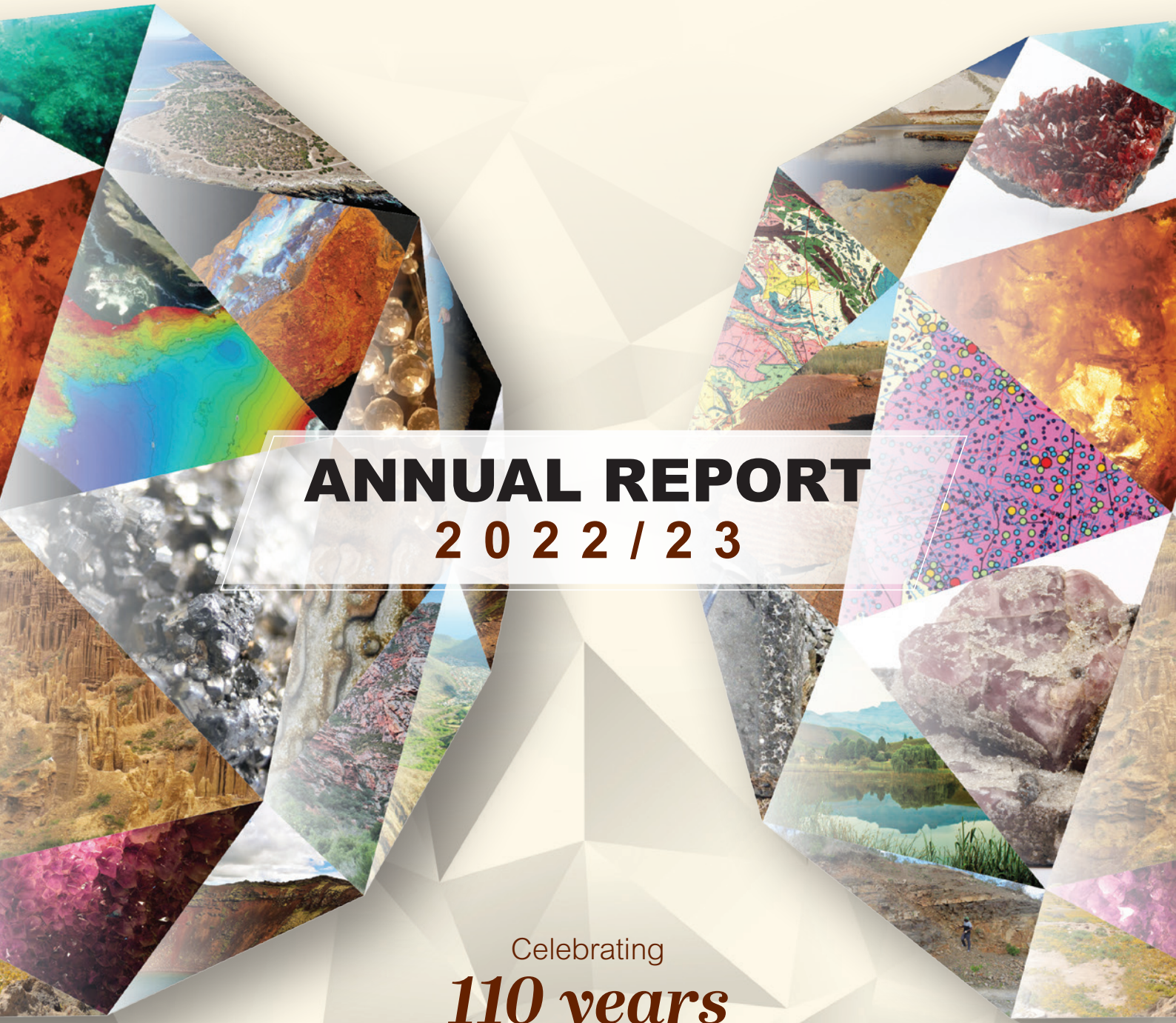
Council for Geoscience



ANNUAL REPORT
2022/23

Celebrating
110 years
of existence and geoscience excellence

mineral resources & energy
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

The Council for Geoscience Annual Report 2022/23 theme

'Geoscience is the fulcrum of human development'

is the mantra which was pronounced by the CEO, Mr Mosa Mabuza and adopted in 2019 by the organisation.

Cover Image:

Geo-Sphere depicting various geoscience images designed as part of the Council for Geoscience's 110 years' celebration at the CGS Geoscience Summit 2022 (Geo-Sphere Designer: Ms Jane Abraham).

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LIST OF ABBREVIATIONS AND ACRONYMS

2D	Two-dimensional
3D	Three-dimensional
AI	Artificial intelligence
APP	Annual performance plan
B-BBEE	Broad-based Black Economic Empowerment
BRICS	Brazil, Russia, India, China, and South Africa
CCUS	Carbon capture, utilisation and storage
CEO	Chief Executive Officer
CGS	Council for Geoscience
COVID-19	Coronavirus disease 2019
DBSA	Development Bank of Southern Africa
DDM	District Development Model
DGPS	Differential global positioning system
DMRE	Department of Mineral Resources and Energy
DSI	Department of Science and Innovation
DTIC	Department of Trade, Industry and Competition
EE	Employment equity
EMEs	Exempted micro-enterprises
ERP	Enterprise resource planning
ERRP	Economic reconstruction and recovery plan
EXCO	Executive Committee
F-REE	Fluorine rare-earth element
GIS	Geographic information system
GRAP	Generally Recognised Accounting Practice
GTP	Geoscience Technical Programme
HVAC	Heating, ventilation and air-conditioning
ICT	Information and communications technology
IEC	International Electrotechnical Commission
IMMP	Integrated and Multidisciplinary Geoscience Mapping Programme
IRMC	Integrated Research into Mine Closure
ISET	Innovation, Science, Engineering and Technology
ISO	International Organization for Standardization
ISPPIA	International Standards for the Professional Practice of Internal Auditing
JOGMEC	Japan Oil Gas and Metals National Corporation
KDD	Karoo Deep Drilling
KOSH	Klerksdorp–Orkney–Stilfontein–Hartebeesfontein
MEDP	Management and executive development programme
MEWMP	Mine and Environmental Water Management Programme
MPRDA	Mineral and Petroleum Resources Development Act

MQA	Mining Qualifications Authority
MTSF	Medium-Term Strategic Framework
NDP	National Development Plan
NMCS	National Mine Closure Strategy
NRF	National Research Foundation
NSTF	National Science and Technology Forum
OAGS	Organisation of African Geological Surveys
OEM	Original equipment manufacturer
PanAfGeo	Pan-African Support to the EuroGeoSurveys–Organisation of African Geological Surveys Partnership
PFMA	Public Finance Management Act
PPPFA	Preferential Procurement Policy Framework Act
PSHA	Probabilistic Seismic Hazard Assessment
QSE	Qualifying small enterprise
REE	Rare-earth element
SABC	South African Broadcasting Corporation
SAGA	South African Geophysical Association
SGS	Saudi Arabia Geological Survey
SP	Strategic plan
SSHAC	Senior Seismic Hazard Analysis Committee
UNISA	University of South Africa
USA	United States of America

Phiphidi Waterfall flows over the Sibasa basalt outcrop

PART A
GENERAL INFORMATION

General Information on the Council for Geoscience

Registered name:	Council for Geoscience
PFMA national public entity:	Schedule 3A
Physical address:	280 Pretoria Street Silverton, Pretoria South Africa
Postal address:	Private Bag X112 Pretoria, South Africa 0001
Telephone number:	+27 (0)12 841 1911
Email address:	info@geoscience.org.za
Website address:	www.geoscience.org.za
External auditors:	Auditor-General South Africa
Bankers:	Nedbank and Absa in Silverton, Pretoria
Board secretary:	Ms Nomkhosi Cele

Council for Geoscience

The Geoscience Act (No. 100 of 1993 as amended), established the Council for Geoscience (CGS) as, among others, the national custodian of geoscientific data, information and knowledge in South Africa.

The CGS has evolved into a modern institution with specialised facilities, assets and expertise. The scientific focus areas of the organisation give expression to a set of thematic areas that include Minerals and Energy; Health, Groundwater and the Environment; Infrastructure and Land Use; Geoscience Innovation and Geoscience Diplomacy. The CGS has six regional offices in South Africa, with a head office in Silverton, Pretoria (Figure 1).

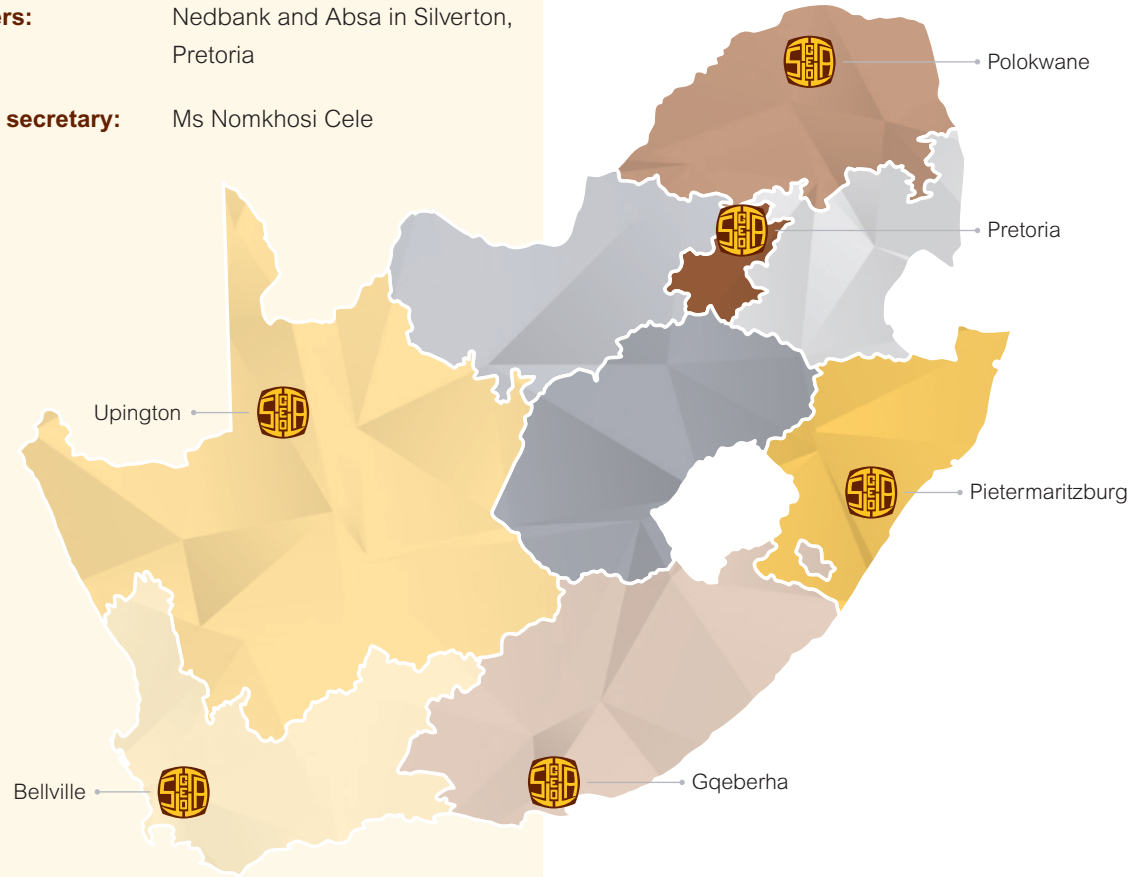


Figure 1: The six regional offices of the CGS in South Africa

1 FOREWORD BY THE CHAIRPERSON OF THE BOARD

Mr Kelepile Dintwe
Chairperson of the Board

It is my privilege and honour to present the Council for Geoscience (CGS) annual report for the financial year 2022/23. This period coincides with the first year of the Accounting Authority's responsibility and the last year of the previous Board's tenure. The report is submitted as part of the oversight responsibility of the outgoing Board, ably led by my predecessor, Dr Humphrey Mathe. The tenure of the outgoing Board ended in April 2023. It is apposite that I convey my appreciation to the outgoing Chairperson and Board for having led the CGS in its achievements in harnessing the geosciences to address societal challenges. These accomplishments were undertaken in accordance with the organisational mantra that geoscience is the fulcrum of human development. Synchronously, I reaffirm the commitment of the current Board to guide the CGS in our pursuit of growth, sustainability and optimised delivery.

In October 2022, the CGS held a Geoscience Summit in eThekwini to celebrate 110 years of its service to society. The event drew participation from critical stakeholders that shared a veritable festival of ideas captured in the presentations and abstracts of the Summit programme. A wide range of delegations represented various spheres of the Government of the Republic of South Africa (RSA), and this spanned across the Ministry of Mineral Resources and Energy; the two Parliamentary houses (the National Assembly and the National Council of Provinces); the Parliamentary Portfolio Committee on Mineral Resources and Energy; the host Mayor of eThekwini Metro; and the Traditional Chiefs from multiple areas where projects of the CGS are being implemented. The participation of previous CGS leaders and retired scientists, as well as a wide range of strategic State entity partners (including the South African Navy, the Agricultural Research Council, the Central Energy Fund, the African Exploration, Mining and Financing Corporation, the State Diamond Trader and the South African Diamond and Precious Metals Regulator), was noteworthy. Our Russian counterparts, the academic community and international guests representing the Organisation of African Geological Surveys also graced the Summit with their presence. Indeed, innumerable participants from the four corners of the globe joined the Summit virtually. The Summit honoured the invaluable work of geoscientists who have contributed immensely to the advancement of the body of geoscientific knowledge. In this regard, awards were conferred on Prof. Morris Viljoen (posthumously), Prof. Richard Viljoen, Prof. Nic Beukes and Prof. Musa Manzi. Overall, the Summit underscored the ongoing significance and relevance of the geosciences to society. The five thematic areas underpinning the strategy of the CGS and brand equity of the organisation were showcased.

The South African people and their Government rely on the CGS to lead the way in re-imagining the exploration landscape in the country. In this regard, the Minister of Mineral Resources and Energy has set a national target of securing a minimum of 5% share of the global exploration expenditure within five years. I particularly wish to acknowledge the foundational work of the CGS in shaping the Exploration Implementation Plan, notably by creating the Junior Exploration Fund and forging partnerships with prospecting rights holders in geologically highly prospective areas. The CGS is instrumental in ensuring that these rights holders obtain the necessary support on expertise, finance and equipment for the successful execution of their exploration work programme. The first pilot project led by a 100% Black-owned

prospecting right holder has already started and is making good progress. Exploration timeframes are being optimised through the appropriate utilisation of geological information and knowledge to de-risk the project. This undertaking progresses the country's transformation agenda towards the socio-economic normalisation of our society, which is a central policy tenet of the Government of the RSA.

I would like to acknowledge the CGS for its cutting-edge research into the decarbonisation of the country's economy. In this respect, the Carbon Capture, Utilisation and Sequestration (CCUS) project of CGS, in partnership with the South African Government and the World Bank, is a critical scientific intervention in support of the Government's Just Energy Transition policy. While it is widely acknowledged that South Africa is well endowed with abundant coal resources and reserves, the Just Energy Transition intervention seeks to explore ways of achieving decarbonisation without eliminating coal from the country's energy basket. To this end, significant progress has been made in winning the support of critical stakeholders in Mpumalanga Province who have sanctioned the intervention of scientific technologies in the pursuit of possible pathways towards a Just Transition. The Govan Mbeki Municipality has ceded land to the CGS in support of this research and the requisite geological characterisation programme is advancing swiftly. We are confident that the country's major emitters of carbon dioxide and related gases will unanimously support this research in the interest of the national good.

The CGS continues to engage in collaborative partnerships, not only to advance and support the organisation's Geoscience for Diplomacy strategic intent but also to augment its revenue generation efforts. One such partnership is with the Eswatini Geological Survey. The collaboration between the CGS and its Eswatini counterpart aims to grow the footprint of South Africa's geoscience contributions on the subcontinent in support of the RSA Government's regional integration foreign policy. The CGS has successfully completed the Malawi Geological Mapping and Minerals Programme. The objective of the Malawi programme, which is a collaboration between the French Geological Survey (Bureau de Recherches Géologiques et Minières), GTK (the Geological Survey of Finland) and the CGS, was to implement a mapping programme for the State of the Republic of Malawi. The CGS partnership with the Namibian Geological Survey is also progressing well. The focus of the Namibian partnership is to achieve incremental map coverage of Namibia at a scale of 1:50 000. The CGS is also strengthening partnerships across Africa through its involvement with the Organisation of African Geological Surveys (OAGS), where it fulfils the function of the Permanent Secretariat. The OAGS gained the recognition of the African Union during the year under review, a significant development, giving the OAGS locus standi and the opportunity to establish itself as a non-profit organisation.

The CGS secured two successive clean financial audits under the leadership of the previous Board. This affirms that the previous Board members, led by Dr Mathe, remained diligent in exercising their oversight responsibilities in working towards securing a prosperous and transformed society enabled by geoscience solutions. The Auditor-General of South Africa has completed the necessary audit procedures on the current annual report of the CGS and we have again sustained the clean audit outcomes for the financial year under review. Therefore, a foundation has been established for an outstanding overall organisational performance of 87% in the current year of reporting.

The Board of CGS congratulates all staff members in the organisation who obtained new qualifications since the finalisation of the last annual report. In particular, I wish to congratulate the following colleagues upon whom Doctoral degrees in the geosciences were conferred: Dr Netshitungulwana, a Chief Scientist in Minerals and Energy; Dr Lusunzi, a Junior Scientist in Minerals and Energy; and Dr Malubisana, a Scientist in Infrastructure and Land Use. These illustrious achievements by our employees truly reflect the fruit borne by their assiduous efforts and of our investment in our youth, in preparing to build a legacy of a capable State for future generations.

The Board conveys its deepest condolences to colleagues who have lost family members and friends during the year. The sadness of loss hit the CGS family particularly hard with the untimely passing of Ms Refilwe Nkokha, who was a Manager of Enterprise Development within our organisation.

In conclusion, I wish to extend our sincere gratitude to the Honourable Minister of Mineral Resources and Energy, Mr SG Mantashe, for the confidence he has bestowed upon myself and the Board to oversee an organisation of such strategic importance to the RSA. I look forward to working with the Honourable Chairperson of the Parliamentary Portfolio Committee on Mineral Resources and Energy, Mr S Luzipho and with the Portfolio Committee on Mineral Resources and Energy. I applaud the CGS executive management together with all scientific and support staff for their commitment and outstanding performance in executing the CGS mandate.

Mr Kelepile Dintwe
Chairperson
Board of the Council for Geoscience

31 July 2023

2 OVERVIEW BY THE CHIEF EXECUTIVE OFFICER

Mr Mosa Mabuza
Chief Executive Officer

It is my privilege to present the Council for Geoscience (CGS) annual report, documenting the activities of the organisation for the financial year 2022/23. The year under review marked the third year of the Medium-Term Strategic Framework (MTSF) 2019–2024 cycle as well as the final year of the tenure of the outgoing Board. It is fitting, firstly, to applaud the individual and collective contributions of CGS management and the entire staff for their continual commitment to the organisation to ensure the successful delivery of the CGS mandate.

Financial year 2022/23 was extremely important to the CGS and South Africa alike, as the CGS celebrated 110 years of existence since its establishment in 1912. This celebration marked our first primarily physical corporate geoscience meeting since the outbreak of the COVID-19 pandemic in early 2020. In October 2022, as part of this commemoration, the CGS held a Geoscience Summit under the theme 'Pioneering Geoscience Excellence' in Durban, KwaZulu-Natal Province. The Summit highlighted the colossal contribution of the geosciences to human development. In this regard, the CGS recognised scientists and contributors who, in the past, had contributed to geoscience development as well as those who continue to play a major role in the advancement of the geosciences in South Africa, Africa and further afield. The Geoscience Summit presented the CGS with an opportunity to give effect to the objectives of the Communication and Stakeholder Relations Strategy that had been approved by the CGS Board in 2020. Over 450 delegates attended the Geoscience Summit, both in person and online. These included, among others, the Department of Mineral Resources and Energy (DMRE) and the Ministry, the Chair of Chairs of the National Assembly of the Parliament of South Africa, the House Chair of the National Council of Provinces, members of the Parliamentary Portfolio Committee, National Government Departments, delegates of the eThekwini Metropolitan Municipality (host city), representatives of District and Local Municipalities and Houses of Traditional and Khoi San Leaders, the South African Local Government Association, the CEOs of various public entities and industry, the Russian Federation Agency of Mineral Resources, the Organisation of African Geological Surveys (OAGS) and representatives of academia. Following the CGS Geoscience Summit, **70** conference papers, three geological field guides and one abstract volume were published.

The CGS has invested significant resources and capacity in support of improving the awareness of its brand, service and products. This is evidenced by an increase in the interest and coverage of the work of the CGS across various media platforms. Moreover, the CGS Geoscience Summit attracted much interest from various media houses regarding the work of the CGS. During the year under review, **48** media articles were produced, while the CGS brand was profiled on several channels, including exhibitions, billboards, social media, podcasts, radio and television. In addition, the level of stakeholder satisfaction saw an improved rating of **79.4%** – up from 66.4% recorded in the previous financial year.

Building and maintaining strategic partnerships with regional and international stakeholders to enhance geoscience diplomacy is one of the strategic outcomes of the CGS. During 2022/23, the organisation engaged and collaborated with African counterparts and those from other parts of the world. In support of the country's regional integration efforts, the CGS engaged with the Central African Republic, Ivory Coast, Niger, South Sudan, Uganda, Botswana and Eswatini. Equally, the CGS also engaged with the European Union, Saudi Arabia, the USA, Japan and Russia. These efforts are carried out in support of Priority 7 of the national MTSF which aims to build "a better Africa and the world". Moreover, a key highlight of the past financial year was the signing of an agreement of cooperation between the OAGS and the African Union on the sidelines of the African Mining Indaba which was hosted in Cape Town in February 2023.

The CGS continued to implement its approved strategy, the Integrated and Multidisciplinary Geoscience Mapping Programme (IMMP), which aims to contribute towards South Africa's Economic Reconstruction and Recovery Plan (ERRP) by securing a minimum of 5% of the global exploration expenditure through the application of geoscience information and knowledge. In the execution of its Geoscience Technical Programme (GTP), the CGS intends unlocking South Africa's mineral and energy resource potential and contributing to achieving a national just transition to a low-carbon economy. The GTP during the year under review focussed on the production of 1:50 000-scale on- and offshore geoscience maps, with a view to generating critical geoscience knowledge. The onshore geoscience map coverage increased from below 5% prior to the commencement of the IMMP, to **12%**. To date, **230** out of a total of **1 916** 1:50 000-scale maps have been published, of which 25 new 1:50 000-scale onshore geoscience maps were produced in 2022/23. The offshore mapping coverage of the country increased from 0.05% reported in previous years to **0.11%**. This improvement in the offshore geoscience map coverage was largely made possible by the publication of the 3318CD Cape Town offshore map in the Table Bay region. The high-resolution data produced include multibeam bathymetry, surficial texture, and hydroacoustic facies maps. These products provide information on the seafloor along South Africa's near-shore environment and will assist in offshore development, including port expansion and the development of near-shore infrastructure. Through the integration of various geoscience datasets, value-added geoscience outputs contributing to minerals, energy, groundwater, infrastructure development and land use, were produced.

Following on work done on the carbon capture, utilisation and storage (CCUS) project of the CGS in previous years, the organisation turned its focus to finding suitable sites in South Africa, based on existing borehole data. This evaluation, for the first time, found that South Africa has exponentially more CCUS potential than had previously been thought. Specifically, there is significant potential underlying Mpumalanga and Gauteng Provinces. This is an important discovery as it will fundamentally change South Africa's energy future. Furthermore, the implementation of the utilisation component of CCUS implies that there are several innovative solutions that can support this work. During 2022/23, research focussed on finalising the geological characterisation of a proposed injection site in the Govan Mbeki Municipality, Mpumalanga Province. Work included finalising geological mapping, reservoir characterisation, structural investigations, and hydro-environmental baseline studies. Additionally, two integrated reports on the petrography of the reservoir and cap rocks of the proposed injection zone were produced. The findings suggest that the proposed reservoir can indeed support the injection of anthropogenic carbon dioxide.

The CGS continued with the implementation of the Probabilistic Seismic Hazard Assessment (PSHA) project on behalf of Eskom, in support of submissions to the National Nuclear Regulator, seeking to extend the operating license of the Koeberg Nuclear Power Station by 20 years. This work furthermore support critical site characterisation and data collection activities to provide the necessary geoscientific information for considered new nuclear build activities at Duynefontein. By the end of the financial year under review, the CGS finalised the majority of the site characterisation

activities, completed the baseline PSHA assessment, and made substantive progress on the Senior Seismic Hazard Analysis Committee (SSHAC) Level 2 documentation – which incorporates Ground Motion Studies and Seismic Source Characterisation. Delivery of the final SSHAC Level 2 PSHA reports are scheduled for completion by the end of the 2023/24 Financial Year, forming a key requirement in considerations of the Koeberg Nuclear Power Station operating license extension, and contribution to national energy security broadly.

The GTP continued to focus on base and precious metals mapping, especially with a view to mapping and characterising the so-called 'minerals of the future' in the Northern Cape and Limpopo Provinces. Two integrated reports on the geochemistry of the Steelpoort area in the Eastern Bushveld Complex (sheets 2429BD, 2430AC, 2429DB and 2430CA) at a scale of 1:50 000 as well as the integrated and multidisciplinary geoscience mapping of vanadium-bearing magnetite pipes in the Eastern Bushveld Complex were completed during the year under review. Of specific focus was the continuation of geological research of the Insizwa Complex, straddling the Eastern Cape and KwaZulu-Natal Provinces. This research is considering the occurrences of Ni-Cu-PGE at potentially economically-viable concentrations.

During the year under review, the CGS finally closed out the project on the geo-environmental baseline assessment conducted as part of the Karoo Deep Drilling Programme. Through the integration of all datasets, a value-added report on natural gas in the Karoo region was published and submitted to the Minister of Mineral Resources and Energy for Cabinet consideration. The study has revealed encouraging prospects of shale gas potential in the area. As such, the study recommends the lifting of the moratorium on shale gas to allow further exploration to ascertain the economic viability of the shale gas in the area. This will take place on the back of a strong science-based regulatory framework supported by the technical findings of the geo-environmental baseline assessment. Two shallow observation boreholes that proved to be particularly high yielding were donated to Beaufort West Municipality in February 2018. At the time, the Western Cape was beleaguered by one of the most severe droughts in recent history. The two boreholes, with a combined monthly capacity of 33 million litres, continue to bring much-needed relief to the community. As of August 2022, the municipality had extracted and distributed well over 840 million litres of water, which is equivalent to 10% of the municipality's monthly capacity.

The CGS through its GTP, continued to implement various Infrastructure and Land Use thematic projects in support of the national MTSF priorities 5 (spatial integration, human settlements and local government) and 6 (social cohesion and safe communities). These programmes further seek to enhance the deployment of the recently adopted One Plan District Development Model approach. Following the April and May 2022 landslide and flooding disasters across KwaZulu-Natal Province, the CGS undertook various field surveys to record and characterise landslide occurrences to update models of the region. The outcome of this work is an improved characterisation of regions that are highly prone to landslides. The work has resulted in an updated inventory of historical and recent landslide occurrences and the re-modelling of the eThekwini Metropolitan region. Additionally, a portion of land across the Port St. Johns Local Municipal areas was assessed, following consultations with the local authority. Development-scale preliminary geotechnical assessments were undertaken, which serve as a valuable tool for future land use planning and the management of current infrastructure and development. This key focus area is enhanced by continued research into local-scale characterisation of subsidence-prone dolomitic land and achieving a more refined characterisation of seismic sources and their subsequent associated risk determinations.

Under its Geoscience Diplomacy Theme, the CGS continued to implement strategic projects in Eswatini, Namibia and Malawi. Various integrated geoscience datasets in support of mineral and energy developmental imperatives in these countries were produced. Moreover, the Geoscience Diplomacy Programme saw the provision of technical support in the context of various diplomatic missions to South Sudan, Ivory Coast and Niger, with a view to finding areas of common benefit and applying innovative geoscientific techniques to accelerate development across Africa.

The critical role of the CGS as a national custodian of all geoscience data and information requires a seamless and accessible geoscience information and knowledge management system, which allows effective decision-making on, among others, the sustainable management of natural resources and the mitigation of the impacts of geohazards. The geoscience data and information portal, launched in 2021/22, continues to provide geoscience data and information records published by the CGS in the form of maps, documents and databases. This information is made available to stakeholders and clients worldwide. Over 22 000 downloads were recorded in the year under review, with requests ranging from published geological maps to bulletins, map explanations and geological shape files.

In pursuit of catalysing junior mining and the emergence of new mines in South Africa, the DMRE initiated a partnership with the Industrial Development Corporation to create a R500 million exploration fund. The fund will be supported by the provision of geological information to de-risk exploration activities and to increase the prospect of success. The initial phase of the implementation of this fund is deliberately being kept small to prove the value of geological information in accelerating the exploration value chain trajectory to the pre-feasibility stage. Moreover, the CGS Board in the year under review approved a Framework for the Provision of Geoscience Services in relation to reconnaissance operations, prospecting research and other related activities in the mineral sector, in line with the Geoscience Act (No. 100 of 1993), as amended. This framework seeks to encourage greater investment in exploration in South Africa and supports South Africa's exploration strategy and implementation plan.

The CGS's Statement of Financial Position reflects total assets to the amount of R610.9 million, which is comprised of non-current and current assets amounting to R381.1 million and R229.8 million, respectively. The CGS significantly enhanced good performance, particularly given the difficult economic climate, with total revenue of R564.1 million and a deficit of R86.8 million. A more comprehensive report on financial information is contained in Part F of the report.

Sustainability is an integral part of the CGS mandate and business at the financial/economic, social, stakeholder and environmental levels. Sustainability is embedded in the scientific focus and innovation upheld within the organisation and the CGS is privileged to have a harmonious and diversified workforce that views the organisation as an employer of choice. I wish to extend a warm welcome to the new members of the CGS team. To those who have left us, I thank you for your service and wish you every success in your future endeavours.

I would like to congratulate Dr Thifhelimbilo Faith Mulabisana and Dr Rudzani Lusunzi for successfully completing their doctoral degrees. Congratulations also to Ms Mpumelelo Dube, Mr Rames Chauke, Ms Corlien Cloete and Mr Sithule Xanga on obtaining their Master's degrees.

Every year is marked by highlights and low points. During the year under review, the CGS lost some of its talent, including some true stalwarts of the geosciences, through retirement. We celebrate the sterling contributions of these colleagues who served the organisation well. The following men and women are among those who have dedicated much of their lives to the organisation:

- Mr Frederik Daniel Jacobus Stapelberg – 37 years as a Chief Scientist in the Infrastructure and Land Use Business Unit.
- Dr Robert James Thomas – eight years as a Specialist Scientist in the Minerals and Energy Business Unit.
- Mr Nicholas Baglow – 31 years as a Chief Scientist in the Minerals and Energy Business Unit.
- Ms Alfreda Bekker-Bonnet – 10 years as a Manager in the Finance Management Business Unit.
- Mr Abram Msiza – 36 years as an Administrative Officer in Knowledge Management Business Unit.
- Ms Ramadimetja Cathrine Manaka – five years as a Cleaner in the Facilities Management Business Unit.
- Ms Fetakgomo Letta Makofane – five years as a Cleaner in the Facilities Management Business Unit.
- Ms Mahloma Salome Magaela – five years as a Cleaner in the Facilities Management Business Unit.

We were deeply saddened during the year by the passing of a valued team member, Ms Refiloe Jeannie Nkokha, Manager: Enterprise Development. I extend my sincere condolences to her loved ones.

To colleagues who are currently recovering from illness, we look forward to welcoming you back soon.

My special thanks go to the Board members, under the judicious leadership of the chairperson, Dr Humphrey Mathe, for their patience, meticulous evaluation of the work of the CGS and for their support and guidance throughout the year. I am also grateful to the Parliamentary Portfolio Committee on Mineral Resources and Energy and the Minister and officials of the DMRE for their unwavering support, commitment, oversight and guidance.

I conclude my overview in the knowledge that we have built a solid foundation for the CGS that is stronger and more delivery focussed, and that exemplifies a capable State institution. It bears repeating that this achievement is possible only because we are standing on the proverbial shoulders of giants in the form of all our forebears.

Mr Mosa Mabuza
Chief Executive Officer
Council for Geoscience

31 July 2023

3 STATEMENT OF RESPONSIBILITY AND CONFIRMATION OF ACCURACY FOR THE ANNUAL REPORT

Based on the best of our knowledge and belief, we confirm the following:

All information and amounts disclosed in the annual report are consistent with the annual financial statements audited by the Auditor-General.

The annual report is complete, accurate and free of any omissions.

The annual report has been prepared in accordance with the guidelines on annual reports, as issued by National Treasury.

The annual financial statements (Part F) have been prepared in accordance with the Generally Recognised Accounting Practice (GRAP) standards applicable to the public entity.

The Board of the CGS is responsible for preparing the annual financial statements and for judgments made on this information.

The Board of the CGS is responsible for establishing and implementing a system of internal controls which has been designed to provide reasonable assurance on the integrity and reliability of the information on performance, human resources and the annual financial statements.

External auditors have been appointed to express an independent opinion on the annual financial statements.

In our opinion, the annual report fairly reflects the operations, performance information, human resources and the financial affairs of the public entity for the financial year ended 31 March 2023.

Yours in service,

Mr Mosa Mabuza
Chief Executive Officer
Council for Geoscience

31 July 2023

Mr Kelepile Dintwe
Chairperson
Board of the Council for Geoscience

31 July 2023

4 STRATEGIC OVERVIEW

The core mandate of the CGS is inscribed in its founding prescripts. The vision, mission and core values of the organisation aptly find their expression, as outlined in Geoscience Act (No. 100 of 1993 as amended), as follows:

Vision

The vision of the CGS is:

A prosperous and transformed society enabled by geoscience solutions.

Mission

The mission of the CGS is to contribute to a prosperous South Africa by:

- Providing integrated, systematic and thematic maps and conducting research on the onshore and offshore geology of South Africa, as mandated, to:
  - Facilitate mineral, energy and agricultural development;
  - Contribute to the assessment and sustainable management of mineral, geohydrological and geoenvironmental resources; and
  - Support infrastructure development.
- Acting as a national advisory authority on geo-environmental pollution.
- Providing an information repository and delivery platform that facilitates actionable decisions and the accessibility of relevant information by relevant stakeholders.
- Discharging the mandate in a manner that supports transformation and national developmental imperatives.

Core values

The core values of the organisation are:

- **Innovation**: Generating and implementing novel ideas and outputs that create value.
- **Diversity**: Embracing an inclusive culture that upholds transformation and recognises contributions from all stakeholders.
- **Excellence**: Striving to excel in every aspect of our business.
- **Accountability:** Fostering reliability and commitment, taking responsibility and ownership.
- **Learning**: Advancing through knowledge creation.
- **Safety, health, and environment**: Prioritising the health and safety of all employees and stakeholders concomitant with environmental stewardship.
- **Transparency:** Providing services impartially, fairly, equitably and transparently.

5 LEGISLATION AND OTHER MANDATES

The Public Finance Management Act (PFMA) (No. 1 of 1999) lists the CGS as a Schedule 3A Public Entity.

The Geoscience Act (No. 100 of 1993) and the subsequent Geoscience Amendment Act (No. 16 of 2010) establish the CGS. The mandate of the CGS includes, without being limited to:

a) The **systematic onshore and offshore** geoscientific mapping of South Africa.
b) **Undertake geoscientific research** and related technological development.
c) The **collection and curation** of all geoscience data and act as a national geoscience repository.
d) The **compilation and development of comprehensive and integrated geoscience knowledge** and information, such as geology, geophysics, geochemistry, engineering geology, economic geology, geochronology, palaeontology, geohydrological aquifer systems, geotechnical investigations, marine geology, geomagnetism, seismology, geohazards, environmental geology and other related disciplines.
e) **Bring to the notice of the Minister any information in relation to the prospecting for and mining of mineral resources**, which is likely to be of use or benefit to the Republic.
f) Promote the search for and the exploitation of any minerals in the Republic.
g) Study (i) the **distribution and nature of mineral resources** and (ii) geoenvironmental aspects of past, current and future mineral exploitation.
h) Study the use of the surface and the **subsurface of the land and the seabed**, and from a geoscientific viewpoint advise government institutions and the general public on the judicious and safe use thereof with a view to facilitate sustainable development.
i) Develop and maintain the **national geoscientific library**, the national geoscientific information centre, the **National Borehole Core Depository**, the **national geophysical and geochemical test sites**, the **national geoscience museum**, the national seismological network and the national geoscience analytical facility.
j) Conduct investigations and render prescribed specialised services to public and private institutions.
k) Render geoscience knowledge services and **advice to the State.**

In terms of the amendments made to the Geoscience Act, sections 4(c), 4(eA), 4(f), 5(b) and 8 that deal with, among others, the custodianship of geoscientific information, the review and evaluation of geotechnical reports, the maintenance of certain national geoscientific facilities and the appointment of a Geotechnical Appeal Committee were held in abeyance. Synchronously, the Mineral and Petroleum Resources Development Act (MPRDA) explicitly provides for the CGS to receive, validate and curate geological information from prospecting and mining right holders as part of their regulatory compliance requirement. These amendments constitute organic growth prospects and significantly broaden the mandate of the CGS.

The policy mandate: The Minerals and Mining Policy for South Africa (1998) affirms the CGS as a science council that supports research and development underpinning the sustainable development of the mining industry. This further enunciates the Constitutional mandate, as elaborated in the founding prescripts of the CGS.

5.1 Other guiding policies

Given the urgent need to address national imperatives, the CGS ensures that its business model and all its activities address the following strategic national outcomes in alignment with the National Development Plan (NDP) Vision 2030:

- **Decent employment through inclusive economic growth:** Delivering spatial geoscience information and services that attract local and international investment to develop mineral and upstream petroleum resources.
- **A skilled and capable workforce to support an inclusive growth path:** Building capacity in respect of geoscientific, administrative and managerial/leadership skills while also developing innovative outputs, systems and services.
- **An efficient, competitive and responsive economic infrastructure network:** Geoscience information and services input into infrastructure development in support of South Africa's economic development of mineral and upstream petroleum resources.
- **Vibrant, equitable and sustainable rural communities with food security for all:** The provision of geoscientific information that enables agricultural development and groundwater exploration, among others.
- **Environmental assets and natural resources which are well protected and continually enhanced:** Conducting research into, among others, acid mine drainage and carbon capture and storage technologies and establishing environmental baselines for possible future shale gas development.
- **An efficient, effective and development-oriented public service and an empowered fair and inclusive citizenship:** Strengthening the CGS to optimise delivery of its mandate and effecting the transformative programme of the South African Government.

Further to the NDP and the MTSF, the objectives of the CGS have been formulated to support the objectives of the DMRE, whose core focus revolves around regulation, transformation and promotion of the minerals and energy sectors as well as provision of sustainable and affordable energy for growth and development to all South Africans.

Other objectives of the DMRE, supported by the CGS and with which its activities are aligned, include contributing to a just transition to a low-carbon economy; unlocking South Africa's high potential mineral and energy resources; diversification and supply of mineral resources in support of both mining and energy sectors; increasing investment in the mineral and petroleum sector, onshore and offshore; increasing South Africa's share of the global minerals and energy market; increasing South Africa's share of the global exploration budget; diversification of energy sources through implementing the Integrated Resource Plan 2019; increasing infrastructure investment by both public and private sectors; inclusive, equitable and competitive exploration as well as ensuring sufficient and relevant skills in the mining and energy sector. The CGS derives its strategic foundation from the government's MTSF 2019 to 2024, the Stakeholders' Declaration on Strategy for the Sustainable Growth and Meaningful Transformation of South Africa's Mining Industry of the DMRE, and the 2019 White Paper on Science, Technology and Innovation of the Department of Science and Innovation (DSI).

6 ORGANISATIONAL STRUCTURE

The organogram of the CGS (Figure 2) describes the reporting structure of the organisation. The structure was developed to support the efficient, effective and robust functioning of the organisation and to streamline the composition of its Board of Directors and executive management. The executive management team of the CGS is headed by the Chief Executive Officer (CEO) who reports to the Accounting Authority (the CGS Board–see Part C of this report). The executive management team, in turn, oversees five portfolios: Integrated Geoscience Development, Geoscientific Services, Finance, Office of the CEO and Corporate Services (see Part A, section 7).

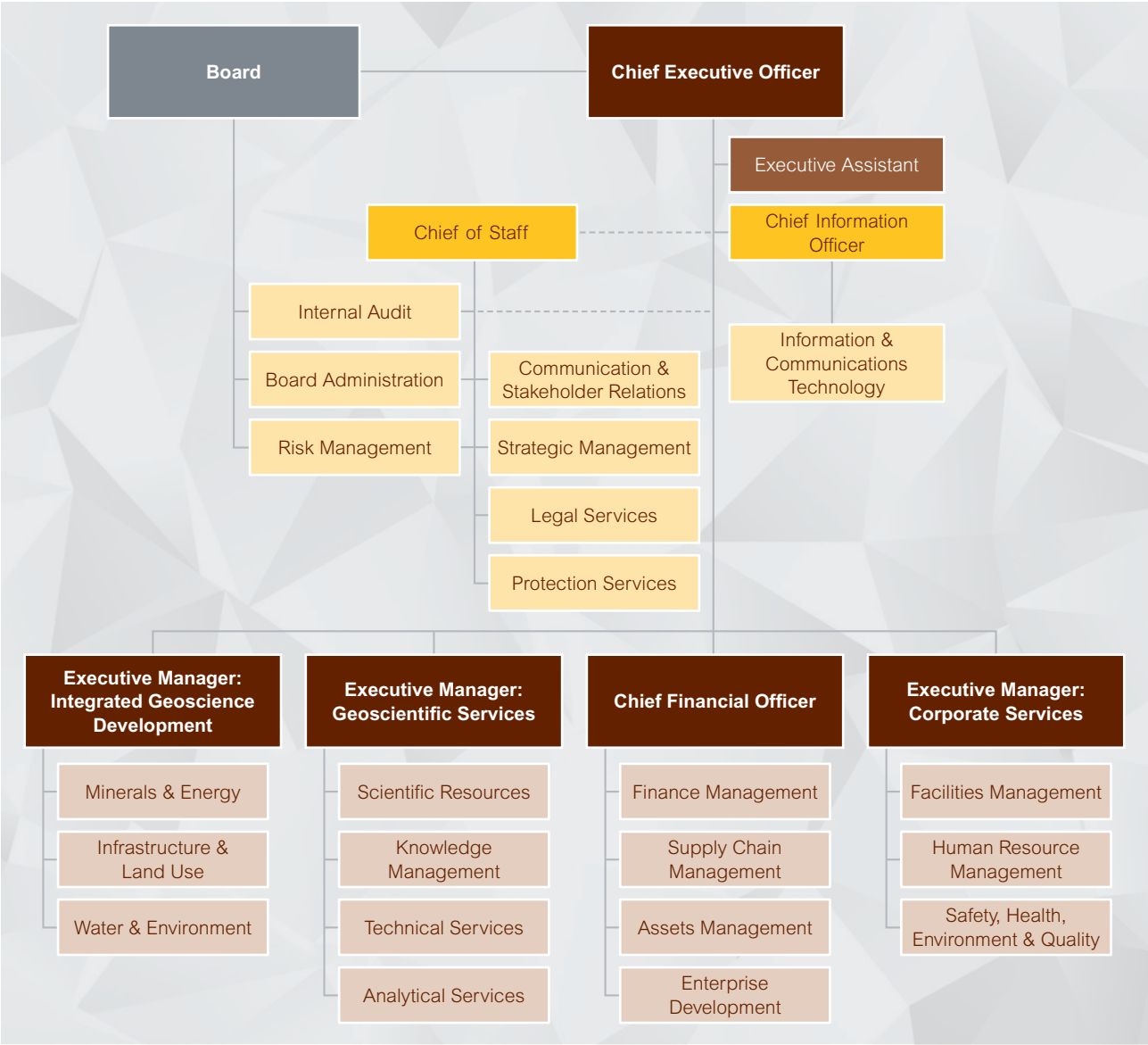


Figure 2: CGS organisational structure

7 CGS EXECUTIVE MANAGEMENT TEAM

Mr Mosa Mabuza
Chief Executive Officer

Dr Thuli Khumalo
Chief of Staff* and
Executive Manager
Geoscientific Services
(Acting)

Mr Thabo Molikoe
Chief Financial Officer
(Acting)

Mr Willem Meintjes
Executive Manager
Integrated Geoscience
Development (Acting)

Ms Zodwa Mbatha
Executive Manager
Corporate Services

* The Chief of Staff is also known as the Executive Manager in the Office of the CEO.

