

Council for Geoscience

Annual Report 2021/22

Presentation to the Portfolio Committee on Mineral Resources and Energy
October 2022



mineral resources
& energy

Department:
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

A proud entity of the Department of Mineral Resources and Energy



Council for Geoscience

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Outline

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- CGS Annual Report 2021/22 Highlights
 - Council for Geoscience Strategy (Progress on its implementation)
 - Summary of Key Achievements for the 2021/22
 - A. Audit Outcomes
 - B. Organisational Performance
 - i. Analysis of the past decade
 - ii. Highlights of achievements per Strategic Programme
 - iii. Operational highlights
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- Strategic outlook of the CGS
- Concluding remarks

CGS Geoscience Summit: Celebrating **110 years** of geoscience excellence



CGS **GEOSCIENCE SUMMIT**

25 - 27 October 2022

Durban International Convention Centre

Celebrating 110 years of geoscience excellence

For more information: <https://www.geoscience.org.za/conference>

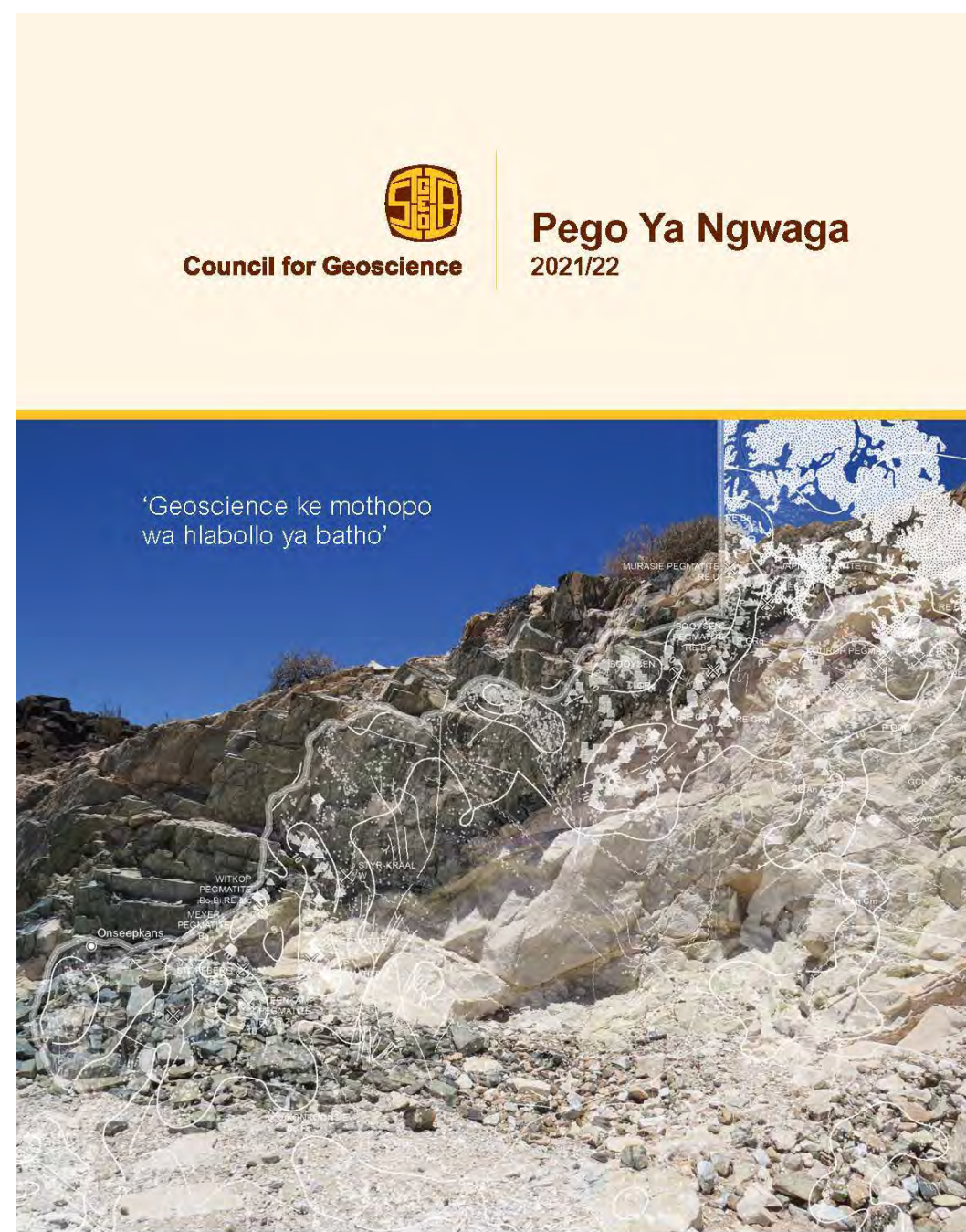
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Council for Geoscience Annual Report 2021/22



Council for Geoscience Strategy (Progress on its implementation)

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.

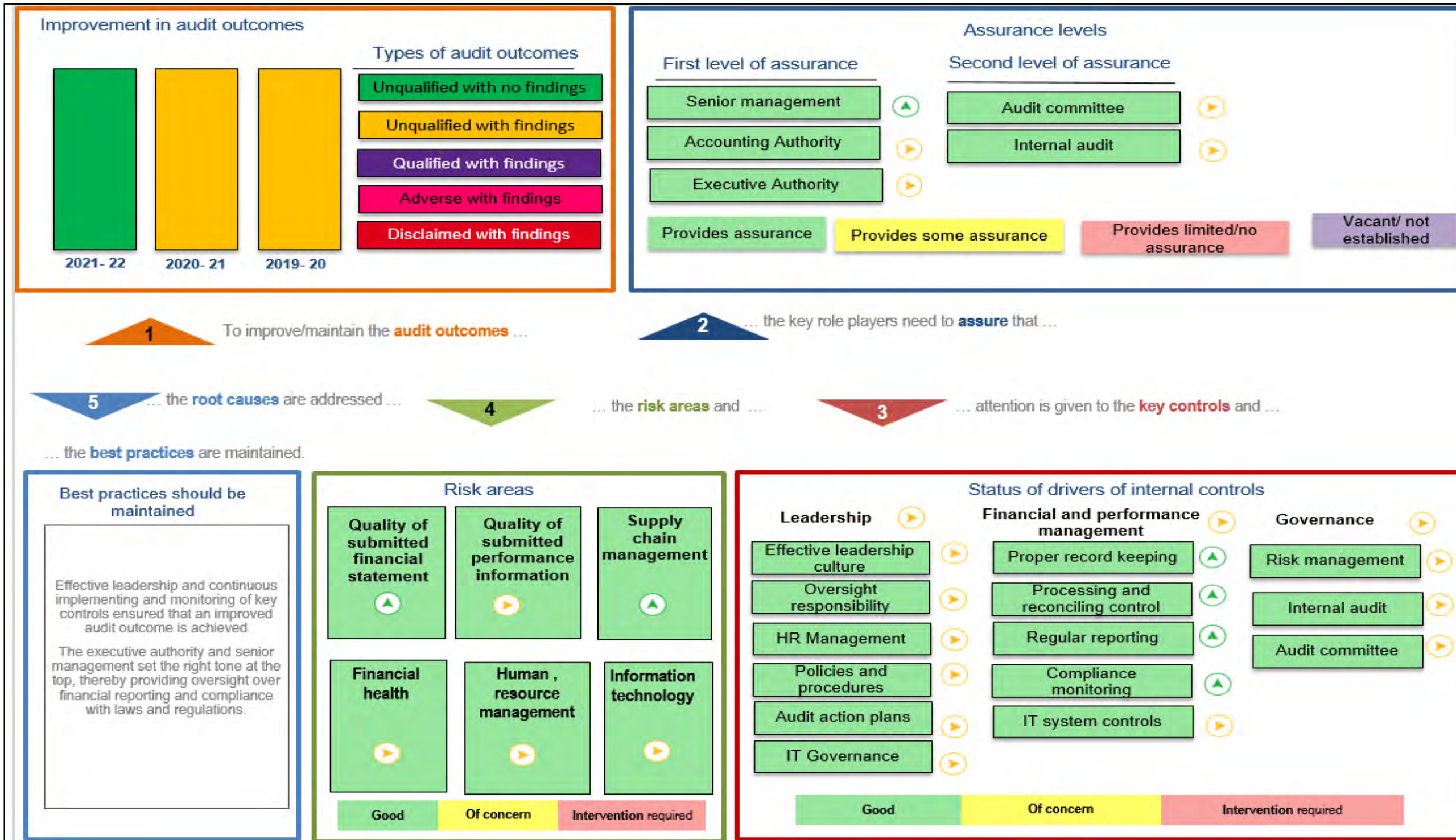


Financial year **2021/22** represents the **fifth year** of continuous implementation of the current phase of the **IMMP** as an instrument of delivery of the strategic re-orientation of the CGS, which decisively focused on implementation of its mandate, inscribed in the founding legislation, the **Geoscience Act No. 100 of 1993 as amended**.

