



# IUGS Geoscience in Africa Event

*22-23 February 2024*

*Nairobi, Kenya*



The IUGS Executive, its affiliate members, and a group of geoscientists representing 13 African countries, met in Nairobi in February 2024 and developed the following ten actions for African Geoscience.

The IUGS will design, implement, and support these actions in collaboration with The Geological Society of Africa (GSAf), The organisation of African Geological Surveys (OAGS), The Minerals Africa Development Institution (MADI), local African Geological Societies, and other international organisations including UNESCO, The European Geosciences Union (EGU) and The Geological Society of America (GSA).

**Some key upcoming meetings to be used to develop these actions**

- a. IUGS EC virtual meeting planned for 24th May 2024.
- b. IUGS EC Meeting at 37th International Geological Congress (IGC) August 25th 2024, Busan, Republic of Korea.
- c. Society of Economic Geologists (SEG) Meeting on the 27th to 30th September 2024, Windhoek, Namibia.
- d. The Colloquium of African Geology (CAG) Nairobi 2025 (date to be announced).
- e. Others.

If possible, IUGS will undertake a similar event in Latin America in 2026 to develop a series of similar actions for that region.



## **IUGS Ten Action Plan for Africa “TAP for Africa”**

### **1. A strategy for fundraising opportunities, outreach and education in geoscience**

IUGS, in collaboration with GSAf, OAGS, UNESCO and other international bodies, will investigate possibilities of establishing a “specific trust fund” (TAP for Africa Trust Fund) for research and training. It might be financed by industries who profit from African resources. It should also engage African diaspora in geoscience. It will contribute to:

- Scholarships for Postgraduate students to be trained in African Universities
- Mobility of young researchers within African countries and elsewhere
- Short periods exchange programs for students among African countries
- Sponsorship programmes to organize open summer schools in Africa that facilitate networking of students from outside Africa with those from Africa.

**Key action:** African entities identified by OAGS, GSAf, and MADI will define project proposals that will be submitted to the up-coming meetings, which will facilitate mobilisation of resources from IUGS (UNESCO-IGCP, GSA International, EGU, EPOS).

### **2. Increase IUGS presence and visibility in Africa while promoting gender balance, diversity and inclusion**

- IUGS will increase its presence and visibility in African scientific meetings/conferences with specific sessions organized to evaluate and facilitate the implementation of TAP for African Geosciences. IUGS will actively seek to amplify the participation of women to promote gender balance in order to make its working groups and activities in Africa as inclusive as possible.
- IUGS will partner with African entities (e.g. OAGS, GSAf, MADI) to increase membership in IUGS and provide services to African entities as members of IUGS.
- IUGS commissions, task groups, and key partners should be involved in promoting the actions and projects identified here and should include key African representation in all activities.

**Key action:** Make IUGS working groups and activities in Africa as open and diverse as possible, in order to Increase the participation of women experts within the IUGS constituent groups. This action involves not only increasing the visibility of women and diverse experts but also ensuring their meaningful involvement in

decision-making processes and leadership roles.

**Facilitate visas and travel for African countries:** IUGS will address the issue of acquiring visas and entering countries hosting an IGC for participants from African Countries. Bids for the IGC must identify difficulties in acquiring visas and passing through immigration for African participants. This matter must be an important factor considered in evaluation of bids.

### **3. A common strategy for education and outreach in geosciences**

IUGS will work towards a common strategy for education and outreach in geosciences in Africa led by joint work from the GSAf and OAGS. This strategy should consider issues such as:

- Higher school education
- How to retain skills and trained young scientists in Africa
- Mobility and exchange programs for students and early career researchers among African countries (see point 1)
- Internship programs for students to enable establish employment opportunities

**Key action:** A joint Taskforce (IUGS, GSAf, OAGS, UNESCO) which can develop a document and guidelines that could guide the joint working practices.

### **4. Improve Geological knowledge and Increase the Awareness of Geological Sciences**

- To promote research training and specific tools for a better geological knowledge specifically on Earth's resources.
- Increase the awareness of geosciences, geoconservation and the potential of Geotourism in Africa. Include more African Geological Heritage Sites and Heritage Stones in the IUGS designation programs and explore the potential to link to UNESCO Global Geoparks as tools for local development.

