

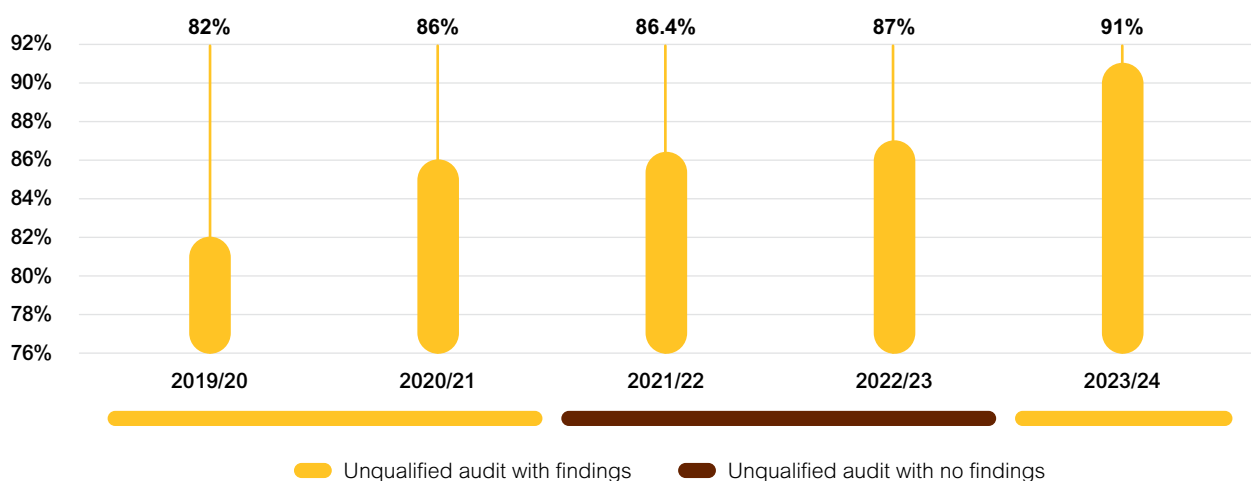


Council for Geoscience

Highlights of the Annual Report 2023/24



Organisational Performance for MTSF Cycle 2019–2024



In the year under review, the CGS obtained an unqualified audit outcome and achieved an **outstanding overall organisational performance of 91%**. Furthermore, the CGS has secured two successive clean audits during the MTSF cycle 2019–2024.



mineral resources & energy

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

The CGS's contribution to geoscientific initiatives and national imperatives through the implementation of its approved strategy, the Integrated and Multidisciplinary Geoscience Mapping Programme (IMMP)



The CGS supported the establishment of the **Junior Miner's Exploration Fund**, created by the erstwhile DMRE, in partnership with the Industrial Development Corporation. The CGS is a signatory to the MoU for this fund, the implementation modalities of which are close to finalisation. The CGS is also piloting an empowering provision in the Geoscience Act that enables it to undertake exploration. The implementation of this provision is part of a suite of interventions that are intended to effect a re-imagined exploration boom in the country, linked with, amongst others, the insatiable appetite for minerals (locally known as critical minerals) to fulfil the global commitment towards net zero emissions.



During the year under review, the Geoscience Technical Programme concentrated on producing **1:50 000-scale geoscience maps**, both onshore and offshore, to advance critical geoscience knowledge. Onshore coverage improved from below 5% before commencement of the IMMP to **16%**. To date, **307** out of a total of 1 916 1:50 000-scale maps have been published, of which **77** were produced in 2023/24. Offshore coverage increased from **0.05% to 0.3%**.



The CGS advanced the national flagship Carbon Capture, Utilization and Storage (CCUS) Pilot Project in Leandra, successfully drilling a deep stratigraphic borehole. Technical studies revealed a **basaltic storage potential of up to 34 billion tons (Gt) within a 25 km² area, far exceeding the initial estimated 5 Gt**. This significantly enhances the project's contribution to a lower carbon economy. Additionally, the CGS presented the geological characterisation of the Leandra Pilot Project at the Conference of the Parties (COP) 28 under the United Nations Framework Convention on Climate Change (UNFCCC).