Palaeontologist working on the fossil database in Bellville Regional Office of the CGS

PART B
PERFORMANCE INFORMATION

This section of the report provides key performance information demonstrating the service delivery achievements of the CGS. The information contained herein corroborates the organisation's effective management, planning, budgeting, implementation, monitoring and evaluation of activities. The impacts and outcomes of its actions are underpinned by symbiotic planning, management inputs and activities to achieve the desired results.

The performance information affirms the alignment of the impacts and outcomes in the strategic plan (SP), the associated programme outputs, the output indicators and targets in the annual performance plan (APP) and the various budget-related documents. This section also highlights achievements measured against the performance indicators and targets identified in the SP, the APP and the budget documents.

1 AUDITOR-GENERAL'S REPORT: PREDETERMINED OBJECTIVES

The Auditor-General of South Africa performed the necessary audit procedures on the performance information in accordance with the AGSA findings engagement methodology. This engagement is not an assurance engagement. Accordingly, the AGSA does not express an assurance opinion or conclusion. The audit conclusion on the performance against predetermined objectives is included in the report to executive management, with material findings being reported under the Predetermined Objectives heading in the report on other legal and regulatory requirements section of the auditor's report.

The Report of the Auditor-General, published as Part F: Financial Information, is on pages 119 to 124.

2 OVERVIEW OF PERFORMANCE

2.1 Service delivery environment

The end of the reporting period represents the sixth year of continuous implementation of the current phase of the IMMP as an instrument of delivery of the strategic re-orientation of the CGS, which decisively focussed on implementing its mandate, inscribed in the founding legislation, the Geoscience Act (No. 100 of 1993 as amended). This includes collection, generation, compilation, interpretation and dissemination of high-quality geoscience data, information and knowledge for South Africa. The IMMP focusses on five core themes listed hereafter and in the operational highlights. The CGS delivered most of its APP targets for the year under review and obtained an overall performance score of 87%. Figure 3 summarises the overall performance of the CGS since the beginning of the implementation of the IMMP.

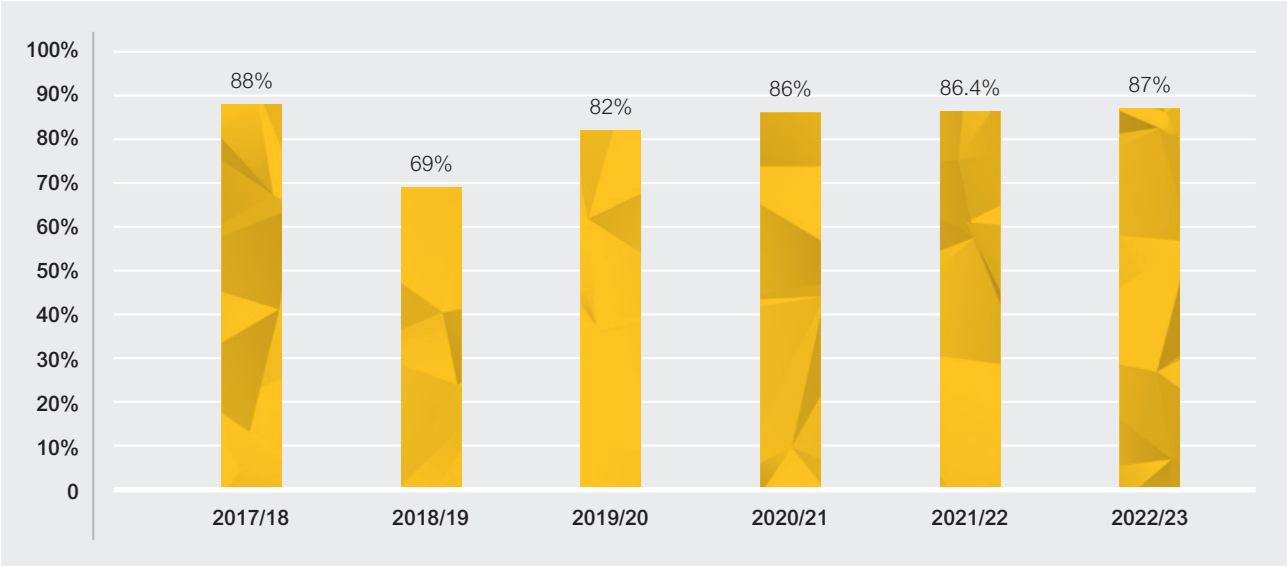


Figure 3: Overall organisational performance since the implementation of the IMMP

Theme 1: Geoscience for Mineral and Energy Resources

The South African Government announced its bold plan to capture a minimum of 5% of the global exploration budget of approximately US$10 billion per annum in the next three to five years. The CGS is privileged to be at the leading edge of rejuvenating and reimagining the country's exploration landscape, consistent with the quality of the geology that suggests that the country remains a proverbial exploration frontier. Accordingly, the CGS provides necessary geoscientific/technical support in a number of DMRE-led initiatives such as South Africa's ERRP, the geo-environmental baseline studies for shale gas development in the Karoo, the Mine and Environmental Water Management Programme (MEWMP) as well as the Exploration Strategy.

The CGS's contribution to the country's energy security and just energy transition is founded on the numerous projects that constitute its GTP. For example, the CGS is investigating the geothermal research potential of South Africa, the early positive results of which will augment the country's sustainable renewable energy programme in the medium to long term as well as continued focus in characterising mineralising systems for 'battery minerals' and 'minerals of the future'. The CGS is also an implementing agency for the CCUS project, which tests carbon capture and utilisation in South Africa as a critical input in reaffirming the country's commitment to clean energy and climate change mitigation.

Progress on the implementation of this aspect of the CGS GTP, albeit at an early stage, gives sufficient confidence that much-needed inclusive economic growth and the energy security needs of the country will be re-catalysed and achieved.

Theme 2: Geoscience for Health, Groundwater and the Environment

Mineral exploration and exploitation activities are shifting their focus towards an increased emphasis on environmental stewardship. Striking a balance between mining development and environmental conservation has become one of the primary research focus areas of the CGS. In this regard, the notion of coexistence of these two seemingly conflicting phenomena is a subject of research that seeks to reconcile their coexistence balanced by scientific research. Furthermore, understanding water resources, particularly in view of the fact that South Africa is a water-scarce country, is a priority research area under this theme. Data and information generated from this theme are intended to improve the understanding of the local and regional aquifer systems to guide the sustainable use of ground- and surface-water resources.

Theme 3: Geoscience for Infrastructure and Land Use

The CGS is legislatively mandated to provide professional and technical advice on infrastructure development, especially in dolomitic terrains. This mandate was expanded with the Geoscience Amendment Act (No. 16 of 2010) to encompass assessments and reviews of all infrastructure development in areas deemed susceptible to geohazards broadly. The CGS continued engagements with the National Department of Cooperative Governance and Traditional Affairs and a handful of district municipalities to explore practical ways to apply geoscience to inform spatial land use and optimal infrastructure development in the context of the district development model (DDM). The CGS continues to carry out its mandate of maintaining the national seismic network, which continuously detects natural and mining-induced earthquakes in South Africa.

Theme 4: Geoscience Innovation

The CGS is steadily strengthening its scientific innovation capacity in various fields and applications in geosciences. Drone technology has been adopted to advance the mandate of the CGS and to provide a novel way of capturing geoscience data to gain a perspective of the Earth to augment ground-based instruments. At the advent of the Fourth Industrial Revolution, the CGS has embarked on research into the use of artificial intelligence (AI) in geoscience through the creation of applications to address, among others, complex regional mineralising system and groundwater potential mapping challenges.

Theme 5: Geoscience Diplomacy

The CGS recognises and implements its role as a geoscientific instrument for the foreign policy predisposition of the Republic of South Africa. During the year under review, high-resolution geoscience mapping programmes in Eswatini, Namibia and Malawi continued. This included the production of various integrated geoscience datasets

in support of the respective minerals and energy developmental imperatives. Moreover, this programme also provided technical support to various diplomatic missions undertaken to South Sudan, Ivory Coast, and Niger, focussing on finding additional areas of mutual benefit and applying the CGS's innovative techniques to accelerate geoscience development in these areas. The CGS has assumed the role of permanent Secretariat of the OAGS, which promotes close relations among African member states in the context of geoscience research. The OAGS represents the interests of African geological surveys and collaborates closely with, among others, the European Geological Surveys to implement the PanAfGEO (Pan-African Support to the EuroGeoSurveys–Organisation of African Geological Surveys Partnership) programme on capacity building across the African continent.

Business of the CGS

In the implementation of its mandate, collaborations between the CGS and various key stakeholders include, without being limited to:

- Strategic projects of other Government departments/ institutions and public entities.
- Private sector projects.

As dictated by legislation, the CGS continued to implement mandatory projects and functions specified in the Geoscience Act (No. 100 of 1993 as amended). These include, among others, the following:

- The national seismic network, also linked to global networks, which monitors seismic activity locally;
- Monitoring of global infrasound activity as part of its collaboration with the Comprehensive Nuclear Test Ban Treaty Organisation;
- The curation of the National Borehole Core Depository, equipped with hyperspectral scanning capability and housing approximately 850km of borehole core and other valuable geological materials;
- The curation of the National Geoscience Museum, which provides information and preserves rare, scientifically valuable and geological heritage samples;
- The National Geoscientific Library and Bookshop, which provide geological publications and maps to the public.
- The National Geoscience Analytical Facility, which is available to analyse, among others, geological samples, water samples and industrial raw materials.

Revitalisation of the National Geoscience Analytical Facility

Since the establishment of the Geological Survey (the predecessor of the CGS) in 1912, the Analytical Services Unit ("the laboratory") has played a pivotal role in realising the mandate of the CGS. From 2018, an unfortunate series of events struck the laboratory, forcing it to close due to aerial contamination. This unfortunate event was exacerbated by the national COVID-19 lockdown in 2020. The installation of the heating, ventilation and air-conditioning (HVAC) system also affected the resumption of duties and services previously offered in the laboratory. With time, some sections of the laboratory have re-opened but offer limited services due to only partially suitable accommodation and environmental conditions.

The CGS management commissioned the revitalisation of the Analytical Services of the organisation in the year under review. This initiative commenced with the development of a value proposition to resuscitate the laboratory. The value proposition was approved in quarter 4 of 2022/23. At the same time, urgent operations of the laboratory were being restored. The value proposition will be fully operationalised in the new financial year and remedial processes will include the creation of optimal environmental conditions and processes as the organisation prepares for International Organization for Standardization (ISO) accreditation. For success, the laboratory will be required to strictly adhere to an upgraded quality management system as an integral part of its improvement and implement quality control and quality assurance principles to demonstrate compliance with the requirements of the latest quality processes and standards set by ISO. This is to ensure that good-quality services and processes are in place for efficacy and sustainability in a fully fledged laboratory.

The revitalisation of the laboratory comes at an opportune time – especially now that the Minister of Mineral Resources and Energy has given state entities under his leadership the directive to contribute to securing a minimum of 5% of the global exploration share. This will not only help the laboratory to occupy its space, but also add to the CGS's contribution towards the developmental imperatives of South Africa. These include economic growth, job creation, poverty eradication and a decent life for all.

With the expected upturn in exploration activities globally, as many countries seek to grow their economies and create

better lives for their citizenry through the deployment of mineral resource programmes, the CGS laboratory needs to improve its efficiency by espousing all operations requirements of good laboratory practices. In particular, the laboratory will take into consideration the Exploration Implementation Plan approved by the DMRE. The importance of prompt analytical services to the various key themes in the CGS cannot be overstated. This requirement includes supporting national programmes of energy, water and food security as well as infrastructure development through innovative and tailor-made analytical services to key stakeholders. The resultant data and information from the laboratory services are part and parcel of pre-competitive geoscience data meant to boost investor confidence and make South Africa an attractive exploration jurisdiction, as it was some decades ago. As in the past, the laboratory can once again be a leading service point for the African continent.

Acquisition of two multifunctional drill rigs

Late in 2021/22, the CGS obtained approval to embark on the acquisition of two multifunctional drill rigs. In terms of the PFMA, these are significant assets. The purchase is intended to bolster the implementation of the GTP and the acquisition of geoscience data for use in rock characterisation and mineral, groundwater and resource estimations. At the start of 2022/23, the appointed service providers and the original equipment manufacturer (OEM) of the two multifunctional drill rigs started the construction of the rigs. The Small Enterprise Finance Agency was instrumental in providing financial support for the service providers to commence with the project. Although some of the parts had been ordered from overseas, accounting for some of the delays, the two rigs were built locally. Nevertheless, several factors adversely impacted the delivery of the two drill rigs and the CGS only took delivery of the first drill rig in February 2023 – pending the installation of electronics on the equipment.

Delivery of the first multifunctional drill rig, initially expected on 31 January 2023, was delayed. Delivery of the rig, together with the accompanying trucks and compressor, finally took place on 22 February 2023. Unfortunately, the drill rig was not fully functional at the outset, owing to the malfunction of various mechanical and electronic components. Despite several attempts to engage with the OEM, the required repairs were not made at the time. As a result, it was not possible to deploy the drill rig to projects as had been contemplated. The first rig is expected to be fully functional in the new financial year. Delivery of the second drill rig is also expected in the new financial year.

Once the drill rigs are fully functional, the CGS will prioritise their deployment in respect of the CGS participation in the Exploration Implementation Plan.

2.2 Organisational environment

During the past financial year, two women executive managers were appointed – one to the Office of the CEO and the other to the Corporate Services Division.

Prolonged and frequent power supply interruptions (i.e. loadshedding) continue to affect CGS workspaces. At the beginning of the financial year under review, the CGS was using diesel generators that were operating beyond their optimum lifespan. As a consequence, staff flagged health concerns triggered by the fumes generated by this equipment. Therefore, to mitigate this impact, the CGS proceeded to rent emergency generators as a temporary measure, to give management the opportunity to develop a long-term energy strategy based on an alternative, sustainable energy supply. In addition, an uninterrupted power supply system was installed to provide back-up power and surge protection during power disruption.

As the custodian of all on- and offshore geoscience data and knowledge in South Africa, the CGS continues to disseminate geoscience data and information to stakeholders and clients through the Public Information Office. Geoscience information and data were disseminated via data@geoscience.org.za and info@geoscience.org.za to a variety of stakeholders, including private citizens, the mining industry, the exploration industry, State-owned enterprises, higher education institutions and international companies (Figure 4). The geoscience data and information included geological borehole/drilling data, mineral maps, geological maps of various scales, publications, dolomite and geotechnical reports, geophysical, geochemical and seismic and marine data.

The geoscience data and information portal, launched in 2021/22, continue to provide geoscience data and information records published by the CGS in the form of maps, documents and databases. This information is made available to stakeholders and clients worldwide. Over 22 000 downloads (Figure 5) were recorded in the year under review with requests such as geological maps, bulletins, map explanations, publications/reports and geological shape files.

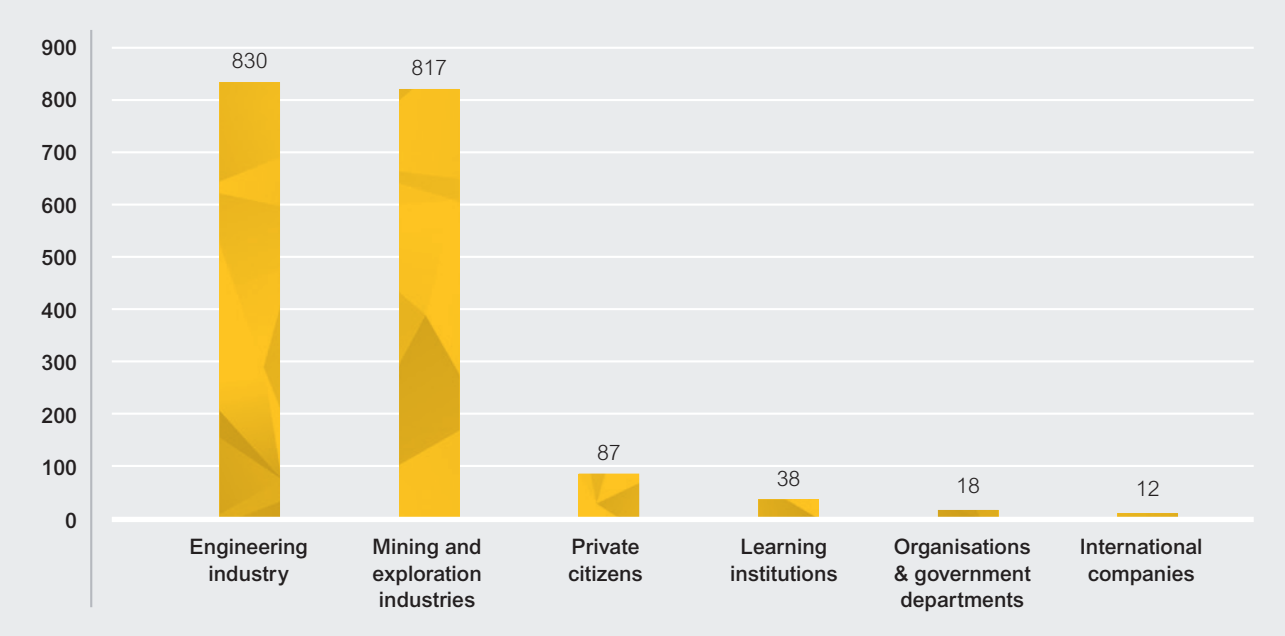


Figure 4: Number of requests through info@geoscience.org.za and data@geoscience.org.za per industry for 2022/23

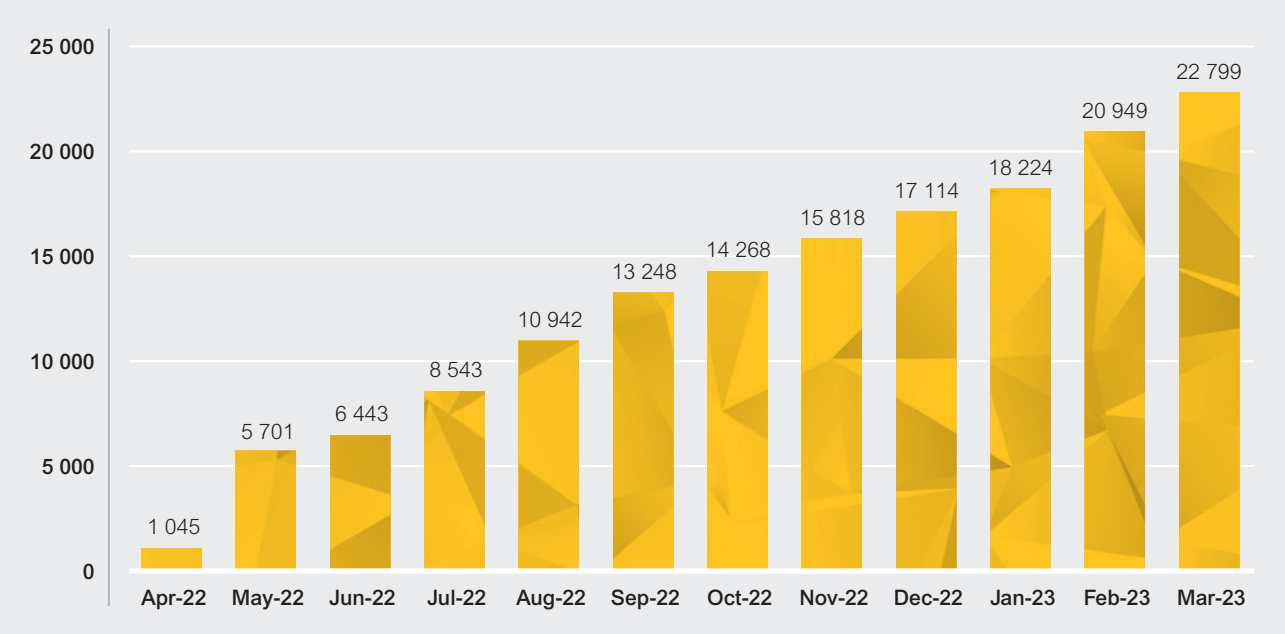


Figure 5: Data downloads through the geoscience data management portal, April 2022–March 2023

2.3 Key policy developments and legislative changes

There have been no key policy amendments to the Geoscience Amendment Act (No. 16 of 2010) since it took effect on 1 July 2012.

The full realisation of the Geoscience Act Regulations is key to the legislated custodianship of on- and offshore geoscience data and information. It is incumbent upon the CGS to ensure the safe preservation and curation of geoscience data and information as the strategic heritage of South Africa. During 2022/23, the CGS continued to hold engagements with several stakeholders in providing information on the gazetted Regulations and clarifying processes to be followed in lodging data with the organisation. In 2023/24, the CGS will embark on an awareness drive to clarify the submission of geoscience data and information. The implementation of the Geoscience Act Regulations, effective in March 2022, relies on ensuring adequate and holistic information and communications technology (ICT) infrastructure. Accordingly, the CGS commissioned the required storage and infrastructure (including disaster recovery infrastructure) to facilitate digital lodgement of geoscience data and information. In the year under review, the CGS developed a digital portal for the submission of geoscience data and information (Phase 1) in collaboration with various external stakeholders. Phase 1 has been completed and will go live early in 2023/24. The CGS has also made provision for mechanisms for the lodgement of physical geoscience data and information which can be fulfilled at designated locations on CGS premises. During 2022/23, 50 submissions were made through the available platforms, including information relating to prospecting operations and expressions of intent to undertake geoscience research.

Phase 2, which is intended to digitise and automate the internal processing of the lodged geoscience data and information, commenced in the year under review and is estimated to be completed at the end of quarter 1 of 2023/24. It is important to note that the CGS has an obligation to uphold high standards of the applicable confidentiality levels and integrity in respect of the lodged geoscientific data and information (reports, samples, raw data, etc.).

The MPRDA of 2008 delineates the role of the CGS in respect of geological information generated through exploration activities in South Africa. In line with its new strategic approach, the CGS is aligning its activities with the latest developments in the MPRDA amendments, the National Environmental Management Act (No. 107 of 1998) and the Spatial Planning and Land Use Management Act (No. 16 of 2013).

The DDM seeks to strengthen the delivery capacity and capability of municipalities. In this regard, the CGS has engaged extensively with a number of district and local municipalities in the Eastern Cape, KwaZulu-Natal, Limpopo and Mpumalanga Provinces to pilot possible geoscientific contributions towards achieving the stated intent of the DDM.

2.4 Progress towards achievement of institutional impacts and outcomes

The SP 2020–2025 of the CGS was reviewed to ensure its alignment with the minimum requirements of the Revised Framework for Strategic Plans and APPs, 2020. The outcome indicators were amended to follow the results-based planning approach adopted by the Government of South Africa. The CGS's SP 2020–2025 was therefore tabled in Parliament in March 2021 and its APP for 2022/23 was tabled in March 2022.

The impact statement of the CGS is drawn from its vision statement: "A prosperous and transformed society enabled by geoscience solutions". The adopted strategy of the CGS (the IMMP) underpins the sustainability of the organisation amidst changing ideologies, a fluctuating economy and a rapidly evolving technological landscape. The strategy is intended to ensure an impactful delivery of the core mandate and to provide innovative geoscience solutions to support the NDP 2030 and other Government plans that address economic growth, poverty, inequality, job creation, education, clean water, affordable and clean energy, and safer communities in South Africa. Figure 6 illustrates the impact pathway of the CGS strategy, its outcomes and areas of impact.

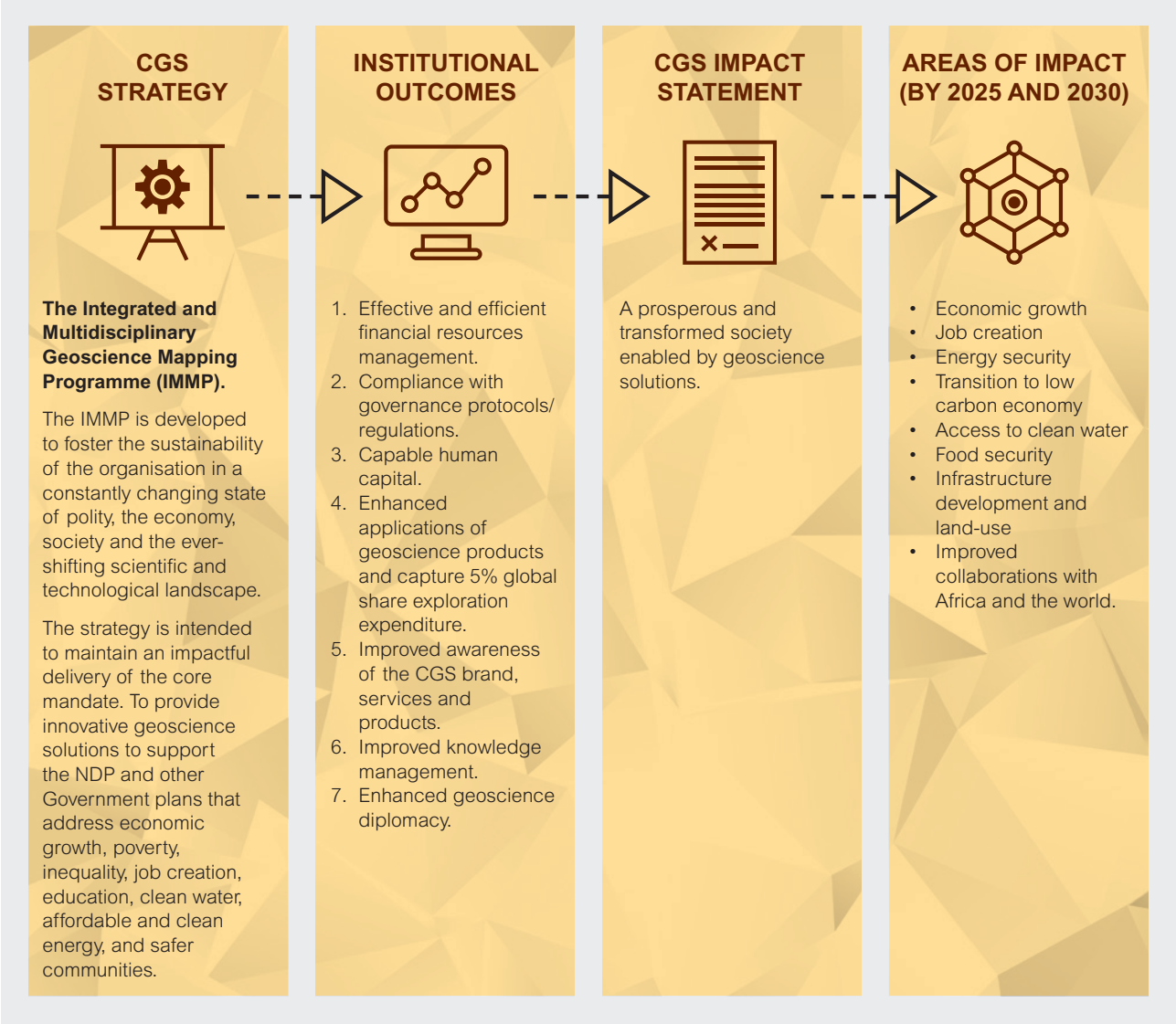


Figure 6: Strategic outlook and impact pathway of the CGS

Table 1 illustrates progress made by the organisation towards the achievement of its five-year targets against the outcome indicators of its SP 2020–2025.

Table 1: Progress made by the CGS in accomplishing its SP 2020–2025

Outcomes	Outcome indicators	Baseline	Five-year target	Progress towards the achievement of the five-year target
MTSF priorities	**Priority 1: A capable, ethical and developmental State**			
Effective and efficient financial resources management	Absence of material audit findings	0	Clean audit attained by 2025	The CGS attained an unqualified audit outcome with no material findings (i.e. clean audit) for 2021/22 and 2022/23. Effectiveness of internal controls is continually being strengthened to attain clean audits.
Compliance with governance protocols/ regulations	An organisation complaint with relevant prescripts	New indicator	100% compliant organisation by 2025	CGS continues to remain 100% compliant with the PFMA. In addition another four (4) compliance checklists were completed in the year under review and included the Promotion of Access to Information Act, the Labour Relations Act, the Basic Conditions of Employment Act and the National Key point/Critical Infrastructure Act. A total of 31 instances of non-compliances were identified during the assessments of the 4 compliance checklists. CGS Management is committed to address these issues and action plans have been put in place and will be tracked on a quarterly basis until resolved.
MTSF priorities	**Priority 3: Education, skills and health**			
Capable human capital	Talent management framework to build, nurture and sustain a capable workforce implemented	New indicator	An empowered, transformed, motivated and capacitated workforce by 2025	A talent management framework has been developed and is currently being considered for approval and implementation.
MTSF priorities	**Priority 2: Economic transformation and job creation Priority 5: Spatial integration, human settlements and local government Priority 6: Social cohesion and safe communities**			
Enhanced applications of geoscience information and knowledge to secure a minimum of a 5% share of the global exploration expenditure	Increased onshore geoscience map coverage	New indicator	16%	Continued focus on geoscientific mapping has seen a significant increase in onshore coverage from below 5% prior to the commencement of the IMMP, to 12%. To date, **230** of a total of 1 916 1:50 000-scale maps have been published.
	Increased offshore geoscience map coverage	New indicator	0.6%	Offshore geoscientific mapping progressed with the publication of two offshore maps, bringing the total coverage to 0.11% of the planned total of 1 828 maps.
	Implementation of the GTP for minerals, energy, groundwater, infrastructure, land use, innovation and the environment	New indicator	Applications of geoscience knowledge towards societal development	The CGS continued to use and beneficiate geoscientific information from existing datasets and those collected and interpreted from the IMMP to contribute to mineral and energy characterisation intended to attract 5% of the global exploration expenditure in South Africa over the next three–five years. Critical value-added geoscientific outputs were produced to contribute to groundwater and infrastructure development, and the safe and judicial use of land.

Outcomes	Outcome indicators	Baseline	Five-year target	Progress towards the achievement of the five-year target
Improved awareness of the CGS brand, services and products	Integrated Communication and Stakeholder Relations Strategy implemented	New indicator	Stakeholders satisfied with the quality of CGS services and products	The CGS has invested resources and capacity to aid in improving the awareness of its brand, service and products. This is evidenced by an increase in the interest and coverage of its work through various media platforms. Moreover, the CGS Geoscience Summit, which was hosted as part of the organisation's 110 years' celebration, saw various media houses attending the event to extensively cover its proceedings and discussions. During the year under review, 48 media articles were produced, while the CGS brand was profiled on several channels, such as exhibitions, billboards, social media, podcasts, radio and television. In addition, the level of stakeholder satisfaction saw an improvement of **79.4%** – up from 66.4% recorded in the previous financial year.
Improved geoscientific domain through effective knowledge management	Utilisation of the integrated geoscience information management system	New indicator	Proficiently managed geoscience data and information by 2025	The challenges in securing the services of an expert data integrator have adversely affected the progress of this programme. The three tender programmes were returned and had been unsuccessful. Only 66.7% progress has been achieved. A recovery plan will be implemented in the new financial year. The CGS is continuing with the multiyear data digitising, migrating and auditing programmes. To date, the CGS has achieved 53.4% (against the 60% target of year two) in the assessment of data inventories; 60% (against the 60% target of year two) for data auditing. Data migration has exceeded the target by 72% (against the 100% target) because of the intensified scanning of additional geoscience maps. The front end of the portal for the lodgement of geoscience data and information in line with the Geoscience Act Regulations has been completed. The back end will be finalised in 2023/24. The CGS will strive to meet the five-year target.
MTSF priorities	**Priority 7: A better Africa and world**			
Enhanced geoscience diplomacy	International strategic partnerships established	New indicator	Geoscience contribution towards "a better Africa and world" strengthened by 2025	The CGS has accelerated its diplomacy programme by strengthening relations with international counterparts during the MSTF period. During the year under review, the CGS signed a strategic agreement with the Saudi Arabia Geological Survey (SGS) and the Japan Oil Gas and Metals National Corporation (JOGMEC). These strategic partnerships envisage conducting field surveys using remote sensing and geographic information system (GIS) techniques (with JOGMEC) as well as cooperating on various geoscientific areas of mutual interest (SGS).

Note: A clean audit is defined as an unqualified opinion with no material findings. An unqualified opinion is given where there were material findings that were corrected during the audit.

To achieve the outcome of effective and efficient financial resource management and the achievement of clean audits in terms of its current SP 2020–2025, the CGS will continue to develop and maintain transparent systems, put in place internal controls and manage risks that may arise. The CGS will continue to aspire towards achieving clean audits. The financial statements will continue to be prepared in accordance with GRAP and the requirements of the PFMA. Controls have already been implemented to ensure the responsible management of assets, revenue, expenditure and liabilities. The established supply chain management function will ensure an appropriate procurement and provisioning system that is fair, equitable, transparent, competitive and cost-effective. Through its internal audit and risk management functions, the CGS monitors the effectiveness of internal controls, assesses financial management controls and mitigates financial misconduct such as fraud, theft, irregular expenditure, and fruitless and wasteful expenditure.

Compliance with governance protocols, regulations and other prescripts is crucial in enabling the CGS to contribute to the achievement of Priority 1 of the MTSF, namely the achievement and maintenance of "a capable, ethical and developmental State". To achieve an acceptable level of compliance, the CGS aims to improve and further develop its compliance management maturity by putting the necessary policies and procedures in place to achieve its target of a fully compliant organisation by 2025. The CGS operates in a complex, diverse and extensive environment and regulatory universe, and has to comply with numerous prescripts. Compliance will be achieved in a structured and systematic manner to ensure full integration into its operations.

The competitive advantage of the CGS resides in the competence of its workforce. To attract, retain, engage and develop the right talent in the right positions, the CGS is currently developing a talent management framework aligned with its strategy. This framework aims to build, nurture and sustain a capable workforce by the end of the MTSF period. The talent management framework will respond to the short-, medium- and long-term exigencies of the business informed by workforce planning.

The IMMP strategy aims to contribute towards South Africa's ERRP by securing a minimum of 5% of the global exploration expenditure through the application of geoscience information and knowledge. In the execution of its GTP, the primary strategy implementation tool of the CGS, the organisation intends to unlock South Africa's mineral and energy resource potential and to contribute to achieving a just transition to a low-carbon economy. A primary focus area of the CGS is the continued production of 1:50 000-scale on- and offshore geoscience maps, through which critical knowledge is generated. This endeavour aims to uncover South Africa's mineral wealth potential. Fundamental geoscience mapping outputs are furthermore beneficiated and leveraged to support safe and sustainable infrastructure development, judicious land use and environmental stewardship. In the wake of the Fourth Industrial Revolution, emerging technologies such as machine learning and AI techniques are being harnessed to generate geoscientific knowledge. During the year under review, 25 new 1:50 000-scale onshore geoscience maps were produced, resulting in an increase to 12% of the national mapping coverage. This achievement marks a significant improvement from below 5% before the commencement of the IMMP. Value-added applied geoscience outputs contributing to minerals, energy, groundwater, infrastructure development and land use, were produced. In particular, the CGS undertook geological and basin characterisation studies in Mpumalanga Province, achieving a key milestone towards realising pilot-scale CCUS work, anticipated to make a substantive contribution to the just transition to a low-carbon economy in South Africa. Continued focus is given to base- and precious metals mapping, especially with regard to mapping and characterising the so-called 'minerals of the future' across the Northern Cape Province. The CGS is therefore making progress in securing 5% of the global exploration expenditure.

To improve CGS brand awareness, services and products, the Integrated Communication and Stakeholder Relations Strategy was implemented in the year under review. The CGS has implemented the strategy in earnest and has started to reap the benefits of creating increased awareness, resulting in its growing public profile. The organisation continues to monitor the growth of its brand through tools such as stakeholder surveys.

As the national custodian of all geoscience data and information, the CGS has concluded Phase 1 of the seamless and accessible geoscience information and knowledge management system that will allow effective

decision-making for the sustainable management of natural resources and the mitigation of the impacts of geohazards, among other objectives. This work includes the front end of the portal for digital lodgement. Holders and owners of data can now deposit their data with the CGS through the portal. It is also possible to lodge physical data that meet the set standards. Optimum use of the information management system remains key to the implementation of the Geoscience Data and Information Policy and the Geoscience Act Regulations. The CGS ensures appropriate levels of confidentiality of the data in its custodianship. The multiyear data migration (digitisation) and auditing of programmes and the assessment of various repositories, including the borehole core, mineral and fossil collections are continuing and, in some respects, have made progress.

The CGS aims to enhance the implementation of the Geoscience Diplomacy thematic area in support of the national foreign policy intention to foster economic diplomacy and to support programmes towards South Africa's contribution to building a **better Africa and the world**, aligned with the United Nations Sustainable Development Goals 2030 and Agenda 2063 of the African Union. The geoscience programmes focus on aspects of human capital development, institutional reform, administrative and managerial/leadership, skills development and the implementation of mutually agreed programmes. During the year under review, the CGS signed a strategic agreement with the SGS and JOGMEC. These strategic partnerships envisage conducting field surveys using remote sensing and GIS techniques (with JOGMEC) as well as cooperating on various geoscientific areas of mutual interest (SGS).

CGS Geoscience Summit 2022 Group

3 INSTITUTIONAL PROGRAMME PERFORMANCE INFORMATION

In accordance with the CGS strategy, a balanced scorecard methodology is used to provide an account of the overall performance of the organisation. The balanced scorecard essentially measures the performance of the CGS at a corporate business level and at an individual level. Five strategic programmes cover the CGS customers, internal business process, learning and growth and financial perspectives (Figure 7). These programmes respond to seven institutional outcomes, as stipulated in the CGS's SP 2020–2025 and are aligned with Government's MTSF priorities. The strategic programmes also address the cross-cutting areas of women, youth and people living with disabilities.

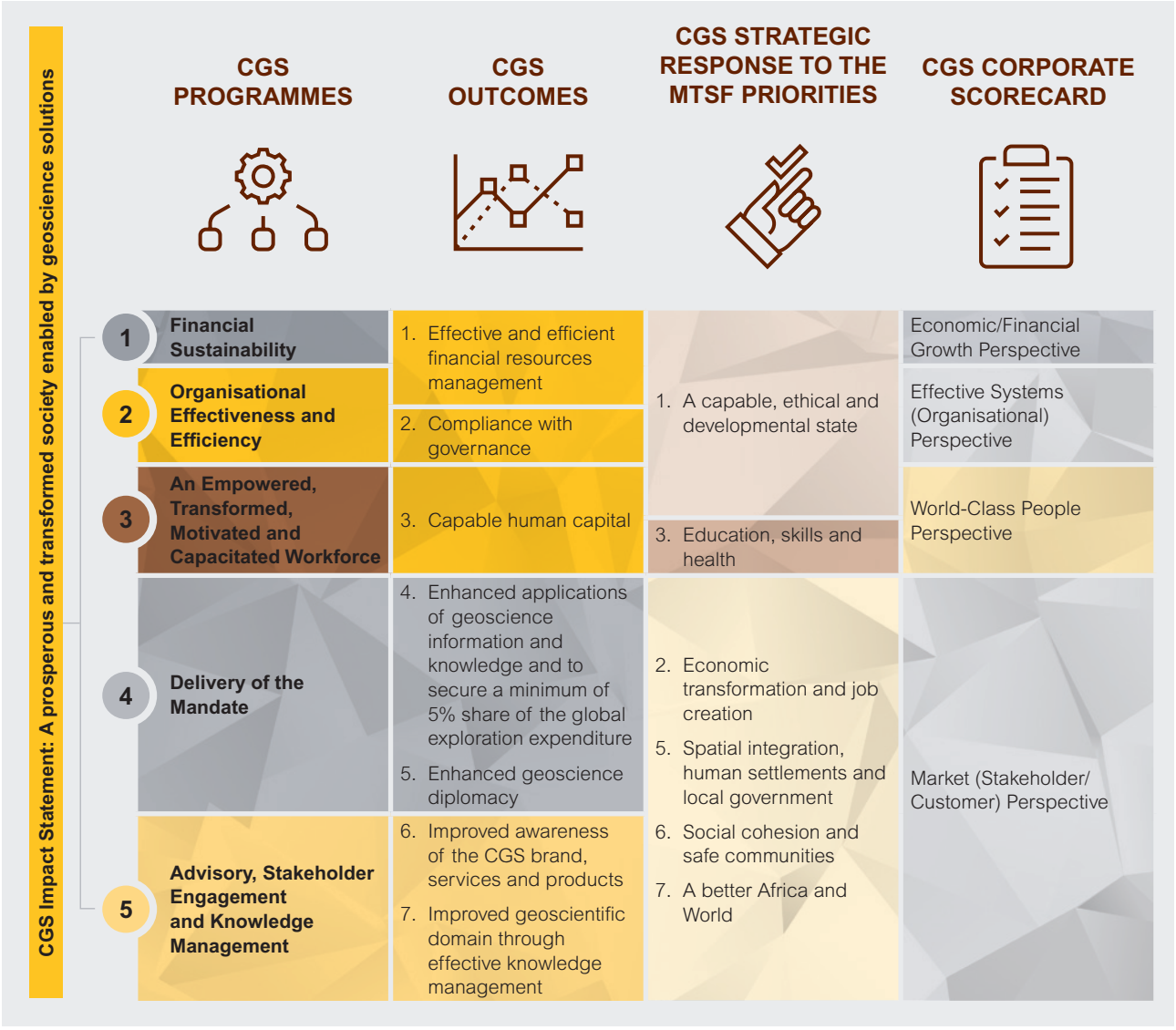


Figure 7: Summary of CGS programmes and links to MTSF 2019–2024 priorities and the corporate scorecard

The performance information of the CGS details its service delivery environment, broad service delivery disciplines, and the clients and stakeholders served. To evaluate the corporate performance of the CGS, the organisation has developed performance indicators, which, together with the performance targets for 2022/23, are summarised in Table 2. Achievement of the targets for the output indicators for each strategic programme for the financial year under review is also detailed in Table 2.

3.1 Corporate Performance Report for 2022/23

Table 2: Corporate performance report against the tabled APP for 2022/23

Economic/Financial Growth Perspective								
Programme 1: Financial Sustainability **Purpose: To ensure effective and efficient delivery of financial management services, to secure funding from the exploitation of collaborative activities and partnerships as well as to generate grant funding** **Institutional outcomes of programme 1: Effective and efficient financial resources management**								
Outcome	**Output**	**Output indicator**	**Audited actual performance 2020/21**	**Audited actual performance 2021/22**	**Planned annual target 2022/23**	**Actual achievement 2022/23**	**Deviation from planned target to actual achievement 2022/23**	**Reasons for deviations**
Effective and efficient financial resources management	Audited financial reports	1. Percentage of overhead costs to total costs	63.00%	54.90%	66%	60.65%	Not applicable*	Target achieved. Overhead expenditure increased in the financial year under review. The CGS was still able to contain overhead cost to below or at 66%.
	Audited financial reports	2. Percentage of personnel costs to total costs	64.03%	57.18%	70%	52.41%	Not applicable*	Target achieved. This is attributed to an aggressive investment towards building the CGS brand and business development activities implemented mainly in the third quarter, resulting in increased total costs, while staff cost remained fairly constant.
	Audited financial reports	3. Revenue from collaborative activities/ partnerships	R23.2m	R107.9m	R122.3m	R133.6m	+R11.3m	Target exceeded. Greater emphasis was placed on commercial projects to ensure that the CGS meets its targets.
	Audited financial reports	4. Grant revenue	R486.2m	R464.3m	R355.7m	R420.3m	+R64.6m	Target exceeded. This is due to the recognition of revenue from medium-term expenditure framework projects over and above the baseline grant allocation for the current year in an effort to reduce deferred income.

