



Council for Geoscience

Annual Performance Plan

2018/19



FOREWORD

The geoscience fields have catalysed a better understanding of the geological assets of the country and, on a larger scale, the African continent. The South African geology is characterised by, *inter alia*, the Archaean rocks of the Barberton Greenstone Belt, the 300 km wide Vredefort Dome as the largest verified impact crater in the world, the relicts of glacial tills in the Northern Cape, the rolling hills of the Drakensberg Mountains, the Kalahari desert, the vast Bushveld Igneous Complex hosting the platinum group metals, the Witwatersrand gold basin, the Karoo Basin with prospects of shale gas and the frontier marine geology with the potential for unlocking the Blue Economy.

Similarly, our archaeological heritage is significant, including a repository of fossil dinosaurs and the palaeo-anthropological site of Maropeng, known as the “Cradle of Humankind”.

Moreover, South Africa hosts more than a third of the world’s gold resources today. The bulk of this gold is derived from the Witwatersrand Basin, which has been mined for well over a century and which is currently being mined at depths of more than 4 000 m. The geological community has developed various models to gain an in-depth understanding of the basin and its development.

Today, South Africa extracts over 54 different types of minerals, an endeavour which contributes to the socio-economic development of the country, including the economy and the creation of much-needed employment.

The endeavour of mapping the relicts of some of the oldest rocks of the Barberton formations, spearheaded by the Viljoen brothers, has placed the country’s geology on the global map. We acknowledge this sterling contribution to the profession by these extraordinary scientists.

The importance of the geosciences to the needs of humanity cannot be overstated. Broadly, this prominence is aptly captured by three core cornerstones: geoscience in society, geoscience in the economy and fundamental geoscience.

It is projected that the world’s population will exceed 9 billion by 2050, with well over half

projected to be living in urban areas, placing enormous strain on our natural resources.

Population growth is likely to lead to a shortage of water in many parts of the world; it is already evident that water security is a major challenge in many countries as a consequence of climate change and the decline in groundwater resources through over use.

This global population growth also has profound implications for human health, global food security and the environment as well as skills shortages, geohazards and the risks inherent to exaggerated inequality, poverty and unemployment.

Thus, it is evident that it is both untenable and unjustifiable to sustain a structurally flawed economic model that places South Africa and the African continent at the lower quartile of worldwide development, notwithstanding our endowment in natural resources land, minerals and upstream petroleum resources.

Africa’s geoscientific knowledge lags significantly behind that of other continents.

Synchronously, the role of the CGS as a geoscience institution in Africa has become critical to the prosperity of the continent.

The strategic re-orientations of the CGS herein contained seek, *inter alia*, to:

- Refocus on a multidisciplinary integrated mapping exercise that will deliver more than 500 map sheets at a scale of 1:50 000.
- Advance a transformational trajectory, in line with the central policy tenet of Government aimed at normalising society in a democratic South Africa.
- Create a critical mass of world-class geoscientists.
- Effectively implement the geoscience diplomacy programme that places collaboration with key stakeholders at the centre of executing the mandate of the CGS. These stakeholders are both national and international.
- Collaborate with our key stakeholders.

We are delighted to present the APP of the Council for Geoscience in support of accelerating the delivery of our mandate, as inscribed in the Geoscience Act, Act No. 100 of

1993 and the Geoscience Amendment Act, Act No. 16 of 2010. This APP is closely aligned to the CGS strategy integrating all critical aspects of the geosciences.

Mr Mosa Mabuza
Chief Executive Officer

Dr Humphrey Mathe
Chairperson of the Board

OFFICIAL SIGN-OFF

It is hereby certified that this Annual Performance Plan:

- Was developed by the Management of the Council for Geoscience under the guidance of the Board.
- Considers all the relevant policies, legislation and other mandates for which the Council for Geoscience is responsible.
- Accurately reflects the annual targets, strategic goals, strategies and outputs which the Council for Geoscience will endeavour to achieve over the MTEF period from 2018/19 to 2020/21.

Chief Financial Officer

Signature_____

Chief Executive Officer

Signature_____

Chairperson of the Board

Signature_____

Executive Authority

Signature_____

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ACRONYMS

AMD	Acid Mine Drainage
APP	Annual Performance Plan
ATP	Annual Technical Programme
BBBEE	Broad-Based Black Economic Empowerment
BEE	Black Economic Empowerment
CCS	Carbon Capture and Storage
CGS	Council for Geoscience
DMR	Department of Mineral Resources
DST	Department of Science and Technology
ECSP	Economic Competitiveness Support Package
EE	Employment Equity
ERP	Enterprise Resource Planning
FY	Financial Year
ICT	Information Communication Technology
ISO	International Organisation for Standardisation
KOSH	Klerksdorp, Orkney, Stilfontein and Hartebeestfontein
KPI	Key Performance Indicator
KZN	KwaZulu-Natal
LRA	Labour Relations Act
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MTEF	Medium-Term Expenditure Framework
MTSF	Medium-Term Strategic Framework
NDP	National Development Plan 2030
NGG	Nuclear Geohazards Group
NGO	Non-Governmental Organisation
NNMP	Namaqua-Natal Metamorphic Province
OAGS	Organisation of African Geological Surveys
PESTEL	Political-Economic-Social-Technological-Environmental-Legislative
PFMA	Public Finance Management Act
PPPFA	Preferential Procurement Policy Framework Act
SACS	South African Committee for Stratigraphy
SANMAP	South African Nearshore Mapping Programme
SLA	Service Level Agreement
SO	Strategic Objective
SWMP	Strategic Water Management Plan
WD	Western Deep Levels
ZAR	South African Rand

Part A: Strategic Overview

1 LEGISLATIVE MANDATE

In terms of the Public Finance Management Act (PFMA) (Act No. 1 of 1999), the CGS is a listed Schedule 3A Public Entity, established under the Geoscience Act (Act No. 100 of 1993) and the subsequent Geoscience Amendment Act (Act No. 16 of 2010).

In terms of the amendments made to the Geoscience Act, sections 4(c), 4(eA), 4(f), 5(b) and 8 that deal with, *inter alia*, 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 put in abeyance. The CGS will approach DMR to facilitate the upliftment of the excluded sections of the Act in this MTEF period. This constitutes organic growth of the CGS in pursuit of maximum execution of its mandate by the end of the current MTEF cycle.

The mandate of the CGS, as defined in the Geoscience Act (as amended), is summarised as follows:

1.1 Geological Research and Knowledge Management

The CGS investigates a wide range of surface and subsurface, onshore and offshore geoscience matters. These include, but are not limited to, geology, geochemistry, geophysics, engineering geology, economic geology, geohazards and geohydrology. The organisation performs these duties mainly through Government funds and, to a lesser extent, through collaborations with private and public institutions, including institutions of higher education. The CGS is responsible for the following, among others:

- The national custodianship of all geoscientific information and dissemination thereof to the necessary stakeholders.
- The review of all geotechnical reports and counsel in respect of infrastructure development within the country.

1.2 The Management of Several National Geoscience Facilities

These include the National Borehole Core Repository, the National Geoscience Heritage Collections (Geoscience Museum), the National Geoscience Library and the National Seismograph Network.

1.3 Advisory

Based on findings obtained through its various functions, the CGS is mandated to advise its primary stakeholder, the Minister of Mineral Resources, on issues relating to mineral resources. In addition, the CGS serves as the national advisory authority to local, provincial, national and international authorities on geohazards and geo-environmental-related issues alike.

1.4 Specialised Geoscientific Services

The CGS is mandated to promote the development of mineral and upstream energy resources in the country. The organisation also conducts investigations and various prescribed services.

1.5 Training and Development

The CGS cooperates with institutions of higher learning in the promotion of research, training and development of scientists in the field of geoscience.

1.6 Other Relevant Policies

In addition to the legislative mandate, the CGS is aligned with other policies including, but not limited to, the following:

- The National Development Plan (NDP) 2030;
- Government's Medium-Term Strategic Framework (MTSF) for 2014–2019;
- The 2010 Stakeholders' Declaration on Strategy for the Sustainable Growth and Meaningful Transformation of South Africa's Mining Industry of the Department of Mineral Resources (DMR);
- The Outcome-Oriented Goals of the DMR;
- The Ten-Year Innovation Plan of the Department of Science and Technology (DST).

In realising the urgent need to address the national imperatives, the CGS ensures that its business model and all its activities address the following strategic national outcomes as per the NDP 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:** Build capacity in respect of geoscientific, administrative and managerial/leadership skills while also developing innovative products, systems and services.
- **An efficient, competitive and responsive economic infrastructure network:** Geoscience information and services input to infrastructure development in support of South Africa's economic development of mineral, upstream petroleum (such as oil and gas) and water resources.
- **Vibrant, equitable and sustainable rural communities with food security for all:** The provision of geoscientific information that enables agricultural development and groundwater exploration.
- **Environmental assets and natural resources which are well protected and continually enhanced:** Conducting research regarding Acid Mine Drainage (AMD) and Carbon Capture and Storage (CCS) 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:** Development of the regulatory systems of the CGS in line with legislative requirements that are aligned with the national mandates that address transformation and equity.

In addition to the NDP, the strategy of the CGS is aligned to the outcome-oriented goals of the DMR as outlined below in Figure 1.