The CGS supported Eskom with the safety case for the renewal of the long-term operating licence for the Koeberg Nuclear Power Station and geoscientific assessments for future nuclear capacity installation. Numerous scientific studies were undertaken, culminating in probabilistic seismic and tsunami hazard assessments, which serve as fundamental inputs to the required engineering design and operating requirements of the power station. All primary scientific inputs to the safety case application to the National Nuclear Regulator were completed during the financial year, following rigorous external peer review and documentation of evidence and results. The work was designed to enhance local capacity that will enable incremental reliance on State, academic and private sector institutions to undertake assessments in fulfilment of prospective projects under consideration by the government, as outlined in the Energy Policy.



The CGS-led National Geohazards Mapping Programme has advanced the understanding of geohazards and their effects on infrastructure, land use, and safety in South Africa. This multi-year initiative includes seismic hazard assessments, active fault mapping, and landslide susceptibility studies. Over the past five years, it has enhanced **geohazard databases and developed thematic maps for seismic risk, sinkhole, and landslide assessments**. These results support municipalities and policymakers in sustainable development and disaster management, and in continuing efforts towards comprehensive geohazard mitigation.



The CGS conducted **hydrogeological mapping** to understand groundwater resources around **strategic mineral and energy projects**. This is crucial for monitoring and environmental preservation. Recent mapping in Mpumalanga and KwaZulu-Natal, related to the CCUS Project, produced three 1:50 000-scale maps near Delmas, Jozini, and Evander. This work supports Onshore Mapping Coverage by providing essential groundwater information for stakeholders, including aquifer quality and quantity assessments. The Delmas and Evander 1:100 000-scale hydrogeological maps serve as baseline geoscientific information, as part of environmental safeguarding and future monitoring activities, to allow for the safe injection of carbon dioxide at piloting stages. The CGS is also advancing groundwater modelling with Artificial Intelligence (AI) and machine learning to improve risk and potential maps, and is investigating managed aquifer recharge to address water scarcity.

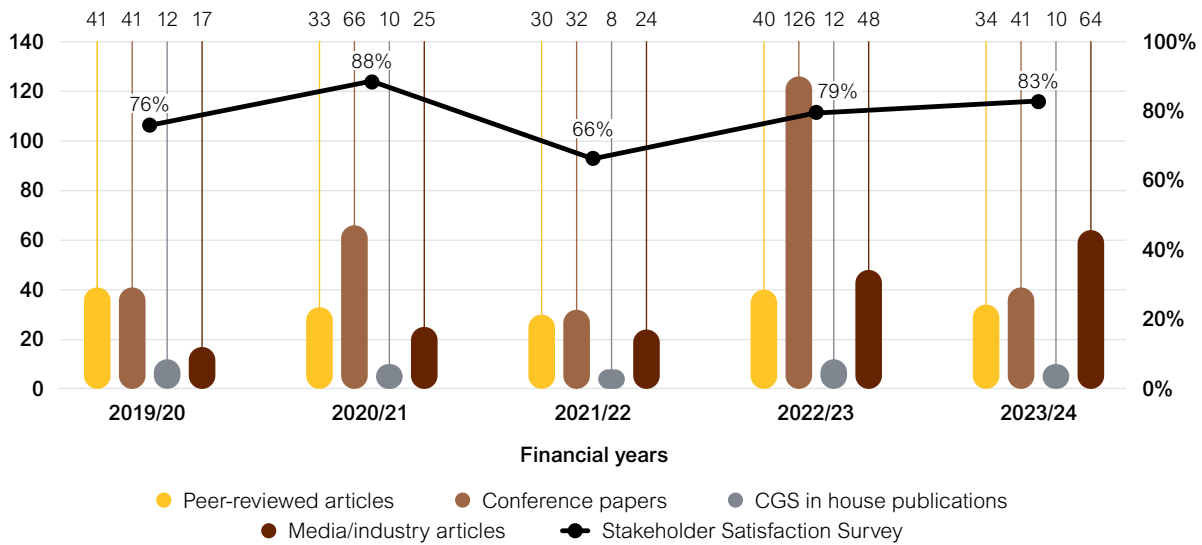
Awareness of the CGS brand, services and products

The CGS has deliberately invested in raising public awareness of its services and products, leading to increased media interest and coverage. This is evidenced in the production of **64** media articles and the profiling of the CGS brand through various channels, including exhibitions, billboards, social media, podcasts, radio, and television. Additionally, stakeholder satisfaction improved to **83%**, up from 79% in the 2022/23 financial year.

