

GEOUNIONS



From the Past to the Future

NASA Visible Earth

Alik Ismail-Zadeh

@ GeoUnions Steering Committee Meeting, 25 March 2026

Mission and Goals of GeoUnions

Mission Statement

GeoUnions is a network of the ISC international scientific unions dealing with Earth and space sciences. The GeoUnions has been established in 2004 to promote the sciences worldwide, to communicate and to coordinates scientific activities of individual unions, and to speak on behalf of GeoUnions to ISC Members and its interdisciplinary bodies as well as to the United Nations organizations and other global stakeholders.

Principal Goals

- to promote and encourage basic studies of the Earth and its environment in space; and
- to facilitate international cooperation in geosciences to benefit humanity.

GeoUnions Meetings



GeoUnions Meetings



Paris 2016



Potsdam 2017



Taipei 2017



Paris 2018

Added value of GeoUnions

- *Scientific and Outreach Programs* (e.g., ILP; IYPE; ENHANS; IYGU) – improving awareness of scientific knowledge among nations, politicians, scientists, and societies.



The International Lithosphere Programme (ILP) is rooted in the Upper Mantle Project (1960-1970), an international program of research on the solid Earth coordinated by IUGG and IUGS with participation of several other unions of the ICSU and UNESCO, which took part in initiating an international project for the study of the East African Rift System. A successful termination of the Upper Mantle Project generated a discussion between IUGG and IUGS on developing an inter-Union Commission on Geodynamics / the International Geodynamics Project, which was then established in 1972 and was active until 1980. The successful project spawned the ICSU Inter-Union Commission on the Lithosphere, which was established in 1980. IUGS and IUGG's associations IASPEI and IAVCEI carried out the scientific work of the program. Since 2005, ILP became an inter-Union programme of IUGG and IUGS (Ismail-Zadeh and Joselyn, 2019).

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The International Year of Planet Earth (IYPE) was an initiative founded by IUGS and sponsored by UNESCO. The Year's activities spanned 2006-2009. Former IUGS President Ed de Mulder was initiator and driver of the Year's Project. UNGA declared 2008 as the IYPE to increase awareness of the importance of Earth sciences for the advancement of sustainable development. The Project backed by IUGG, IGU, IUSS, and INQUA was proven to be quite successful (e.g, series of IYPE books, YES – young Earth scientists' movement) .

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Disaster Risks Research and Assessment to Promote Risk Reduction and Management

Authors:

Irasema Alcántara-Ayala (Mexico), Orhan Altan (Turkey), Daniel Baker (USA), Sálvano Briceño (France/Venezuela), Susan Cutter (USA), Harsh Gupta (India), Ailsa Holloway (South Africa), Alik Ismail-Zadeh (Germany/Russia), Virginia Jiménez Díaz (Venezuela), David Johnston (New Zealand), Gordon McBean (Canada), Yujiro Ogawa (Japan), Douglas Paton (Australia), Emma Porio (Philippines), Rainer Silbereisen (Germany), Kuniyoshi Takeuchi (Japan), Giovanni Valsecchi (Italy), Coleen Vogel (South Africa), Guoxiong Wu (China), and Panmao Zhai (China)

Reviewers:

David Alexander (UK), Reid Basher (New Zealand), Bronwyn Hayward (New Zealand), Ilan Kelman (UK), Allan Lavell (Costa Rica), Alberto Martinelli (Italy), Omar Perez (Venezuela), Roger Pulwarty (USA), and Ester Szein (USA)

Editors:

Alik Ismail-Zadeh (Germany/Russia) and Susan Cutter (USA)