**Key action:** IUGS Geoheritage commission to include actions involving R&D in African heritage environments.

### **5. IUGS sponsored research labs with partners**

- Develop IUGS-sponsored research labs in geophysics, geochemistry, and geochronology that will assist African researchers (graduate students and faculty) endorsed by IUGS and when appropriate apply for specific funding from national research foundations to do so.
- Such facilities might be in developed countries for use by African scientists, but IUGS envisages creation of labs in Africa for Africans and research

visitors.

- This action will require co-sponsorship from partners in Africa but also GSA, EGU, UNESCO and others.

**Key action:** Establish a task force which might investigate the feasibility and what it requires to enable the establishment of such laboratories in institutes and in the field.

## **6. Science Diplomacy - IUGS with key African geoscientists as an advocate to inform and influence policy makers and society**

- IUGS with key African geological institutions serves as an advocate to inform and influence policy makers and society.
- The IUGS brand can be used by the African geoscience community (such as National professional societies, the African Academy of Science) to deal and discuss with governments/policy makers on geoscience initiatives, etc.

**Key action:** An identified IUGS executive member will serve in the role of coordinating with those African colleagues wishing to offer such a program and in seeking funding for doing so.

## **7. Decarbonisation of future energy resources**

**Embrace the Green energy transition in Africa:** use of all renewable energy resources and support for immediate and affordable results, including capacity building.

- **Geothermal:** IUGS recognizes the world leading expertise of Kenya in geothermal energy development. And a collaborative programme on green fields geothermal research and development in Africa and the Global South is proposed.
- **Hydrogen:** IUGS recognizes the rapid development of hydrogen from several sources as a fuel and encourages R&D.
- **Hydrocarbons:** This resource, especially gas, is still needed. Its deleterious effects can be mitigated by decarbonizing the transport infrastructure. However, some countries are still dependent on fossil energies, e.g. coal. Collaborative efforts between IUGS and entities of these countries should be encouraged in development of clean coal technologies, like CCS/CCU.
- **Nuclear energy:** Storage of the waste, inventory of respective subsurface structures. IUGS should engage with African entities for R&D in new nuclear waste geological storage technologies.
- **Hydro-Technologies:** We need to encourage development of hydropower

systems and understand the impact of climate change on these resources.

- **Green energy minerals:** R&D on exploration and development, including ethical aspects of sourcing.

## **8. Support Geoscience Mapping Programs and initiatives in Africa**

IUGS with its relevant affiliated organisations, commissions and task groups such as:

- Geoscience Education, Training & Technology Transfer
- Global Geochemical Baselines (GGB)
- International Commission on Stratigraphy (ICS)
- International lithosphere program
- Deep Time Digital Earth

will work together with relevant organisations in Africa (OAGS, GSAf) and other geological surveys (USA, China, Canada, Australia, Europe) to design, implement and support relevant training programs and projects on mapping tailored on the basis of the relevance and the needs for each region/country.

## **9. Recognize the need to preserve and enhance African geodata**

Work with partners to create an Inventory of all existing relevant data. Create a high-quality research inventory on strategic/green energy minerals, energy systems (agro-food requirements. Where appropriate with the focus on cross border issues.

**Key action:** IUGS will support development of online platform through GMIS Structure, AMREC, Digital Earth Africa to provide the status of geoscience data for each member state. IUGS will optimise geoscientific information, FAIR data, aligned to African priorities and existing platforms with a focus on African resources.

