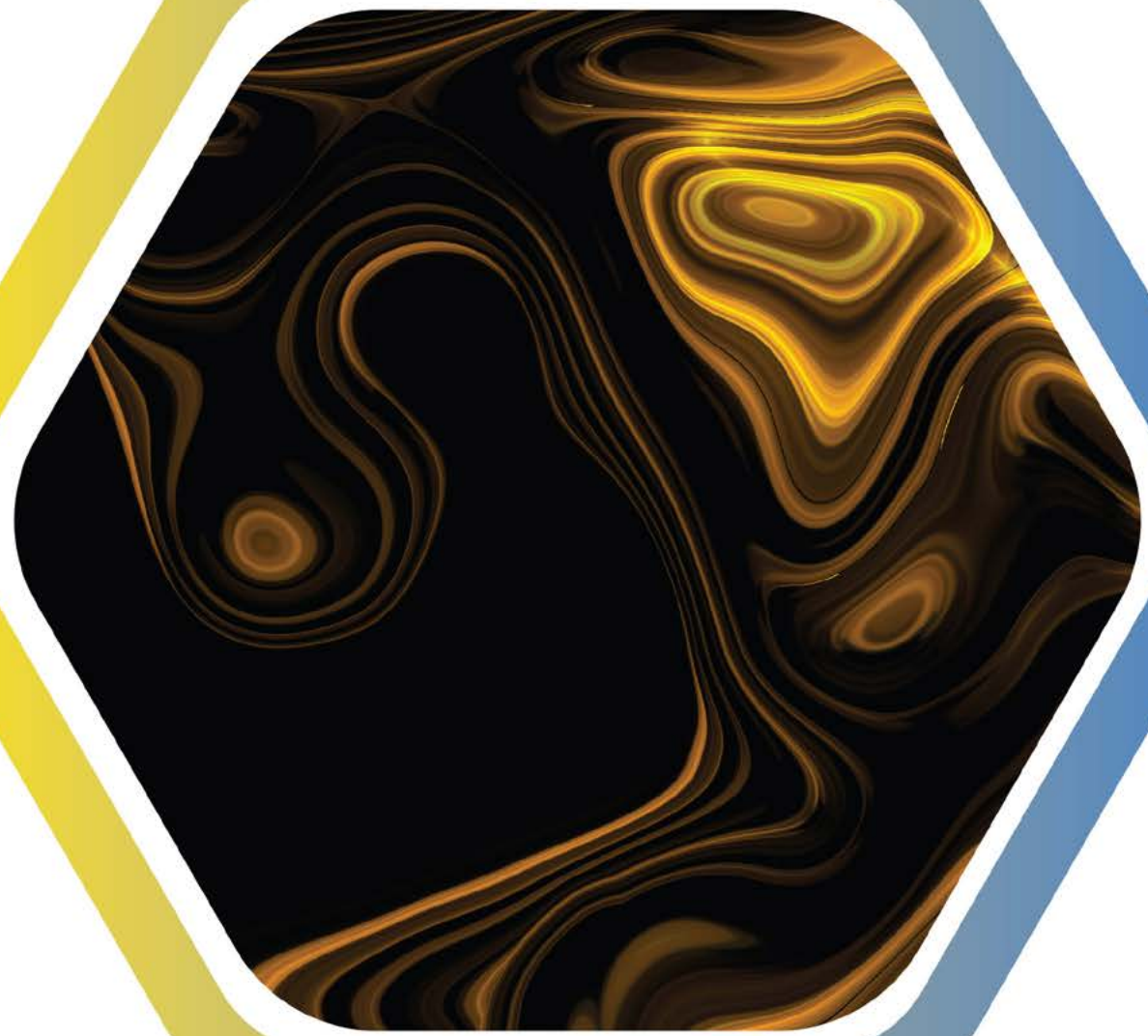
Botswana Geoscience Institute

Excellence in Geoscience



ANNUAL REPORT

2020

Botswana Geoscience Institute
Excellence in Geoscience

ABOUT THIS REPORT

COMPILATION AND PRODUCTION OF THIS ANNUAL REPORT IS IN FULFILMENT OF SECTION 31 OF BOTSWANA GEOSCIENCE INSTITUTE (BGI) ACT OF 2014.

This Report provides comprehensive Botswana Geoscience Institute business review with regards to its operations and activities during the 2019/20 financial year. It includes review of critical areas such as its financial performance, flagship projects and forward looking of the Institute according to its Strategic Plan and Mandate as espoused in the Botswana Geoscience Institute Act no 29 of 2014.

Contact Information

Enquiries, feedback, comments and questions on the content of this report can be directed to the address below.

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ACRONYMS

AFTAC	Air Force Technical Applications Center
BGI	**Botswana Geoscience Institute**
BGI ERC	Botswana Geoscience Institute Research and Editorial Committee
BITRI	**Botswana Institute of Technology Research and Innovation**
BIUST	Botswana International University of Science and Technology
BOPEU	**Botswana Public Employees Union**
BSN	Botswana Seismological Network
DGS	**Department of Geological Survey**
DoM	Department of Mines
IATA	**International Air Transport Association**
ISO	International Organization for Standardization
IRIS	**Incorporated Research Institutions for Seismology**
JOGMEC	Japan Oil, Gas and Metals National Corporation
LIMS	**Laboratory Information Management System**
MTC	Management Tender Committee
NDP	**National Development Plan**
NGIC	National Geoscience Information Centre
NIGIS	**National Integrated Geoscience Information System**
ODR	Okavango Delta Region
OHMS	**Open House Management Solutions**
PGMs	Platinum Group Metals
QDS	**Quarter Degree Sheets**
REE	Rare Earth Element
SEG	**Society of Exploration Geophysics**
SPA	Selebi-Phikwe Area
TSPs	**Tirelo Sechaba Participants**
UB	University of Botswana

BOTSWANA GEOSCIENCE INSTITUTE
TRADE MARK

Botswana
Geoscience
Institute
Excellence in Geoscience

This is the fourth (4th) Botswana Geoscience Institute Annual Report, and the second one published with the Institutes' Corporate Identity. In the previous report (2019), this Identity was not explained due to the delayed processes of implementation. We however, take pride in explaining the conceptualisation of this trade mark as follows:

BGI Mantra - Excellence in Geoscience

This is our purpose. It expresses our highest intent to meet all expected levels of distinction in everything we do. It drives performance as we undertake geoscience research to meet expectations of both our local and international customers and partners. It compels us in our everyday work to produce results that position the Institute at the highest level of recognition and repute.

The BGI Logo

The BGI logo represents the core Mandate of the Institute. This Logo Mark is a combination of various elements resembling the process undertaken to deliver BGI Mandate. It is a reflection of a classical ability of incorporating key elements of geoscience research. Such elements have been combined to develop an imagery that resonates with Geoscience research industry.

BELOW ARE THE LOGO MARK ELEMENTS

The Compass

We are Botswana Land Explorers - In order to facilitate the speedy discovery of minerals and water, render advisory services to its stakeholders to offer comprehensive data and information, BGI goes beyond expectations in all directions to explore the possibilities within our land. For over a hundred years the geological compass has been one of the geologist's standard field equipment for measuring orientation of geological structures and general navigation.

The Magnifying Glass

We are Geological Research Experts in Botswana - BGIs uses the latest technology to undertake geological, mineral and environmental geology assessment. The magnifying glass is a historical pocket tool used by geoscientists to examine rocks, sediments, soil and other materials. It symbolizes the expertise that the Institute holds to serve better.

The Drill Bit

Our Cutting-edge Technology and tools - BGI is a program based institute with dedicated Information Delivery and Science Delivery departments that work cohesively to service the Geoscience community better. A drill bit demonstrates at the simplest level, the technology used by BGI to extract rock samples for further complex analysis.

The Zebra

We take pride in our contribution to the economy - Our abundant minerals and wildlife have taken our country from 6km of tarred road in the 1960s to thousands of kilometres of highways today. The Zebra represents nature and wildlife and how BGI carries out its mandate with respect to and preservation of the environment.