Summary of Key Achievements for the 2021/22



Auditor General's Summary of CGS 2021/2022 Audit Outcome

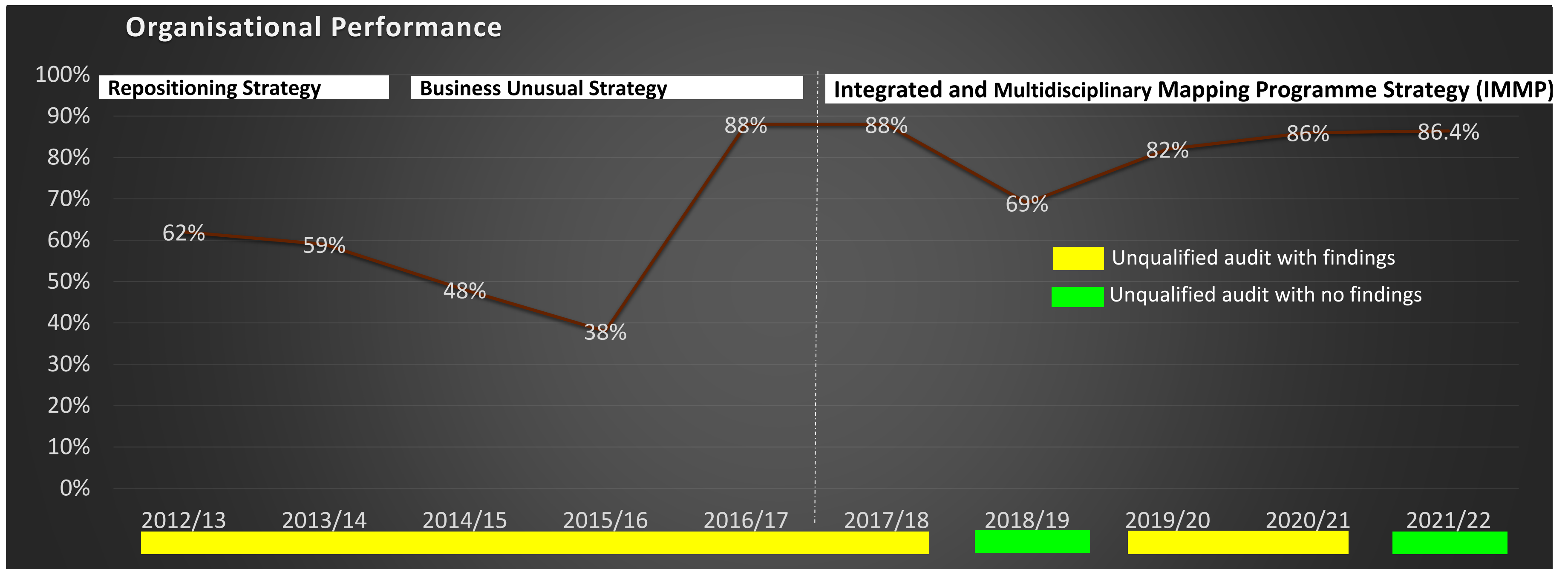


The CGS has achieved a **Clean Audit** for the financial year 2021/2022. This is a second clean audit for the CGS with no audit qualifications over the past 20 years.

Controls are constantly being reviewed for enhancement to maintain the clean audit status.

Moreover, through the effective implementation of the strategic programmes, an **overall performance of 86.4%** was realised by the organisation.

Organisational Performance pre-IMMP and during 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”.

Organisational Performance per Strategic Programme – 2021/22

CGS Impact Statement: A prosperous and transformed society enabled by geoscience solutions

CGS PROGRAMMES	CGS OUTCOMES	CGS STRATEGIC RESPONSE TO THE MTSF PRIORITIES	CGS CORPORATE SCORECARD
1 Financial Sustainability	1. Effective and efficient financial resources management	1. A capable, ethical and developmental state	Economic/Financial Growth Perspective
2 Organisational Effectiveness and Efficiency	2. Compliance with governance protocols/regulations		Effective Systems (Organisational) Perspective
3 An empowered, transformed, motivated and capacitated workforce	3. Capable human capital	3. Education, skills and health	World-Class People Perspective
4 Delivery of the mandate	4. Enhanced applications of geoscience information and knowledge and to secure a minimum of 5% share of the global exploration expenditure 5. Enhanced geoscience diplomacy	2. Economic transformation and job creation 5. Spatial integration, human settlements and local government	Market (Stakeholder/Customer) Perspective
5 Advisory, stakeholder engagement and knowledge management	6. Improved awareness of the CGS brand, services and products 7. Improved geoscientific domain through effective knowledge management	6. Social cohesion and safe communities 7. A better Africa and World	



Programme 1: Financial Sustainability

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	Planned annual target 2021/2022	Actual achievement 2021/2022	Status of Achievement
Effective and efficient financial resources management	Audited financial reports	Percentage of overhead costs to total costs	≤66%	54.90%	Target achieved
	Audited financial reports	Percentage of personnel costs to total costs	≤70%	57.18%	Target achieved
	Audited financial reports	Revenue from collaborative activities/partnerships	R33m	R107.9m	Target achieved
	Audited financial reports	Grant revenue	R373.2m	R464.3m	Target achieved

Programme 2: Organisational Effectiveness and Efficiency

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 resource management and compliance with governance protocols/regulations

Outcome	Output	Output indicator	Planned annual target 2021/2022	Actual achievement 2021/2022	Status of Achievement
Effective and efficient financial resource management and	Audited annual report	Percentage of total Procurement spend on goods and services from small, medium and micro enterprises (QSE and EMEs) in terms of PPPFA of 2017	≥30%	42.48%	Target achieved
	Audited annual report	Number of audit qualifications	0	0	Target achieved
Compliance with governance protocols/regulations	Availability report	Availability of key enterprise services	≥99%	99.89%	Target achieved

Programme 3: An Empowered, Transformed, Motivated and Capacitated Workforce

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	Planned annual target 2021/2022	Actual achievement 2021/2022	Status of Achievement
Capable human capital	Human resources reports	Percentage of scientific staff with Master’s or Doctoral degrees	≥35%	41.22%	Target achieved
	Human resources reports	Staff turnover rate	≤10%	4.99%	Target achieved
	Human resources reports	Percentage of training expenditure to leviabale amount of payroll	≥1%	2.33%	Target achieved
	Human resources reports	Percentage of staff living with disability	≥1.5%	1.86%	Target achieved
	Human resources reports	EE statistics, scientific cohort (Female representation)	44%	39%	Target not achieved
	Human resources reports	EE statistics, EXCO ((Female representation)	20%	20%	Target achieved

Programme 4: Delivery of the Mandate

Market (Stakeholder / Customer) perspective

Programme 4: Delivery of the mandate

Programme 4 purpose: Execute the integrated and multidisciplinary geoscience mapping programme

Institutional outcomes of programme 4: Enhanced applications of geoscience products and capture 5% global share exploration expenditure and Enhanced geoscience diplomacy

Outcome	Output	Output indicator	Planned annual target 2021/2022	Actual achievement 2021/2022	Status of Achievement
Enhanced application of geoscience products and capture 5% global share exploration expenditure, and Enhanced geoscience diplomacy.	Onshore geoscience maps	Onshore geoscience map coverage	9.5%	10.7%	Target achieved
	Offshore geoscience maps	Offshore geoscience map coverage	0.3%	0.05%	Target not achieved
	Value-added geoscience products such as integrated reports, 3D models, innovative solutions, mineral systems and emplacement models	Applied geoscience products for minerals and energy	4	4	Target achieved
	Value-added geoscience products such as integrated reports and 3D models, innovative solutions	Applied geoscience products for infrastructure, land use, health, groundwater and the environment	5	7	Target achieved