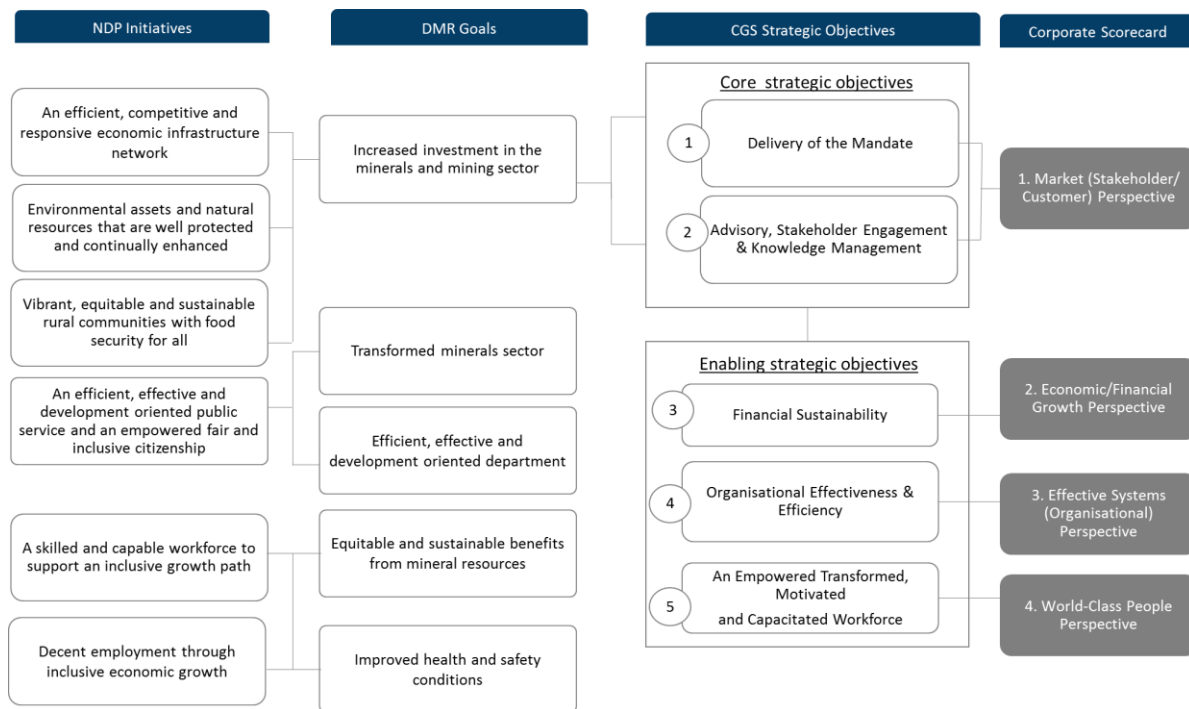


Figure 1: Relationship between the strategic objectives of the CGS, NDP initiatives and the goals of the DMR.

2 SITUATIONAL ANALYSIS

The year 2017 marks the 150th year of official mining in South Africa which has been spearheaded by the information generated by geologists. Consequently, South Africa holds one of the world's largest reserves of non-energy minerals (see Figure 2 below) with the world's largest known reserves of, *inter alia*, platinum group metals (87% of global reserves), manganese (80%), chromium (72%) and refractory alumina-silicate (40%). South Africa has the infrastructure, financial systems and Government legislation to support the growth of and investment in the mining sector.

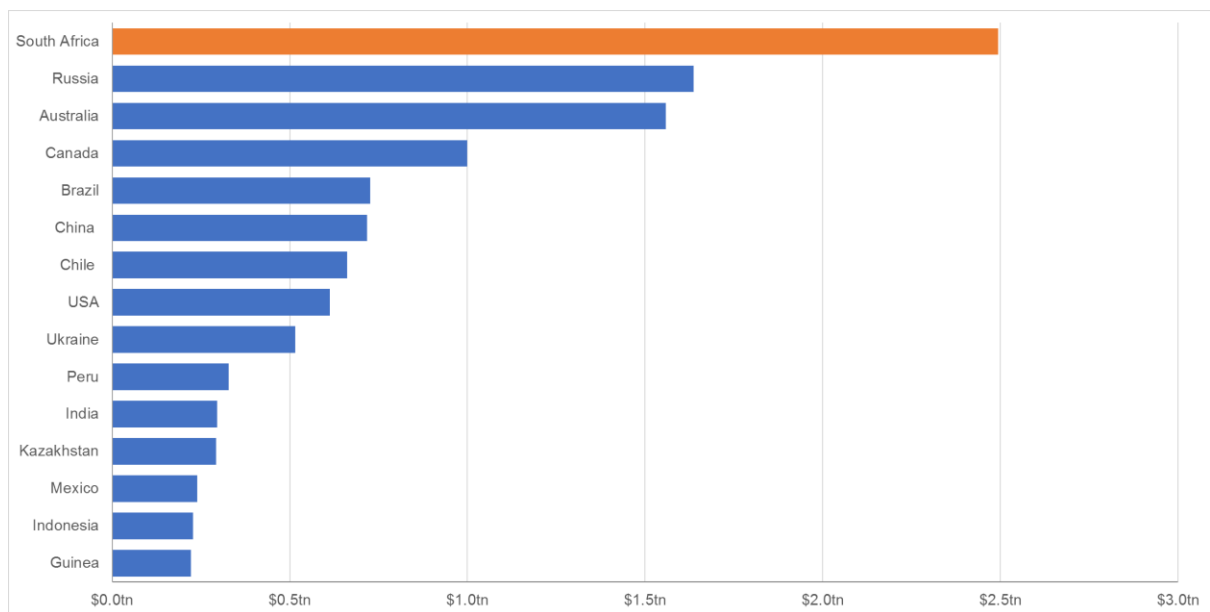


Figure 2: Income generated by the mineral reserves of the top fifteen resource-rich countries¹ expressed in US\$ (billions).

Despite the abundance of mineral resources available in South Africa relative to the rest of the world, the country has been unable to optimise the development of its mineral resources during the longest synchronised commodities boom. Figure 3 below shows that, in 2014, South Africa produced significantly fewer minerals than countries such as China, Australia, Brazil, India, the United States and Russia, who are relatively fewer reserves.

¹ Citibank Group, 2010 values.

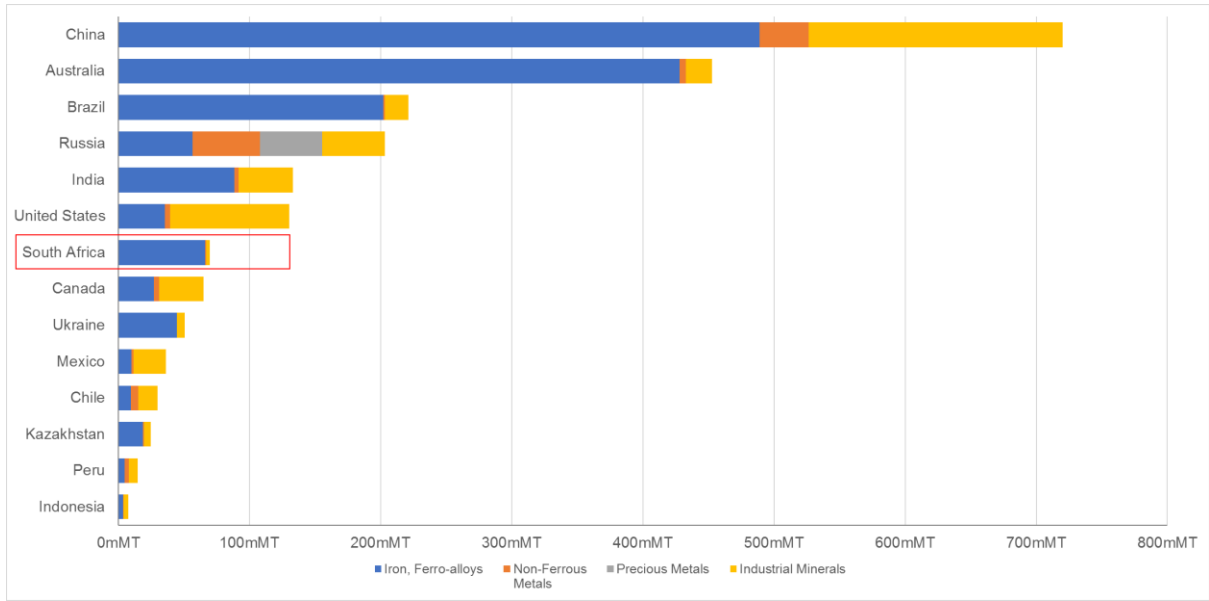


Figure 3: Total mineral production by country, 2014 (Metric tonne, millions).²

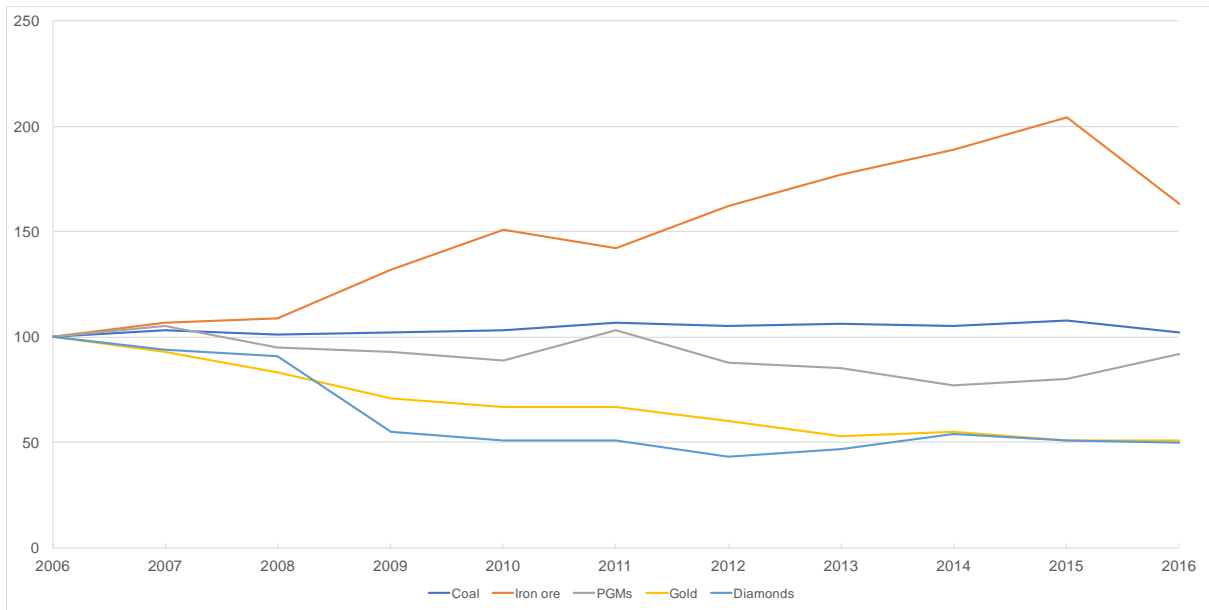


Figure 4: Indexed trend in South African annual mineral production (June 2006 = 100).³

The abundance of resources confirms the potential for the mining industry not to only grow competitively and sustainably, but to also anchor meaningful transformation objectives intended to normalise society.

² Reichl, C. et. al., 2016. World Mining Data. International Organizing Committee for the World Mining Congresses, Vienna.