Colour Inspiration

Brown is the principal earthy colour and is presented in different tones and resembles BGI working spectrum. The earth tone colour schemes come from natural elements of BGI working space such as baseline exploration and preservation of natural resources.

Blue, just like the serene Okavango Delta, inspires a sense of calmness and represents water—specifically in its form of rain as it is a precious resource in Botswana, which our fortunes as a country were built on.

Contour Lines

Groundwater resources and hydrogeology are key elements in the operations of BGI. Contour lines are generally used in geology to connect points of equal data. In the case of topographic maps, they represent points of equal elevation or altitude.

BGi
www.bgi.org.bw

Our Secondary Logo

This is our alternative logo. The focus is on the iconic "G" connecting to the "I". Looking closely one will observe a blade-like shape acting as a connector between the "G" and the "I". It denotes cutting edge technology that the institute will harness and use in its day to day work.

Botswana
Geoscience
Institute
Excellence in Geoscience

CORPORATE
OVERVIEW

CORPORATE OVERVIEW

OUR VISION AND MISSION

Vision Statement
To be a renowned Geoscience Centre

Mission Statement
We Create Economic Value through Advancing, Promoting and Disseminating Geoscientific Knowledge for the Benefit of Botswana and our Global Partners

CORPORATE VALUES

	We are **reliable** custodians of Geoscience information
	We promote market-oriented and **innovative** products and services
	We espouse **professionalism**
	We create a conducive environment that promotes absolute **integrity**

STRATEGIC LEVERAGE AREAS

Technology Focus Area:
A focus on technology compels the Institute to do more with less, improve service delivery, improve efficiencies and to execute its mandate fully as a modern and transitioning geoscience organisation.

Human Capacity Focus Area:
A focus on people allows us not only to recruit, develop and retain talent, but more importantly allows us to build an organisational structure aligned to a modern geoscience organisation.

Research Focus Area:
Focussing on research allows us to bring new energy, direction and excellence to our core mandate and not just meet but exceed the needs of our customers and of our shareholder.

CORPORATE OVERVIEW (Continued)

OUR CONTEXT

BGI has been established to innovatively apply science and technology to understand the earth for the greater benefit of Botswana and its citizens and broaden the nation's economic base along the mineral sector. The Institute is mandated to undertake research in the field of geosciences, provide specialised geoscientific services and advice in all matters of geoscience and geohazards. The Institute is also responsible for promoting the search for, and exploration of any mineral in Botswana and it is a custodian of all geoscience information.

The Institute Mandate, is detailed in the Botswana Geoscience Institute Act, 2014 and is operationalised through a five (5) Year (2018 - 2023) Strategic Plan adopted in 2018 and revised in March 2020. The BGI mandate is entirely linked to the country's national development goals and strategic imperatives. The establishment of BGI has presented Botswana with a unique opportunity to set up a geoscience organisation that can meet the needs of its stakeholders and customers. BGI therefore, is projected to become a trusted adviser in all matters of geoscience in Botswana. This Institute is expected to achieve this by applying diverse professional expertise, historical and tested knowledge, nationwide earth observation infrastructure and strong partnerships and collaborations globally.

In line with Botswana Government's policy and intent to lure investors to Botswana and thereby increase foreign direct investment, BGI is expected to open avenues for collaboration in research and mineral discovery and the overall sustainable development of Botswana's mineral sector and related activities such as the monitoring of geohazards.

BGI's context and the role it plays in the national economy, can be traced from the Bechuanaland Protectorate era throughout the period of the Department of Geological Survey. After the transformation of the Department of Geological Survey, BGI started operations in June 2017 and currently has 127 staff members.

The core mission of Botswana Geoscience Institute, just like those of other geoscience organisations in other countries, is to support the socio-economic development and quality of life of its people. This role primarily aids mineral exploration and it is a long term and important objective of many resource rich nations such as Botswana. This role has been tested and remains the same. All what has been refined is the efficiencies driven by the advent of technology and endorsements of best practices.

In understanding the role played by BGI's forebear, the Department of Geological Survey, and that which BGI will continue to play, it is important to consider some of the key developmental changes that Botswana has undergone. In particular, phenomenal urbanisation in a short period of time. It is in this context that all will appreciate BGI's relevance to the socio-economic development of Botswana.

Many countries have started this practice at different levels as we have in Botswana. We firstly concerned ourselves mainly with the search for groundwater, then gradually moved into identifying the locations of mineral resources needed for the growth of our country.

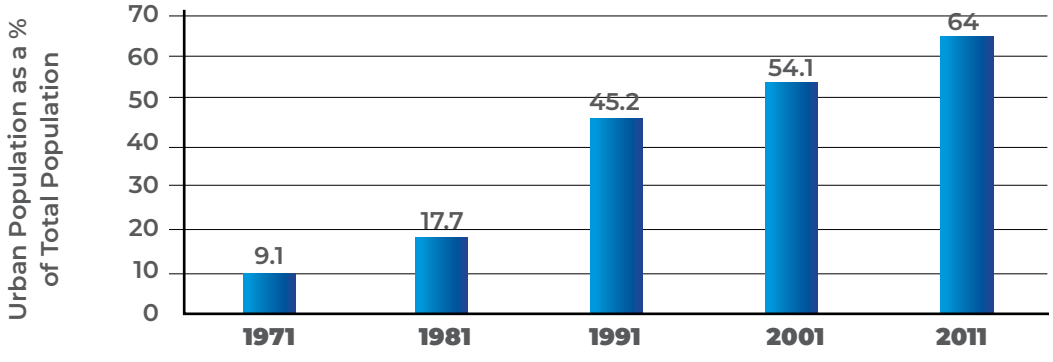


Figure 1: *Growth of Urban Population in Botswana (Source - Statistics Botswana 2014)*

CORPORATE OVERVIEW (Continued)

In 1971, less than 10% of the population resided in urban areas. As the country has experienced fundamental economic growth, urban locations have both increased in number and size, and together with rural to urban migration. This has led to a phenomenal rise in the urban population. By 2001, more than 50% of Batswana were urban residents and this increased further to 64% by 2011. Urbanisation reflects increasing economic activity.

This significant growth and change in the urban population demographics, indicates an increase in requirements of resources including minerals, land, water and environmental wellbeing. Resources such as construction materials, safe and sustainable land for residential, industrial and waste disposal and the implementation of an increasingly complex infrastructure such as power and road networks depend on the baseline work done by BGI.

BGI, plays a vital role in providing geoscience information and promoting mineral exploration and mining activity. The growth in the level of exploration activity is evidenced by the expansion of the prospecting licence administration unit from one person in the 1980's to the current fully fledged unit. Resource rich countries such as Botswana generate significant revenues from the sale of minerals. It is a known fact that mining dominates Botswana's economic activities though it has experienced fluctuations. Since the discovery of diamonds, minerals have continued to contribute significantly to GDP and export earnings, though this has been decreasing over the years.

In Botswana a preferred destination for mineral exploration, the Institute is undertaking projects aimed at de-risking mineral exploration by ensuring availability and accessibility of geoscience information. This information will be available online to enable ease of access by prospective investors. These projects will also enable us to offer effective advisory services on mineral potential in the country.