Programme 5: Advisory, Stakeholder Engagement and Knowledge Management

Market (Stakeholder / Customer) perspective

Programme 5: Advisory, Stakeholder Engagement and Knowledge Management

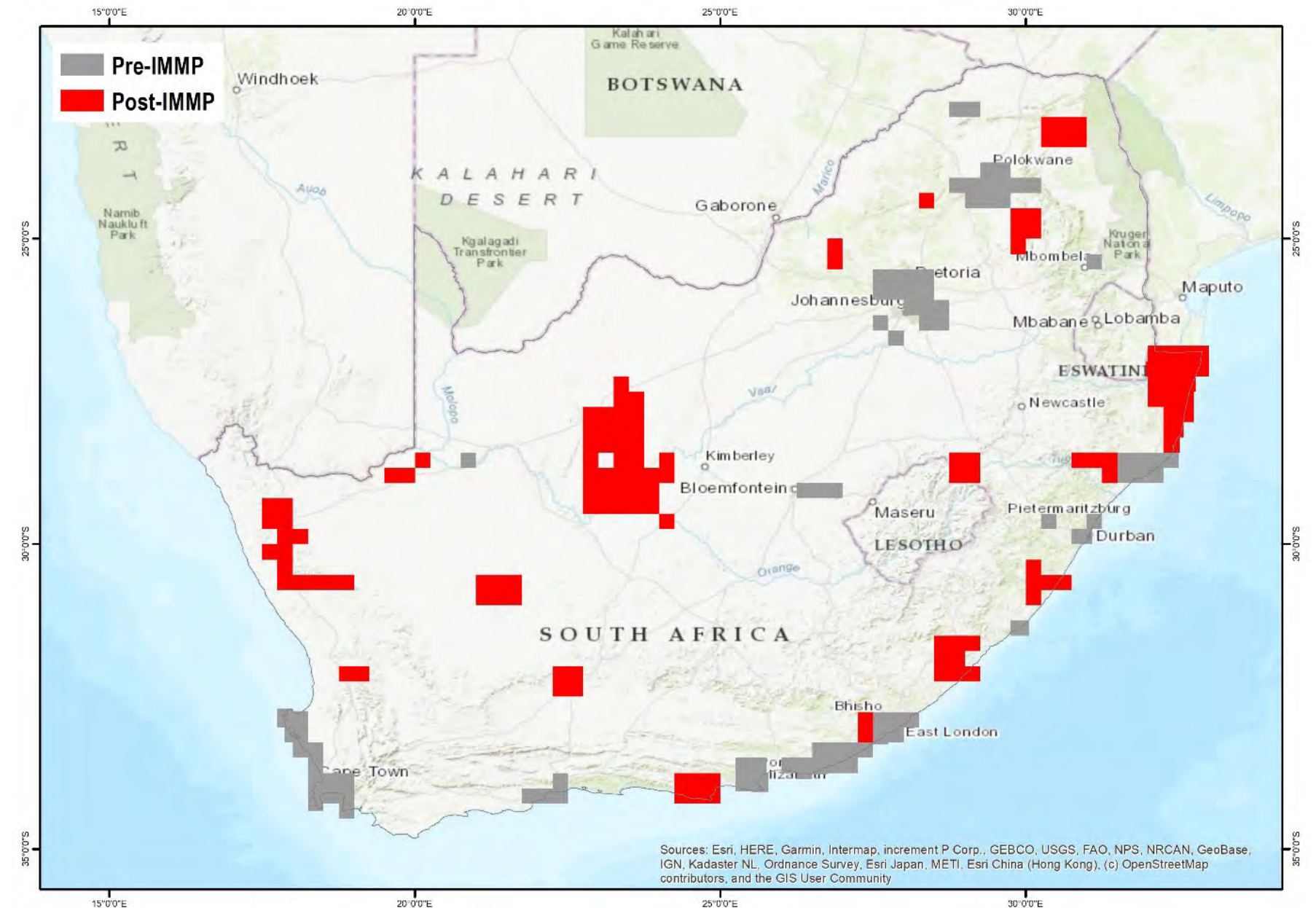
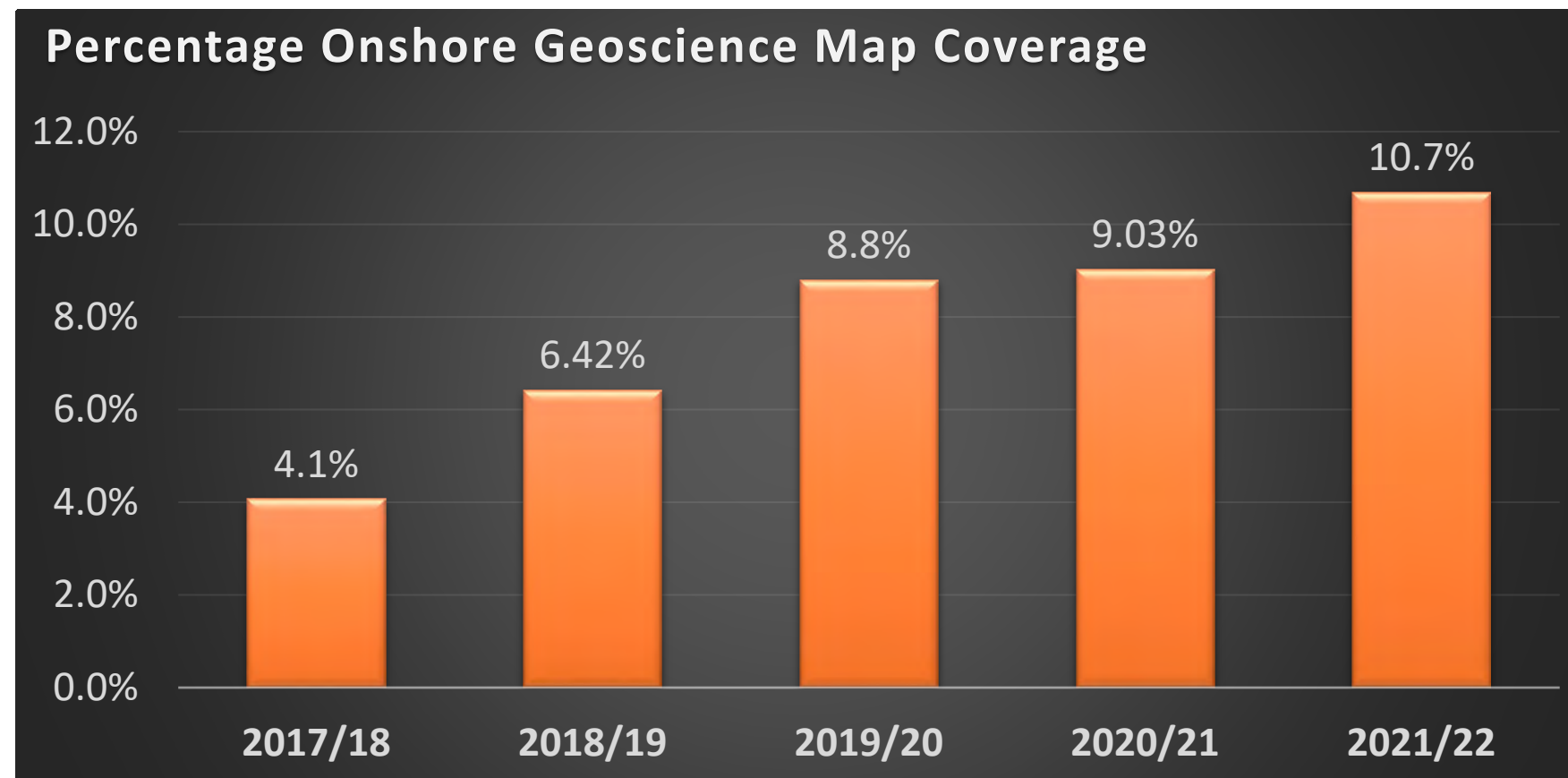
Purpose: To improve stakeholder relations through collaborations with strategically aligned institutions, the private sector and the general public.

Institutional outcomes of programme 5: Improved awareness of the CGS brand, services and products as well as Improved knowledge management.

Outcome	Output	Output indicator	Planned annual target 2021/2022	Actual achievement 2021/2022	Status of Achievement
Improved awareness of the CGS brand, services and products. and Improved knowledge management	Media articles	Number of articles published on media platforms	24	24	Target achieved
	Stakeholder survey report	Stakeholder satisfaction level	≥70%	66.4%	Target not achieved
	Peer-reviewed Articles published in scientific journals, book chapters and edited volumes	Number of peer-reviewed articles published	30	30	Target achieved
	Examples: memoirs, bulletins, books and atlases.	Number of CGS publications	8	8	Target achieved
	Examples: Conference Abstracts, extended abstracts, papers and keynotes	Number of conference proceedings	25	32	Target achieved

Operational Highlights: Contributions to the Economic Recovery and Reconstruction Plan

Onshore Geoscience Map Coverage



The Geoscience Technical Programme of the CGS focused on accelerated economic recovery projects that included the **on-going detailed geoscience 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**.