## **10. Develop Research and Awareness in Geology for Health**

IUGS will work together with UNESCO and other African and international organisations to support the development of geological research projects which have direct and indirect societal impacts related to the health of people in the continent. These will be aligned with regional, national priority programs and UN Sustainable Development Goals (SDG). It may cover:

- Mining operations and their environmental and health impacts
- Water pollution, quality and health
- Soil quality, food security and health
- Extreme events including those related to geological risk and climate change

## Key data portals that might help these actions

<https://scienceforafrica.foundation/grand-challenges-africa>

<https://www.weforum.org/agenda/2023/10/investment-opportunities-africas-energy-sector/>

<https://au.int/en/agenda2063/>

<https://www.weforum.org/agenda/2023/11/innovative-approaches-for-unlocking-research-and-development-funding-in-africa/>

International Science Partnerships Fund (ISPF) - GOV.UK ([www.gov.uk](http://www.gov.uk))

CMMI <https://portal.ga.gov.au/persona/cmmi>

<https://www.usgs.gov/centers/gggsc/science/critical-minerals-mapping-initiative-cmmi>

<https://www.digitalearthafrica.org/>

<https://madi.africa/>

[https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/europe-world/international-cooperation/regional-dialogues-and-international-organisations/eu-africa-cooperation/funding-and-support\\_en](https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/europe-world/international-cooperation/regional-dialogues-and-international-organisations/eu-africa-cooperation/funding-and-support_en)

<https://www.nature.com/articles/d44148-023-00360-4>



# List of Participants

## IUGS Geoscience in Africa Event

**Nairobi, Kenya**  
**February 22-23, 2024**

<b>Representatives from IUGS Constituent Groups, Adhering Organizations and Affiliated Organizations</b>						
NO.	GROUP	POSITION	F_NAME	G_NAME	AFFILIATION	COUNTRY/ REGION
1	Executive Committee Members	President	LUDDEN	John	Heriot-Watt University	U.K.
2		Secretary General	FINNEY	Stanley	California State University	U.S.
3		Treasurer	KITAZATO	Hiroshi	Waseda University	Japan
4		Past President	CHENG	Qiuming	China University of Geosciences (Beijing)	China
5		Vice President	CHEONG	Daekyo	Kangwon National University	ROK
6		Vice President	MOURI	Hassina	University of Johannesburg	South Africa
7		Councilor (2020-2024)	MCKINLEY	Jennifer	Queen's University	U.K.
8		Councilor (2020-2024)	STROINK	Ludwig	GFZ German Research Centre for Geosciences	Germany
9		Councilor (2022-2026)	PEREIRA	Lola	Department of Geology, University of Salamanca	Spain
10		Councilor (2022-2026)/Social Media Manager	ROJAS-AGRAM ONTE	Yamirka	Christian-Albrechts-Universität zu Kiel	Germany
11	Publications Committee (PC)	E-Bulletin Editor	KAUR	Gurmeet	Panjab University	India
12	Publications Committee (PC)	IUGS Webmaster	DI CAPUA	Giuseppe	National Institute of Geophysics and Volcanology	Italy
13	Episodes	Executive Editor	LEE	Sung Keun	Seoul National University	ROK
14	IUGS Social Media	Social Media officer	MUNOZ GRANADOS	Daniela	Universidad de Los Andes	Colombia
15	International Commission on Stratigraphy (ICS)	Chair	HARPER	David	Durham University	U.K.
16	International Commission on Geoheritage (ICG)	Chair	HILARIO	Asier	Basque Coast UNESCO Global Geopark	Spain
17	IUGS Commission for Geoscience Information (CGI)	Chair	THORLEIFSON	Leonard Harvey	Minnesota Geological Survey	U.S.
18	Commission on Global Geochemical Baselines (CGGB)	First Co-Chair	LADENBERGER	Anna	Geological Survey of Sweden	Sweden
19	Commission on Global Geochemical Baselines (CGGB)	Second Deputy Chair	SIMUBALI	Gloria Namwi	Geological Survey of Namibia	Namibia
20	Commission on Geoscience Education, Training and Tech Transfer (COGE)	Chair	VILLACORTA CHAMBI	Sandra	CSIRO, Mineral Resources, Perth, Australia	Australia
21	Commission on Geoethics (CG)	Chair	PEPPOLONI	Silvia	Istituto Nazionale Di Geofisica e Vulcanologia	Italy
	Task Group on Diversity, Equity, and Inclusion (TGDEI)	Chair				



