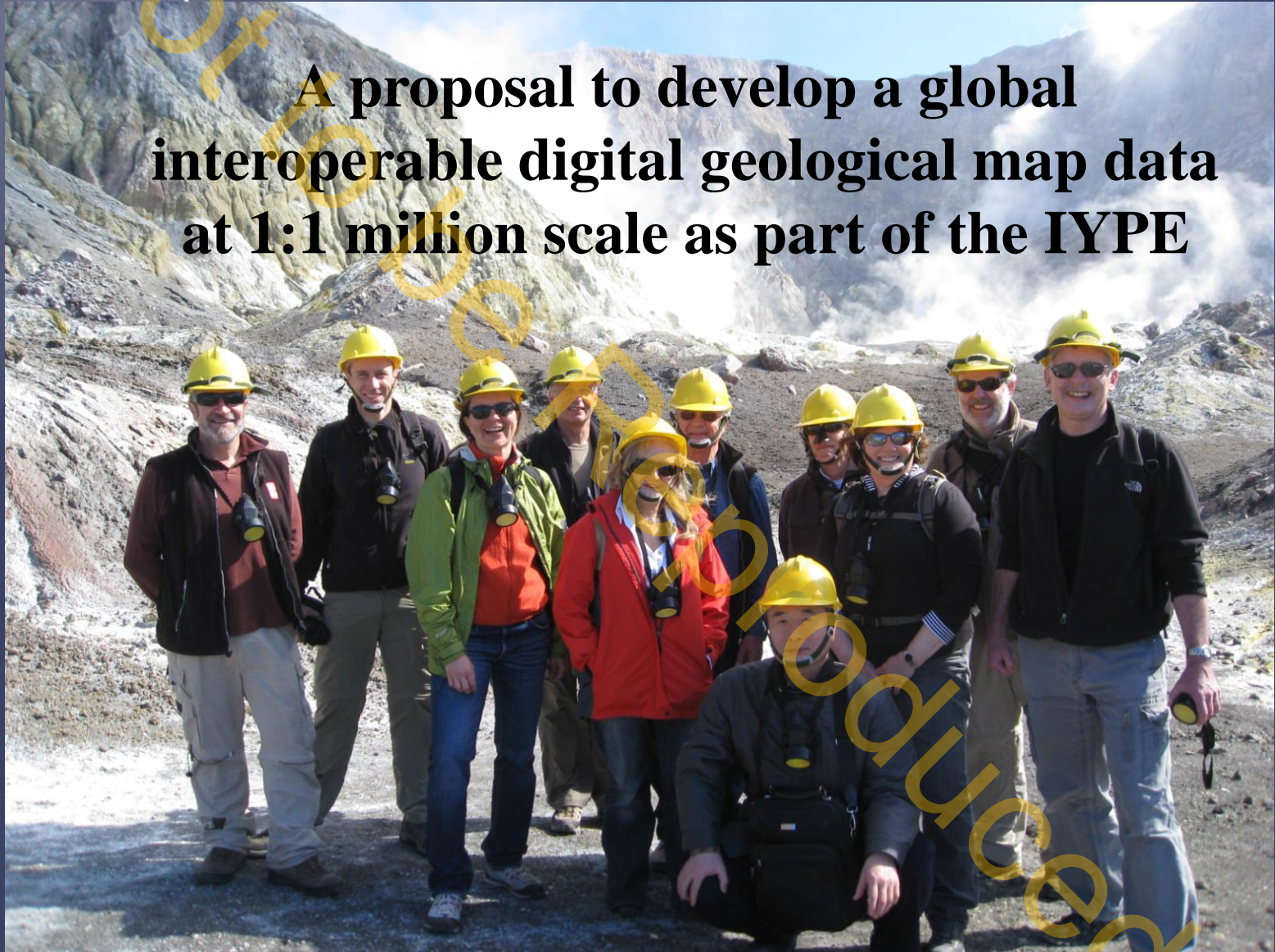
The Geological Map of the World at 1:25 M and 1:50 M scales



United Nations Educational,
Scientific and Cultural Organization

ONE-GEOLOGY PROJECT

**A proposal to develop a global
interoperable digital geological map data
at 1:1 million scale as part of the IYPE**





United Nations Educational,
Scientific and Cultural Organization

Earth Sciences & Earth Observation



• IIIrd Summit:

• Approval of the Plan for the creation of a **Global Earth Observation System of Systems (GEOSS)** over the period of 2005-2015, and identify the necessary human, budgetary, scientific and technological resources for the implementation of GEOSS.