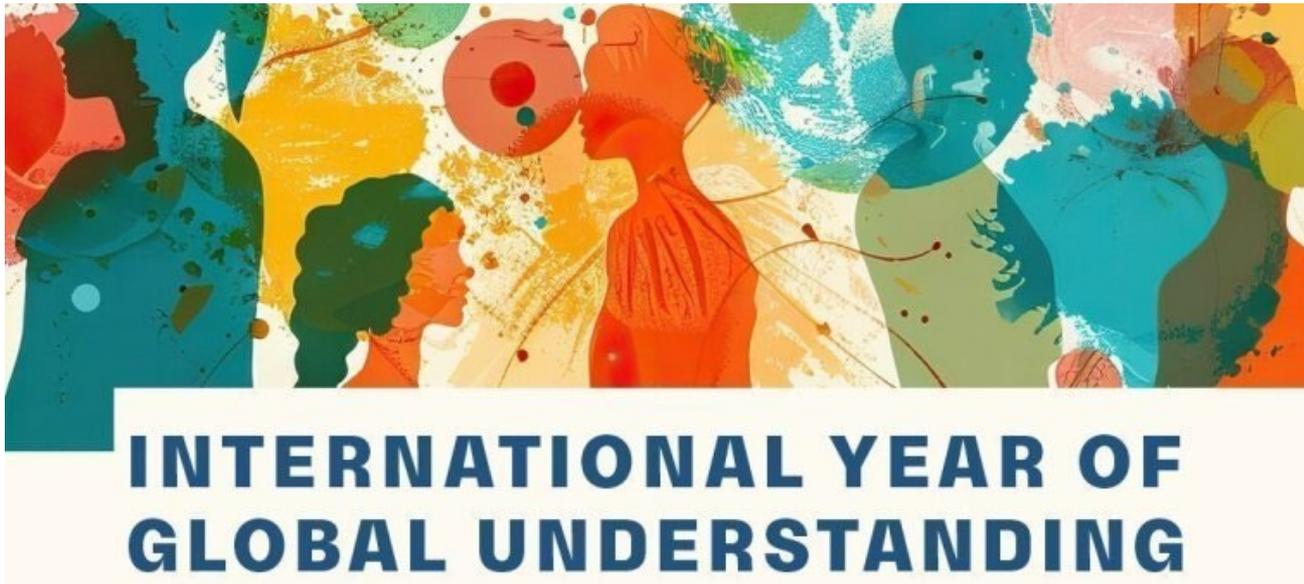


MARCH 12, 2015

ICSU-ISSC AD-HOC GROUP ON DISASTER RISK ASSESSMENT

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The aim of IYGU was to promote better understanding of how the local impacts the global in order to foster smart policies to tackle critical global challenges such as climate change, food security and migration. “We want to build bridges between global thinking and local action. Only when we truly understand the effects of our personal choices – for example in eating, drinking and producing – on the planet, we can make appropriate and effective changes,” said Benno Werlen, who initiated this project in IGU.

Added value of GeoUnions

- *Science for Society* – promoting scientific understanding of climate and its change, natural hazards and disaster risks, mineral resources and water depletion, soil and food, etc.

The Value of Geoinformation for Disaster and Risk Management (VALID)