* Not applicable: The planned target was a range rather than an absolute figure.

Effective Systems (Organisational) Perspective								
Programme 2: Organisational effectiveness and efficiency **Purpose: To develop and implement effective and compliant policies, procedures and business processes in support of the CGS integrated service-delivery model, adhere to best practice to achieve sustainable governance as well as to provide and operate flexible, expandable and secure ICT solutions** **Institutional outcomes of programme 2: Effective and efficient financial resources management and compliance with governance protocols/regulations**								
Outcome	**Output**	**Output indicator**	**Audited actual performance 2020/21**	**Audited actual performance 2021/22**	**Planned annual target 2022/23**	**Actual achievement 2022/23**	**Deviation from planned target to actual achievement 2022/23**	**Reasons for deviations**
Effective and efficient financial resources management and Compliance with governance protocols/ regulations	Audited annual report	5. Number of audit qualifications	0	0	0	0	0	Target achieved. An unqualified audit outcome with no material findings (i.e. clean audit) has been attained for the year 2022/23. Concerted effort is made for continued improvement.
	Audited annual report	6. Percentage of total procurement spend on goods and services from small, medium and micro-enterprises (QSE and EMEs) in terms of PPPFA of 2017	40.75%	42.48%	35%	49%	Not applicable*	Target achieved. This performance is due to a deliberate focus and targeting to procure from EMEs and QSEs.
	Availability report	7. Availability of key enterprise services	100%	99.89%	99%	99.62%	+0.62%	Target exceeded. Through continuous improvements on the cybersecurity controls and technology investments during the reporting period, an overall 99.62% of key service availability was achieved.

* Not applicable: The planned target was a range rather than an absolute figure.

World-Class People Perspective								
Programme 3: An empowered, transformed, motivated and capacitated workforce								
Purpose: To attract and retain highly skilled scientific personnel in the geoscience industry; To build capacity in respect of geoscientific, administrative and managerial/ leadership skills while also developing innovative products, systems and services; to promote and invest in human resources transformation and diversity								
Institutional outcomes of programme 3: Capable human capital								
Outcome	**Output**	**Output indicator**	**Audited actual performance 2020/21**	**Audited actual performance 2021/22**	**Planned annual target 2022/23**	**Actual achievement 2022/23**	**Deviation from planned target to actual achievement 2022/23**	**Reasons for deviations**
Capable human capital	Human resources reports	8. Percentage of scientific staff with Master's or Doctoral degrees	40.47%	41.22%	40%	48.51%	+8.51%	Target exceeded. CGS management continues to invest in learning and development initiatives. As a result, there is a healthy pipeline of part-time bursars currently studying towards Master's and PhD qualifications.
	Human resources reports	9. Percentage of training expenditure to leviable amount of payroll	1.20%	2.33%	1%	1.93%	+0.93%	Target exceeded. CGS management continues to invest in staff learning and development initiatives.
	Human resources reports	10. Staff turnover rate	5.48%	4.99%	10%	7.89%	Not applicable*	Target achieved. CGS management continues to apply retention interventions such as learning and development initiatives.
	Human resources reports	11. Percentage of staff living with disability	2.25%	1.86%	1.6%	1.84%	+0.24%	Target exceeded. CGS management continues to encourage colleagues to disclose their disabilities and supports them in this regard.
	Human resources reports	12. EE statistics, scientific cohort (Female representation)	39%**	39%	46%	42.57%	-3.43%	Target not achieved. Recruitment process for some of the positions meant to be filled over the reporting period has not yet been finalised.
	Human resources reports	13. EE statistics, Senior management (Female representation)	New measure	New measure	50%	41.18%	-8.82%	Target not achieved. Three women have vacated their positions through either termination or promotional appointments, resulting in a decline in this statistic.
	Human resources reports	14. EE statistics, Top management*** (Female representation)	20%**	20%	40%	50%	+10%	Target exceeded. Two women were appointed to executive manager positions in the last quarter of the financial year under review to fill vacant positions.

* Not applicable: The planned target was a range rather than an absolute figure.

** Restated audited performance information of 2020/21 expressed as a percentage.

*** Top management in the audited performance for 2020/21 and 2021/22 were indicated as members of the CGS Executive Committee (EXCO).

Market (Stakeholder/Customer) Perspective								
Programme 4: Delivery of the mandate **Purpose: Execute the Integrated and Multidisciplinary Geoscience Mapping Programme** **Institutional outcomes of programme 4: Enhanced applications of geoscience information and knowledge and to secure a minimum of 5% share of the global exploration expenditure as well as enhanced geoscience diplomacy**								
Outcome	**Output**	**Output indicator**	**Audited actual performance 2020/21**	**Audited actual performance 2021/22**	**Planned annual target 2022/23**	**Actual achievement 2022/23**	**Deviation from planned target to actual achievement 2022/23**	**Reasons for deviations**
Enhanced applications of geoscience information and knowledge and to secure a minimum of 5% share of the global exploration expenditure and Enhanced geoscience diplomacy	Onshore geoscience maps	15. Onshore geoscience map coverage	9.03%	10.7%	12%	12%	0	Target achieved. Geological mapping is prioritised as it forms the basis of all value-added outputs.
	Offshore geoscience maps	16. Offshore geoscience map coverage	0.05%	0.05%	0.2%	0.11%	-0.09%	Target not achieved. The 3318CD Cape Town hydro-acoustic facies map was published in the fourth quarter of the year under review. Regrettably, the unfavourable sea weather did not permit adequate data collection and coverage across the remainder of the False Bay mapping sections. Additionally, the existing collaboration with the key external stakeholders could not be capitalised on yet, due to their prior commitments.
	Value-added geoscience outputs such as integrated reports, 3D models, innovative solutions, mineral systems and emplacement models	17. Applied geoscience outputs for minerals and energy	7	4	6	7	+1	Target exceeded. This performance is due to the fast-tracking of the implementation of the GTP projects, especially the CCUS project, together with the publication of an additional report generated from collaborative BRICS–NRF–CGS efforts.
	Value-added geoscience outputs such as integrated reports and 3D models, innovative solutions	18. Applied geoscience outputs for infrastructure, land use, health, groundwater and the environment	10	7	6	6	0	Target achieved through the implementation of the GTP.

Market (Stakeholder / Customer) Perspective								
Programme 5: Advisory, stakeholder engagement and knowledge management **Purpose: To improve stakeholder relations through collaborations with strategically aligned institutions, the private sector and the general public** **Institutional outcomes of programme 5: Improved awareness of the CGS brand, services and products as well as improved geoscientific domain through effective knowledge management**								
Outcome	**Output**	**Output indicator**	**Audited actual performance 2020/21**	**Audited actual performance 2021/22**	**Planned annual target 2022/23**	**Actual achievement 2022/23**	**Deviation from planned target to actual achievement 2022/23**	**Reasons for deviations**
Improved awareness of the CGS brand, services and products	Media articles	19. Number of articles published on media platforms	25	24	28	48	+20	Target exceeded as a result of the positive public relations and media coverage received at the Mining Indaba.
	Stakeholder survey report	20. Stakeholder satisfaction level	88.48%	66.4%	70%	79.4%	+9.4%	Target exceeded as a result of focussed and improved stakeholder engagements.
Improved geoscientific domain through effective knowledge management	Peer-reviewed articles published in scientific journals, book chapters and edited volumes	21. Number of peer-reviewed articles published	33	30	32	40	+8	Target exceeded. This performance is due to the aggressive approach applied to generate data and information on projects.
	Examples: memoirs, bulletins, books and atlases	22. Number of CGS publications	10	8	8	12	+4	Target exceeded. A total of 12 internal publications were produced. Some of these were the result of the CGS Geoscience Summit.
	Examples: abstracts, extended abstracts and conference papers and keynotes, etc.	23. Number of papers published in a conference proceedings	66	32	70	126	+56	Target exceeded. 126 papers published in conference proceedings were produced for 2022/23. The target was exceeded by 56 due to numerous post-COVID-19 conferences.

Table 3: Performance linked to budget

	2022/23			2021/22		
Programme/activity/objective	Budget R'000	Actual expenditure R'000	(Over)/ Under-expenditure R'000	Budget R'000	Actual expenditure R'000	(Over)/ Under-expenditure R'000
Programme 1: Financial sustainability	65 013	73 513	(8 500)	67 038	66 640	398
Programme 2: Organisational effectiveness and efficiency	102 080	115 427	(13 347)	105 260	104 635	625
Programme 3: An empowered, transformed, motivated and capacitated workforce	14 557	16 461	(1 904)	15 011	14 922	89
Programme 4: Delivery of mandate	386 418	436 941	(50 523)	398 456	396 089	2 367
Programme 5: Advisory, stakeholder engagement and knowledge management	15 631	17 675	(2 044)	16 118	16 022	96
Total	**583 699**	**660 017**	**(76 318)**	**601 884**	**598 308**	**3 576**

Strategy to overcome areas of underperformance

Strategies to overcome areas of underperformance include:

1) The finalisation of two (2) False Bay near-shore map sheets will be reprioritised during 2023/24, subject to favourable weather conditions and the availability of operational equipment. Additionally, the CGS will continue engaging with key external stakeholders for the utilisation of vessels to support accelerated data collection activities (especially for continental shelf and deep-marine environments).
2) The finalisation of the recruitment currently underway will be aligned with the scientific cohort target (taking into account the representation of women).
3) Efforts will be made to achieve the target on senior management (female representation) through recruitment currently underway as well as through the replacement of the three incumbents.

4 OPERATIONAL HIGHLIGHTS

4.1 Geoscience Technical Programme

The integrated and multidisciplinary approach of the CGS is the cornerstone of its GTP and aims to contribute to the following thematic areas: Minerals and Energy; Health, Groundwater and the Environment; Infrastructure and Land Use; Geoscience Innovation and Geoscience Diplomacy. The IMMP is currently implemented through the GTP, among other initiatives, and includes a collection of high-impact geoscientific research and mapping projects. In the year under review, the GTP comprised statutory and commercial projects. The highlights on the progress of the GTP during 2022/23 are discussed in the following sections.

4.1.1 Geoscience for Minerals and Energy Resources

The Geoscience for Minerals and Energy Theme of the CGS is a critical component of the annual output of the organisation. Its importance is reflected by the significant proportion of CGS resources directly allocated to this Theme, the key objective of which is to integrate various geoscience datasets towards the characterisation and evaluation of new and existing mineral systems. Furthermore, the Geoscience for Minerals and Energy Theme benefits from a legacy of more than 110 years of geoscience data collection, information and knowledge. These legacy datasets, together with newly acquired data, are being integrated in innovative ways, for example by using various kinds of machine learning protocols and targeted mineral system modelling. Importantly, the use of various satellite imagery forms a critical component of data integration. The fundamental rationale to this approach aims to increase South Africa's exploration expenditure and to accelerate the minerals and energy contributions of the CGS towards the country's socio-economic development.

A key premise of the CGS's Geoscience for Minerals and Energy Theme is that South Africa's geology and proven mineral potential are currently under-valued and, as a consequence, under-utilised. Their contribution to the achievement of the nation's socio-economic development goals is therefore currently suboptimal. South Africa is an international leader endowed with several key mineral resources, including battery minerals such as lithium, vanadium and cobalt, precious metals such as gold and the platinum group of minerals, and energy-linked resources such as coal, uranium, and natural gas. Integrated geoscience mapping in the past has expanded knowledge about the extent and inferred reserves of these resources while assisting in delineating possible new mineral extensions that warrant further investigation. These findings suggest that South Africa's minerals and energy industries play a more prominent role in contributing to the achievement of South Africa's socio-economic development goals.

Importantly, the planning and development of the CGS's Geoscience for Minerals and Energy Theme is very closely correlated with South Africa's NDP Vision 2030 and the numerous provincial and local embodiments of this plan, including various provincial and DDMs throughout the country. Focussed target regions are selected and anticipated to have a direct impact on key development goals. Moreover, the minerals and energy systems that are being researched and developed are notable both at a local and an international scale, relative to their supply, demand, and beneficiation criteria. These include key minerals that are deemed critical to future industrial and technological development. Several key projects within the CGS's Geoscience for Minerals and Energy Theme include on- and offshore geoscience mapping, base metal mapping, precious metal mapping, the just transition, CCUS, national geophysics test sites and the national petrophysics and geochemical databases projects.

During 2022/23, several key contributions were made towards South Africa's mineral and energy development aspirations. These include:

- Expanding South Africa's 1:50 000-scale onshore geoscience mapping coverage to 12%.
- Extended offshore data collection which aims to accelerate South Africa's 1:50 000-scale offshore coverage.
- The production of seven value-added minerals and energy outputs specifically focussing on base metals

in Limpopo and the Northern Cape Provinces, natural gas in the Karoo and research into CCUS.

- Finally, the results of minerals and energy research was published in several peer-reviewed journals and presented at a number of international conferences.

4.1.1.1 Onshore Geoscience Mapping

The CGS Onshore Geoscience Mapping Programme aims to increase the 1:50 000-scale onshore coverage of South Africa. During 2022/23, onshore coverage increased to 12% (Figure 8). The programme finds expression through the publication of maps from various parts of South Africa, including KwaZulu-Natal, the Eastern Cape, and the Northern Cape Provinces. Of specific interest, these maps cover critical mineral zones, including those deemed key to achieving South Africa's minerals and energy and large-scale infrastructure development objectives.

4.1.1.2 Offshore Geoscience Mapping

The Offshore Geoscience Mapping Programme of the CGS aims to map South Africa's offshore region in high-resolution (1:50 000 scale) in support of the development of the country's blue economy. South Africa's offshore exclusive economic zone is significantly large and mostly unexplored. Extensive mapping is required to characterise this zone to inform development planning requirements. The CGS has therefore embarked on an extensive campaign to map this zone. Key focus areas identified include the near-shore region, the continental shelf, and the deeper marine region. To date, work has focussed on the continental shelf and the near-shore. Offshore mapping has focussed on defining the seafloor using a multibeam echosounder, pinger sub-bottom profiler and a boomer sub-bottom profiler. The acquired data are processed using improved codes and algorithms specifically targeted for seafloor research.

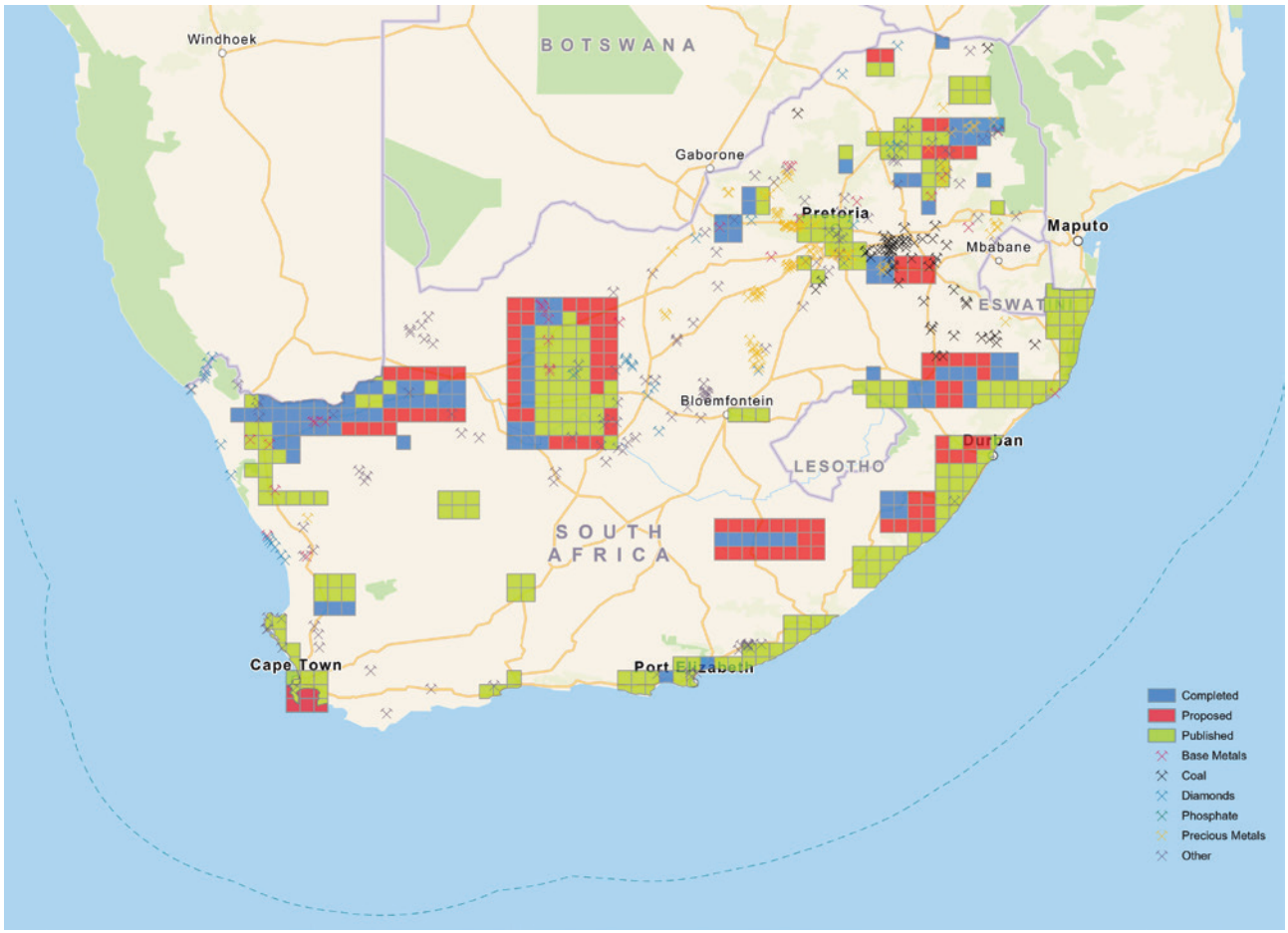


Figure 8: Progress made on national onshore map coverage by the end of 2022/23

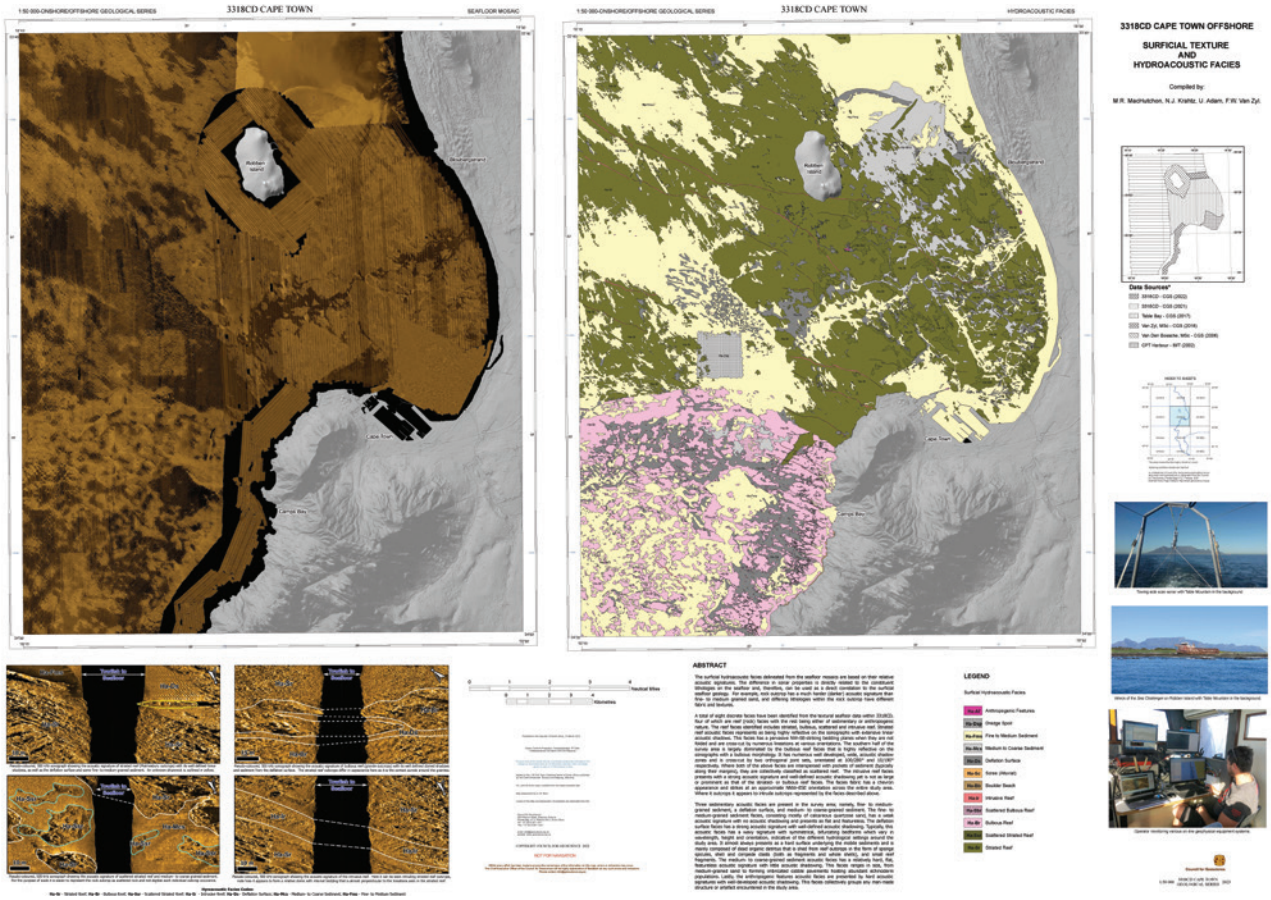


Figure 9: 1:50 000-scale offshore geological coverage around Cape Town

During 2022/23, offshore coverage increased to 0.11% (from 0.05% reported in previous years). Work largely focussed on the publication of the 3318CD Cape Town offshore map (Figure 9) in the Table Bay region. The high-resolution data produced includes multibeam bathymetry, surficial texture, and hydroacoustic facies maps. These products provide information on the seafloor along South Africa's near-shore environment and will assist in offshore development, including port expansion and the development of near-shore infrastructure.

4.1.1.3 Base Metals Mapping

The CGS's Base Metal Mapping programme aims to develop the fundamental and necessary geoscience data and information to support the characterisation and development of base metals in South Africa. Importantly, this data focusses on increasing mineral exploration expenditure in South Africa on mineral systems such as copper-lead-zinc, copper-nickel-cobalt, nickel-chrome, iron-vanadium-titanium, lithium-REEs (rare-earth elements) and phosphate-fluorite. These are metals that have a wide range of applications in technological and industrial development, both nationally and internationally. Focus areas for the financial year under review were in the Northern Cape, the North West, Gauteng, Limpopo, KwaZulu-Natal and Eastern Cape Provinces. In the Northern Cape Province, integrated work has focussed in Namaqualand, and specifically on copper-lead-zinc in the vicinity of Aggeneys, nickel-chrome around Kenhardt and phosphate-REEs in the vicinity of Kakamas. Work in the North West Province considers nickel-chrome and platinum group metals closely associated with ultramafic sequences of the Bushveld Complex. Other focus areas include copper-nickel-cobalt in the Eastern Cape Province and potential nickel-REE resources in Limpopo Province.

During the year under review, several key geoscience layers were produced contributing to the characterisation of mineral resources and an improved understanding of regional mineralising systems. The output includes various 3D models, mineralising maps and integrated reports (Figure 10) and the publication of reports on Fe-Ti-V, Sn-F-REE and PGE mineralisation.

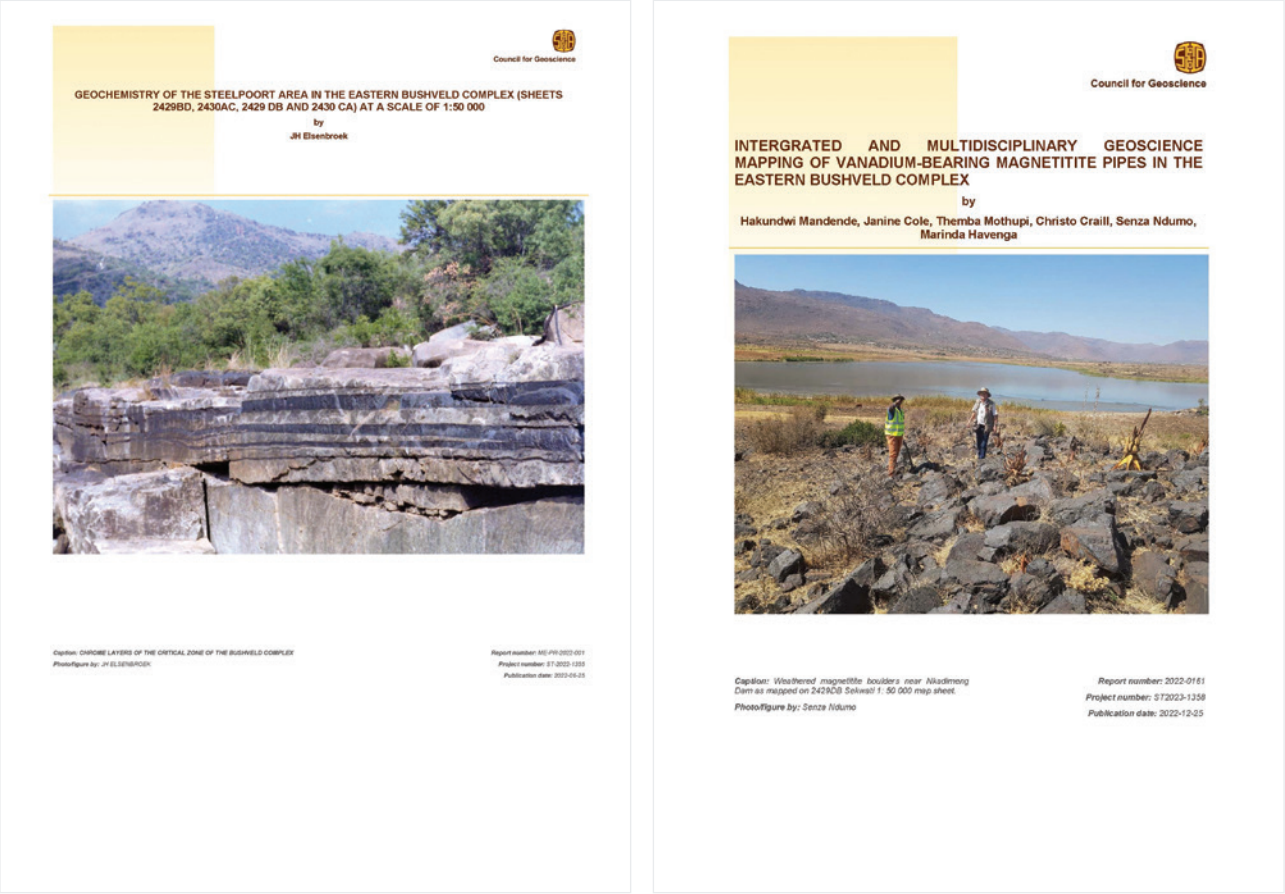


Figure 10: Examples of integrated reports produced for the CGS Base Metals Mapping Programme in the Bushveld Complex

4.1.1.4 Precious Metals Mapping

The Precious Metals Mapping Programme of the CGS aims to undertake fundamental research across selected precious metal provinces in South Africa. During 2022/23, this work focussed on precious metals in KwaZulu-Natal, Limpopo and Mpumalanga Provinces.

Several key geoscience layers, including various preliminary 3D models to better understand structural controls and lithological correlations, mineralising maps, and integrated reports, were produced to achieve the characterisation of these resources (Figure 11). Crucially, revised preliminary resource estimations of gold in the Giyani Greenstone Belt were undertaken and the potential extension of the Sabie-Pilgrim's Rest goldfield was delineated.

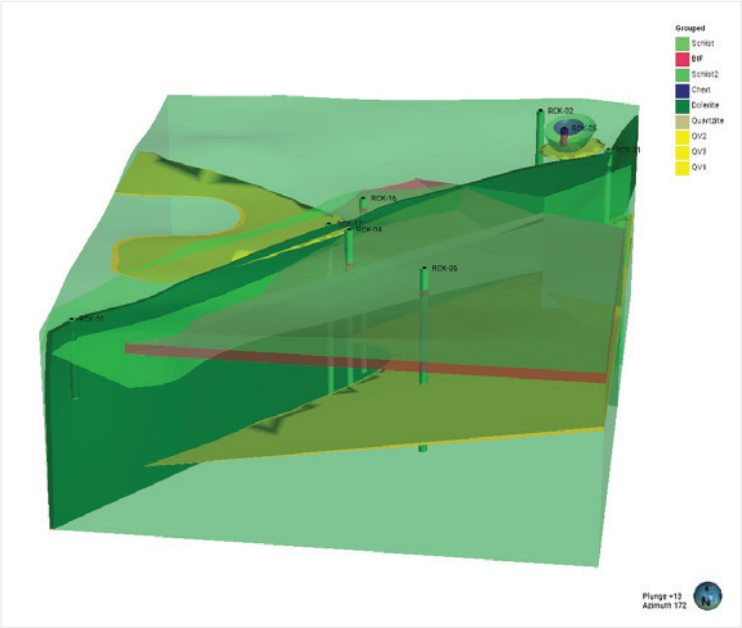


Figure 11: 3D implicit geological model of the Khakhala area in the Giyani Greenstone Belt

4.1.1.5 Just Transition

The CGS's Just Transition Programme aims to undertake fundamental research with a view to supporting South Africa's just transition towards a low-carbon economy.

The Just Transition Programme of the CGS continues to develop the fundamental and requisite geoscience data and information to support the characterisation and development of energy-linked resources in support of South Africa's just transition. The project encompasses various hydrocarbon and other natural gases in the Karoo region as well renewable energy resources, such as geothermal systems.

During 2022/23, work focussed on energy-linked systems in the Eastern Cape, KwaZulu-Natal, Northern Cape, and Mpumalanga Provinces. Several key geoscience layers were produced in the context of this national imperative. These included various mineralising system models of key energy-linked resources, such as hydrocarbon and battery-linked minerals and renewable resources such as geothermal energy systems. Crucially, this also included the publication of a value-added report on natural gas in the Karoo (Figure 12).

Figure 12: Karoo Deep Drilling and Geo-environmental Baseline Programme value-added report published in 2022/23

4.1.1.6 Carbon Capture, Utilisation and Storage

South Africa's continued development hinges significantly on the country's ability to generate a sustainable supply of energy to meet national demands. South Africa historically, and at present, generates the bulk of its energy supply from fossil fuels, primarily coal. The country is endowed with vast quantities of coal and is one of the world's largest coal producers. Furthermore, coal is critical to South Africa's socio-economic development. The coal industry is one of the largest employers in the mining industry and a major contributor to the country's gross domestic product. Moreover, within the context of the post-COVID-19 economic recovery, coal has grown to be one of the most significant contributors to South Africa's mining economy. South Africa has committed to reducing greenhouse gas emissions, but with coal being the most significant contributor to greenhouse gas emissions, the Government has called for the development of innovative solutions to help South Africa transition towards a low-carbon economy. The shift from coal cannot be absolute; there is a need for a just transition. This is critical to ensure that those communities that rely on coal for their livelihood are not negatively affected by this transition. Moreover, the energy transition will not be immediate and therefore a sustainable solution is needed. Globally, CCUS is considered to be this solution. In supporting this national project, the CGS will conduct research to establish South Africa's first pilot anthropogenic carbon dioxide underground storage site, so that South Africa's energy and national development needs continue to be met, while the country still contributes effectively towards combatting climate change.

In previous financial years, CCUS focussed on finding suitable sites in South Africa, based on existing borehole data. This evaluation, for the first time, found that South Africa has exponentially more CCUS potential than previously considered. Specifically, there is significant potential in Mpumalanga and Gauteng Provinces. This was an important discovery as it will fundamentally change South Africa's energy future. Furthermore, the implementation of the utilisation component of CCUS implies there are several innovative solutions that can support this work. During 2022/23, research focussed on finalising the geological characterisation of a proposed injection site in the Govan Mbeki Municipality, Mpumalanga Province. This included finalising geological mapping, reservoir characterisation, structural investigations, and hydro-environmental baseline studies. Also included was the publication of two mineralogy and petrography reports on the reservoir and cap rocks of the proposed injection zone (Figure 13). The findings suggest that the proposed reservoir can indeed support the injection of anthropogenic carbon dioxide.

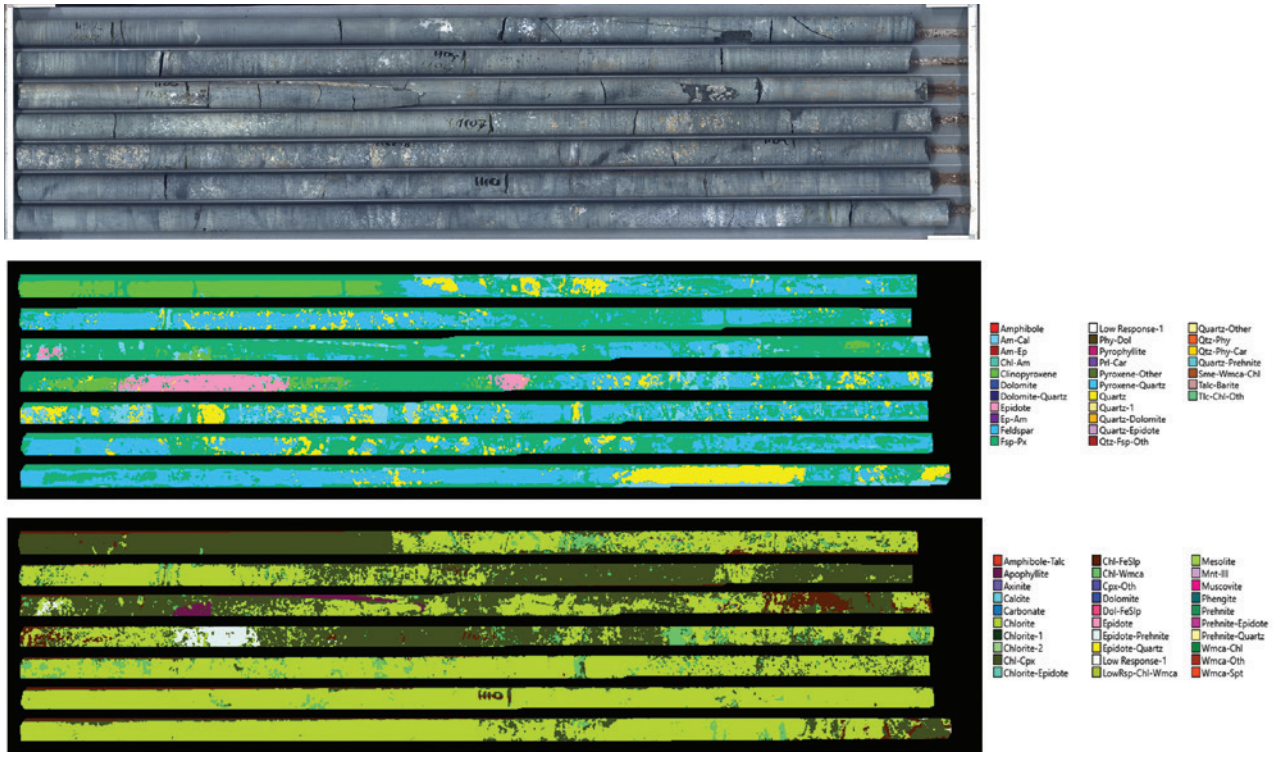


Figure 13: Hyperspectral mineral map collage of Klipriviersberg Group basalt cap rock units from CCUS borehole core samples

4.1.2 Geoscience for Infrastructure and Land Use

The Geoscience for Infrastructure and Land Use Theme provides for the mapping and characterisation of geological hazards at various scales across the country. The geoscience information is analysed to identify safe and sustainable human settlement areas, sustainable land use and to provide scientific evidence in support of optimal infrastructure development. In further support of attaining these objectives, the Constitution of South Africa and section 5.1(eA) of the Geoscience Amendment Act (No. 16 of 2010) holds that the CGS must "review and evaluate all geotechnical reports in respect of geohazards that may affect all infrastructure development at prescribed tariffs".

In line with NDP Vision 2030, the objective of the theme is to facilitate effective infrastructure and land development. A number of developmental acts and agencies, such as the Municipal Infrastructure Support Agency, the Disaster Management Act, the Spatial Planning and Land Use Management Act, the National Building Regulations and Building Standards Act and the Critical Infrastructure Bill, also create an enabling environment for the theme to support national imperatives. This theme not only provides geoscience information and input for infrastructure development, but also supports South Africa's economic development of mineral, upstream petroleum (i.e. oil and gas) and water resources as well as the DDM. Among the country's natural (geological) hazards are included a high risk of subsidence in dolomitic terrains, damage and destruction as a result of earthquakes, landslides and floods, all of which may have a significant impact on the economy, property, lives of people and key infrastructure developments. The CGS strengthens the nation's ability to manage the impact of natural (geological) hazards by collecting geoscience information and building early warning systems and geoscientific knowledge that can reduce hazard impacts. Project highlights supporting infrastructure and land-use planning are detailed below.

4.1.2.1 National geohazards mapping programme

The National Geohazard Mapping Programme is a multiyear initiative aimed at integrating contributions from various disciplines to improve our understanding of geohazards and their impact on infrastructure, land use and community safety across South Africa.

The work in 2022/23 for this project was conducted under five subthemes:

1. Seismic hazard and risk-related studies (seismic risk modelling of the City of Johannesburg, palaeoseismic and seismotectonic studies of the Tugela region and the Karoo Basin, ground motion and mine seismology studies).
2. Dolomite hazards and risk-related studies (dolomite hazard mapping of Gauteng).
3. Landslide hazard assessments (KwaZulu-Natal [eThekwini] detailed inventory and updated modelling post-April 2022 disasters).
4. Geotechnical mapping (geotechnical mapping of April 2022 disaster-affected regions across the Eastern Cape).
5. Tsunami hazard assessments (establishing a regional hazard assessment methodology for tsunami hazard assessments).

Following the April and May 2022 landslide and flooding disasters across the KwaZulu-Natal Province, the CGS undertook various field surveys to record and characterise landslide occurrences to update models of the region to better characterise regions highly prone to landslides. This work resulted in an updated inventory of historical and recent landslide occurrences, and the re-modelling of the eThekwini Metropolitan region (Figure 14), incorporating newly compiled and updated 1:50,000 scale surface geological maps. Additionally, a first-ever inventory and landslide susceptibility map was modelled for the Ndwedwe Local Municipal region directly north of eThekwini. In both instances, correlations between modelled landslide susceptibility zones and recorded landslide occurrences were highly satisfactory. Further work commenced to detect large-scale ground movement prior to mass movement using InSAR satellite technology. A methodology is being developed to achieve this, which will be implemented within the next two years.

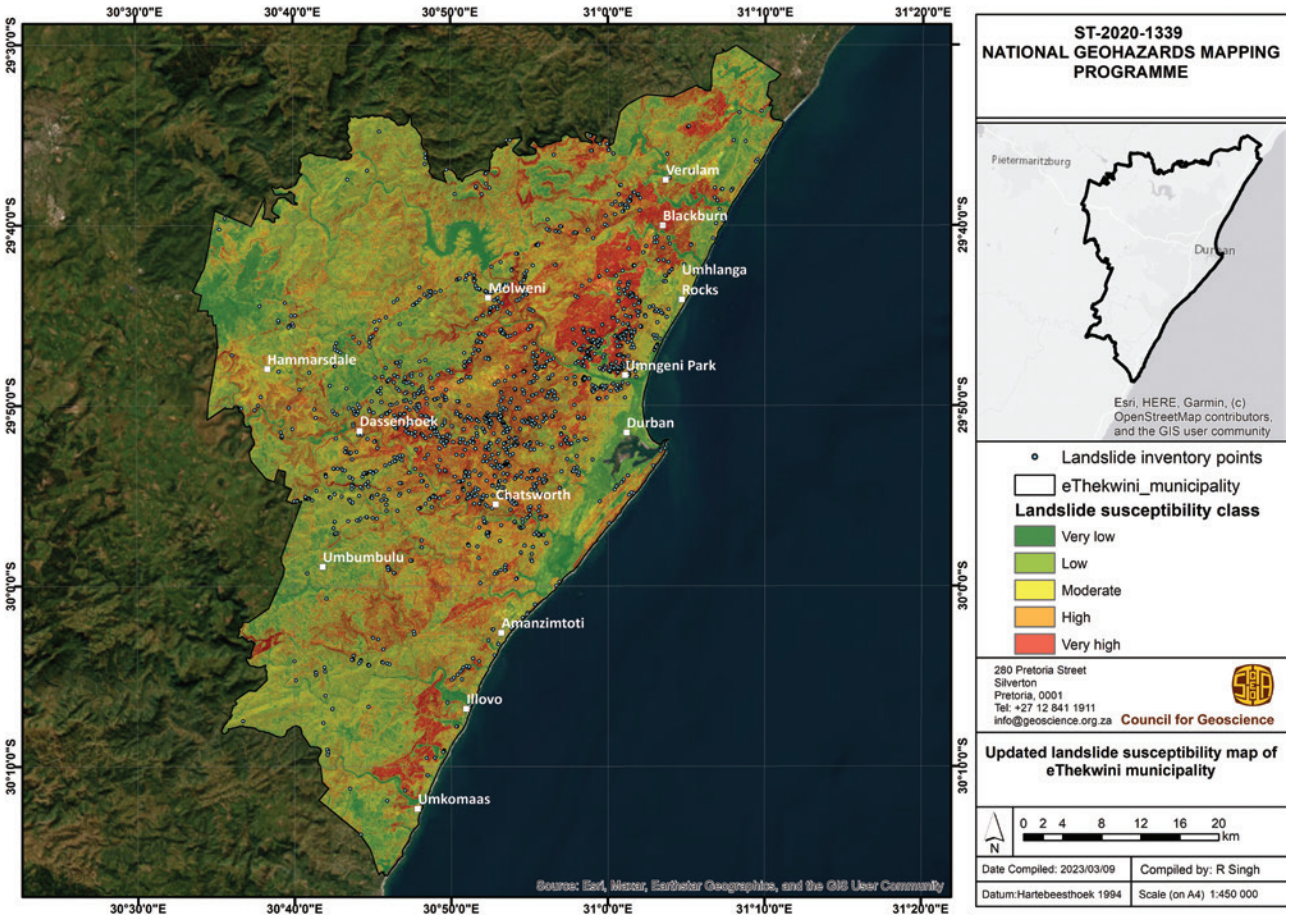


Figure 14: Updated landslide inventory (white dots) and susceptibility modelling for the eThekwini metropolitan region following the April 2022 landslide disasters, incorporating newly compiled 1:50 000 scale surface geology information and landslide occurrences

Furthermore, to assist local authorities with land development planning prior to development and to avoid future disaster occurrences, the CGS is currently undertaking 1:10 000 scale geotechnical mapping in specific regional municipal settings. During the financial year under review, a portion of land across the Port St. Johns Local Municipal areas was assessed, following consultations with the local authority and the April 2022 disasters. Development-scale preliminary geotechnical assessments were undertaken which serve as a valuable tool for future land-use planning and management of current infrastructure and development. This key focus area is furthermore enhanced by the continued research into local-scale characterisation of subsidence-prone regions on dolomitic land, and more refined characterisation of seismic sources and subsequent associated risk determinations.

