

DISSEMINATION OF INFORMATION

10

CGS publications, including bulletins, geochemical synthesis reports, geological explanations and Geoclips

33

Peer-reviewed articles published in both local and international journals

66

Conference proceedings published

25

Media articles published to enhance and grow the the CGS brand

THE GEOSCIENCE ACT 100 OF 1993 DRAFT REGULATIONS



The CGS dedicated its resources to working with the Department of Mineral Resources and Energy (DMRE) to draft the Geoscience Act Regulations, which clarify the provisions of the Geoscience Act of 1993, as amended, that established the CGS. The regulations were gazetted for public comments during 2020/21 and stakeholders will be consulted in 2021/22 once all inputs and comments have been received.

OUR STRATEGIC PARTNERSHIPS FOR A BETTER AFRICA AND THE WORLD



The CGS, in partnership with the African Exploration Mining and Finance Corporation, is providing technical support to the DMRE in advancing the bilateral cooperation between South Africa and the Central African Republic (CAR). To this effect, the CGS concluded a strategic and technical partnership with its CAR counterpart, the Office of Geological Research and Mining, in January 2021.

The CGS has embraced the intergovernmental relations framework to enhance coordination with all three spheres of Government. In 2020/21, meetings were held with key stakeholders in all three spheres, which allowed CGS scientists access to public and private land to conduct planned research (implementation of the Geoscience Technical Programme). Engagement with local government was strengthened through participation in the strategic planning sessions of the **District Municipalities of Mopani and Waterberg** in Limpopo in support of the **District Development Model**.

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Council for Geoscience

AUDIT OUTCOME

The Council for Geoscience (CGS) received an **unqualified audit outcome** for 2020/21.

19th consecutive year

ORGANISATIONAL PERFORMANCE

(MTSF 2019-2024)

Performance against planned targets

2019/20	2020/21
82%	86%



86%



mineral resources & energy

Department:
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

OUR RESPONSE TO COVID-19



The CGS played a critical role in intensified monitoring and impact assessment of seismicity in mining areas as a precursor to the phased reopening of mining operations during the national lockdown in accordance with the amended Chapter 4, S11(K)(3) of the National Disaster Management Act Regulations published on 16 April 2020.

OUR CONTRIBUTIONS TO THE ECONOMIC RECOVERY AND RECONSTRUCTION PLAN

- The CGS **streamlined the Geoscience Technical Programme to respond** to the post-COVID-19 economic recovery programme, continuing its detailed mapping programme at a scale of 1:50 000 and increasing onshore map coverage to **9.03% computed from 18 high-quality geological maps produced**.
- The partnerships developed with the South African Navy and the coastal division of the Department of Environment, Forestry and Fisheries are intended to augment the capacity to enable **attainment of 0.3% offshore coverage** in the next financial year.
- Economic recovery projects focused on the **minerals of the future, including base and precious metals, rare earth elements and coal**.

High-priority mineral anomalies identified



Through the mineral systems approach, new areas were found to host widespread metals and minerals in the Orange River Pegmatite Belt (Northern Cape Province), which is about 67% larger than previously predicted.

- The CGS **responded to the post-COVID-19 economic recovery and reconstruction plan by supporting the DMRE**, working with the Minerals Council, to draft an **'Exploration Implementation Plan'** as the lifeblood of the mining industry's growth. The CGS has established that exploration activities do not reflect the quality of geosciences of South Africa, due to a lack in investment in continuous mapping at an appropriate scale that is sufficient to attract exploration interest

to secure a minimum share of 5% of the global exploration expenditure in South Africa.

- As part of the Karoo Deep Drilling Programme, the CGS has now started drilling a 3 500m ultra-deep vertical stratigraphic research borehole. In the year under review, 2 412.06m were drilled, with methane gas (CH₄) detected at depths of 1 734m and at 2 325m.
- Following the application of artificial intelligence techniques for groundwater mapping, several boreholes were selected and drilled in Phuthaditjhaba. All boreholes were targeting geological faults thought to represent an unidentified block fault system. One high-yielding borehole provides an estimated 12 litres/second, making it a sizeable groundwater source for the water-scarce community of Phuthaditjhaba.
- In support of Medium-Term Strategic Framework (MTSF) priority 5 on spatial integration, human settlements and local government, and the District Development Model, the CGS executed projects such as aggregate mapping to compile the crushed aggregate quality map of the Eastern Cape Province.

Support for Just Transition to low carbon economy

- The CGS assumed the responsibility of implementing agency for the **Carbon Capture, Utilisation and Storage** project, a partnership of the South African Government and the World Bank. The CGS used existing geoscientific information to select a site in Mpumalanga Province for further geological characterisation. This work will determine the suitability for the site to safely sequester large quantities of carbon dioxide.

BUILDING A CAPABLE HUMAN CAPITAL AT THE CGS



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employees registered as bursars for the 2021 academic year, 53% of whom are women, with six of the eight registered for PhDs being females.

Overall, the organisation has almost gender parity at an organisational level, with 48% of the workforce being females. Youths constitute 30% of the workforce.

Two of our female scientists (Dr Maphuthi Kwata and Dr Valerie Nxumalo) have attained their Doctoral degrees. Mr Litshedzani Mutele, Ms Thato Kgari, Ms Noluvuyo Dudumashe and Mr Melvin Sethobya attained their Master's degrees.



Dr Asinne Tshibubudze and Dr Cameron Penn-Clarke were admitted as fellows of the Geological Society of South Africa (GSSA) in recognition of their concerted efforts to grow the country's geoscience knowledge base.

GEOSCIENCE DATA AND INFORMATION

Engineering Industry

Mining Industry

Private Citizens

Information and data dissemination 2020/21 (guided by the CGS – Geoscience Data and Information Policy, 2019)

4 363

requests received (for, among others, dolomite reports and boreholes, geological borehole data, geological maps, geological mineral maps and other information such as geochemical and geophysical data)

Learning Institutions

International Companies

Organisations and Government Departments