Benefit Analysis and Stakeholder Assessment



International Council
for Science - GeoUnions

Joint Board of Geospatial
Information Societies

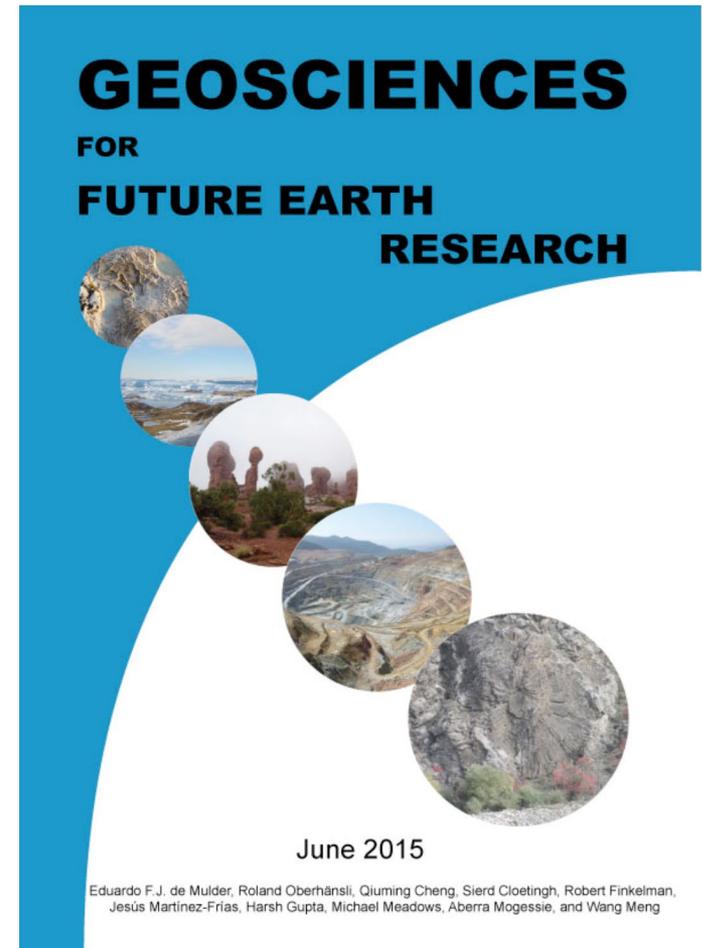
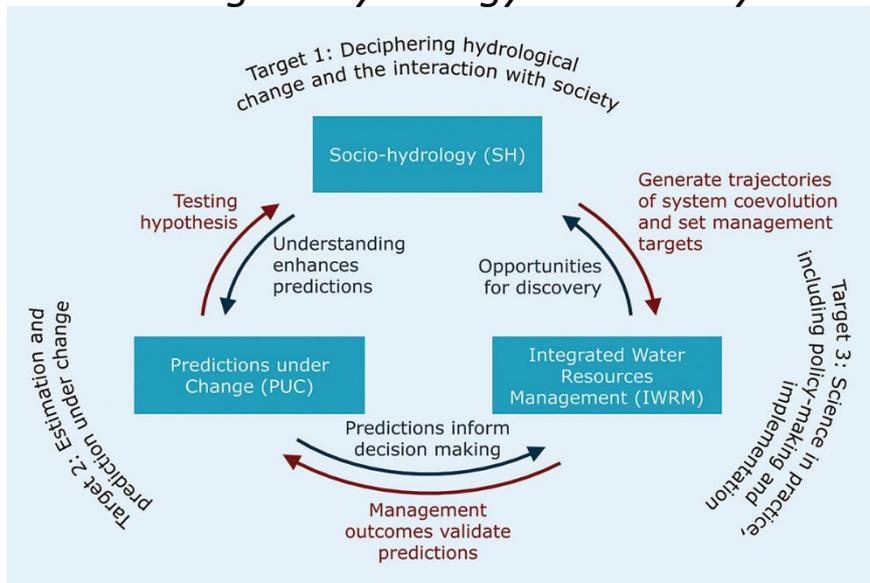
United Nations Office
for Outer Space Affairs

Added value of GeoUnions

- *Science for Society* – promoting scientific understanding of climate and its change, natural hazards and disaster risks, mineral resources and water depletion, soil and food, etc.



Panta Rhei: a decade of research on change in hydrology and society



Added value of GeoUnions

- Working together with nations and intergovernmental bodies – developing joint programs (e.g., with UN agencies)



unesco

International Geoscience
Programme

The International Geoscience Programme (IGCP) serves as a knowledge hub of UNESCO to facilitate international scientific cooperation in the geosciences. The IGCP mission includes promoting sustainable use of natural resources, advancing new initiatives related to geo-diversity and geo-heritage and geohazards risk mitigation. Since 1972, the International Geoscience Programme (IGCP) has partnered with IUGS to bring together thousands of Earth scientists from around the world and allowed them to benefit from the cooperative spirit generated under the umbrella of UNESCO.

Added value of GeoUnions

- Working together with nations and intergovernmental bodies – developing joint programs (e.g., with UN agencies)



UNESCO created the Intergovernmental Hydrological Programme (IHP) in 1975 to advance water science and sustainable water management. As the only UN intergovernmental initiative dedicated to water, IHP works on securing clean drinking water, preventing floods, preserving glaciers, improving water quality, and more, by bringing together top scientists and policymakers to turn knowledge into action to better understand, protect, and manage this vital resource. Long-standing partners of this programme are the IUGG's International Association of Hydrological Sciences and IAHG affiliated to IUGS.

