



IUGS Geoscience in Africa Event

22-23 February 2024

Nairobi, Kenya



IUGS Ten Action Plan for Africa

“TAP for Africa”

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 GSAf, OAGS, MADI, local African Geological Societies, and other international organisations including UNESCO, EGU and 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 IGC August 25th 2024
- c. SEG Meeting on the 27th to 30th September 2024
- d. 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 actions for that region.

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 establishment of 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.

2. Increase IUGS presence and visibility in Africa

- 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 partner with OAGS and other African entities to increase membership in IUGS and provide services to OAGS and other African entities as members of IUGS.
- African entities identified by OAGS and GSAf 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)
- IUGS Meetings will be held in different regions every year where possible. The first such event will be CAG30 in Nairobi in 2025.

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
- 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 Heritage

To promote training and specific tools for a better geological knowledge (water, mineral resources...) with a special consideration to geological heritage. Increase the awareness of 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: include actions involving R&D in heritage environments.

5. Ensure the participation of African scientists in 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.

Facilitation of 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, and this matter must be an important factor considered in evaluation of bids.

Key action: Make IUGS working groups and activities in Africa as open as possible, in order to Increase the participation of African experts within the IUGS constituent groups, consider regional diversity and gender balance.

6. 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 establish such laboratories in institutes and in the field.

7. 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.

8. Decarbonisation of future energy resources

- **Embrace the Green energy transition in Africa:** use of all renewable energy resources support for immediate low hanging fruits, 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.

9. 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.

10. Recognize the need to preserve and enhance African geodata

Work with partners to create an Inventory of all existing relevant data; Quality research inventory on strategic/green energy minerals, energy systems (geothermal) agro-food requirements and water with the focus on cross border issues

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

their ownership /ownership/accessibility/gaps.

Following recommendation no. 1, to investigate the possibility of establishment of a “Specific fund” capitalized by industries who profit from African resources and enable implementation of specific projects.



11. 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)

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

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

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



List of Participants

IUGS Geoscience in Africa Event

Nairobi, Kenya
February 22-23, 2024

Representatives from IUGS Constituent Groups, Adhering Organizations and Affiliated Organizations						
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-AGRAMONTE	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	National Institute of Geophysics and Volcanology	Italy
	Task Group on Diversity, Equity, and Inclusion (TGDEI)	Chair				

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

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

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