³ PWC, 2016. SA Mine: Highlighting trends in the South African Mining Industry. www.pwc.co.za/mining

At the 2017 Mining Indaba held in Cape Town, the Minister of Mineral Resources, Honourable Mosebenzi Zwane (MP), announced, among other things, the development of multidisciplinary and integrated geological maps of the entire country at a scale of 1:50 000 and other relevant scales. These maps are intended to provide the necessary data in support of investment and other developmental decisions. It is envisaged that the effective and efficient delivery of this programme will contribute significantly to infrastructure development, exploration and the extraction of mineral and petroleum resources.

To effectively and efficiently deliver on the re-focused mapping programme, the CGS has developed a strategy that takes into account the various organisational performance elements necessary for the realisation of its goals.

2.1 Performance Delivery Environment

To understand the current performance delivery environment of the CGS, it is necessary to analyse the impact of political, economic, social/cultural, technological, environmental and legislative factors on the organisation through a PESTEL analysis. The operational and financial situation of the organisation also influences the strategy of the CGS. These factors are summarised in Figure 5 below.

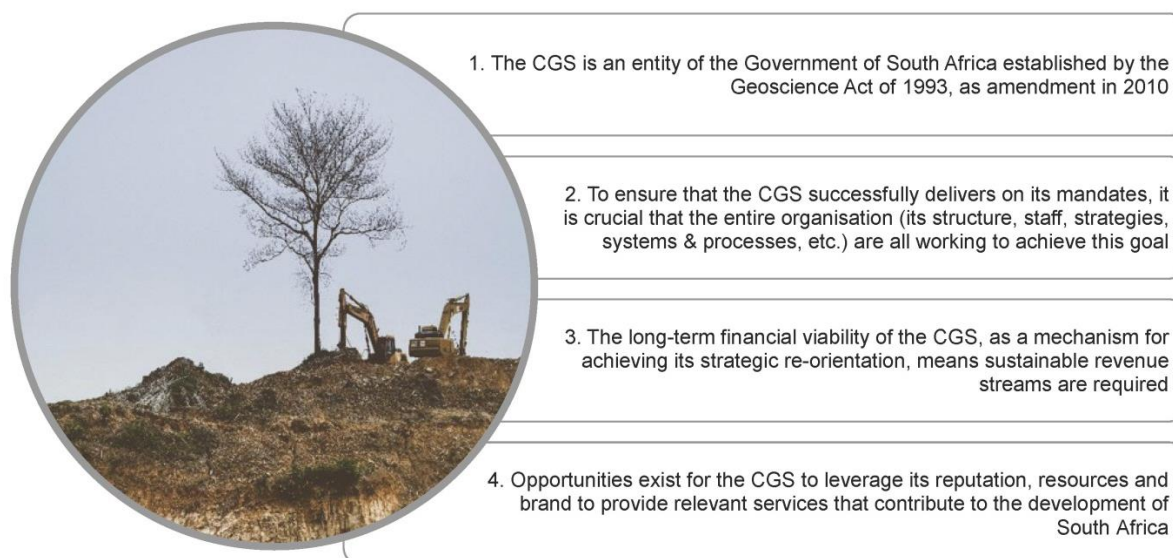


Figure 5: Key CGS performance environmental factors.

2.1.1 External Environmental Analysis

The external environment consists of variables/forces that are outside the traditional boundaries of the CGS and therefore not typically within the short-term control of the organisation. These variables shape the context within which the organisation exists and present it with threats and opportunities that have the potential to either retard or stimulate strategic success. The variables include diverse factors such as rapid technological change, Government action, the socio-economic climate and energy. The following factors were assessed by means of the PESTEL analysis:



Figure 6: PESTEL analysis.

Political: The CGS reports to and supports the DMR in executing its mandate and priorities. The CGS takes direction from the strategic goals of the DMR in developing its own strategies. As a science institution, the CGS reports on scientific research and innovation to the Department of Science and Technology (DST). Other Government policies and priorities such as transformation are central to the normalisation of the longstanding irregularities of society, in keeping with the democratic values of the country. To this end, the CGS subscribes to the transformation agenda in respect of broad-based black economic empowerment, employment equity and economic growth.

Economic: The slow rate of recovery from the global economic downturn has meant that the Government's fiscal strength is accordingly limited. The CGS appreciates this possible

constraint, but mitigates it in presenting a strategy that seeks to provide requisite quality data with profound impact on long term national developmental and investment decisions.

The ability of the CGS to generate external revenue to supplement the Government grant, as it had prior to the economic downturn, has been vastly reduced. The contribution of the external revenue has been reduced significantly in relation to the total revenue of the CGS. The expansionary policy in terms of increased expenditure on infrastructure development has afforded the CGS the opportunity to focus on South Africa. Further, the slow recovery has the potential to limit Government's ability to fund the delivery of the CGS mandate due to other pressing and competing socio-economic priorities.

The slump in global markets led to a reduction in downstream mining activities. This creates a need for the country to expand on upstream mining activities such as mapping to stimulate the industry. In order for the CGS to meaningfully undertake this increased mapping requirement a significant Government grant investment is necessary.

Social/Cultural: The CGS, as a science council, takes cognizance of its social and cultural environment and ensures that it responds accordingly. The increased participation and advocacy of society on issues relating to, among others, infrastructure development, mineral resources development, energy and the preservation of the natural environment influence the objectives of the CGS and also have the potential to impact on both the profile and the value of services provided by the CGS.

Technological: Technological advancement enables the CGS to respond to the expectations and requirements of its stakeholders in order to ensure service delivery. The innovative utilisation of emerging mapping technologies for the gathering of data improves the effectiveness and efficiency of the CGS in delivering on its mandate. The rapid development of technology provides the CGS with major opportunities in the areas of research, innovation, skills development and service delivery.

Investment in scientific research and technological development is an imperative stimulant for innovation. This will enable the organisation to be globally competitive and relevant.

Environmental: Natural environmental and man-made hazards create a need for geological information and solutions to mitigate hazards, e.g. infrastructure development on dolomitic ground prone to sinkhole formation, tsunamis, earthquakes, AMD, groundwater pollution and global warming. The natural environmental challenges dictate the programmes and mitigating strategies that the CGS should address.

Changes in climatic conditions, i.e. when conducting fieldwork, will mostly affect the CGS operationally in terms of the effective and timely delivery of projects and services.

Legislative: The CGS is an organisation mandated by legislation and any changes to the legislative framework (see Section 1 above) will have a direct impact on the strategy and operations of the organisation.

In developing the five-year strategy for the CGS, these factors have been considered to enable the organisation to take full advantage of opportunities to adjust and navigate within the legislative framework to contribute to the creation of a prosperous society for all within South Africa.

Table 1 summarises the major strengths and weaknesses of the CGS as well as the major threats and opportunities facing the organisation.

Table 1: CGS SWOT Analysis.

Strengths	Weaknesses
<ul style="list-style-type: none"> • Government grant funding. • A sound historical heritage and information accumulated over a 100-year period on which to shape the future. <ul style="list-style-type: none"> ○ Research competence and strong knowledge base. ○ Good understanding of the South African natural resource environmental landscape. ○ Empowering legislative mandate. ○ Geological data and information as major strategic resources. 	<ul style="list-style-type: none"> • A limited capacity of highly qualified and skilled scientists. • Inadequate access and utilisation of vast historical geological information. • A very low coverage of high quality, integrated, multidisciplinary maps in South Africa. • Dependency on short term ring-fenced funding for MTEF projects. • Paucity of career growth for internal geoscientists.

Opportunities	Threats
<ul style="list-style-type: none"> • Supportive line function departments (DMR, DST). • Collaboration opportunities with various state and international entities in geoscientific research. • Innovative utilisation of geoscientific information in various emerging fields such as medical geology and geometallurgy which are new fields that integrate existing geoscientific information to deliver envisaged results. • Utilisation of existing structures across the continent to facilitate geoscience regional integration. • Transformation, growth and development of world-class scientists. 	<ul style="list-style-type: none"> • Competition for geoscientific skills. • Competing Government priorities for fiscal funding. • Loss of geoscience talent. • Lack of real growth in Government grant funding.

2.1.2 Stakeholder Analysis

Realising an effective stakeholder engagement approach is a key requirement for the CGS, not only to fulfil its legislative mandate but also to leverage optimal delivery through collaboration with critical stakeholders to obviate the prospects of duplication and to nurture the development of the geosciences.

The CGS operates within a complex network of internal and external stakeholders. The various functions within the organisation, both core and support, rely on one another to operate effectively for the benefit of the South African public.

Primary stakeholders include, albeit not limited to the Parliament of the Republic of South Africa, the Minister of Mineral Resources, the National Treasury, the Department of Science and Technology (DST) and the South African public. The secondary stakeholders critical to the CGS include, among others, international geological surveys, geoscience organisations, institutions of higher learning and mining companies.

The CGS is a state-owned entity and, by extension, an instrument of Government established to execute aspects of national foreign policy through bilateral agreements with other countries. Table 2 summarises the various stakeholder groupings of the CGS.

Table 2: High-Level Stakeholder Groupings of the CGS.

Social and Strategic Political Partners	Stakeholders and/or Partnerships	1	Government
		2	The Public
		3	Political Agencies/Parties
		4	Media
		5	NGOs and Section 9 Institutions
		6	Nature Conservation Institutes
	Regional Integration Partners	7	The African Union and the OAGS
Public and Private Institutions	Stakeholders and/or Partnerships	8	Spatial Planning and Development Companies/Government
		9	Businesses
Resources Structure	Partnerships	10	Development Banks
		11	Insurance companies
Professional Institutions	Partnerships	12	Universities
		13	Research Institutions
		14	Geological Society of South Africa and alike formations
		15	Other Geological Surveys

2.2 Organisational Review

2.2.1 Overview of the CGS

The CGS conducts integrated, systematic and thematic mapping and research of both the onshore and offshore geology of South Africa, as mandated, to:

- Catalyse optimal development of mineral, energy and groundwater resources;
- Contribute to the assessment and sustainable management of mineral, geohydrological and geo-environmental resources (including agricultural development and medical geology);
- Support infrastructure development;
- Leverage the frontier Blue Economy prospects.

The above is achieved through collaboration between the following skills areas:

- Geophysics;
- Remote Sensing;
- Geological Mapping;
- Geochemical Surveys;
- Minerals and Energy;
- Geohydrology;
- Environment;
- Seismology;
- Marine Geology.