Added value of GeoUnions

- Working together with nations and intergovernmental bodies – developing joint programs (e.g., with UN agencies)



UN-GGIM

United Nations Global Geospatial Information Management (UN-GGIM)



General Assembly

Distr.: General
11 March 2015

Sixty-ninth session
Agenda item 9

Resolution adopted by the General Assembly on 26 February 2015

[without reference to a Main Committee (A/69/L.53 and Add.1)]

69/266. A global geodetic reference frame for sustainable development

Added value of GeoUnions

- *Science for the Developing World* – GeoUnions plays a special role in bridging state-of-the-art science to less-affluent countries of the world (e.g., Geoscience in Africa).
 - Action Plan for African Geoscience (IUGS)
 - Geodetic Research & Infrastructure (IUGG-IAG)
 - Geoscience Education (IUGS-Commission on Geoscience Education)
 - African Seismological Commission (IUGG-IASPEI)
 - **Science for Health and Well-being (ISPRS)**
 - **Electronic Geophysical Year for Africa (IUGG)**

Added value of GeoUnions

- *Capacity Building and Science Education – GeoUnions Future of Earth and Space Science Education workshop and relevant Declaration.*

Declaration “Future Earth and Space Science Education”

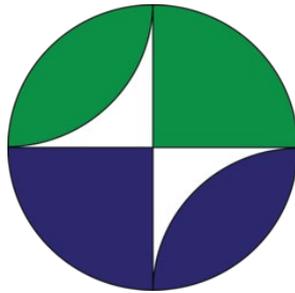
The following declaration aims to highlight the importance of Earth and space science education in future scientific progress and to reinforce the link between the scientific community, national governments and the public to contribute to sustainable development of society through scientific awareness and actions related to challenging problems of society.

The declaration was adopted on 1 December 2015 by the participants of the International Conference “Future Earth and Space Science and Education” co-sponsored by the Abdus Salam International Centre for Theoretical Physics (ICTP) and the International Union of Geodesy and Geophysics (IUGG) and held in ICTP, Trieste, Italy on 2-6 November 2015.

Adopted by IAU, ICA, IGU, INQUA, ISPRS, IUGG, IUGS, URSI as well as ICTP, IRDR, and WCRP

Added value of GeoUnions

- *Data and Information* – promoting observational and data services (e.g., Global Geodetic Observing System).



GGOS
Global Geodetic
Observing System

The Global Geodetic Observing System (GGOS) of the IUGG International Association of Geodesy (IAG) provides the essential framework for accurate measurements and consistent modelling and interpretation of Earth system processes and interactions, including global change, Earth deformation, and mass exchange between and within the geosphere, biosphere, cryosphere, hydrosphere and atmosphere. GGOS provides a framework of geodetic observation infrastructure and expertise to analyze observational data and produce geodetic products that serve science and society.

