

**MINUTES**



**INTERNATIONAL UNION OF GEOLOGICAL SCIENCES**

**78th EXECUTIVE COMMITTEE MEETING**

**OPEN SESSION**

**February 14<sup>th</sup>-15<sup>th</sup>, 2023**

**Queen's University and Ulster University  
Belfast, Northern Ireland  
United Kingdom**

# Contents

Participants .....	3
1. Opening of Meeting .....	5
2. Discussion and Approval of Agenda .....	5
3. Approval of Minutes of Virtual Progress meeting, October 2022 .....	5
4. Executive Committee Reports .....	6
4.a. President's Report .....	6
4.b. Treasurer's Report .....	6
4.c. Secretary General's Report .....	17
4.d. Permanent Secretariat's Report .....	18
5. IUGS Committees .....	21
5.a. Publications Committee .....	21
5.a.1. E-Bulletin and Social Media .....	21
5.a.2. Website .....	23
5.a.3. 60th anniversary publicity .....	26
5.a.4. Episodes .....	26
5.b. Nominating Committee .....	27
5.c. New Activities Strategic Implementation Committee (NASIC) .....	28
6. IUGS Commissions, Task Groups, Initiatives .....	30
6.a. Global Geochemical Baselines (CGGB) .....	30
6.b. Education, Training and Technology Transfer (COGE) .....	31
6.c. Management and Application of Geoscience Information (CGI) .....	32
6.d. History of Geological Sciences (INHIGEO) .....	33
6.e. Tectonics and Structural Geology (TecTask) .....	34
6.f. Geoheritage (ICG) .....	35
6.g. Stratigraphy (ICS) .....	37
6.h. Initiative on Forensic Geology (IFG) .....	39
7. New Commission on Geoethics .....	40
8. IUGS Joint Programs .....	41
8.a. International Lithosphere Programme (ILP) .....	41
8.b. UNESCO - IGCP .....	42
8.c. DDE .....	43
9. 37th IGC in 2024 (Busan) .....	44
10. Reports from IUGS Adhering Organizations .....	45
11. European Federation of Geologists .....	46
12. Other groups: Geological Society of Kenya and plans for 2024 IUGS EC Meeting .....	47
13. Discussion: Future of Geosciences; Future of IUGS .....	48
14. Close of the Open Session .....	51

## **Participants**

### **IUGS Executive Committee:**

John LUDDEN (JL; President), Stanley FINNEY (SF; Secretary General), Hiroshi KITAZATO (HK; Treasurer), Qiuming CHENG (QC, Past President, Chair of Nominating Committee), Daekyo CHEONG (DC; Vice President), Hassina MOURI (HM; Vice President), Jennifer MCKINLEY (JM; Councilor), Ludwig STROINK (LS; Councilor), Lola PEREIRA (LP; Councilor), Yamirka ROJAS-AGRAMONTE (YR; Councilor)

### **Observers (attending parts of the meeting):**

Özlem ADIYAMAN LOPES (UNESCO), Giuseppe DI CAPUA (Publications Committee, PC), Gurmeet KAUR (Publications Committee, PC), Youngsook HUH (Managing Editor of Episodes), David HARPER (International Commission on Stratigraphy, ICS), Anna LADENBERGER, Gloria PRIETO RINCON, Ariane ARGYRAKI, Demetriades ALECOS and Paula ADANEZ (Commission on Global Geochemical Baselines, CGGB), Sandra VILLACORTA CHAMBI (Commission on Geoscience Education, Training & Technology, COGE), Asier HILARIO (International Commission on Geoheritage, ICG), Enrique GÓMEZ RIVAS (Commission on Tectonics and Structural Geology, TecTask), Ezio VACCARI and Martina KOELBL-EBERT (International Commission on the History of Geological Sciences, INHIGEO), Harvey THORLEIFSON (Commission on the Management & Application of Geoscience Information, CGI), Silvia PEPOLONI (Task Group on Diversity, Equity, and Inclusion, TGDEI), Laurance DONNELLY (Initiative on Forensic Geology, IFG), Hans THYBO (International Lithosphere Program, ILP), Natarajan ISHWARAN (Deep-Time Digital Earth, DDE), Patrick McKeever (Global Geoparks Network, GGN), Courtney JERMYN (Earth Science Matters Foundation, ESMF), Laura QUIJANO (EuroGeoSurveys, EGS), Akinade OLATUNJI (Society for Environmental Geochemistry and Health, SEGh), Marko KOMAC (European Federation of Geologists, EFG), Chaosheng ZHANG (International Medical Geology Association, IMGa), Hema ACHYUTHAN (Geological Society of India, GSI), Jianhua CAO, Qukan LUO and Liang ZHONG (International Research Center on Karst, IRCK), Bernhard GRASEMANN (Austrian National Committee of Geosciences), Banerjee DHIRAJ MOHAN (Indian National Committee for IUGS-INQUA), Chrysanthus Muchori GICHERUH and Joseph Ng'ang'a KURIA (Geological Society of Kenya, GSK), Ahmed AL-TAMIMI and Zahed EBRAHIM (Geological Survey and Mineral Resources Board of Yemen), Ana María ALONSO ZARZA (Instituto Geológico y Minero de España (IGME), Liza Socorro MANZANO (Lands Geological Survey Division of the Mines and

Geosciences Bureau-Philippines), Marianna Kováčová (National Geological Committee of Slovakia)

**IUGS Secretariat:**

MA Yongzheng (Director), SITU Yu (Secretary) and MU Langfeng (Secretary)

## **1. Opening of Meeting**

Prof. Chris Johnston, Pro-Vice-Chancellor of the Faculty of Engineering and Physical Sciences of Queen's University, Belfast delivered a welcoming Address. Prof. Johnston conveyed his welcome to meeting delegates. He reviewed the history of the University and gave an introduction of the Faculty of Engineering and Physical Science. He finally wished a full success of the meeting.

John Ludden (JL) expressed gratitude to the Queen's University, Belfast for hosting the 78<sup>th</sup> IUGS EC Meeting and welcomed the online and offline delegates of the Meeting. JL introduced Councillors Lola Pereira and Yamirka Rojas-Agramonte who started their term in 2022. In-person delegates briefly introduced themselves one by one.

JL explained that IUGS EC originally planned to hold the 78<sup>th</sup> EC Meeting in Nairobi, Kenya, but as COVID-19 pandemic was still active in Kenya, EC had to make the decision to change the meeting place to Belfast, Northern Ireland, UK.

Lola Pereira (LP) suggested a condolence message on the IUGS website for the earthquake that affected Turkey and the north of Syria, as well as other adjacent countries.

## **2. Discussion and Approval of Agenda**

JL suggested adding items "Geological Net-Zero" and "the role of IUGS National members" under the item "Discussion: Future of Geosciences; Future of IUGS".

Laurance Donnelly (LD) suggested adding item "influencing government" under the item "Discussion: Future of Geosciences; Future of IUGS".

Motion to approve the Agenda.

Approved.

## **3. Approval of Minutes of Virtual Progress meeting, October 2022**

Motion to approve minutes of the Virtual Progress meeting, October 2022.

Approved.

## **4. Executive Committee Reports**

### **4.a. President's Report**

JL reported that in 2022, IUGS has ceased cooperation with Russia, including the 38<sup>th</sup> International Geological Congress (IGC) to be held in St. Petersburg, Russia in 2028 and called for potential candidates for the new host of the 38<sup>th</sup> IGC.

IUGS decided to increase its visibility on social media and succeeded with outreach through web presence, tweets, face-book etc increasing broadly. IUGS has established a short-term task force on the transition management of the IUGS public outreach activities and a series of events of the 60<sup>th</sup> Anniversary of IUGS have been successfully held and effectively promoted via IUGS social media platforms.

IUGS started the smooth transition of TecTask from a commission to a professional society. IUGS created the Task Group on Diversity, Equity, and Inclusion (TGDEI), which aims to deal with problems related to diversity, equity, and inclusion within the IUGS scientific community, such as gender equality.

JL reviewed that IUGS made efforts for the consensus on the use of geographic nomenclature between the Japanese geological community and the Korean organizers of the 37<sup>th</sup> IGC.

JL emphasized that IUGS has effectively developed new memberships of Kenya and Algeria and United Kingdom has agreed to promote its IUGS membership from Level-6 to Level-7. Russia's membership stops as IUGS has ceased cooperation with Russia.

JL emphasized that IUGS has built a stronger relationship with IUGG and other GeoUnions so as to enhance the impact of the geosciences and link across subdisciplines, such as from geophysics to bio-geo sciences and joint geoscience education. JL mentioned that IUGS has made progress in joining the International Science Council (ISC) gender inclusiveness actions and in creating an ethics commission within IUGS, namely Commission on Geoethics (CG).

### **4.b. Treasurer's Report**

Hiroshi Kitazato (HK) introduced the budgetary structure of IUGS. IUGS income includes membership fee (70%), UNESCO-IGCP reimbursement, Royalties from Geological Society of London and capitation fee both from IGC and RFG (once every four years). IUGS expense includes UNESCO-IGCP allocation, joint programs (ILP and OneGeology), IUGS Commissions, Task Groups, Initiatives, Affiliated Organizations, contributions to ISC, IUGS committees, Episodes and administration costs. IUGS fund is composed of current activities, contingency/flexibility and reserve for future.

By December 31, 2022, total balance of IUGS account is 1,832,882.59 USD. Breakdown of current part as of December 31, 2022 includes USD account (1,377,301.94 USD), EUR account (337,465.18 EUR) and JPY account (12,415,023 JPY and cash (3.5 EUR).

**Total Balance of IUGS Account as of December 31, 2022**  
(compared to 2021)

	2022	Amount (USD) 2021
<b>Current Part (Note 1)</b>	<b>1,832,882.59</b>	<b>1,765,286.84</b>
<b>Reserved Part</b>	-	-
<b>Total Balance</b>	<b>1,832,882.59</b>	<b>1,765,286.84</b>

Current Part is Cash and Deposit at Bank. Reserved Part is for the fund that is kept separately from Current Part, such as fund put in financial instruments. Currently, all the amount of Total Balance (except cash of EUR 3.50) is kept in accounts in USD, EUR and JPY at MUFG Bank, Ltd., Shibuya Meijidori Branch, in Tokyo (as in Note 1 below). Since IUGS has no legal entity registered in Japan, it is not feasible to make contracts to hold financial instruments in Japan.

**Note 1: Breakdown of Current Part as of December 31, 2022**

			Amount converted (Note 2) in USD
USD Account	USD	1,377,301.94	1,377,301.94
EUR Account	EUR	337,465.18	361,222.73
JPY Account	JPY	12,415,023	94,354.17
Cash	EUR	3.50	3.75
<b>Total Current Part</b>			<b>1,832,882.59</b>

The following is included in IUGS account.

Deposit payable	
(Note 3)	176,993.60
(Note 4)	26,774.60
Provision for Hutchison Award	
(Note 5)	20,000.00

**Note 2:** Exchange rate as of December 31, 2022

1 EUR = 1.0704 USD

1 JPY = 0.0076 USD

**Note 3:** This is the amount received from India in relation to the cancellation of the 36th IGC (International Geological Congress) at Delhi in 2020. Considering there are some people who are having difficulties in receiving refund of the registration fee that they paid directly from the Indian LOC (Local Organising Committee), IUGS has decided to undertake some of the refunding task after negotiations with LOC of the 36th IGC and this "Deposit payable" will be used for the refund. It is planned that IUGS will notify the procedures of refund to those eligible, collect

necessary information for remittance and then, start making the remittance for the refund. The transactions related to this fund are excluded from the calculation of Income/Expense of IUGS.

**Note 4:** This is due to overpaid membership fee of the Russian member in 2011 and had been used for the subscription fee of Episodes of the Russian member since 2014. However, there was no movement in 2022.

**Note 5:** This is the provision for the expenses related to Hutchison Award on the occasion of IGC (International Geological Congress) in 2024. It is planned to make provision of USD 30,000 by the end of 2023 (for the three years from 2021-2023, USD 10,000 per year is provided). For the details of the award, please refer to <https://www.iugs.org/awards>.

### Income

IUGS income in 2022 is 533,616.07 USD in total and it includes membership fees (369,584.99 USD), contribution from UNESCO to IGCP (162,500 USD) and other income (1,531.08 USD).

	(Amount in USD)	
	2022	2021
<b>Income</b>		
Membership Fees	<b>369,584.99</b>	<b>400,782.35</b>
For2020	615.48	For2019 3,170.00
For2021	45,479.18	For2020 11,018.52
For2022	323,490.33	For 2021 386,593.83
Contribution from UNESCO to IGCP(Note 6)	<b>162,500.00</b>	<b>84,100.00</b>
Final payment for previous year	50,000.00	34,100.00
1st payment for current year	60,000.00	50,000.00
2nd payment for current year	52,500.00	-
Other Income(Note 7)	<b>1,531.08</b>	<b>42,893.65</b>
<b>Total Income</b>	<b>533,616.07</b>	<b>527,776.00</b>

### Expense

IUGS expense in 2022 is 609,787.35 USD in total and IUGS net income in 2022 is -76,171.28 USD. Translated exchange loss (with no cash-out) is -33,226.57 USD and



deposit payable from the 36<sup>th</sup> IGC is 176,993.60 USD. Therefore, the net increase in IUGS account is 67,595.75 USD.