BGI will also ensure safer communities and livelihoods by embarking on projects such as geotechnical investigations, seismicity monitoring, and assessment of geohazards on critical infrastructure. Communication and public education will remain central to our operations to in order create awareness of the breadth of expertise and services that BGI represents. BGI undertakes critical research of national interest in collaboration with stakeholders in Botswana and Internationally. Such research is formulated to include the mineral sector value-chain so as to contribute to the country's GDP. These stakeholders comprise but not limited to the following;

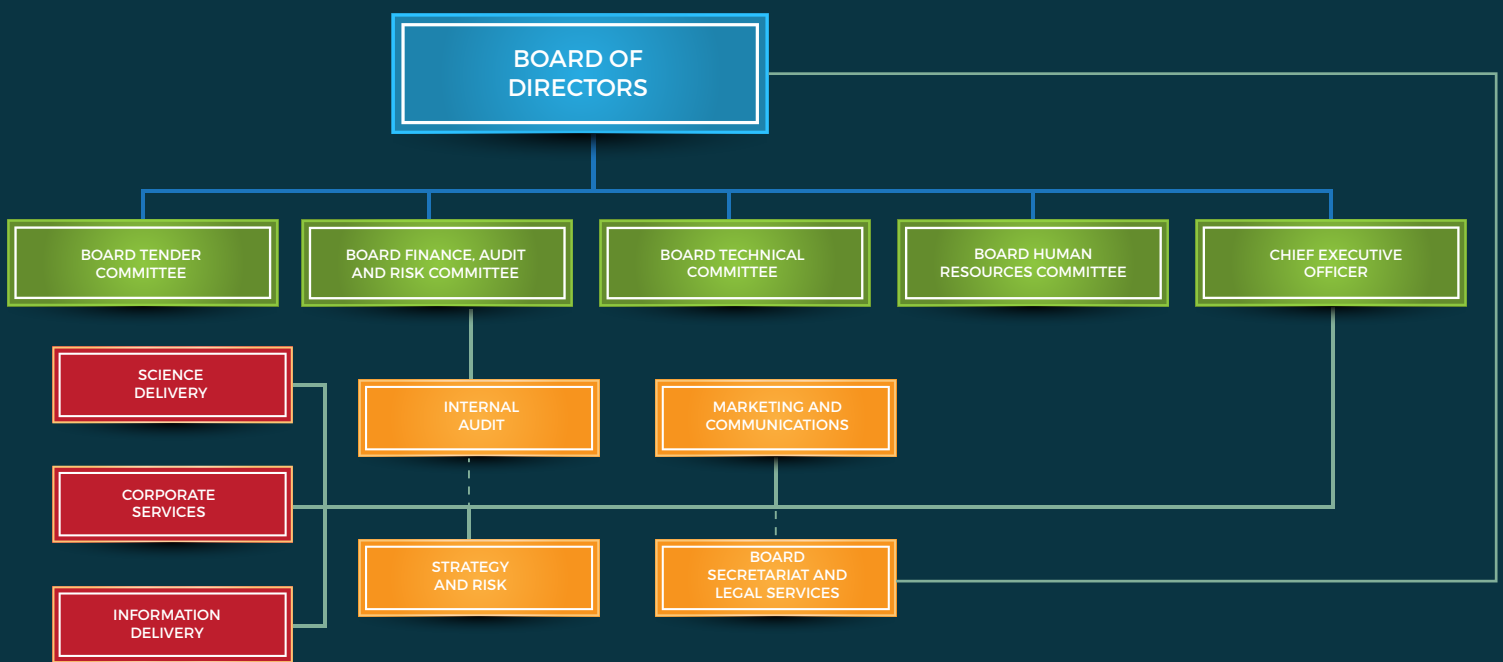
Our stakeholders

As we undertake our work, the key stakeholders that are of prime focus and these are;

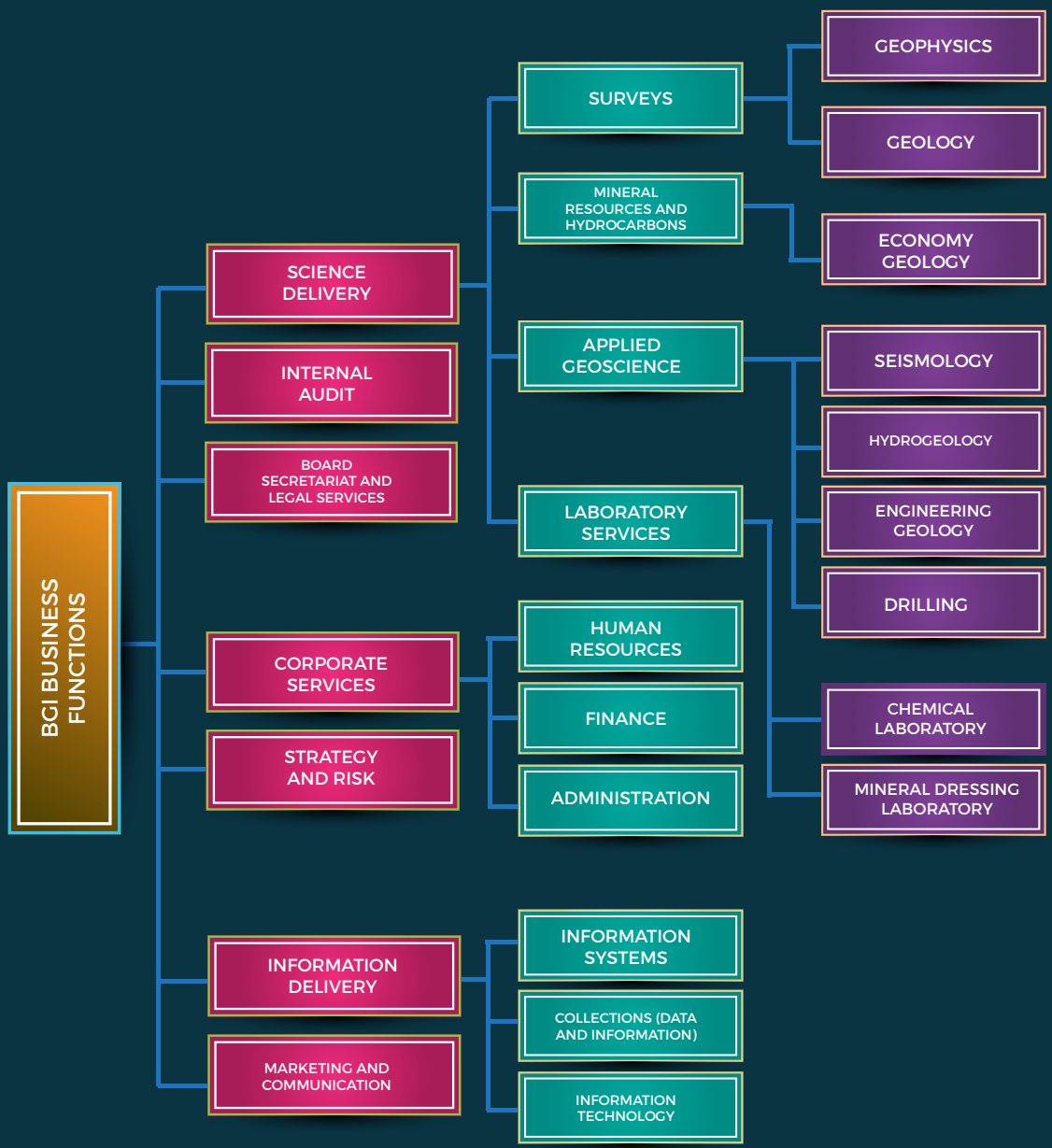
- **Government of Botswana**
- **Strategic partners (both local and international)**
- **Academia**
- **Our suppliers**
- **Our customers**
- **Our employees**
- **Communities**
- **Non-Governmental Organisations**