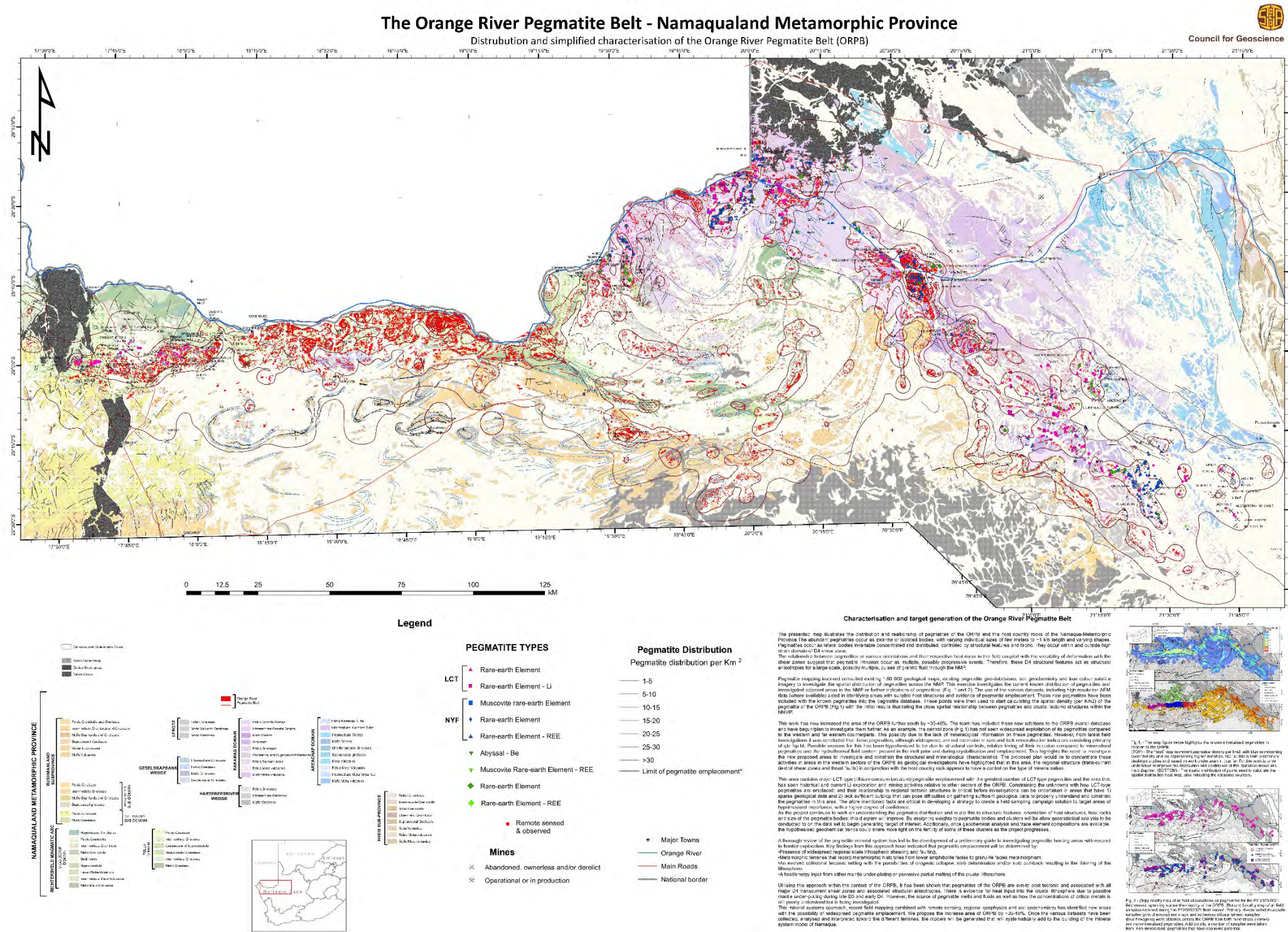
Operational Highlights: Contributions to the Economic Recovery and Reconstruction Plan

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%**.



Operational Highlights: Contributions to the Economic Recovery and Reconstruction Plan



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.

Operational Highlights: Contributions to the Economic Recovery and Reconstruction Plan

The Karoo Deep Drilling Programme has, by **end of October 2021**, completed the drilling of the KDD-01 ultra-deep vertical stratigraphic borehole down to the depth of **2 978 m**. The borehole intersected the carbonaceous shales of the Ecca Group earmarked for shale gas potential.

A suite of gas measurements were undertaken on these shales in an effort to model the gas potential. A comprehensive report detailing the findings from the drilling and the rest of the baseline study is currently being concluded.

In addition: the **two shallow boreholes** drilled and donated by the CGS to the Beaufort West Municipality in February 2018 continue to provide water to the 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.

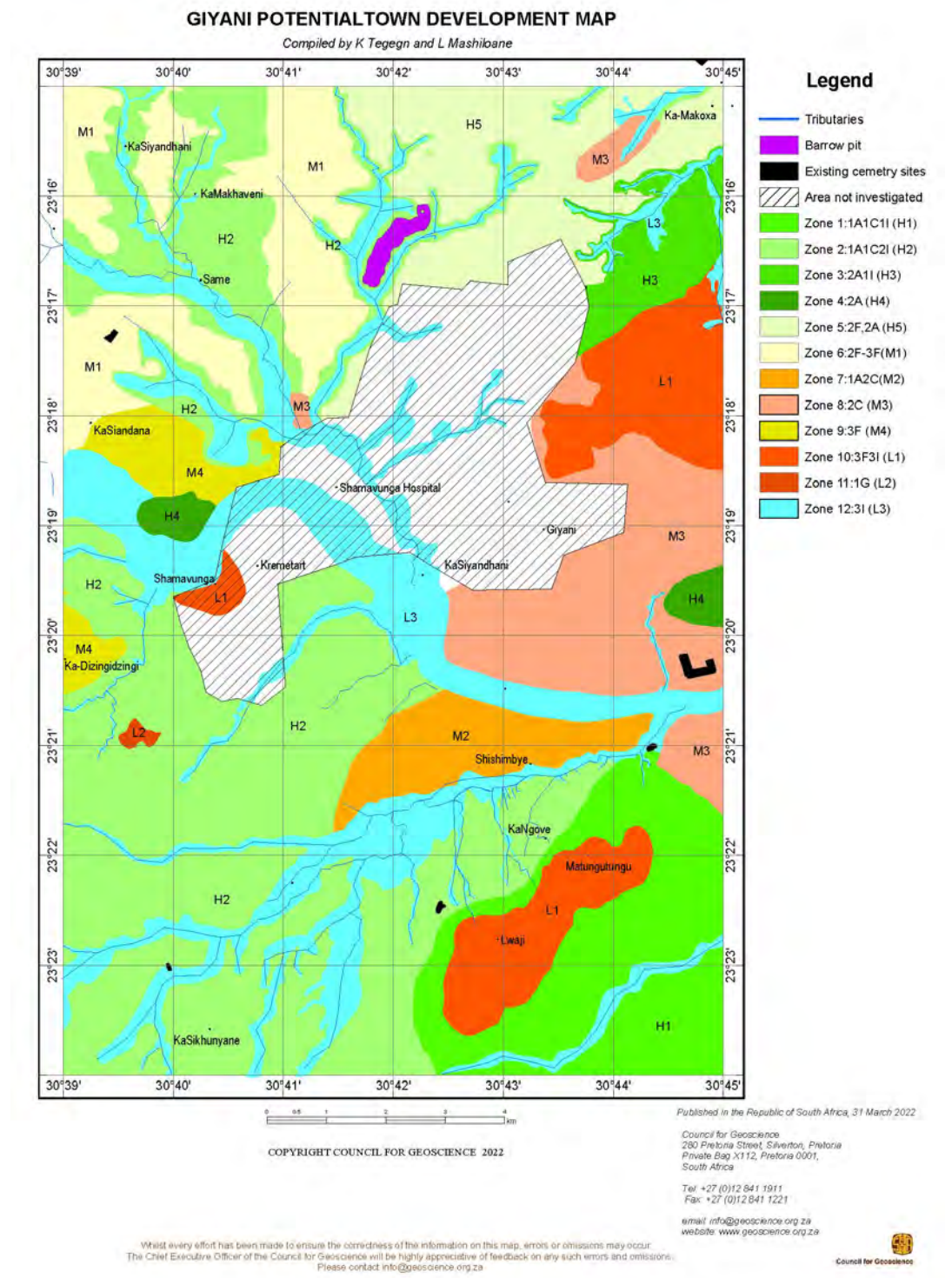


Operational Highlights: Contributions to the Economic Recovery and Reconstruction Plan

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.

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.