GeoUnions Scientific Challenges

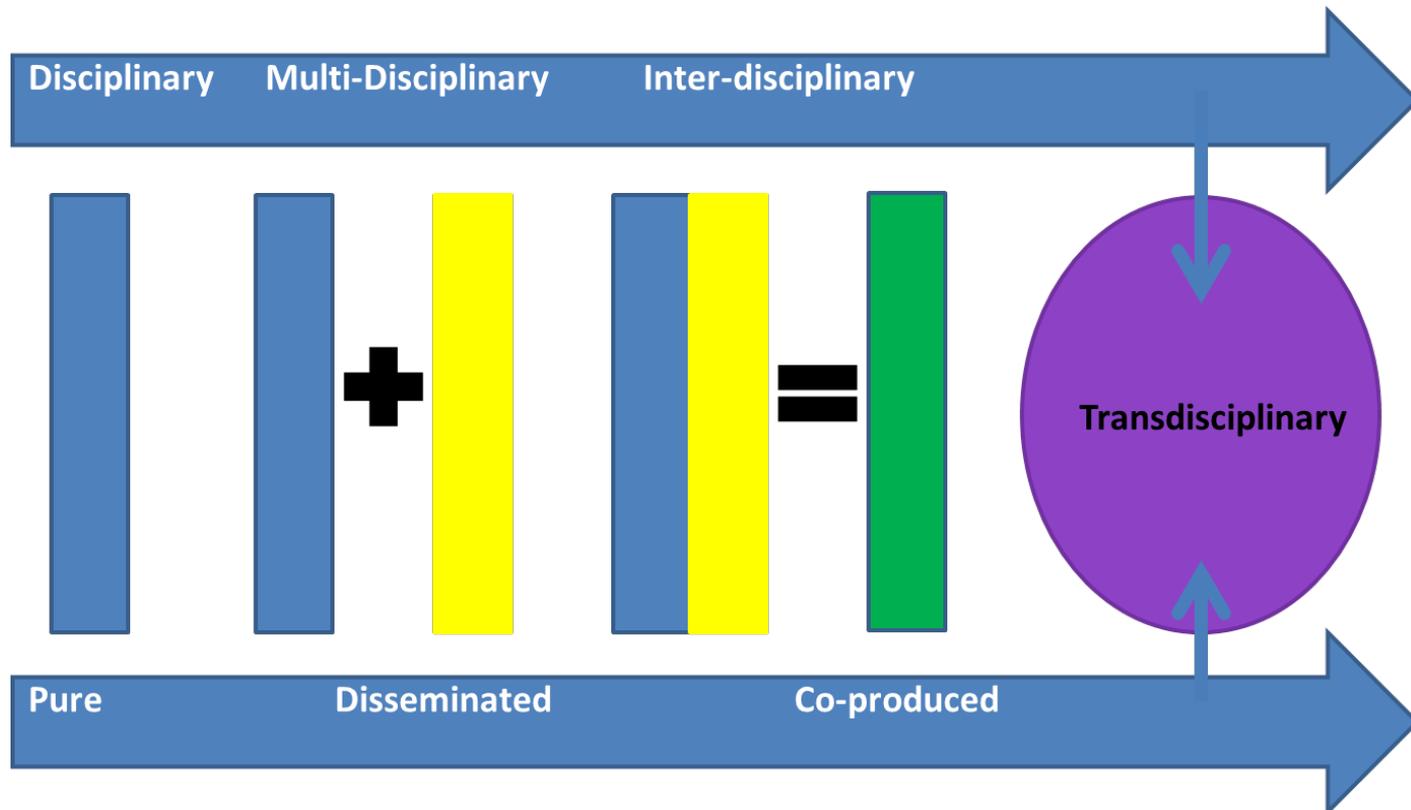
- A healthy future for the geosciences requires emphasis on *basic science*.

Governments, funding agencies, geounions, and professional societies of geoscientists should support and promote fundamental scientific development intellectually and financially at a level comparable to that of applied science.

- Scientific discoveries should *benefit humanity* and demonstrate the importance of scientific outcomes in daily life of the society. Geoscientists need to continue to put their short-term basic results into use. This will credibility of scientific knowledge and enhance trust in science.

GeoUnions Scientific Challenges

- Inter- and trans-disciplinary studies are vital to making progress in science for society, especially in the fields of climate and environmental change, natural hazards, water and food security, etc.



Few more challenges

- The coupling between geosciences as well as between ***geosciences and social sciences***.
- ***Combined expertise from relevant disciplines*** would help to quantify the observed processes and elucidate which interactions between spheres are important.
- Cooperation between ***GeoUnions and professional geoscientific societies***.
- Role of GeoUnions in the ***new era of AI and digital science***.
- ETC

Future

- The ISC *International Geoscientific Unions:*
WORKING TOGETHER ON CHALLENGING PROBLEMS
- Establishment of *closer cooperation with ISC Interdisciplinary Bodies, such as IRDR, WCRP, UHWP* (not always works well ...)
- GeoUnions are enjoying the 22-year cooperation. Strengthening this cooperation in the future would benefit each union individually and Earth and space sciences.
- Strengthening a cooperation with professional societies (e.g., AGU, AOGS, EGU), intergovernmental organizations, industry, and the public would be tremendously important.

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