Geoscience Research Outputs (2019–2024)

Over the past five years, the organisation has made significant strides in its academic and public engagement efforts. There has been a consistent increase in peer-reviewed publications and conference presentations, underscoring the organisation's growing influence in its field. Contributions to CGS publications have also been noteworthy, reflecting a deepening expertise and thought leadership. Media coverage has expanded, highlighting the organisation's role as a key player in the industry and enhancing its public profile. Additionally, stakeholder satisfaction has shown a positive trend, indicating strong relationships and effective communication strategies. These achievements underscore the organisation's commitment to excellence and its ability to make a meaningful impact across various platforms.

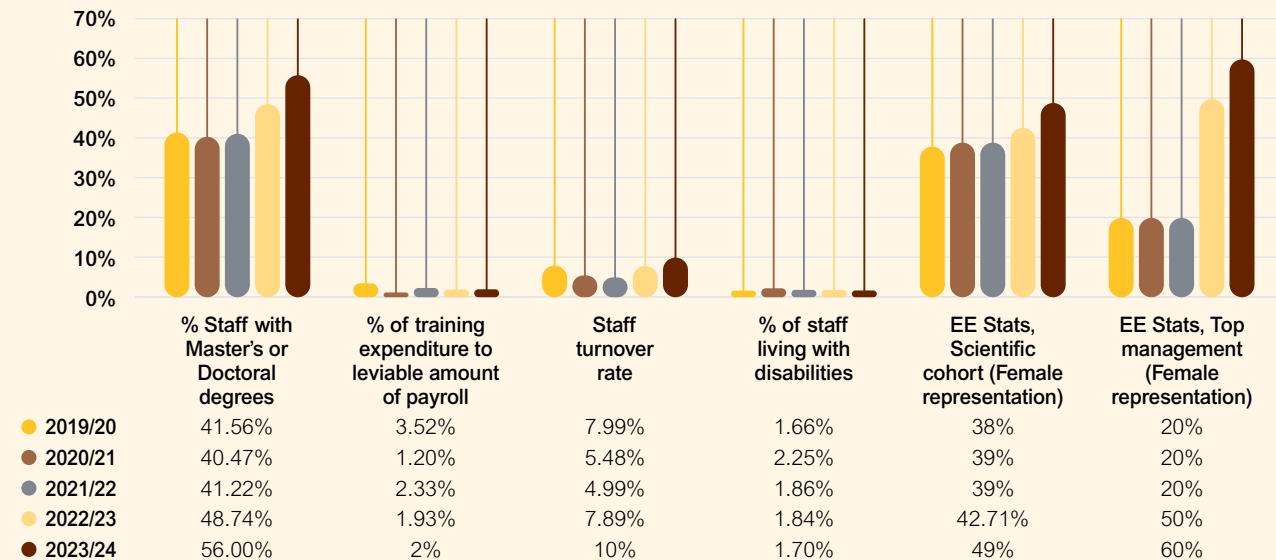
Summary of geoscience research outputs, media articles and stakeholder satisfaction



Building capable human capital

During the Medium-Term Strategic Framework (MTSF) cycle, the CGS has made significant progress in academic development, thus contributing to national research capacity. Staff completed a total of **11 PhD degrees (7 female)** and **23 Master's degrees (13 female)**, reflecting the Council's commitment to advancing geoscience knowledge and expertise. These academic achievements not only enhance the CGS' research capabilities but also strengthen its role as a leading geoscience institution.