CORPORATE STRUCTURE

Botswana Geoscience Institute
Excellence in Geoscience

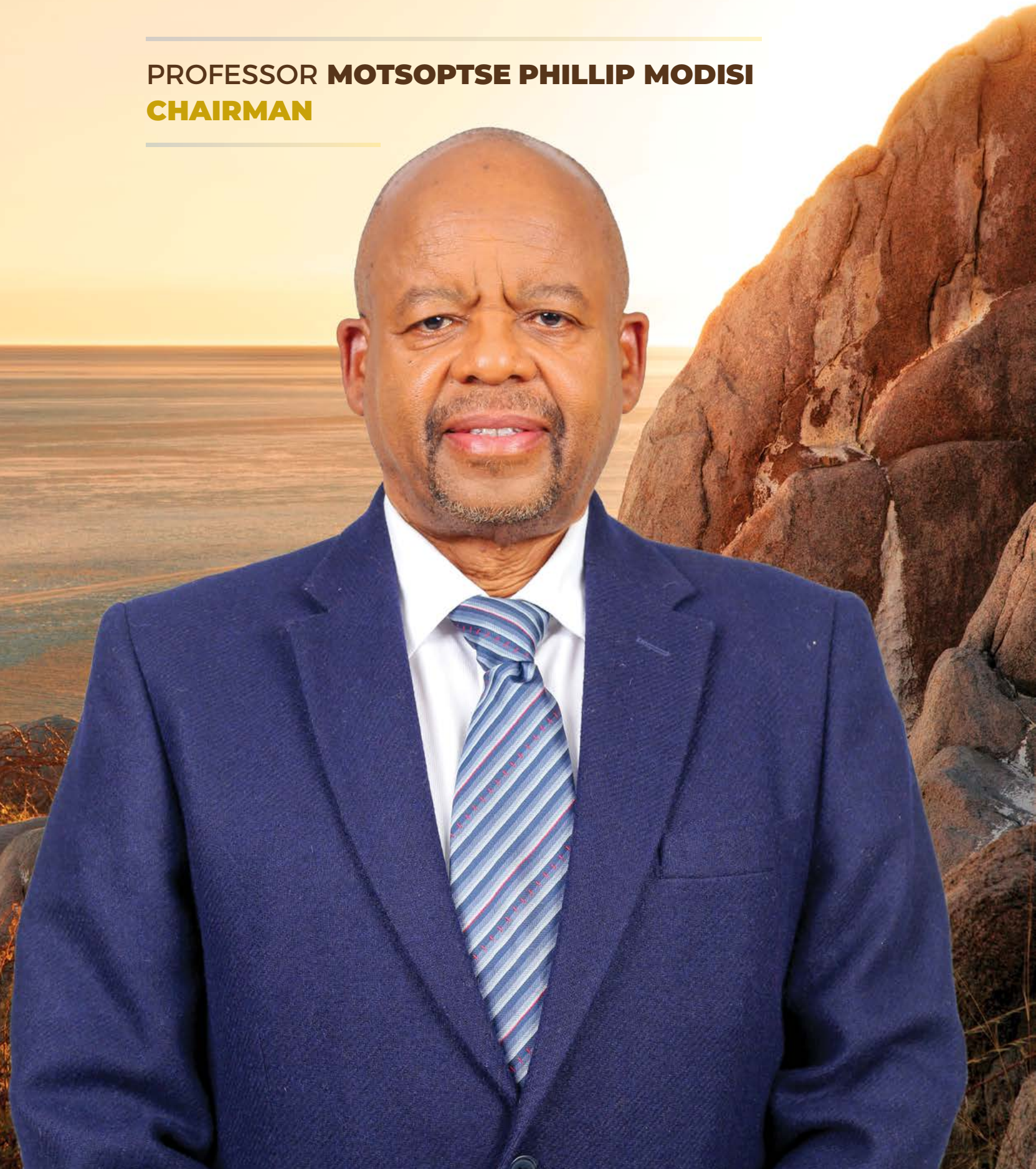


BGI BUSINESS FUNCTIONS



PROFESSOR **MOTSOPTSE PHILLIP MODISI**

CHAIRMAN



CHAIRMAN'S STATEMENT

INTRODUCTION

I was appointed the Chairman of Botswana Geoscience Institute in August 2019.

Before assumption of duty, the Board was led by Professor Elisha M. Shemang as Acting Board Chairperson since July 2018 following the departure of the former Chairman, Mr John Farr. I thank him for his leadership during this period. I feel privileged to present this Annual Report whose work was largely accomplished during his time as the Acting Chairperson of the Board. It is an obvious fact that he led an able team of Directors with diverse knowledge and experience in directing the affairs of an organisation of a magnitude of BGI.

OVERVIEW

During the course of the year, some Board Members' tenure of office came to an end. These are Ms O. Mokopakgosi, Ms T. Mmoshe, Dr. S. Odisitse and Mr. O. Gaboutloeloe. We thank the Minister for reappointing them to serve the Institute for another term for the purpose of continuity.

In line with Section 21 of the Botswana Geoscience Act, No. 29 of 2014, and as required by business, The Board resolved to co-opt three experts being Mr. Sipho Mbebe (Human Resources); Mr Othusitse Lebuletswe (Procurement) and Nomsa Basaakane (Finance).

I am pleased to present the Botswana Geoscience Institute Annual Report of 2019/20 compiled pursuant to Section 31 of the Botswana Geoscience Institute Act 2014. This is the fourth (4) BGI Annual Report since the establishment of the Institute. This report is published at the end of the second year of implementation of BGI maiden Corporate Strategy 2018-2023.

There were some delays in projects planning and resourcing at the beginning of strategy implementation. However, we were able to advance some critical projects such as the Compilation of Mineral Accounts, National Integrated Geoscience Information System (NIGIS) Nata/Gweta hydrogeology project, investigation of Rare Earth Elements and Battery metals in Botswana, Selebi Phikwe Seismicity monitoring and compilation industrial minerals.

It is a known fact that, as the world changes, it challenges all of us to make choices which are very difficult due to the perceived consequences. As an Institute, we rejected to stay the same as we wouldn't want to be left behind. We adapted and built on what we know and have done many years in this complex practice of geoscience research. Our response to the challenges we face included the revision of our Strategic Plan in early 2020.

As the Board, we understand that the smartest way to change and remain afloat is to build on our strengths.

CHAIRMAN'S STATEMENT (Continued)

We were fully aware that our strategy provides for resilience and growth. We therefore kept a closer eye contact on our strengths and weathered the storm. This challenge particularly refers to the inadequate budget to implement our projects spectrum because the Strategic Plan was developed in anticipation of funds availability.

Revision of the Strategic Plan

In revising our Strategic Plan, we paid attention to refocusing our portfolio of strategic projects and initiatives. We refined strategic objectives based on challenges facing the institute and learnings from the first year of implementation.

We adopted strategic leverage areas that focus on technology, research and building required human capacity. These leverage areas are what we will pay attention to as we implement our new Strategic Plan. We have also set a clear and compelling imperative, a goal that will serve as a unifying focal point of effort, also known as the BHAG (Big Hairy Audacious Goal). This ultimate goal compels us to ***"collate, package, enhance and avail 100% of our geoscience information online"*** for the remainder of the Strategic Plan implementation period.

Audited Financial Statements

In line with Section 29 and 30 of the Botswana Geoscience Institute Act, the Board has caused preparation and maintenance of books of accounts and records for BGI. The Board approved the attached Annual Financial Statements as a true and fair record of the state of affairs for the financial year 2019/2020 as audited by Mazars Partnership (the External Auditors).

In examining the Institute's Asset register, however, it was realised that the value of the Head Office property in Lobatse in the previous years, was recorded using the Insurance replacement cost rather than the market value as is best practice. This was also examined together with the other properties which were recorded at market value. Furthermore, valuation report errors were picked in relation to the out-station properties and these had to be corrected accordingly. The Institute has, as a result decided to restate its accounts to reflect an updated BGI portfolio.

Corporate Governance

BGI has developed systematic ways of working, coordinated through the office of the Board Secretary. This system ensures seamless operations of the Board and has immensely contributed to the improved turnaround times of addressing all matters requiring the intervention of the Board. BGI is committed to sound corporate governance by striving to adhere to acclaimed codes of governance and standard practices.

Stakeholder engagement

The Government of Botswana as a shareholder, was upraised, over this financial year, of BGI operations and work activities through the Office of The Chief Executive.