Expense (Note 8)	2022	2021
IGCP	256,196.11	170,600.00
Joint Programmes	20,089.05	21,278.98
IUGS Commissions	117,903.13	78,529.07
IUGS Task Groups		
Initiatives	9,500	47,165.00
Affiliated Organizations	28,000	29,000.00
Contributions	16,100.96	14,226.39
Committees		
Episodes	28,000.00	28,000.00
Awards (Argand, Harrison, and YS Prize)	6,901.82	
Awards (Hutchison)		12,427.00
Secretariat Expense	15,000.00	15,000.00
ICS Special Funding Program		
IUGS Associated Event	60,247.73	5,008.66
Other Expense	51,848.56	28,031.41
<b>Total Expense</b>	<b>609,787.35</b>	<b>449,266.51</b>
<b>Net Income</b>	<b>-76,171.28</b>	<b>78,509.49</b>
Translated Exchange Loss (with No Cash-out) (Note 9)	-33,226.57	-33,361.45
Deposit Payable from the 36th IGC (refer to Note 3 in Page 1)	176,993.60	
Net Increase in IUGS Account	67,595.75	45,148.04

**Note 6:** UNESCO reimburses the finance to IGCP based on Implementation Partners Agreement upon submission of payment report by IUGS. Receipt of USD 38,560 as the final reimbursement for 2022 is expected in early 2023.

**Note 7:** Other income includes royalty (USD 1,416.38) and bank interests.

**Note 8:** The breakdown and detail of Expense is shown in "Breakdown and Detail of Expense compared to Budget in Allocation Table". For the details of the projects and activities, please refer to <https://www.iugs.org/>

**Note 9:** This item was included in "Other Income/Expense" in the past. However, in the consideration that it is not the income/expense that IUGS can budget, it has been moved out of "Budget in Allocation Table" and the calculation of Net Income. This translated exchange loss is due to the difference of the balance amount converted to USD between the beginning and the end of 2022, caused by the appreciation of USD against EUR and JPY towards the end of 2022. No cash out occurred on this.

Exchange rate as of

December 31, 2022	December 31, 2021
1 EUR = 1.0704	USD = 1.1343 USD
1 JPY = 0.0076	USD = 0.0087 USD

**Breakdown and Detail of Expense** (compared to Budget in Allocation Table) 1/3

Total expense in 2022: USD 609,787.35

Activity (Note 10)	Activity/Recipient (Note 10)	2022 Paid (USD)	2022 Budget (USD)	Note
IGCP : International Geoscience Programme (jointly financed with UNESCO)		256,196.11	273,000.00	Breakdown is shown in Page 6
	UNESCO (reimbursed to IUGS from UNESCO)	162,500.00	168,000.00	USD 162,500 was reimbursed in 2022 (including the payment for the previous year) and USD 38,560 is expected to be reimbursed in early 2023 by UNESCO.
	IUGS (borne by IUGS)	93,696.11	105,000.00	For the projects in 2022, the allocation is: UNESCO USD 151,060, IUGS USD 105,136.11.
Joint Programmes		20,089.05	20,650.00	
	ILP: International Lithosphere Program / IUGG Int. Union of Geodesy & Geophysics	15,000.00	15,000.00	
	One Geology / UKRI-Research Innovation Natural Environmental Research Council	5,089.05	5,650.00	GBP 4,174.91 (paid from JPY a/c. JPY 669,612) converted to USD
IUGS Commissions		117,903.13	118,000.00	
	CGI: Commission for the Management and Application of Geoscience Information	10,000.00	10,000.00	
	COGE : Comission on Geoscience Education (Edu.,Training / Tech Transfer)	8,000.00	8,000.00	
	ICS: International Commission on Stratigraphy	54,000.00	54,000.00	
	INHIGEO : Commission on the History of Geological Sciences	4,000.00	4,000.00	
	TECTASK :Tectonics and Structural Geology	4,903.13	5,000.00	Payment of EUR 4,580.65 converted to USD
	GeoHeritage : International Commission on Geoheritage	31,000.00	31,000.00	
	CGGB : Commission on Global Geochemical Baseline	6,000.00	6,000.00	
IUGS Task Groups		-	12,000.00	
	TGIG : Isotope Geology and Geochronology	-	-	
	TGIR : Igneous rocks	-	12,000.00	Invoice is expected
Initiatives		9,500.00	29,500.00	
	RFG : Resources for Future Generations	-	-	
	Marine Scoping Study	-	-	
	DDE : Suzhou Deep-Time Digital Earth Research Program	-	20,000.00	Invoice is in process
	IFG : Initiative on Forensic Geology	9,500.00	9,500.00	

**Note 10:** Budget is allocated based on the evaluation of projects by IUGS Executives Committee members in reference to annual reports from each project. For the details on projects and activities, please refer to <https://www.iugs.org/activities>.

Breakdown and Detail of Expense (compared to Budget in Allocation Table) 2/3

Total expense in 2022: USD 609,787.35

Activity (Note 10 in Page 3)	Activity/Recipient (Note 10 in Page 3)	2022 Paid (USD)	2022 Budget (USD)	Note
<b>Affiliated Organisations</b>		28,000.00	35,000.00	
	AGID : Association of Geoscientists for International. Development	-	-	
	IMGA : International Medical Geology Association	3,000.00	3,000.00	
	CGMW : Commission for the Geological Map of the World	6,000.00	6,000.00	
	GSAf : Geological Society of Africa	5,000.00	5,000.00	
	ICL : International Consortium on Landslides	5,000.00	5,000.00	
	SGA : Soc. Geol. Applied Min.	-	-	
	IGEO : International Geoscience Education Organisation	-	5,000.00	Invoice is in process (due to the organisational change in IGEO)
	IAGOD : International Association on the Genesis of Ore Deposits	-	2,000.00	Invoice is in process
	IAPG : International Association for Promoting Geoethics	5,000.00	5,000.00	
	GFGD : Geology for Global Development	4,000.00	4,000.00	
	IRCK (Karst) : Institute of Karst Geology	-	-	
<b>Contributions</b>		16,100.96	14,077.00	
	ISC (former ICSU) : International Science Council	16,100.96	14,077.00	Payment of EUR 12,292, EUR 250 (Gender Equality), EUR 2,500 (IYSSD), converted to USD
<b>Committees (within IUGS)</b>		-	-	
	FC : Finances Committee	-	-	The meetings were held by Zoom.
	NC : Nomination Committee	-	-	
	CC : Conference Committee	-	-	
	PC : Publication Committee	-	-	
<b>Episodes (Costs of Production, online publication and distribution of Episodes in 2021)</b>		28,000.00	28,330.00	
	Geological Society of Korea	28,000.00	28,000.00	Based on MOU of August 26, 2016, as IUGS Contribution
	Additional IUGS Contribution	-	330.00	
<b>Hutchison Award (Note 11)</b>		-	10,000.00	Budget USD 10,000 is provision for IGC in 2024, with no actual payment in 2022 (Please see "Hutchison Award Provision" at the bottom of the table).
<b>IUGS Awards (Note 12)</b>		6,901.82	10,000.00	Argand USD 2,358.87, Harrison USD 3,079.41, Early Career (YS) EUR 1,367.28
<b>Secretariat Expense : IUGS Secretariat at Chinese Academy of Geological Sciences</b>		15,000.00	15,000.00	Based on MOU in 2020 with Ministry of Natural Resources of the People's Republic of China

**Note 11:** Hutchison Award: This award is intended to promote professional growth of young scientists by supporting their participation in important IUGS-sponsored conferences. It is planned to make provision of USD 30,000 for IGC in 2024. For the details of the award, please refer to <https://www.iugs.org/awards>.

**Note 12:** IUGS Awards: IUGS Émile Argand Award, James M. Harrison Award and Early Career (YS) Award. For the details of the awards, please refer to <https://www.iugs.org/awards>.

**Breakdown and Detail of Expense** (compared to Budget in Allocation Table) 3/3

Total expense in 2022: **USD 609,787.35**

Activity (Note 10 in Page 3)	Activity/Receipient (Note 10 in Page 3)	2022 Paid (USD)	2022 Budget (USD)	Note
ICS Special Funding Program (Note 13 )		-	50,000.00	Budget is carried over for 2023
IUGS Associated Event (For the 60th Anniversary of the IUGS)		60,247.73	80,000.00	(Note 14 )
<b>Other Expense</b>		<b>51,848.56</b>	<b>84,500.00</b>	
	Routine Meetings	13,728.68	30,000.00	77th IUGS EC Meeting, March 2022 in Paris, France
	Representative Scientific Meetings	12,553.89	10,000.00	(Note 15 )
	Exhibitions	-	-	
	Annual Reports	-	-	
	Website	-	500.00	
	ARC (Ad hoc Review)	3,517.32	10,000.00	
	Promotion Items	-	-	
	Bank Charges	7,904.73	10,000.00	
	Audit	2,625.21	2,500.00	JPY 345,423 converted to USD
	Treasurer's Office	11,518.73	15,000.00	Payment for part-time accounting secretary and office supplies.
	Online Session (Zoom)	-	-	
	Disbursement from deposit payable	-	6,500.00	
<b>TOTAL EXPENSE</b>		<b>609,787.35</b>	<b>780,057.00</b>	This amount includes amount on IGCP to be reimbursed by UNESCO
Adjustment	Provision for Hutchison Award	10,000.00		Budget USD 10,000 for "Hutchison Award" is provision for IGC in 2024, with no actual payment (not recognised as expense) in 2022. For the three years from 2021-2023, USD 10,000 per year is provided.
		<b>619,787.35</b>	<b>780,057.00</b>	

**Note 13:** Special Funding Program: This program was created based on the recommendations by IUGS Finance Committee in 2019. The following two projects were awarded the fund in February 2020.

"Forensic Geological Analysis of Crimes in International Mining, Minerals and Metals" from Initiative on Forensic Geology (USD 47,500 for 2 years)

"Regenerating the Time Lords: Towards the completion, calibration, digitation and outreach of the geological timescale" from the International Commission on Stratigraphy (USD 50,000 for 2 years)

**Note 14:** Related to the 60th Anniversary of IUGS, for renewal of the website, creation of new materials and photographic galleries, and organising events at "Earth Futures Festival", payments were made to Seismic Geoscience Limited (EUR 37,600.64) and Earth Futures Pty Limited. (USD 20,000).

**Note 15:** Attendance on Ceremony/Conference on Chibanian (Japan), Congress "The first 100 IUGS geological heritage" (Spain), Meeting at GAC (Geological Association of Canada), EGU

(European Geoscience Union), SCAR (Scientific Committee on Antarctic Research) (India), World Science Forum (South Africa), ICL 20th Anniversary/18th Global Committee of IPL (Japan)

**Analysis of Membership Status and Fees**  
**Status of Countries by Fees Category - 2022**

Category	Active	Inactive	Total	Number of Countries paid for		
				2022	2021	2020
1	22	49	71	17	2	1
2	11	6	17	10	1	
3	12	3	15	10	1	
4	8	1	9	6	1	
5	-	-	-	-	-	-
6	3	0	3	2	1	
7	4	0	4	4	1	
8	4	0	4	3		
<b>Total</b>	<b>64</b>	<b>59</b>	<b>123</b>	<b>52</b>	<b>7</b>	<b>1</b>
(2021)	66	56	122		48	11
(2020)	66	56	122			51

- Category 1      Algeria became a new active member of Category 1 in 2022  
 Category 6&8    One member changed its category from 8 to 6 for 2022.  
 Category 8      One membership has been suspended by the resolution of EC meeting in March 2022.

**Alteration of Status during the year 2022**

New member	Algeria	2022 dues paid
Pending→Active	Cuba	2022, 2021, 2020 dues paid
Inactive→Active	Kenya	2022 dues paid
Active→Pending	Bangladesh Iran Mongolia South Africa Sri Lanka Vietnam	Dues unpaid for 2 years as of the end of 2022
Pending→Inactive	Argentina Greece Kosovo Tajikistan	Dues unpaid for 3 years as of the end of 2022

**Countries with no contact point - 26 countries**

Azerbaijan, Belarus, Belize, Bolivia, Bosnia and Herzegovia, Burkina Faso, Burundi, Cote D'Ivoire, Ecuador, Georgia, Ghana, Iraq, Madagascar, Nicaragua, Panama, Paraguay, Somalia, Sudan, Suriname, Swaziland, Syria, Tanzania, Tunisia, Uruguay,

Venezuela, (Nepal), (Rwanda). The countries in ( ) are not the members but showed interest in membership in the past.

### **Countries restricted by OFAC (US Office of Foreign Assets Control)**

#### **- four countries, one region and two self-proclaimed countries**

Cuba, Iran, D.P.R.Korea, Syria, Crimea Region,  
Donetskaya Narodnaya Respublika (self-proclaimed) and,  
Luganskaya Narodnaya Respublika (self-proclaimed)  
(as of April 2022, by MUFG Bank)

### **Expenses of IGCP**

In 2022, IUGS paid 105,136.11 USD for 14 IGCP projects and UNESCO paid 151,060 USD for 20 projects.

### **Financial Comments**

#### **Financial Situation as of December 31, 2022**

During the period from 01/01/2022 to 31/12/2022, IUGS income and expense are USD 533,616.07 and USD 609,787.35 respectively, and the net loss is USD 76,171.28. The balance of IUGS current account as of 31/12/2022 is USD 1,832,882.59. This includes USD 203,768.20 of "Deposit payable" as explained in Note 3 & 4 in Page 1.