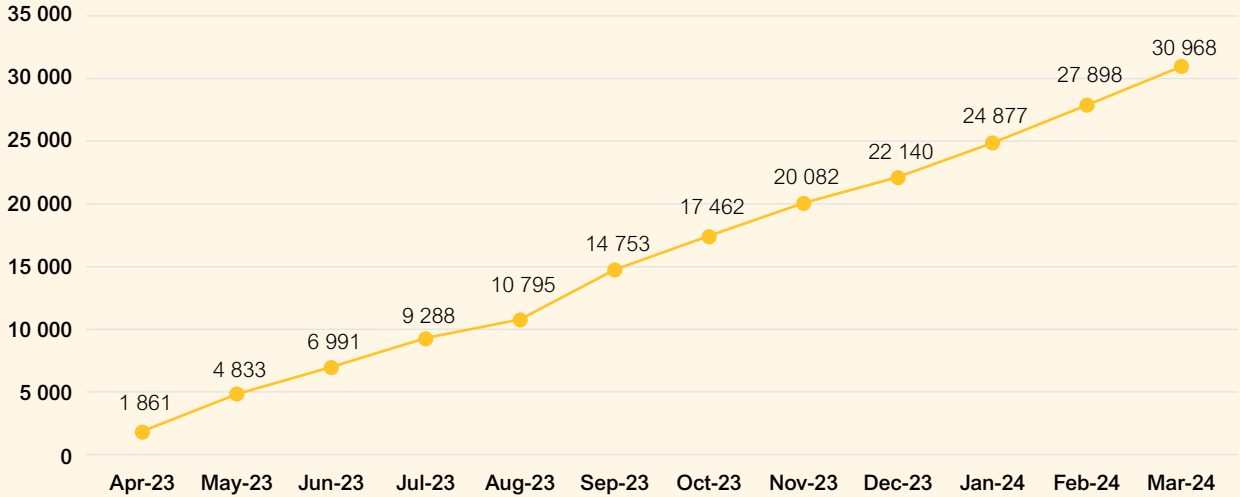
Summary of human resource targets achieved in the MTSF cycle: Towards building capable human capital



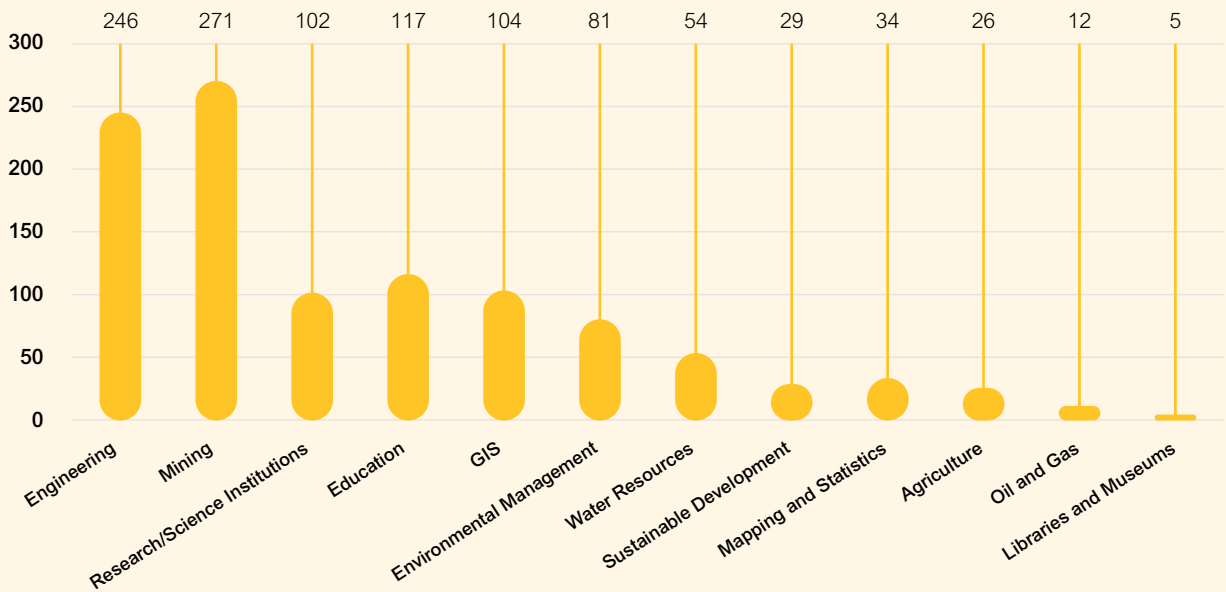
Geoscience Data and Information

The CGS, as the national custodian of geoscience data, relies on an efficient information management system for informed decision-making on resource management and geohazard mitigation. Launched in 2021/22, the Geoscience Data and Information Portal offers global access to CGS data, including maps, documents, and databases. In 2023/24, over **30 900 downloads** were recorded for resources such as geological maps, bulletins, and shape files.

Cumulative Downloads – 2023/24



Number of downloads per Industry Type



Council for Geoscience

www.geoscience.org.za



280 Pretoria Street, Silverton, Pretoria, South Africa

Tel: +27 (0)12 841 1911

info@geoscience.org.za