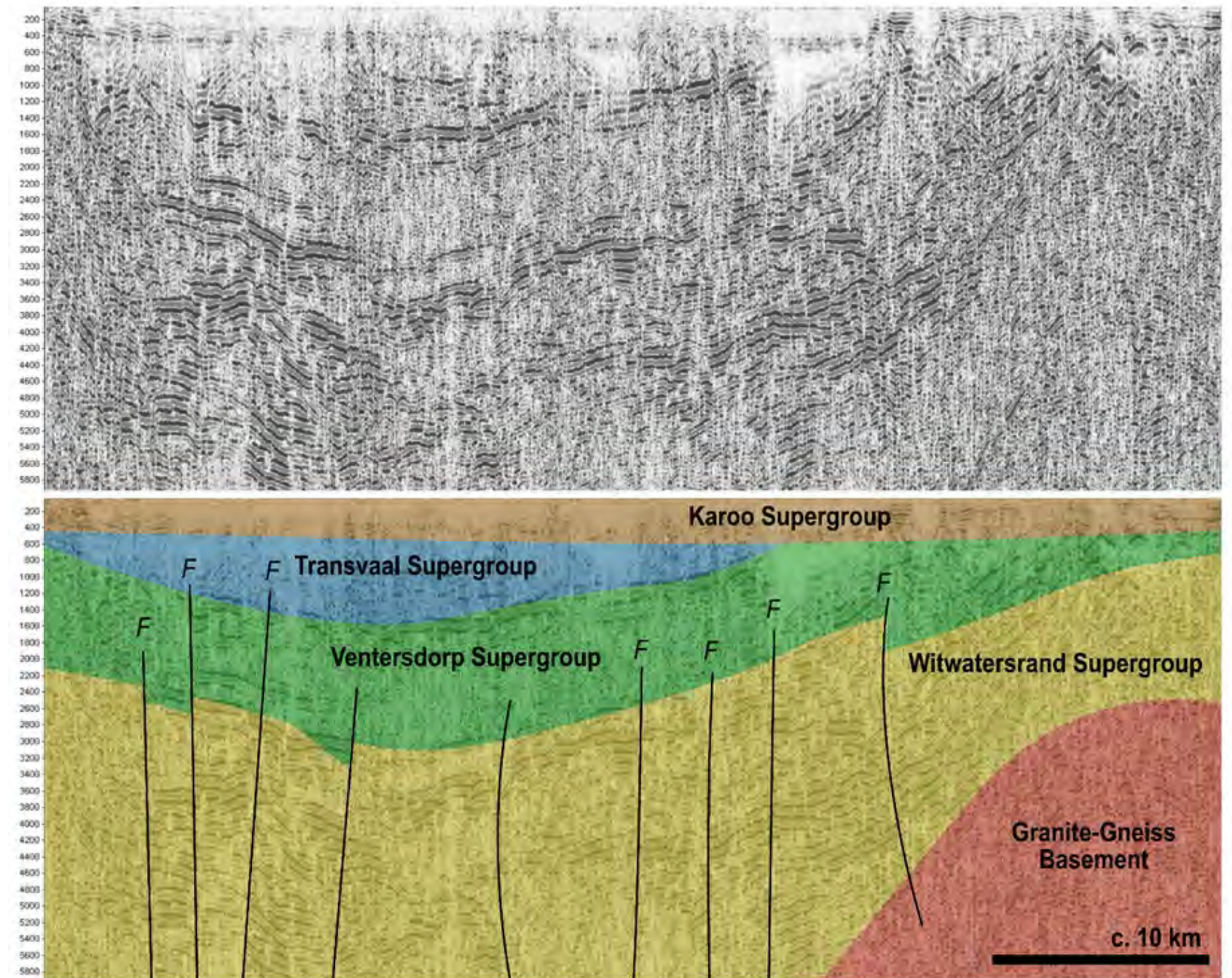
In these efforts, the CGS has also produced a crushed aggregate potential map of southern KwaZulu-Natal which indicate most prospective areas for aggregate exploitation. In addition, several microzonation models have been produced which serve as a basis for evaluating site-specific risk analysis that is essential for the safety of critical infrastructure.



Operational Highlights: Contributions to the Economic Recovery and Reconstruction Plan

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.



Operational Highlights: Contributions to the Economic Recovery and Reconstruction Plan

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.

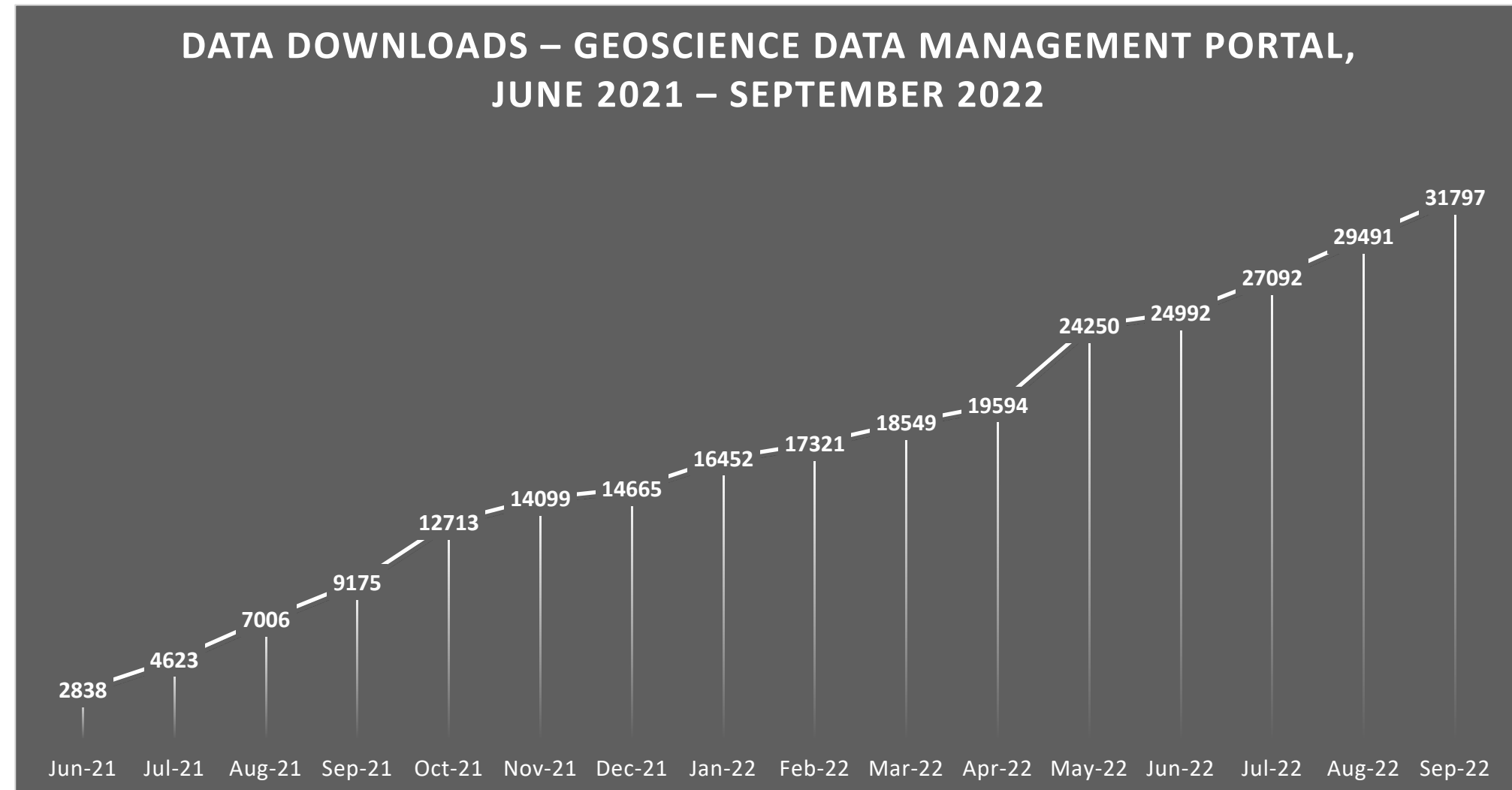
In further support of the exploration activities in South Africa as well as the ERRP, the **Department of Mineral Resources and Energy** has allocated additional funds to the tune of **R500 million** to the **CGS** to support the proposed exploration work. The funds will be transferred to the CGS in two tranches, **R200 million** during the financial year **2023/24** and **R300 million** in the financial year **2024/25**.



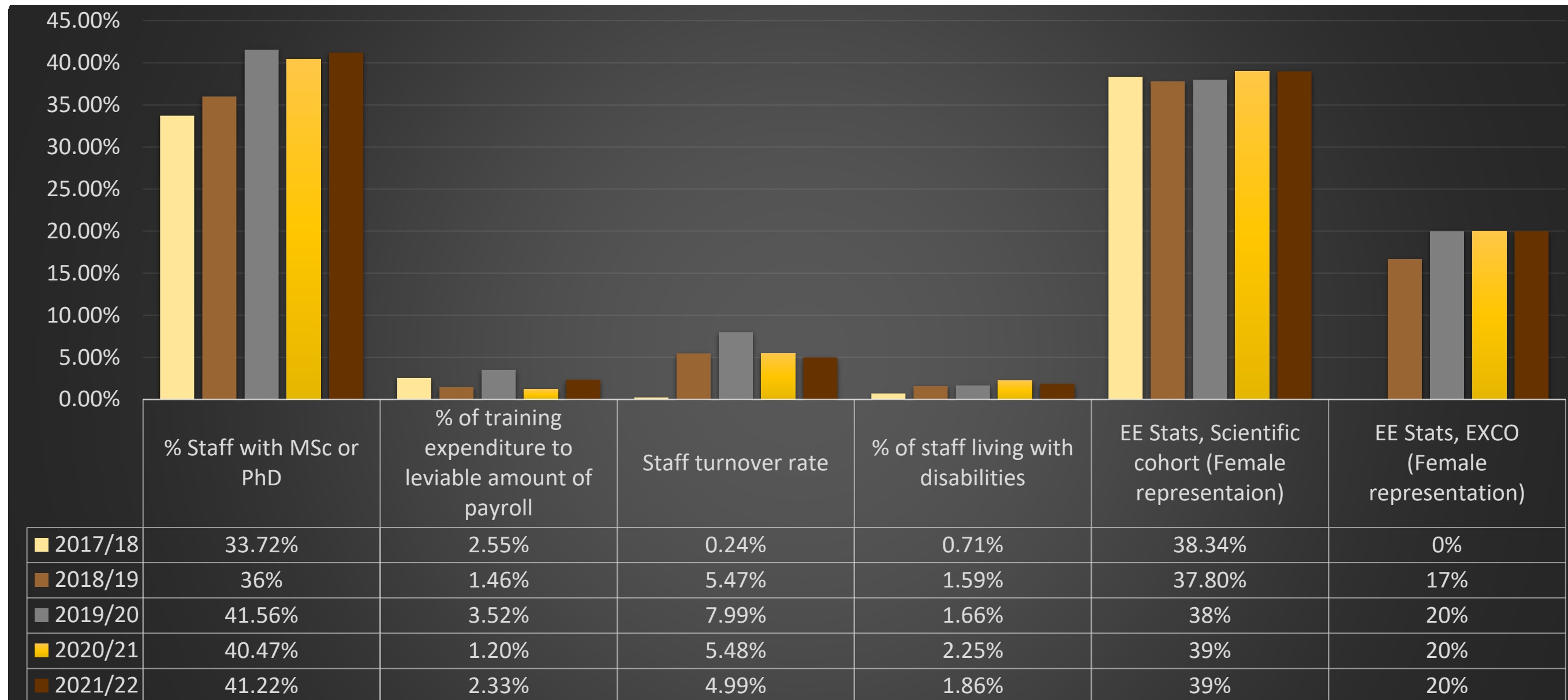
Operational Highlights: Contributions to the Economic Recovery and Reconstruction Plan

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.