#### **Income**

The total income received during 2022 is USD 533,616.07, including membership fee of USD 369,584.99 (compared to USD 400,782.35 in 2021). The major reason for the decrease of the membership fee income is the suspension of one membership of Category 8 (by the resolution made at EC meeting in March). On the positive side, Algeria, Cuba and Kenya became active members in 2022. Receipt of USD 38,500, as the final reimbursement of finance to IGCP projects for 2022, is expected from UNESCO in early 2023.

#### **Expense**

The total expense during 2022 is USD 609,787.35. Finance to IGCP increased compared to the previous year (2021) by more than USD 85,000, as mentioned below.

For several items of the budget on IUGS Task Groups, Initiatives, Affiliated Organisations and ICS Special Funding Program, the payments had not been made by the end of 2022 (with invoice in process etc.) and, therefore, additionally the payment for these items up to around USD 89,000 may be made in 2023.

#### **IGCP Projects Co-financed with UNESCO**

34 IGCP (International Geoscience Programme) projects were financed jointly with UNESCO during 2022 (compared to 26 projects in 2021), totaling to USD 256,196.11, of which IUGS bore USD 105,136.11. The projects that were not implemented during 2022 may be transferred to 2023 upon the approval of UNESCO.

#### **IUGS 60th Anniversary**

The major costs regarding the 60th anniversary are for organising the related conferences and events (including "Earth Futures Festival", "First 100 IUGS

Geological Heritage Sites"), renewal of the website, creation of new materials and photographic galleries.

### **"Long-term Inactive" matters**

#### **Outlook for 2023**

In order to encourage the members that have been inactive for long periods to be active, a special measure will be implemented for 2023.

Inactive member countries count more than two thirds in Category 1. Most of them have not paid membership fee for more than 5 consecutive years. According to the IUGS statute, inactive members should pay for 3 consecutive years to return to active status. However, in order to encourage these countries to become active, IUGS Bureau proposes to adopt a special treatment "Special Rule for 60<sup>th</sup> Anniversary" for 2023. With this "special rule", the members of Category 1 that have not paid membership fee for the last 5 consecutive years can become active, if they pay membership fee for 2023 only.

### **36<sup>th</sup> IGC refund procedures and time plans**

#### **History**

Due to COVID-19 pandemic that started in January 2020, the 36<sup>th</sup> IGC India was postponed just one week prior to its opening. It was finally canceled in 2021. The 35<sup>th</sup> IGC LOC decided to refund registration fee and some other received fees. However, the refund procedures took much time and also faced many troubles. As a result, more than 150 people still had not received refund as of November 2022. IUGS President and Secretary General negotiated with IGC secretary general and to take the task of refund procedures with IUGS networks and facilities.

#### **Fund transferred from India**

In November 2022, the fund for refund, USD 176,993.60 (net of the bank charges), was transferred from India to IUGS's bank account, with lists of those eligible for refund. It is planned that refund will be made using this amount and that bank charges and other related expenses will be paid from this fund.

#### **Steps to Implementation**

Proposed steps are:

- 1) Notify the eligible people on refund procedure by letter from IUGS Secretary General, with Form for Claim (Form similar to IUGS Reimbursement Claim Form).
- 2) Collect the filled Forms for Claim (proposed deadline: the end of March, 2023).
- 3) Start making refund in April 2023, when Treasurer's Office can work on this.

#### **Auditing**

Treasurer's office has received appropriate level of audit by a Japanese auditor (Mr. Kazuhiro Tanaka, CPA) year by year. Income and expense records have been duly



examined during the year 2022. The accounting records have been prepared correctly.

**EC78Act\_01:** Yamirka Rojas-Agramonte (YR) to contact inactive members in Central and Southern America to encourage them to reactivate their membership.

#### **4.c. Secretary General's Report**

Stanley Finney (SF) reported that the main activities of the IUGS Secretary General in 2022, including:

1. Organized 77th IUGS EC in Paris in March 2022;
2. Wrote action and allocation letters arising from EC meeting;
3. Served as EC contact for issues arising from IUGS constituent groups;
4. Managed the production of the 2021 IUGS Annual Report, distributed in May 2022;
5. Attended dedication of Chibanian GSSP in Japan in May 22 and gave a presentation on ICS and GSSPs in the Chibanian Symposium;
6. Managed the IUGS response to the death of IUGS Councilor-elect Carlos Cónsole-Gonella and the election of replacement Councilor Yamirka Rojas-Agramonte;
7. Managed the voting by the IUGS EC on ratifications of the GSSA for the Hadean Eon, the GSSP for the Campanian Stage, the First 100 Geological Heritage Sites, and ten IUGS Geological Heritage Stones. SF were invited to meet President of Los Angeles County Museum of Natural History and front-page story in Los Angeles Times on La Brea Tar Pits as one of "First 100";
8. Contributed to the First 100 IUGS Geological Heritage Sites, including the Zumaia Event in October and organized the presentation of Emile Argand and Early Career Geoscientist medals at the Zumaia Event;
9. Participated in IGCC meeting in July 2022 and prepared call for EOI for 38th IGC in 2028;
10. Participated in a Virtual progress meeting of the EC in October 2022 and several Bureau meetings;
11. Worked to organize EC meeting in Kenya;

12. In January 2023, carried out ARC review of IGCP (report to follow);

13. Worked closely with IUGS Secretariat on many IUGS related matters and questions.

SF pointed out that scheduling of 2024 EC Meeting will be discussed at the 78<sup>th</sup> EC meeting and he will contact IUGS Bureau members, constituent groups and relevant organizations to contribute to the 2022 IUGS Annual Report soon after the 78<sup>th</sup> EC meeting with the deadline of late March.

JL asked when IUGS should call on for the medalists of IUGS awards to be presented at the IUGS Council Meeting at the 37<sup>th</sup> IGC. SF answered that this call will be distributed in early 2024 with the deadline of May or June, 2024. SF reminded that IUGS constituent groups needed to prepare a four-year reports to IUGS Council at least one month prior to the Council Meeting. SF reminded IUGS constituent groups to prepare lists of new officers of their groups for EC's ratification at the EC meeting before the Council Meeting at the 37<sup>th</sup> IGC.

#### **4.d. Permanent Secretariat's Report**

Mr. MA Yongzheng (MY) reported on the main work of the Secretariat.

##### **● Business Meetings**

#### **1. 77th EC Meeting on 16-18 March, 2022**

- Assisted Secretary General in preparing and distributing the Announcement of the 77th EC Meeting;
- Distributed the call for submitting IUGS Annual Reports to the IUGS Constituent Groups, Adhering Organizations and Affiliated Organizations;
- Prepared and distributed meeting documentation (including Agenda, annual reports etc.);
- Assembled financial requests from the IUGS Bodies;
- Minute taking, preparation and distribution (including Action List);

#### **2. EC Virtual Progress Meetings and Other Virtual Meetings**

The Secretariat arranged the following meetings through zoom:

- Virtual Meeting of IGCC (14 July 2022)
- EC Virtual Progress Meeting (5 October 2022)
- Prepared and distributed meeting documentation;
- Minute taking, preparation and distribution (including Action List);

#### **3. DDE Open Science Forum and Series of Business Meetings, 9 November, 2022**

- Assisted in its promotion to the IUGS Constituent Groups, Adhering Organizations and Affiliated Organizations, etc.;
- Assisted in the preparatory work of the forum and on-site meeting affairs;

#### **4. 78th EC Meeting in February, 2023**

- Distributed the call for submitting IUGS Annual Reports to the IUGS Constituent Groups, Adhering Organizations and Affiliated Organizations;
- Collected all the annual reports and prepared meeting documentation (including Agenda, annual reports etc.).

#### **5. Second IUGS Nominating Committee Meeting, 11 January, 2023**

- Made arrangements for the second NC meeting and inform all the NC members;
- Compiled and collected meeting documentation (including Agenda, Nomination Call, etc.);
- Minute taking, preparation and distribution (including Action List).

#### **● IUGS 60th Anniversary**

- Assisted in updating the 60th Anniversary website, showcasing the scientific achievements of the IUGS constituent bodies;
- Participated in the preparatory work of a series of scientific events, including the IUGS 60th anniversary event held in Basque Coast on October 25 – 28 on which IUGS announced the First 100 IUGS Geological Heritage Sites, Geosolutions for Net Zero, International Geodiversity Day, etc.;
- Invited Chinese scientists to participate in the IUGS 60th anniversary events;
- Conducted survey on the participation of the IUGS constituent bodies so as to strengthen links within IUGS;
- Held zoom meetings with the IUGS@60 team on the IUGS 60th anniversary;
- Distributed information of the IUGS 60th anniversary events to the IUGS community.

#### **● Electronic Election of the IUGS Councilor (2022-2026)**

- Sent the call of Nominations for position of IUGS Councilor (2022-2016) to all the IUGS active adhering organizations;
- Organized two rounds of electronic elections via emails;
- Finished statistics of voting and send the results to the IUGS community.

#### **● Outreach and Publications**

##### **1. Annual Report**

- Designed and formatted the 2021 IUGS Annual Report;

##### **2. Episodes**

- Prepared and updated the list of recipients;
- Mailed 100 hardcopies of Episodes, No. 1 (Mar), No. 2 (Jun), No. 3 (Sep), No. 4 (Dec).

### 3. E-Bulletin

- Formatted and distributed the E-Bulletin #182-#191 to over 160,000 recipients;
- Updated the list of recipients based on feedbacks.
- Drafted some pieces of IUGS news being published on E-Bulletin.

### 4. New Year E-Card

- Designed and distributed the electronic New Year Card in the name of the Bureau to the international geoscience community.

## ● **Membership Maintenance**

### 1. Adhering Members

- Updated the contact information of the IUGS Adhering Members in the IUGS Information Management System.
- Prepared the updated list of membership status (Active, Pending, Inactive) of Adhering Members being posted on the IUGS website;
- Actively communicated with inactive members and assisted them in becoming active members.

### 2. Affiliated Members

- Updated the contact information of IUGS Affiliated Organizations in the IUGS Information Management System according to the information published on their official websites.

## ● **Others**

- Assisted in the statistics analysis of the active IGCP projects;
- Did a large amount of daily correspondence with regard to the 36th IGC reimbursements;
- Assisted with NC on its annual meeting.

## ● **Work Plan for 2023**

### Preparations and Participation of the IUGS Business Meetings

- 78th IUGS EC Meeting,
- IUGS EC Progress Meetings and Bureau Meetings,
- Meeting with the 37th IGC Organizing Committee
- IUGS Nominating Committee Virtual Meeting in August and November, etc.;

### Daily Routine

- Basic Work on membership maintenance
- Information system updates
- Distribution of IUGS publications including Episodes, E-Bulletin and annual report, etc

IUGS Exhibitions at EGU, GSA and AGU

- Materials for Distribution are as follows:
- IUGS pop up, flyer and brochures (need updating)
- Flyer and brochures of some IUGS affiliated organizations (voluntary contribution)
- IUGS annual reports in 2020-2022
- Hard Copies of ICS charts
- IUGS Publications (e.g. Episodes, First 100 Geoheritage Book with purchase information, Geochemical Sampling Book, IUGS books published by GSL, and other voluntary contributions from IUGS affiliated organizations)
- Promotional items (IUGS pins, hats, notebooks, T-shirts etc.)

## **5. IUGS Committees**

### **5.a. Publications Committee**

#### **5.a.1. E-Bulletin and Social Media**

##### **E-Bulletin**

Gurmeet Kaur (GK) introduced that all IUGS commissions, task groups, initiatives, IGPC projects and adhering bodies are invited to provide a steady flow of material, consisting of concise texts accompanied by a few illustrations (photographs, diagrams, etc.). The E-bulletin is the quickest instrument for disseminating news about IUGS initiatives, activities, achievements, events and publications. Some IUGS constituent groups, including INHIGEO, IFG, ICS, CGGB, ICG, TecTask and TGDEI contribute to E-bulletin on a regular basis.

GK mentioned that the E-bulletin is brought out in the last week of every month and it is regularly published well in time. The e-Bulletin is a collective efforts of the IUGS PC and various groups. The E-bulletin is sent to IUGS President for final approval before it is sent out for circulation to IUGS Secretariat and IUGS webmaster.

##### **Social Media**

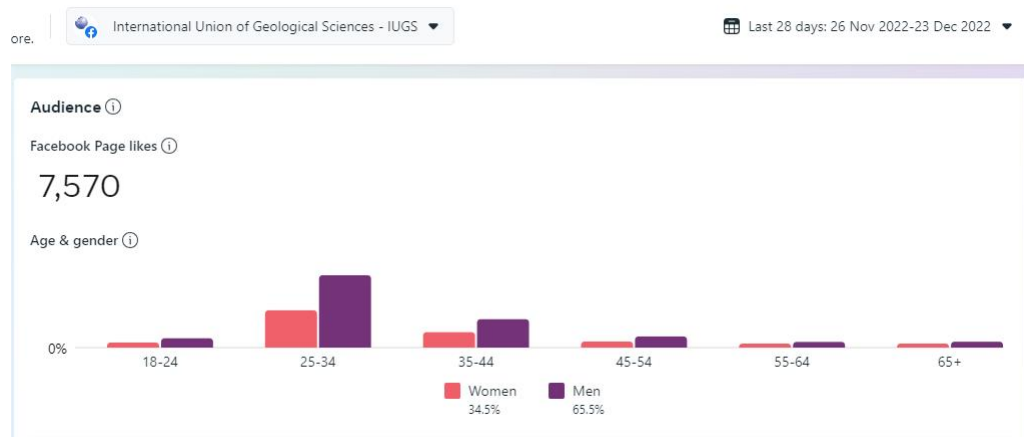
GK introduced that IUGS social media platforms include Facebook, Twitter and LinkedIn. IUGS@60 technical team managed the main IUGS twitter page for the year 2022.