In addition, the CGS has a responsibility to act as a national advisory authority on geohazards and geo-environmental pollution by leveraging knowledge and expertise gained through the mapping and research activities discussed above.

Finally, the CGS is a legislatively mandated geoscientific information repository and aims to develop a comprehensive delivery platform that will facilitate the accessibility of information to relevant stakeholders.

2.2.1.1 Organisational Structure

Figure 7 below depicts the structure of the Council for Geoscience that was developed to support the efficient, effective and robust functioning of the CGS.

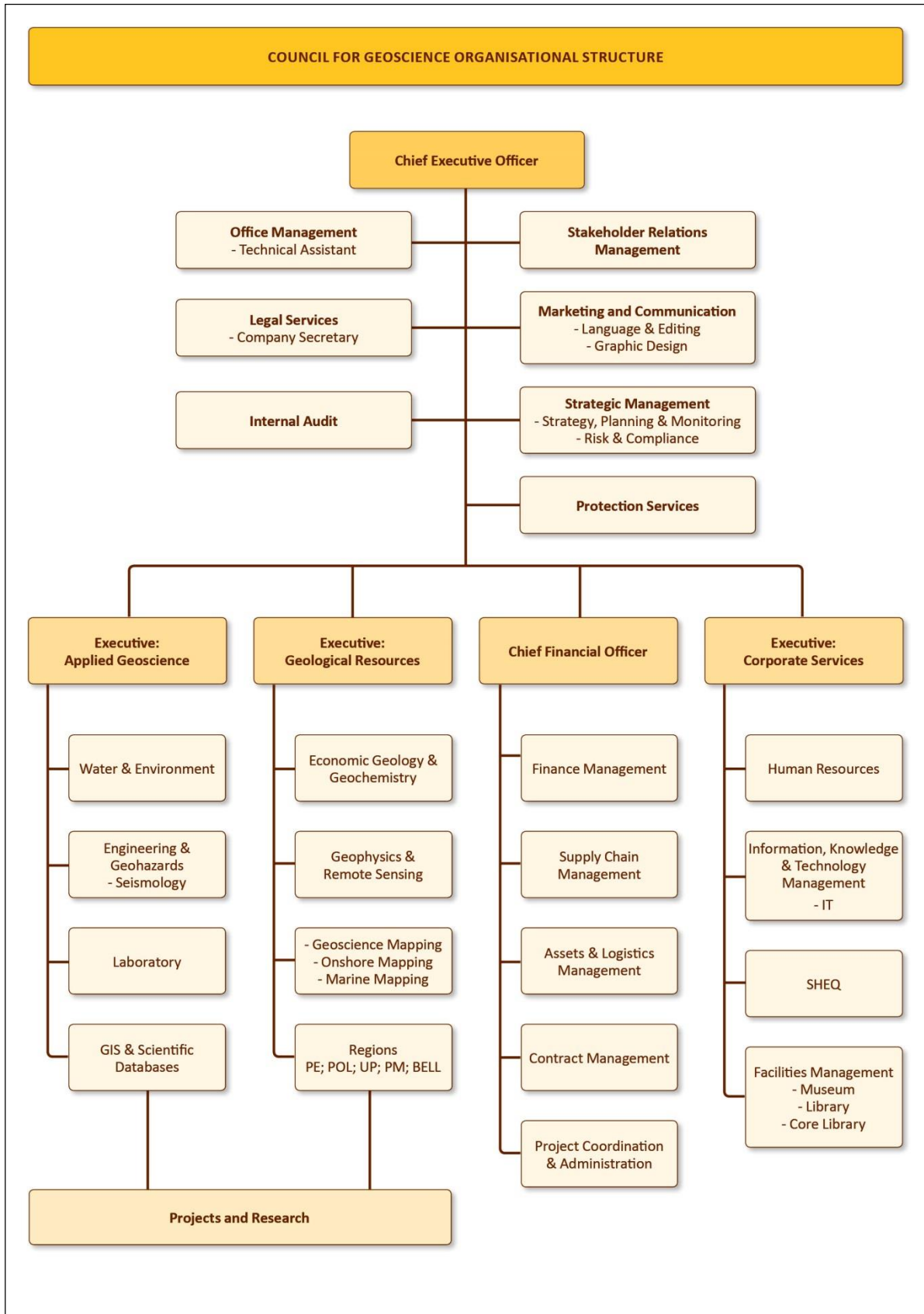


Figure 7: Organisational structure of the CGS.

2.2.2 Governance

2.2.2.1 Board

The CGS Board approves the strategies, goals, operating policies and priorities of the organisation and monitors compliance with the policies and achievements with respect to scientific, administrative and financial objectives. The Board Members bring independent counsel on strategic decisions. Moreover, Board Members are fully conversant with their fiduciary duties, as outlined in Section 50 of the PFMA (Act No. 1 of 1999).

Four Board Committees underpin the Board:

- Finance;
- Technical;
- Personnel, Remuneration and Transformation;
- Audit and Risk.

2.2.2.2 Management

Managers are responsible for the following functions in the organisation:

- Development of the strategic direction of the CGS;
- Development and implementation of annual performance plans;
- Management of legal, regulatory, ethical and other compliances;
- Management of CGS operations and service delivery;
- Management of corporate administration;
- Management of corporate performance;
- Management of finances;
- Management of personnel;
- Management of transformation;
- Promotion of the CGS.

2.2.3 Revenue Sources

The CGS has various sources of revenue, namely the Government grant, revenue from collaborative activities and revenue from publications.

2.2.3.1 Revenue from the Government Grant

The revenue from the Government grant consists of a Baseline Government grant and additional funding for MTEF projects. The Baseline grant was R144m in FY13 and has increased to R184m in FY17. The MTEF project related revenue grew from R41m in FY13 to R206m in FY17.

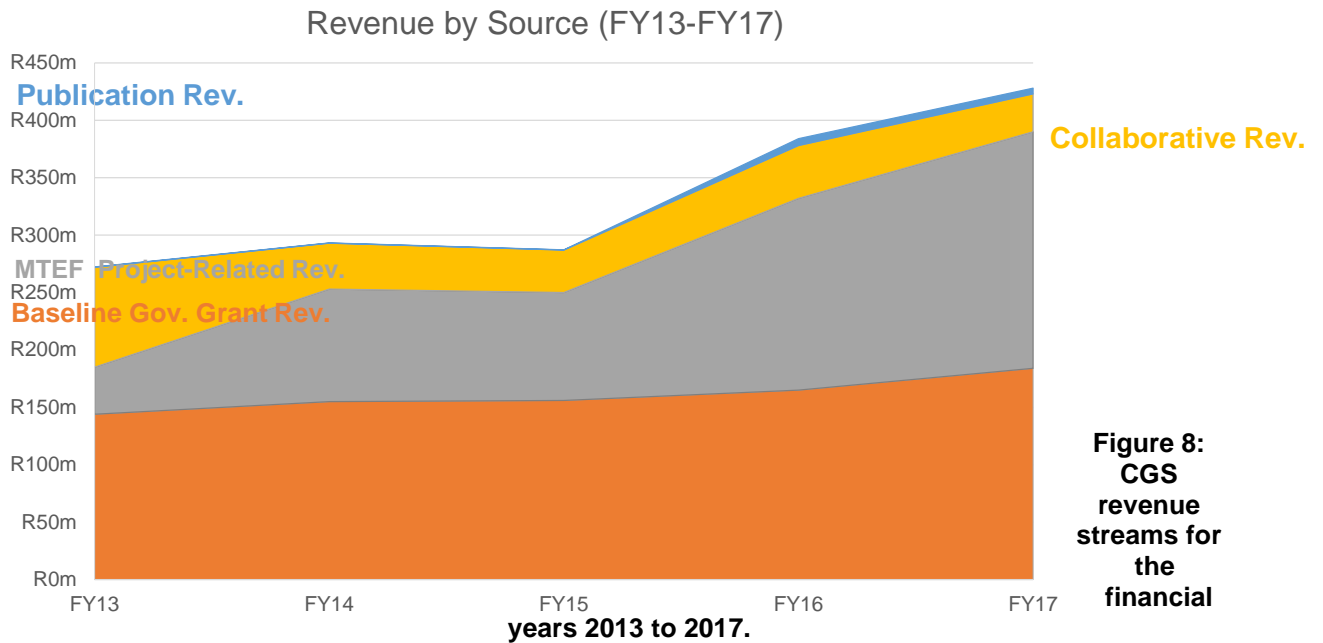
2.2.3.2 Revenue from Collaborative Activities

The CGS collaborates with both national and international organisations on a commercial basis. Such collaborative projects are undertaken for various government agencies,

international agencies, private sector clients and multinational funding agencies. However, revenue generated from collaborative activities is susceptible to global economic fluctuations, which impact adversely on the programmes of the CGS. The Collaborative revenue decreased from R87m in FY13 to R33m in FY17.

2.2.3.3 Revenue from Publications

The revenue from publications grew from R0.3m in FY13 to R5m in FY17.



The revenue of the CGS has increased steadily over the years. In addition, there has been a noticeable change in the revenue composition of the organisation over the past five years, with a significant increase in MTEF project related revenue and a decrease in revenue from collaborative work.

Part B: Programmes and Sub-programmes

3 STRATEGIC OBJECTIVES

There are five main objectives that comprise the pillars of the strategy. The first and second strategic objectives are derived directly from the legislative mandate of the CGS and are therefore the core objectives. The last three objectives enable the effective and efficient delivery of the core objectives.

Figure 9 below outlines the strategic objectives of the CGS for the next five years.