Operational Highlights: Towards Building a Capable Human Capital

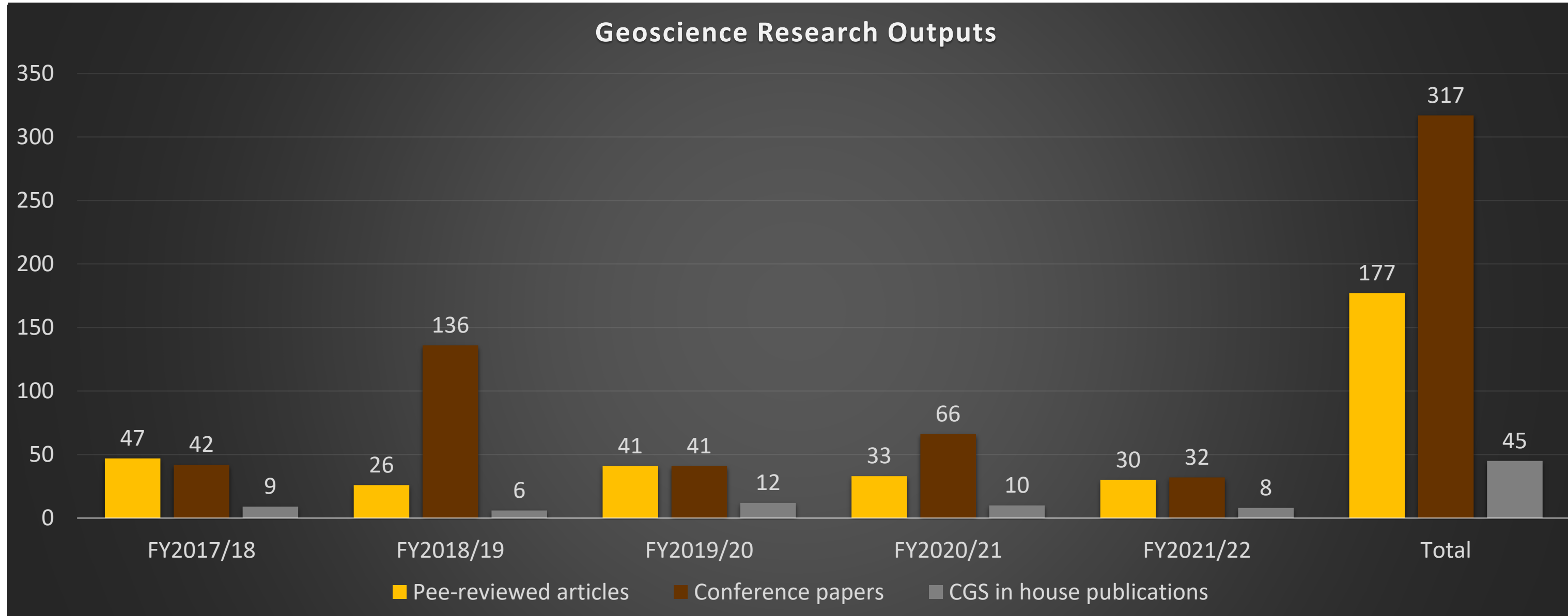


2021/22 Academic Achievements

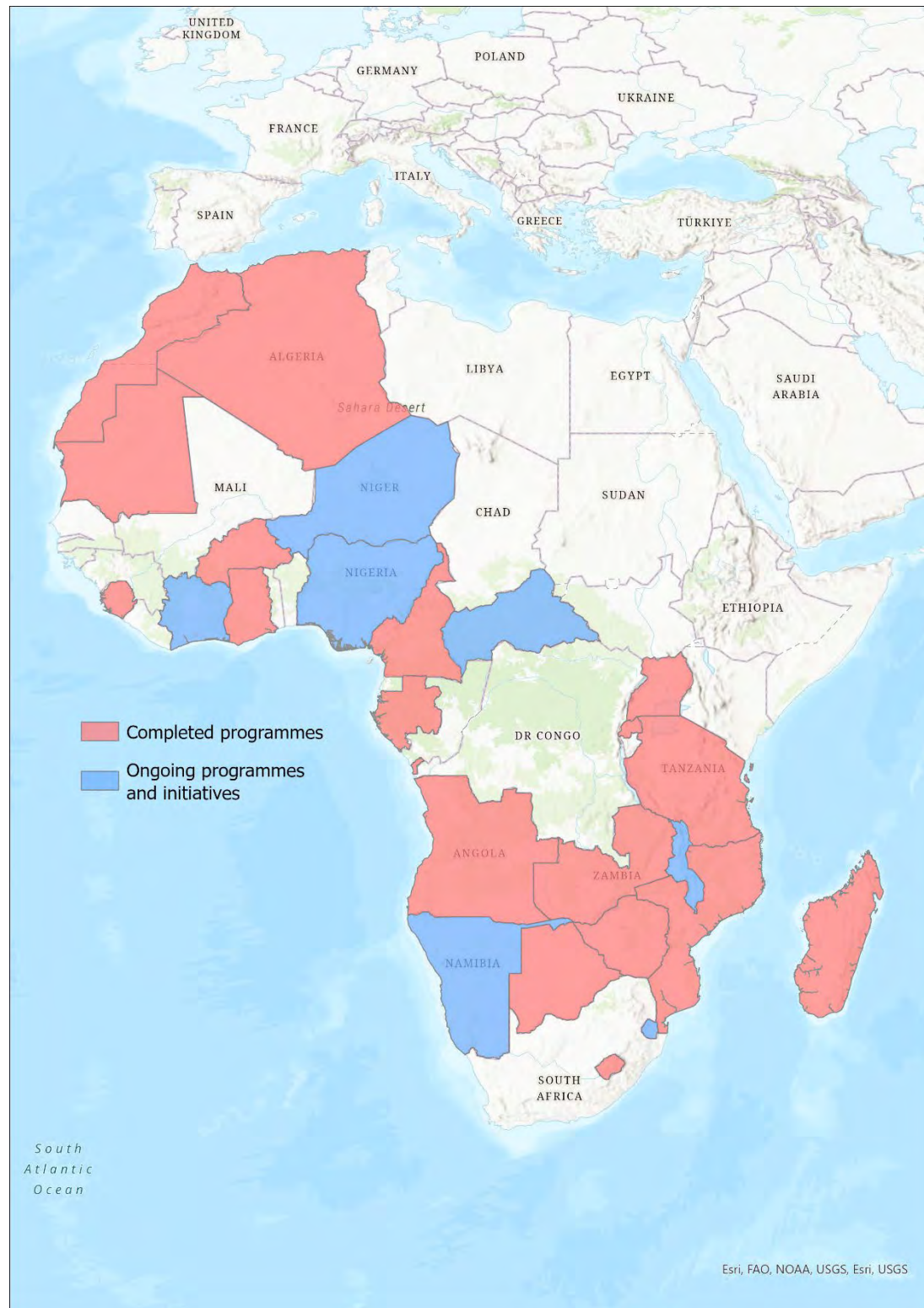


Congratulations to **Dr Talicia Pillay**, **Dr Haajierah Mosavel** and **Dr Brassnavy Manzunzu** for attaining their **Doctoral degrees**; and **Mr Thato Ntikang**, **Mr Mawande Ncume** and **Ms Boitumelo Mahlase** on their **Master's degrees**.

Operational Highlights: Geoscience research outputs - for an improved geoscientific domain through effective knowledge management



Operational Highlights: Strategic Partnerships Established for a Better Africa and the World



Geoscience Diplomacy

The CGS recognises and implements its role as a geoscientific instrument for foreign policy predisposition of the Republic of South Africa. In this regard, the CGS has assumed a role of **permanent Secretariat of the Organisation of African Geological Surveys**, which promotes close relations among African member states in **geoscience research**.

The **CGS has renewed its collaboration** with the **Namibian and Malawian geological surveys** for the implementation of high-resolution geological mapping projects. **In year 2021/22, the CGS has signed an agreement with the Kingdom of Eswatini to conduct a regional airborne geophysical survey for geoscience mapping.** Other collaborative opportunities are a subject of continuous assessment with counter parts from peer jurisdictions, while existing partnerships are sustained with partners such as the United States Geological Survey, Chinese Geological Survey, Geological Survey of Canada and Nigerian Geological Survey Agency.

