



Council for Geoscience

# Highlights of the Annual Report 2021/22

## About the Council for Geoscience

The Council for Geoscience (CGS) is the legal successor of the Geological Survey of South Africa, which was formed in 1912 by the amalgamation of the former Surveys, the oldest of which – the Geological Commission of the Cape of Good Hope – was founded in 1895. The Geoscience Act, Act 100 of 1993, as amended, established the CGS in its present form. The CGS is listed as a Schedule 3A Public Entity in terms of the Public Finance Management Act (PFMA) (Act No. 1 of 1999).

## Council for Geoscience Strategy

The CGS strategy (i.e. **The Integrated and Multidisciplinary Geoscience Mapping Programme – IMMP**), adopted in 2017/18, encourages the sustainability of the organisation in a changing state of ideologies, economy, and technological landscape. The IMMP is intended to maintain an impactful delivery of the core mandate of the CGS and provides innovative and responsive geoscience solutions to support the National Development Plan 2030 and other government plans that address such national development imperatives as economic growth, poverty, inequality, job creation, education, food security, optimal land use, environmental stewardship, clean water, affordable and clean energy, and safer communities, among others.



Financial year 2021/22 represents the **fifth 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 focused on implementation of its mandate, inscribed in the founding legislation, the Geoscience Act No. 100 of 1993 as amended.



mineral resources  
& energy

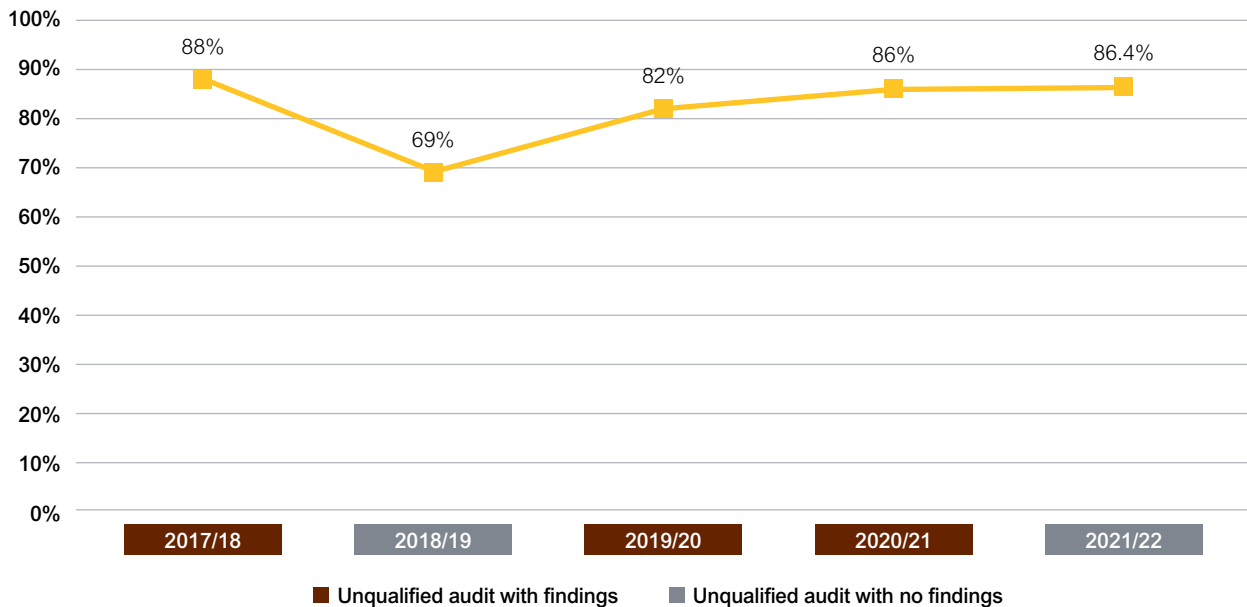
Department:  
Mineral Resources and Energy  
REPUBLIC OF SOUTH AFRICA

# Summary of Key Achievements for the FY2021/22

## Audit Outcome for FY2021/22

The CGS is pleased to announce its attainment of an **unqualified audit outcome with no material findings (a clean audit)** for the year under review. Moreover, through the effective implementation of the strategic programmes, an **overall performance of 86.4%** was realised by the organisation.

### Organisational performance since the implementation of the IMMP



### The Status of the Internal Controls

The CGS conducted the External Quality Assurance Review in line with the International Standards for Professional Practice for Internal Auditing, and it has received an overall opinion that the internal audit activity, “Generally conforms to the Standards and Code of Ethics”.

## CGS’s Contributions to the Economic Recovery and Reconstruction Plan (ERRP)



The CGS officially **launched its survey boat known as the R/V (Research Vessel) Nkosi**. The boat was acquired to augment the CGS’s **marine geoscience programme** which aims to map the South African continental shelf (offshore) in the highest resolution based on modern technology, at various depth scales. The marine geoscience programme in 2021/22 has mapped the outer parts of 1:50 000 sheet 3318CD between Melkbosstrand and Llandudno in the Western Cape Province. The high-resolution data collected will contribute towards the improvement of offshore geoscience map coverage which is currently at 0.05%.

Contributions to **energy security** and the **just transition to low carbon economy**: As an implementing agency for the **Carbon Capture, Utilisation and Storage Project** for South Africa, the CGS in the year under review secured a state-owned piece of land in the Mpumalanga Province for the proposed pilot plant. The site selection was supported by a Basic Assessment Report and detailed structure, seismic and subsurface geological characterisation. Samples collected from existing boreholes were also analysed for their mineralogical, petrological, geochemical, and importantly, their reservoir properties.