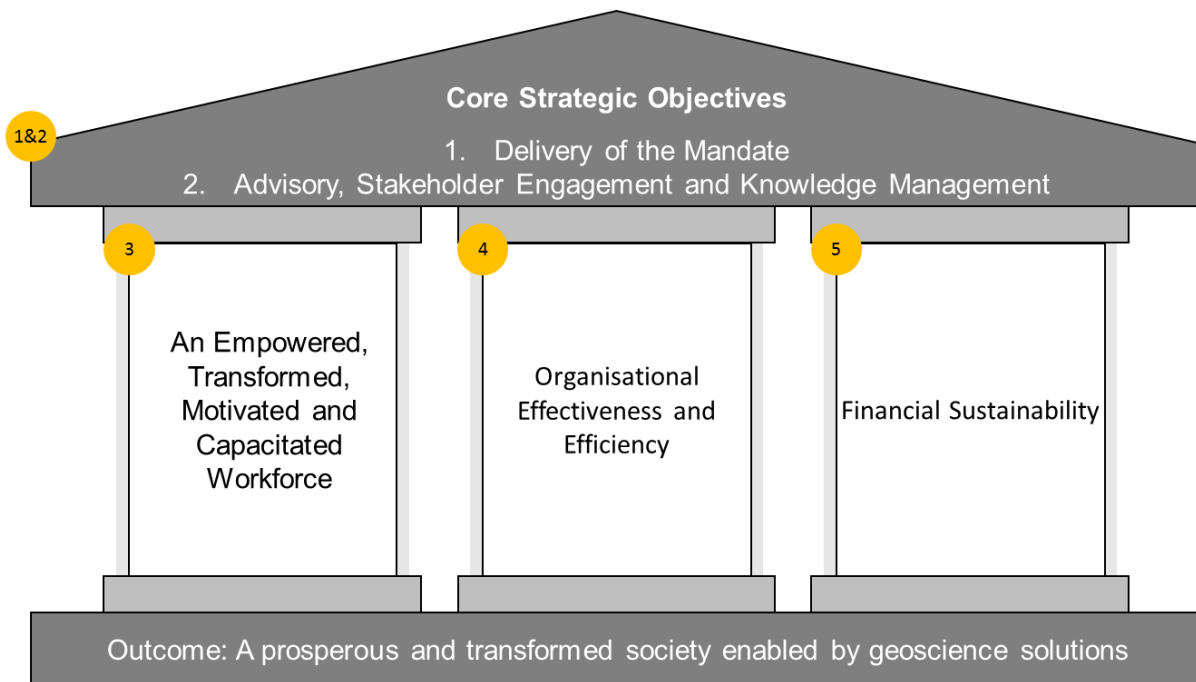


Figure 9: Strategic objectives of the CGS.

3.1 Resource Considerations

3.1.1 Financial Resources

Table 3: Financial Resources for 2017/18 to 2020/21.

INCOME	(RAND)	2017/18	2018/19	2019/20	2020/21
		x 1 000	x 1 000	x 1 000	x 1 000
Government grant		366,988	393,909	320,928	340,184
Deferred income		107,369	-	-	-
Sales and contracts		22,000	24,200	26,620	29,282
Sundry income		3,518	3,694	3,878	4,072
TOTAL INCOME	(RAND)	499,875	421,803	351,426	373,538
EXPENDITURE	(RAND)	2017/18	2018/19	2019/20	2020/21
		x 1 000	x 1 000	x 1 000	x 1 000
Personnel costs		226,777	244,919	264,513	285,674
Bursaries		3,061	3,367	3,704	4,074
Commercial project costs		9,900	10,890	11,979	13,177
Overheads and operating costs		169,007	57,127	55,731	55,113
SUBTOTAL		408,745	316,303	335,927	358,038
Surplus before capital expenditure		91,130	105,500	15,500	15,500
Application of surpluses:					
Capital expenditure					
Vehicles and aircrafts		3,500	3,500	3,500	3,500
Equipment		12,000	12,000	12,000	12,000
Building and laboratory infrastructure		75,630	-	-	-
Digital information system; buildings; equipment and facilities		-	90,000	-	-
SUBTOTAL		91,130	105,500	15,500	15,500
TOTAL EXPENDITURE	(RAND)	499,875	421,803	351,426	373,538
Surplus (Loss)		-	-	-	-

The CGS has two sources of funds, namely the Government grant and collaborative/contract revenue. These revenues determine the scope of the Annual Technical Programme (ATP) of the CGS.

Owing to the lack of certainty in the contract revenue stream, the CGS implements its programmes for each year with caution in order to avoid over-expenditure or losses. There is a significant reduction in the total Government grant for the 2019/20 financial year owing to the Economic Competitiveness Support Package (ECSP) allocations for the stimulation of investment into the minerals and energy sector and the building and laboratory infrastructure projects coming to an end in 2018/19.

3.1.2 Revenue from Government Grant

The Government grant consists of the baseline grant, additional funding for MTEF projects and the conditional grant. There has been no real growth in the baseline grant over the MTEF period. The marginal increase in the grant is meant to address inflation. The average growth rate is 6% year on year. The Government grant for the 2017/18 financial year includes deferred income of R107,4 million from the MTEF projects. The baseline grant is 177,2m, R206,9m, R218,5m, and R231,7m for the financial years 2017/18, 2018/19, 2019/20 and 2020/21, respectively.

Table 4: Revenue Analysis for 2017/18 to 2020/21.

Item	2017/18 x 1 000	2018/19 x 1 000	2019/20 x 1 000	2020/21 x 1 000
Government grant	474.4m	393.9m	320.9m	340.2m
Baseline allocation	177.2m	206.9m	218.5m	231.7m
MTEF projects (ring fenced)	157.3m	96.9m	102.4m	108.5m
Deferred income	107.4m			
Economic Competitiveness Support Package	32.5m	90m	0	0
Commercial revenue	22m	24.2m	26.6m	29.2m
Sundry income	3.5m	3.7m	3.9m	4.1m
TOTAL REVENUE (RAND)	499.9m	421.8m	351.4m	373.5m

Table 5: Link between the Budget of the CGS and its Strategic Objectives.

Costing of CGS Objectives	2017/18	2018/19	2019/20	2020/21
Objective (Programme) 1: Delivery of the Mandate	13,386,225	11,295,524	9,410,888	10,003,028
Objective (Programme) 2: Advisory, Stakeholder Engagement and Knowledge Management	330,924,863	279,240,010	232,649,364	247,287,845
Objective (Programme) 3: An empowered, transformed, motivated and capacitated workforce	12,466,800	10,519,698	8,764,507	9,315,976
Objective (Programme) 4: Organisational effectiveness and efficiency	87,420,535	73,766,930	61,459,063	65,326,115
Objective (Programme) 5: Financial sustainability	55,676,577	46,980,839	39,142,179	41,605,035
Total Budget	499,875,000	421,803,000	351,426,000	373,538,000

3.1.3 Revenue from Collaborative/Partnership Activities

Revenue from collaborative activities is budgeted at R22m for 2017/18 and is expected to increase by 10% year on year over the MTEF period. This is based on current collaborative contracted work. The absence of further revenue income in this category of work is due to the organisational refocus on the core mandate of the CGS.

3.1.4 Personnel Costs

The personnel costs budget includes salaries for existing and additional critical positions, fringe benefits, such as death and disability insurance, postretirement medical aid insurance as well as recruitment-related costs. Annual salary increases are negotiated at the bargaining forum and are approved by the CGS Board. Personnel cost is budgeted at R226.8m for 2017/18 and an 8% increase year on year over the MTEF period to cater for additional staff required to unlock the MTEF projects. A recent benchmarking exercise was conducted and depicted a picture that CGS salary scales are low compared with those of industry and, as a consequence, the CGS struggles to retain its personnel. The CGS is losing its staff members mainly to the mining industry and to Government departments. Both financial and non-financial means necessary to retain staff should be identified, formalised, implemented and monitored for impact.

3.1.5 Bursaries

The bursary budget is essential for developing capacity and to expedite the training of individuals. The commercial environment in which the Council for Geoscience competes for international and national tenders is extremely competitive and the only way for the CGS to be able to compete is by upgrading the skills of its staff members. The bursary scheme has an added advantage as it also serves as a feeder pipeline for the transformation of the staff complement. In this regard, an amount of R3.5m has been budgeted for 2017/18, with a 10% increase year on year over the MTEF period.

3.1.6 Cost of Collaborative/Partnership Projects

The CGS invests in the commercial environment to generate the budgeted revenues over the MTEF period. These investments are in the form of direct materials and services required to deliver the agreed commercial outputs. Commercial project expenditure is budgeted at R9.9m for 2017/18, which is 45% of the projected revenue for each year over the MTEF period.

3.1.7 Scientific and Technical Equipment

The rapidly aging research infrastructure of the CGS is of great concern to the organisation. Over the past few years, attention was given to the replacement of some equipment. However, this was not sufficient to sustain services and skills development in the CGS.

An amount of R15,5m has been budgeted for the replacement of vehicles, equipment and aircraft repairs for 2017/18. Funding has been allocated to the Building and Infrastructure project from National Treasury to the amount of R75,6m in 2017/18 which includes deferred income of R43,1m. A capital renewal plan is developed annually to address the infrastructure requirements.

3.2 Materiality Framework

Table 6: Materiality Framework.

Nature of Business	Circumstances giving rise to Need for Disclosure in Terms of Materiality and Significance	Material Threshold Value for Disclosure and Reporting Purposes	Process to be initiated if Threshold is reached
<p>Geophysics and Research</p> <p>Generally, research related entities may set a materiality figure higher than for non-research related entities, as research related losses can be expected to be higher and more difficult to anticipate and manage within the normal accounting practices, Geoscience Act and operating procedures. Disclosure in this area is unlikely to materialise</p>	<p>Equipment and Technology</p> <p>Laboratories and Geophysics are the two main areas giving rise to the need for disclosure in terms of materiality and significance</p> <p>Laboratories</p> <p>Geophysics</p> <p><i>Consideration in terms of expenditure was given as follows: (as included within the budgeting process)</i></p> <ul style="list-style-type: none"> <i>Irregular Expenditure consisting of spending outside of approved budget</i> <i>Fruitless and Wasteful Expenditure. Equipment not suited or necessary for purpose</i> 	<p>Calculating the property and equipment threshold value at 2% of the value as indicated in the annual financial statements (R255,542,000)</p> <p>R5.1m</p> <p>R5.1m</p> <p>The usual accounting practices and the Geoscience Act will generally cover replacement or loss of equipment in the normal operational process and should not require disclosure</p>	<p>Management to submit a report with all relevant details and values concerned to Executive for comment and disclosure to Treasury where required</p> <p><i>Process:</i></p> <ul style="list-style-type: none"> <i>Information to be provided regarding event;</i> <i>Investigate where required: Internal Audit and Finance;</i> <i>Determine whether loss is due to contravention of the Act or disregard of Geoscience Act;</i> <i>Determine whether due to lack of due care and diligence, gross negligence or criminal activity; and</i> <i>Responsibility</i> <p>The Executive must direct a request for ruling or approval from Treasury or the relevant Executive Authority</p>
<p>The business needs to ensure that all financial transactions fall within the approved budget and are conducted within the normal accounting practices and Geoscience Act</p>	<p>Financial</p> <p>Operations and Capex are considered as the main areas giving rise to the need for disclosure in terms of materiality and significance:</p> <p>Operating Expenditure</p> <p><i>(Existing Budgeted Projects)</i> <i>Any irregular spending outside of approved budget</i></p> <p>New Projects</p> <p><i>Unforeseen additional expenditure due to poor project planning or early</i></p>	<p>R1.2m</p> <p>Operating threshold value calculated at 1% of budget value (R169,007,000)</p> <p>Expressed as 2% of the Project Value</p> <p>This threshold will vary according to the project value. E.g. R40m equates to R800,000,</p>	<p>Management to submit a report with all relevant details and values concerned to Executive for comment and disclosure to Treasury where required</p> <p><i>Process:</i></p> <ul style="list-style-type: none"> <i>Information to be provided regarding event;</i> <i>Investigate where required: Internal Audit and Finance;</i> <i>Determine whether loss is due to contravention of the Act or disregard of Geoscience Act;</i> <i>Determine whether due to lack of due care and diligence, gross negligence or criminal activity; and</i> <i>Responsibility</i>