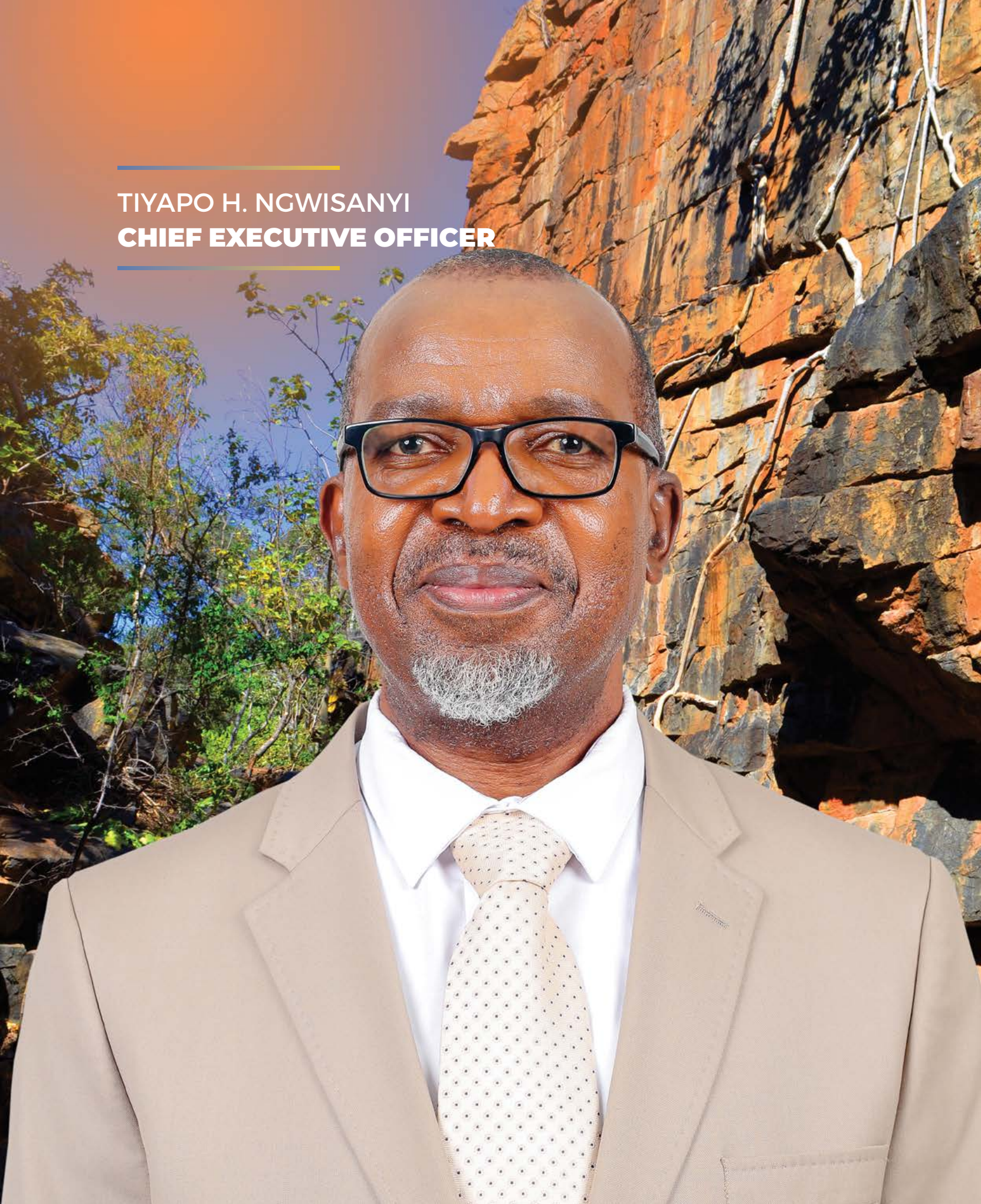
Since being appointed to the BGI Board, I have also had an opportunity to meet and network with key players in the mines and minerals industry. It was of interest to note that there was a call for institutions similar to BGI to initiate research into carbon emission mitigation in fossil fuel (coal) in electric power generation.

There is a realisation that the move towards renewable energy will go through a transition period, as by and large many countries are still reliant on coal as an energy source. This type of research could be multidisciplinary and provide an opportunity to collaborate with experts in other disciplines and a wider choice of institutions to work with.

Finally, on behalf of the Board, I welcome all new employees who joined the Institute to offer service. As the Board, we wish everyone in the BGI team well in the future and thank all our employees for their dedicated service and our partners in sharing resources to drive our diverse but related mandates. I also wish to thank the BGI shareholder, represented by the Ministry of Mineral Resources, Green Technology and Energy Security for their constant support and encouragement.

Thank You

Professor Motsoptse Phillip Modisi
Chairman



TIYAPO H. NGWISANYI

CHIEF EXECUTIVE OFFICER

CHIEF EXECUTIVE OFFICER'S STATEMENT

Since its establishment, Botswana Geoscience Institute has strived to meet its obligations and expectations according to the BGI Act 2014. Compiling and producing the Annual Report is one of those deliverables which must be completed following the end of the financial year. I am therefore delighted to present this Annual Report for the financial year that ended March 31 2020.

This Annual Report is a collaborative effort of all BGI business sections led by Marketing and Communications Department. It presents progress and overall performance against six (6) Strategic Plan Priority Areas.

The year 2019/20 marked the Institute second year of implementation of its maiden Strategic Plan 2018-2023. It was during this year that we saw the need to rethink our approach to implementing our strategy due to the fast emerging and varied challenges. We however demonstrated some resilience by delivering credible outcomes in some areas of our operations even in the face of economic headwinds.

Highlights of notable achievements were on collaborations and partnerships which have facilitated the Institute to achieve project implementation such as National Integrated Geoscience Information System (NIGIS), evaluation of Letlhakeng cement grade calcrete deposits and Palapye geotechnical mapping projects.

In his capacity as the representative of the shareholder, the Minister of Minerals Resources, Green Technology and Energy Security directed the Institute to fast track projects such as investigation of Rare Earth Elements and Battery Elements whose demands has increased the world over. The project highlights are included in the report. The Institute was also directed to restructure the organisation so that to pave way for adjustment of Core vs Support staff, and enable effective projects implementation. Such an activity has been planned for the next financial year due to its magnitude and significance.

Towards the end of the financial year, the major impediment was the outbreak of the Coronavirus (COVID-19) pandemic which imposed limitations on our work and all businesses across the globe. However, milestones discussed below on priority areas are a demonstration of our resilience even against challenges.

STRATEGIC PRIORITIES	PROFESSION/QUALIFICATION
PRIORITY 1: **Undertake high quality geoscience research for mineral exploration, promotion of sustainable development and geohazards management**	a) Out of the planned seventeen (17) publications, twelve (12) were produced by the end of the year, while the remaining five (5) were at review and editorial stage. b) The portfolio of projects were at 78% compared to a target of 89%. The major contribution to the variance were scope changes for the cement-grade limestone assessment and Geological Revision Mapping of South-East Botswana projects. c) Cement grade and calcrete in Letlhakeng have shown cement grade calcretes with an average thickness of eight (8) metres. This is underlain by good quality clay which can, upon conducting feasibility studies, also be successfully mined. d) Also of significance in the provision of high quality geoscience research is that during the year BGI managed to establish an Editorial Research Committee with 7 Members appointed. The Committee's role is to provide quality assurance on the technical reports produced by BGI.
PRIORITY 2: **Provide quality geoscience information**	a) BGI continues to improve the quality of its laboratory services by comparing with other local and regional labs through Proficiency Testing. BGI Proficiency Testing results for the year have averaged at 90%. b) Our Partnerships with BITRI, BIUST and UB have assisted in Quality Assurance/Quality Control performance laboratory analysis in the various projects we were undertaking. c) The online library system (LIBWIN) was made live in December 2019. Its URL is **www.library.bgi.org.bw**. Data is continually being uploaded

CHIEF EXECUTIVE OFFICER'S STATEMENT (Continued)