4.1.2.2 Materials for infrastructure development

This project focusses on assessing naturally occurring hard rock materials for use as aggregates in road and railway construction and the concrete industries. Furthermore, research is undertaken to determine the feasibility of basalt fibre manufacturing in South Africa as a potential emerging industrial composites market.

The CGS compiled a national construction materials database based on an assessment of available published data sources, published literature, remote sensing, and field mapping and verification. The consolidated and updated national map of active and abandoned quarries is depicted in Figure 15. Additionally, geological characteristics, in combination with an existing geotechnical laboratory analysis undertaken by the CGS for construction material purposes, were summarised for all Provinces across the Country. The results will serve as a geological basis for future construction material exploration and source development, in combination with the updated national quarries map. In furthering laboratory-scale analysis on the geotechnical properties of construction materials, additional testing was undertaken to improve the quality of marginally suitable aggregates. Preliminary analysis of

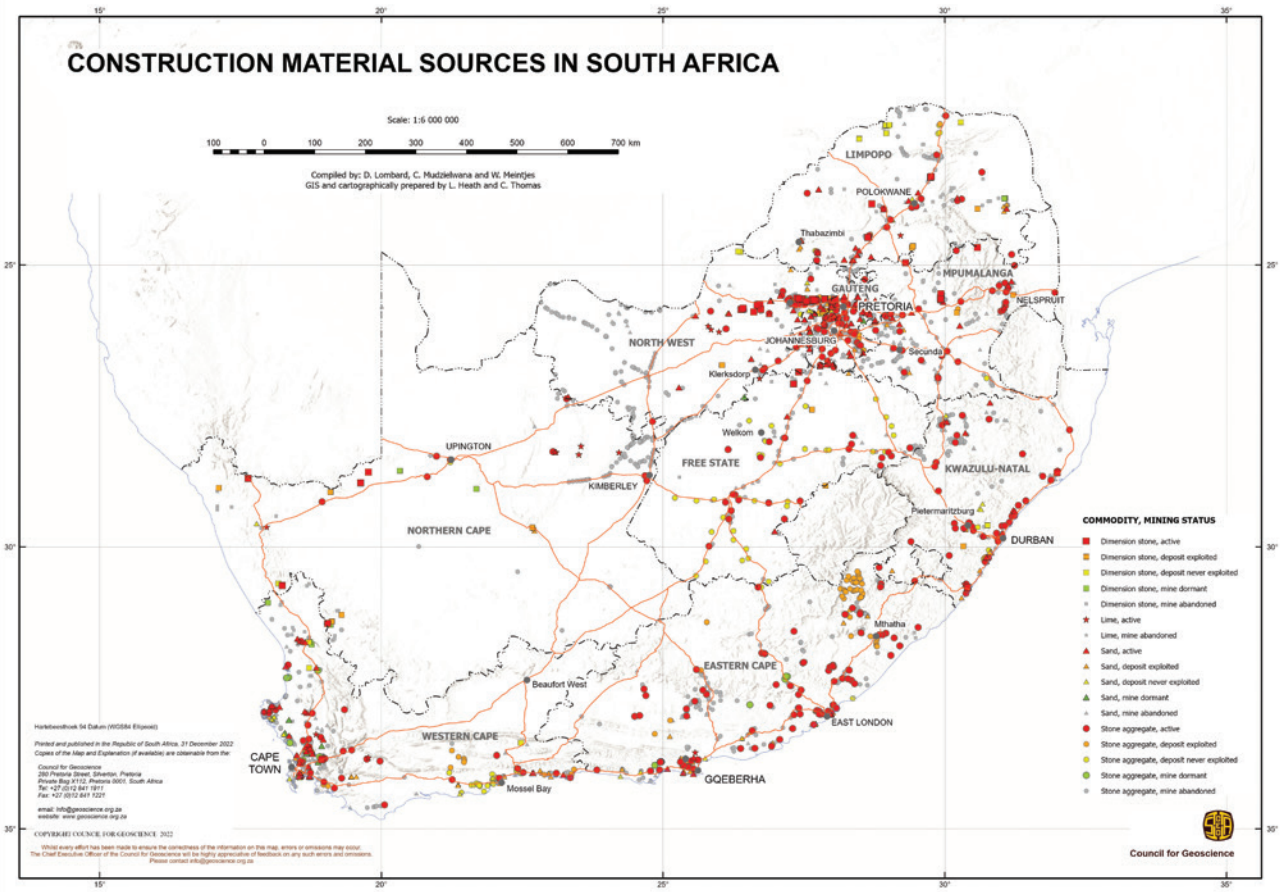


Figure 15: Updated South African quarry database (revised/audited data from the CGS South African Minerals Database, DMRE, SANRAL, ASPASA, CGS field mapping, and Google Earth imagery)

available blend testing results indicates a wide variability of characteristics, which underscores the differences in rock types and sites. The current results show many areas of interest for improved marginally suitably quality aggregate based on its physical characteristics, such as composite angularity, water absorption, crushing strength, and resistance to impact.

4.1.2.3 Seismic monitoring and network maintenance

As part of discharging its legislative mandate to establish and maintain a national seismograph network, the CGS continued to analyse seismicity across South Africa. Results from routine seismic monitoring conducted as part of the analysis of waveforms from the South African National Seismograph Networks (regional, mining clusters and client-owned networks) between January 2022 and February 2023 resulted in an update to the databank by the addition of 4 039 and 5 501 epicentral solutions, respectively. The majority of the seismic signals originated in the open-cast mining areas of the Republic (from the regional networks) and the far West Rand (82% of all mining-related events). Tectonic earthquakes within South African borders and off-coast regions totalled 674.

A number of 'felt-earthquakes' were also reported during the financial year, which the CGS investigated on a quantitative basis by engaging local communities. Further improvements were made in the routine analysis methodologies to include fault slippage analysis (i.e. focal mechanisms). Of note during the financial year under review, the CGS continued its collaboration with various mining regions in assessing mine-related seismicity, with a specific focus on creating an integrated seismological database.

4.1.3 Geoscience for Health, Groundwater and the Environment

Mining is a relatively mature sector that has historically boosted the South African economy but has, to some degree, left environmental legacy challenges in need of urgent attention. The social and economic well-being of communities is related directly to the health of the environment where they live, produce their food and work. The focus of mining worldwide is shifting towards exploration and exploitation, with greater emphasis being placed on environmental stewardship. As a water-scarce country, South Africa faces significant challenges in regard to the availability and provision of water, exacerbated by a limited understanding of water resources. The development of communities, agriculture and mineral and energy resources depends on the availability of and knowledge about water resources.

The Geoscience for Health, Groundwater and the Environment Theme promotes environmental stewardship, particularly in areas prone to contamination through activities such as mineral exploration and exploitation. Under this theme, sources of groundwater are identified and delineated for communities, industries and agriculture. Interventions such as artificial groundwater recharge are also considered as a continued subject of scientific research. This theme comprises several projects, including the MEWMP and the management of State-contingent liabilities with respect to derelict and ownerless mines – now termed Integrated Research into Mine Closure (IRMC).

4.1.3.1 Mine and Environmental Water Management Programme

The MEWMP was conceived to contribute to the sustainable management of mine-impacted water. The programme carries out research and implements preventive measures focussing mainly on ingress control and remediation technologies including passive treatment system. Following the successful implementation of the Van Ryn canal, monitoring data have proven that the canal prevents potential mine water discharge in the Eastern Basin, while the Western and Central Basins have indeed experienced discharge in the 2022/23 rainy season. It is estimated that the Van Ryn canal intervention alone contributed to the prevention of water contamination in the region of 40ML/day, with an anticipated annual cost saving of around R59 million from a mine-water treatment perspective. For the reporting financial year, three additional canals were reviewed in preparation for their implementation in the Central Rand in the coming financial year.

Integrated Research into Mine Closure

The focus of the Integrated Research into Mine Closure (IRMC) project is twofold: support of the National Mine Closure Strategy (NMCS) and research into pre- and post-closure planning. Following the gazetting of the NMCS, the implementation plan was completed, taking into account research outcomes and comments resulting from the consultation process. The research component of the project aims to assess the potential post-mining use of mining regions. Investigations are being carried out into soil, air and water quality and other physical properties such as ground stability. In the financial year under review, the extent of post-mining subsidence

was investigated in the Klerksdorp–Orkney–Stilfontein–Hartebeesfontein (KOSH) area and in Mpumalanga Province. This is an ongoing project and the integrated products will be presented in coming financial years.

Groundwater Assessment and Management

The CGS has undertaken hydrogeological mapping with the aim of understanding groundwater resources around areas of strategic minerals and energy projects. Understanding groundwater resources will assist in ensuring sufficient monitoring and protection during the exploitation of minerals and other activities such as carbon capture injection and storage. In the financial year under review, mapping focussed on Mpumalanga and KwaZulu-Natal Provinces, with both areas related to the CCUS project. Three 1:50 000-scale maps were completed in the vicinity of Delmas, Jozini and Evander.

Application of groundwater modelling is a developing field in the CGS and finding expression in various projects such as regional groundwater assessments and the IRMC. Increased testing is being undertaken and applications being developed continue to improve the confidence of the risk maps and groundwater-potential maps based on AI. In the light of increasing water scarcity and associated risks, geoscientific investigations into managed aquifer recharge are increasingly focussing on the identification of areas where managed aquifer recharge can be applied.

4.1.4 Geoscience Research and Innovation

The Research and Innovation Programme of the CGS aims to develop innovative and efficient workflows to streamline the processing and interpretation of geoscience data and information in support of the CGS's mandated objectives and research programmes.

The Geoscience Research and Innovation Theme fosters the conversion of ideas into actionable solutions to solve some of the country's most pressing societal challenges, such as water scarcity, poverty and safe and sustainable development. Datasets (geology, geophysics, geochemistry etc.) are being collected and accumulated across a wide variety of geoscience fields at a dramatic pace, creating an urgent need to generate new computational theories and tools to extract useful information (knowledge). The theme also investigates the application of modern technologies such as AI and machine learning methodologies in knowledge extraction. This endeavour will undoubtedly improve the speed, efficiency and accuracy of the knowledge extraction process.

During 2022/23, the Geoscience Research and Innovation Programme focussed on the development of software to support the processes of various spatial datasets, such as seismicity and the establishment of the digital twin modelling of selected South African geoscience environments.

4.1.5 Geoscience Diplomacy

The geographical vagaries of the planet's surface place it beyond the borders and jurisdiction of any single State or entity. As the permanent Secretariat of the OAGS, the CGS uses the Geoscience Diplomacy Theme as a key vehicle to forester international relations, especially across the African Continent, in building capacity and enabling collaboration. In line with one of the bold priorities of the sixth administration of **'A better Africa and the world'**, the CGS has a history of collaborating with various African countries through geoscience mapping, institutional reform, map compilation and other services.

The Geoscience Diplomacy Theme creates an enabling environment for the achievement of national imperatives. Crucial components of the theme are human capital building through the development of geoscientific, administrative and managerial/leadership skills and the creation of innovative products, systems and services. The establishment of the African continental free-trade area, an African Union initiative, offers invaluable opportunities to place South Africa on a path of investment-led trade and collaboration with other African countries to develop continent-wide industrial capacity.

The theme supports broad international geoscientific developmental goals and requirements, particularly of African communities. The CGS Geoscience Diplomacy Programme aims to undertake integrated and multidisciplinary geoscience research and development across Africa in support of allied developmental imperatives.

During 2022/23, work focussed on finalising programmes in Eswatini, Namibia and Malawi, including the production of various integrated geoscience datasets in support of various mineral and energy developmental imperatives. Moreover, this programme saw various technical support to diplomatic missions undertaken to South Sudan, Ivory Coast and Niger, with a view to finding areas of common benefit and applying innovative geoscientific techniques to accelerate development.

5 GEOSCIENCE KNOWLEDGE AND INFORMATION MANAGEMENT SERVICES

Prudent geoscience knowledge management, including the curation of the CGS mineral and fossil collection, borehole cores, digitisation of analogue records and the dissemination of related data and information, continues to be key in the organisation's performance. The implementation of the GTP substantially relies on new and existing high-quality data and information. Therefore, it is important to ensure that data are curated and preserved prudently and are available when required. The vast physical collections under the custodianship of the CGS are an integral part of the organisation's project-specific activities. This information must thus be updated and revitalised from a scientific and heritage perspective.

The digitisation programme was significantly improved (achieving 172% against the 100% target) by an intensification of the programme which saw the addition of 2 158 geoscientific maps which had been held at the regional offices. Unfortunately, the assessment of the geoscientific repositories did not yield the desired results due to staff resignations. Ultimately 53.4% was achieved against an initial target of 60%. Nevertheless, an assessment of the extensive collection of micropalaeontological and palynological material was carried out. These materials were systematically collected from all Phanerozoic lithostratigraphic successions and loosely consolidated deposits from all over South Africa and its offshore coastline. These collections make an important contribution to economic recovery programmes in South Africa, as the fossils are associated with valuable stratigraphic data in known hydrocarbon-bearing successions. Collectively, the data can be used to deduce biostratigraphic correlations and to better understand hydrocarbon plays and carbon storage sites, both onshore and offshore.

To further contribute to the national geoscience body of knowledge, CGS continues to implement borehole core recovery campaigns. In particular, notable core was scanned using the CGS hyperspectral scanner and stored at the National Borehole Core Depository in 2022/23. This core was collected from the CGS Karoo Deep Drilling (KDD) Programme, the CCUS Programme and from the well-preserved sedimentary Moodies Group in the Barberton Mountainland. However, the project only achieved 66.7% completion in the financial year owing to challenges associated with finding a service provider to assist. A recovery plan is currently being devised for the new financial year to achieve an improved knowledge management outcome.

6 INFORMATION AND COMMUNICATIONS TECHNOLOGY

During 2022/23, the following key ICT activities were undertaken to improve the effectiveness and efficiency of the CGS.

6.1 Availability of key enterprise services

ICT value is created by providing a connected information community with effective and efficient access to geoscience information and services. For the period under review, various ICT solutions, maintenance, assessments and monitoring measures contributed to an overall achievement, on average, of 99.62% service availability, which is slightly above the scorecard target of 99%.

The overall efficiency and effectiveness of the CGS was enhanced through, among others, the provision of new end-user equipment (computers and laptops).

6.2 Cybersecurity and technological enhancement

6.2.1 Cybersecurity

During 2022/23, various policies and protective cybersecurity mechanisms remained in place to protect CGS assets and the CGS continued to maintain and improve cybersecurity. Various cybersecurity assurance providers such as the State Security Agency Cyber Centre continued to perform security assessments on CGS ICT infrastructure and systems to mitigate potential vulnerabilities.

To further strengthen the CGS's cybersecurity, additional investments were made in the deployment of advanced cybersecurity technologies, such as secure messaging and sending large files, to strengthen the protection of data in transit. An additional firewall was implemented at the regional offices (for example Polokwane) to enable more advanced monitoring of the cyberspace and introducing an additional defence layer against potential cyber threats. A cybersecurity user awareness programme was also rolled out to educate CGS staff on emerging cyber threats and the role of each staff member in maintaining the CGS cybersecurity posture.

6.2.2 Technological enhancement

Additional firewalls were sourced to improve cybersecurity at three sites (Gqeberha, Polokwane and the National Borehole Core Depository). A software-defined area network was set up to connect the CGS head office with the Polokwane and National Borehole Core Depository sites.

The network enhancement achieved improved organisational effectiveness by reducing operational costs (for example offsite backup, data connectivity and virtual private network management between multisites) as the various sites are able to use the existing head office internet connectivity and second disaster recovery site. Thus, ICT resource usage was improved through this deployment at multiple sites. The CGS network was improved by the addition of a second disaster recovery site.

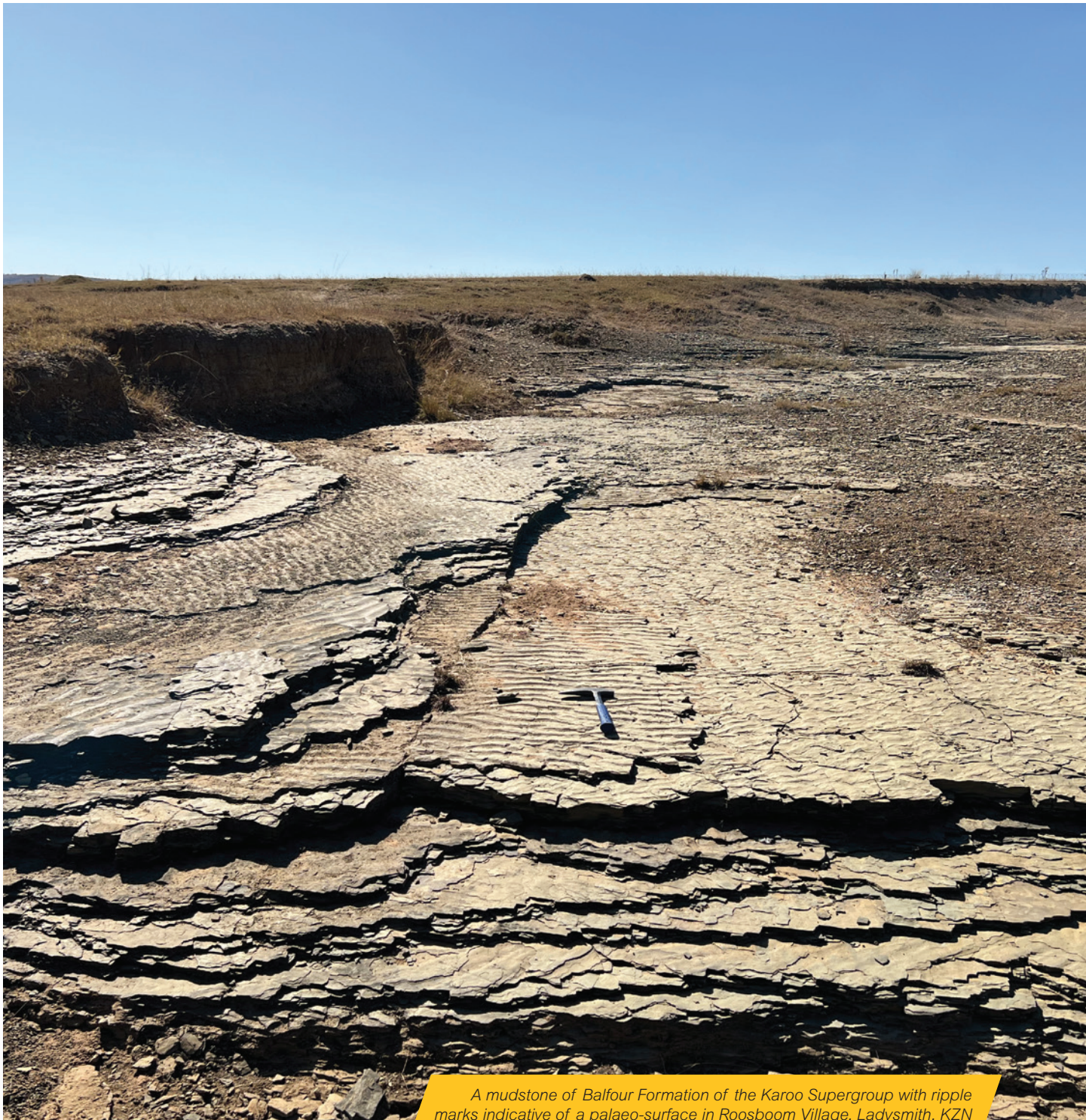
During the financial year under review, the implementation of enterprise resource planning progressed with supply chain management; e-procurement; fleet management; contract management; customer relationship management; inventory management modules and associated custom development being completed and signed-off by the end-user community. The completion of these modules forms part of efforts to continuously improve the CGS operational efficiencies. The implementation remains a work in progress.

During the review period, CGS also revamped its website and intranet. The modernised CGS website now incorporates, among others, enhancements such as e-commerce to streamline electronic sales and disseminate intellectual property products (e.g. maps) of the CGS. This is in line with phase one of the application of the Geoscience Act Regulation relating to the collection of geoscience data and information. In addition, the CGS has developed a mobile application to modernise the publication of geoscience information. The launch of the new website, intranet and mobile application will take place in 2023/24.

The provision of a mobile application, revamped website and intranet will translate into improved CGS efficiency and effectiveness. The revamped website and mobile application are crucial to the digital transformation of the CGS's public service delivery and to facilitate effective information dissemination between the CGS and the geoscience community.

6.3 Business continuity

During 2022/23, the CGS conducted various business recovery tests as part of its strategy to create awareness and to identify areas of improvement and remediation. The disaster recovery plan was updated.



A mudstone of Balfour Formation of the Karoo Supergroup with ripple marks indicative of a palaeo-surface in Roosboom Village, Ladysmith, KZN

7 GEOSCIENCE RESEARCH OUTPUTS

The CGS disseminates the results of its research to stakeholders via a publication series, including memoirs, bulletins, explanations, annual reports, media articles, conference proceedings and maps. These products are presented in sections 7.1 to 7.3. By refocussing on its mandate and the acquisition of new multidisciplinary data, the CGS forged new external collaborations and partnerships and was able to produce additional publications.

7.1 CGS publications

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2. H. Mandende, J. Cole, T. Mothupi, C. Craill, S. Ndumo and M. Havenga (2022). Bulletin 161: Integrated and multidisciplinary geoscience mapping of vanadium-bearing magnetite pipes in the eastern Bushveld Complex. (Confidential).
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6. Geoclips volume 67, September 2022, 23 pp.
7. Geoclips volume 68, December 2022, 18 pp.
8. Geoclips volume 69, March 2023, 15 pp.
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10. T. Dhansay, N. Hicks, N. Moabi, H. Coetzee and N. Mukosi (2022). Evolution of the Kaapvaal Craton. Geological field guide. Geoscience Summit field trip.
11. R. Singh, G. Chiliza and M. Ncume (2022). Geomorphological and geological controls of landslides, eThekwini Metropolitan Municipality. Geological field guide. Geoscience Summit field trip.
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7.2 Peer-reviewed articles

(CGS staff are indicated in bold)

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2. **Cawthra, H.C.**, **Brandt, M.B.C.**, **Hicks, N.** and **Khoza, D.** (2023). Comments on Singh *et al*. (2022) Marine seismic surveys for hydrocarbon exploration: What's at stake? South African Journal of Science, 119(3/4). https://doi.org/10.17159/sajs.2023/14514.
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4. Cooper, A., Smith, A., Rishworth, G., Dodd, C., Forbes, M., **Cawthra, H**. and Anderson, C. (2022). Microbialites of modern siliciclastic rock coasts. Journal of Sedimentary Research, 92, doi: 10.2110/jsr.2021.071.
5. Cooper, G.D., Morris A., **Botha, G.**, Titshall. L., Burgdorf. R.J. and Rozanov, A. (2023). The role of landscape and parent material on regolith under timber plantations at Highflats, KwaZulu-Natal, South Africa. Geoderma Regional, 32, pp. 1–13.
6. **Cole, P.** and **Coetzee, H.** (2022). Innovative use of change detection in large numbers of satellite scenes, with geological applications. https://doi.org/10.1144/qjegh2022-048.

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10. Durrheim, R.J., **Midzi, V.**, Doucoure, M. and Manzi, M.S.D. (2022). Assessment of the earthquake risk posed by shale gas development in South Africa. In: (A. Unnikrishnan, F. Tangang and R.J. Durrheim, editors). Extreme natural events. Springer, Singapore. https://doi.org/10.1007/978-981-19-2511-5_12. Book chapter.
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7.3 Conference proceedings

(CGS staff are indicated in bold)

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Palaeontologists taking high resolution images of fossil bivalves

Scientist tracing geology on a SPOT remote sensing image

PART C
GOVERNANCE

Corporate governance at the CGS embodies systems, structures and processes by which the entity is directed, controlled and held to account. Governance is applied through the precepts of the enabling Act of the CGS, the Geoscience Act (No. 100 of 1993 as amended), the PFMA (No. 1 of 1999 as amended), National Treasury Regulations, the Protocol on Corporate Governance in the Public Sector, and policies of the organisation. This part of the report details the organisation's governance systems, structures and processes.

- **The Board and its committees** – the composition of the Board and committees, Board induction, Board remuneration and conduct, role and responsibilities of the Board.
- **Compliance with laws and regulations** – the status of CGS compliance with legislative prescripts.
- **Internal control and risk management** – the risk management framework implemented and the effectiveness of the internal controls in the organisation.
- **Fraud and corruption** – measures to detect and combat fraudulent activities.
- **Internal audit** – activities of the internal audit function.
- **Quality assurance** – status of quality assurance.
- **Health, safety and environment issues** – compliance with safety, health, environment and quality standards.

1 EXECUTIVE AUTHORITY

The Minister of Mineral Resources and Energy (The Minister), through the CGS Board, is accountable for the control, management and performance management of the CGS. Accordingly, the organisation submits reports quarterly and annually in terms of National Treasury Regulations (26.1) to the DMRE, on 30 April, 31 July, 31 October and 31 January, unless directed otherwise by National Treasury.

2 BOARD OF THE COUNCIL FOR GEOSCIENCE

2.1 Board composition and duties

The Minister appointed the outgoing CGS Board with effect from 1 May 2020, in terms of section 4 of the Geoscience Act (No. 100 of 1993 as amended) until 30 April 2023. The Board was composed of eleven non-executive members, four alternate members and one executive member, the CEO. The Chairperson of the Board is an independent, non-executive member and the roles and duties of the Chairperson and the CEO are clearly outlined.

The composition of the Board from 1 May 2020 to 30 April 2023 was as follows:

Dr Humphrey Mathe
Chairperson of the Board

Dr Mathe was appointed Board Chairperson on 1 May 2020. He is a qualified geologist with an MSc (Mineral Exploration) from Rhodes University, a PhD (Applied Geology) from the University of Natal, Durban and an Advanced Management Programme from Insead, Fontainebleau, France. Dr Mathe is the CEO of Tranter Resources Pty Limited. Previously, he was the CEO of Scinta South Africa Pty Limited, a coal resources company; and the Executive General Manager: Corporate Services at Exxaro Resources Limited. Prior to that he was the Chief Operating Officer and Executive Director of Eyesizwe Coal Pty Limited. Dr Mathe has worked in the mining industry all of his life and has more than 45 years' experience. He was a finalist in the Boss of the Year Award for 2008. Dr Mathe serves on the boards of Talent10 Holdings Pty Limited, Scinta South Africa Pty Limited (Non-Executive Chairman), Tranter Holdings Pty Limited, Tranter Resources Pty Limited (CEO), CGS (Non-Executive Chairman), Handa Mining Corporation (TSX listed), Cape Copper Oxide Company (Non-Executive Chairman), Empowerment Capital Investment Partners (Non-Executive Chairman) and Wescoal Holdings Limited [(JSE listed) Non-Executive Chairman]. He also serves on the Investment Committee of Acrux Resources Pty Limited. Dr Mathe is a Fellow of the Geological Society of South Africa and is registered with the South African Council for Natural Scientific Professions as a scientist.

Mr Mosa Mabuza
Chief Executive Officer

Mr Mabuza is a Geologist with a Bachelor's Honours degree in Geology and a Postgraduate Diploma in Business Administration. He was appointed a Board member on 1 May 2020. Mr Mabuza is the current CEO of the CGS having been appointed on 15 July 2017. His contract has been renewed, effective 15 June 2022, for a five-year term. Mr Mabuza served, among others, at De Beers as an Explorationist, Laboratory Geologist and Senior Business Analyst; at the DMRE as Chief Director of Mineral Promotion; at Anglo American Platinum as Head of Government Relations; and at the DMRE as Deputy Director-General for Mineral Policy and Promotion.

Mr Xolisa Mvinjelwa
Deputy Board Chairperson

Mr Mvinjelwa holds a Bachelor of Science in Chemistry from the University of Cape Town, a Master's degree in Business Administration and a Certificate in the Management of Advanced Programmes from the University of the Witwatersrand Business School. Mr Mvinjelwa also holds a Diploma in Production Management from the Production Management Institute of South Africa. He was appointed a Board member and Deputy Chairperson of the Board on 1 May 2020 and 27 May 2021, respectively. He has over 30 years' experience of working within the mining industry, having started out in his career at Vereeniging Refractories (Anglo American subsidiary) as a Technical Assistant in the R&D Department while progressing through the company. He held various positions as a Process Controller, Quality Superintendent, Plant Manager, Market Analyst and Technical Sales Representative. He later joined Rhino Minerals (ANGLOVAAL subsidiary) as an Assistant Technical Marketing Manager where he was responsible for developing new markets globally. He has been working for IMERYS South Africa (IMERYS subsidiary) for the past 20 years and has occupied various positions over the years, including Sales & Marketing Manager; Director: Special Projects; Head of HR, Policy & Strategy; Head of Strategy & Corporate Services and Board Secretary. He is currently the Executive Director: Ethics & Transformation at IMERYS South Africa and Chairman of the Social & Ethics Committee of the Board. As an entrepreneur, Mr Mvinjelwa serves on various boards of companies mainly in the mining and associated industries. He is the Chairman of Coastal Fuels, which is a junior coal mining company with coal assets. He is also the Chairman of Ticamode, a B-BBEE company and a partner of IMERYS.

Mr Beeuwen Gerryts
Board member

Mr Gerryts is a Mechanical Engineer with a Master's in Engineering Management (technology and innovation management) from the University of Pretoria. He was appointed a Board member on 1 May 2020. He is serving at the Department of Science and Innovation as the Chief Director for Technology Localisation, Beneficiation and Advanced Manufacturing. Mr Gerryts has extensive experience in research and innovation management, ICT and product system specifications, policy development, and is the author of publications in research and development and industrial development.

Ms Rosalind Mdubeki
Board member

Ms Mdubeki was appointed a Board member on 1 May 2020. She holds a National Diploma and a Bachelor's degree in Surveying, and a Certificate in Project Management. She has worked for Eskom as a Survey Technician and Engineer in training and currently serves as a Surveyor General: Bloemfontein (where she is responsible for the Free State and Northern Cape) in the Department of Agriculture, Land Reform and Rural Development.

Ms Deborah Mochothli
Board member

Ms Mochothli was appointed a Board member on 1 May 2020 and has a Master's degree in Environment and Society, a BTech degree in Environmental Health, a BA Honours qualification in Public Administration and a BA degree in Social Science. She has worked for the Department of Water and Sanitation as Chief Director for Regulations and Water Use, for the South African National Parks as Manager: Environmental Audits and for the Mafikeng District as Chief Environmental Health Officer.

Ms Lebogang Madiba
Board member

Ms Madiba was appointed a Board member on 1 May 2020. She has a BCom Honours degree in Economics from the University of Pretoria, a Master's degree in Finance in Economic Policy from the University of London (SOAS) and an Executive Leadership qualification from the UNISA School of Business Leadership. Ms Madiba currently serves as Chief Director: Economic Services in Public Finance at the National Treasury and as the Economic Development Function Group Leader responsible for budget-related matters of selected national departments and their public entities. Currently, Ms Madiba is serving as non-executive Director of the Board of the South African Diamond and Precious Metal Regulator. Previous employment capacities include Deputy Treasurer: Front Office and Structured Finance for Transnet SOC Ltd and Director: Country Risk within the Asset and Liability Division of the National Treasury. Ms Madiba was also a member of the Reserve Management Committee of the South African Reserve Bank until 2018.

Ms Adila Chowan
Board member

Ms Chowan was appointed a Board member on 1 May 2020. She is a Chartered Accountant and holds an LLB qualification. Ms Chowan is an admitted Advocate practising from Duma Nokwe Chambers. She has served on public and private company boards as a non-executive Director and as an Audit Committee member.

Adv. Ntika Maake
Board member

Advocate Maake was appointed a Board member on 1 May 2020. He holds B. Iuris and LLB degrees, a diploma in Corporate Governance (UNISA), a diploma in Project Management (Executive College) a postgraduate certificate in Climate Change and Energy Law, a postgraduate certificate in Water Law (University of the Witwatersrand) and a Master of Laws degree in the Extractive Industries in Africa. Advocate Maake is an LLD Candidate in Property Law (Property Clause) (University of Pretoria). He has served in several public entities, including Eskom Holdings, the City of Tshwane and the Department of Justice and Constitutional Development. Advocate Maake was the Chairperson of the Water Tribunal at the Department of Human Settlements, Water & Sanitation. He is also a Member of the Disciplinary Committee at the Premier Soccer League.

Dr Jennifer Mirembe
Board member

Dr Mirembe was appointed a Board member on 27 May 2020. She has a Doctorate in Town Planning, a Master's degree in City Planning and a number of management qualifications. She has served in several senior positions, including her current role of Director for Delivery Channel Management and Chief Town Planning at the National Department of Human Settlements.

Dr Patience Gwaze
Board member

Dr Gwaze was appointed a Board member on 3 March 2022. She has a PhD in Physical and Chemical Properties of Aerosol Particles, a Master's degree in Geophysics, and a BSc Honours in Physics. She served in various institutes as a research scientist before joining the Department of Forestry, Fisheries and the Environment in 2010. She is currently the Chief Director: Air Quality Information, and the designated National Air Quality Officer.

Mr Andries Moatshe
Board member

Mr Moatshe was appointed an alternate Board member to Ms Malie on 1 May 2020. Ms Malie has resigned from her position. Mr Moatshe holds a Master's degree in Environmental Management and a Higher Diploma in Public Health. He is currently working for the DMRE as Chief Director for Mine Environmental Management and has contributed to the department's policy development.

Mr Paul Nel
Board member

Mr Nel was appointed an alternate Board member to Ms D Mochotlhi on 1 May 2020. He has a BCompt Honours degree and is a Chartered Accountant and Information Systems Auditor. He has served as Chief Director at the Department of Water and Sanitation, as Managing Director for Integrated Business Control, South Africa, as Senior Chief Financial Officer at several banking institutions and an Audit Manager for Deloitte.

Mr Sabelo Malaza
Board member

Mr Malaza was appointed an alternate Board member on 1 May 2020. He has a Master's degree in Business Administration, a BPhil degree in Knowledge and Information Management, a Bachelor of Science degree and a qualification in Management Development from the Gordon Institute for Business Science. He is an Environmental Management Practitioner with more than 18 years' experience in the public sector. Mr Malaza has served at the Department of Water and Sanitation and the Department of Environment, Forestry and Fisheries in diverse capacities. He is currently a Chief Director responsible for processing environmental impact assessments at the Department of Fisheries, Forestry and Environment.

Ms Pontso Tsotetsi
Board member

Ms Tsotetsi was appointed an alternate Board member to Ms R Mdubeki on 1 May 2020. She has a Bachelor's in Land Surveying, a Diploma in Land Surveying and a Certificate in Advanced Management Development Programme. She is currently employed as the Deputy Surveyor General: Gauteng at the Department of Agriculture Land Reform and Rural Development.

2.2 The current Board – 1 June 2023 to 30 May 2026

The current Board was appointed by the Minister effective 1 June 2023. The Board includes the Chairperson (independent), ten non-executive members, two alternate members and the CEO (executive member).

Mr Kelepile Dintwe
Chairperson of the Board

Mr Kelepile Dintwe has over 25 years career experience in the gold mining industry. He was appointed as the Chairperson of the CGS Board on 1 June 2023. Mr Dintwe is currently leading the Business Improvement and Technology undertaking at Harmony Gold Ltd, where his career started in 2021. He spent the first 13 years of his career life in engineering technical and junior management roles at AngloGold Ashanti Ltd (AGA) before transitioning to a senior management appointment as a Vice President at their Group Corporate office. His 14 year accountabilities as a Vice President spans across several AGA corporate disciplines of Business Strategy; Business Planning; Investor Relations; and Sustainability. Mr Dintwe has also had a three-year secondment as an expatriate worker in the role of Vice President at the AGA business in West Africa, Republic of Ghana. His production operational leadership as a General Manager covers several deep-level underground mines, surface re-mining operations and various gold metallurgical plants. Additionally, his career highlights outside the mining sector include managerial roles in the Altron Group (Willard Batteries) and Engineering Manager accountabilities at Eskom. His leadership experience in a governing body includes Board appointments in subsidiaries of AGA Ghana Ltd and recently as Board Chairperson of Bigen Africa Group Holdings. He holds a BSc. Electrical Engineering degree from the University of the Witwatersrand together with an Executive Leadership Development Programme qualification through the University of Pretoria in partnership with Harmony Gold Ltd.

Mr Mosa Mabuza
Chief Executive Officer

Mr Mabuza is a Geologist with a Bachelor's Honours degree in Geology and a Postgraduate Diploma in Business Administration. He was re-appointed as a member of the CGS Board on 1 June 2023. Mr Mabuza is the current CEO of the CGS having been appointed on 15 July 2017. His contract has been renewed, effective 15 June 2022, for a five-year term. Mr Mabuza served, among others, at De Beers as an Explorationist, Laboratory Geologist and Senior Business Analyst; at the DMRE as Chief Director of Mineral Promotion; at Anglo American Platinum as Head of Government Relations; and at the DMRE as Deputy Director-General for Mineral Policy and Promotion.

Mr Xolisa Mvinjelwa
Deputy Board Chairperson

Mr Mvinjelwa holds a Bachelor of Science in Chemistry from the University of Cape Town, a Master's degree in Business Administration and a Certificate in the Management of Advanced Programmes from the University of the Witwatersrand Business School. Mr Mvinjelwa also holds a Diploma in Production Management from the Production Management Institute of South Africa. He was re-appointed Deputy Chairperson of the CGS Board on 1 June 2023. He has over 30 years' experience of working within the mining industry, having started out in his career at Vereeniging Refractories (Anglo American subsidiary) as a Technical Assistant in the R&D Department while progressing through the company. He held various positions as a Process Controller, Quality Superintendent, Plant Manager, Market Analyst and Technical Sales Representative. He later joined Rhino Minerals (ANGLOVAAL subsidiary) as an Assistant Technical Marketing Manager where he was responsible for developing new markets globally. He has been working for IMERYS South Africa (IMERYS subsidiary) for the past 20 years and has occupied various positions over the years, including Sales & Marketing Manager; Director: Special Projects; Head of HR, Policy & Strategy; Head of Strategy & Corporate Services and Board Secretary. He is currently the Executive Director: Ethics & Transformation at IMERYS South Africa and Chairman of the Social & Ethics Committee of the Board. As an entrepreneur, Mr Mvinjelwa serves on various boards of companies mainly in the mining and associated industries. He is the Chairman of Coastal Fuels, which is a junior coal mining company with coal assets. He is also the Chairman of Ticamode, a B-BBEE company and a partner of IMERYS.

Adv. Ntika Maake
Board member

Advocate Maake was re-appointed as a member of the CGS Board on 1 June 2023. He holds B. Iuris and LLB degrees, a diploma in Corporate Governance (UNISA), a diploma in Project Management (Executive College) a postgraduate certificate in Climate Change and Energy Law, a postgraduate certificate in Water Law (University of the Witwatersrand) and a Master of Laws degree in the Extractive Industries in Africa. Advocate Maake is an LLD Candidate in Property Law (Property Clause) (University of Pretoria). He has served in several public entities, including Eskom Holdings, the City of Tshwane and the Department of Justice and Constitutional Development. Advocate Maake was the Chairperson of the Water Tribunal at the Department of Human Settlements, Water & Sanitation. He is also a Member of the Disciplinary Committee at the Premier Soccer League.

Mr Andries Moatshe
Board member

Mr Moatshe was re-appointed as a member of the CGS Board on 1 June 2023. Mr Moatshe holds a Master's degree in Environmental Management and a Higher Diploma in Public Health. He is currently working for the DMRE as Chief Director for Mine Environmental Management and has contributed to the department's policy development.

Dr Mayshree Singh
Board member

Dr Mayshree Singh was appointed as a member of the CGS Board on 1 June 2023. She has a Bachelor's degree in Physics and Geology, a Master's in Geophysics and a PhD in Geomatics. She runs her own consultancy, Maya Geophysics that specialises in earthquake hazard and risk-related research, and applied site investigations. Dr Singh has more than 20 years of research and industry experience and specialises in the field of seismotectonics. She has worked on projects for the nuclear and reinsurance industries, large dams, and power stations. She has lectured at the University of KwaZulu-Natal and worked as a researcher at the Council for Geoscience. She mentors and supervises postgraduate students and teaches fundamental science courses at university level. Dr Singh has fostered collaborations with researchers at academic institutions and participates in research efforts targeting the understanding of vulnerability of buildings to earthquake ground motion and improving our understanding of tectonic-related earthquakes and fault structures.

Dr Siyanda Mngadi
Board member

Dr Siyanda Mngadi holds a PhD in Geophysics from the University of the Witwatersrand. He has published peer-reviewed papers in international journals. Dr Mngadi was appointed as a member of the CGS Board on 1 June 2023. He began his career as a graduate student at the CSIR Centre for Mining Innovation and later worked in asset management as a junior quantitative and fundamental investment analyst covering the mining and energy sectors. He held several positions, including as the Executive Manager responsible for mergers and acquisitions for an investment company with interests in mining and energy. He served as a non-executive director for several organisations including the Anglo American Inyosi Coal, Inyosi Coal, UJU Mining and the board committees of the CGS. Dr Mngadi is the managing director of Ntuthuko Resources, involved in mineral exploration, mining and energy industries. Ntuthuko Resources is currently involved in the exploration of REE, lithium, iron ore, manganese, and nickel.

Ms Ntombifuthi Nxumalo
Board member

Ms Nxumalo was appointed as a member of the CGS Board on 1 June 2023. She is a geoscience professional with a BSc Honours in Geology (Wits) and an MBA in Global Business & Sustainability (UNICATT). She has undertaken a PhD research study (Wits) titled, 'South Africa's coal mine closures: An enabling regulatory framework for post-closure land-uses to support self-reliant mining communities'. The research explores the role of current South African minerals and mining legislation and the regulatory framework in achieving sustainable post-mining land uses towards self-reliant mining communities post-closure. Ms Nxumalo has a diverse working experience within the mining and energy sectors. She began her career as a geologist in the Free State Goldfields, then joined the DMRE: Mineral Regulation Directorate. She also worked at Eskom, Primary Energy Division. In the last few years as an entrepreneur, she's been managing a Sustainability Consultancy, Luhlaza-ISS. Ms Nxumalo previously served in the South Africa Diamond and Precious Metals Regulator Board as the deputy chairperson of the Board and chairperson of the technical committee between 2016 and 2019. She also served as chairperson in the Pelindaba Safety Information Forum of the National Nuclear Regulator and as a member of the Panel of Experts that mentors entrepreneurs at the Innovation Hub.

Ms Thobeka Njozela
Board member

Ms Thobeka Njozela holds an MBA from the University of Pretoria, a Bcompt Hons from the University of Transkei and a BComm from Fort Hare University. She has also completed a GIBBS Executive Management Programme and Management Programme at Rhodes University. A Certified Director, she obtained a Certified Internal Audit qualification and holds certifications in Control Self-Assessment, and Risk Management Assurance. Ms Njozela was appointed as a member of the CGS Board on 1 June 2023. She has served as a member of audit and risk committees of national, provincial departments and public entities. She has extensive knowledge of public sector management, governance, financial management; risk management; internal audit, policy development, business process optimisation, strategy development and implementation, monitoring and evaluation.