The total number of Facebook followers has surpassed 8,000. The close coordination and cooperation amongst the PC members has been instrumental in the smooth functioning of the IUGS social media platforms.

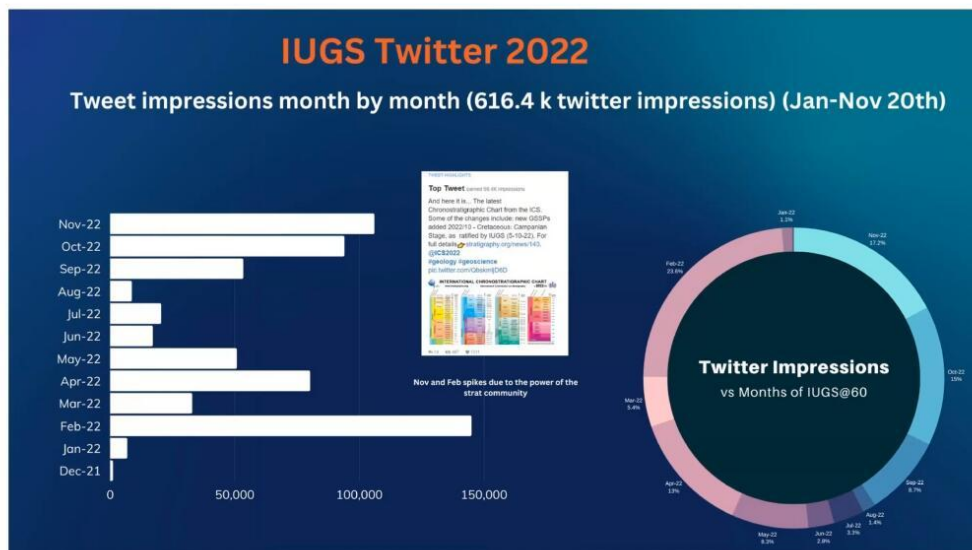
Total IUGS facebook followers:



Gives the age group and gender statistics on accessing IUGS facebook posts



Tweet impressions month by month (January to November 20<sup>th</sup>)



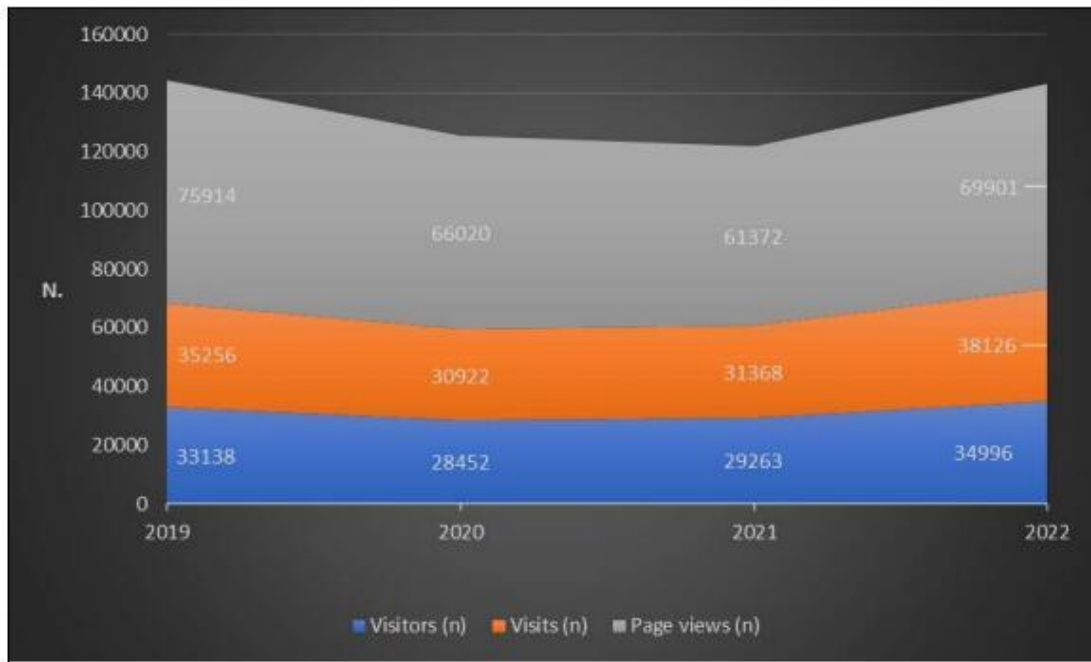
## 5.a.2. Website

Giuseppe Di Capua (GDC) reported that the activity of the webmaster was focused to maintain efficient website of IUGS by creating and updating pages regularly. During the year, GC worked in strict cooperation with IUGS Secretary General, the E-bulletin editor, the Secretariat and the IUGS 60<sup>th</sup> Anniversary staff for assuring continuous support to IUGS bodies to promote events and activities organized or supported by the Union.

GDC introduced that IUGS website is monitored through Google Analytics in order to analyze accesses and user behaviors. The comparison of access statistics in then range of years 2019-2022 for the interval 1 January-20 December is shown in table 1. The comparison of the total number of unique visitors, visits and page views for the same time interval is also shown in figure 1.

**Table 1.** Comparison of access statistics to the IUGS website for the years 2019- 2022, period 1 January-20 December (Source: Google Analytics).

	2019	2020	2021	2022
Visitors (n)	33138	28452	29263	34996
Visits (n)	35256	30922	31368	38126
Page views (n)	75914	66020	61372	69901
Pages/Visit (n)	2.15	2.14	1.96	1.83
Average visit duration (min.)	1:39	1:41	1:22	1:25
Bounce rates (%)	66.17	62.28	68.37	70.82



**Figure 1.** Graph of access statistics (visitors, visits, page views) to the IUGS website for the years 2019- 2022, period 1 January-20 December (Source: Google Analytics).

GDC reported that the percentage increase in the number of unique visitors, visits and page views is shown in table 2, as well as a small percentage increase was observed for the average visit duration from 2021 to 2022. Moreover, there is a decrease in the number of pages consulted for each visit. Finally, the bounce rates increased in 2022 reaching the highest value since 2019.

**Table 2.** Comparison of access statistics to the IUGS website for the years 2021 and 2022, period 1 January-20 December (Source: Google Analytics).

	2021	2022	Difference 2022-2021 (n)	Difference 2022-2021 (%)
<b>Visitors (n)</b>	29263	34996	+ 5733	+ 19.6
<b>Visits (n)</b>	31368	38126	+ 6758	+ 21.5
<b>Page views (n)</b>	61372	69901	+ 8529	+ 13.9
<b>Pages/Visit (n)</b>	1.96	1.83	- 0.13	- 6.6
<b>Average visit duration (min.)</b>	1:22	1:25	+ 0:03	+ 3.7
<b>Bounce rates (%)</b>	68.37	70.82	+ 2.45	+ 3.6

GDC mentioned that the contribution of social media to the number of visits is scarce, as shown in table 3. Most visits come from Facebook. Visits from Facebook



and Twitter have decreased from 2021 to 2022, whilst from LinkedIn have doubled up. The low impact of social media is due likely to the lack of direct links to the IUGS website in the posts published.

**Table 3.** Visits to the IUGS website from the most important social media for the years 2021 and 2022, period 1 January-20 December (Source: Google Analytics).

	2021	2022	Difference 2022-2021 (n)	Difference 2022-2021 (%)
<b>Visits from social media (n) (total number of visits)</b>	505 (31368)	478 (38126)	- 27	- 5.3
<b>From Facebook (n)</b>	266	256	- 10	- 3.8
<b>From Twitter (n)</b>	177	84	- 93	- 52.5
<b>From LinkedIn (n)</b>	40	79	+ 39	+ 97.5

GDC introduced that in 2022, peaks of visits were reached on 24, 25, 26 and 27 October 2022 with a number of 290, 314, 302, 329 sessions respectively, during the event “First 100 IUGS Geological Heritage Sites”, held in Zumaia (Spain). The number of 329 visits is the second higher since 2016, after the major peak of 439 visits on 29 October 2021.

Visits come from 181 countries, mainly from China (14.7%), USA (11.5%), India (11.3%). Less than 5% of visits comes from all other countries.

The most visited pages of the website were the following: Homepage (38.3%), Calendar 2022 (6.4%), History (5.9%), ICS (5.2%), IGC (4.7%), Executive (2.8%), Flagship Activities (2.6%), Episodes (2.6%), DDE (2.3%), Organization (2.3%), Calendar 2023 (2.1%). Other pages got less than 2.0% of visits.

GDC presented several criticalities:

- IUGS doesn’t have the property of the website domain (iugs.org), so we don’t have access to it. This implies that we don’t know user and password to access the domain management.
- The contribution of social media to the number of visits is scarce. It is due likely to the lack of direct links to the IUGS website in the posts published.
- The Calendar is the second most visited page of the website. Unfortunately its updating is quite demanding since it requires data mining from many other websites. Numbers of events in the Calendar decrease year by year since 2019.

### 5.a.3. 60th anniversary publicity

This item has been elaborated under the agenda item “President’s Report”.

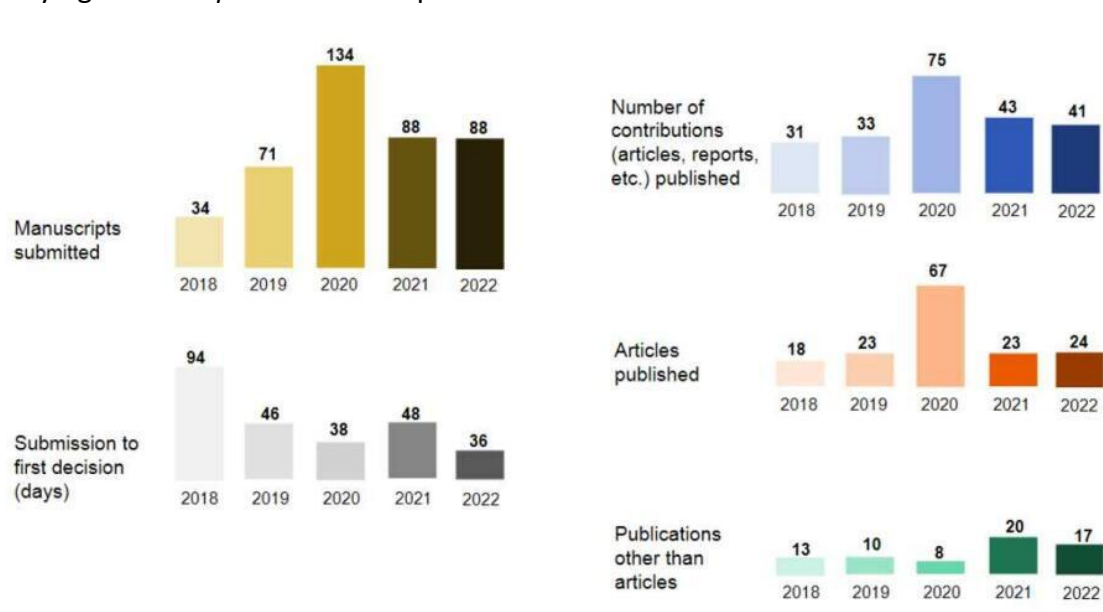
### 5.a.4. Episodes

Youngsook Huh (YH) reported that notable activities of Episodes in 2022 as follows:

#### Publication status

A total of 88 manuscripts were submitted in 2022 (as of 2022.12.31) through the EM system, and 41 manuscripts (24 original articles, 2 reviews, 4 communication regarding IUGS geological standards, 1 report, 2 History of Geology, 2 book reviews, 3 obituaries/profiles, and 3 editorials) were published.

Key figures for *Episodes* for the period 2018-2022 are shown below:



#### Journal turnaround time (days):

	2021	2022
Submission to technical check completion (ME)	1.2	1.1
Technical check completion to transfer to EIC	0	0
Submission to editor assignment (EIC)	1.2	1.1
Submission to reviewer invitation (AE)	12.9	10.3
Submission to first decision	48	36

#### Acceptance/Rejection rate (Final decision in 2022)

Acceptance rate: 44.5%, Rejection rate: 55.5%

Youngsook Huh (YH) reported notable achievements of Episodes in 2022 as follows:

### **Updated editorial board**

- Dr. Lucia Angiolini resigned for personal reasons, and Dr. Carlos Cénsole-Gonella passed away.
- Dr. Maria Rose Petrizzo and Dr. Kathleen Histon newly joined the editorial board (August, 2021).

### **New managing editor**

YH is from the School of Earth and Environmental Sciences, Seoul National University. She started as the new Managing Editor in January 2023. She received her Ph.D. in Marine Chemistry & Geochemistry from Massachusetts Institute of Technology-Woods Hole Oceanographic Institution.

### **CiteScore metrics**

According to the Scopus CiteScore (as of 2022.12.31), the Citescore rose from 2.8 in 2020 to 3.9 in 2021, and the percentile rose from Q2 in 2020 to Q1 in 2021. CiteScore Tracker 2022 is 5.2 (Last updated on February 5th, 2023). CiteScore is proportional to the IF, so the IF is expected to rise slightly next year.