Nature of Business	Circumstances giving rise to Need for Disclosure in Terms of Materiality and Significance	Material Threshold Value for Disclosure and Reporting Purposes	Process to be initiated if Threshold is reached
	<p><i>termination or cancellation of projects</i></p> <p>Capex: -</p> <p>Total Assets</p>	<p>R10m equates to R200,000</p> <p>R12.3m</p> <p>Total asset threshold value calculated at 2% of the value as indicated in the annual financial statements (R613,704,000)</p>	<p>The Executive must direct a request for ruling or approval from Treasury or the relevant Executive Authority</p>
<p>In terms of the PFMA Section 54, information will be submitted by accounting authorities in respect of any significant change in the nature or extent of its interest in a significant business activity; and A significant change in the nature or extent of its interest in a significant partnership, trust, unincorporated joint venture or similar arrangement</p>	<p>Where the business has joint ventures or similar arrangements, these are strictly governed by the Geoscience Act in addition to the PFMA</p> <p>Concluding any transaction in terms of Section 54 without approval from the Executive Authority</p>	<p>Should such an event materialise it would need to be investigated and only then would the potential loss be determined</p> <p>No threshold can be anticipated</p> <p>Any transgression is to be investigated and reported once all relevant details have been compiled</p>	<p>Management to submit a report with all relevant details and values concerned to Executive for comment and disclosure to Treasury where required</p> <p><i>Process:</i></p> <ul style="list-style-type: none"> • <i>Information to be provided regarding event;</i> • <i>Investigate where required: Internal Audit and Finance;</i> • <i>Determine whether loss is due to contravention of the Act or disregard of Geoscience Act;</i> • <i>Determine whether due to lack of due care and diligence, gross negligence or criminal activity; and</i> • <i>Responsibility</i> <p>The Executive must direct a request for ruling or approval from Treasury or the relevant Executive Authority</p>

3.3 Medium-Term Strategic Objectives and Performance Indicators for FY 2018/19 to FY 2020/21

Table 7: Medium-Term Strategic Objectives and Performance Indicators for FY 2018/19 to FY 2020/21.

Strategic Objective (Perspective)	Strategic Initiatives	Measures (KPI)	Unit	Frequency	Audited/Actual Performance			Estimated Performance (2017/18)	Medium-Term Targets		
					2014/15	2015/16	2016/17		2018/19	2019/20	2020/21
1. Delivery of the Mandate (Stakeholder/ Market)	1.1 Execute the new integrated, thematic and systematic mapping and research programme	Digital maps produced (cumulative)	#	Quarterly	na	na	na	40	45	95	150
		Geoscientific information audited (cumulative)	%	Quarterly	na	na	na	30%	50%	100%	100%
		Annual Statutory Programme (Completion) (not cumulative)	%	Annually	na	na	na	100%	100%	100%	100%
		Innovation projects completed (not cumulative)	#	Annually	5	2	3	3	3	4	4
	1.2 Execute existing strategic projects	Karoo deep drilling project (not cumulative)	%	Quarterly	na	na	na	100%	100%	100%	100%
		Mine water management programme (not cumulative)	%	Quarterly	na	na	na	100%	100%	100%	100%
		Stimulation of investment in the mining and mineral exploration sectors (not cumulative)	%	Quarterly	na	na	na	100%	⁴ -	-	-
		Management of State contingent liabilities with	%	Quarterly	na	na	na	100%	100%	100%	100%

⁴ The targets will be set upon confirmation of funding.

Strategic Objective (Perspective)	Strategic Initiatives	Measures (KPI)	Unit	Frequency	Audited/Actual Performance			Estimated Performance (2017/18)	Medium-Term Targets		
					2014/15	2015/16	2016/17		2018/19	2019/20	2020/21
		respect to derelict and ownerless mines (not cumulative)									
2. Advisory, Stakeholder Engagement and Knowledge Management (Stakeholder/Market)	2.1. Manage geoscientific data, information and knowledge to address the new integrated mapping plan	Completed integrated digital migration (cumulative)	%	Quarterly	na	na	na	20%	40%	60%	80%
	2.2 Disseminate and make accessible and advise on relevant geoscientific data, information and knowledge, increasing the presence of the CGS	Publications produced: • Peer reviewed articles (not cumulative)	#	Quarterly	na	na	34	15 ⁵	20	25	30
		• Scientific abstracts • Bulletins • Memoirs • Map explanations • Media publications (not cumulative)	#	Quarterly	na	na	269	100	105	110	200
	2.3. Geoscientific diplomacy programme	Number of agreements implemented between the CGS and its stakeholders (cumulative)	#	Quarterly	na	na	na	6	12	18	24

⁵ Target amended upward based on 2017/18 2nd Quarter actual performance.

Strategic Objective (Perspective)	Strategic Initiatives	Measures (KPI)	Unit	Frequency	Audited/Actual Performance			Estimated Performance (2017/18)	Medium-Term Targets		
					2014/15	2015/16	2016/17		2018/19	2019/20	2020/21
		Marketing and promotional initiatives (not cumulative)	#	Quarterly	na	na	na	25	30	35	40
		Stakeholder satisfaction level (not cumulative)	%	Annually	86%	57%	84%	85%	86%	88%	92%
	2.4. Act as Advisory Authority on Geohazards related to infrastructure and development	Geohazard assessment reports compiled within prescribed timeframes (not cumulative)	%	Quarterly	na	na	na	- ⁶	100%	100%	100%
3. An Empowered, Transformed, Motivated and Capacitated Workforce (Learning and Growth)	3.1 Creation of an attractive organisational culture	Level of staff satisfaction (not cumulative)	%	Annually	61%	55%	60%	70%	75%	80%	85%
		Net staff turnover rate (not cumulative)	%	Annually	2.2%	1.8%	0.86%	<5%	<5%	<5%	<5%
	3.2. Develop and empower competent staff	Training ⁷ expenditure (Ratio of training expenditure to leviable amount of payroll ⁸) (not cumulative)	%	Quarterly	na	na	na	2%	2%	2%	2%
		3.3. Promote and invest in human resource transformation and diversity	Staff with disability (not cumulative)	%	Quarterly	na	na	0.89	1%	1.25%	1.5%
	EE statistics (not cumulative)		Ratio (Male/Female)	Quarterly	56:44	56:44	54:46	54:46	53:47	52:48	51:49

⁶ The strategic initiative has not been formally implemented due to the corresponding section of the Geoscience Act being in abeyance until 2018/19.

⁷ Training budget is spent evenly across all categories of staff based on the Training Plan that has been developed from the IDPs.

⁸ Leviable amount of payroll as is stated in Schedule 4 of the Income Tax Act, as amended.

Strategic Objective (Perspective)	Strategic Initiatives	Measures (KPI)	Unit	Frequency	Audited/Actual Performance			Estimated Performance (2017/18)	Medium-Term Targets		
					2014/15	2015/16	2016/17		2018/19	2019/20	2020/21
4. Organisational Effectiveness and Efficiency (Systems)	4.1 Policies, processes, procedures and standards	Implementation of the planned activities for the year for Laboratory ISO 17025 accreditation. (not cumulative)	%	Quarterly	na	na	na	100%	100%	100%	100%
		Organisational wide implementation of the planned activities for the year in terms of ISO 9001 certification (not cumulative)	%	Quarterly	na	na	na	100%	100%	100%	100%
	4.2 Technological systems that support policies, processes and procedures	Integrated ICT systems implemented as per business requirements (cumulative)	%	Quarterly	na	na	na	20%	60%	100%	100%
	4.3 Adhere to best practice to achieve sustainable governance	Audit qualifications (not cumulative)	#	Annually	0	0	0	0	0	0	0
	4.4 Economic transformation to enable growth funding and adhere to best practice	Value spent on preferential procurement as a proportion of total spend on procurement (not cumulative)	%	Quarterly	51%	40%	74%	75%	76%	77%	78%



Strategic Objective (Perspective)	Strategic Initiatives	Measures (KPI)	Unit	Frequency	Audited/Actual Performance			Estimated Performance (2017/18)	Medium-Term Targets		
					2014/15	2015/16	2016/17		2018/19	2019/20	2020/21
5. Financial Sustainability (Financial)	5.1 Financial sustainability	Government grant ⁹ (not cumulative)	ZAR	Quarterly	R287m	R340m	R390m	R366.9m	R393.9m	R320.9m	R340.2m
		Revenue from collaborative activities/ partnerships (not cumulative)	ZAR	Quarterly	na	na	na	R22m	R24.2m	R26.6m	R29.3m
		Revenue from intellectual property (not cumulative)	ZAR	Quarterly	na	na	na	0	0	0	R100k

⁹ Government grant target is established according to the budget allocated by National Treasury for the three MTEF years.

4 CGS STRATEGIC OBJECTIVES AND ANNUAL PERFORMANCE PLAN

4.1 Strategic Objective 1: Delivery of the Mandate

4.1.1 Strategic Objective 1 Quarterly and Annual Targets for FY 18/19

Table 8: Strategic Objective 1 Quarterly and Annual Targets for FY 18/19.