• 17 February 2005, Brussels



United Nations Educational,
Scientific and Cultural Organization

Earth Sciences & Earth Observation

International Continental Drilling Program

- In 2004 ICDP and UNESCO signed a Memorandum of Understanding to strengthen the developing country participation in the Programme
- 13 countries participate: Germany, USA, Japan, China, Canada, Austria, Mexico, Norway, Poland, Czech Rep, Iceland, Finland, South Africa
- Capacity building activities were recently organised in Ghana and Guatemala





United Nations Educational,
Scientific and Cultural Organization

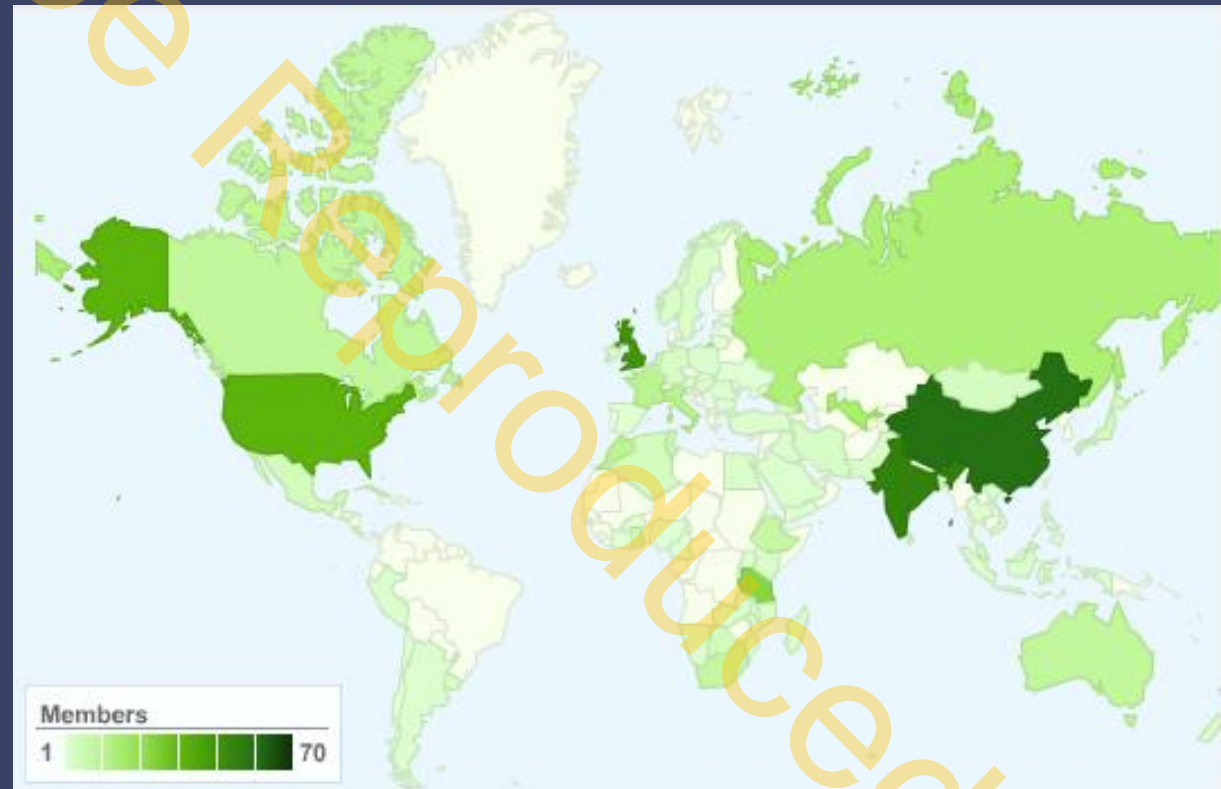
Young leadership and global cooperation



YES (Young Earth Scientist) Network

www.networkyes.org

679 international members
as of February 26, 2010

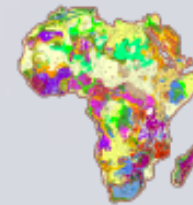


Global Earth Observation Section



United Nations Educational,