YH reported the revenue and expenditure of Episodes in 2022 as follows:

### **Revenue**

Annual revenue of Episodes is composed of IUGS fund and subscriptions and others. Annual IUGS fund is 28,000 USD. In 2022, subscriptions and others are 4,020 USD and the whole revenue of Episodes in 2022 is 32,020 USD.

### **Subscriptions**

In 2022, the subscription fee is 720 USD, which is much lower than those of previous years (8,880 USD in 2021, 7,840 USD in 2020 and 7,520 in 2019) due to the cancellation of the subscription by Russian colleagues.

### **Expenses**

In 2022, the delivery costs are 1,966 USD, which are lower than those of previous years (4,509 in 2021, 2,957 USD in 2020, 2,228 in 2019) due to the cancellation of subscription of Russian colleagues. Balance in 2022 is -3,775 USD.

### **Activities planned for 2023**

YH reported the activities planned for 2023, including 1. To implement the diversity tool in the EM system and 2. To aim for on-time publication and secure a Special Issue.

### **5.b. Nominating Committee**

Qiuming Cheng (QC) expressed gratitude to IUGS Secretariat for the preparation of the virtual meeting of the Nominating Committee (NC) in January 2023 and to editor of Episodes and webmaster for publishing news from NC.

QC reported that the second meeting of the IUGS Nominating Committee (NC, 2020-2024) was held virtually on January 11th, 2023. The meeting was organized by QC with the attendance of 5 NC members from Colombia, Germany, Namibia, Spain, and USA. During the meeting, the NC members reviewed activities in 2022 and discussed on the draft Nomination Call with definition and references for each IUGS EC position and potential benefits. During the meeting, NC's work plan for 2023 and 2024 is decided. According to the work plan, a call for nominations for EC (2024-2028) was distributed in January 2023 with deadline of October 31<sup>st</sup>, 2023, and other tasks for 2023 and 2024 are as follows:

July/August 2023: Send out reminders for nomination

November 2023: Send out a second call for nominations (if necessary) (Extended deadline: 31 December, 2023)

January-March 2024: Hold an in-person meeting to discuss and put forward the slate of candidates by the NC

April 2024: Send the formal slate to the IUGS President

August 2024: Be elected by the IUGS Council

QC mentioned that NC will make full use of the IUGS website, E-Bulletin and the extensive international networking of IUGS to publicize the call for nominations as widely as possible to attract qualified and capable candidates with geographical distribution and gender balance to take up leading roles of IUGS.

### **5.c. New Activities Strategic Implementation Committee (NASIC)**

Edmund Nickless (EN) as the Chair of NASIC (New Activities Strategic Implementation Committee) reported that NASIC was established in 2013 with the Resourcing Future Generations (RFG) initiative as the only NASIC activity. The prime objective of the RFG is to help ensure the multigenerational needs for raw materials, energy and water while ensuring social equity. To implement RFG, symposiums, seminars and annual meetings of many geoscience societies have been organized. NASIC published a White Paper on Demand and Supply Issues.

EN then introduced RFG 2018, organized by the Canadian colleagues, as an IGC Special Topic Meeting, characterized by predominantly young early career audience. The follow-up of RFG2018 is ReSToRE (Researching Social Theories, Resources and Environment) Summer Schools. The first ReSToRE event was held in Dublin in July 2019 to bring together early-career researchers and practitioners at the intersection of the social sciences and geosciences from developing and developed countries to address critical issues related to resources.

Since 2020 the work programme of NASIC/RFG has focussed on delivering capacity-building events aimed at three specific audiences: ReSToRE Summer School; Technical Workshops to address locally identified training needs; and FoRGe (Fostering Researchers in Geosciences), a programme to build research capacity and support professional development among early-career university faculty in developing countries.

Specific activities during 2022 included three principal tasks: delivering ReSToRE2, postponed from 2021; working with the FoRGe steering committee on a questionnaire, to be distributed under the auspices of UNESCO, inviting geoscience colleagues in African universities to identify and separate the operational, disciplinary and scientific barriers they face in pursuing their research; and working with SGA on student-led, online panel discussions on “How Africa can transition to C-neutrality by 2050”.

ReSToRE2 attracted over 120 applications from which 50 were selected from 28 nations, including 18 developing countries. About a fifth of the delegates came from the extractive industries, the remainder from academia and government. Collectively, participants’ expertise included geology, environmental management, environmental psychology, anthropology, sociology, data science, law, engineering, hydrogeology and political science. Planning is underway for ReSToRE3, to be held in Dublin, Ireland, 1-5 July 2024 (details will be available shortly at <https://www.icrag-centre.org/restore/>). Thereafter, the intention is to franchise the brand and, in so doing, to encourage a series of such events outside of Europe.

The planned work programme for 2023 is: to continue to collaborate with African colleagues on organising the 8th SGA-IUGS-UNESCO-SEG Short Course on African Metallogeny to be held in Johannesburg from 9 to 13 October 2023; and to work on delivering ReSToRE3.

Among other matters, The Glasgow Pact, the outcome of COP 26, pledged further cuts to CO<sub>2</sub> emissions, but nowhere in the text is there any acknowledgement of the forecast, greatly- increased demand for the metals and minerals that will be required by the technologies to enable the energy transition. Neither is there any recognition of how and from where these raw materials are to come. Such omissions should provide an opportunity for IUGS to embrace an expanded programme of RFG activities, particularly as every indication is that, COP 27, to be held this autumn, will focus on technologies to combat climate change without addressing issues of raw material demand and supply. Given that policy vacuum, there is an opportunity for IUGS, as an authoritative and independent voice, to take a more active position.

The future of RFG remains uncertain. If it is to continue, whether or not as an IUGS activity, the initiative needs a physical home and staffing, possibly in a Geological

Survey Organisation, and a more ambitious outward facing programme which links strongly to other disciplines in the humanities, social, natural and physical sciences, which are actively working in the area of climate change mitigation and the energy transition.

DB pointed out that the 36th IGC refunding to a large number of registrants were failed due to various reasons. Therefore, the refunds have already been transferred to the IUGS account and IUGS will attempt to accomplish the refunding instead. The final formal presentation of the 36th IGC will be handed over to the South Korean colleagues during their visit to Busan this July. The 36th IGC was formally closed, so any remaining issues concerning the 36th IGC should be addressed to DB only.

## **6. IUGS Commissions, Task Groups, Initiatives**

### **6.a. Global Geochemical Baselines (CGGB)**

Anna Ladenberger (AL) presented the Steering Committee of CGGB (2020-2024). The Committee is Co-Chaired by AL and Dr. Kate V. Knights. CGGB has 214 members in 73 countries in 2022, including 12 members newly joining CGGB in 2022. AL introduced the history, mission and implementation of CGGB. AL presented CGGB website and publications on global-scale geochemical mapping according to IGCP 259 specifications.

AL reviewed that in 2022, The FOREGS project celebrated its 25<sup>th</sup> anniversary and CGGB participated in IUGS World Water Day Event and IUGS Women in Geoscience Event. CGGB organized a virtual event at the IUGS Earth Science Festival with the title “A planetary health check on Global Geochemical Baselines: Assessing the geochemistry of life’s most vital resources” on October 10<sup>th</sup>, 2022. AL participated in the ASGMI conference “Geochemistry for Social Development” and delivered an invited lecture “Geochemical mapping in Europe: Geochemistry Expert Group EGS contribution to more sustainable resources management”.

AL reported that in 2017, CGGB was invited to participate in the project “Global Black Critical Zone Geo-ecological Survey” and compiled the *Manual of Standard Geochemical Method for the Global Black Soil Project*. The fifth Workshop on Global Black Critical Zone Geo-ecological Survey (BASEGS-IGCP665) was virtually held on December 7<sup>th</sup>, 2022 and CGGB Steering Committee member, Alecos Demetriades delivered a presentation at the Workshop.

AL mentioned that *Manual of Standard Methods for Establishing the Global Geochemical Reference Network* was published in June 2022 and the *Manual* has 49 contributors from 23 countries and 23 referees from 13 countries. The *Manual* introduced sampling design, sample types, sample preparation, geoanalysis, data management, maps and statistics. Publications of CGGB now have a DOI number.

AL introduced that CGGB provided a letter of support for the OneGeochemistry Initiative's application to become a Working Group within CODATA.

AL mentioned that in 2022, CGGB participated in or held meetings including 77<sup>th</sup> IUGS EC meeting, Steering Committee Virtual Meetings and Annual Joint Business Meeting with Geochemistry Expert Group of EuroGeosurveys and the Geochemistry Group of ASGMI in Athens.

AL reported that the total cost of CGGB is 7,088.10 USD and CGGB requested fund from IUGS of 13,782 USD to cover planned expenses in 2023 and first quarter of 2024.

### **6.b. Education, Training and Technology Transfer (COGE)**

Sandra Villacorta (SV) represented SWOT analysis of COGE, the role of a COGE member, COGE's goal, specific objectives and vision, COGE's current structure and organization. COGE sets up Chris King Award to commemorate the life and work of Prof. Chris King, the former President of COGE. Geoscience Education Field Officer (GEFO) Program was established in 2019 by Chris King and is a collaboration program between IUGS and EGU. COGE cooperates with EGU to train GEFOs, conduct initiatives and with IGEO to constantly monitor and collaborate with Latin American Chapters of IGEP and translate books at Spanish.

SV reviewed activities and achievements of COGE in 2022 as follows:

- Set up session on Geoscience Education session at the IGC 2024.
- Updated COGE website and uploaded organizational documents and previous reports.

SV presented COGE activities plan in 2023 as follows:

**January:** Submission of COGE Session at IGCP 2024; Submission of COGE Annual Report; Meeting with EGU Education.

**February:** Virtual general assembly; Chris King Award committee election

**March:** Launching social media campaign to invite geoscience educators to apply for Chris King Award; Quarterly virtual meeting of ordinary members; selection of nominees.

**April:** Coordinating with Education Field Officers; Field Officers Program meeting at EGU2023; Publishing results of Chris King Award.

**May:** Quarterly virtual meeting of ordinary members.

**June:** Participating of AESC2023.

**July:** Coordinating with Education Field Officers.

**August:** Quarterly virtual meeting of ordinary members

**September:** Drafting paper to the IUGS E-bulletin

**October:** Coordinating with Education Field officers

**November:** Meeting with EGU Education

**December:** Drafting working plan 2024 and annual report; Quarterly virtual meeting of ordinary members; COGE end-of-the year general assembly.

SV mentioned that balance of COGE at the end of 2022 is USD 5,080 and requested budget for 2023 is USD 9,910.

SV pointed out that in next steps, COGE will organize local events, such as rock and mineral exhibitions to introduce people to geosciences in a fun and interactive way, partner with industry/gov/schools and universities to offer geology workshops and geotrips, and host film festivals, such as Earth Future Festival.

### **6.c. Management and Application of Geoscience Information (CGI)**

Harvey Thorleifson (HT) presented the general information of CGI, including mission, vision, relationship with IUGS, membership status, CGI Secretariat. HT mentioned that CGI hosts or co-hosts DDE standards task group and five working groups and collaborates especially with CGMW, CODATA, DDE, LOOP, OGC and OneGeology.

HT reviewed that 2022 CGI Council meetings were held on January 26<sup>th</sup>, April 12<sup>th</sup>, June 30<sup>th</sup> and October 26<sup>th</sup> and leadership meetings were held on August 30<sup>th</sup>, October 17<sup>th</sup> and December 20<sup>th</sup>. CGI co-hosted the GeoInfo Summit on February 24<sup>th</sup>, May 19<sup>th</sup> and September 20<sup>th</sup> and 21<sup>st</sup> and the Summit brought together CGI, CGMW, CODATA, DDE, LOOP, OGC and OneGeology. CGI actively supported and participated in the November DDE meetings in Paris. Also last year, GeoSciML GitHub repositories were rationalized.

HT mentioned that with the DDE Standards Task Group, we further developed the DDE review procedure, metadata standard, evaluation guide, standards framework plan and metadata app.



HT pointed out that financial transactions were light due to the lack of in-person meetings and the closing balance of CGI by January 1<sup>st</sup>, 2023 is USD 23,650. In 2023, CGI will intensify preparation for meetings and sessions at the 37<sup>th</sup> IGC and update 1-year and 5-year plan. CGI will support DDE Standard Task Group focus on FAIR and Open Science and sustain our broad communication mechanisms.

HT mentioned that CGI is entering the year with USD 23,650 carried over and for 2023, CGI requests USD 20,000 from IUGS. CGI anticipates USD 10,000 from DDE for DDE-STG activities.

HT featured the Geoinfo Summit consensus on a global solid earth digital twin. HT mentioned that a digital twin is an indefinitely sustained dynamic model and this spatial geoscience paradigm incorporates observations and inferences. CGI's 2020s focus will be on authoritative information to support applications and concurrent effort and CGI needs concurrent effort on FAIR publications and evergreen databases. The global solid earth digital twin thus is an agenda for the 21<sup>st</sup> Century.

#### **6.d. History of Geological Sciences (INHIGEO)**

Martina Koelbl-ebert (MK) introduced that the goal of INHIGEO is to promote study on the history of geological disciplines in an international context and with an open interdisciplinary approach and to encourage national and regional organizations with the same purpose. Currently, INHIGEO has 286 members from 50 countries and 14 organizations affiliated with. MK presented the current Board of Management of INHIGEO.