Financial Information



Audited Actuals FY2021/22 and Budget FY2022/23– FY2023/24

Income/Funding Model				
Income (Rands)	2021/22 Budget x 1000	2021/22 Actuals x 1000	2022/23 Budget x 1000	2023/24 Budget x 1000
Government grant - Baseline	196 104	196 104	207 946	204 991
Government grant – Baseline Increase Geological Mapping	128 000	128 000	147 815	154 467
Government grant – MTEF	159 476	118 934	43 690	—
Government grant – Baseline Increase Geoscience activities including onshore and offshore map coverage	—	—	—	200 000
Deferred Income : CCUS Project	81 818	24 369	57 441	—
Sales and contracts	32 210	104 775	*122 317	*130 188
Sundry income	4 276	11 030	4 490	4 714
TOTAL INCOME - A	601 884	583 212	583 699	694 360

- * Includes MTEF funding for the Rehabilitation of D&O mines and the Water Ingress Solutions which were adjusted to Commercial Revenue

Audited Actuals FY2021/22 and Budget FY2022/23– FY2023/24, continued

Expenditure (Rands)	2021/22 Budget x 1000	2021/22 Actuals x 1000	2022/23 Budget x 1000	2023/24 Budget x 1000
Personnel costs	316 946	337 419	342 117	378 065
Bursaries and Training	4 481	3 045	4 930	5 423
Commercial project costs	14 495	64 621	55 043	58 585
Overheads and operating costs	222 045	190 302	144 883	225 287
SUBTOTAL - B	557 967	595 387	546 973	667 360
SURPLUS(LOSS) A-B	-	(12 175)	-	-
Budgeted Capital Expenditure (vehicles; equipments;etc)	43 917	*44 741	36 726	27 000
TOTAL EXPENDITURE	601 884	595 387	583 699	694 360

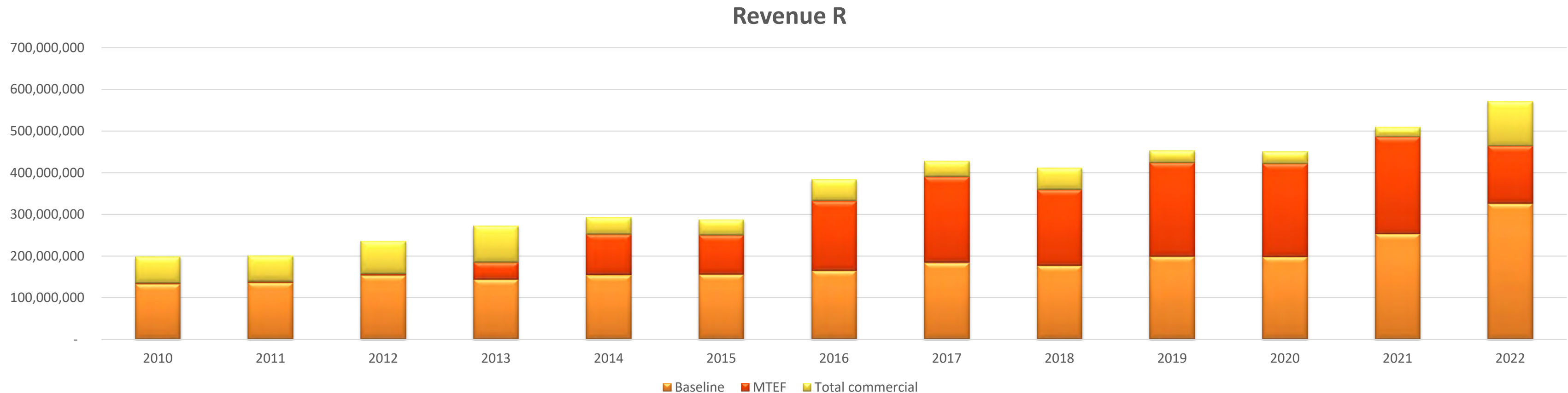
*Balance Sheet

Analysis of Government Grant Allocations from FY2022/23 to FY2025/26

ITEM	2022/23	2023/24	2024/25	2025/26
Baseline allocation	R207.9m	R205.0m	R214.2m	R223.8m
Water Ingress Project	* —	* —	* —	* —
Rehabilitation of D&O Mines (Research Portion)	* —	* —	* —	* —
Baseline Increase : Baseline Increase Geoscience activities including onshore and offshore map coverage	—	R200.0m	R300.0m	R313.4m
Baseline Increase : Geological Mapping for Exploration of Mining	R147.8m	R154.5m	R161.4m	R168.7m
Total Government Grant (2022 MTEF DMR Final Allocation letter 8 February 2022)	R355.7m	R559.5m	R675.6m	R705.9m

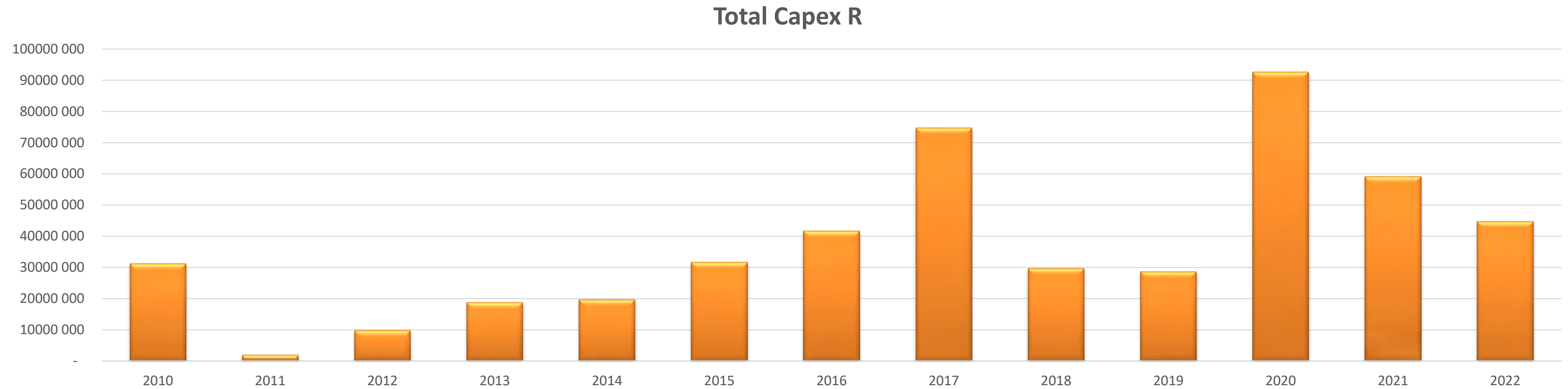
*Technical adjustments implemented in the 2022 MTET projects where funding was moved to commercial revenue to align to the DMRE's budget classifications.

Financial Sustainability



- The Government grant consists of the baseline grant funding for the MTEF.
- Baseline grant funding of R484.5m has been allocated for Geological mapping for exploration of mining over the MTEF.
- **Additional baseline allocations of R813.4m have been allocated for the geoscience activities over the MTEF.**
- Technical adjustments were implemented on the MTEF projects where funding for the Rehabilitation of derelict and ownerless mines and the Water Ingress Solutions was moved to commercial revenue to align to the DMRE's budget classification.
- CGS secured the Development of Carbon Capture Storage Project with the World Bank.

Financial Sustainability, continued



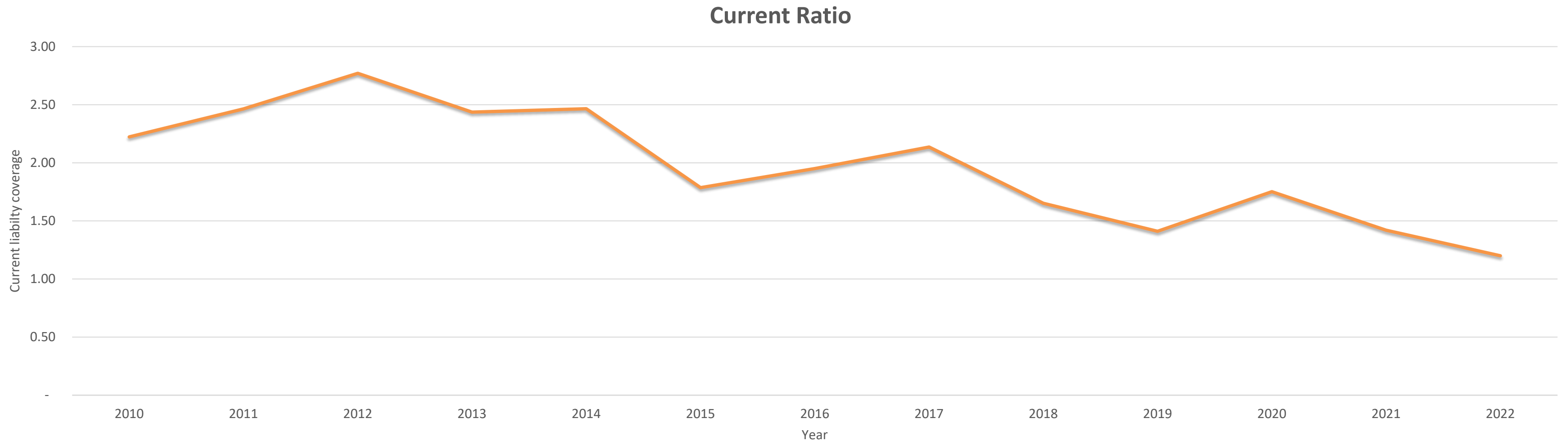
- A capital renewal plan is developed annually to address the infrastructure requirements.
- In 2020, additional funding was spent in respect of lab infrastructure and implementation of an ERP system.
- **The aging research infrastructure of the CGS is of great concern to the organisation and attention is given to the replacement of infrastructure.**

Financial Sustainability, continued



- A steady balance sheet position has been maintained over the last 12 years and total assets have increased by an average of 7% over the period.