STRATEGIC PRIORITIES	PROFESSION/QUALIFICATION
PRIORITY 3: Promote awareness and public education	• The Institute presented at the 5th Annual Africa Mining Summit (Gaborone), and 2019 Botswana Resource Sector Conference (Gaborone). • Other significant stakeholder engagements for brand building purposes were; Lobatse Business Open Day organised by Lobatse Town Council; National Science and Technology Week held at Good Hope Senior Secondary school organised by Botswana International University of Science and Technology (BIUST) in conjunction with Department of Research, Science and Technology in the Ministry of Tertiary Education Research Science and Technology. • A major dimension in promoting awareness and public education was through the consultative meetings and talks at a number of Local authorities across the country. The focus was on introducing the Institute and its mandate as well as informing the local authorities about mineral potential in their areas. • The Institute, together with other organisations participated at the Annual Mining Indaba in South Africa to promote mineral investment in Botswana.
PRIORITY 4: Build a sustainable Botswana Geoscience Institute	• As a non-profit organisation, we focused on improving efficiencies and implementing cost recovery measures and ensure that available funding exceeds operational costs. • In response to the request to the shareholder for additional funding, an additional P12.5 Million was received for special projects relating to Geodata implementation system, Disaster and Business continuity program and Geohazard assessment and Seismic monitoring. • Income Generation/Supplementation of Shareholder funding, the Institute generated an income of 3.8% of the budget against a target of 3%. This is a 0.73% increase from 2018/19. • BGI benefited from its relationships and collaborations that leverage sharing of resources to undertake projects that are both of national interest and are within strategic imperatives of the partners. For instance, BGI signed a three year Agreement with JOGMEC for geological mapping projects. BITRI and the funding provided by partners to drive BGI initiatives and downstream value addition. • Coreshed services are now levied for cost recovery purposes. The level of cost recovery will be reviewed once the planned Business Model development is completed.
PRIORITY 5: Uphold operational and service excellence	• To improve operational excellence, all departments have Risk Registers that are continuously monitored. • In view of risk posed by COVID-19 outbreak a Business Impact Assessment was developed to identify critical business activities and associated resources requirements to ensure operational resilience and continuity of operations during and after the outbreak. • Procurement committees and other critical resources within the organisation have been capacitated through a Procurement process training and an internal Pitso.

CHIEF EXECUTIVE OFFICER'S STATEMENT (Continued)

STRATEGIC PRIORITIES	PROFESSION/QUALIFICATION
PRIORITY 6: **Promote talent management**	• Efforts to create a conducive environment to attract, retain and develop talent were continued building from what was achieved in the previous year. Even though there is evidence of a rising staff turnover, the Institute had an annual average 94.3% retention rate. The institute has deliberately skewed its employee training and development plan towards research but some of these could not be executed as supplier countries went into lockdown in the last quarter of the year due to COVID-19. • Through the partnership PanAfGeo project between the Organisation of African Geological Surveys (OAGS) and the Geological Surveys of Europe (EuroGeoSurveys), BGI hosted 3 training programs with participants from across Africa including BGI.

I am positive that with our focus on the future as envisioned in the revised Corporate Strategy we will continue to fulfil our customers' and stakeholders' expectations. We are confident that the BGI Corporate Strategy is robust enough to deliver the Institute's Mandate. As individuals and a collective, I have no doubt that we are cut for success as we understand our resolve to contribute to the national economy.

In closing, I send special thanks to the BGI Board, particularly to Professor E. Shemang who led the Board as the acting Chairperson for over a year. His guidance is highly appreciated. Special appreciation goes to the BGI Management and the entire Staff for their unwavering commitment and belief that together we can.

I thank you

Tiyapo H. Ngwisanyi
Chief Executive Officer


Botswana
Geoscience
Institute
Excellence in Geoscience
BOARD OF
DIRECTORS

BOARD OF DIRECTORS

BOARD OF DIRECTORS (Continued)

BOARD OF DIRECTORS PROFILES

Professor Motsoptse Phillip MODISI
Board Chairman

1

Professor Motsoptse Phillip Modisi is Botswana Geoscience Institute Chairman appointed on the 15th August 2019 for a period of 4 years. He holds a PhD in Geology from McMaster University, MSc in Geology from South Dakota School of Mines and Technology and BSc (Hons) in Geology from University of Ibadan.

Professor Modisi has worked for the Department of Geological Survey, now transformed into Botswana Geoscience Institute where he served under different roles starting from Assistant Geologist, and progressed through the ranks up to the role of Assistant Director.

His service also includes, being Member of Botswana College of Agriculture Governing Council, Chairperson of Botswana College of Agriculture Appointments and Promotion Committee and was an External Examiner for Botswana International University of Science and Technology from 2016 to 2017. He is a member of a number of organizations including the Botswana Academy of Science, Botswana Geoscientists Association and the Astronomical Society of Botswana.

He is an astute publisher as shown by his articles in Geology Journals, Chapters in Books and published Monographs.

Professor Elisha M. SHEMANG
Vice-Chairman

2

Professor Elisha M. Shemang holds PhD in Applied Geophysics obtained from Ahmadu Bello University, Nigeria. In 2012, he joined Botswana International University of Science and Technology – BIUST, as Professor and Founding Head, Department of Earth and Environmental Sciences. He is now Dean of Post Graduate School at BIUST. Professor Shemang previously worked at the University of Botswana as Professor in the Department of Geology.

He was appointed to the Board of Directors on July 16, 2016 and was subsequently appointed the Acting Chairman of the Board from July 2018 until the appointment of the substantive Chairman in August 2019.

Professor Shemang has over 30 years of experience in teaching and research, consultancy and human resources development in geology, geophysics, groundwater and environmental science. His experience in the University systems extends over several countries in Canada, Europe and Africa. He has served and is still serving as a member of high-level university administration and management committees. He is an author/co-author of 1 book and 5 book chapters and many refereed published scholarly/scientific journal articles in the subject of geoscience. He is a member of Botswana Joint Committee on Science and Technology, and member of the steering committee of the Botswana Mining Museum and Educational and Research Centre. He is a member of several professional bodies amongst which are, Society of Exploration Geophysics (SEG), American Geophysical Union, European Association of Geoscientists and Engineers, International Association of Hydrogeologists, and Botswana Geoscientists Association.

Ms. Ontlametse MOKOPAKGOSI
Board Member

3

Ms. Mokopakgosi has MA in Health Policy, Planning and Management from University of Leeds, UK and a Bachelor of Arts in Social Science, (Economic and Demography), from the University of Botswana.

In June 2016 she joined the Human Resource Council as Manager, Human Resource Development Planning. She previously worked as Deputy Permanent Secretary at the Ministry of Mineral Resources, Green Technology and Energy Security and the Ministry of Health responsible for Corporate Services. She served as a member of the National Vision Council, Public Service Training Advisory Committee, and SADC Human Resource Planning Sub-Committee.

Ms Mokopakgosi is a Co-Author of "National Health Accounts for Botswana: 2000-2012" and "Public-Private options for expanding access to human resources for HIV/AIDS in Botswana", October, 2007, publications.

BOARD OF DIRECTORS PROFILES (Continued)

Ms. Tebogo MMOSHE
Board Member

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Ms. Tebogo Mmoshe is a Chartered Accountant (ACCA) and a fellow member of the Botswana Institute of Chartered Accountants. She has an MBA obtained from University of Derby, UK, BSc (Hons) in Applied Accounting from Oxford Brookes University, UK. She is a Certified Risk Analyst by International Academy of Business and Financial Management (IABFM). She went through the Executive Development programme by University of Cape Town (UCT) Graduate Business School, South Africa and has Diploma in Telecoms from Commonwealth Telecommunications Organisation.

She is currently holding a position of Director Compliance and Monitoring at Botswana Communications Regulatory Authority, before that she was the Head of Finance. Previously, she worked at Botswana Unified Revenue Service as Acting General Manager and Botswana Meat Commission as Internal auditor.

Dr. Sebusi ODISITSE
Board Member

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Dr. Odisitse has a PhD in Chemistry obtained from University of Cape Town, South Africa. He joined Botswana International University of Science and Technology as Lecturer in the Department of Chemical and Forensic Sciences. He previously worked at Botswana Institute for Technology Research and Innovation as a Researcher, Nanomaterials, under Natural Resources and Materials division.

He has more than 21 years of experience in teaching, tutoring, lecturing and as a researcher specializing in chemistry. He is the author and co-author of more than 8 published international scholarly/ scientific journal articles and 5 technical papers in the subject of chemistry, drugs, and chemical biology. He is a member of Royal Society of Chemistry (UK), American Chemical Society (USA) and South African Chemical Institute (SA). He is a member of The Institute of Directors in South Africa (IoDSA). He serves in a number of Boards such as Botswana Institute for Technology Research and Innovation (BITRI) and Chemical Weapons (Prohibition) Board and in several national committees.