Scientific and Cultural Organization

*International Education
Partnerships*



**Earth science
education initiative
in Africa.**

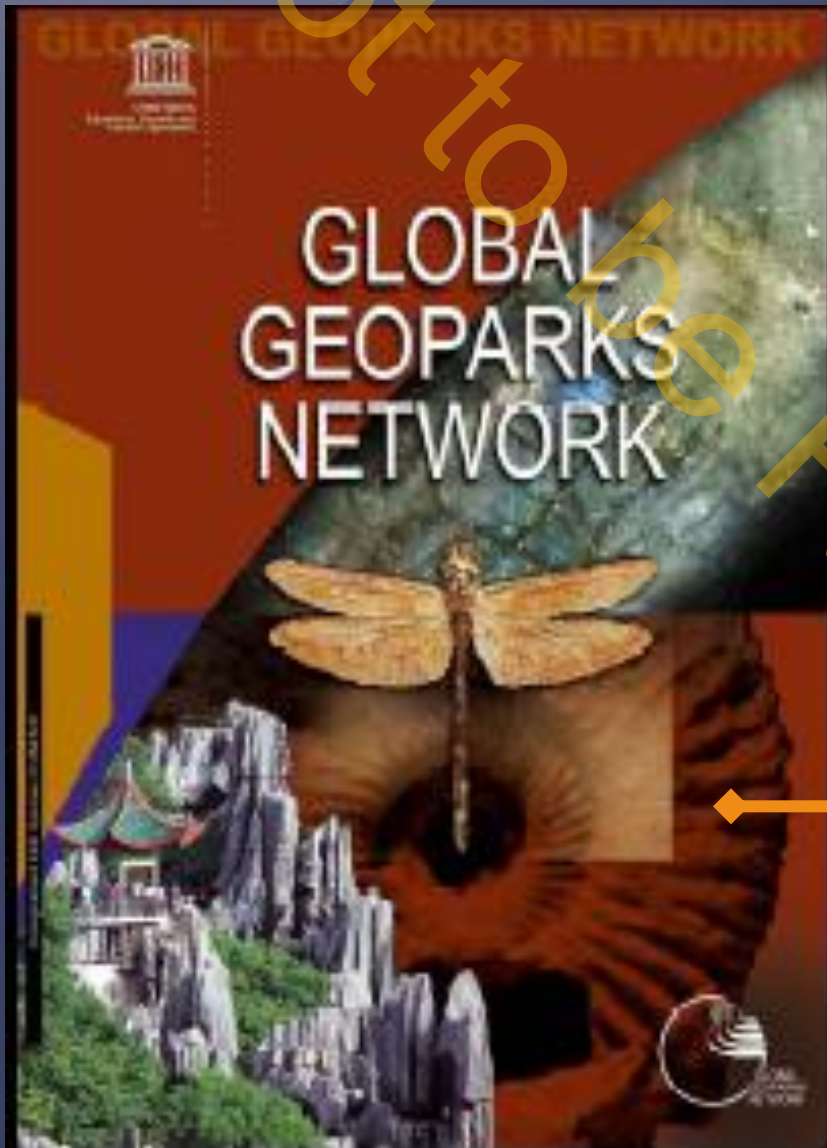
A New UNESCO Initiative

To support the development of the next generation of earth scientists in Africa who are equipped with the necessary **tools, networks and perspectives** to apply sound science to solving and benefiting from the challenges and opportunities of sustainable development.



United Nations Educational,
Scientific and Cultural Organization

Earth Sciences & Earth Observation



**Preservation
Education
Development**



United Nations Educational,
Scientific and Cultural Organization



International Geoscience Programme

Presentation by: IGCP Executive Secretary

Robert Missotten

r.missotten@unesco.org

<http://www.unesco.org/science/earth>

Thank you for your kind attention