MK reviewed the INHIGEO Conference 2022 in Les Eyzies, France on September 15-24, 2022. At the Conference, 40 papers and 10 posters were presented. INHIGEO sponsored History of Geology session at the 6<sup>th</sup> International Palaeontological Congress- From Gondwana to Laurasia, Thailand on November 7-11, 2022 and 20 papers and 3 posters were presented.

MK mentioned that INHIGEO contributes to the journal *Episodes* reviews of historical IGCs, the series on classic papers, book reviews and independent research papers. 7 papers on the history of geology have recently been published in *Episodes*. INHIGEO also contributed articles to the monthly anniversary events for IUGS website and E-bulletin.

MK reported that INHIGEO organized the special webinar event on October 8, 2022 on related history of the IGC and IUGS within the development of the geological sciences from the late 19<sup>th</sup> century to the end of the 20<sup>th</sup> century and mentioned historical geosites contributed to "The First 100 IUGS Geological Heritage Sites" at Zumaia, Basque Country, Spain on October 2022, 25-28.

Ezio Vaccari (EV) reviewed the Virtual Open Forum “History of the Geological Sciences- providing resources for society” took place on July 11, 2022. An INHIGEO webinars “Histories of Volcanology: from Ancient catastrophies to a contemporary discipline” will be held online on February 24<sup>th</sup>, 2023.

EV introduced that Dr. Maddalena Napolitani and Timothe Lhoste won the INHIGEO Young Scholar Awards at the the 47<sup>th</sup> INHIGEO Symposium in Les Eyzies, France on September 21, 2022.

EV mentioned that INHIGEO cooperates with IUGS commissions and groups, such as International Commission on Geoheritage, Initiative on Forensic Geology, International Commission on Stratigraphy and International Commission on Geoethics.

EV pointed out that INHIGEO has more projects underway, including development of its website and bibliographical sources, archives and historical-geological databases.

INHIGEO Meetings 2023 including INHIGEO Symposium in Cracow, Poland on July 31 to August 4, 2023, INHIGEO Session “V10 History of Volcanology and Historical Volcanology” at the 28<sup>th</sup> IUGG General Assembly in Berlin and 6<sup>th</sup> Argentinian Congress and First Latin American Congress of History of Geology on October 6-7, 2023 in San Miguel de Tucuman, Argentina. In addition, INHIGEO has proposed two geo-historical sessions at the IGC 2024 related to the themes “Earth History and stratigraphy” and “Geoheritage, Geopark and Geotourism”.

#### **6.e. Tectonics and Structural Geology (TecTask)**

Enrique Gómez Rivas (EGR) introduced that TecTask was established as an IUGS task group in 2004 and was upgraded to an IUGS commission in 2009. Main aims of TecTask are to stimulate communication and coordination within the international science community and to provide information to the public. TecTask has 5 EC members and 12 officers. It is planned to end TecTask in 2024.

EGR presented the Terminology & Standards in structural geology & tectonics. Aim of the Terminology and Standards is to create and maintain a database for professional terminology and standards. On Wiki website, the Terminology and Standards is open to the community for contributions and there are currently more than 200 entries.

EGR introduced Outcropedia, which is an online tool for collecting data from world-class outcrops and for creating GeoTours. It was launched in 2004 and re-designed in 2018. It is aimed to link Outcropedia to Terminology & Standards wiki.

TecTask has 24 seminars with about 1,250 subscribers and more than 43,500 total views under YouTube seminar channel.

EGR reviewed conferences organized or coorganized by TecTask, including International Conference of Deformation Mechanisms, Rheology and Tectonics in Catania, International Conference of Young Researchers in Structural Geology & Tectonics and Italian Geological Society 2022 Meeting in Torino.

EGR mentioned that TecTask participated in the Earth Science Festival seminar "Tectonics: the Science of the Dynamic Earth" and 100 IUGS Geological Heritage Sites-Tectonics Chapter.

EGR reported that transition from IUGS TecTask Commission to the IASGT (International Association for Structural Geology & Tectonics) is conducted through three phases (Phase 1: 2020-2021, Phase 2: 2022, Phase 3: 2023-2024). In 2022, TecTask finished the foundation of IASGT and it is legally based in India. EC members are appointed and TecTask starts activity transfer. In 2023 and 2024, the transfer of TecTask activities, member recruitment, and the creation of the legal structure in India will be completed. Prof. Manish Mamtani has been appointed as IASGT founding chair. More than 900 members have signed up to date and it is planned to hold an inaugural IASGT workshop in Kharagpur, India in February 2024.

EGR mentioned that TecTask budget provided by IUGS for 2022 is 4,566 EUR and for 2023, budget request of TecTask is 2,500 EUR.

#### **6.f. Geoheritage (ICG)**

Asier Hilario (AH) introduced that International Commission on Geoheritage (IUGS-ICG) was created in 2016 and in 2020, IUGS EC decided to dissolve and rejuvenate ICG. AH presented the Executive Committee of ICG.

AH reported that in 2022, main achievements of ICG includes:

- The First 100 IUGS Geological Heritage Sites have been designated. Definition of standards, procedures, voting members.
- 10 new IUGS Heritage Sites have been designated
- The new Subcommittee on Geo-collection has been created
- 17 aspiring UGGp have been evaluated for their geological heritage
- ICG new website. [www.iugs-geoheritage.org](http://www.iugs-geoheritage.org)

AH reviewed the IUGS Zumaia Declaration of the the First 100 IUGS Geological Heritage Sites. The declaration event attracted more than 17,800 online and offline visitors from 158 countries.

The 100 IUGS Geological Heritage Sites program was developed on the bases of IGCP project 731. At the beginning of the program, 42 focal points (national representatives) and 10 international organizations were involved. The program has 181 candidates from 56 countries and 36 voting members. During the conduction of the program, 550 evaluations were completed, 100 sites from 56 countries were selected and 485 authors from more than 50 countries were involved. 500 hard copies of the book “The First 100 IUGS Geological Heritage Sites” were sold out and 3,000 digital copies were downloaded from the website.

AH introduced the process of the evaluation of the first 100 IUGS Geological Heritage Sites. In March 2022, 181 application from 56 countries were received and all proposals were evaluated by 34 voting members. Every proposal was evaluated by at least three voting members who graded each candidate. 550 evaluations were completed. An IUGS selection committee was established and all 550 evaluations were reviewed to double check and ensure quality control. 150 sites have been accepted as IUGS geological heritage sites and only the first 100 will be designated in 2022 and the rest will be designated in 2023. The selection of the first 100 geoheritage sites has been done according to voting members scoring, geographical distribution and typology. More than 500 experts from 55 countries were involved in the First 100 IUGS Geological Heritage Sites programs.

The 100 geoheritage sites include 34 sites in America, 28 sites in Europe, 15 sites in Africa and 23 sites in Asia-Pacific-Middle East. There was a Chinese event for the first 100 IUGS Geoheritage Sites.

AH mentioned that there were more than 200 mass media publications on the First 100 IUGS Geoheritage Sites in 30 different countries. At the Geoparkea social media platforms, the First 100 IUGS Geoheritage Sites received 56,400 impacts in Twitter, 6060 impacts/8452 people reach in Facebook and 3082 impacts in Instagram. At IUGS social media platforms, the First 100 IUGS Geoheritage Sites receives 70,000 impacts. From May to October 2022, [www.iugs.org/100sites](http://www.iugs.org/100sites) had 7,762 visits and from October to January 2022, [www.iugs-geoheritage.org](http://www.iugs-geoheritage.org) had 18,000 visits from 158 countries.

AH showed ICG’s total cost for the IUGS 60<sup>th</sup> Anniversary event of 138,864 Euros.

IUGS Subcommission on Heritage Stones has redefined its standard on heritage stones and 10 new heritage stones were ratified and currently there are totally 32 heritage stones.

AH mentioned that in 2022, ICG received allocation of 11,000 USD from IUGS, support for IUGS Geoheritage Event of 20,000 USD and remain from 2021 of 4,697 USD. The total income in 2022 is 35,607 USD. Total expenditure of 2022 is 34,068.9 Euros. 2022 remains is 1,628.1 Euros. ICG proposes budget of 18,600 Euros for 2023.

AH pointed out that in 2023, the main goals of ICG are the consolidation of the internal structure, statutes, members and operation of the three designation programs and the promotion of the designation programs, visibility and engagement among the global geoscience community.

### **6.g. Stratigraphy (ICS)**

David Harper (DH) introduced officers of ICS. ICS has 17 subcommissions involving 60 executives and over 500 scientists.

DH mentioned that completion of the chart, series/epoch and stat/age definition is our key priority. DH listed some significant achievements of ICS include:

- Definition and ratification of some 12 GSSPs in the last four years.
- Key contributions to IUGS 60: IUGS Heritage sites and webcasts on Extinction and the Stratigraphical Record together with Geodiversity.
- Most downloaded *Episodes* article: A practical solution: the Anthropocene is a geological event, not a formal epoch.
- Additional translation of the chart, including Korean and Japanese versions of the 2022/10 update.
- Ratification by IUGS on the adoption of the subseries and subepochs as formal divisions (tied to stages) to be adopted at the discretion of the individual system/period subcommissions, published in *Episodes*.
- Bases of the Lower/Early, Middle/Mid-, and Upper/Middle/Late Neogene Subseries/Subepochs coincident with the respective global stages GSSPs ratified; published in *Episodes*.
- Continued major makeover (new content, new design) of the ICS webpages and the development of an ICS family for the subcommissions.
- Auxiliary stratotype sections, published in *Episodes*, unanimously approved by the ICS.
- The next STRATI meeting will be in Lille, July 11-13<sup>th</sup>, 2023.
- Establishment of an assessment committee for ICS medals.
- A new subcommission for Cambrian stratigraphy.

DH introduced that International Chronostratigraphic Chart is the key product of ICS. 80 of the global stages are completed, some of the older GSSPs are under revision and 20 are in need of attention. Discussions continue on the applicability of GSSPs in Precambrian chronostratigraphy.

DH mentioned that in 2022, ICS held several GSSP site dedications for:

- ✓ Base of Chibanian Stage (Pleistocene)
- ✓ Base of Priabonian Stage (Paleogene)
- ✓ Base of Coniacian Stage (Cretaceous)
- ✓ Base of Hauterivian Stage (Cretaceous)

- ✓ Base of Kimmeridgian Stage (Jurassic)
- ✓ Base of Artinskian Stage (Permian)
- ✓ Base of Sakmarian Stage (Permian)
- ✓ Base of Wuliuan Stage (Cambrian)
- ✓ Base of Miaolingian Series (Cambrian)
- ✓ Dapingian Stage (Ordovician) GSSP

DH mentioned that in 2022, ICS defined 7 ICS Heritage Sites, including:

- ✓ Gubio (end Cretaceous, meteorite impact, extinction and base of Cenozoic)
- ✓ Meishan (end Permian, major extinction, base of Mesozoic)
- ✓ Meishucun (Precambrian-Cambrian transition, base of Palaeozoic)
- ✓ Nhlazatse (Mesoarchean microbially-induced structures)
- ✓ Sirius Pass (Precambrian-Cambrian rocks, Cambrian Explosion)
- ✓ Mount Everest (Middle Ordovician tropical limestones)
- ✓ Klonk (base of Devonian and first GSSP)

DH announced that the 4<sup>th</sup> International on Stratigraphy with field excursions and business meetings will be held on July 11-13<sup>th</sup>, 2023 in Lille, France.

DH presented the future work of ICS, including:

- Priority funding is for those subcommissions moving to complete the outstanding 20 GSSPs, through field meetings and some laboratory work.
- Work is far advanced on the Burdigalian, Langhian, Bartonian, Aptian, Oxfordian, Olenkian, Norian, Kungurian stages. There is now a strong focus on completion of the Serpukhovian, Moscovian, Kasimovian and gzhelian stages in the Carboniferous.
- Support for dedication ceremonies.
- Preparation of data for the DDE. Nomination of a data officer for each subcommission.
- Most subcommissions will hold their own conferences /field meetings in the coming year.
- A number are publishing books on their respective systems (e.g. Ordovician)
- Better promotion of ICS activities. Continued modernization of the webpages and their functionality; accelerate use of social media.
- Support for attendance Commission (including subcommissions) members at STRATI 2023.

DH explained that currently, each subcommission receives about 2,000 USD for its activities per year. About 90% of actual costs are funded by research grants to individuals and institutions together with support in kind. Operational costs plus support for Lille meeting 65,390 USD are requested for 2023.

## **6.h. Initiative on Forensic Geology (IFG)**

Laurance Donnelly (LD) reported that the aim of IFG is to develop forensic geology internationally and promote its applications. Main activities include crime scene examinations, geological trace evidence, ground search for burials (homicide, counter terrorism, serious and organized crime), and mining, minerals and metals crime. In total, 89 activities and events were recorded in 2022. The IUGS-IFG Committee was confirmed at the IUGS-IFG Annual General Meeting on 2 August 2022 at Glasgow in Scotland.

LD then introduced the structure and governance of IFG, and the IUGS-IFG Geoforensic International Network (GIN) with a display of the GIN map. In 2022, three main trainings were organized including the one in University Federico II of Naples in Italy, in Police Scotland and in Royal Canadian Mounted Police.

150 forensic geologists, archaeologists, anthropologists and medical and legal experts from ten countries focused on the search for missing persons and homicide graves, in conjunction with victims' relatives in Colombia. Numerous knowledge exchange, capacity building and teaching have been carried out in universities, research institutes and professional societies.