Dr Moloko Matlala
Board member

Dr Moloko Matlala obtained a Secondary Teachers Diploma from Setotolwane College of Education, an MSc in Zoology from the University of Limpopo, and a PhD in Genetics from the University of Pretoria. Currently, he is pursuing a Master of Business Administration at the Wits Business School. Dr Matlala is currently the Chief Director: National Water Resource Information Management at the Department of Water and Sanitation. Throughout his career, he has held several positions, including Water Pollution Control Officer, Assistant Director, and Deputy Director in both Mpumalanga and Limpopo provincial offices of the Department of Water and Sanitation. Dr Matlala was appointed as a member of the CGS Board on 1 June 2023.

Mr Mandla Malindisa
Board member

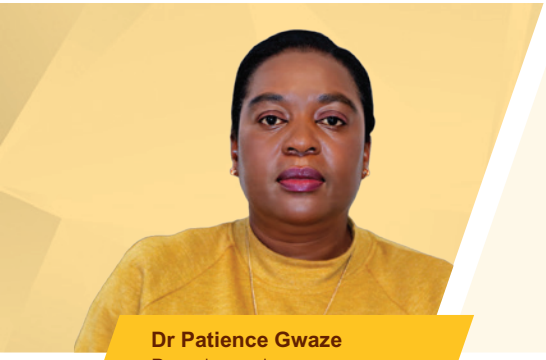
Mr Malindisa was appointed an alternate Board member to Dr Moloko Matlala on 1 June 2023. Mr Malindisa holds a minimum Bachelor of Commerce degree, a certificate in Programme Forensic and Investigative Auditing and other certificates. He is currently working for the Department of Water and Sanitation as Chief Director Risk and Compliance Management with more than 19-years' experience in the field of risk management, internal control, internal audit, and special financial fraud investigations. He has served as a Chief Risk Officer for three national government departments, a Risk Management Specialist at the KwaZulu-Natal Provincial Treasury, Chief Risk Officer at Sekhukhune District Municipality, Risk Management Professional at Statistics South Africa and a Senior State Accountant at the KwaZulu-Natal Department of Education.

Dr Jennifer Mirembe
Board member

Dr Mirembe was re-appointed as a member of the CGS Board on 24 July 2023. She has a Doctorate in Town Planning, a Master's degree in City Planning and a number of management qualifications. She has served in several senior positions, including her current role of Director for Delivery Channel Management and Chief Town Planning at the National Department of Human Settlements.

Dr Mmboneni Muofhe
Board member

Dr Mmboneni Muofhe is the Deputy Director-General (DDG) for Socio-Economic Innovation Partnerships at the Department of Science and Innovation in South Africa. He was appointed as a member of the CGS Board on 1 June 2023. Dr Muofhe previously held the position of DDG for International Resources and Cooperation and DDG for Technology Innovation in the same department. He has years of experience in science, technology and innovation systems which includes doing scientific research, managing research, international cooperation, development and innovation funding schemes and implementation of various DSI initiatives and instruments. Dr Muofhe led the implementation of various science, technology and innovation strategies such as the National Space Science Strategy, Bioeconomy, and Hydrogen South Africa (energy). He also led the process of developing the report on South Africa's Technical Readiness to Support Shale Gas Industry. Dr Muofhe serves in different governance roles, including the Boards of Biovac (South Africa's vaccine manufacturing company), and now, CGS and is on the Steering Committee of the World Health Organization's mRNA Technology Transfer Hub. He served as a member of the Board of Governors for the International Centre for Genetic Engineering and Biotechnology and is currently the Lead Co-Chair of the Group on Earth Observations. Academically, Dr Muofhe holds a BSc degree (Univen), MSc (UCT), MBA (UP) and PhD in Management of Technology and Innovation (da Vinci Institute).



Dr Patience Gwaze
Board member

Dr Gwaze was appointed a Board member on 3 March 2022. She has a PhD in Physical and Chemical Properties of Aerosol Particles, a Master's degree in Geophysics, and a BSc Honours in Physics. She served in various institutes as a research scientist before joining the Department of Forestry, Fisheries and the Environment in 2010. She is currently the Chief Director: Air Quality Information, and the designated National Air Quality Officer.

Mr Sabelo Malaza
Board member

Mr Malaza was appointed an alternate Board member to Dr Patience Gwaze on 3 March 2022. He has a Master's degree in Business Administration, a BPhil degree in Knowledge and Information Management, a Bachelor of Science degree and a qualification in Management Development from the Gordon Institute for Business Science. He is an Environmental Management Practitioner with more than 18 years' experience in the public sector. Mr Malaza has served at the Department of Water and Sanitation and the Department of Environment, Forestry and Fisheries in diverse capacities. He is currently a Chief Director responsible for processing environmental impact assessments at the Department of Fisheries, Forestry and Environment.

The Board upholds and embraces its fiduciary duties outlined in section 50 of the PFMA Act (No. 1 of 1999 as amended), which require, among others, that Board members:

a) Exercise the duty of utmost care to ensure reasonable protection of the assets and records of the CGS;
b) Act with fidelity, honesty, integrity and in the best interest of the CGS in managing the financial affairs of the organisation;
c) Refrain from acting in a way that is inconsistent with responsibilities assigned to them;
d) Refrain from using their position and/or privileges or confidential information they obtained as members of the Board for personal gain or to improperly benefit another person; and
e) Disclose and declare any direct or indirect interests that they or their spouse or close family member(s) may have that could pose a potential conflict of interest.

The Board implements annual declarations of interest and a declaration of interest at every committee and Board meeting to ensure that members disclose real or perceived conflicts in any matter before the Accounting Authority. Board members must withdraw from proceedings when such matters are considered, unless the Board decides otherwise.

Subject to the provisions of the Geoscience Act (No. 100 of 1993 as amended), read together with the PFMA, the Board is accountable for the performance of the CGS. The Board must exercise control and manage the affairs of the CGS, set the strategic direction of the organisation, and approve its vision, mission, strategic objectives and policies.

In addition, the Board monitors compliance with policies and performance with scientific, administrative and financial objectives. The Board is solely responsible for ensuring that the CGS has and maintains effective, efficient and transparent systems of financial management, risk management and internal audit, and fair, equitable, competitive and cost-effective procurement practices.

The Board has the authority to lead, control and manage the business of the CGS, and has adopted a comprehensive delegation of authority framework in accordance with section 56 of the PFMA, which delegates the day-to-day management of the affairs of the CGS to the CEO. The delegation of authority policy does not in any way divest the Board of its responsibility and accountability for the organisation.

2.3 Board Charter and Board responsibilities

The Board Charter, which is reviewed annually, provides for the following:

a) Leadership role of the Board, judgment and strategic direction;
b) Board composition;
c) Accountability, fiduciary duties and responsibilities;
d) Code of conduct for the Board;
e) Constitution and appointment of committees;
f) Governance and meeting procedures;
g) Management of conflicts of interest;
h) Responsibility for the adoption of strategic plans and the monitoring of operational performance and management;
i) Determination and approval of policies;
j) Risk management; and
k) Board selection, orientation and evaluation.

2.4 Board induction and orientation

The CGS has a Board induction programme for new members.

2.5 Training of new Board members

A director development programme ensures that Board members are adequately and continually trained to ensure that they have the necessary knowledge of and are developed in regard to best practices and principles of corporate governance. Adequate and deliberate courses offered by reputable institutions are identified to strengthen the Board's skills and participation. Board and committee members are encouraged to notify the Board Secretary when they identify additional training that may enhance their contribution to the organisation. Through quarterly reports and policies, Board members are kept abreast of CGS governance structures, strategic projects and organisational performance to enable them to fulfil their duties and responsibilities.

2.6 Board meetings

The outgoing Board held five meetings in 2022/23. Table 4 details the attendance of meetings by each Board member during the year.

Table 4: CGS Board meetings in 2022/23

Board members	28 April 2022	27 May 2022	28 July 2022	27 October 2022	27 January 2023	Number of meetings attended
Dr H Mathe (Chairperson)	Present	Present	Present	Present	Present	5
Mr M Mabuza (CEO)	Present	Present	Present	Present	Present	5
Mr X Mvinjelwa (Deputy Chairperson)	Present	Present	Present	Present	Present	5
Dr P Gwaze	Present	Apology	Apology	Present	Apology	2
Mr S Malaza	Present	Present	Present	-	Present	4
Ms D Mochotlhi	Present	Present	Present	Present	Present	5
Mr P Nel	-	-	-	-	Present	1
Ms R Mdubeki	Present	Apology	Apology	Present	Present	3
Ms P Tsotetsi	-	Apology	Apology	-	-	0
Adv. N Maake	Present	Present	Present	Present	Present	5
Ms A Chowan	Present	Present	Apology	Present	Present	4
Dr J Mirembe	Present	Present	Present	Present	Apology	4
Mr B Gerryts	Present	Apology	Present	Apology	Present	3
Mr A Moatshe	Apology	Present	Present	Present	Apology	3
Ms L Madiba	Apology	Apology	Apology	Present	Present	2

2.7 Board remuneration

The remuneration of Board members is determined by the Minister of Mineral Resources and Energy in consultation with the Minister of Finance, as disclosed in note 13 of the notes to the financial statements (Table 5).

Table 5: Remuneration of CGS Board members (2022/23)

Name	Remuneration	Other allowance	Other re-imbursements	Total R'000
Dr H Mathe	147	-	-	147
Mr X Mvinjelwa	189	-	-	189
Adv. N Maake	181	-	-	181
Ms A Chowan	89	-	-	89
Dr J Mirembe	-	-	-	-
Mr S Malaza	-	-	-	-
Mr P Nel	-	-	-	-
Ms R Mdubeki	-	-	-	-
Ms D Mochotlhi	-	-	-	-
Ms P Tsotetsi	-	-	-	-
Ms L Madiba	-	-	-	-
Mr A Moatshe	-	-	-	-
Mr B Gerryts	-	-	-	-
Dr P Gwaze	-	-	-	-

2.8 Committees of the Board

In terms of section 15 of the Geoscience Act (No. 100 of 1993 as amended), the Board may establish a committee that will, subject to the direction of the Board, perform such functions of the Board as determined from time to time. Furthermore, section 56 of the PFMA Act (No. 1 of 1999 as amended) provides that some Board responsibilities and aspects of the management of the CGS may be delegated to Board committees without divesting the Board of its roles and responsibilities. The Board committees are, therefore, required to make recommendations to the entire Board before strategic decisions are implemented by management. Mandated by section 15 of the Geoscience Act (No. 100 of 1993 as amended), section 56 of the PFMA and the recommendations of the King Code, the Board has constituted and delegated some of its functions to the following four Board committees:

a) Audit and Risk Committee;
b) Finance Committee;
c) Technical Committee; and
d) Personnel, Remuneration and Transformation Committee.

2.9 Audit and Risk Committee

The Audit and Risk Committee was established in terms of section 77 of the PFMA and National Treasury Regulation 27. The committee discharges its responsibilities in terms of the Audit and Risk Committee Charter, which sets out the composition, roles and responsibilities of the committee. It continually monitors the quality and reliability of CGS financial information used by the Board, financial statements issued by the CGS and various functions within the organisation. The Audit and Risk Committee ensures that emerging risks are timeously identified and that appropriate and effective control measures are put in place to mitigate these risks. The composition of the committee and attendance of its meetings from 1 April 2022 to 31 March 2023 are reflected in Table 6.

Table 6: Audit and Risk Committee meetings in 2022/23

Committee members	21 April 2022	19 May 2022	21 July 2022	20 October 2022	20 January 2023	Meetings attended
Ms K Maroga	Present	Present	Present	Present	Present	5
Mr O Willcox	Present	Present	Present	Present	Present	5
Dr T Khumalo*	Present	Present	Present	Present	Present	5
Ms D Morabe	Present	Present	Present	Present	Present	5
Adv. A Chowan	Present	Present	Apology	Present	Present	4
Adv. N Maake	Present	Present	Present	Present	Present	5
Mr SM Xulu	Present	Apology	Apology	Present	Apology	2
Dr S Mngadi	Present	Present	Present	Present	Present	5
Ms D Seane	Present	Present	Present	Present	Present	5

* means that the member resigned.

2.9.1 Audit and Risk Committee report

The Audit and Risk Committee reports that it has complied with its responsibilities arising from section 77 of the PFMA and National Treasury Regulation 27.1. The committee also reports that it has adopted the Audit and Risk Committee Charter as its appropriate terms of reference, has regulated its affairs in compliance with this charter and has discharged all the responsibilities contained therein.

In executing its duties, the committee has performed, among others, the following functions:

2.9.2 Evaluation of internal controls

The committee has directed, monitored and evaluated the activities of the internal audit function. Through the internal audit function, the committee constantly monitored the effectiveness of the internal controls within the CGS and assessed whether the internal audit function had fulfilled its roles. During 2022/23, the internal controls were reported to have significantly improved in some areas, and the overall control rating was reported to require improvement. There is room for improvement in regard to the following:

a) Supply chain management;
b) Asset management;
c) Financial management;
d) Learning and development;
e) Recruitment, selection and placement;
f) Performance information;
g) Information technology;
h) Communication and stakeholder relations;
i) Fraud, corruption, ethics and governance;
j) Risk and compliance management; and
k) Protection services.

The committee reports that progress on the implementation of corrective measures to resolve findings is being monitored and that progress reports are compiled on a quarterly basis.

2.9.3 Evaluation of the annual report

The committee has:

a) Reviewed the CGS's report on corporate performance information;
b) Reviewed the CGS accounting policies and practices;
c) Reviewed the adequacy and usefulness of the financial information provided to the Auditor-General;
d) Evaluated, reviewed and discussed with the Auditor-General the audited CGS annual financial statements included in the present annual report;
e) Reviewed the Auditor-General's management report and the Auditor's report; and
f) Based on the information provided to the committee, considered and concluded that the annual financial statements comply with the requirements of the PFMA, National Treasury Regulations and the South African GRAP standards.

2.9.4 Risk management

The committee reports that during the year under review it approved the Strategic Risk Register, Anti-Fraud and Corruption Policy and the Enterprise Risk and Compliance Management Policy. These policies were subsequently communicated to staff and incorporated into the culture of the CGS. The committee reviewed:

a) The organisation's risk appetite and tolerance levels; and
b) The significant financial risk exposures of the CGS, and directed management to monitor and develop mitigation strategies for such exposures, including risks relating to reputation, operations, fraud, strategy, ICT systems, disaster recovery and business continuity.

2.9.5 Evaluation of financial statements

The committee reviewed and discussed with the Auditor-General the financial statements of the CGS for the year ended 31 March 2023. The committee also reviewed the management letter of the Auditor-General and management responses thereto. The committee is of the opinion that the financial statements are compliant, in all material respects, with the requirements of the PFMA and South African GRAP standards.

2.9.6 Auditor's report

The term of the CGS Board ended on 30 April 2023, prior to the compilation of the current Annual Report. As such, the term of the Audit and Risk Committee was completed at the same time as that of the outgoing Board.

The CGS is pleased to present its Annual Report for the financial year ended 31 March 2023. The outgoing Audit and Risk Committee had reviewed the audit findings' implementation plan of 2021/22 before the completion of its term of office and reported at the time that a significant number of findings have been resolved. Management has committed to resolve all audit findings that are still in progress.

The committee concurs and accepts the conclusions of the Auditor-General on the financial statements and is of the opinion that the audited Annual Financial Statements should be accepted and read together with the report of the Auditor-General.

Mr Serame Maetle
Chairperson
Audit and Risk Committee
Council for Geoscience

31 July 2023

2.10 Finance Committee responsibilities and composition

The Finance Committee of the CGS is mandated to consider and recommend for the Board's approval the following matters:

a) Significant financial activities;
b) Liquidity and financial condition of the CGS;
c) Write-off of bad debts;
d) Material variances in the approved annual and/or revised budgets in accordance with the Materiality and Significance Framework Plan;
e) Proposed capital and operating budget for capital expenditures;
f) Financial statements for the annual report;
g) All policies that have financial implications; and
h) Corporate performance information management against the approved budget.

The Finance Committee consists of six non-executive members and the CEO (executive member). Member details are presented in Table 7, with meeting attendances logged from 1 April 2022 to 31 March 2023.

Table 7: Finance Committee meetings in 2022/23

Committee members	21 April 2022	19 May 2022	21 July 2022	20 October 2022	20 January 2023	Meetings attended
Mr P Nel	Present	Present	Present	Apology	Present	4
Mr M Mabuza	Present	Present	Present	Present	Present	5
Mr O Willcox	Present	Present	Present	Present	Present	5
Adv. A Chowan	Present	Present	Apology	Present	Present	4
Adv. N Maake	Present	Present	Present	Present	Present	5
Ms D Morabe	Present	Present	Present	Present	Present	5
Dr J Mahachi	Present	Present	Present	Present	Present	5

2.11 Technical Committee

The Technical Committee of the CGS is mandated to consider and recommend for the Board's approval the annual scientific and strategic technical programme (GTP) of the organisation, to evaluate the scientific and technical output and to oversee the implementation of the ICT strategy as well as the end-term evaluations.

The composition and meeting attendance of the Technical Committee from 1 April 2022 to 31 March 2023 are reflected in Table 8.

Table 8: Technical Committee meetings in 2022/23

Committee members	20 April 2022	18 May 2022	20 July 2022	19 October 2022	19 January 2023	Meetings attended
Mr B Gerryts	Present	Present	Present	Present	Present	5
Mr M Mabuza	Present	Present	Present	Present	Present	5
Mr X Mvinjelwa	Present	Present	Present	Present	Present	5
Dr M Mayekiso	Present	Present	Present	Present	Present	5
Dr S Mngadi	Present	Present	Present	Present	Present	5
Dr J Mahachi	Present	Present	Present	Present	Present	5
Ms S Malaza	Present	Present	Present	Present	Present	5

2.12 Personnel, Remuneration and Transformation Committee

The Personnel, Remuneration and Transformation Committee is mandated to consider and recommend for the Board's approval the human resources strategies and policies of the CGS, the organisational remuneration model, remuneration for executive management and annual salary increases. The committee also evaluates and makes recommendations on the payment of performance bonuses and considers organisational performance reports on labour-related matters, employment equity and employee training and development matters.

The composition and meeting attendance of the Personnel, Remuneration and Transformation Committee from 1 April 2022 to 31 March 2023 are reflected in Table 9.

Table 9: Personnel, Remuneration and Transformation Committee meetings in 2022/23

Committee members	20 April 2022	18 May 2022	20 July 2022	19 October 2022	19 January 2023	Meetings attended
Ms R Mdubeki	Present	Apology	Present	Apology	Present	3
Mr M Mabuza	Present	Present	Present	Present	Present	5
Mr X Mvinjelwa	Present	Present	Present	Present	Present	5
Dr M Mayekiso	Apology	Present	Present	Present	Present	4
Ms M Seane	Present	Present	Present	Present	Present	5
Dr J Mirembe	Present	Present	Present	Apology	Present	4
Dr T Khumalo*	Present	Present	Present	Present	Present	5

* means that the member resigned.

3 RISK MANAGEMENT

The CGS Board is responsible for entrenching risk management governance through effective leadership. Management accounts to the Board for the integration of risk management into the daily operations of the CGS and for the implementation and monitoring of the risk management process. The Audit and Risk Committee is an independent entity responsible for overseeing risk exposure related to governance and risk management at the CGS. The CGS develops a strategic risk register annually based on the organisational strategy, which is monitored quarterly and which provides assurance to the Board that the CGS is adequately managing identified risks. The strategic risk register is also workshopped with the Board annually. Operational risk is managed through operational risk registers and the GTP risk register and discussed during the Operational Risk Management and Combined Assurance Committee. The Enterprise Risk and Compliance Management policy was last reviewed and updated in April 2022.

The organisational risk management governance structure of the CGS is presented in Figure 16.

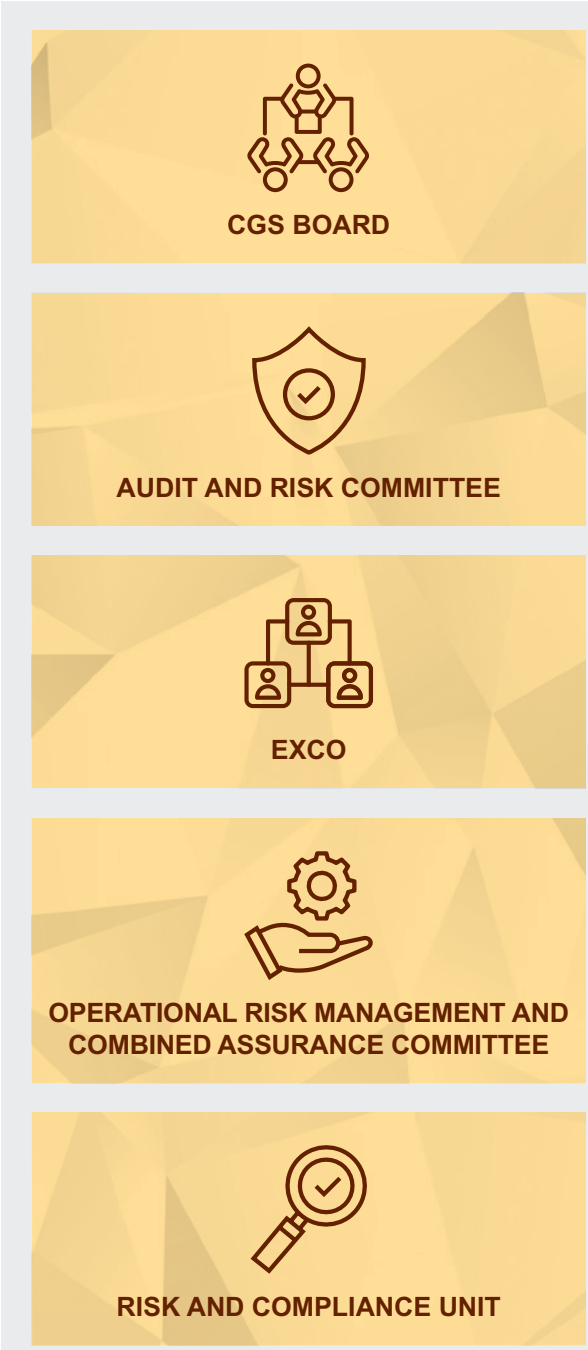


Figure 16: Organisational risk management governance structure of the CGS

4 INTERNAL CONTROL

Management is responsible for designing, implementing and continually reviewing internal controls to provide assurances on the effectiveness and efficiency of operations and on the reliability of financial reporting, and for the safeguarding and maintenance of accountability for the assets of the organisation. These controls are monitored throughout the CGS by management and employees, with a necessary segregation of duties. The internal audit function performs independent reviews on the adequacy and effectiveness of these controls as part of the approved annual internal audit plan, and the internal audit reports are presented to the Audit and Risk Committee.

5 INTERNAL AUDIT

The internal audit function was established in terms of the PFMA and has adopted the risk-based audit approach aligned to the International Standards for the Professional Practice of Internal Auditing (ISPPIA). Internal Audit function conforms with the ISPPIA. The Audit and Risk Committee reviewed and approved a formal internal audit charter.

The Audit and Risk Committee approved an annual internal audit plan, and internal audit reports were presented to the committee quarterly. Follow-up audits were conducted on prior-year audit findings. The internal audit function also performed preliminary investigations on matters reported on the whistleblowing hotline and ad hoc assignments requested by management.

6 COMPLIANCE WITH LAWS AND REGULATIONS

The CGS complies with National Treasury Regulations through the PFMA compliance checklist and calendar, which are continually monitored and updated. Compliance with laws and regulations is monitored through the activities of the Audit and Risk Committee and by the Risk and Compliance Unit at an operational level, based on the regulatory universe of the CGS which was approved by the Board in August 2022. Compliance checklists are developed for all applicable laws and regulations listed in the regulatory universe and monitored systematically. The level of compliance is discussed during the Operational Risk Management and Combined Assurance Committee meetings.

7 FRAUD AND CORRUPTION

The CGS has a legal responsibility in terms of the PFMA to take steps to prevent unauthorised, irregular, fruitless and wasteful expenditure and losses resulting from criminal conduct. The CGS Anti-Fraud and Corruption Policy was reviewed and approved in January 2023, and an anonymous whistleblowing tip-off line is in place. This function is administered externally by Deloitte. Reports are made available monthly, and all suspicions of fraudulent conduct is investigated by the internal auditors and reported to the Audit and Risk Committee. Fraud risks are identified during the risk assessment process and monitored through the various risk registers at the CGS.

8 MINIMISING CONFLICT OF INTEREST

All suppliers of goods and services to the CGS are required to complete standardised National Treasury documentation (SBD4 Declaration of Interest). In view of possible allegations of favouritism and conflicts of interest, should the resulting bid, or part thereof, be awarded to persons employed by the CGS, or to persons connected with or related to CGS employees, it is required that the bidder or their authorised representative declare their position to the evaluation/ adjudication authority. In addition, staff members of the CGS involved in the Bid Specification, Bid Evaluation and Adjudication Committee are required to complete declaration and non-disclosure forms at each meeting.

9 CODE OF CONDUCT

All CGS staff members abide by a Code of Ethics. The CGS is committed to ethical, fair and transparent business dealings and promotes a non-divisive, socially and environmentally responsible corporate culture. It does so by subscribing to the following values:

1. **Innovation** – Generating and implementing novel ideas and products that create value.
2. **Diversity** – Embracing an inclusive culture that upholds transformation and recognises contributions from all stakeholders.
3. **Excellence** – Striving to excel in every aspect of its business.
4. **Accountability** – Fostering reliability and commitment, taking responsibility and ownership.
5. **Learning** – Advancing learning through knowledge creation.
6. **Safety, health, and environment** – Prioritising the health and safety of all employees and stakeholders in accordance with principles of environmental stewardship.
7. **Transparency** – Providing services impartially, fairly, equitably and transparently.

Furthermore, the CGS subscribes to following principles:

- Fairness and integrity in all business dealings, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships.
- Respect for the human rights and dignity of all employees.
- Acceptance of diverse cultural, religious, race, gender and sexual orientations.
- Honesty, transparency and accountability.
- Adherence to sound standards of corporate governance and to laws.
- Always behave in a way which is beyond reproach when representing the organisation and taking responsibility for these actions.
- Act with integrity in all dealings with Board/Committee members, employees, suppliers, customers and other stakeholders.
- Obey all applicable government laws, rules and regulations and desist from committing criminal offences.
- Avoid conflict of interest and declare them when they arise.
- Not use corporate information for any purpose other than that for which it was intended and keeping information confidential.
- Refrain from engaging in practices or pursue private interests that conflict with those of the CGS or that could result in the CGS suffering loss or damage as a result.

In terms of the CGS Code of Ethics, all persons representing the CGS must uphold the highest standards of business ethics and integrity. Furthermore, all staff, contractors, consultants and others acting on behalf of the CGS must accurately and honestly represent the organisation and refrain from engaging in any activity or scheme intended to defraud anyone of money, property or services. The reputation and integrity of the CGS are central to the ability of the organisation to operate as an effective State-owned organisation.

10 BOARD SECRETARY

The Board Secretary provides advisory services to the Board and notifies Board members of regulatory changes and new developments in corporate governance. Furthermore, the Board Secretary guides the Board and Board committees on how to discharge their responsibilities in the best interests of the organisation. The Board Secretary facilitates and attends Board and Board committee meetings, and takes custody of all policy documents.

11 QUALITY ASSURANCE

Services delivered by the CGS are rendered in the context of a quality management system which ensures that creation, delivery and monitoring of services are in line with national and international quality standards. Quality management in the CGS ensures that stakeholders receive excellent services at all times. In an effort to get the organisation ISO 9001 certified, a plan was put in place for the implementation of the requirements of ISO 9001: 2015 standard and to improve on the organisation's quality management system. The plan so far was undertaken for the financial years 2021/22 and 2022/23. On 31 March 2023, implementation progress was at 41%.

The CGS laboratory remains a high-priority facility in testing a variety of samples to ensure excellent and accurate service and to meet the requirements of clients and stakeholders. The organisation is also planning to get its Analytical Services test methods accredited for ISO/IEC 17025: 2017. The plan was put in place and undertaken for the financial years 2021/22 and 2022/23. On 31 March 2023, implementation progress was at 78%. The desired progress towards implementation of the ISO 9001: 2015 and ISO/IEC 17025: 2017 standards could not be achieved as of 31 December 2022. Better progress could have been made had it not been for operational impediments due to the HVAC upgrade project construction that was taking place at the Silverton offices in a live environment. Completion of the HVAC upgrade project took longer than anticipated. The project is now complete and fully commissioned, and the intention is to accelerate the implementation of the requirements of the two standards during 2023/24.

12 HEALTH, SAFETY AND ENVIRONMENT

Management is obliged, in terms of the Occupational Health and Safety Act No. 85 of 1993 and Regulations, to provide a safe workplace without risk to human life, while staff members have a duty to work and behave in compliance with the safety directives of the organisation. The CGS Safety, Health and Environment Management Policy enables the organisation to drive compliance with applicable legislation. The latter also provides various indicators against which performance in this area is monitored, ensuring the elimination of hazards and reduction of risks. The current compliance status is at 91%. Processes are afoot to put measures in place to address non-complying areas. The organisation has established a Safety, Health and Environment Committee that meets at least once every three months to discuss occupational health and safety issues that affect workers. The committee, after each meeting, may put forward recommendations to the Executive Committee, if necessary. The committee, in addition to the bargaining forum, is also used as a platform for consultation with workers on occupational health and safety and environment matters.

Management has established and is currently executing a plan for implementing the standard requirements of ISO 45001 and ISO 14001 for improvement of the organisation's occupational health and safety and environmental management systems, respectively. On 31 March 2023, implementation progress was at 21% and 27% for ISO 45001 and ISO 14001, respectively. The organisation's plan is to accelerate the establishment and implementation of these standards' requirements during the coming financial year.

13 SOCIAL RESPONSIBILITY

The CGS's organisational strategy is primarily driven and enabled by integrated communication and effective stakeholder engagement. The organisation has adopted an integrated communication and stakeholder relations strategy that is premised on building and maintaining strong, constructive and mutually beneficial relationships with key stakeholders, particularly in areas where the CGS operates.

The CGS continues to strive towards building collaborative relationships with its stakeholders for mutual benefit, improving its relationships and managing expectations by disseminating accurate, pertinent and up-to-date information. Where possible, the organisation has given back to communities where it has operated by partnering with other state-owned entities, as well as provincial, district and local municipalities to share knowledge and information on geoscientific subject matters and contribute to uplifting the socio-economic conditions of the area.

The following are but some of the initiatives that the CGS implemented in the year under review:

- Actively participated in the National Disaster Management Centre, a "National Centre" that seeks to promote an integrated and coordinated system of disaster prevention, mitigation and risk management. The organisation shared its research pertaining to landslides as an advisory authority on the risk of subsidence in dolomitic terrains that may affect infrastructure development and land-use, particularly following the recent floods that affected the KwaZulu-Natal and Eastern Cape Provinces.
- Produced mine-induced land subsidence and susceptibility maps that aid spatial planning decision-making and disaster management plans. The maps categorise mined areas and their surroundings into zones with varying degrees of subsidence susceptibility and likelihood.
- Continuously monitors seismic activities and proactively shares information regarding the occurrence of seismic activities as and when these occur to the media and public. In the year under review, the CGS has responded to many enquiries from various media channels and publications, municipalities and concerned members of the public on specific earthquakes that garnered public attention.
- Short-term employment of casual workers in various technical projects to support the scientific activities thus building capacity through training in areas where the CGS operates.
- Coordinated as well as participated in career expos for high school learners across the country. Furthermore, the CGS was invited to share its work at talks organised by geoscience departments in various universities.
- Research and development of a remote sensing and machine learning technique to map illegal mines as a monitoring system.
- Participated in various DDM forums through which municipalities are beginning to realise the importance of geoscience in their strategic planning, such as Integrated Development Plans.

The CGS is committed to delivering geoscience solutions that impact society and ensuring that communities derive value from its geoscientific research. In addition, the organisation continues to be a responsible corporate citizen that cares for its communities and the environment. Through these initiatives, the CGS is able to raise the profile of its brand and bring awareness of its work to key stakeholders and the public.

13.1 Building the CGS brand

During 2022/23, the CGS coordinated brand awareness activities to raise awareness of its work among stakeholders. This endeavour involved organising events, campaigns, stakeholder engagements, participating in conferences, and establishing and maintaining media relations and strategic collaborations and partnerships.

Brand-building highlights included:

- A media article was published in the publication *Modern Mining* on the conclusion of a memorandum of understanding between the CGS and the Development Bank of Southern Africa (DBSA) to boost infrastructure development.

- A media piece was published on the online news site *My Broadband* which focussed on repairing sinkholes in South Africa. The duration and cost estimates for this work were publicised.
- *Mining Weekly* magazine published a piece on the CGS celebration of 110 years of geoscientific excellence.
- The CGS published message in the *Mail & Guardian* newspaper to congratulate two CGS scientists who had reached the final round of the National Science and Technology Forum (NSTF) awards.
- CGS women were profiled in *Leadership Magazine* in celebration of Women's Month.
- An article was published in the *South African Municipal Publication 2023* with a focus on geoscience as the fulcrum for human development.
- A career spotlight piece that celebrated two CGS scientists was published in the *Innovation, Science, Engineering and Technology (ISET) Career South Africa* magazine to attract the interest of learners to earth science-related careers.
- A media advertorial was published in the *Green Economy journal* on the role of the CGS in the country's just energy transition to a low-carbon economy.
- A media advertorial was published in the *Mining Africa News* magazine on integrated geoscience mapping for a sustainable future.
- A media article was published in the *Mining Decision* magazine focussing on the CGS data portal that provides digital access to geoscientific data.
- A media piece was published in the *African Business* magazine focussing on reimagining mineral exploration.
- A media article was published in the *Mining Review Africa* publication on stepping stones for South African exploration.
- A number of articles were published in various media publications such as the *Weekend Argus*, *IOL Business Report*, *City Press* and *Rapport* covering the CGS's participation in the African Mining Indaba that took place in Cape Town.
- A total of 48 advertorials were published in various trade and mainstream media to profile and promote the CGS's work and role in society.
- Real-time newsfeeds showcasing organisational developments, stakeholder engagement initiatives, campaigns, events and geoscience information contributed to a steady growth of followers on CGS social media platforms such as Facebook, Twitter and LinkedIn.

Media interviews included:

- The CEO of the CGS, Mr Mosa Mabuza, was interviewed by *Mining Review Africa* on the CGS as an enabler for exploration.
- Mr Mosa Mabuza was interviewed by SABC News (@ TheGlobe) on reducing our carbon footprint.
- Ms Refilwe Monoko was interviewed on The Sheila Khama Extractives Podcast about the geopolitics of critical minerals.
- Dr Taufeeq Dhansay was interviewed on Radio 702 where he gave his views on illegal mining.
- Mr Mosa Mabuza was interviewed on the SABC News Morning Live show which covered the CGS Summit and the organisation's 110-year celebration of its existence.
- Mr Sibongiseni Hlatshwayo was interviewed on Ukhozi FM during the Geoscience Summit.
- Dr Humphrey Mathe was interviewed by the SABC News Morning Live team to profile the Geoscience Summit and the 110-year celebration of the CGS's existence.
- Mr Goodman Chiliza was interviewed on Ukhozi FM on an earthquake that had occurred in KwaZulu-Natal Province.
- Dr David Khoza was interviewed by Hot FM where he explained the CGS's contribution to the mining industry.
- Mr Mosa Mabuza was interviewed on Channel Africa's Rise and Shine FM show to talk about critical minerals and the importance of geological mapping to the mining industry.
- Dr Thakane Ntholi was interviewed by Newzroom Afrika on the role of youth in the mining industry.

In addition, the CGS responded to an abundance of ad hoc print and online media enquiries on earthquakes as and when these occurred.

Campaigns and events included:

Key campaigns and events during the year:

- Mr Mosa Mabuza officially announced the Geoscience Summit on internal and external communication platforms.
- The CGS hosted a career expo in Leandra, Mpumalanga, to introduce learners to science-related careers.
- During Women's Month (August), the CGS celebrated some of its women employees by profiling them on various internal and external communication platforms.
- The CGS commemorated International Geodiversity Day (6 October) by focussing on the geology of Lake Fundudzi located in the Soutpansberg in Limpopo Province.

- The CGS participated in the South African Geophysical Association (SAGA) conference in December 2022 to share work done by the organisation through oral and poster presentations and to promote the CGS brand.
- The CGS profiled the Geoscience Summit using billboards strategically located at O.R Tambo International Airport in Johannesburg, King Shaka International Airport in Durban and in Pretoria Street in Silverton, Pretoria, where its headquarters are situated.
- A year-end video message from the CEO was shared with employees, and a season's greetings message was shared with CGS followers on various social media platforms.
- The CGS participated in the DMRE-coordinated mining investment conferences that took place in Limpopo and North West Provinces. The CEO and Ms Refilwe Monoko presented talks on the mineral potential in these provinces with a view to stimulating new investment opportunities.
- The CGS hosted a two-day wellness event, themed 'Science at play', that sought to empower and equip employees with information pertaining to their health, wellness and lifestyles.
- The CGS participated in the Mine Health and Safety Council Summit to raise awareness of its work on seismicity and ground stability studies.

13.2 Stakeholder engagement

The *raison d'être* of the CGS draws on stakeholder relations management as an enabler for delivering on its mandate. The CGS stakeholder engagement process is aligned with the strategic outputs of the organisation. The aim of the stakeholder engagement programme is to build mutually beneficial relationships with its stakeholders. To achieve this objective, the CGS must engage and communicate with a broad spectrum of stakeholders, including employees, international, national and provincial departments, municipalities, traditional authorities, State-owned entities, farmers, environmental non-government organisations, academic and professional bodies, private companies and the public.

During 2022/23, a concerted effort was made to improve the quality and frequency of interactions with stakeholders to foster a supportive and collaborative operating environment. The CGS stakeholder engagement programme follows an integrated approach that includes understanding, aligning and managing stakeholder expectations, underpinned by corporate responsibility, good governance and transparency. This approach focusses on building and nurturing symbiotic relationships with key stakeholders to ensure the successful implementation of the CGS GTP and commercial projects. To this end, CGS management, scientific, technical and support staff all embrace this approach, which is now beginning to bear fruit in respect of project implementation, brand positioning and visibility.

Numerous introductory and iterative engagements were held with key stakeholders to enable the seamless implementation of the CGS GTP, corporate engagements and events. Subsequent to the approval of the Exploration Strategy for the Mining Industry in South Africa, Government gave the CGS the responsibility to revitalise the exploration sector, necessitating a reprioritisation of several projects.

Northern Cape: Base metal mapping project

In its quest to undertake fundamental research on various types of magmatic and hydrothermal base metals, the CGS engaged with a variety of stakeholders in the Northern Cape Province to galvanise their support, especially to ensure that the affected community allows CGS scientists access to private property to collect geological data. Scientists collected data for base metal mineralisation characterisation in Namaqualand within the framework of the 1:50 000-scale mapping campaign. The stakeholders consulted included, among others, representatives of the ZF Mgcawu District Municipality, the Kai!Garib Municipality, the Khâi-Ma Municipality, private game reserves, farmers, landowners and mining operators. In addition, the CGS held iterative meetings with the Agri Noord-Kaap union to provide updates on results from the mapping programme of the previous year and to seek support for activities planned for 2022/23.

Mpumalanga: CCUS

The CGS has been tasked with the responsibility to implement CCUS and to consider all interrelated aspects of social, economic, technical and environmental factors. In the Mpumalanga Province, the stakeholder engagement programme provided support to the fundamental geoscience mapping programme with a view to expanding the repository of 1:50 000-scale maps, and research and development to characterise the geological formations that are suitable for CO_2 storage. The objective of this work is to ensure South Africa's energy security through CCUS and to facilitate the country's transition to a low-carbon economy. This research advances the South African commitment to shift towards a

low-carbon economic growth trajectory, consistent with the commitments to the international climate change protocols. Prior to the execution of scientific work, the CGS held a number of consultative engagements with all spheres of Government in the Province, including the Department of Economic Development and Tourism, Gert Sibande District Municipality, Govan Mbeki Local Municipality, community leaders and the farming community.

These engagements culminated in the CGS being invited to the Mpumalanga Energy Summit and the Provincial Economic Summit, where the CGS presentation outlined how CCUS research aims to contribute directly to South Africa's energy security in response to the unprecedented national energy crisis. As a response to the just transition, the CGS was afforded an opportunity to exhibit and present at the Nkangala District Municipality's DDM Just Transition and Renewable Energy Summit. The purpose of the summit was to gather a variety of stakeholders in one place to discuss issues pertaining to energy in the district under the Just Transition Framework. The summit was followed by an invitation to the CGS to participate in the Department of Agriculture, Land Reform and Rural Development Spatial Planning and Land Use Management Forum. The CGS presented on CCUS, showcasing the integration of geotechnical studies into DDM strategies at a municipal level.

The CGS, in addition, conducted three procurement workshops for small, medium and macro enterprises, in collaboration with the Govan Mbeki Local Municipality's Local Economic Development Directorate, to outline the research objectives and possible economic spin-offs associated with CCUS within the jurisdiction of the municipality. Local business forums and stakeholders showed great interest in the workshops, especially in view of possible future employment opportunities arising from CCUS that might alleviate the high unemployment rate within the municipality.

As part of its community capacity building initiative, the CGS, in collaboration with the Highveld Ridge West Circuit and the Gert Sibande Education District, hosted a career exhibition for high school learners in Leandra. The aim of the event was to empower Grade 11 to 12 learners by creating an awareness of science, technology, engineering, mathematics and innovation careers. Funding and bursary opportunities were also presented. During this event the CGS provided guidance and mentorship to the more than 370 learners, educators, stakeholders and exhibitors who attended the event.

Eastern Cape and KwaZulu-Natal Provinces: National geohazards mapping

Following the heavy rain that caused severe flooding and landslides in southern and south-eastern South Africa, particularly in KwaZulu-Natal and the Eastern Cape Provinces in April 2022, the CGS prioritised these areas for landslide and susceptibility assessments. A National State of Disaster was declared in response to the floods and landslides that had caused 448 people to lose their lives, displaced over 40 000 people, and destroyed over 12 000 houses. Infrastructure such as roads, health clinics, and schools had been severely damaged.

To enable the implementation of the assessment, the Communication and Stakeholder Relations Unit of the CGS organised meetings with the eThekwini Metropolitan Municipality, ward councillors and the Luthuli Traditional Council to present the CGS plan for the regions affected by the floods. In addition, the KwaZulu-Natal CGS disaster research team was tasked with identifying the areas that had been worst affected by severe flooding and landslides in the area of eThekwini for a planned field trip during the Geoscience Summit. As part of commemorating 110 years of existence, the CGS hosted a field trip during which participants joined CGS scientists in analysing recent findings of the research study undertaken in the flood-ravaged areas in an attempt to answer remaining questions.

While in the Eastern Cape, CGS scientists were tasked with establishing the extent of the damage and advising the municipality accordingly. In addition, the scientists conducted geotechnical mapping to inform future town development planning within the jurisdiction of the Port St. Johns Local Municipality.