22	International Commission on History of Geological Sciences (INHIGEO)	Chair	<b>VACCARI</b>	<b>Ezio</b>	Università degli Studi dell'Insubria	Italy
23	International Commission on History of Geological Sciences (INHIGEO)	Secretary General	<b>KÖLBL-EBERT</b>	<b>Martina</b>	Ludwig-Maximilians-Universität München	Germany
24	Commission on Geoscience Education, Training and Tech Transfer (COGE)	Vice Chair	<b>OCCHIPINTI</b>	<b>Susanna</b>	National Association of Geologists	Italy
25	Commission on Tectonics and Structural Geology (TecTask)	Chair	<b>GOMEZ-RIVAS</b>	<b>Enrique</b>	Universitat de Barcelona	Spain
26	Task Group on Igneous Rocks (TGR)	Chair	<b>LUSTRINO</b>	<b>Michele</b>	Sapienza Università di Roma	Italy
27	Task Group on Submarine Geohazards (TGSG)	Chair	<b>KAWAMURA</b>	<b>Kiichiro</b>	Yamaguchi University	Japan
28	Task Group on Submarine Geohazards (TGSG)	Secretary General	<b>OKUBO</b>	<b>Yasukuni</b>	Geothermal Energy Research & Development CO., LTD.	Japan
29	Initiative on Forensic Geology (IFG)	Chair	<b>DONNELLY</b>	<b>Laurance John</b>	Alfred H Knight International	U.K.
30	Deep-Time Digital Earth (DDE)	Representative	<b>ISHWARAN</b>	<b>Natarajan</b>	Deep-Time Digital Earth (DDE)	France
31	International Geoscience Program (IGCP)	Representative	<b>MHOPJENI</b>	<b>Kombada</b>	UNESCO	Namibia
32	International Lithosphere Program (ILP)	President	<b>THYBO</b>	<b>Hans</b>	International Lithosphere Program (ILP)	Denmark
33	European Geosciences Union (EGU)	President	<b>ARTEMIEVA</b>	<b>Irina</b>	European Geosciences Union	Denmark
34	Geological Society of America (GSA)	Representative	<b>SZTEIN</b>	<b>Ester</b>	Geological Society of America	U.S.
35	American Geosciences Institute (AGI)	Executive Director	<b>ARTHUR</b>	<b>Jonathan</b>	American Geosciences Institute	U.S.
36	Nigerian Mining and Geosciences Society (NMGS)	President	<b>OLATUNJI</b>	<b>Akinade</b>	Nigerian Mining and Geosciences Society (NMGS)	Nigeria
37	International Geoscience Education organization (IGEO)	Chair	<b>ORION</b>	<b>Nir</b>	Weizmann Institute of Science	Israel
38	Geological Society of Africa (GS Af)	President	<b>OKUNLOLA</b>	<b>Olugbenga Akindeji</b>	University of Ibadan	Nigeria
39	Geological Society of Kenya (GSK)	President	<b>KURIA</b>	<b>Joseph Ng'ang'a</b>	Geological Society of Kenya	Kenya
40	International Association on the Genesis of Ore Deposits (IAGOD)	Representative	<b>BINELI BETSI</b>	<b>Thierry O.</b>	Botswana International University of Science and Technology	Botswana
41	International Association on the Genesis of Ore Deposits (IAGOD)	Representative	<b>BARTON</b>	<b>Mary</b>	Odikwa Geoservices CC	Namibia
42	Geological Survey of the Netherlands /TNO	Chief Geologist	<b>VAN DER MEULEN</b>	<b>Michiel</b>	Geological Survey of the Netherlands/TNO	Netherlands
43	Lithuanian National Committee of Geologists	President	<b>SATKUNAS</b>	<b>Jonas</b>	Lithuanian Geological Survey	Lithuania
44	Canadian National Committee for IUGS	Co-Chair	<b>BOGGS</b>	<b>Katherine</b>	Mount Royal University	Canada
45	Canadian National Committee for IUGS	Past President	<b>LEBEL</b>	<b>Daniel</b>	Geological Survey of Canada	Canada
46	The Gambia Geological Department	Acting Director	<b>JAWO</b>	<b>Aliou</b>	The Gambia Geological Department	Gambia
47	The Gambia Geological Department	Adviser	<b>DARBOE</b>	<b>Mansata M.</b>	The Gambia Geological Department	Gambia