Financial Sustainability, continued



- The current ratio is at 1.2:1.0 as at 31 March 2022.
- The CGS is in good financial standing over the next MTEF. This means that the CGS will meet its current financial obligations as they become due.

Budget Implications over the MTEF

- Additional baseline allocations to the amount of R813m (R200m in 2023/24; R300m in 2024/25 and R313 in 2025/26) have been made available to the CGS over the 2023 MTEF period.
- The additional allocations are to be used for the geoscience activities which includes the onshore and offshore map coverage in support of the National Exploration Strategy.
- This means that the implementation of economic recovery onshore and offshore mapping projects in the CGS will be accelerated to augment contribution towards the South African Economic Reconstruction and Recovery Plan.
- **A special thank you and appreciation** to the **PPC, Minister of Mineral Resources and Energy, DMRE and National Treasury** for their continued support and availing additional resources to execute the National Exploration Strategy.

Current challenges with CGS Funding and Model

- Technical adjustments were implemented on the MTEF projects where funding for the Rehabilitation of derelict and ownerless mines and the Water Ingress Solutions was moved to Contract/Collaborative revenue to align to the DMRE's budget classifications in compliance with the National Treasury budget classification circular.
- The outsourcing of these MTEF projects by the DMRE will be based on a contract between the DMRE and CGS through open tender process. This funding is therefore not guaranteed for the CGS and hence presents challenges with regards planning as the CGS delivery depends largely on its built specialist scientific personnel capacity and external services providers.
- The Collaborative/commercial revenue generation is dependent on global economic factors. It is **not dependable** or **guaranteed** -The Covid-19 pandemic, impacts negatively on the Collaborative revenue generation capability.

Current challenges with CGS Funding and Model

- The CGS mandate is **long-term in nature** and needs a more sustainable funding that covers a period longer than an MTEF cycle. This observation was one of the factors that lead to the conception of the Integrated and Multidisciplinary Geoscience Mapping Program (IMMP), which has a time-span longer than ten years.
- The IMMP requires funding to the amount of **R20 billion rand** for the **first ten** years. This program received support and was allocated funding to the amount of **R386m** in the 2019 MTEF that was discontinued from the 2021/2022 financial year. The baseline has been adjusted upward with **R463m** over the MTEF period.
- An additional baseline allocation has been made available to the amount of **R813m** over the MTEF period to meet the requested additional **R300m** per annum adjustment. Further support is requested for this allocation to be sustained.

Long-Term Financial Sustainability Strategies

- The CGS has to grow its Collaborative revenue in terms both its product offerings and value of collaborative projects pipeline, to augment the Government grant allocations.
- **Competitive advantage should be created** by exploiting the **data accumulated over a period longer than a century, through latest technologies** to add value and **generate new products and services**.
- Produce quality value propositions in order to exploit emerging collaborative revenue opportunities to grow its pipeline. An example is that in the **Reinsurance and Insurance Industry**, the Engineering and Geohazards Business Unit collects information that could be used to **assess geotechnical risks** in developing products for **geohazard risk to infrastructure (roads, buildings, power stations, etc.)** at a fee.

Strategic Focus



Strategic Focus of the Council for Geoscience (CGS)

CGS Vision



A prosperous and transformed society enabled by geoscience solutions

CGS Mission



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;
- Support infrastructure development.
- Discharging the mandate in a manner that supports transformation and national developmental imperatives.

CGS Values



- Innovation
- Diversity
- Excellence
- Accountability
- Learning
- Safety, Health, and Environment
- Transparency

Council for Geoscience Strategy, summarised

The Strategy is aligned with the National Development Plan (NDP) 2030, the MTSF 2019 – 2024 and the MTSF Priorities: Priority 1: A capable, ethical & developmental state, Priority 3: Education, skills & health, Priority 2: Economic transformation & job creation; Priority 5: Spatial integration, human settlements & local government; Priority 6: Social cohesion & safe communities; Priority 7: A better Africa & World.

CGS STRATEGY



The Integrated and Multidisciplinary Geoscience Mapping Programme (IMMP).

The CGS strategy (i.e. IMMP), adopted in 2017/18, encourages the sustainability of the organisation in a changing state of ideologies, economy, and technological landscape. It is intended to maintain an impactful delivery of the core mandate of the CGS and provides innovative and responsive geoscience solutions to support the NDP 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.

CGS OUTCOMES



1. Effective and efficient financial resources management
2. Enhanced applications of geoscience information and knowledge and to secure a minimum of 5% share of the global exploration expenditure
3. Improved geoscientific domain through effective knowledge management
4. Compliance with governance protocols/regulations
5. Capable human capital
6. Improved awareness of the CGS brand, services and products
7. Enhanced geoscience diplomacy

CGS IMPACT STATEMENT



A prosperous and transformed society enabled by geoscience solutions

AREAS OF IMPACT (BY 2025 AND 2030)



- Economic growth
- Job creation
- Energy security
- Transition to low carbon economy
- Access to clean water
- Food security
- Infrastructure development and land-use
- Improved collaborations with Africa and the world

The Integrated Multidisciplinary Geoscience Mapping Programme

CORE THEMES OF THE INTEGRATED AND MULTIDISCIPLINARY GEOSCIENCE MAPPING PROGRAMME

ND* imperative:
Economic growth

ND imperative:
Environment and health

ND imperative:
Innovation

ND imperative:
International relations

1 Geoscience for mineral and energy resources

Onshore and offshore geoscience research and mapping for current and future generations

Modelling geological environments and mineralising systems for mineral and energy resources

2 Geoscience for infrastructure and land use

Geotechnical mapping and vulnerability investigations (sinkholes, mine subsidence, coastal erosion and landslides)
Seismic susceptibility investigations (mine seismic hazard assessments)

Optimisation of land use (food security, geoheritage and geotourism, physical infrastructure)

3 Geoscience for health, groundwater and the environment

Environmental geoscience research (monitoring and mitigating the impact of geology and mining activities on health and the environment)

Hydrogeological research and modelling

4 Geoscience innovation

Application of artificial intelligence in geoscience

Cultivating geoscientific innovation and novelty

5 Geoscience diplomacy

Geoscience collaboration and global standards

International geoscience policy and governance

OAGS Secretariat



CUSTODIANSHIP OF ALL GEOSCIENTIFIC INFORMATION IN SOUTH AFRICA

Key anticipated challenges that may hamper the delivery of key priorities and possible mitigations

Key risks	Risk mitigations
1. Inadequate of long term funding to implement the mandate	<ul style="list-style-type: none"> • Increased investment in geosciences to promote sustainable mineral and energy development. • Development of a financial model to augment and sustain the Organisation
2. Policy and legislative inconsistencies	<ul style="list-style-type: none"> • CGS contribution to processes of policy/legislation harmonisation across all spheres of government.
3. Overlap and Duplication of geoscience initiatives in a constrained funding environment	<ul style="list-style-type: none"> • Streamlining of projects, collaboration and clear understanding of mandates
3. Lack of access to historical geological data and information from the private sector	<ul style="list-style-type: none"> • Implementation of the Geoscience Act Regulations.
4. Access to land to execute the geoscience mapping mandate	<ul style="list-style-type: none"> • Institute a technical amendment to the Geoscience Act to provide for unimpeded access to land, in line with international best practice for geological surveys.
5. Proliferation of inactive Prospecting Rights (PR) that sterilize exploration and prohibit the CGS from executing its mandate	<ul style="list-style-type: none"> • Update and maintain accurate PR register • CGS to gain access to the PR system

Conclusions



Concluding Remarks

“CGS Vision and Impact Statement: A prosperous and transformed society enabled by geoscience solutions”

CGS’s Short-term and Long-term interventions

- **Secure a long-term sustainable funding model for the CGS**
- Optimise the contribution of CGS to National Developmental imperatives, MTSF and the The South African Economic Reconstruction and Recovery Plan.
- Give tangible expression of geosciences to addressing societal challenges
- Create a critical mass of young, diversified World Class geoscientists at the CGS
- Find a healthy balance of implementing the mandate and executing income generating projects
- Produce innovative geoscience products for commercial and knowledge purposes.
- Continue collaborations with key stakeholders.

Ke a leboga kudu



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