Western Cape: Karoo Deep Drilling Programme

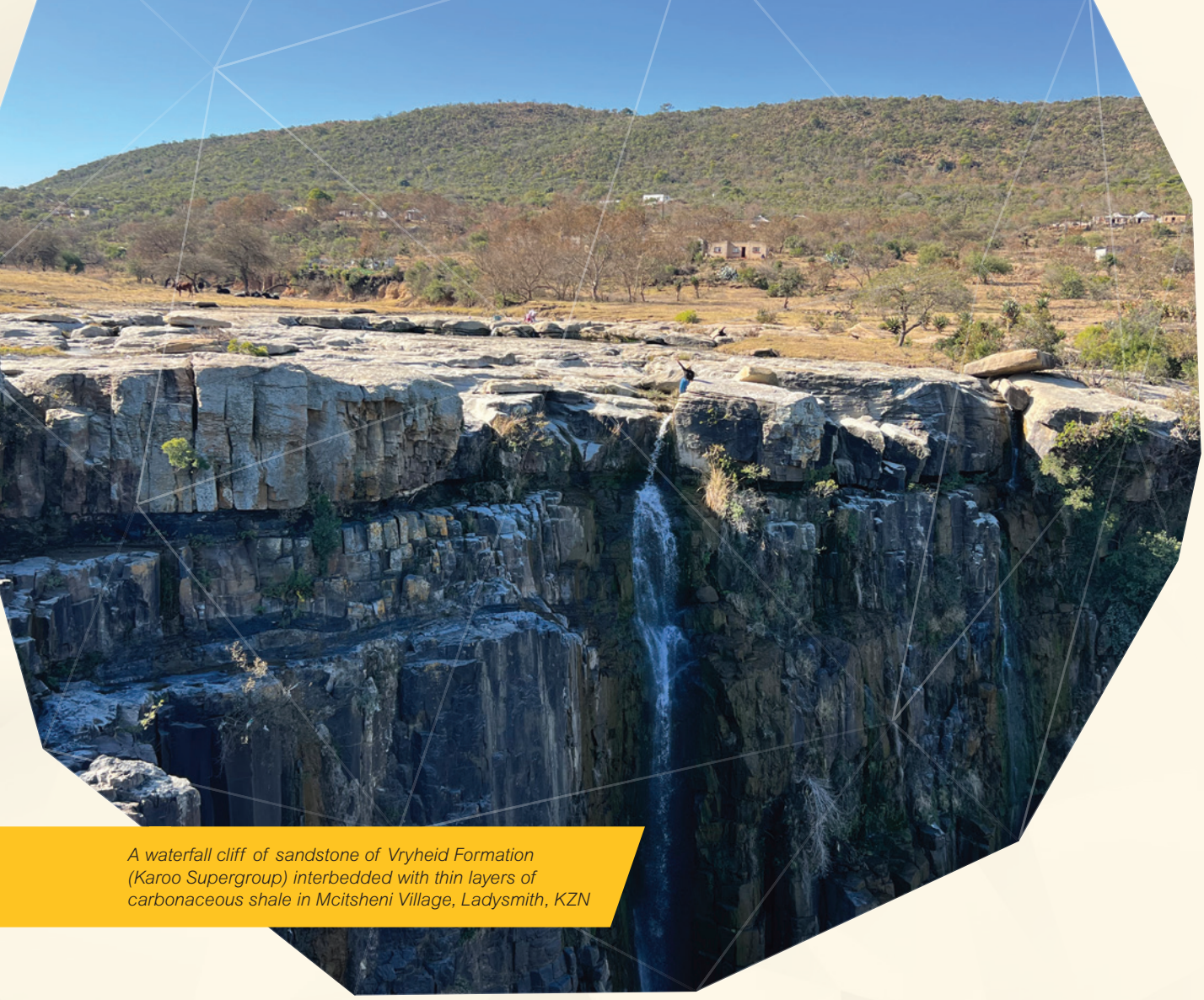
The CGS CEO led a team to apprise the Council of the Central Karoo District Municipality on the progress, implementation and recommendations of the geo-environmental baseline study carried out for the KDD Programme. The objective of the programme was to provide scientific baseline information on possible shale gas development in South Africa. The report will be made available to the public once the South African Cabinet has endorsed it. The meeting with the district municipality also introduced the KDD Programme to the newly appointed council following the local government elections that had been held in 2021.

14 B-BBEE COMPLIANCE PERFORMANCE INFORMATION

The following table (Table 10) has been completed in accordance with the compliance to the Broad-based Black Economic Empowerment (B-BBEE) requirements of the B-BBEE Act of 2013 and as determined by the Department of Trade, Industry and Competition.

Table 10: CGS B-BBEE compliance performance information

Has the Department / Public Entity applied any relevant Code of Good Practice (B-BBEE Certificate Levels 1–8) with regards to the following:		
Criteria	**Response Yes/No**	**Discussion** *(include a discussion on your response and indicate what measures have been taken to comply)*
Determining qualification criteria for the issuing of licences, concessions or other authorisations in respect of economic activity in terms of any law?	No	The CGS does not issue licences, it is not within its mandate. The issuing of mining licences is done by the DMRE.
Developing and implementing a preferential procurement policy?	Yes	Preferential procurement is incorporated in the Supply Chain Management Policy and implementation is on-going depending on new National Treasury statutes.
Determining qualification criteria for the sale of state-owned enterprises?	No	It is not within the mandate of the CGS to sell state-owned enterprises.
Developing criteria for entering into partnerships with the private sector?	Yes	The CGS can collaborate with the private sector; it depends on how the skills sets complement each other, and each partnership will have its own criteria.
Determining criteria for the awarding of incentives, grants and investment schemes in support of Broad-based Black Economic Empowerment?	No	The CGS does not issue grants and investments schemes; however, bursaries are issued based on the CGS bursary policy.



A waterfall cliff of sandstone of Vryheid Formation (Karoo Supergroup) interbedded with thin layers of carbonaceous shale in Mcitsheni Village, Ladysmith, KZN

PART D
HUMAN RESOURCES MANAGEMENT

This section presents key focus areas of the Human Resources Business Unit for 2022/23, including training and transformation initiatives.

The section also includes:

- Performance measurement systems to assess performance;
- Management of employee wellness to ensure the health and wellbeing of staff;
- Key human resources activities for the year;
- Human capital challenges;
- Human resources goals; and
- Human resources statistics.

The CGS regards its staff as a resource pivotal to the delivery of its strategic objectives. To this end, the Human Resources Business Unit is a strategic partner in the organisation whose role is to ensure that the CGS attracts and retains the required resources and expertise to carry out its legislative mandate and strategic objectives.

1 OVERVIEW OF HUMAN RESOURCES MATTERS

1.1 Staff complement

The CGS has a staff complement of 428 across six regions, namely Pretoria (Head Office), Gqeberha, Bellville, Limpopo, Pietermaritzburg and Upington. Of these, 46% are employed in core (scientific) functions and 54% in support functions (Figure 17). The organisation invests significantly in its staff with a major focus on youth and women. The CGS takes pride in a staff complement of whom 50% are women.

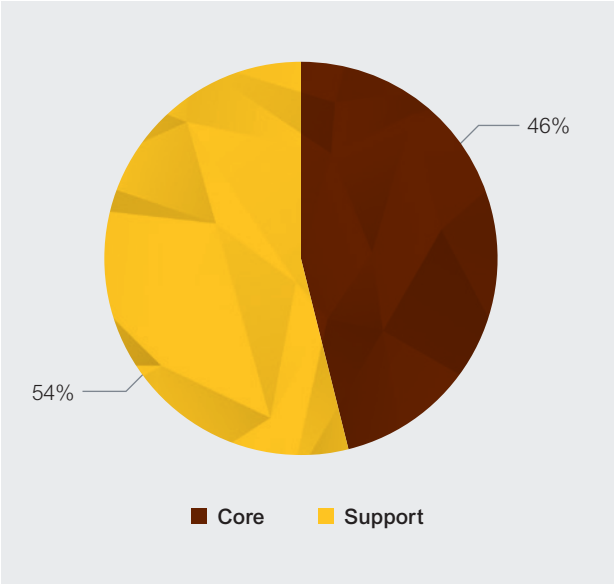


Figure 17: Composition of the CGS staff complement in 2022/23

1.2 Key human resources activities and achievements during 2022/23

- The performance contracts for core functions were standardised during the year under review. The purpose of this exercise was to ensure the alignment of performance targets for all scientists at different levels.
- The Mining Qualifications Authority (MQA) granted the CGS's application for a discretionary grant for the Intern programme and the Management and Executive Development Programme (MEDP). Funding for 10 internships and three staff members currently studying under the MEDP was approved. This achievement demonstrates the CGS's commitment to performance management and to supporting staff development with a view to creating a healthy talent pipeline and fair performance targets.
- Successful staff inductions were held during which Executive Managers and Managers presented the activities and important policies and procedures applicable to their respective business units. Furthermore, the appointed Employee Wellness Service Provider presented services available in this regard to CGS staff members and their extended family members.
- The CGS successfully hosted a Wellness Day at all the CGS offices. The aim of the Wellness Day was to empower employees by providing them with health education and lifestyle advice. This information will enable them to optimise their health, and will therefore promote a healthy workforce. Employees were afforded the opportunity to take health screening tests, and to participate in fun and physical activities to promote team building.
- The CGS partnered with the Commission for Conciliation, Mediation and Arbitration to host two workshops on harassment in the workplace. The aim of the workshops was to empower employees and managers with knowledge on workplace harassment. Harassment includes behaviour such as bullying and sexual harassment.
- A staff satisfaction survey was conducted during the last quarter of 2022/23 and the resulting interventions will be implemented in the new financial year.
- Two women executive managers were successfully appointed to fill the vacant positions of Executive Manager in the Office of the CEO and Executive Manager Corporate Services. The appointments resulted in the CGS exceeding its target of 40% female representation by 10% (achieving 50%) in top management positions in the organisation.
- As a science institution, the CGS advertised and offered 49 deserving bursars with new bursaries. The bursaries were awarded to CGS staff (part-time bursaries) as

well as non-staff (full-time bursaries), with a view to contributing to the government's initiatives of skills development and creating employment opportunities. The bursary initiative further demonstrates the CGS's commitment to staff development.

- A talent management framework has been developed and is currently being considered for approval and implementation.
- An Employment Equity report was successfully submitted to the Department of Employment and Labour.
- A Workplace Skills Plan and annual training report was successfully submitted to the MQA.

1.3 Staff turnover analysis

Employee turnover measures the percentage of employees who left the CGS during the year under review, as well as the rate at which vacancies are filled. The year ended with a staff turnover of 7.89%, which is below the set 10% threshold. This rate is attributed to retention initiatives such as learning and development and other important employee support initiatives. Resignations accounted for 65% of terminations, with 21% of terminations resulting from retirement. As reflected in Figure 19, 50% of all terminations are from core and 50% are from support.

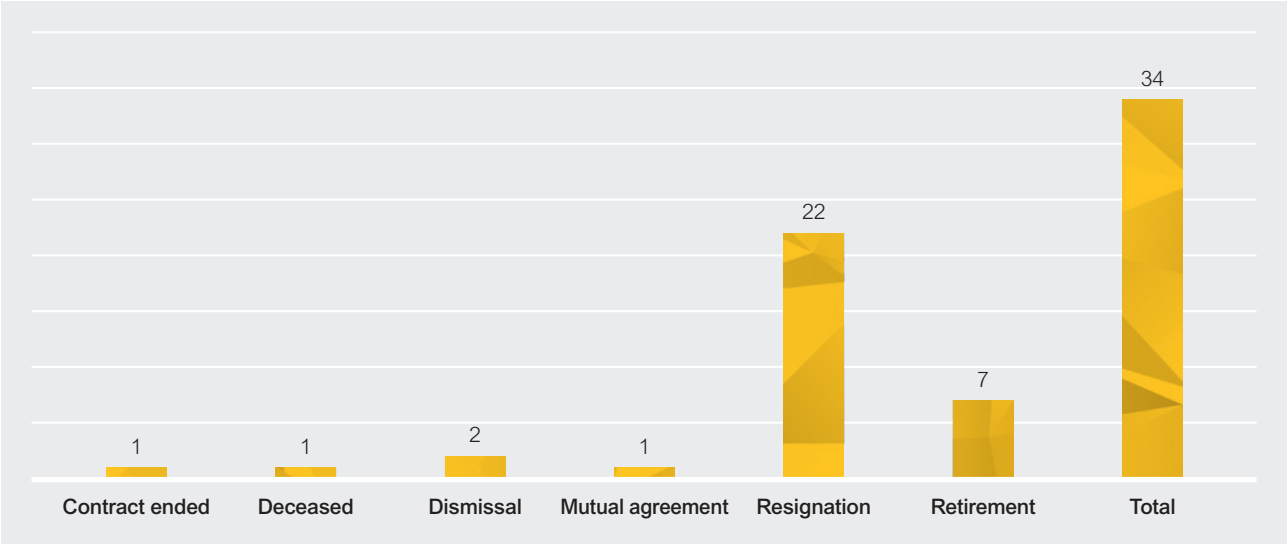


Figure 18: CGS staff turnover in 2022/23

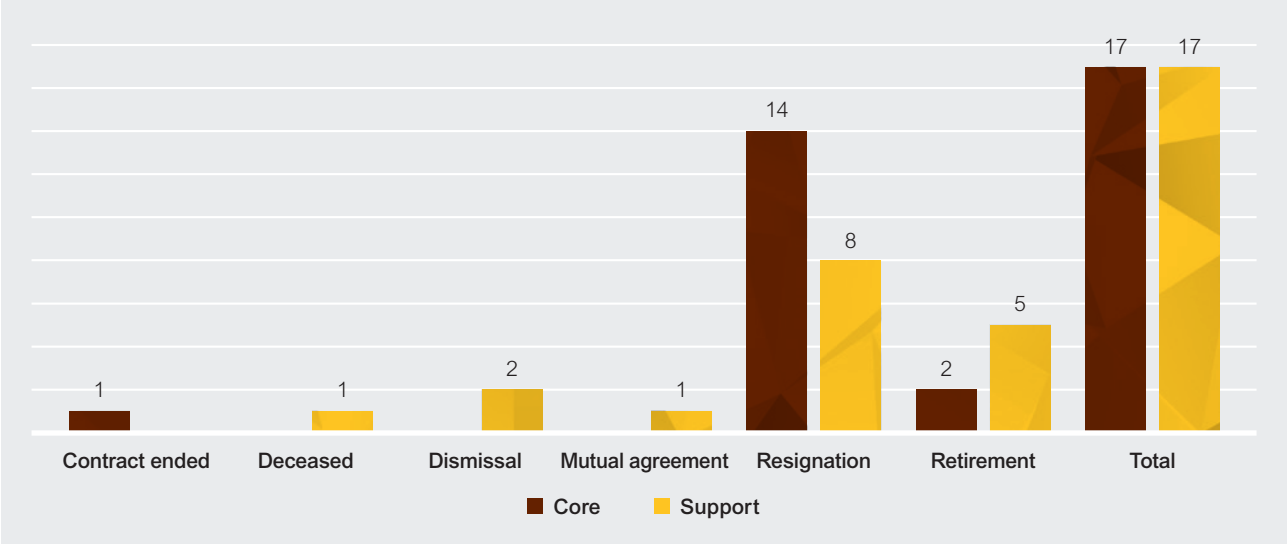


Figure 19: Turnover of CGS support and core staff in 2022/23

1.4 Overall employee tenure

Seventy-eight percent of CGS staff remain at the CGS for five years or longer. While longer-tenured employees have knowledge of the culture, services and mandate of the CGS, it is important to balance the value of retaining this knowledge with the equally important goal of hiring new employees who contribute new and fresh ideas. It is to the CGS's advantage that its workforce reflects a blend of the two cohorts.

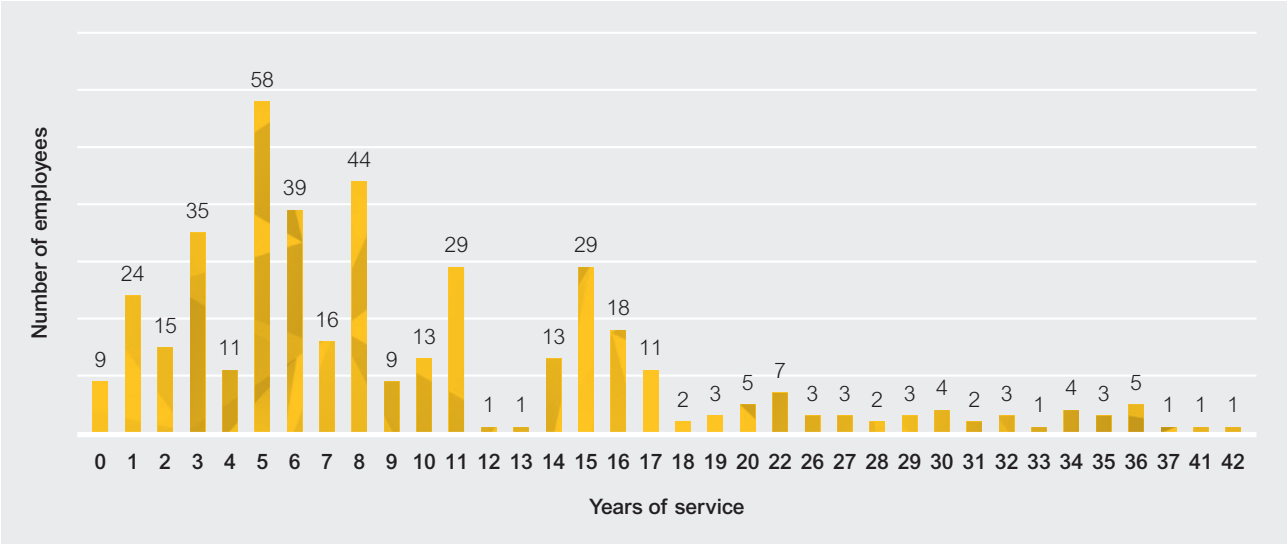


Figure 20: Overall employee tenure within the CGS

1.5 Workforce age analysis

Twenty-two percent of the CGS workforce are classified as youth. This statistic represents a decline from 26% in 2021/22. To capacitate its youth, the CGS continues to give opportunities to staff (and the citizens of the country) through its bursary and internship programmes.

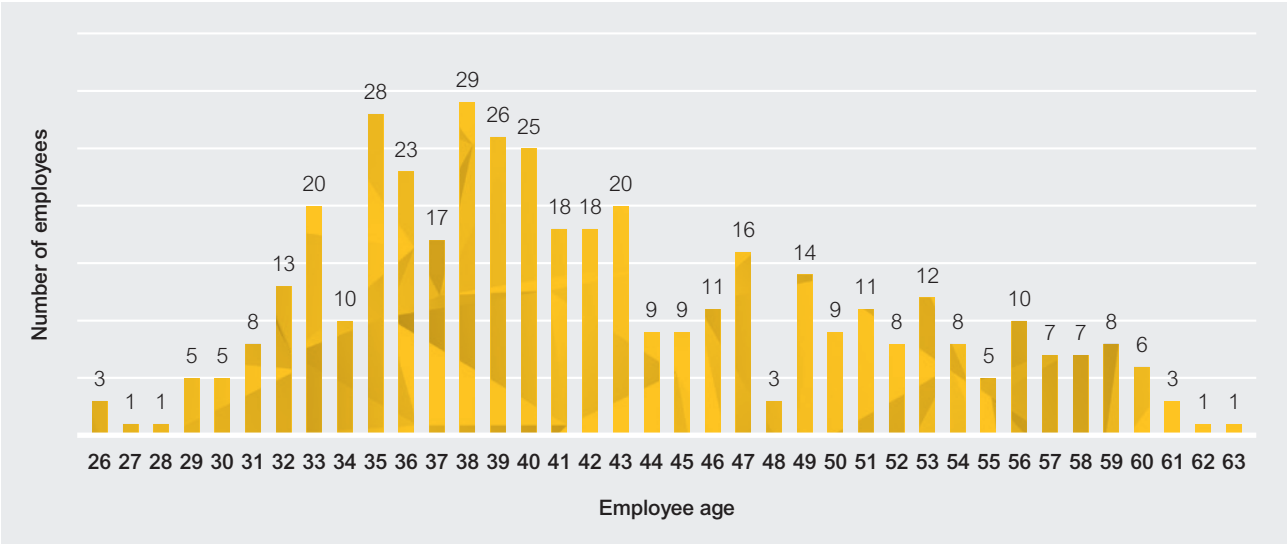


Figure 21: Analysis of the ages of CGS employees

1.6 Internship programme

Figure 22 presents an overview of the CGS internship programme for the year under review.

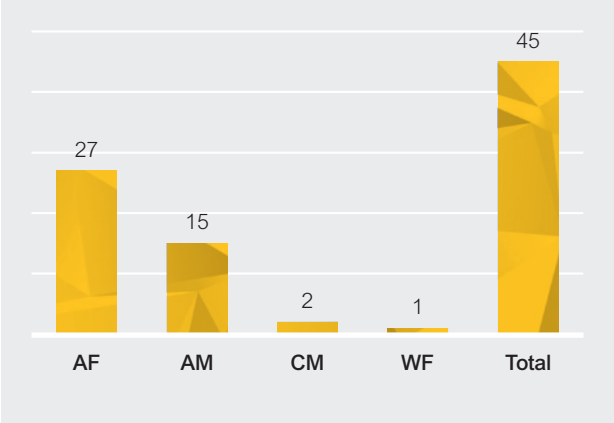


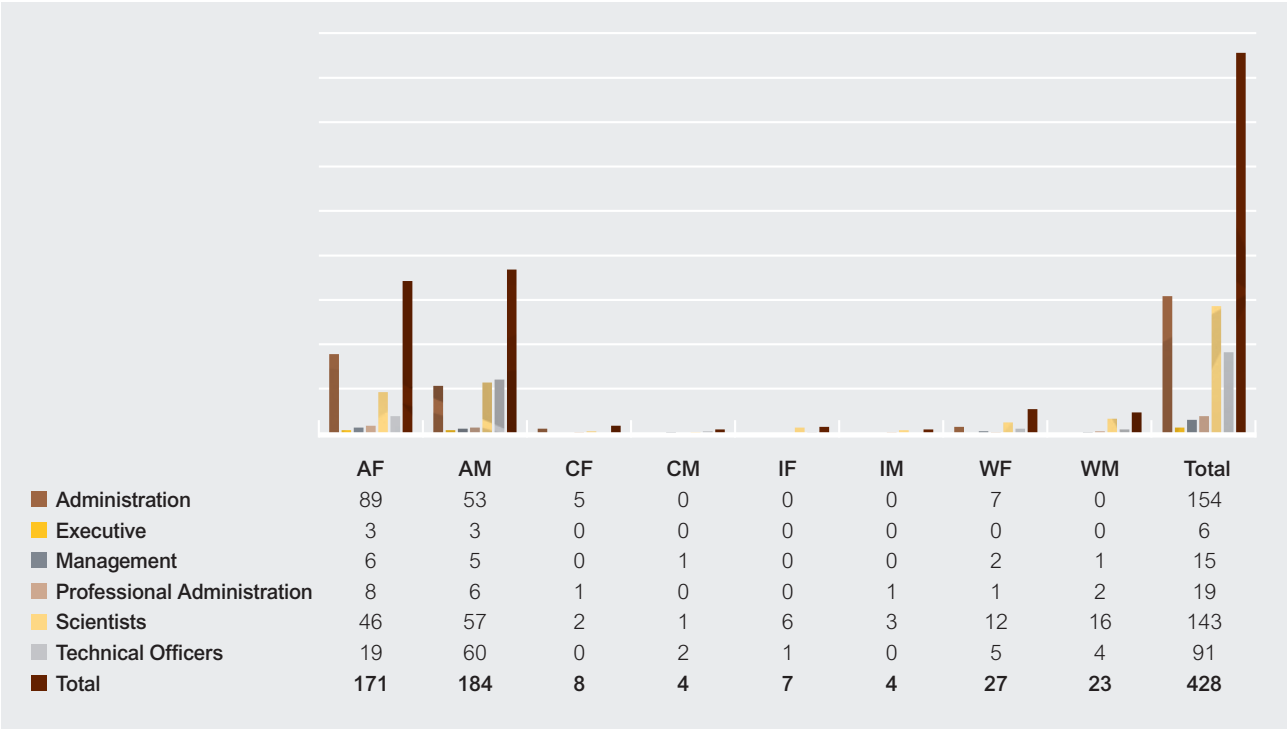
Figure 22: CGS internship programme in 2022/23

Note: AF – African female; AM – African male; CM – Coloured male; WF – White female

There are currently 45 interns at the CGS on a programme that runs for a period of two years. Forty-seven percent of the interns are placed with the core staff of the organisation, while 53% are in support functions. The programme gives graduates much-needed practical exposure to increase their prospects of employment. Some interns are offered permanent employment while others are offered fixed-term contracts during or after their internship contracts, following a rigorous recruitment process.

1.7 Workforce analysis

While gender representation has been achieved at organisational level, there is an opportunity to improve representation in some key and strategic areas. Noticeably, 52% of African women occupy administrative roles, while 3.51% are in management positions. Management is considering implementing affirmative action measures to ensure that more African women are appointed to critical positions.



	AF	AM	CF	CM	IF	IM	WF	WM	Total
Administration	89	53	5	0	0	0	7	0	154
Executive	3	3	0	0	0	0	0	0	6
Management	6	5	0	1	0	0	2	1	15
Professional Administration	8	6	1	0	0	1	1	2	19
Scientists	46	57	2	1	6	3	12	16	143
Technical Officers	19	60	0	2	1	0	5	4	91
Total	**171**	**184**	**8**	**4**	**7**	**4**	**27**	**23**	**428**

Figure 23: CGS staff profile: demographics by race, gender and job category

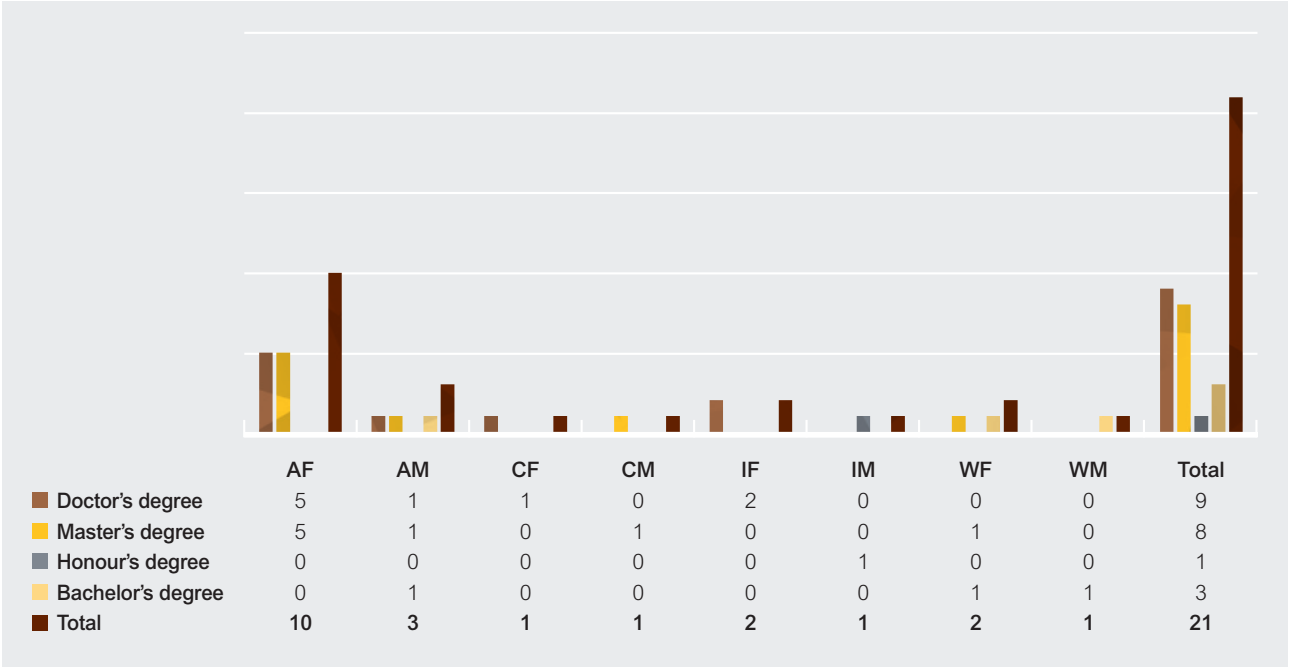
Note: AF – African female; AM – African male; CF – Coloured female; CM – Coloured male; IF – Indian female; IM – Indian male; WF – White female; WM – White male

1.8 Bursaries

1.8.1 Full-time bursars

The external full-time bursary programme supports talented students from previously disadvantaged backgrounds. In the 2022 academic year, 21 students were awarded bursaries. Figure 22 profiles the full-time bursars for the year under review.

Of these 21 full-time bursars, 76% are women and 24% are men. Of the nine full-time PhD bursars eight are women and six of the eight Master's degree bursars are women. This demonstrates the CGS's commitment in empowering women in the geoscience environment.



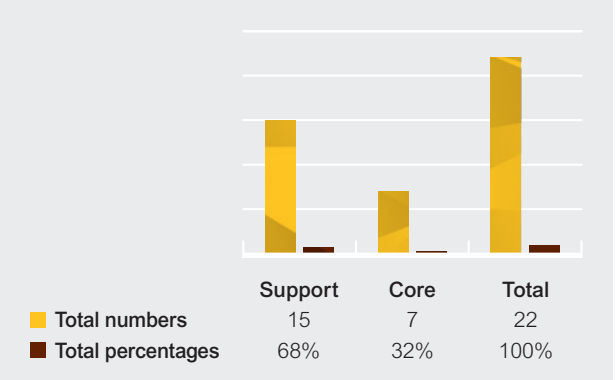
	AF	AM	CF	CM	IF	IM	WF	WM	Total
Doctor's degree	5	1	1	0	2	0	0	0	9
Master's degree	5	1	0	1	0	0	1	0	8
Honour's degree	0	0	0	0	0	1	0	0	1
Bachelor's degree	0	1	0	0	0	0	1	1	3
Total	10	3	1	1	2	1	2	1	21

Figure 24: Full-time CGS bursars in 2022/23

Note: AF – African female; AM – African male; CF – Coloured female; CM – Coloured male; IF – Indian female; IM – Indian male; WF – White female; WM – White male

1.8.2 Part-time bursars

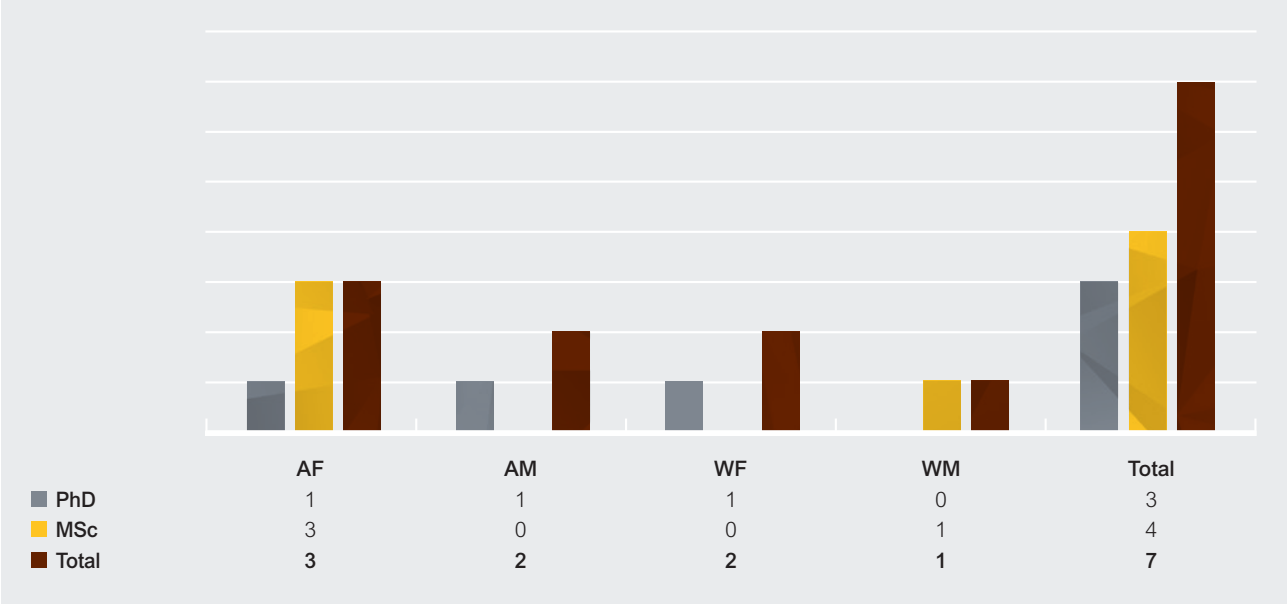
Part-time bursaries are offered to CGS staff for scientific and non-scientific studies. The part-time bursary programme is integral to CGS's career development and retention strategies. There were 22 new part-time bursars in the year under review. Of these new bursaries awarded, seven are for core-related qualifications and 15 are for support-related qualifications. Sixty-eight percent of the bursars are women while 32% are men. The skills development initiative demonstrates the CGS's commitment to creating and supporting a capacitated and skilled workforce.



	Support	Core	Total
Total numbers	15	7	22
Total percentages	68%	32%	100%

Figure 25: Breakdown of part-time CGS bursars in 2022/23

Figure 26 provides an overview of the seven part-time bursars pursuing PhD and Master's degrees for the year. Notably, 57% of the bursars are women and 43% are men.



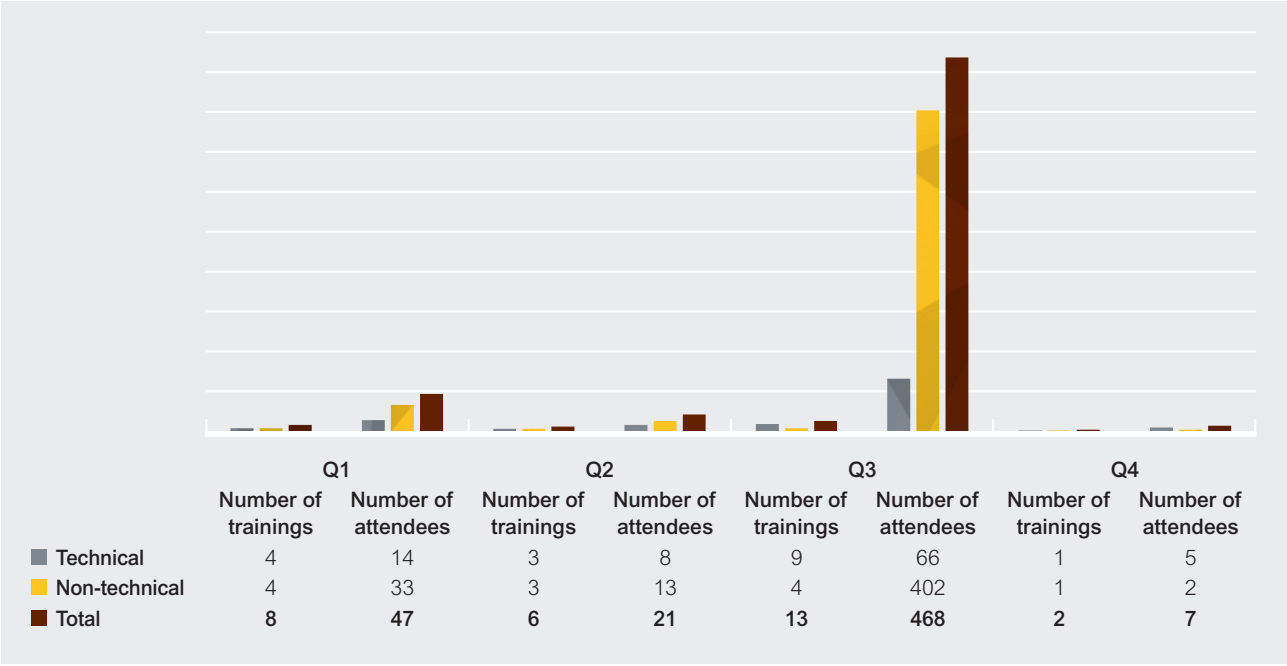
	AF	AM	WF	WM	Total
PhD	1	1	1	0	3
MSc	3	0	0	1	4
Total	**3**	**2**	**2**	**1**	**7**

Figure 26: Part-time PhD and Master's degree bursars at the CGS

Note: AF – African female; AM – African male; WF – White female; WM – White male

1.9 Training interventions completed during the year

Figure 27 summarises the number of training interventions completed during the year under review.



	Q1		Q2		Q3		Q4	
	Number of trainings	Number of attendees	Number of trainings	Number of attendees	Number of trainings	Number of attendees	Number of trainings	Number of attendees
Technical	4	14	3	8	9	66	1	5
Non-technical	4	33	3	13	4	402	1	2
Total	**8**	**47**	**6**	**21**	**13**	**468**	**2**	**7**

Figure 27: List of training interventions and numbers of attendees

1.10 Investing in staff

In line with the employment equity priorities of the country, the CGS takes its responsibility to empower staff seriously, especially from historically disadvantaged communities, and grows a scientific and support services human resources base that is gender representative. Our people love what they do, as the following four profiles of some of our star performers attest.

Dr Thifhelimbilu Mulabisana

"The first South African woman to graduate with a PhD in Geophysics, specialising in Seismic Hazard and Seismotectonics.

When did you join the CGS?

I joined the CGS in 2012 as an intern in the then Seismology Business Unit.

What did you want to do when you were in matric?

I knew I wanted to do research into earthquakes; I found them interesting.

How did the CGS assist you in fulfilling your dreams?

The CGS helped me to discover my passion through its outreach career exhibitions. The CGS also sponsored my studies from the time I was an undergraduate right up to my PhD studies.

What is your current role?

I am a scientist, specialising in earthquake seismology.

What is rewarding about your role?

I research seismic hazards and seismotectonics. I find this work rewarding as I am able to contribute to identifying earthquake-associated hazards in South Africa and southern Africa. In this way I can contribute to the safe development of infrastructure.

How is your role linked to the CGS's strategic objectives?

The research in which I participate influences the safety measures and precautions put in place for infrastructure development. I think this work is of paramount importance to human advancement.

What challenges you?

I am challenged by the desire to learn and the excitement of discovering new things.

With hindsight, would you have chosen a different career?

It took me a while to identify the career I wanted to pursue when I was growing up. But I do not think there is any other way I would have been happier contributing to society.

How would you encourage:

Youngsters wanting to follow your career?

Science and research are a lot of fun, especially when you get to understand how much your work contributes to human development.

Ambitious CGS employees below your level?

There are ample opportunities to further your studies at the CGS, grab them and strive to perform to your full potential.

Dr Rudzani Lusunzi

When did you join the CGS?

I began working at the CGS as an intern in 2011 and have over 12 years' work and research experience. From November 2014 to March 2015, I was employed as a junior scientist in the Water and Environment Business Unit. In July 2015, I moved to the Minerals and Energy Business Unit.

What did you want to do when you were in matric?

I wanted to work as a mining engineer.

How did the CGS assist you in fulfilling your dreams?

I joined the CGS as an intern in the Water and Environment Business Unit, where my primary responsibilities included geochemical sampling and quality control and assurance. As an intern, I was assigned a team leader task (to interns and technical officers) for all aspects involving mine tailings. I began working on data processing and interpretation under the supervision of senior scientists, which helped me to develop scientifically. I was tasked with assessing the potential environmental impacts attributable to mining in all South African provinces under the scientific guidance from senior staff. In 2012, following a site visit to one of the gold mining areas in Mpumalanga Province, I identified a potential problem that needed to be addressed urgently before it escalated. I then applied to study towards a Master's degree to solve the potential problem I had identified (2016–2018). This work led to a PhD qualification (2019–2022). I am grateful that the CGS believes in empowering its employees and that it ensures that their skills are enhanced through formal education qualifications.

What is your current role?

I am a junior scientist in the Minerals and Energy Business Unit.

What is rewarding about your role?

I undertake geoscientific research in a wide variety of terrains. My work includes project management and project implementation in the Minerals and Energy and the Water and Environment Business Units of the CGS.

How is your role linked to the CGS's strategic objectives?

Economic growth and environmental sustainability are two of the CGS's primary focus areas. I am involved in exploration geochemistry projects that are critical to the achievement of the objective of the NDP to capture a 5% share of global exploration expenditure. Furthermore, I am involved in projects aimed at improving water and air quality, both of which are issues that are critical to environmental sustainability, particularly in the face of global warming.

What challenges you?

South Africa is a water-scarce country, so we must preserve and enhance the resources we have. My main challenge is dealing with environmental contamination, particularly of water resources.

With hindsight, would you have chosen a different career?

I applied for and was assessed by the South African Police Services (SAPS) in 2007, and I was accepted to begin training in 2008. That said, I have no regrets about not joining the SAPS in 2008, choosing rather to return to university to complete my Honours degree in Geology.

How would you encourage:

Youngsters wanting to follow your career?

I would tell them "Let God and the sky be your limit". Some of us have never had the opportunity to be exposed to a variety of careers at a young age. Today, however, anything is possible, and you can go as far as you want. Prepare to make a difference – you are one of a kind – you can achieve your dreams if you believe in yourself.

Ambitious CGS employees below your level?

It is possible to achieve your goals as long as you are disciplined, focussed and determined.

Mr Masogana Chuene

When did you join the CGS?

I joined the CGS in 2014 as a contract technical officer in the Minerals and Energy Business Unit (formerly known as Economic Geology and Geochemistry).

What did you want to do when you were in matric?

I always wanted to work in mining and the geosciences.

How did the CGS assist you in fulfilling your dreams?

The CGS helped me to discover my passion through field excursions on various geoscience programmes including work entailing seismology, geophysics, water and the environment. Currently, I am enrolled at the University of South Africa where I am pursuing a postgraduate degree in Environmental Studies.

What is your current role?

I am an assistant technical officer in the Technical Services Unit. Our job is to provide assistance in the context of geoscientific programmes to help our scientists achieve their objectives in the office, laboratory (core laboratory), or in the field.

What is rewarding about your role?

My role entails providing assistance in geolocating study sites, geosampling, analyses and keeping field records (i.e. logging activities, making grids and observing safety protocols). These roles are vital to conducting geoscience research and fundamental to successful skills transfer in a variety of contexts (i.e. land use and infrastructure, minerals and energy and water and the environment), in support of the CGS's intention to solve societal challenges.

How is your role linked to the CGS's strategic objectives?

CGS strives to create a prosperous and transformed society enabled by geoscience solutions. My role is to assist scientists in fulfilling this objective through research.

What challenges you?

Water and environment-related research work keeps my mind awake.

With hindsight, would you have chosen a different career?

Given that I am privileged to work various geoscience units, I am able to choose what I am passionate about, as I have broad knowledge of most of the programmes carried out by CGS. I do not think I could have asked for a better place to be. Certainly, I would not have chosen to work anywhere else than where I am right now.

How would you encourage:

Youngsters wanting to follow your career?

Given an opportunity, science can be the solution to most of our challenges. Youngsters should focus and must not be distracted from achieving their goals, as they are the future of our land.

Ambitious CGS employees below your level?

The CGS is an institution that encourages its employees to upskill themselves so that they are able to boost the quality of work they produce. Bursaries are offered to staff annually to enable them to pursue studies ranging from undergraduate to postgraduate level. It is up to us to make use of this opportunity.

Ms Caroline Kabini

When did you join the CGS?

I joined the CGS on 1 December 2017 as a cleaner.

What did you want to do when you were in matric?

When I was in matric, my goal was to attend university and pursue a degree in Business Administration. I was passionate about learning about business and management, and I wanted to gain the knowledge and skills necessary to succeed in this field. However, I had to work because my family could not afford to fund my studies.

How did the CGS assist you in fulfilling your dreams?

The CGS supported my dream by granting me a bursary to pursue a Certificate in Office Administration. I have completed my certificate and am currently registered for a Bachelor in Business Administration. My studies are being funded by a CGS bursary. I am grateful for the CGS's help, which has enabled me to pursue my academic goals and achieve my dreams. In addition to funding my studies, the CGS has given me the opportunity to work in different roles, for example as a receptionist, a human resources administrator and business unit administrator.

What is your current role?

I am currently acting as a business unit administrator in the Minerals and Energy Unit (mapping stream). Officially, my job description is that of cleaner.

What is rewarding about your role?

My role as a cleaner entails cleaning the offices for colleagues. My job helps them to do their work in a clean environment/office. I find it rewarding to know that I am providing a healthy, hygienic and comfortable environment for staff to enable them to produce their best work in contributing to the CGS's strategic objectives.

As an administrator, my role is to support my team by doing administrative work, which allows them to focus on scientific work.