Dr. Budzanani TACHEBA
Board Member

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Dr. Tacheba currently works for Botswana Innovation Hub as Director – Innovation and Technology. He previously worked as a Research Fellow at the University of Botswana in different research projects. He also worked as Regional Coordinator for the Global Monitoring for Food Security Consortium, developing and administering geospatial products for SADC region; and interim Coordinator in the Botswana Innovation Hub Project Office, Ministry of Infrastructure Science and Technology, where he facilitated establishment of BIH as a Private Company.

He has more than 16 cumulative years' experience in academia (R&D), industry and government. He has served in the Medical Education Partnership Initiative Advisory Board. Dr. Tacheba holds a PhD in Environmental Science from University of Botswana, MSc in Remote Sensing from University of London (UCL) and an Executive Education Certificate in Science, Technology and Innovation Policy from Harvard University.

Ms. Bogadi T. MATHANGWANE
Board Member

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Ms. Mathangwane holds a Master's Degree in Water Resources from Iowa State University in the US and BSc Honors in Applied and Analytical Chemistry from the UK. She is currently working as Director for Botswana Government in the Ministry of Land Management, Water and Sanitation Services in the Department of Water and Sanitation.

Ms. Mathangwane has extensive knowledge in areas of integrated water resources management with emphasis in water conservation, water demand management, water quality and trans-boundary water resources management. She has also facilitated and directed mega water and sanitation projects in the country including those funded by different International cooperating Partners. She is a member and sits in the advisory committees of the SADC River Basin Commissions of which Botswana is party to. She was conferred with prestigious international award: "LEADERSHIP AWARD FOR OUTSTANDING CONTRIBUTION TO WATER EFFICIENCY' at the 2015 World Corporate

BOARD OF DIRECTORS PROFILES (Continued)

Social Responsibility (CSR) Congress held at Taj Lands End, Mumbai, India. This Award was in recognition of her notable contribution to Water use efficiency nationally, regionally and internationally.

Mr. Ogone Oscar Mokoko GABOUTLOELOE, Esq. Sr. PCH

Board Member

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Mr. Gaboutloeloe, Esq. Sr. PCH is an admitted attorney and a Notary Public of the High Courts of Botswana, with an LLB obtained from University of Botswana, an MSc in Strategic Management and a Masters of Commerce in Trade Law and Policy obtained from the University of Cape Town.

He is presently employed by Air Botswana, the national airline, as General Counsel and Director Legal Services. He has previously worked for Botswana Post for over half a decade in various roles including as Head of Government Relations, Regulatory Affairs, International Postal Affairs, and Corporate Strategy and External Relations. His professional experience has been across diverse sectors including NGO's, medical insurance providers, a private hospital, the Botswana Unified Revenue Services, and the Public Procurement and Asset Disposal Board.

Mr. Gaboutloeloe is a Member of the International Air Transport Association (IATA) Legal Advisory Council - a role he was appointed to by IATA Board of Governors at the Annual General meeting held in Seoul, Korea in June 2019.

He is a lifelong member of the Scout Movement, has served as Legal Advisor to Botswana Scouts Association, has sat on various Boards including Non-Governmental Organisations, a private sector property investment consultancy firm and he is a member of Labour Advisory Board.

Mr. Gaboutloeloe has contributed two chapters to "The Future is in the Post", a Postal Industry journal. He is a member of the Law Society of Botswana of good standing and a member of the FIFA club licensing committee, the First Instance Board (FIB) of the Botswana Football Association.

Mr. Tiyapo Hudson NGWISANYI

Chief Executive Officer

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Mr. Ngwisanyi is a geoscientist who began his career with the Botswana Department of Geological Survey in 1988 after obtaining a BSc degree in Geophysics from Memorial University of Newfoundland in Canada. In 1992 he graduated with an MSc in Exploration Geophysics from International Institute for Aerospace Survey and Earth Sciences (ITC), Delft, Netherlands. His earlier work as a scientist was primarily in geophysical surveys related to the search for minerals and groundwater.

At the Department of Geological Survey he rose through the ranks until appointed Director in 2010, a position he held until 2015 when he became the founding CEO of Botswana Geoscience Institute. He has published eight (8) technical reports and has co-authored in 5 published scientific journals. He has served as a member of the Water Apportionment Board and the National Disaster Management Technical Committee.

Mr Ngwisanyi has been instrumental in managing partnerships and collaborations and has sustained relations in the Mineral Resource Sector between Botswana and other countries. The relationship between Japan and Botswana in the mineral sector and promoting transfer of technology, academic exchanges and mutual understanding between the two countries.

Botswana Geoscience Institute

Excellence in Geoscience

CORPORATE GOVERNANCE

CORPORATE GOVERNANCE

Composition of BGI Board of Directors

Botswana Geoscience Institute is governed by a Board of Directors consisting of eight (8) Non-Executive Directors. During the period under review, four Board Members' tenure came to an end and were renewed for a further four year period. These are Mr Gaboutloeloe, Ms Mmoshe, Ms Mokopakgosi and Dr. Odisitse.

Minister of Mineral Resources, Green Technology and Energy Security, acting in accordance with Botswana Geoscience Institute Act Section 6 (5), appointed the BGI Board of Directors as indicated below table. These Members are appointed by reason of their expertise and experience in the areas relevant to the function and Mandate of the Institute.

NAME	PROFESSION/ QUALIFICATION	CURRENT OCCUPATION AND COMPANY	POSITION BOARD, (e.g. Board Chairperson, Audit/ HR Committee Chairperson or Ordinary Member)	DATE OF FIRST APPOINTMENT	EXPIRY DATE
Professor, Motsoptse Phillip Modisi	PhD in Structural Geology	Associate Professor of Geology at University of Botswana	**Chairman of the Board**	**15 August 2019** On first term of apportionment	**August 2023**
Professor, Elisha M. Shemang	PhD in Applied Geophysics	Dean of Post Graduate School, Professor of Geoscience - Botswana International University of Science and Technology	**Vice Chairman** **Chairman, Board Technical Committee** **Member of Board HR Committee**	**16 July 2015**	**June 2020**
Ms. Bogadi T. Mathangwane	MSc in Water Resources; BSc(Hons) in Applied and Analytical Chemistry, Water Resources	Director, Department of Water and Sanitation, Ministry of Land Management, Water and Sanitation Services.	**Member of Board Technical Committee,** **Member of Board Tender Committee**	**1 November 2017.** On first term of apportionment	**November 2022**
Dr. Sebusi Odisitse	PhD in Chemistry, MSc in Chemistry and BSc in chemistry and Physics	Lecturer – Botswana International University of Science and Technology, Department of Chemical and Forensic Sciences	**Member of Board Technical Committee** **Member of Board Finance, Audit & Risk Committee**	Re-appointed for second term in July 2020	**August 2023**
Ms. Tebogo Mmoshe	MBA, BSc (Hons) in Applied Accounting and ACCA	Director Compliance and Monitoring – Botswana Communications Regulatory Authority	**Chairperson, Board Finance, Audit and Risk Committee** **Member of the Technical Committee**	Re-appointed for second term in July 2020	**August 2023**
Ms. Ontlametse Mokopakgosi	MA in Health Policy, Planning and Management	Manager, Human Resource Development Planning – Human Resource Development Council	**Board Member** **HR Board Committee**	Re-appointed for second term in July 2020	**August 2023**
Mr. Ogone O. M. Gaboutloeloe	Bachelor of Laws (LLB), MSc in Strategic Management and Masters of Commerce	An admitted attorney and a Notary Public of the High Courts of Botswana, General Counsel and Director Legal Services Air Botswana	**Board Finance, Audit and Risk Committee** **Board Tender Committee**	Re-appointed for second term in August 2019	**August 2023**
Dr. Budzanani Tacheba	PhD in Environmental Science, MSc in Remote Sensing	Director, Innovation and Technology. Botswana Innovation Hub	**Member of the Technical Committee** **Member of Board Finance, Audit and Risk Committee**	**16 July 2015** On First Appointment	**June 2020**

Table 1: *Composition of BGI Board of Directors*

CORPORATE GOVERNANCE (Continued)

Role of the Board of Directors

The Board of Directors brings leadership, commitment and thoroughness to the business of the Institute as well as its governance pursuant to its statutory mandate, in ensuring proper and effective control of the Institute's business and carrying out periodic evaluation of the Institute's performance. The Chief Executive Officer is an Ex-Officio Member of the Board. He is bound by a contract of employment with agreed set targets which are appraised by the Board from time to time.