Performance Indicator	Unit	FY16/17 Actual	Annual Target for FY2018/19	Quarterly Targets				
				Q1 (Apr – Jun)	Q2 (Jul – Sep)	Q3 (Oct – Dec)	Q4 (Jan – Mar)	
Digital maps produced (cumulative)	#	NM ¹⁰	45	0	5	15	45	
Geoscientific information audited (cumulative)	%	NM	50%	5%	20%	35%	50%	
Annual Statutory Programme (Completion) (cumulative)	%	NM	100%	10%	40%	70%	100%	
Innovation projects completed (cumulative)	#	3	3	0	0	2	3	
Completion (cumulative)	Karoo Deep Drilling	%	76% NM	100%	25%	50%	75%	100%
	D&O Mines	%	84% NM	100%	25%	50%	75%	100%
	Mine Water Management	%	94% NM	100%	25%	50%	75%	100%

¹⁰ NM – New Measure.



Performance Indicator	Unit	FY16/17 Actual	Annual Target for FY2018/19	Quarterly Targets			
				Q1 (Apr – Jun)	Q2 (Jul – Sep)	Q3 (Oct – Dec)	Q4 (Jan – Mar)
Target Generation	%	83% NM	-	-	-	-	_11

4.2 Strategic Objective 2: Advisory, Stakeholder Engagement and Knowledge Management

4.2.1 Strategic Objective 2 Quarterly and Annual Targets for FY 18/19

Table 9: Strategic Objective 2 Quarterly and Annual Targets for FY 18/19.

Performance Indicator	Unit	FY 2016/17 Actuals	Annual Target for FY2018/19	Quarterly Targets			
				Q1 (Apr – Jun)	Q2 (Jul – Sep)	Q3 (Oct – Dec)	Q4 (Jan – Mar)
Completed integrated digital migration (cumulative)	%	NM	40%	10%	20%	30%	40%
Publications produced: <ul style="list-style-type: none"> Peer reviewed articles (cumulative) 	#	34	7	5	10	15	20

¹¹ Target will be set upon confirmation of funding.

Performance Indicator	Unit	FY 2016/17 Actuals	Annual Target for FY2018/19	Quarterly Targets			
				Q1 (Apr – Jun)	Q2 (Jul – Sep)	Q3 (Oct – Dec)	Q4 (Jan – Mar)
<ul style="list-style-type: none"> • Scientific abstracts • Bulletins • Memoirs • Map explanations • Media publications (cumulative) 	#	269	105	25	50	75	105
Number of agreements implemented between the CGS and its stakeholders ¹² (cumulative)	#	NM	12	-	2	6	12
Marketing and promotional initiatives (cumulative)	#	NM	30	5	10	20	30
Stakeholder satisfaction level (not cumulative)	%	84.3%	86%	-	-	-	86%

¹² Focus is being given the mapping programme of South Africa hence the reduction on the signed contract/SLA targets.

Performance Indicator	Unit	FY 2016/17 Actuals	Annual Target for FY2018/19	Quarterly Targets			
				Q1 (Apr – Jun)	Q2 (Jul – Sep)	Q3 (Oct – Dec)	Q4 (Jan – Mar)
Geohazard assessment reports compiled within prescribed timeframes (not cumulative)	%	NM	100%	100%	100%	100%	100%



4.3 Strategic Objective 3: An Empowered, Transformed, Motivated and Capacitated Workforce

4.3.1 Strategic Objective 3 Quarterly and Annual Targets for FY 18/19

Table 10: Strategic Objective 3 Quarterly and Annual Targets for FY 18/19.

Performance Indicator	Unit	FY 2016/17 Actuals	Annual Target for FY2018/19	Quarterly Targets			
				Q1 (Apr – Jun)	Q2 (Jul – Sep)	Q3 (Oct – Dec)	Q4 (Jan – Mar)
Level of staff satisfaction (not cumulative)	%	60%	75%	-	-	-	75%
Net staff turnover rate (not cumulative)	%	0.86%	<5%	-	-	-	<5%
Training ¹³ expenditure (Ratio of training expenditure to leviabale amount of payroll) (not cumulative)	%	NM	2%	2%	2%	2%	2%
Staff with disability (not cumulative)	%	NM	1.25%	1.25%	1.25%	1.25%	1.25%
EE statistics (not cumulative)	Ratio (Male: Female)	54:46	53:47	53:47	53:47	53:47	53:47

¹³ Training budget is spent evenly across all categories of staff based on the Training plan that is developed from IDP's.

4.4 Strategic Objective 4: Organisational Effectiveness and Efficiency

4.4.1 Strategic Objective 4 Quarterly and Annual Targets for FY 18/19

Table 11: Strategic Objective 4 Quarterly and Annual Targets for FY 18/19.

Performance Indicator	Unit	FY 2016/17 Actuals	Annual Target for FY2018/19	Quarterly Targets			
				Q1 (Apr – Jun)	Q2 (Jul – Sep)	Q3 (Oct – Dec)	Q4 (Jan – Mar)
Implementation of the planned activities for the year for Laboratory ISO 17025 accreditation (cumulative)	%	NM	100%	50%	60%	75%	100%
Organisational wide implementation of the planned activities for the year in terms of ISO 9001 certification (cumulative)	%	NM	100%	60%	70%	80%	100%
Integrated ICT systems implemented as per business requirements (cumulative)	%	NM	60%	30%	40%	50%	60%
Audit qualifications (not cumulative)	#	0	0	-	-	-	0
Value spent on preferential procurement as a proportion of total spend on procurement (not cumulative)	%	73.9%	76%	76%	76%	76%	76%

4.5 Strategic Objective 5: Financial Sustainability

4.5.1 Strategic Objective 5 Quarterly and Annual Targets for FY 18/19

Table 12: Strategic Objective 5 Quarterly and Annual Targets for FY 18/19.

Performance Indicator	Unit	FY 2016/17 Actuals	Annual Target for FY2018/19	Quarterly Targets			
				Q1 (Apr – Jun)	Q2 (Jul – Sep)	Q3 (Oct – Dec)	Q4 (Jan – Mar)
Government grant ¹⁴ (cumulative)	ZAR	R390.2m	R393.9m	R90m	R180m	R190m	R393.9m
Revenue from collaborative activities/ partnerships (cumulative)	ZAR	R33.1m	R24.2m	R6m	R12m	R18m	R24.2m

Note: There are instances where the targeted figures for FY 2018/19 are lower than the actuals for FY 2016/17. These are instances where non-recurrent factors influenced the achievement in 2016/17 and hence had to be normalised in 2018/19.

¹⁴ Government grant target is established according to the budget allocated by National Treasury for the three MTEF years.

4.6 Performance Indicator Descriptions for Corporate Scorecard 2018–2019

Indicator 1: Digital maps produced

Short definition: There are two allowable measurable deliverables for digital maps: i.e. a georeferenced raster field sheet and digital vectorised geological information, e.g. lithology (bedrock and regolith layers), structural geology, economic geology, geochemistry (whole rock and soil geochemistry), geophysics, etc.

A raster map refers to a compiled field sheet that has been scanned, clipped and georeferenced and uploaded to the database and is accompanied by a legend. The scanned raster map is an interim product that still needs to be captured (vectorised) by cartography but is otherwise a completed scientific product.

A vector map is captured in ArcGIS as polygon, point and line features. The features are symbolised and the layout and legend should be integrated and created to serve the purpose of application. The features will have query-able attributes. The maps need to have undergone a quality control review and/or other relevant structures in the CGS and uploaded onto the centralised database by the relevant database custodian and it can be updated as and when new geological information is gathered.

Method of calculation: Count the number of approved digital maps completed at a prescribed scale, e.g. 1:50 000 scale

Indicator 2: Geoscientific information audited

Short definition: Completed data/information catalogued.

Method of calculation: Compute percentage completion as per agreed deliverables.

Indicator 3: Annual Statutory Programme Audit (completion)

Short definition: An assessment (audit) of the overall completion of project and quality of products as listed in the Annual Technical Programme.

Method of calculation: Completion of the projects is scored in terms of percent (0 – 100%) and the quality is scored from 1 – 5. A mean completion % and mean quality is indicated for each project, and the Performance Index for the unit is then calculated by the formula – $\sum \text{mean completion \%} \times \sum \text{mean quality} / 5$. The Corporate

Performance Index (Corporate Scorecard) is calculated as the mean of all the Business Units' Performance Indexes.

Indicator 4: Innovation projects completed

Short definition: Innovation projects completed can be defined as any geoscientific project involving novelty which seeks to solve a wide range of geoscientific problems or using novel methodology that may result in a patent, registered design, copy right or trade secret.

Method of calculation: Count the number of approved innovation projects completed.

Indicator 5: Karoo Deep Drilling Project

Short definition: Establishment geo-environment baseline, i.e. that natural environmental conditions existing prior to any natural resource exploration and exploitation, using a wide range of a multidisciplinary applications (geology, structure, hydrogeology, geophysics and seismology)

Method of calculation: Compute percentage of deliverables (task reports, maps, etc.) completed as per agreed to audit.

Indicator 6: Mine Water Management Programme

Short definition: Completion of agreed deliverables with DMR for the financial year in question, i.e. not the deliverables for the lifespan of the project. The deliverables should be evident from the approved project plan. Understanding mine water (e.g. acid and/or alkaline) drainage with the intention of mitigating negative impacts by reducing ingress by redirecting and/or remediating effluent into natural drainage systems.

Method of calculation: Compute percentage of deliverables (task reports, maps, etc.) completed as per agreed to audit.

Indicator 7: Stimulation of investment in the mining and exploration sectors

Short definition: Completion of agreed deliverables with DMR for the financial year in question, i.e. not the deliverables for the lifespan of the project. The deliverables should be evident from the approved project plan.

Method of calculation: Compute percentage of deliverables (task reports, maps, etc.) completed as per agreed to audit.

Indicator 8: Management of State contingent liabilities with respect to derelict and ownerless mines

Short definition: Formalise and maintain the existing database of derelict and ownerless mines developed by the CGS between 2005-2008 and developing this database into a working tool linked to spatial data, documents and other information related to mines.

Method of calculation: Compute percentage of deliverables (task reports, maps, etc.) completed as per agreed to audit.