How is your role linked to the CGS's strategic objectives?

The CGS strategy entails an IMMP in support of the NDP and other governmental initiatives. These plans aim to create economic growth and employment with a view to reducing poverty and inequality. To achieve the strategic objectives of the CGS, staff require a clean working environment and administrative support.

What challenges you?

I am challenged to be the best version of myself.

With hindsight, would you have chosen a different career?

I am happy with my current role, as I see it as crucial to the organisation. However, I also want to grow in my career and that is why I am studying.

How would you encourage:

Youngsters wanting to follow your career?

My advice is to just do your best every day and to be the best version of yourself. If you can do that, everything else will fall into its rightful place.

Ambitious CGS employees below your level?

Invest in upgrading yourself by studying and excelling in your current role.

Ms Vhuhwavhohau Nengovhela

When did you join the CGS?

I joined the CGS in 2020 as an intern in the Mapping Unit, which is now part of the Minerals and Energy Business Unit.

What did you want to do when you were in matric?

I wanted to understand our national wealth residing in mineral deposits. I also wanted to gain an in-depth understanding of how geological processes lead to the evolution of continents and landscapes.

How did the CGS assist you in fulfilling your dreams?

The CCUS and KDD projects have catalysed my research abilities and provided me an opportunity to understand research processes from a professional perspective.

What is your current role?

I am an intern in the Minerals and Energy Unit.

What is rewarding about your role?

My role entails doing research for various projects in the unit. In this way I am helping to contribute towards achieving energy security in the country and I am actively involved in climate action. The reward of my work will be the achievement of sustainable development.

How is your role linked to the CGS's strategic objectives?

The research in which I participate focusses on achieving energy security, climate action and the just transition in support of national development imperatives.

What challenges you?

I am motivated by continuous learning and challenged to use geoscience to answer some of the tough questions and challenges in South Africa.

With hindsight, would you have chosen a different career?

Earth science has always been my passion, I knew as early as my teenage years that I wanted to be a geologist, after reading about geology in the Britannica Encyclopaedia.

How would you encourage:

Youngsters wanting to follow your career?

Human development has always hinged on the discovery of natural resources (usually water or metals) and this will remain so. Today, our demand for mineral resources and energy is unprecedented. Geoscience will still remain the "fulcrum of human development" in the 21st century and beyond.

Ambitious CGS employees below your level?

The CGS provides young scientists/researchers numerous opportunities to thrive. The multidisciplinary approach adopted by the organisation means that an intern can participate in a range of projects across the different business units and, in so doing, acquire a variety of technical skills. For example, I have had the opportunity to work with data acquired from the hyperspectral core scanner, and I have participated in the KDD drilling project in the Karoo Basin, the first of its kind since the SOEKOR project in the 1960s. Nothing beats this type of exposure for a young geoscientist.

1.11 Employee relations

During the year under review, various misconduct cases were heard and grievances were lodged. The most prevalent transgressions were non-disclosure of conflicts of interest (5) and breaches of the CGS Code of Ethics (5). These transgressions were followed by dishonesty (3), alcohol abuse (2), unprofessional conduct (2), misrepresentation (1), harassment (1) and unauthorised absence (1). The CGS continues to encourage employees to comply with policies and procedures by applying various interventions to encourage adherence to the policies. Corrective measures are applied when management is required to enforce compliance.

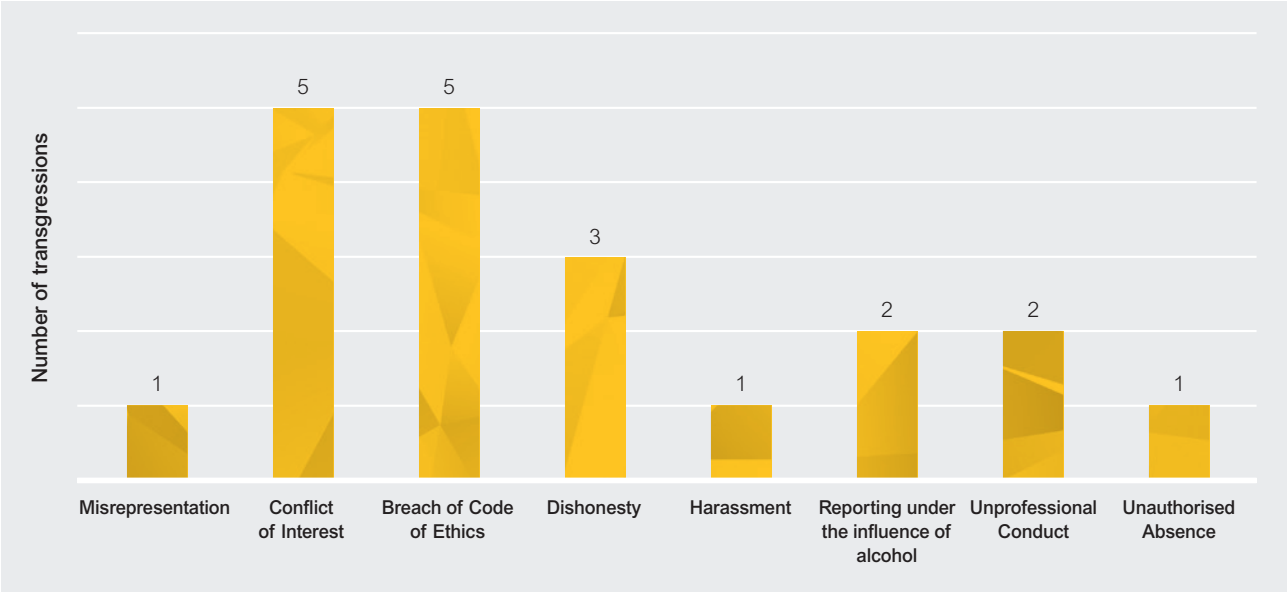


Figure 28: Breakdown of cases of misconduct at the CGS during 2022/23

1.12 Safety time lost through injury

Nine injury-on-duty cases were reported during the year under review and measures are being taken to prevent a recurrence of these.

1.13 Planned activities for 2023/24

The Human Resources Business Unit is planning the following activities for 2023/24:

a) Performance management – contracting, mid-year review and final assessment;
b) Workplace skills plan and annual training report to the MQA;
c) Employment Equity Plan implementation and report to Department of Employment and Labour;
d) Policy reviews;
e) Policy awareness workshop;
f) Resuscitation of mentorship programme;
g) Wellness Day;
h) Inductions;
i) Disability awareness campaign; and
j) Implementation of the targeted interventions of the 2022/23 staff survey.

~2.6Ga diabase dyke with granite basement xenoliths intruding Pongola Supergroup lithologies in the White Mfolozi Inlier in central KwaZulu-Natal.

Deformed pillow structures in komatiitic basalts of the Sifula Greenstone Belt in the Buffalo River Gorge, central KwaZulu-Natal

PART E
PFMA COMPLIANCE REPORT

This part of the report provides information relating to the CGS's compliance with the PFMA. The section covers the following information:

- Irregular, fruitless and wasteful expenditure and material losses;
- Late and/or non-payment of suppliers; and
- Supply chain management.

1 IRREGULAR, FRUITLESS AND WASTEFUL EXPENDITURE AND MATERIAL LOSSES

1.1 Irregular expenditure

a) Reconciliation of irregular expenditure

Description	2022/23 R'000	2021/22 R'000
Opening balance	-	1 695
Add: Irregular expenditure confirmed	-	-
Less: Irregular expenditure condoned	-	(1 695)
Less: Irregular expenditure not condoned and removed	-	-
Less: Irregular expenditure recoverable	-	-
Less: Irregular expenditure not recovered and written off	-	-
Closing balance	**-**	**-**

No irregular expenditure has been incurred in the financial year under review.

Reconciling notes

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure under assessment in 2022/23	-	-
Irregular expenditure relating to 2021/22 and identified in 2022/23	-	-
Irregular expenditure for the current year	-	-
Total	**-**	**-**

b) Details of current and previous year irregular expenditure (under assessment, determination, and investigation)

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure under assessment	-	-
Irregular expenditure under determination	-	-
Irregular expenditure under investigation	-	-
Total	**-**	**-**

No irregular expenditure has been incurred in the financial year under review.

c) Details of current and previous year irregular expenditure condoned

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure condoned	-	1 695
Total	**-**	**1 695**

No irregular expenditure has been incurred in the financial year under review.

d) Details of current and previous year irregular expenditure removed – (not condoned)

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure NOT condoned and removed	-	-
Total	**-**	**-**

No irregular expenditure has been incurred in the financial year under review.

e) Details of current and previous year irregular expenditure recovered

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure recovered	-	-
Total	**-**	**-**

No irregular expenditure has been incurred in the financial year under review.

f) Details of current and previous year irregular expenditure written off (irrecoverable)

Description	2022/23 R'000	2021/22 R'000
Irregular expenditure written off	-	-
Total	**-**	**-**

No irregular expenditure has been incurred in the financial year under review.

Additional disclosure relating to Inter-Institutional Arrangements

g) Details of non-compliance cases where an institution is involved in an inter-institutional arrangement (where such institution is not responsible for the non-compliance)

Description	2022/23 R'000	2021/22 R'000
None	-	-
Total	**-**	**-**

No irregular expenditure has been incurred in the financial year under review.

h) Details of current and previous year disciplinary or criminal steps taken as a result of irregular expenditure

Disciplinary steps taken
None

No irregular expenditure has been incurred in the financial year under review.

1.2 Fruitless and wasteful expenditure

a) Reconciliation of fruitless and wasteful expenditure

Description	2022/23 R'000	2021/22 R'000
Opening balance	18 496	18 496
Add: Fruitless and wasteful expenditure confirmed	-	-
Less: Fruitless and wasteful expenditure written off	-	-
Less: Fruitless and wasteful expenditure recoverable	-	-
Closing balance	**18 496**	**18 496**

Fruitless and wasteful expenditure was identified with regards to the implementation of the humidity, ventilation and airconditioning (HVAC) system up to 2017. The work was found to be technically not acceptable and needed remediation. Management remains committed to eliminating and avoiding any fruitless and wasteful expenditure.

Reconciling notes

Description	2022/23 R'000	2021/22 R'000
Fruitless and wasteful expenditure that was under assessment in 2022/23	-	-
Fruitless and wasteful expenditure that relates to 2021/22 and identified in 2022/23	-	-
Fruitless and wasteful expenditure for the current year	-	-
Total	**-**	**-**

b) Details of current and previous year fruitless and wasteful expenditure (under assessment, determination, and investigation)

Description	2022/23 R'000	2021/22 R'000
Fruitless and wasteful expenditure under assessment	-	18 496
Fruitless and wasteful expenditure under determination	-	-
Fruitless and wasteful expenditure under investigation	-	-
Total	**-**	**-**

Fruitless and wasteful expenditure was identified with regards to the implementation of the humidity, ventilation and airconditioning (HVAC) system up to 2017. The work was found to be technically not acceptable and needed remediation. Management remains committed to eliminating and avoiding any fruitless and wasteful expenditure.

c) Details of current and previous year fruitless and wasteful expenditure recovered

Description	2022/23 R'000	2021/22 R'000
Fruitless and wasteful expenditure recovered	-	-
Total	**-**	**-**

d) Details of current and previous year fruitless and wasteful expenditure not recovered and written off

Description	2022/23 R'000	2021/22 R'000
Fruitless and wasteful expenditure written off	-	-
Total	**-**	**-**

e) Details of current and previous year disciplinary or criminal steps taken as a result of fruitless and wasteful expenditure

Disciplinary steps taken
None

1.3 Additional disclosure relating to material losses in terms of PFMA Section 55(2)(b)(i) and (iii)

a) Details of current and previous year material losses through criminal conduct

Material losses through criminal conduct	2022/23 R'000	2021/22 R'000
Theft	-	-
Other material losses	-	-
Less: Recovered	-	-
Less: Not recovered and written off	-	-
Total	**-**	**-**

b) Details of other material losses

Nature of other material losses	2022/23 R'000	2021/22 R'000
None	-	-
Total	**-**	**-**

c) Other material losses recovered

Nature of losses	2022/23 R'000	2021/22 R'000
None	-	-
Total	**-**	**-**

d) Other material losses written off

Nature of losses	2022/23 R'000	2021/22 R'000
None	-	-
Total	**-**	**-**

2 LATE AND/OR NON-PAYMENT OF SUPPLIERS

Description	2022/23 R'000	2021/22 R'000
Valid invoices received	11 692	284 278
Invoices paid within 30 days or agreed period	10 809	266 359
Invoices paid after 30 days or agreed period	883	17 919
Invoices older than 30 days or agreed period (unpaid and without dispute)	N/A	N/A
Invoices older than 30 days or agreed period (unpaid and in dispute)	N/A	N/A

The invoices paid after 30 days were invoices in dispute with the suppliers regarding either the price or quantity of goods or services received.

3 SUPPLY CHAIN MANAGEMENT

3.1 Procurement by other means

Project description	Name of supplier	Type of procurement by other means	Contract number	Value of contract R'000
Motivation for the approval of a single-source procurement process for appointing Major Drilling South Africa for retrieval and replacement of drilling rods	Major Drilling South Africa	Deviation	N/A	R2 306 867.77
Appointment of Optron (Pty) Ltd as a sole supplier for the procurement of two (2) new differential global positioning systems (DGPS) and a total station	Appointment of Optron (Pty) Ltd	Deviation	N/A	R1 108 641.40
Appointment of 13 specialists on a short-term contract to participate and contribute to the second workshop scheduled for 20–24 June 2022 for the Duynefontyn Probabilistic Seismic Hazard Analysis	Prof. Alex Kisters Dr Alastair Sloan Dr Marco Andreoli Dr Douglas Paton Prof. Norm Abrahamson Prof. Andreas Rietbrock Prof. Brady Cox Dr Olga Ktenidou Prof. Ben Edwards Dr Linda Al Atik Dr Laura Gulia Dr Gabriel Torro Dr Anthony Tankard	Deviation	N/A	R2 502 700.00
Appointment of Dr P. Stafford, a specialist to the Ground Motion Technical Integration Team for the Duynefontyn Probabilistic Seismic Hazard Analysis	Dr Peter Stafford	Deviation	N/A	R4 830 000.00
Appointment of Dr V. Montaldo Falero, a specialist to the Seismic Source Technical Integration Team for the Duynefontyn Probabilistic Seismic Hazard Analysis	Dr V. Montaldo Falero	Deviation	N/A	R3 712 115.46
Appointment of Red Dog Scientific Services to purchase additional equipment for the mobile seismograph stations	Red Dog Scientific Services	Deviation	N/A	R2 133 496.96
Appointment of Liepzig Advisory IT (Pty) Ltd for the provision of Enterprise Resource Planning (ERP) project management services	Liepzig Advisory IT (Pty) Ltd	Deviation	N/A	R2 760 000.00
Appointment of Bentley Systems International Limited for one (1) corporate license for Oasis Montaj and Leapfrog Software at an annual subscription	Bentley Systems International Ltd	Deviation	N/A	R4 015 719.51

Project description	Name of supplier	Type of procurement by other means	Contract number	Value of contract R'000
Appointment of University of Vermont and Professor Paul Bierman for the provision of cosmogenic dating services	University of Vermont and Prof. Paul Bierman	Deviation	N/A	R1 069 200.00 R985 875.00
Appointment of AIRBUS Southern Africa (Pty) Ltd for the CGS helicopter (RZJ) to regain airworthiness	AIRBUS Southern Africa (Pty) Ltd	Deviation	N/A	R5 400 000.00
Appointment of Mira Geoscience for a yearly subscription of the Geoscience Analyst Software maintenance corporate license	Mira Geoscience	Deviation	N/A	USD 15 060.00
Appointment of Red Dog Scientific Services as a sole supplier to supply the CGS with a set of resistivity meter	Red Dog Scientific Services	Deviation	N/A	R2 939 189.55
Appointment of Malvern PANalytical (Pty) Ltd to replace the damaged X-ray tube in the Zetium X-ray fluorescence spectrometer	Malvern PANalytical (Pty) Ltd	Deviation	N/A	R1 080 678.00
STARLIMS Netherlands B.V. (formerly Abbott Informatics Netherlands B.V.) for the upgrade of STARLIMS v10 to STARLIMS v12, including the annual maintenance plan (AMP)	STARLIMS Netherlands BV (formerly Abbott Informatics Netherlands BV)	Deviation	N/A	R2 322 374.24
Appointment of Spec Africa to supply, deliver and install a high-security Clearvu fence or similar/equivalent which is electrified to the CGS located on the farm Goedehoop, Leandra, Mpumalanga province	Spec Africa	Deviation	N/A	R6 994 304.54
Appointment of Gobora Drilling (Pty) Ltd for reverse circulation (RC) drilling of eight holes at Nchwaning 267 for a period of six to eight weeks	Gobora Drilling (Pty) Ltd	Deviation	N/A	R2 563 752.50
Total				**R43 124 030.24**

3.2 Contract variations and expansions

Project description	Name of supplier	Contract modification type (Expansion or Variation)	Contract number	Original contract value R'000	Value of previous contract expansion/s or variation/s (if applicable) R'000	Value of current contract expansion or variation R'000
Heating, ventilation, and air conditioning (HVAC) system project – supplementary budget	Amakhaza Moia (Pty) Ltd	Variation	N/A	R76 464 703.02	N/A	R23 740 081.00
Contract variation of 11.01% between the CGS and Gqozi Group Investment to procure additional and essential equipment for the fully functional core/reverse circulation drill rig	Gqozi Group Investment	Variation	N/A	R21 956 742.64	N/A	R2 417 393.21
Contract variation of 10.46% between the CGS and Mission Point Investment Holdings to procure additional and essential equipment for the fully functional percussion/reverse circulation drill rig	Mission Point Investment Holdings	Variation	N/A	R23 111 589.50	N/A	R2 417 393.21
Total				**R121 533 035.16**	**N/A**	**R28 574 867**

Jannelsepan Formation Areachap group – Pyroxene, hornblende quartz schist

PART F
FINANCIAL INFORMATION

This part of the report provides insight into the financial wellness of the CGS and covers the following information:

- Report of the Chief Financial Officer, which includes the general financial review and matters related to the proposed activities, retention of surplus, supply chain management, audit report and plans for the future.
- Report of the Auditor-General to Parliament on the CGS. This report gives an opinion regarding the fairness of the annual financial statements in presenting the organisation's financial position, financial performance, cash flow in accordance with South African GRAP standards and requirements of the PFMA in all material aspects. It reports on performance on legal and regulatory compliance, internal control and related matters.
- Annual financial statements, comprising the statement of financial position, statement of financial performance, statement of changes in net assets, cash flow statement and notes to the financial statements.

1 CHIEF FINANCIAL OFFICER'S REPORT

Mr Thabo Molikoe
Chief Financial Officer
(Acting)

Good financial management is at the heart of any business. The CGS recognises that maintaining its financial health has helped to propel the organisation forward.

Background

The Council for Geoscience is listed as a Schedule 3A Public Entity in terms of the Public Finance Management Act, Act No. 1 of 1999. The objectives underlying the establishment of the CGS are to develop and publish world-class geoscience knowledge products and to render geoscience-related services to the South African public and industry.

Financial position

A steady balance sheet position with an average growth rate of 7% has been maintained over the last 12 years. The CGS boasts total assets to the value of R610.9 million and a liquidity ratio of 1:1 in the reported financial year.

Property and equipment

An investment to the amount of R59.5 million was made in property, equipment and intangible assets during the year.

Continued investment in scientific infrastructure and equipment remains a priority to ensure that world-class facilities and equipment are acquired and maintained.

Cash flow management

The cash and cash equivalents decreased from R292.9 million in 2023 to R170.2 million in 2022, resulting in a net cash outflow of R122.8 million. This investment was made to support the acceleration of economic recovery through the implementation of the geoscience mapping programme.

Going concern

The CGS's annual financial statements have been prepared on the going-concern basis. Executive management has performed a formal review of the CGS's ability to continue as a going concern in the foreseeable future and based on this review, considers that the presentation of the financial statements on this basis is appropriate.

Events after the reporting date

South Africa seeks to engage member states on the purpose underpinning the proposal for the establishment of the BRICS Geological Forum and the CGS will play a pivotal role. Member countries will equally create and develop programmes of common interest to focus on, among others, mineral development, water security, societal safety, economic development, energy security and the advancement of geoscience in general.

South Africa will assume the role of chair in 2023. The multilateral platform will provide the BRICS nations with opportunities to utilise and exchange data and technical expertise among member countries and empower them to compete in the full value chain of the globalised economy.

Request for the retention of surplus

In terms of Section 53(3) of the PFMA of 1999, the CGS has to obtain approval from National Treasury to retain surpluses. Approval was obtained for the use of accumulated surpluses for the maintenance of and investment in scientific equipment and infrastructure, and the implementation of the repositioning strategy. A new request will be made for the year under review.

Supply chain management

The Supply Chain Management Unit is operational under the division of the Chief Financial Officer. This business unit provides an appropriate procurement and provisioning system which is fair, equitable, transparent, competitive and cost-effective, and is established in accordance with Section 54 of the PFMA of 1999 (as amended by Act No. 29 of 1999). In terms of the B-BBEE, Section 13G (1) of the B-BBEE Act, the CGS complied with management control and enterprise supplier development.

Audit report matters

Matters raised in the audit report of the Auditor-General are given due attention to ensure attainment of unqualified audit opinions. The CGS obtained an unqualified audit opinion from the Auditor-General for the year ended 31 March 2023 and will continue to enhance the internal control environment.

Financial sustainability

In order to ensure financial sustainability, the CGS is deliberate in exploiting its vast geoscience information, knowledge and scientific prowess to develop apposite value propositions worthy of both fiscal and commercial investment.

2 REPORT OF THE AUDITOR-GENERAL TO PARLIAMENT ON THE COUNCIL FOR GEOSCIENCE

Report on the audit of the financial statements

Opinion

1. I have audited the financial statements of the Council for Geoscience (CGS) set out on pages 125 to 160, which comprise the Statement of Financial Position as at 31 March 2023, Statement of Financial Performance, Statement of Changes in Net Assets and Cash Flow Statement for the year then ended, as well as notes to the financial statements, including a summary of significant accounting policies.

2. In my opinion, the financial statements present fairly, in all material respects, the financial position of the Council for Geoscience as at 31 March 2023 and its financial performance and cash flows for the year then ended in accordance with Standards of Generally Recognised Accounting Practise (Standards of GRAP) and the requirements of the Public Finance Management 1 of 1999 (PFMA).

Basis for opinion

3. I conducted my audit in accordance with the International Standards on Auditing (ISAs). My responsibilities under those standards are further described in the responsibilities of the auditor-general for the audit of the financial statements section of my report.

4. I am independent of the public entity in accordance with the International Ethics Standards Board for Accountants' *International code of ethics for professional accountants (including International Independence Standards)* (IESBA code) as well as other ethical requirements that are relevant to my audit in South Africa. I have fulfilled my other ethical responsibilities in accordance with these requirements and the IESBA code.

5. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Other matter

6. I draw attention to the matter below. My opinion is not modified in respect of this matter.

National Treasury Instruction Note No. 4 of 2022-23: PFMA Compliance and Reporting Framework.

7. On 23 December 2022 National Treasury issued Instruction Note No. 4: PFMA Compliance and Reporting Framework of 2022-23 in terms of Section 76(1)(b), (e) and (f), 2(e) and (4)(a) and (c) of the PFMA, which came into effect on 3 January 2023. The PFMA Compliance and Reporting Framework also addresses the disclosure of unauthorised expenditure, irregular expenditure, and fruitless and wasteful expenditure. Among the effects of this framework is that irregular and fruitless and wasteful expenditure incurred in previous financial years and not addressed is no longer disclosed in the disclosure notes of the annual financial statements, only the current year and prior year figures are disclosed in note 22 and note 23 to the financial statements. The movements in respect of irregular expenditure and fruitless and wasteful expenditure are no longer disclosed in the notes to the Annual Financial Statements of Council for Geoscience. The disclosure of these movements (e.g. condoned, recoverable, removed, written off, under assessment, under determination and under investigation) are now required to be included as part of other information in the Annual Report of the auditees. I do not express an opinion on the disclosure of irregular expenditure and fruitless and wasteful expenditure in the Annual Report.

Responsibilities of the accounting authority for the financial statements

8. The Accounting Authority is responsible for the preparation and fair presentation of the financial statements in accordance with the Standards of GRAP; and the requirements of the PFMA and for such internal control as the Accounting Authority determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

9. In preparing the financial statements, the Accounting Authority is responsible for assessing the public entity's ability to continue as a going concern; disclosing, as applicable, matters relating to a going concern; and using the going concern basis of accounting unless the appropriate governance structure either intends to liquidate the public entity or to cease operations, or has no realistic alternative but to do so.

Responsibilities of the auditor-general for the audit of the financial statements

10. My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with the ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

11. A further description of my responsibilities for the audit of the financial statements is included in the annexure to this auditor's report.

Report on the annual performance report

12. In accordance with the Public Audit Act 25 of 2004 (PAA) and the general notice issued in terms thereof, I must audit and report on the usefulness and reliability of the reported performance information against predetermined objectives for the selected material performance indicators presented in the Annual Performance Report. The Accounting Authority is responsible for the preparation of the Annual Performance Report.

13. I selected the following material performance indicators related to Delivery of the Mandate presented in the Annual Performance Report for the year ended 31 March 2023. I selected those indicators that measure the public entity's performance on its primary mandated functions and that are of significant national, community or public interest.

    - Onshore geoscience map coverage
    - Offshore geoscience map coverage
    - Applied geoscience outputs for minerals and energy
    - Applied geoscience outputs for infrastructure, land use, groundwater and the environment.

14. I evaluated the reported performance information for the selected material performance indicators against the criteria developed from the performance management and reporting framework, as defined in the general notice. When an Annual Performance Report is prepared using these criteria, it provides useful and reliable information and insights to users on the public entity's planning and delivery on its mandate and objectives.

15. I performed procedures to test whether:

    - the indicators used for planning and reporting on performance can be linked directly to the public entity's mandate and the achievement of its planned objectives
    - the indicators are well defined and verifiable to ensure that they are easy to understand and apply consistently and that I can confirm the methods and processes to be used for measuring achievements
    - the targets linked directly to the achievement of the indicators and are specific, time bound and measurable to ensure that it is easy to understand what should be delivered and by when, the required level of performance as well as how performance will be evaluated
    - the indicators and targets reported on in the Annual Performance Report are the same as what was committed to in the approved initial or revised planning documents
    - the reported performance information is presented in the Annual Performance Report in the prescribed manner
    - there is adequate supporting evidence for the achievements reported and for the reasons provided for any over- or underachievement of targets.

16. I performed the procedures for the purpose of reporting material findings only.

17. I did not identify any material findings on the reported performance information for the selected indicators following selected material performance indicators.

Other matter

18. I draw attention to the matter below.

Achievement of planned targets

19. The Annual Performance Report includes information on reported achievements against planned targets and provides explanations for over- and underachievements.

Report on compliance with legislation

20. In accordance with the PAA and the general notice issued in terms thereof, I must audit and report on compliance with applicable legislation relating to financial matters, financial management and other related matters. The accounting authority is responsible for the public entity's compliance with legislation.

21. I performed procedures to test compliance with selected requirements in key legislation in accordance with the findings engagement methodology of the Auditor-General of South Africa (AGSA). This engagement is not an assurance engagement. Accordingly, I do not express an assurance opinion or conclusion.

22. Through an established AGSA process, I selected requirements in key legislation for compliance testing that are relevant to the financial and performance management of the public entity, clear to allow consistent measurement and evaluation, while also sufficiently detailed and readily available to report in an understandable manner. The selected legislative requirements are included in the annexure to this auditor's report.

23. I did not identify any material non-compliance with the selected legislative requirements.

Other information in the annual report

24. The Accounting Authority is responsible for the other information included in the Annual Report, which includes the the audit committee's report. The other information referred to does not include the financial statements, the auditor's report and those selected material indicators in the scoped-in programme presented in the Annual Performance Report that have been specifically reported on in this auditor's report.

25. My opinion on the financial statements, the report on the audit of the Annual Performance Report and the report on compliance with legislation do not cover the other information included in the Annual Report and I do not express an audit opinion or any form of assurance conclusion on it.

26. My responsibility is to read this other information and, in doing so, consider whether it is materially inconsistent with the financial statements and the selected material indicators in the scoped-in programme presented in the Annual Performance Report, or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

27. I did not receive the other information prior to the date of this auditor's report. When I do receive and read this information, if I conclude that there is a material misstatement therein, I am required to communicate the matter to those charged with governance and request that the other information be corrected. If the other information is not corrected, I may have to retract this auditor's report and re-issue an amended report as appropriate. However, if it is corrected this will not be necessary.

Internal control deficiencies

28. I considered internal control relevant to my audit of the financial statements, Annual Performance Report and compliance with applicable legislation; however, my objective was not to express any form of assurance on it.

29. The matters reported below are limited to the significant internal control deficiencies that resulted in the basis for the opinion, and the material findings on compliance with legislation included in this report.

30. I did not identify any significant deficiencies in internal control.

Other reports

31. I draw attention to the following engagements conducted by various parties. These reports did not form part of my opinion on the financial statements or my findings on the reported performance information or compliance with legislation.

32. Various investigations were initiated by the public entity into allegations of possible unethical behaviour and allegations of procurement and contract management irregularities. These investigations were at various stages of completion at the date of this auditor's report.

Auditor-General

Pretoria

31 July 2023

AUDITOR-GENERAL
SOUTH AFRICA

Auditing to build public confidence

ANNEXURE TO THE AUDITOR'S REPORT

The annexure includes the following:

- the auditor-general's responsibility for the audit
- the selected legislative requirements for compliance testing.

Auditor-general's responsibility for the audit

Professional judgement and professional scepticism

As part of an audit in accordance with the ISAs, I exercise professional judgement and maintain professional scepticism throughout my audit of the financial statements and the procedures performed on reported performance information for selected material performance indicators and on the public entity's compliance with selected requirements in key legislation.

Financial statements

In addition to my responsibility for the audit of the financial statements as described in this auditor's report, I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error; design and perform audit procedures responsive to those risks; and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the public entity's internal control
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made
- conclude on the appropriateness of the use of the going concern basis of accounting in the preparation of the financial statements. I also conclude, based on the audit evidence obtained, whether a material uncertainty exists relating to events or conditions that may cast significant doubt on the ability of the public entity to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements about the material uncertainty or, if such disclosures are inadequate, to modify my opinion on the financial statements. My conclusions are based on the information available to me at the date of this auditor's report. However, future events or conditions may cause a public entity to cease operating as a going concern
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and determine whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Communication with those charged with governance

I communicate with the Accounting Authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide the Accounting Authority with a statement that I have complied with relevant ethical requirements regarding independence and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence and, where applicable, actions taken to eliminate threats or safeguards applied.

Compliance with legislation – selected legislative requirements

The selected legislative requirements are as follows:

Legislation	Sections or regulations
Public Finance Management Act 1 of 1999 (PFMA)	Section 51(1)(b)(i); 51(1)(b)(ii); 51(1)(e)(iii) Section 53(4) Section 54(2)(c); 54(2)(d) Section 55(1)(a); 55(1)(b); 55(1)(c)(i) Section 57(b)
Treasury Regulations (TR)	Treasury Regulation 8.2.1; 8.2.2 Treasury Regulation 16A3.1; 16A3.2; 16A3.2(a); 16A6.1; 16A6.2(a) & (b); 16A6.2(e);16A6.3(a); 16A6.3(a)(i); 16A6.3(b); 16A6.3(c); 16A6.3(d); 16A6.3(e); 16A6.4; 16A6.5; 16A6.6; TR 16A.7.1; 16A.7.3; 16A.7.6; 16A.7.7; 16A8.2(1); 16A8.2(2); 16A8.3; 16A8.3(d); 16A8.4; 16A9.1(b)(ii); 16A9.1; 16A9; 16A9.1(c); 16A9.1(d); 16A9.1(e); 16A9.1(f); 16A 9.2; 16A 9.2(a)(ii); TR 16A 9.2(a)(iii) Treasury Regulation 30.1.1; 30.1.3(a); 30.1.3(b); 30.1.3(d); 30.2.1 Treasury Regulation 31.1.2(c') Treasury Regulation 31.2.1; 31.2.5; 31.2.7(a) Treasury Regulation 31.3.3 Treasury Regulation 33.1.1; 33.1.3
Prevention and Combating of Corrupt Activities Act No.12 of 2004 (PRECCA)	Section 34(1)
Preferential Procurement Regulations of 2022 (PPR)	3(1) 4(1) 4(2) 4(3) 4(4) 5(1) 5(2) 5(3) 5(4) 5(4)
PFMA instruction note no. 3 of 2021/22	Definition Par. 4.2(b) Par. 4.4 Par. 4.3 Par. 4.4(c) Par. 4.4(d)
SCM Instruction Note 03 of 2021-22	Par. 3.2.1 Par. 4.1 Par. 7.2 Par. 3.3.1 Par. 4.2(b)
SCM Instruction No. 2 of 2021/22	Par. 3.2.1 Par. 3.2.4 Par. 3.2.4(b)
NT Instruction 07 of 2017/18	Par. 4.3
NT Instruction 4A of 2016/17	Par. 6
NT Instruction note 4 of 2015/16	Par. 3.4

Legislation	Sections or regulations
NT Instruction No. 5 of 2020/21	Par. 4.8 Par. 4.9 Par. 5.3
Preferential Procurement Regulations (PPR), 2011	PPR 2011 4(1) PPR 2011 4(3) PPR 2011 4(4) PPR 2011 4(5) PPR 2011 5(1) PPR 2011 5(2) PPR 2011 5(3) PPR 2011 5(5) PPR 2011 6(1) PPR 2011 6(2) PPR 2011 6(3) PPR 2011 6(5) PPR 2011 6(4) PPR 2011 7(1) PPR 2011 10 PPR 2011 11(2) PPR 2011 11(4) PPR 2011 11(5) PPR 2011 11(8)
Treasury Instruction note 11 of 2020/21	Par. 3.1 Par. 3.4(b) and 3.9
Preferential Procurement Policy Framework Act 5 of 2000 (PPPFA)	PPPFA Section 2(1)(a) PPPFA Section 2(1)(f)
Second amendment NT Instruction No. 5 of 2020/21	Par. 1
Erratum NT Instruction note No. 5	Par. 2
Preferential Procurement Regulations (PPR), 2017	PPR 2017 5(1) PPR 2017 5(3) PPR 2017 5(6) PPR 2017 5(7) PPR 2017 6(1) PPR 2017 6(2) PPR 2017 6(3) PPR 2017 6(5) PPR 2017 6(6) PPR 2017 6(8) PPR 2017 7(1) PPR 2017 7(2) PPR 2017 7(3) PPR 2017 7(5) PPR 2017 7(6) PPR 2017 7(8) PPR 2017 8(2) PPR 2017 8(5) PPR 2017 9(1) PPR 2017 10(1) PPR 2017 10(2) PPR 2017 11(1)
Public Service Act	18(1), (2)

3 ANNUAL FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2023

STATEMENT OF FINANCIAL POSITION

as at 31 March 2023

	Notes	2023 R'000	2022 (Restated) R'000
Assets			
Non-current assets		381 181	364 667
Property and equipment	4	359 579	341 464
Intangible assets	5	4 039	5 641
Heritage assets	28	17 562	17 562
Current assets		231 585	360 189
Inventories	6	5	5
Trade and other receivables from exchange transactions	8	61 395	67 186
Cash and cash equivalents	9	170 186	292 997
Total assets		**612 767**	**724 856**
Net assets and liabilities			
Accumulated surplus		333 249	421 019
Non-current liabilities			
Post-employment benefit liabilities	7	5 979	11 530
Current liabilities		273 540	292 308
Trade and other payables	10	71 989	52 334
Deferred income	11	168 869	205 182
Accruals	12	32 683	34 792
Total net assets and liabilities		**612 767**	**724 856**

STATEMENT OF FINANCIAL PERFORMANCE

for the period ended 31 March 2023

	Notes	2023 R'000	2022 (Restated) R'000
Total revenue		572 248	583 212
Revenue from exchange transactions	13	172 732	256 969
Revenue from non-exchange transactions	13	399 516	326 243
Total cost of projects		**(259 744)**	**(268 543)**
Cost of commercial projects	13	(117 139)	(83 215)
Cost of statutory projects	13	(142 605)	(185 328)
Gross surplus		**312 503**	**314 669**
Administrative expenses		(398 620)	(328 840)
Other operating expenses	13	(1 624)	(905)
Deficit from operations		**(87 741)**	**(15 076)**
Finance cost	14	(29)	(20)
Net (deficit)/surplus for the year		**(87 770)**	**(15 096)**

STATEMENT OF CHANGES IN NET ASSETS

for the period ended 31 March 2023

	Notes	Accumulated surplus R'000	Total R'000
Opening balance at 31 March 2021		**449 181**	**449 181**
Net surplus for the period		(13 066)	(13 066)
Restated balance at 31 March 2021		**436 115**	**436 115**
Net loss for the period		(12 175)	(12 175)
Correction of prior period error	26	(2 921)	(2 921)
Restated net loss for the period		(15 096)	(15 096)
Restated balance at 31 March 2022		**421 019**	**421 019**
Net loss for the period		(87 770)	(87 770)
Balance at 31 March 2023		**333 249**	**333 249**

CASH FLOW STATEMENT

for the period ended 31 March 2023

	Notes	2023 R'000	2022 (Restated) R'000
Cash outflow from operating activities		**(64 348)**	**(22 102)**
Cash receipts from customers		560 179	525 052
Cash paid to suppliers and employees		(634 553)	(556 980)
Cash generated from operations	16	(74 374)	(31 928)
Interest received	13	10 055	9 846
Finance cost	14	(29)	(20)
Cash outflow from investing activities		**(58 464)**	**(43 264)**
Acquisition of:			
Property and equipment	16.1	(59 397)	(43 697)
Intangible assets	16.2	(183)	(187)
Proceeds from sale of asset	13	-	-
Insurance proceeds for property and equipment	4.1	1 116	620
Net increase/(loss) in cash and cash equivalents		**(122 812)**	**(65 365)**
Cash and cash equivalents at beginning of period	9	**292 997**	**358 362**
Cash and cash equivalents at end of period	9	**170 186**	**292 997**

1 ACCOUNTING POLICIES
for the period ended 31 March 2023

1.1 Basis of preparation

Statement of compliance

1. The financial statements have been prepared in accordance with the Standards of Generally Recognised Accounting Practices (GRAP) including any interpretations, guidelines and directives issued by the Accounting Standards Board.

   The financial statements have been prepared on a historic cost basis and accounting policies are consistent with prior years.

   These Annual Financial Statements have been prepared on a going concern basis, i.e. the assumption that the Council for Geoscience will continue to operate as a going concern for at least the next 12 months.

2. The Cash Flow Statement has been prepared in accordance with the direct method.

3. Specific information is presented separately on the Statement of Financial Position such as:

   a) receivables from non-exchange transactions, including taxes and transfers;
   b) taxes and transfers payable; and
   c) trade and other payables from non-exchange transactions.

The budget reporting standard does not apply to the Council for Geoscience as our budget is tabled as part of the Department of Mineral Resources and Energy budget.

1.2 Revenue recognition

Revenue comprises the revenue from non-exchange transactions recognised as income in the current year, contract income and sales of publications.

The CGS measures revenue at the fair value of the consideration received or receivable. Revenue is recognised only when it is probable that the economic benefits associated with a transaction will flow to the CGS, and the amount of revenue and associated costs incurred or to be incurred can be measured reliably.

1.2.1 Revenue from non-exchange transactions

The Council for Geoscience receives grants in the form of a baseline allocation from the Department of Mineral Resources and Energy.

Revenue from non-exchange transactions is recorded as deferred income when it is received. It is then recognised as income proportionate to the costs incurred or to the extent that CGS has complied with any of the criteria, conditions or obligations embodied in the grant.

Other baseline allocation funds are recognised as revenue upon receipt.

1.2.2 Revenue from exchange transactions

Revenue from exchange transactions comprises sales and contract revenue as follows:

Sales revenue

Sales revenue represents the invoiced value of goods and services supplied by the Council for Geoscience. This revenue is recognised when the revenue recognition criteria are met.

Contract revenue

Revenue from contracts is recognised by means of progress payments over the duration of the contracts. Revenue from contracts in progress is recognised when the revenue criteria are met. When the outcome of a contract can be estimated reliably, revenue is recognised by referring to the stage of completion of the contract outcome.

1.3 Interest received

Interest is recognised on a time proportionate basis with reference to the principal amount receivable and the effective interest rate applicable.

1.4 Property and equipment

Property and equipment are tangible non-current assets that are held for use in the production or supply of goods or services, or for administrative purposes, and are expected to be used during more than one period.

1 ACCOUNTING POLICIES (continued)

The cost of an item of property and equipment is recognised as an asset when:

- it is probable that future economic benefits associated with the item will flow to the Council for Geoscience; and
- the cost of the item can be measured reliably.

Land and buildings were valued at initial recognition and subsequently only the building is depreciated on a straight-line method.

Costs include costs incurred initially to acquire or construct an item of property and equipment and costs incurred subsequently to add to, replace part of, or service it. If the cost of a replacement part is recognised in the carrying amount of an item of property and equipment, the carrying amount of the replaced part is derecognised.

Property and equipment are carried at cost less accumulated depreciation and any impairment losses.

Day-to-day expenses incurred on property and equipment are expensed directly to surplus or deficit for the period.

Where an asset is acquired at no cost or at a nominal cost, its cost is its fair value as at the date of acquisition.

Major refurbishment that meets the recognition criteria of an asset is capitalised.

Depreciation is provided on all property and equipment other than freehold land to write down the cost, less residual value, on a straight-line basis over their average useful lives, as follows:

Land	Not depreciable
Buildings	30 years
Motor vehicles	5 to 14 years
Equipment	5 to 14 years
Aircraft and Helicopter – Body	15 to 18 years
Aircraft and Helicopter – Components	Useful hours as per Civil Aviation Authority
Boat	10 years
Office furniture	20 to 27 years
Computer equipment*	3 to 15 years
Specialised equipment	15 years
Electronic devices	2 years

* All existing computer equipment continue to depreciate for 6 years from date of purchase. New computer equipment procured on or later than 1 April 2022 will adopt the new useful life of 3 years.

The depreciation charges for each period are recognised in the Statement of Financial Performance, unless it is included in the carrying amount of another asset.

The average useful lives and residual values are reviewed on an annual basis and changes are reflected as a change in accounting estimates on a prospective basis.

The residual value of motor vehicles is 10% of cost. The residual value of land and buildings is the market value at the end of the useful life. The residual value of the aircraft body is 10%. The residual value of boats is 10%.

1.5 Intangible assets

An intangible asset is recognised when:

- it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity; and
- the cost of the asset can be measured reliably.

Capitalised computer software is carried at cost less accumulated amortisation and less accumulated impairment losses. Computer software is tested annually for impairment or changes in estimated future benefits. Amortisation is provided to write down the intangible assets to their residual value, on a straight-line basis, being two to eleven years.

Research and development

Expenditure on research activities is recognised as an expense in the period in which it is incurred.

An internally generated intangible asset arising from research and development is recognised as part of intangible assets only if all of the following conditions are met:

- an asset is created that can be identified;
- it is probable that the asset created will generate future economic benefits; and
- the development cost of the asset can be measured reliably.

Where no internally generated intangible asset can be recognised, development expenditure is recognised as an expense in the period in which it is incurred. Internally generated assets are amortised on a straight-line basis over their useful lives.

1.6 Heritage assets

Heritage assets are assets held for their cultural, environmental or historical significance. Heritage assets are initially recognised at deemed cost which has been determined, due to the nature of heritage assets, by specialist valuators.