48	IUGS Secretariat	Director	<b>MA</b>	<b>Yongzheng</b>	China Geological Survey (CGS)	China
49		Secretary	<b>GU</b>	<b>Yanfei</b>	Chinese Academy of Geological Sciences (CAGS)	
50		Secretary	<b>XU</b>	<b>Yaqi</b>	Chinese Academy of Geological Sciences (CAGS)	

<b>Invited Lecturers and Participants from African Countries</b>				
<b>NO.</b>	<b>F_NAME</b>	<b>G_NAME</b>	<b>AFFILIATION</b>	<b>COUNTRY/REGION</b>
1	<b>MOURI</b>	<b>Hassina</b>	International Union of Geological Sciences (IUGS)	South Africa
2	<b>MUGYENYI</b>	<b>Frank</b>	Minerals Africa Development Institute (MADI)	Uganda
3	<b>OKUNLOLA</b>	<b>Olugbenga Akindeji</b>	Geological Society of Africa	Nigeria
4	<b>GICHERUH</b>	<b>Chrysanthus Muchori</b>	Geological Society of Kenya	Kenya
5	<b>KURIA</b>	<b>Joseph Ng'ang'a</b>	Geological Society of Kenya	Kenya
6	<b>MHOPJENI</b>	<b>Kombada</b>	UNESCO	Namibia
7	<b>NYASIMI</b>	<b>Mary</b>	UNESCO	Kenya
8	<b>SAMBA EP DIENE</b>	<b>Rokhaya</b>	Organization of African Geological Surveys (OAGS)	Senegal
9	<b>OLATUNJI</b>	<b>Akinade</b>	Nigerian Mining and Geosciences Society (NMGS)	Nigeria
10	<b>NGUNO</b>	<b>Anna</b>	Geological Society of Africa & Geological Survey of Namibia	Namibia
11	<b>ARISEKOLA</b>	<b>Tunde Muritala</b>	African Minerals Development Centre (AMDC)	Ethiopia
12	<b>PETER</b>	<b>Lesego Polite</b>	Botswana Geoscience Institute	Botswana
13	<b>KASSAYE</b>	<b>Asfawossen Asrat</b>	Department of Mining and Geological Engineering, Botswana International University of Science and Technology	Botswana
14	<b>JAWO</b>	<b>Alieu</b>	Geological Department, Ministry of Petroleum and Energy	Gambia
15	<b>DARBOE</b>	<b>Mansata M.</b>	Geological Department, Ministry of Petroleum and Energy	Gambia
16	<b>SIMUBALI</b>	<b>Gloria Namwi</b>	Geological Survey of Namibia	Namibia
17	<b>BARTON</b>	<b>Mary</b>	Odikwa Geoservices CC	Namibia
18	<b>NDIAYE</b>	<b>Abdoul Aziz</b>	Ecole Nationale Supérieure des Mines et de la Géologie (ENSMG, Ex_IST, University Cheikh Anta Diop Dakar, SENEGAL)	Senegal
19	<b>CHAMUSSA JUVANE</b>	<b>Mónica</b>	ENH National Oil Company	Mozambique
20	<b>MERIAUX</b>	<b>Catherine</b>	ICTP-EAIFR, University of Rwanda	Rwanda
21	<b>OKOO</b>	<b>Joyce</b>	Kenya Electricity Generating Company PLC	Kenya
22	<b>DATA</b>	<b>Gabriel</b>	Ministry of Energy and Mineral Development	Uganda
23	<b>DANBATTA</b>	<b>Umar Adamu</b>	Centre for Inland Basins Studies (CIBS), Ahmadu Bello University, Zaria	Nigeria
24	<b>BINELI BETSI</b>	<b>Thierry O.</b>	Botswana International University of Science and Technology	Botswana
25	<b>MANUEL</b>	<b>José</b>	Geologica Institute of Angola	Angola
26	<b>BARNES- SAKYI-ADDO</b>	<b>Georgette</b>	Georgette Barnes Limited/Women in Mining Ghana	Ghana
27	<b>MWANGI</b>	<b>Anna</b>	KenGen PLC	Kenya