Indicator 9: Completed integrated digital migration

Short definition: Develop a common file geodatabase for geoscience data and information.

Method of calculation: Compute percentage of digitisation and consolidation of geoscientific information (e.g. task reports, maps, etc.)

Indicator 10: Publications produced: peer reviewed articles

Short definition: The publication of CGS information in peer-reviewed scientific publications.

Method of calculation: Count number of publications

Indicator 11: Scientific abstracts; bulletins (including series of CGS specific bulletins as well as Geoclips); memoirs; map explanations; media publications

Short definition: The publication of CGS information in scientific abstracts; bulletins (including series of CGS specific bulletins as well as Geoclips); memoirs; map explanations; media publications

Method of calculation: Count number of publications

Indicator 12: Number of agreements implemented between the CGS and its stakeholders

Short definition: Number of agreements (e.g. MOU, contracts, service-level agreements and other collaborative programmes) implemented in the financial year.

Method of calculation: Count number of agreements

Indicator 13: Marketing and promotional initiatives

Short definition: All approved marketing activities (campaigns, exhibitions and engagements) launched to promote the CGS.

Method of calculation: Count number of promotional activities.

Indicator 14: Stakeholder satisfaction level

Short definition: This is the level of satisfaction of all customers in active engagement with the CGS as determined through an official satisfaction survey conducted by the CGS.

Method of calculation: Percentage satisfaction as determined by survey.

Indicator 15: Geohazard assessment reports compiled within prescribed timeframes

Short definition: A mandatory requirement for infrastructure development on all areas underlain by dolomite. The issuing of a dolomite assessment letter-comments which is forwarded to the relevant authorities and consultants.

Method of calculation: Percentage of letter-comment responses issued by the CGS divided by the number of reports received from consultants.

Indicator 16: Level of staff satisfaction

Short definition: This is the level of satisfaction of staff with the CGS in general. The survey is conducted by a consultant and must be completed by the end of April each year.

Method of calculation: Statistical analysis.

Indicator 17: Net staff turnover rate**Short definition:** Number of staff who have left the organisation.**Method of calculation:** Number of staff who have left the organisation divided by the total number of staff at any one time multiplied by 100 yielding a percentage.**Indicator 18: Training expenditure****Short definition:** Total expenditure on training on staff and non-staff.**Method of calculation:** Ratio of training expenditure to leviabale amount of payroll**Indicator 19: Staff with disability****Short definition:** Staff with disabilities as reported in the policy**Method of calculation:** Ratio of staff with disability to total staff multiplied by 100 yielding a percentage.**Indicator 20: EE statistics****Short definition:** The ratio of gender and race for the purpose of attaining transformation.**Method of calculation:** The ratio of female:male and black:white staff multiplied by 100 yielding percentage**Indicator 21: Implementation of the planned activities for the year for Laboratory ISO 17025 accreditation****Short definition:** Extent of implementation of subtasks in the Laboratory as per the agreed to ISO 17025 project plan.**Method of calculation:** A percentage of deliverables delivered is determined.**Indicator 22: Organisational-wide implementation of the planned activities for the year in terms of ISO 9001 certification****Short definition:** Number of implemented subtasks completed as per the agreed ISO accreditation plan.

Method of calculation: A percentage of subtasks implemented as planned for the year.

Indicator 23: Integrated ICT systems implemented as per business requirements

Short definition: Extent of implementation of an Enterprise Resource Planning (ERP) System, based on subtasks completed aligned to the agreed project plan.

Method of calculation: A percentage of completed subtasks.

Indicator 24: Audit qualifications

Short definition: Total number of audit qualifications as reported on in the Auditor-General's audit report (available usually in the 2nd quarter of the year subsequent to the auditing period).

Method of calculation: Simple count of qualifications.

Indicator 25: Value spent on preferential procurement as a proportion of total spend on procurement

Short definition: The value of purchases from BEE companies expressed as a percentage of the total purchases in the CGS. Vendor BEE rating certificates are captured on the ACCPAC financial system and a report is generated from that

Method of calculation: Simple cumulative count of the rand value spent on preferential procurement in proportion to the total spent.

Indicator 26: Government grant

Short definition: The sum of baseline and conditional grant recognised.

Method of calculation: Simple calculation of transferred amounts.

Indicator 27: Revenue from collaborative activities/partnerships

Short definition: Revenue earned from commercial collaborative activities or partnerships.

Method of calculation: Simple count.

Indicator 28: Revenue from intellectual property

Short definition: Revenue derived from registered products, processes and services related to intellectual property.

Method of calculation: simple calculation of rand value .

Note: All measures are cumulative unless otherwise indicated

Part C: Execution Plan

5 MAPPING PROGRAMME

An integrated systematic and thematic mapping programme has been developed to implement the CGS strategy as outlined below.

The CGS Mapping Programme has an initial phase, which is expected to be delivered over a period of ten years. This programme is aimed at moving the organisation back to its core mandate of mapping. The goal is to develop integrated, multidisciplinary, high quality geological maps of the entire country at a scale of 1:50 000. The primary purpose of the information generated is to encourage investment in the exploration of prospective minerals, energy, groundwater and upstream petroleum resources in South Africa, both onshore and offshore.

The mapping programme workflow has been summarised in Figure 10 below.

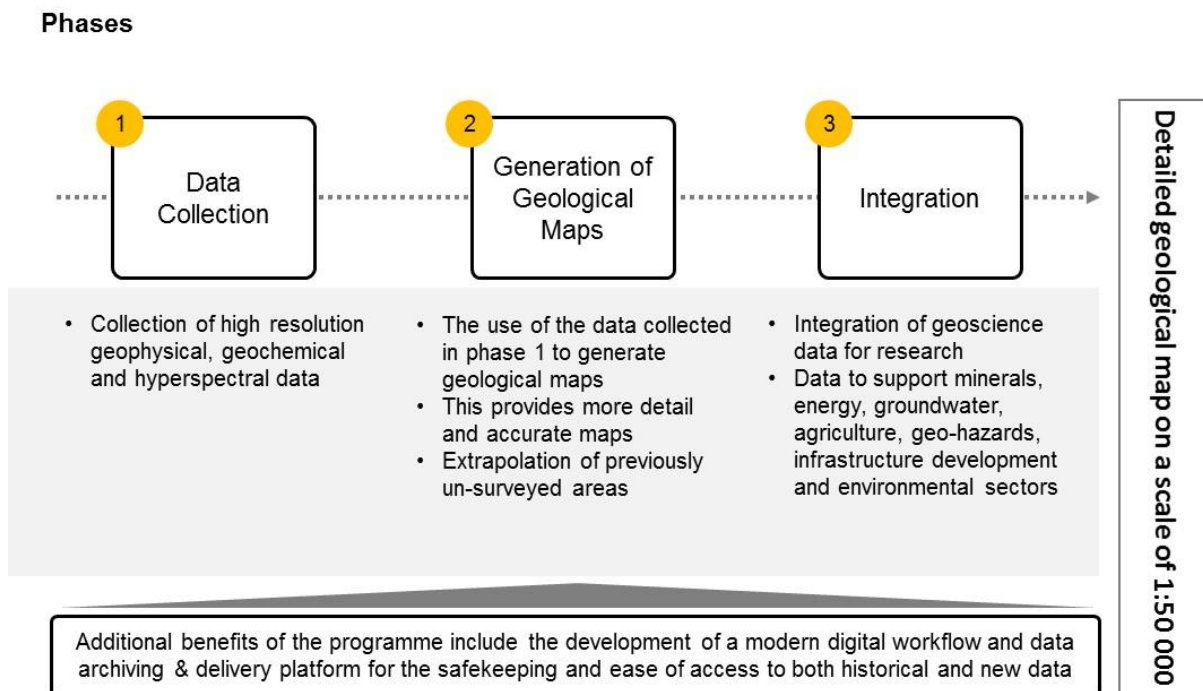


Figure 10: High-level work plan of the CGS Mapping Programme.

The detail of the first year of the mapping programme is outlined in Table 13 below.

5.1 Annual Technical Programme and Budgets

Table 13: Annual Technical Programme and Budgets.

SOUTH AFRICAN INTEGRATED AND MULTIDISCIPLINARY GEOSCIENCE MAPPING PROGRAMME : 2018-2021 MATRIX				
ND Imperative : Economic Growth	ND Imperative : Environment and Health	ND Imperative: Innovation	ND Imperative : International Relations	
1. Geoscience for mineral and energy resources	2. Geoscience for infrastructure and land use	3. Geoscience for health, groundwater and the environment	4. Geoscience Innovation	5. Geoscience Diplomacy
Custodianship of ALL geoscientific information in RSA	Geotechnical susceptibility and vulnerability investigations (sinkholes, mine subsidence, coastal erosion and landslides)	Environmental geoscience research (monitoring and mitigating the impact of geology and mining activities on health and the environment – D&O, Mine Water Management etc.)	Exploration for artificial intelligence application in geoscience	Geoscience collaboration and global standards
Onshore and offshore geoscience research for current and future generations (e.g. mineral and energy)	Seismic susceptibility investigations (mine seismic hazard assessment)	Hydrogeological research	Cultivating geoscientific innovation and novelty – NIPMO	International geoscience policy & governance
Modelling geologic environments and mineralising systems for mineral and energy resources	Optimisation of land use (food security, geoheritage and geotourism, physical infrastructure)			OAGS Secretariat
R118 000 000	R 33 000 000	R 95 000 000	R 5 000 000	R15 000 000

6 CORPORATE LEVEL STRATEGIC RISKS

The following table depicts the strategic objectives of the CGS and the associated risks identified:

Table 14: CGS Strategic Risk Register 2017/18.

NO	STRATEGIC OBJECTIVE (SO)	RISK
1	Delivery of the mandate (integrated multidisciplinary mapping programme)	Failure to deliver on integrated, thematic and systematic mapping and research and the statutory programme
2	Advisory and stakeholder engagement	Inability to meet stakeholder needs and expectations
		Negative image/brand of the CGS
3	Organisational effectiveness and efficiency	Non-compliance with applicable legislation, regulations and standards (PFMA, Geoscience Act, PPPFA, BBBEE, LRA, ISO, etc.)
		Inefficient management of geoscience data
		Inability to respond to business threats
4	An empowered, transformed, motivated and capacitated workforce	Organisational sustainability
5	Financial sustainability	Insufficient funds to deliver on mandate