1 ACCOUNTING POLICIES (continued)

Heritage assets are reflected at deemed cost and are not depreciated. At each reporting date heritage assets are assessed for indications of impairment. If any such indication exists, an estimate of the recoverable amount or the recoverable service amount of the heritage assets will be determined and tested against the carrying amount.

1.7 Inventories

The Council for Geoscience is a custodian of scientific information that produces publications in the form of books, maps and map explanations etc. These publications are distributed to the public for free or at a nominal charge.

Inventories are initially measured at deemed costs (fair value).

1.8 Translation of foreign currencies

Foreign currency transactions

A foreign currency transaction is recorded, on initial recognition in Rand, by applying to the foreign currency amount the spot exchange rate between the Rand and the foreign currency at the date of the transaction.

At each balance sheet date:

- foreign currency monetary items are translated using the closing rate.

Exchange differences arising on the settlement of monetary items or on translating monetary items at rates different from those at which they were translated on initial recognition during the period or in previous Annual Financial Statements are recognised in the Statement of Financial Performance in the period in which they arise.

Cash flows arising from transactions in a foreign currency are recorded in Rand by applying to the foreign currency amount the exchange rate between the Rand and the foreign currency at the date of the cash flow.

1.9 Deferred income

Deferred income is accounted for in the Statement of Financial Position. The related revenue is recognised on an accrual basis in the Statement of Financial Performance in the period in which it satisfies the revenue recognition criteria.

1.10 Retirement benefit costs

Short-term employee benefits

The cost of short-term employee benefits (those payable within 12 months after the service is rendered, such as bonuses, paid vacation leave and sick leave) is recognised in the period in which the service is rendered and is not discounted.

The expected cost of compensated absences is recognised as an expense as the employees render services that increase their entitlement or, in the case of non-accumulating absences, when the absence occurs.

Defined contribution and defined benefit plans

The Council for Geoscience operates both a defined contribution pension and provident fund and a defined benefit plan in respect of post-retirement medical aid contributions. For the defined benefit plan, the defined benefit obligation and the related current service cost, is determined by using the projected unit credit method. The defined benefit plan is subject to an annual actuarial valuation. The qualifying plan asset of this scheme is held and administered by Momentum Group Limited.

The actuarial gains or losses are further limited to the extent that the net cumulative unrecognised actuarial gains or losses (before recognition of that actuarial gain or loss) exceed the unrecognised part of the transactional liability. Payments to defined contribution retirement benefit plans are charged to the Statement of Financial Performance in the year to which they relate.

1.11 Provisions and contingent liabilities

Provisions are recognised when:

- the entity has a present obligation as a result of a past event;
- it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and
- a reliable estimate can be made of the obligation.

The amount of a provision is the present value of the expenditure expected to be required to settle the obligation.

Commitments

The CGS classifies commitments as contracted future transactions that are non-cancellable or only cancellable at significant cost, and that will normally result in the outflow of cash.

This excludes steady routine transactions such as salary commitments relating to employment contracts or social security benefits.

A distinction is made between operational and capital commitments.

Disclosure is made of the aggregate amount of operational and capital expenditure contracted for at the reporting date, to the extent that the amount has not been recorded in the financial statements.

If a commitment is for a period longer than a year, it is stated in the note to the commitments.

Disclosure of expenditure that has been approved as per our delegation of authority, but that has not yet been contracted for, is made.

1.12 Financial instruments

Initial recognition

The entity classifies financial instruments, or their component parts, on initial recognition as a financial asset, a financial liability or an equity instrument in accordance with the substance of the contractual arrangement.

Financial assets and liabilities are recognised on the entity's Statement of Financial Position when the CGS becomes party to the contractual provisions of the instrument.

Financial assets and liabilities are recognised initially at fair value.

Derecognition of financial instruments

The entity derecognises a financial asset only when the contractual rights to the cash flows from the asset expire, or it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity.

The entity derecognises financial liabilities when the entity's obligations are discharged, cancelled or they expire.

Impairment of loans and receivables

Financial assets are assessed for indicators of impairment at each Statement of Financial Position date. Financial assets are impaired where there is objective evidence that, as a result of one or more events that occurred after the initial recognition of the financial asset, the estimated future cash flows of the investment have been impacted.

The carrying amount of trade receivables is reduced through the use of an allowance account (bad debt provision). When a trade receivable is considered uncollectible, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are credited against the allowance account. Changes in the carrying amount of the allowance account are recognised in surplus or deficit.

Fair values of trade and other payables are determined at a price charged at transaction date and impaired when indicators of impairment are present. At year end there were no differences between the book value and the fair values of trade and other payables.

Fair value of trade and other receivables

Fair values of trade and other receivables are determined at a price charged at transaction date and impaired when indicators of impairment are present. At year end there were no differences between the book value and the fair values of trade and other receivables because of the short-term maturity.

Financial assets carried at amortised cost

Loans and receivables are measured at amortised cost less any impairment losses recognised to reflect irrecoverable amounts. Impairment is determined on a specific basis, whereby each asset is individually evaluated for impairment indicators. Write-offs of these assets are expensed in surplus or deficit.

Cash and cash equivalents

Cash and cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash. Cash and cash equivalents are measured at fair value.

Financial liabilities carried at amortised cost

Trade and other payables are initially measured at fair value and are subsequently measured at amortised cost.

1 ACCOUNTING POLICIES (continued)

1.13 Operating leases

Leases of assets under which all the risks and rewards of ownership are effectively retained by the lessor are classified as operating leases. Lease payments under an operating lease are recognised as an expense on a straight-line basis over the lease term.

Any contingent rents are expensed in the period they are incurred.

1.14 Impairment

The CGS identifies cash generating assets as assets that are managed with the objective of generating a commercial return, and non-cash generating assets as assets that do not generate market related cash flows from that asset.

The entity assesses at each Statement of Financial Position date whether there is any indication that an asset may be impaired. If there is any indication that an asset may be impaired, the recoverable amount is estimated for the individual asset. The recoverable amount of an asset is the higher of fair value less assumed costs to sell and its value in use.

If the recoverable amount of an asset is less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. That reduction is an impairment loss recognised immediately in surplus or deficit.

At each reporting date the entity assesses impairment losses recognised in prior years for continued existence or decreases. If such indication exists, the recoverable amounts of those assets are estimated. The increase in the carrying amount of an asset attributable to a reversal of an impairment loss does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior periods. A reversal of an impairment loss of assets carried at cost less accumulated depreciation or amortisation is recognised immediately in surplus or deficit.

1.15 Critical accounting estimates and judgements

Provision for bad debts

Past experience indicates a reduced prospect of collecting debtors over the age of four months. Debtor balances are regularly assessed by management and provided for in line with the policy.

Provisions

Provisions were raised and management determined an estimate based on the information available and in line with the policy.

Property and equipment

Management has made certain estimations with regard to the determination of estimated useful lives and residual values of items of property and equipment.

Leases

Management has applied its judgement to classify all lease agreements that the entity is party to as operating leases, as they do not transfer substantially all risks and ownership to the entity. Furthermore, as the operating lease in respect of premises is only for a relatively short period of time, management has made a judgement that it would not be meaningful to classify the lease into separate components for the land and for the buildings for the Polokwane office's current lease, and the agreement will be classified in its entirety as an operating lease.

1.16 Sources of estimation uncertainty

There are no key assumptions concerning the future and other key sources of estimation uncertainty at the Statement of Financial Position date that could have a significant risk of causing material adjustment to the carrying amounts of assets and liabilities within the next financial year.

1.17 Irregular expenditure

Irregular expenditure is recorded in the notes to the financial statements when confirmed. The amount recorded is equal to the value of the irregular expenditure incurred, unless it is impractical to determine, in which case reasons therefore must be provided in the notes. Irregular expenditure receivables are measured at the amount that is expected to be recovered and are de-recognised when settled or written off as irrecoverable.

Irregular expenditure must be removed from the balance of the irregular expenditure notes when it is either:

a) condoned by the relevant authority if no official was found to be liable in law;
b) recovered from an official liable in law;
c) written off if it is irrecoverable from an official liable in law; or
d) written off if it is not condoned and not recoverable.

1.18 Fruitless and wasteful expenditure

Fruitless and wasteful expenditure is expenditure that was made in vain and would have been avoided had reasonable care been exercised. Fruitless and wasteful expenditure where identified is accounted for in the related year. The expenditure is accordingly classified with its nature, and where subsequently recovered or written off, it is accounted for accordingly in surplus or deficit.

1.19 Post-reporting date events

Events after the reporting date are those events, both favourable and unfavourable, that occur between the reporting date and the date when the financial statements are authorised for issue. Two types of events can be identified:

- Those that provide evidence of conditions that existed at the reporting date (adjusting events after the reporting date)
- Those that are indicative of conditions that arose after the reporting date (non-adjusting events after the reporting date).

The CGS will adjust the amounts recognised in the financial statements to reflect adjusting events after the reporting date once the event occurred.

The CGS will disclose the nature of the event and estimate its financial effect or a statement that such estimate cannot be made in respect of all material non-adjusting events, where non-disclosure could influence the economic decisions of users taken on the basis of the financial statements.

1.20 Related party transactions

Individuals as well as their close family members, and/or entities are related parties if one party has the ability, directly or indirectly, to control or jointly control the other party or exercise significant influence over the other party in making financial and/or operating decisions. Management is regarded as a related party and comprises the Board members and Senior management. Related party transfers/payments of appropriated funds, specific-purpose allocations, etc. would generally fall under the disclosure exemption in GRAP 20, and such transfers and allocations are therefore part of the normal supplier and/or client/recipient relationships and are therefore not disclosed.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS
for the year ended 31 March 2023

2 New standards and interpretations

2.1 Standards and interpretations issued, but not yet effective

The Council for Geoscience has not applied the following standards and interpretations, which have been approved but are not yet effective for accounting periods 2022/23:

GRAP statement	Description	Impact	Effective date
GRAP 25	Employee Benefits	None	To be determined
GRAP 104	Financial Instruments (Revised)	None	1 April 2025
IGRAP 7	Limit on a Defined Benefit Asset Min Fund Requirement and Interact	None	To be determined
IGRAP 21	The Effect of Past Decisions on Materiality	None	1 April 2023

3 Going concern assessment

Management has considered the following matters relating to the Going Concern:

In the year under review the CGS recognised a deficit of R87.8 million, negative cash outflow of R 22.1 million and current liabilities marginally exceeding current assets. This performance may cast doubt on the CGS's ability to continue as a going concern. However, the budget compiled for the 2023/24 financial year supports the ongoing execution of the CGS mandate. Further to the above there has been no change in any legislation to suggest that the entities objectives are threatened and as a result, its ability to continue as a going concern. The CGS has also received a significant grant allocation over the current MTEF period. There are no legal or court claims or litigations against the CGS which could threaten the entity's ability to operate as a going concern. There are no material uncertainties related to events or conditions that may cast significant doubt about the CGS's ability to continue as a going concern.

Under the going concern assumption, the CGS is viewed as continuing inter-operations for the foreseeable future and therefore accounts for its assets and liabilities on the basis that it will be able to realise and discharge them in the normal course of operations. Taking the aforementioned into account, management has prepared the Annual Financial Statements on the going concern basis.

4 Property and equipment

2023	Land R'000	Buildings and fixtures R'000	Equipment* R'000	Office furniture R'000	Aircraft and boat R'000	Motor vehicles R'000	Computer equipment R'000	Total R'000
Gross carrying amount	18 231	254 227	209 552	14 134	24 792	30 713	68 497	620 146
Accumulated depreciation at the beginning of the period	(1 600)	(81 015)	(138 609)	(9 098)	(10 439)	(17 576)	(20 345)	(278 682)
Opening net carrying amount at 31 March 2022	**16 631**	**173 212**	**70 942**	**5 036**	**14 353**	**13 137**	**48 152**	**341 464**
Movements during the period:								
Work in progress (refer to note 4.2)	-	(83 295)	(141)	-	-	-	2 599	(80 837)
Acquisitions	-	110 878	18 895	836	-	790	8 835	140 235
Disposals	-	-	(226)	(18)	-	(27)	(396)	(666)
Disposals – Cost	-	-	(3 665)	(325)	-	(57)	(2 329)	(6 376)
Disposals – Depreciation	-	-	3 439	308	-	30	1 933	5 710
Depreciation	-	(7 610)	(21 673)	(493)	(526)	(2 546)	(7 769)	(40 618)
Closing net carrying amount at 31 March 2023	**16 631**	**193 186**	**67 797**	**5 361**	**13 827**	**11 355**	**51 421**	**359 579**
Gross carrying amount	18 231	281 810	224 640	14 645	24 792	31 446	77 602	673 166
Accumulated depreciation/ impairment	(1 600)	(88 624)	(156 843)	(9 283)	(10 965)	(20 091)	(26 181)	(313 587)

4 Property and equipment (continued)

2022	Land R'000	Buildings and fixtures R'000	Equipment* R'000	Office furniture R'000	Aircraft and boat R'000	Motor vehicles R'000	Computer equipment R'000	Total R'000
Gross carrying amount	18 231	233 716	202 459	14 265	24 859	26 899	62 934	583 363
Accumulated depreciation at the beginning of the period	(1 600)	(74 644)	(121 646)	(9 331)	(9 760)	(15 624)	(16 064)	(248 669)
Opening net carrying amount at 31 March 2021	**16 631**	**159 072**	**80 813**	**4 934**	**15 099**	**11 275**	**46 870**	**334 694**
Movements during the period:								-
Work in progress (refer to note 4.2)	-	20 511	(195)	-	-	-	(2 988)	17 328
Reversal of impairment	-	-	-	-	-	-	-	-
Acquisitions	-	-	11 726	721	-	4 133	9 789	26 369
Disposals	-	-	(72)	(134)	(4)	(32)	(108)	(350)
Disposals – Cost	-	-	(4 438)	(852)	(67)	(319)	(1 238)	(6 914)
Disposals – Depreciation	-	-	4 366	718	63	287	1 130	6 564
Depreciation	-	(6 371)	(21 329)	(485)	(742)	(2 239)	(5 411)	(36 577)
Closing net carrying amount at 31 March 2022	**16 631**	**173 212**	**70 942**	**5 037**	**14 354**	**13 137**	**48 152**	**341 464**
Gross carrying amount	18 231	254 227	209 552	14 134	24 792	30 713	68 497	620 146
Accumulated depreciation/ impairment	(1 600)	(81 015)	(138 609)	(9 098)	(10 439)	(17 576)	(20 345)	(278 682)

* Equipment in the tables above include the following categories of equipment: Specialised Equipment, Audio and Visual, Technical Equipment, Office Equipment and Scientific Equipment.

4 Property and equipment (continued)

The transfer of the following land and buildings as stipulated under Section 26 of the Geoscience Act (No. 100 of 1993) has not yet been completed.

Location	Fair value at date of transfer R'000
474 Carl Street, Town Lands 351JR, Pretoria West	2 800
280 Pretoria Street, Silverton, Pretoria	94 000

The value of these properties has been included in the carrying amount of land and buildings as at 31 March 2023 and was determined by an independent valuator.

Details regarding land and buildings are kept at the Council for Geoscience head office and will be supplied upon written request.

4.1 Compensation from third parties for property and equipment lost

	2023 R'000	2022 R'000
Proceeds from insurance	1 116	620

4.2 Property and equipment in the process of being constructed

Cumulative expenditure recognised in the carrying value of property and equipment being developed/constructed

	Buildings and fixtures R'000	Equipment* R'000	Aircraft and boat R'000	Total R'000
Gross carrying amount	91 580	20 751	1 040	113 371
Opening net carrying amount at 31 March 2022	**91 580**	**20 751**	**1 040**	**113 371**
Movement	(84 152)	2 457	-	(81 695)
Closing net carrying amount at 31 March 2023	**7 428**	**23 208**	**1 040**	**31 676**

* Equipment in the tables above include the following categories of equipment: Specialised Equipment, Audio and Visual, Technical Equipment, Office Equipment and Scientific Equipment.

4 Property and equipment (continued)

Property and equipment in the process of being constructed with delays

Included in the work in progress for buildings and fixtures is a carrying amount of R83.605 million in respect of a ventilation system in the Silverton building that has been delayed. The work was found to be technically not acceptable and needed remediation.

	Buildings and fixtures R'000
Gross carrying amount	83 605
Opening net carrying amount at 31 March 2022	**83 605**
Movement	(83 605)
Closing net carrying amount at 31 March 2023	**-**

Repairs and maintenance

Repairs and maintenance expenditure incurred for the year to repair and maintain property and equipment.

	2023 R'000	2022 R'000
Land and buildings	8 966	8 413
Office equipment and furniture	39	77
Technical and scientific equipment	2 669	1 910
Computer equipment	158	55
Aircraft	2 260	210
	14 092	**10 665**

5 Intangible assets

	2023 R'000	2022 R'000
Computer software		
Gross carrying amount	16 752	16 833
Accumulated amortisation	(11 110)	(9 666)
Opening net carrying amount at 31 March 2022	**5 641**	**7 168**
Movements during the period:		
Acquisitions	183	187
Disposals	(72)	(9)
Disposals – Cost	(3 803)	(269)
Disposals – Amortisation	3 731	259
Amortisation	(1 714)	(1 704)
Closing net carrying amount at 31 March 2023	**4 039**	**5 641**
Gross carrying amount	13 132	16 752
Accumulated amortisation	(9 093)	(11 111)

6 Inventories

	2023 R'000	2022 R'000
Publication inventories	5	5

7 Retirement benefit

7.1 Post-retirement medical aid fund (PRM)

The Council for Geoscience has made provision for the medical aid fund covering all its qualifying employees. All eligible employees are members of the defined benefit scheme. To improve management of this defined benefit scheme the CGS established a qualifying plan asset in October 2010 which is held and administered by Momentum Group Limited and evaluated annually as at 31 March.

The amount recognised in the Statement of Financial Performance is determined as follows:

	2023 R'000	2022 R'000
Current service costs	54	52
Interest charge	2 471	2 350
Expected return on planned assets	(1 513)	(1 306)
Actuarial (gain)/loss recognised	(2 607)	(434)
Recognition of loss on asset realisation	(3 956)	(392)
	(5 551)	**270**

The amount included in the Statement of Financial Position arising from the CGS' obligation in respect of PRM is as follows:

	2023 R'000	2022 R'000	2021 R'000	2020 R'000	2019 R'000
Present value of fund obligations	22 210	25 894	26 070	24 348	(15 094)
Fair value of planned assets	(16 231)	(14 364)	(14 810)	(15 094)	8 035
Liability recognised in the Statement of Financial Position	**5 979**	**11 530**	**11 260**	**9 254**	**(7 059)**

7 Retirement benefit (continued)

Movement in net liability during the period is as follows:

	2023			2022		
	Liability R'000	Planned asset R'000	Net R'000	Liability R'000	Planned asset R'000	Net R'000
Liability at beginning of period	25 894	-	25 894	26 070	-	26 070
Value of planned assets at beginning of period	-	(14 364)	(14 364)	-	(14 810)	(14 810)
	25 894	**(14 364)**	**11 530**	**26 070**	**(14 810)**	**11 260**
Interest charge/expected return of planned asset	2 471	(1 513)	958	2 350	(1 306)	1 044
Contributions received	-	(3 956)	(3 956)	-	(392)	(392)
Current service costs	54	-	54	52	-	52
Benefits paid	(2 360)	2 360	-	(2 373)	2 373	-
Actuarial (gain)/loss	(3 849)	1 242	(2 607)	(205)	(229)	(434)
Closing balance	**22 210**	**(16 231)**	**5 979**	**25 894**	**(14 364)**	**11 530**

Contributions expected to be paid

Top up payments are expected to be made during the 2024 financial year.

Expected rate of return on assets	10.89%
Assumptions	
Discount rates	10.89%
Basis of discount rates: JSE zero coupon bond yield after the market closed on 31 March 2023	
Return on assets	10.89%
Expected salary increases	6.50%
Healthcare cost inflation rate	7.64%

Sensitivity analysis on accrued liability (R Millions) for the year ending 31 March 2023

Assumption	Change	In service	Continuation	Total	Change
Central assumptions	-	1 574	20 636	22 210	-
Healthcare inflation	1%	1 839	22 038	23 877	8%
	-1%	1 357	19 372	20 729	-7%
Discount rate	1%	1 362	19 382	20 744	-7%
	-1%	1 836	22 049	23 885	8%
Post-retirement mortality	-1 year	1 618	21 508	23 126	4%
Average retirement date	-1 year	1 658	20 636	22 294	0%
Continuation of membership at retirement	-10%	1 424	20 636	22 060	-1%

The preceding table indicates, for example that if medical inflation is 1% greater then the long-term assumptions made, the liability will be 8% higher than that shown.

7 Retirement benefit (continued)

Sensitivity analysis for current service and interest cost (R Millions) for the year ending 31 March 2023

Assumption	Change	Current service	Interest cost	Total	Change
Central assumptions	-	36 767	2 281 468	2 318 235	-
Healthcare inflation	1%	44 906	2 462 951	2 507 857	8%
	-1%	30 247	2 120 333	2 150 580	-7%
Discount rate	1%	30 689	2 316 941	2 347 630	1%
	-1%	44 397	2 237 456	2 281 853	-2%
Post-retirement mortality	-1 year	37 689	2 381 122	2 418 811	4%
Average retirement date	-1 year	40 463	2 290 680	2 331 143	1%
Continuation of membership at retirement	-10%	33 091	2 265 418	2 298 509	-1%

The preceding table indicates, for example that if medical inflation is 1% greater then the long-term assumptions made, the liability will be 8% higher than that shown.

7.2 Pension and provident fund benefits

The CGS and its employees contribute to a defined contribution plan. The assets of the scheme are held separately from the CGS in funds under the control of trustees. The total cost charged to income of R16.274 million (2022: R16.072 million) represents equal contributions of 7.5% by the employer and employee.

8 Trade and other receivables from exchange transactions

	2023 R'000	2022 R'000
Trade receivables	27 670	31 493
Contract customers	30 082	28 182
Other receivables	9 478	9 763
	67 231	69 438
Less – Provision for bad debts	(5 836)	(2 252)
	61 395	**67 186**
Provision for bad debts		
Opening balance	2 252	2 026
Movement	3 584	226
Closing balance	**5 836**	**2 252**
Analysis of impairment		
Long overdue debtors considered impaired	5 836	2 252
	5 836	**2 252**

There is no difference between the fair value of trade and other receivables and their book value.

9 Cash and cash equivalents

Cash and cash equivalents at the end of the period are represented by the following balances:

	2023 R'000	2022 R'000
Cash at bank	143 566	116 907
Call accounts	26 620	176 091
	170 186	**292 997**

There is no difference between the fair value of cash and cash equivalents and their book value.

10 Trade and other payables

	2023 R'000	2022 R'000
Trade payables	29 304	21 430
Other payables	42 685	30 904
	71 989	**52 334**

There is no difference between the fair value of trade payables and their book value.

11 Deferred income

Exchange revenue

	2023 R'000	2022 R'000
11.1 Deferred income arising as a result of an agreement entered into with the Department of Science and Innovation to develop an intellectual property management office (Geoscience Act Par 5(1)(g))		
Carrying amount at the beginning of period	2 607	2 607
Amounts used during the period	-	-
Carrying amount at the end of period	2 607	2 607
11.2 Deferred income arising as a result of an agreement with the Organisation of African Geological Surveys		
Carrying amount at the beginning of period	335	293
Amounts received	1 036	42
Carrying amount at the end of period	1 371	335

11 Deferred income (continued)

	2023 R'000	2022 R'000
11.3 Deferred income arising as a result of an agreement entered into with the Department of Mineral Resources and Energy to develop and implement various measures to mitigate the effect of mining-induced contamination and integrated research into mine closure		
Carrying amount at the beginning of period	52 271	-
Amounts used during the period	(19 792)	-
Carrying amount at the end of period	32 479	-
11.4 Deferred income arising as a result of an agreement entered into with the National Research Foundation		
Carrying amount at the beginning of period	110	110
Amounts received	-	-
Amounts used during the period	-	-
Carrying amount at the end of period	110	110
11.5 Deferred income arising as a result of the Carbon Capture, Storage and Utilisation Project		
Carrying amount at the beginning of period	57 441	81 810
Amounts received	-	-
Amounts used during the period	(37 975)	(24 369)
Carrying amount at the end of period	19 466	57 441
11.6 Deferred income arising as a result of the Carbon Capture, Storage and Utilisation Project funded by the World Bank		
Amounts received	101 000	101 000
Amounts used during the period	(5 292)	-
Carrying amount at the end of period	95 708	101 000
11.7 Deferred income arising as a result of an agreement with the Department of Mineral Resources and Energy		
Carrying amount at the beginning of period	43 690	106 518
Amounts received	-	50 819
Amounts used during the period	(26 562)	(113 647)
Carrying amount at the end of period	17 128	43 690
Total deferred income	**168 869**	**205 182**

12 Accruals

	2023 R'000	2022 R'000
Accruals for leave pay		
Carrying amount at the beginning of period	28 698	27 216
Provision current period	1 795	4 003
Amounts used during the current period	(3 540)	(2 521)
Carrying amount at the end of period	26 954	28 698
The leave pay provision relates to the estimated liabilities as a result of leave days due to employees.		
Accruals for 13th cheque		
Carrying amount at the beginning of period	6 094	6 256
Provision current period	(365)	(162)
Carrying amount at the end of period	5 729	6 094
The 13th cheque accrual relates to the structuring of the employee costs to company and is paid out on employees' birthdays.		
Total accruals	**32 683**	**34 792**

13 Surplus/Deficit from operations

Operating surplus/deficit is arrived at after taking the following items into account:

	2023 R'000	2022 R'000
Revenue	**572 248**	**583 212**
Non-exchange revenue		
Total grant received	355 761	377 062
Project related revenue	-	(50 819)
Contracting revenue	43 755	-
Total non-exchange revenue	399 516	326 243
Exchange revenue		
Department of Mineral Resources and Energy project related revenue	2 599	113 647
Contracting revenue	110 494	104 726
Publication revenue	2 868	3 198
Carbon, capture, storage and utilisation	37 975	24 369
	153 936	245 939

13 Surplus/Deficit from operations (continued)

	2023 R'000	2022 R'000
Other exchange revenue		
Foreign currency gains	881	44
Proceeds from sale of asset	-	-
Recovery of asset losses	1 116	620
Sundry income	6 694	912
	8 692	1 576
Interest received		
- Interest income on call accounts	5 487	7 006
- Interest income on current accounts*	4 618	2 447
	10 104	9 453
* Includes interest accrued to the amount of R394 040		
Total exchange revenue	172 732	256 969
Total cost of contracts	**259 744**	**268 543**
Cost of commercial projects		
Direct cost	80 979	64 621
Personnel expenditure	36 160	18 594
	117 139	83 215
Cost of statutory projects		
Direct cost	30 668	55 618
Personnel expenditure	111 937	129 710
	142 605	185 328
Administrative expenses include:		
Audit fees	3 117	3 672
- Current period	2 448	2 895
- Internal audit	591	219
- Fee for other services	78	558
Provision for bad debts	3 584	-
Depreciation – On owned assets	40 617	36 576
- Buildings	7 610	6 371
- Equipment	21 673	21 329
- Office furniture	493	484
- Motor vehicles	2 546	2 239
- Aircraft	299	443
- Boat	227	299
- Computer equipment	7 769	5 411

13 Surplus/Deficit from operations (continued)

	2023 R'000	2022 R'000
Reversal of impairment	-	-
Amortisation – Intangible assets		
- Computer software	1 714	1 704
Rentals in respect of operating leases		
- Land and buildings	1 400	6 614
- Multifunctional printers	1 695	887
Other operating expenses		
Net loss on disposal of equipment	226	72
Net loss on disposal of vehicles	27	32
Net loss on disposal of intangible assets	72	9
Net loss on disposal of computer equipment	396	108
Net loss on disposal of office furniture	18	134
Net loss on disposal of boat	-	3
Write-off work in progress – HVAC	-	-
Foreign currency losses	886	548
	1 624	905
Staff costs	**345 924**	**340 464**
Included in staff costs are:		
Defined benefit plan expense for the post-retirement medical aid fund	(5 551)	270
- Current service cost	54	52
- Interest cost	2 471	2 350
- Expected return on plan assets	(1 513)	(1 306)
- Recognised actuarial (gain)/loss	(2 607)	(434)
- Recognition of loss on asset realisation	(3 956)	(392)
Defined contribution plan expenses for the pension and provident fund	**16 274**	**16 072**

13 Surplus/Deficit from operations (continued)

Emoluments

Senior management	2022/23 Pensionable salary R'000	Performance bonus R'000	Provident/ Pension fund contributions R'000	Other contributions* R'000	Termination benefits R'000	Total R'000
Mr Mabuza M	3 811	368	232	147	-	**4 557**
Mr Matsepe LD	2 686	256	163	579	-	**3 685**
Ms Monoko PR	2 023	183	132	115	-	**2 453**
Dr Tshipa J	796	-	48	558	2 273	**3 675**
Dr Khoza TD	2 032	177	124	115	-	**2 447**
Ms Mbatha ZB	240	-	18	11	-	**269**
Dr Khumalo TN	242	-	18	11	-	**271**

Senior management	2021/22 Pensionable salary R'000	Performance bonus R'000	Provident/ Pension fund contributions R'000	Other contributions* R'000	Termination benefits R'000	Total R'000
Mr Mabuza M	3 656	404	222	921	-	**5 203**
Mr Matsepe LD	2 577	304	157	130	-	**3 168**
Ms Monoko PR	1 941	220	127	550	-	**2 839**
Dr Tshipa J	2 057	195	123	279	-	**2 655**
Dr Khoza TD	1 949	213	119	108	-	**2 389**

* Other contributions relate to employer contributions towards statutory deductions and leave.

Board emoluments

Non-executive Board Members	2023 R'000	2022 R'000
Dr Mathe H	147	45
Mr Mvinjelwa X	189	129
Mr Mokoena S*	-	113
Adv. Maake N	181	126
Ms Chowan A	89	96
Dr Mirembe J	-	-
Mr Malaza S	-	-
Mr Nel P	-	-
Ms Mdubeki R	-	-
Ms Mochothli D	-	-
Ms Tsotetsi P	-	-
Ms Madiba L	-	-
Mr Moatshe A	-	-
Mr Gerryts B	-	-
Dr Gwaze P	-	-
	606	**509**

* Deceased March 2022.

14 Finance cost

	2023 R'000	2022 R'000
Finance cost on motor vehicle fleet cards	29	20

15 Reconciliation of net surplus/(loss) for the period to cash generated from operations

	2023 R'000	2022 R'000
Net surplus for the period	(87 770)	(15 096)
Interest	29	20
Depreciation on property and equipment	40 617	36 576
Amortisation – Intangible assets	1 714	1 704
Reversal of impairment of assets	-	-
Proceeds from sale of assets	-	-
Compensation from third parties for property and equipment lost	(1 116)	(620)
Net loss on disposal of fixed assets	738	358
Interest earned	(10 055)	(9 846)
Provision for post-retirement medical aid benefits	(5 551)	270
Operating cash flows before working capital changes	(61 394)	13 365
Working capital changes:		
Increase in provision for accumulated leave pay and 13th cheque	(2 109)	1 321
(Increase)/Decrease in trade and other receivables	5 792	(44 658)
Increase/(Decrease) in trade and other payables	19 655	(15 801)
Increase/(Decrease) in deferred income	(36 314)	13 845
Cash generated from operations (including finance costs)	**(74 374)**	**(31 928)**

16 Acquisitions of:

	2023 R'000	2022 R'000
16.1 Property and equipment		
Land and buildings	110 878	-
Equipment	18 895	11 726
Office furniture	836	721
Aircraft and boat	-	-
Motor vehicles	790	4 133
Computer equipment	8 835	9 789
	140 235	26 369
Work in progress – Acquisitions		
Land and buildings	(83 295)	20 511
Computer equipment	2 599	(2 988)
Equipment	(141)	(195)
Aircraft and boat	-	-
	(80 837)	17 328
Total acquisitions	**59 397**	**43 697**
16.2 Intangible assets		
Computer software	183	187
	183	**187**

17 Contingent liability

17.1 Pending legal action

	2023 R'000	2022 R'000
The Council for Geoscience has an estimated legal liability due to pending labour cases	529	476
	529	**476**

18 Taxation

No provision for income tax was made as the Council for Geoscience is exempted in terms of Section 10(1)(Ca)(i) of the Income Tax Act.

19 Operating lease commitments

	2023 R'000	2022 R'000
19.1 Lease of office space		
The operating lease between a supplier and the Council for Geoscience entered into from 1 December 2017 to 30 November 2023.		
At the reporting date the outstanding commitments under non-cancellable operating leases, which fall due are as follows:		
Up to I year	493	562
2 to 5 years	-	495
Total lease commitments	**493**	**1 057**
19.2 Lease of office printing equipment		
The operating lease contracts with suppliers from 1 May 2021 to 30 January 2025.		
At the reporting date the outstanding commitments under non-cancellable operating leases, which fall due are as follows:		
Up to I year	2 631	2 847
2 to 5 years	749	3 480
Total lease commitments	**3 380**	**6 327**
19.3 Lease of office generators		
The operating lease between AGP Electrical and Instrumentation and the Council for Geoscience entered into on 30 January 2023 to 31 July 2023		
At the reporting date the outstanding commitments under non-cancellable operating leases, which fall due are as follows:		
Up to I year	1 778	-
2 to 5 years	-	-
Total lease commitments	**1 778**	**-**
19.4 Commitments		
Operating expenditure		
Approved and contracted	110 137	146 824
Approved but not yet contracted	3 030	28 201
Capital expenditure		
Approved and contracted – Property and equipment	57 679	71 858
Approved but not yet contracted – Property and equipment	5 997	-
Total commitments	**176 843**	**246 882**

19 Operating lease commitments (continued)

	2023 R'000	2022 R'000
Commitments		
Up to I year	41 548	35 405
2 to 5 years	135 295	211 478
Total commitments	**176 843**	**246 882**

The Council for Geoscience has usage-based contracts for the provision of the following:

- Sampling Services Geophysics
- Accommodation and travel
- Courier services

20 Financial instruments

Financial instruments consist of cash and cash equivalents, investments with financial institutions, trade and other receivables, and trade and other payables.

20.1 Credit risk

Financial assets, which potentially subject the Council for Geoscience to concentrations of credit risk, consist principally of cash, short-term deposits, and trade receivables. The Council for Geoscience's cash equivalents and short-term deposits are placed with high credit quality financial institutions. Trade receivables are presented net of the allowance for doubtful debts. Credit risk with respect to trade receivables is limited due to the large number of customers being dispersed across different industries and geographical areas. Accordingly, the CGS has no significant concentration of credit risk.

The carrying amounts of financial assets included in the Statement of Financial Position represent the Council for Geoscience's exposure to credit risk in relation to those assets.

Trade and other receivables are controlled by well-established policies and procedures which are reviewed and updated on an on-going basis. The CGS does not have any significant exposure to any individual customer or counterparty.

Trade receivables and other payables are carried at amortised costs. Refer to notes 8 and 10.

20 Financial instruments (continued)

20.2 Interest rate risk

The organisation's exposure to interest rate risk and the effective interest rates on the financial instruments at the reporting date are: 31 March 2023.

	Weighted average effective interest rate %	Weighted average effective interest rate %
Assets		
Cash	1.00%	1.00%
Call accounts	4.88%	3.94%

Short-term deposits

The risk is perceived to be low due to the following factors:

- Funds are only invested with approved financial institutions according to the policy of the Council for Geoscience.
- Short-term deposits are only reinvested or invested after Management's approval.

20.3 Foreign currency risk

The CGS undertakes certain transactions denominated in foreign currencies, hence exposures to exchange rate fluctuations arise. It is not the CGS' policy to take out cover on these outstanding foreign currency transactions due to the fact that these transactions take place on an ad hoc basis. The Council for Geoscience's exposure as at 31 March 2023 is disclosed in note 21.

20.4 Airborne operations risk

It is the policy of the Council for Geoscience to transfer risk in respect of airborne operations to third parties, namely insurers and an external operator.

21 Foreign currency exposure

	2023			2022		
	Exchange rate	Foreign amount '000	Rand amount R'000	Exchange rate	Foreign amount '000	Rand amount R'000
21.1 Trade receivables						
Foreign currency						
US$	R17.52660	$41	726	R14.39330	$28	399
21.2 Banks						
Foreign funds						
Euro	R18.96690	€240	4 552	R15.86860	€240	3 808

22 Related-party transactions

During the period the following related-party transactions took place between the Council for Geoscience and the Department of Mineral Resources and Energy:

	2023 R'000	2022 R'000
Total grant received	355 761	377 062

Relationships:

Parent National Department: Department of Mineral Resources and Energy

Refer to note 11 for further details regarding transactions with the Department of Mineral Resources and Energy.

Income received from related parties

During the year funds were received and revenue recognised for services rendered by the CGS from the following related parties that are related to the entity as indicated below. The balances at year-end contained in deferred income and debtors is disclosed. Amounts receivable from these entities are subject to the same terms and conditions as normal trade receivables.

	2023 R'000	2022 R'000
Debtors balances		
Department of Defence	3 376	-
National Research Foundation	-	-
Petroleum Agency SA	-	-
Eskom	19 892	6 463
Petroleum Agency SA	-	3 340
Housing Development Agency*	3 584	-
Deffered income balance		
Department of Science and Innovation	2 607	2 607

* A provision for bad debt of an equal amount has been recognised due to the amount outstanding for longer then 60 days.

Relationship: National sphere of government

22 Related-party transactions (continued)

Services rendered by related parties

During the year expenses were incurred and recognised for services rendered to the CGS from the following related parties that are related to the entity as indicated below. The balances at year-end contained in trade payables are diclosed. Amounts due to these entities are subject to the same terms and conditions as normal trade payables.

	2023 R'000	2022 R'000
Creditors balances		
Department of Public Works and Infrastructure	-	-

Relationship: National sphere of government

All other related-party transactions were concluded at arm's length.

23 Irregular expenditure

	2023 R'000	2022 R'000
Opening balance	-	1 695
Irregular expenses identified in the current year	-	-
Expenditure condoned	-	(1 695)
	-	**-**

Details of irregular expenditure identified in the current year

Non-compliance with National Treasury's instruction note 5 of 2020/21 'Emergency Procurement in Response to National State of Disaster'. National Treasury Practice note number 5 was repealed by National Treasury Practice note 11 with effect from 1 September 2020. The contract variation of 25% for internet services was concluded after instruction note 5 of 2020/21 was repealed on 26 August 2020. No loss has been incurred as services were rendered. National Treasury condoned the irregular expenditure on 30 April 2021.

Disciplinary steps were taken against the employee that caused the irregular expenditure and they have since resigned.

24 Fruitless and wasteful expenditure

	2023 R'000	2022 R'000
Opening balance	18 496	18 496
Fruitless and wasteful expenditure identified in the current year	-	-
	18 496	**18 496**

24 Fruitless and wasteful expenditure (continued)

Determination

Fruitless and wasteful expenditure was identified with regards to the implementation of the humidity, ventilation and airconditioning (HVAC) system up to 2017. The work was found to be technically not acceptable and needed remediation. Management remains committed to eliminating and avoiding any fruitless and wasteful expenditure.

Investigation

The Council for Geoscience has commenced with investigative procedures and has engaged legal services to recover the costs and damages.

25 Events after reporting date

Non-adjusting events

Eminent acquisition of assets

Acquisition of equipment in support of the upgrade and safety of the Council for Geoscience head office building. The estimated cost for this acquisition is R9 million.

26 Correction of prior year error

		2023 R'000	2022 R'000
Nature	**Period**		
A correction was made to payables in the prior period relating to the allocation of payments.	31 March 2022	-	176
A correction was made to the financial statements to debtors for the prior period.	31 March 2022	-	(19)
A correction was made to the financial statements to depreciation/amortisation for prior period.	31 March 2022	-	(341)
A correction was made to the financial statement to prepaid expenses for the prior period.	31 March 2022	-	2 014
A correction was made to leave liability recognised in the correct period.	31 March 2022	-	233
An adjustment was made to property plant and equipment in the prior period relating to a construction project retention.	31 March 2022	-	858
		-	**2 921**
Effect			
Statement of Financial Performance for the period ended 31 March 2022			
Administrative expenses		-	2 940
Revenue from exchange transactions		-	(19)
		-	2 921

26 Correction of prior year error (continued)

	2023 R'000	2022 R'000
Effect		
Statement of Financial Position as at 31 March 2022		
Trade and other receivables from exchange transactions	-	19
Trade and other payables	-	(3 048)
Accruals	-	(233)
Property and equipment	-	341
Statement of Net Assets for the Period Ended 31 March 2022		
Accumulated surpluses	-	(2 921)

Correction of prior year disclosure

Nature

Disclosure as at 31 March 2022

Restatement of closing balances of cumulative expenditure recognised in the carrying value of property and equipment being developed/ constructed and cost:

Buildings and fixtures	-	2 515
Office furniture	-	-
Restatement of accumulated depreciation		
Vehicles – Other	-	-
Boat	-	-
Restatement of closing balances of commitments		
Approved and contracted	-	-

Effect

None (only disclosure item)

27 Change in accounting estimate

The useful lives of property and equipment were reassessed. This resulted in a change of estimated remaining lives of certain assets in the categories listed below:

Useful lives

	Old	New
Equipment	5–7 years	5–14 years
Office furniture	20 years	20–27 years
Motor vehicles	5–8 years	5–12 years
Computer equipment	6 years	6–15 years
Computer software	2–5 years	2–11 years
Aircraft	15 years	18 years

The effect of the change in accounting estimate has resulted in depreciation amounting to R867 888 in 2022/23.

The change of R1 414 120 will be reflected in future periods.

	2023 R'000	2022 R'000
Due to the change in accounting estimate regarding the useful life and residual values of assets the depreciation expense is reported at:	34 493	31 500
Equipment	21 673	21 329
Office furniture	493	484
Motor vehicles	2 546	2 571
Computer equipment	7 769	5 411
Computer software	1 714	1 704
Aircraft	299	-
Depreciation expense using the previous rates would have been reported at:	35 361	33 587
Equipment	22 130	22 909
Office furniture	497	595
Motor vehicles	2 720	2 658
Computer equipment	7 852	5 640
Computer software	1 719	1 784
Aircraft	443	-
Difference – Useful lives	867	2 087
Equipment	457	1 580
Office furniture	4	111
Motor vehicles	174	87
Computer equipment	83	229
Computer software	5	80
Aircraft	144	-

28 Heritage assets disclosure

GRAP 103 defines heritage assets as assets which have a cultural, environmental, historical, natural, scientific, technological or artistic significance and are held indefinitely for the benefit of present and future generations.

Certain heritage assets are described as inalienable items thus assets which are retained indefinitely and cannot be disposed of without consent as required by law or otherwise.

	2023 R'000	2022 R'000
Nature		
The Council for Geoscience has the following classes of heritage assets:		
- Gemstone collections	1 445	1 445
- Meteorite collections	2 804	2 804
- Mineral collections	13 313	13 313
	17 562	**17 562**

The heritage assets were initially recognised at fair value using valuators with the following credentials:

- Fossils – Professor for Paleontological Research, University of the Witwatersrand
- Mineral collections – MSc Geology and Professor and Chairman of the Department of Geology, University of the Witwatersrand
- Meteorite collections – Author of "Meteorites", private collector of meteorites
- Gemstones – MSc Geology

Various valuation methods were used taking into account the different types of heritage assets held by the CGS.

The valuation reports are held at the Council for Geoscience offices and are available for inspection.

The Palaeontological (fossil) assets have no monetary value as legislation does not permit the purchase or sale of fossils. (National Heritage Resources Act 1999 Par 35(4)(c)).

The Council for Geoscience is in possession of old scientific equipment for display purposes only. This equipment does not carry any value.

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NOTES

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