A series of outreaching activities, seminars, workshops and conferences have been organized as well including soil discriminating and geolocation tracing in China and forensic geology at Japan Geoscience Union, etc. IFG has been providing operational support for police and law enforcement.

A special project :Crimes in Minerals, Mining and Metals Industry has been initiated. LD was invited to Brazil to collaborate with INTERPOL, UNODC and Attorney General's lab to work on the Clean Gold Program. LD elaborated on close collaboration with INTERPOL, Colombia National Police, United Nations Office on Drugs and Crime (UNODC), and European Commission,. A special project on conflict minerals is undergoing along with a huge demand increase due to their use in technology (phones, laptops, and medical equipment). Special projects on base metals, battery minerals, and industrial minerals were mentioned as well. IFG has succeeded in increasing and improving IUGS global visibility and international exposure.

The IFG bank account remained in Aberdeen, Scotland, managed by the IFG treasurer and verified by the IFG chair and IFG Committee. At the 77th IUGS EC Meeting held on 16-18 March, 2022, IFG was allocated a budget of USD 9500. The remaining 2022 budget spend into 2023 is £14,443.16 and residual sum of £443.16 is planned. IFG request to roll forward the projected balance to support the forensic geology programme for 2023.

## **7. New Commission on Geoethics**

Silvia Peppoloni (SP) informed the path towards the IUGS-CG. A letter from SF was received on 20 April 2022, inviting SP (IAPG Secretary General) to draft a proposal to create an IUGS Commission on Geoethics. On 25 July 2022, SP accepted the invitation and submitted a first draft of the proposal. SP and Giuseppe Di Capua (GC) (IAPG Treasurer) attended the online IUGS EC Meeting and presented the proposal on 5 October 2022. On 12 January 2023, SP submitted the Statutes and the Plan of Activity 2023 of the IUGS-CG, requesting for comments and suggestions. Feedbacks have been included in both the final versions.

The new commission is established on the foundations of International Association for Promoting Geoethics (IAPG), which is founded in 2012 and became affiliated to IUGS in 2013. IAPG provides a multidisciplinary, scientific platform for widening the discussion and creating awareness about problems of Geoethics and Ethics applied to the Geosciences. The great development of geoethics in the last 11 years is testified by numerous important scientific books, events, initiatives, sessions, mainly organized by the IAPG in cooperation with other geoscience organizations.

SP introduced the IUGS-CG Statute, informing that CG is active from 1 January 2023. CG is the supporting branch of IAPG to the IUGS and the IUGS body that officially deals with geoethics and social geosciences for the Union. The IUGS guarantees organizational and operational autonomy to CG. CG is composed of experts of the IAPG appointed to coordinate long-term international cooperative activities on geoethics and social geosciences, and promote public awareness of the ethical and social implications of geoscience knowledge, research, practice, education, and communication.

CG focuses on ethical issues, values, approaches, initiatives within the IUGS community in order to develop a more just, equitable, and inclusive working environment in IUGS, carry out activities for increasing the awareness of the ethical and social implications of geoscience knowledge and practice, promote the adoption of geoethical principles and values, foster a geoethical perspective in practicing and applying geosciences, make geoethics an essential point of reference for any action on land, subsoil, waters, and atmosphere usage that stakeholders and decision-makers have to take into proper account while interacting with the Earth system, and to enhance multidisciplinary approaches in dealing with local and global anthropogenic changes by creating opportunities for cooperation between geosciences and the humanities.

The core businesses of CG are: drafting and updating ethical guidelines for the IUGS, supporting the IUGS regarding questions such as unprofessional conduct, misconduct, harassment, retaliation, racism, sexism, conflicts of interest, reducing the gender gap and increasing diversity, cooperating with IUGS bodies to focus on



geoethical issues, contributing to IUGS events or any other scientific or public events, supporting the IUGS in developing activities at the geoscience-policy interface and delicate issues related to geoscience-society interaction, promoting the adoption of the Geoethical Promise within universities and geoscience organizations, organizing events that address ethical and social implications of geosciences, training on geoethics, professional ethics, data ethics, and publication ethics, networking with geoscience and humanities organizations to create opportunities for bridging geosciences and human and social sciences, fostering opportunities to increase the impact of IUGS in Latin American and African countries, supporting IUGS in enlarging its network and preparing an annual report.

SP then introduced the governing body of IUGS-CG. And the CG Secretariat is hosted in the head office of IAPG at the Istituto Nazionale di Geofisica e Vulcanologia (National Institute of Geophysics and Volcanology), Via di Vigna Murata 605, 00143 Rome, Italy. The minimum duration of CG is 8 years. CG is funded by IUGS annually and CG will manage its funds through the bank account of IAPG. IAPG will support CG in managing its financial income and expenses.

Planned activities in 2023 are as follows: Creation of the CG logo, Creation of the CG webpages, opening of social media pages, promotion of CG inside and outside the IUGS community, Creation of Task Groups, including TG IUGS Ethical Guidelines, TG supporting IUGS in internal disputes and TG Diversity, Equity, and Inclusion, and participation in IUGS meetings, congresses, conferences, webinars or any other scientific or public events.

## **8. IUGS Joint Programs**

### **8.a. International Lithosphere Programme (ILP)**

Hans Thybo (HT) introduced the background of ILP. ILP covers all continents and has operated 80 programs since 1980s. Each ILP program involves 50 to 1000 scientists. ILP is a bottom-up organization. HT listed members of ILP Bureau and ILP Advisory Board.

HT mentioned that ILP research themes include: Geoscience of Global Change, Contemporary Dynamics and Deep Processes, Continental Lithosphere and Oceanic Lithosphere. Task forces and coordinating committees are the core of ILP and their duration is 5 years. New programs are approved by the ILP Bureau after open calls.

HT introduced the ILP Evgueni Burov Medal, which is a medal for praiseworthy mid-career achievements in honor of Evgueni Burov - an enthusiastic researcher, scientist, teacher and contributor to ILP. In 2022, the Medal was awarded to Dr. Jun Korenaga from Yale University, United States.

HT introduced that ILP Flinn-Hart Award has since 1991 been presented annually to an outstanding young scientist for contributions to the solid earth sciences covered by ILP. It consists of a travel grant and a citation, and aims to encourage the participation of promising young scientists in the program. In 2022, Flinn-Hart Award was awarded to Dr. Pietro Sternai from University of Milano-Bicocca, Italy.

HT presented 2023 work plan of ILP as follows:

- Provide support to the new Task Forces/Coordinating Committees.
- Presence at the IUGG General assembly in Berlin 2023.
- Several sessions with TF and CC contributions at EGU-23 in Vienna and at AGU 2023 in San Francisco.
- Several workshops of individual task forces are planned.
- ILP Business meeting and meeting of the bureau during EGU annual meeting in Vienna, April 2023.
- Meeting between the ILP officers and the advisory Board.
- Strategic discussion of the ILP role in the scientific community.
- An ILP townhouse meeting and a dedicated ILP session at AGU 2023.
- Award the E. Burov medal and Flinn-Hart award with lectures at EGU 2023.
- Strengthen connection to industry through the most relevant projects.
- Expand the national membership, e.g., with dedicated approach to African countries and Australia.
- Seeking new support from national science foundations and industry.

HT pointed out that ILP applies for a contribution from IUGS of 15,000 USD for 2023.

### **8.b. UNESCO - IGCP**

Özlem Adiyaman (OA) introduced that UNESCO promotes the significance of geology and geophysics to deliver the UN2030 agenda in collaboration with IUGS and plays an important role in supporting collaborative research in earth sciences, supporting capacity building.

OA introduced the new composition of IGCP Council, including Dr. Jonathan Craig, Prof. YoungHee Kim (newly elected in 2022), Dr. Gloria Prieto (newly elected in 2022), Dr. Mohamed Jalludin and Dr. Hassina Mouri.

OA introduced that there are totally 60 active IGCP projects with 4,400 project participants from 133 countries. 45% of participants are from developing nations and 40% of project leaders are female. 40.1% of the participants are from Europe and North America, 31.4% from Asia-Pacific Region, 11.7% from Latin, America and Caribbean, 10.1% from Africa and 6.57% from Arab. OA introduced that in 2022, there are 59 African project leaders from 30 participating countries and 47.5% African project leaders are female.

OA reviewed key capacity-building activities, including ReSToRE 2 (Researching Social Theories, Resources and Environment) International Summer School held on July 4-8, 2022 and the First International Geodiversity Day celebrated on October 6<sup>th</sup> each year.

OA reviewed several events jointly held by UNESCO and IUGS for the IUGS 60<sup>th</sup> Anniversary, including IUGS: Celebrating Women in Geoscience, IUGS Energy Transition Series, Earth Futures Festivals and IUGS Geoheritage Sites. OA presented the book *Geoscience in Action: Advancing Sustainable Development*, which is jointly published by UNESCO and American Geophysical Union (AGU).

OA reported that for 2023, IGCP requires appx. 350,000 USD funding, including 250,000 USD from UNESCO and appx. 100,000 USD from IUGS.

OA introduced a survey to be launched in 2023: Fostering Researchers in the Geosciences: FoRGe, which is a supporting education activity in Africa.

OA pointed out that in celebration of the 50<sup>th</sup> Anniversary of the IGCP, UNESCO and IUGS will hold a conference titled “Healing the Earth: UNESCO and Earth sciences - past, present and future” on March 16<sup>th</sup>, 2023. The Conference will showcase IGCP’s achievements, impact and current status.

### **8.c. DDE**

JM introduced that a global launch of DDE was jointly held by UNESCO, IUGS, IYBSSD and DDE on November 2022 at UNESCO Headquarters, Paris, France. The organization of DDE Open Science Forum enabled positive relations with UNESCO, with DDE viewed as a key partner in the implementation of UNESCO Open Science Recommendation and a DDE-UNESCO MOU has been drafted and is currently under discussion.

JM mentioned several follow-up activities, such as establishing new RCEs (DRC, USA), partnership projects (World Bank) and events activities (GSA, EGU etc.) are foreseen for development and implementation in 2023.

JM reviewed a meeting co-organized by DDE, IUGS and CGMW at the Maison de la Geologie, Paris, France on November 7<sup>th</sup>, 2022. More than 50 attending in person and more online. Presentations and discussions are conducted under three main themes: deep-time, applied geosciences and standards and processes. The meeting included a discussion on the role of DDE and geosciences applications, such as energy transition.

JM reviewed face-to-face meetings of DDE GC, EC and SC on November 8<sup>th</sup>, 2022 and several important decisions were made at the meeting, including that the GC decided against obligatory financial subscriptions and invited Members to choose

the nature and kind of contributions they wished to promote DDE's development. SC evaluated 11 proposals for financing under a 2022 Seed Grand Fund established by DDE Secretariat. SC recommended 4 projects for funding for the period 2023-2025 and this was approved by DDE EC on December 19-20<sup>th</sup>, 2022. SC recommended financial support for 3 ongoing projects for the period 2022-2024 and this was approved by DDE EC on December 19-20<sup>th</sup>, 2022.

JM mentioned that Prof. Joanna Dudzinska-Nowak (co-leader of the MargSeas TG) explains mission and workplan of DDE Margseas TG at the 4<sup>th</sup> Baltic Earth Conference, Topical Session "Comparing marginal seas".

JM pointed out that DDE Platform ([www.deep-time.org](http://www.deep-time.org)) was launched at the GC session organized at UNESCO Headquarter in Paris on November 8<sup>th</sup>, 2022 and is now open to all interested users. The DDE Cloud on which the Platform is based is the result of more than 100 international scientists working together over 3 years.

JM mentioned that Geological Surveys of Zimbabwe (first in Africa) and Colombia became DDE Members and Argentina and Iran have indicated interest. Discussions between DDE and World Bank to launch a Map of Africa Project has been started and are continuing. Two post-doctoral fellows have been recruited to work with DDE/RCE in Suzhou, China.

JM presented 2023 plan of DDE, including:

- Support one major event comparable to the 2022 DDE Open Science Forum.
- Showcase DDE progress and achievements at the GSA gathering in Pittsburgh, PA, USA in October 2023.
- Other events that could be supported by DDE, particularly in collaboration with UNESCO and other UN/multilateral organizations are under consideration.
- DDE will be represented at the IPTC Conference in Bangkok, Thailand on March 1-3, 2023.
- Special efforts will be made for more cooperation with Africa.
- DDE will convene a Townhall Meeting during the EGU session in April 2023 in Austria. DDE will launch the "World Cup" Competition at the EGU Townhall meeting.
- DDE Scholar Group will aim to identify the 10 most important research topics in geosciences.
- DDE communicated with IGC to set DDE as Theme (T)37 of 37<sup>th</sup> IGC and will continue to explore more DDE activities at the 37<sup>th</sup> IGC.

## **9. 37th IGC in 2024 (Busan)**

Daekyo Cheong (DC), Chairman of the Organizing Committee for IGC 2024, briefed on the general information of the IGC 2024 at Busan BEXCO (Aug. 25-31, 2024)

with more than 8000 participants from 120 countries. The theme of the IGC 2024 is “The Great Travelers: Voyages to the Unifying Earth”.

The Organizing Committee hosted the plenary meeting on July 2, 2021, during which additional committee members were appointed and roles & responsibilities of sub-committees were presented along with site-visits to BEXCO and Busan Cinema Center.