The Geoscience Technical Programme of the CGS focused on accelerated economic recovery projects that included the **on-going detailed mapping at a scale of 1:50 000** and **key projects focusing on the critical minerals of the future including base and precious metals (for example, nickel, cobalt, chromium and gold), rare-earth elements and coal**. The onshore map coverage has increased to **10.7%** from **below 5%** since implementation of the **IMMP**.



### Applications of geosciences beyond minerals and energy:

- a) The two shallow boreholes drilled and donated by the CGS to the Beaufort West Municipality in February 2018 during the geo-environmental baseline assessment studies (part of the Karoo Deep Drilling Programme), continue to provide water to the Beaufort West Municipality. To date, the municipality has extracted and distributed well over **835 million litres** of water, which is equivalent to 10% of the municipality's monthly capacity.
- b) In support of integrated district development planning and infrastructure development, the CGS has developed the first **1:10 000-scale development suitability map** around Giyani. This map will be presented to the relevant authorities to aid in infrastructure development and land use.
- c) The CGS implemented various infrastructure and land use thematic projects in support of the 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. In these efforts, the CGS has also produced a crushed aggregate potential map of southern KwaZulu-Natal which indicate most prospective areas for aggregate exploitation. In addition, several microzonation models have been produced which serve as a basis for evaluating site-specific risk analysis that is essential for the safety of critical infrastructure.



The South African geological intricacies present opportunities for discovery of tier-1 mineral deposits needed to support the insatiable demand to fulfil the current and imminent global growth. For instance, South Africa has abundant geological terranes often buried beneath thick sediments as seen in the Northern Cape Province that have not been fully characterised. The CGS is proud to report on the publishing of the one-of-a-kind **Orange River Pegmatite Prospectivity Map**. This area is a known source of **lithium and rare earths** in the **Northern Cape Province**. This map will contribute significantly to the much-needed intervention for the **battery industry** and **renewable energy**.



The **Exploration Strategy for the Mining Industry of South Africa and its Implementation Plan 2022** was published in April 2022 by the Minister of Mineral Resources and Energy. These policy documents seek to attract investment through a reinvigorated mining exploration strategy encouraging mineral exploration, clean technology, processing and mining supply and services sectors. In further support of the exploration activities in South Africa as well as the **ERRP**, the Department of Mineral Resources and Energy has allocated additional funds to the tune of **R500 million** to the CGS to support the proposed exploration work. The funds will be transferred to the CGS in two tranches, R200 million during the financial year **2023/24** and R300 million in the financial year **2024/25**.



To support one of the strategic initiatives outlined in the Exploration Strategy for the Mining Industry of South Africa, the CGS has **launched for the first time a geoscience data portal**, which has been developed to ensure that access to geoscience data and information records published by the CGS in the form of maps, documents and databases are made available to stakeholders and clients. The geoscience data portal can be accessed at **<https://maps.geoscience.org.za>**



The **Geoscience Act Regulations 2022** were also published for implementation.

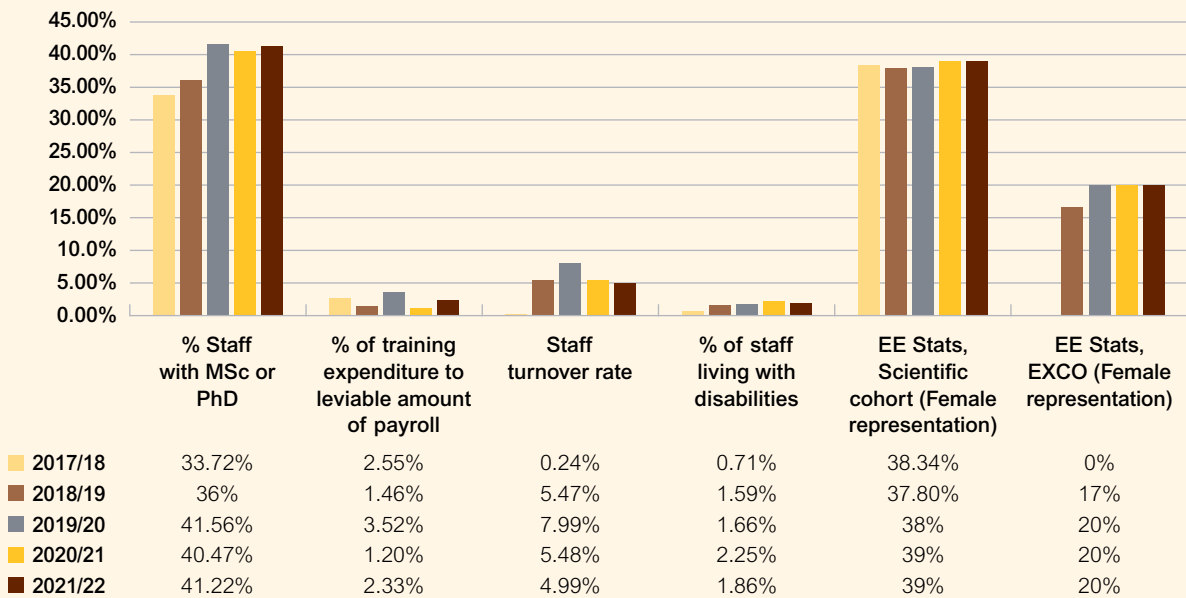
## Towards building a capable human capital



### 2021/22 Academic Achievements

**Congratulations** to **Dr Talicia Pillay, Dr Haajierah Mosavel and Dr Brassnavy Manzunu** for attaining their **Doctoral degrees**; and **Mr Thato Ntikang, Mr Mawande Ncume and Ms Boitumelo Mahlase** on their **Master's degrees**.

#### Summary of the human resources target achievements over the past five years: Towards Building a Capable Human Capital



### Geoscience research outputs: For an improved geoscientific domain through effective knowledge management

#### Geoscience research outputs 2017/18–2021/22