DC has participated in the Fall Meeting of Geological Society of Korea 2022 on October 26-28 in Jeju Korea and AGU Fall Meeting as a virtual exhibitor for the promotion of the IGC 2024. DC then displayed the preliminary masterplan outlined for the IGC 2024 and Theme and Technical Sessions. The Scientific Program Committee is chaired by Roland Oberhaensli, composed of the International Scientific Committee and Advisory Board.

IGC 2024 Field Trips in South Korea includes 28 routes in total, 11 for geology, 6 for geohazards, and 11 for geoparks. Field trips in neighboring countries are being prepared. Detailed information will be fully prepared and uploaded on website until the first half of 2023.

A special Geo Film Festival will be organized, providing locals and visitors with films related to geoscience during the Busan International Film Festival. A volume of conversation and interactions, especially through social media platforms, have already taken place between the members of the Organizing Committee and thousands of prospective delegates. The 37th IGC has made use of three main social media platforms: Facebook and YouTube, as well as a blog on the website to keep delegates abreast of preparations for this ‘Olympics of Geology’.

Exactly 20 local organizations have cooperated with the LOC for the successful IGC 2024. Weather conditions in August of Busan is perfect for travelers to visit. Busan, a city for gourmets, is known for its diverse food with a lot of history and tradition. BEXCO, convention center, boasts 46,500 m<sup>2</sup> of exhibition hall, and 50 meeting rooms.

At last, DC informed session proposals from IUGS constituent groups and affiliated organizations were still welcome until the end of March, 2023.

## **10. Reports from IUGS Adhering Organizations**

D. M. Banerjee (DB) on behalf of the Indian INSA Committee for IUGS & INQUA made a report. INSA-IUGS National Committee became actively involved in organizing the Virtual Session of 36th IGC in March, 2022 as approved by the President and Secretary General of IUGS. DB with office support of the 36th IGC Organizing Committee under the administrative control of the Geological Survey of India took

charge of the organization of the virtual congress. A new website Virtual 36th IGC.nic.in was launched where all downloadable publications are made available. The Virtual Congress was formally inaugurated in Delhi at the FICCI Auditorium in the physical presence and online appearance of several Indian officials. E-copy of about 6000 abstracts originally submitted for the Congress scheduled to be held in March 2020 were made available on the Virtual 36th IGC website for free download. Sixty five field guide books which were prepared for various field excursions were printed as hard copy, formally released for free download. 774 pages of Indian Report to IUGS with 50 scientific articles and 10 institutional reports were accomplished. Two postage stamps commemorating the Virtual 36th IGC were released on the occasion by the Post Master General.

DB elaborated on the detailed program of the virtual congress on 20-22 March, 2022. At the end of the program, the IGC Presidential Cup was virtually transferred to South Korean team, led by Weon-Seo Kee, President of the Geological Society of Korea. Besides, Pyeong-Koo Lee, President of Korea Institute of Geoscience and Mineral Resources and Heong-Joon Park, Mayor of Busan Metropolitan City delivered a speech at the handover ceremony.

## **11. European Federation of Geologists**

Marko Komac (MK), as the President of the EFG, informed that EFG represents the professional geoscience associations of Europe, promotes excellence in application of geoscience across the continent and creates public awareness of geoscience's importance to European society. 28 European national associations are the European members of EFG.

EFG aims to promote professionalism in geology, enable international recognition of expertise and mobility, and offer standing and credibility at European Level in licenced sectors. Activities including International Mentoring Programme, and newly-launched Coaching scheme for career and personal challenges have been organized. Training focused on energy transition and geoscience impact will come soon. By virtue of its network, EFG has participated in the global community and maintained international networks.

EFG operates in areas, directly related to IUGS objectives: enhancing international professional & ethical standards, supporting the research in the field of geosciences and teaching the underpins it, raising public awareness of the importance of geoscience to society.

Strategic efforts have been made to strengthen collaboration with global geoscience 'peak councils', prime movers in sustainability and foreign affairs and environmental think-tanks. MK elaborated on the communication and outreach of EFG by virtue of the EFG website, European Geologist Journal, EFGGeoBlogs, webinars, GeoNews

monthly and EFGeoWeek newsletters, EuroWorkshops, photo contest “Legends of Geoscience” and instant social media communication @efginfo.

MK then briefed the participants on EFG’s projects, with more than 20 EU-funded research and innovation projects be delivered in last decade. Currently EFG is participating in 7 active projects across the EU’s Horizon and EIT programmes with wide range of consortium partners. Expert Panels of EFG are responsible for providing independent reliable information on geoscience technical topics.

The big objectives of EFG are as follows: Creation of secure quality jobs that can respond to society’s needs; Secure sufficient awareness of geology and supply of new professionals; Support evident opportunities where we can contribute to positive change.

The near future activities are as follows: Applying for new projects; Reach-out to European Regional Offices in Brussels; Enlargement of NA&Associated and Observing members; Organization of 4 events with EAGE; Global Geoscience Professionalism Group (GGPG) new EFG representative; Representation in UNECE Sustainable Energy Division expert groups. MK explained why EFG exists: EFG represents a European voice for profession, demonstrating and sharing expertise.

MK recommended INTRAW (International Raw Materials Observatory), a non-profit international association which supports worldwide cooperation on mineral raw materials’(RM) research and innovation, education and outreach, industry and trade and recycling, management and substitution of strategic raw materials. The common interest between IUGS and INTRAE lies in: Raising awareness among public on sustainable RM exploration, extraction and use; Supporting proper policy-decisions related to RM; World Barometer; Commodity Economic Information System; Special session on RM challenges at IGC Busan; Promotion in IUGS posts/publications.

## **12. Other groups: Geological Society of Kenya and plans for 2024 IUGS EC Meeting**

Chrysanthus Gicheruh (CG), President of Geological Society of Kenya, introduced GSK, aiming to advance geosciences, study of the earth sciences and interests of geoscience professionals and practitioners in Kenya and beyond. GSK is a non-profit making NGO established to cater for needs of geologists in Kenya and encourage geo-scientific education, collaboration & cooperation in Kenya, across African continent and the world at large. GSK Fundings are mainly from individuals and corporate membership. GSK was mooted in 1972 by indigenous Kenyan geologists and officially established on August 18, 1973 at Madini Hse, Mines & Geology Department.

CG introduced the four GSK committees, including the Governing Council Committee, Professional Committee, Programs Committee, and Advisory Committee, and

Standing Subcommittees. GSK currently has about 1500 geologists. Interested persons or institutions can initiate application to join GSK by making an application through online membership system on GSK website [www.gsk.or.ke](http://www.gsk.or.ke). Membership categories to be approved by GC are as follows: FGSK Awards, Professional Membership, Graduate Membership, Associate Membership, Technician Membership, Student Membership, Visiting Members, Firm Membership, and Institutional Membership. Benefits of membership are including: To attend general meetings of GSK and participate in GSK activities; Professional Members, Graduate Members and Corporate Members are eligible to vote at AGM and other meetings called by GC; Participation in conferences and seminars, welfare contributions, journals and publications, and tournaments. CG elaborated on the GSK events, including the GSK celebrating 40 years anniversary and 11th Conference of GSK, and GSK GC at the 47th AGM.

CG introduced some of the geological resources in Kenya, such as groundwater, geothermal, industrial minerals, oil&gas&coal, and precious stones. The future opportunities and partnerships lie in geo-science for socio-economic development, research & education, natural resources mapping, geo-hazard mapping, disaster management & mitigation, policy formulation, resource mobilization, international boundary resolutions & conflict management & geology diplomacy, legal and administrative considerations, consultancy, infrastructure development, conservation, dissemination of results/advocacy/action planning, and consensus building on critical priority issues. GSK welcomes individuals and institutions interested in membership and opportunities for partnership and collaboration to further geological advancement in Kenya and the world.

JL informed that the 79th IUGS EC Meeting will be held in Kenya. Besides, JL expressed IUGS's wish to hold a workshop in Kenya with around 100-200 participants during the next Executive Committee's performance of duties.

**EC77Act\_02:** JL to set up a committee that evolves African representatives with the collaborative efforts from GSK for the future workshop in Africa.

### **13. Discussion: Future of Geosciences; Future of IUGS**

Ana Maria Alonso Zarza (AZ), representative of the Instituto Geológico y Minero de España (IGME) pointed out that more funding options should be provided for those who wanted to join in the geoscience field from a scratch. Secondly, the hot topic of Carbon Capture, Utilization and Storage (CCUS) originated from the oil industry. Geoscience is so powerful and critical to enable our geologists to actively participate in finding solutions for climate change and change the perception of geoscience. Geoscience students should be given more diversified knowledge and flexibility so that they can be more adaptive to different industries.



SF informed that the situation in California is totally different. Students in California State University have been getting tremendous support from all aspects. He cited his son, a young hydro geologist as an example to testify that the young people are well-trained in these kinds of tools. He emphasized the issue of energy transition accompanied by a problem. Vast areas of desert in California are being covered with solar panels, which can be regarded as another type of environmental destruction. Geologists need to use their knowledge to help guide the transition to avoid similar disorganized activities that are happening.

JM emphasized that geoscientists need to be seen as part of the solution. She brought up the question how do we make sure that examples around the world that are good practice can make more awareness in other countries. JM held that the transition was going to be difficult, in the end driven by industry with help from government and maybe help from international organizations like IUGS. As an international organization, all we can do is communication because of insufficient funds.

Harvey Thorleifson (HT), Chair of the Commission on the Management & Application of Geoscience Information, stated that you have to start by asking six questions when you think about the future. The six questions are who, what, when, where, why and how. When is something that we address in planning out activities. Where is something that we address in our activities. The why in geoscience is very obvious. The why in geoscience is energy, minerals, water, hazard, engineering, climate change and etc. HT emphasized the most important question is the who. Who are we? What are our goals? What is the state that we want to achieve ten years from now on? What resources do we have? Then you could think about how shall we deploy our resources to maximize progress towards our goals in order to achieve the ultimate aim, which is quality of life, along with biodiversity preservation and landscape preservation. How do you measure progress toward those goals and others? How do you measure success in terms of who are we? HT cited an instance that he organized a two day workshop to assess the state of sectors of earth science in Canada when he was the President of the Canadian Federation of Earth Sciences. This geoscience summit was a mirror set up so that geoscientists of Canada could look at themselves and assess their state.

Natarajan Ishwaran (NI) added that geological data is fundamental for politicians, policy makers and others to understand and justify their own positions about what transition means. Transition could not be too quick. IUGS, based on data and expertise, could play a major role in changing the current global energy transition dominated by environmentalists. NI held that the transition has to come down to a realistic level of discussion between governments.

JL informed that IUGS has worked together with AGU and EGU to participate in COP this year. The challenge lies in how to make a presentation that really addresses the

problem of energy transition. IUGS, though as a sixty years old organization that was created to provide standards to build a geology of globe, has not got geophysics inside. For instance, IUGS cannot solve any geological problems about geology, geophysics, sociology and and economics.

SF stated that IUGS had long been a bottom-up organization, having the geoheritage thing that was captured the world's imagination insights. ICS has been going on for years to develop this incredible time scale. If you want to do anything, look at the history of geology, it's a group of people that come together because they have this desire initiative. The strength of IUGS lies in that there is power in that people who have come together and done incredible things. Unless you have a group of people coming from the bottom up wanting to push something, can the geophysics group be established.

JL agreed that IUGS could not rely on establishment of the geophysics group. IUGS should cope with IUGG and some other unions, like the International Science Council, trying to get a group of geounions together to have a position on the energy transition.

LD added most geologist would be rather being a member of the international public intelligence or association or enterprise association and that's the group IUGS needs to increase visibility.

JL proposed that any industrial union for geoscience be created, which has a voice and underneath the union the commissions could be kept with a better visibility.

David Harper (DH) added the sort of core mission of IUGS is communication and making sure that the international community is aware of the standards, of using standards and these standards come from IUGS. One way which we work out very hard is to built capacity and get more and more people involved in our subcommissions globally and get more and more people involved in the working groups globally. In that way, ICS get the message out to community right across the world because they are dealing with all sorts of people in many different contries when they are setting up these stratatypes. The second thing is through societies, journals, episodes and social media.

QC emphasized that IUGS is a union consisting of affiliated organizations and national committees, rather than an association consisting of individual scientists. IUGS could do more to motivate and encourage these organizations to work together. When QC was the President, he initiated DDE, the big science program, to facilitate and promote interactions among these organizations. DDE starts with 12 members including 6 geological surveys, such as Canada, China, U.K., Russia and Republic of Korea, and six international associations. Because the International

Science Council has merged the natural science and social science together, IUGS should take the opportunity to cooperate with other unions.

Demetriades Alecos (DA) pointed out the problem was how do we motivate all these people and have more energetic national committees. IUGS should have closer collaboration with EFG and carry out outreach activities to schools, universities, and societies.

Courtney Jermyn (CJ), Executive Director of Earth Science Matters Foundation, informed a four-day speaker series which brought a whole bunch of international people together to solve the challenge, that is, to help fill the gaps and diversify energy transition. She hoped the next IGC could bring different associations and people together at the event for a specific challenge.

#### **14. Close of the Open Session**

JL thanked all the participants for the open session and apologized to the external audience for all the technical difficulties during the two days.

### ACTION LIST

Item	Description	Status
EC78Act_01	Yamirka Rojas-Agramonte (YR) to contact inactive members in Central and Southern America to encourage them to reactivate their membership.	
EC78Act_02	JL to set up a committee that evolves African representatives with the collaborative efforts from GSK for the future workshop in Africa.	