During the period under review, the Minister of Mineral Resources, Green Technology and Energy Security, according to the Botswana Geoscience Institute Act Section 6 (5), appointed the Institute's substantive Chairperson, Professor Motsoptse Phillip Modisi from 15 August 2019 for a period of 4 years. Professor Modisi takes over from Professor Elisha M. Shemang who has been acting chairperson following the resignation of Mr. John Farr in July 2018.

As per best practice, Board appointments are based on prescribed requisite skills and experience. As such, the appointed members of the Board have diverse skills and experience in various disciplines, which accordingly assists in ensuring BGI discharges its mandate within the stipulated provisions of the Botswana Geoscience Institute Act. Such disciplines include, Geological Engineering, Sciences, Law, Market Regulation, Finance and Accounting, Management and Business Administration.

The Institute is committed to the highest organisational standards and business integrity, ethical values and professionalism in all of its activities. As an essential part of this commitment, the Board of Directors supports high standard of corporate governance and the Board is accountable to the shareholder in this regard.

CORPORATE GOVERNANCE (Continued)

Responsibilities of the Board

BGI Board of Directors is responsible for the general control of the performance and management of the undertakings and affairs of the Institute. In particular, BGI Board of Directors' responsibilities are;

- Determining the general performance of the Institute.
- Determine corporate policy and provide strategic direction for giving effect to the objectives of the BGI Act.
- Ensures compliance with applicable Laws and Regulations,
- Approve significant capital expenditure projects, selection of service providers and major financial proposals.
- Advise the Minister to change, review or formulate geosciences related policies and strategies where necessary, and
- Do such other things as provided by the BGI Act or as may be necessary to the proper implementation of the BGI Act.

Board Committees

The Board is ultimately accountable for the Institute's activities and deals with all organisations business not specifically delegated to its Committees or Management, and monitors the use of resources to achieve the Mandate of the Institution. Though there are scheduled Board meetings, the Board is supported in executing its responsibilities by four (4) standing specialist committees and these are;

- **Technical Committee**
- **Finance, Audit and Risk Committee,**
- **Tender Committee and**
- **Human Resource Committee.**

Technical Committee

In General, this Committee of the Board provides oversight on technical matters of the Institute, project development and management, and systems and technology acquisition. The Committee may also consider project economic analysis, appraisal of technical risk factors, appropriate longer-range (as well as early stage) preparations for project development and implementation, as well as such other matters as may be requested by the Board.

Composition;

Professor. Elisha M. Shemang	**- Chairperson**
Dr. Sebusi Odisitse	**- Member**
Ms. Tebogo Mmoshe	**- Member**
Dr. Budzanani Tacheba	**- Member**

Tender Committee

The Committee ensures that all tenders within the authority of the Board are addressed in a transparent and procedural manner to enhance an effective control environment in the Institute's procurement process and that the Board encourages the necessary respect for control by management and employees of the Institute.

The Board Tender Committee has the authority to deliberate and decide tenders in excess of Pula 5 million. In order to expedite the business operations, authority for tenders of Pula 5 million and below has been delegated to a Management Tender Committee (MTC), a sub-committee consisting of Management staff and the outcomes of the tender evaluation and adjudications are reported to the Board Tender Committee on a periodical basis.

Composition;

Mr. Ogone O.M. Gaboutloeloe	**- Chairperson**
Dr. Budzanani Tacheba	**- Member**
Ms. Ontlametse Mokopakgosi	**- Member**
Ms. Bogadi T. Mathangwane	**- Member**
Mr. Othusitse Lebuletse	**- (Co-opted Member)**

Finance Audit and Risk Committee

The Finance, Audit and Risk Committee is responsible for ensuring that Executive management creates and maintains an effective control environment for BGI and that

CORPORATE GOVERNANCE (Continued)

management encourages the necessary respect for internal controls among all employees. The Committee reviews Financial Controls, Accounting Systems and reporting to the shareholder.

This responsibility of the committee is achieved through;

- Assessing the Policies and procedures of the Institute to ensure that, that the accounting systems and related controls are adequate and functioning effectively.
- Identifying major risks to which the Institute is exposed and verify that the related internal control systems are adequate and functioning effectively.
- Reviewing the financial statements of the Institute to provide assurance that those financial disclosures made by the Board and management portray the Institutes financial conditions, results of operation and long term commitments.
- Overseeing both the internal and external audit process, together with reviewing effectiveness of both auditors.
- Monitoring all legal and regulatory compliance.

The members of the Finance Audit and Risk Committee for the year under review were;

Ms. Tebogo Mmoshe	–	**Chairperson**
Dr. Sebusi Odisitse.	–	**Member**
Mr. Ogone O. M. Gaboutloeloe	–	**Member**
Ms. Ontlametse Mokopakgosi	–	**Member**
Ms. Nomsa Basaakane	–	**(Co-opted Member)**

Human Resource Committee

The Committee was set up to regulate both substantive and procedural administration of staff and staff welfare issues, which include recruitment processes, industrial relations matters, remuneration and other compensation as may be necessary.

In particular, the Committee undertakes the following;

- Deliberate and decide on policy issues relating to remuneration and benefits, salaries and other related matters.
- Determine, for Board approval, the remuneration policy for all BGI staff.
- Determine targets and objectives for any performance to related pay schemes.
- Recommend to the Board Executive Management appointments.

Members of the Human Resource Committee:

Ms. Ontlametse Mokopakgosi	-	**Chairperson**
Dr. Budzanani Tacheba	-	**Member**
Ms. Bogadi Mathangwane	-	**Member**
Mr. Ogone O. M. Gaboutloeloe	-	**Member**
Mr. Sipho Mbebe	-	**(Co-opted Member)**

Executive Committee

The BGI Board, subject to predefined limits, has delegated its executive authority to the Executive Management Committee, (EXCO), headed by the Chief Executive Officer (CEO). The EXCO is responsible for proposing strategic alternatives to the Board and is accountable for the implementation of strategies, policies, and other decisions approved by the Board. It manages the business and affairs of the Institute, implements strategic decisions, prioritises the allocation of capital, technical and human resources and establishes best management practices.

Composition;

• Chief Executive Officer	-	**Mr. Tiyapo H. Ngwisanyi**
• Director, Information Delivery	-	**Ms. Lesego P. Peter**
• Director, Science Delivery	-	**Mr. Puso Akanyang**
• Director, Corporate Services	-	**Mr. Kevin K. Masupe**
• Manager, Strategy and Risk (A)	-	**Mr. Samuel Serero**
• Manager, Legal Services/ Board Secretary	-	**Ms. Obolokile C. Sekga**
• Manager, Marketing and Communications	-	**Mr. James B. Molosankwe**
• Manager, Internal Audit	-	**Ms. Onkemetse Samuel**

CORPORATE GOVERNANCE (Continued)

Adhoc Committees

Adhoc Committees are appointed by the Board, as and when necessary, to consider specific issues before the submission of the Board for a final decision. The Board, as it finds necessary, determines the terms of reference of such committees.

Compliance with the Laws and legal Requirements

The Board is conscious of its responsibility and is unequivocally committed to upholding ethical behaviour in conducting its business. The Board, through the Legal Services and Board Secretariat and the Chief Executive Office, strives to ensure that the business of the Institute complies with the laws and regulations of Botswana.
BGI is committed to conducting its activities in compliance with the law and ethical standards. Apart from this being the right thing to do, BGI is also extremely aware of the risks of failing to do so.

Ethics

Members of the Board and employees are required to conduct themselves according to the highest ethical standards. The Institute strives at all times to make relevant disclosures of information to stakeholders in a transparent manner including disclosures during Board meetings.

Relations with the Shareholder

The Board has a responsibility for ensuring that a satisfactory dialogue with the shareholder takes place. This dialogue is facilitated through the office of the Chief Executive Officer and Board Secretary. The Chairman of the Board has sufficient access to the Minister responsible for the Institute to discuss any matters of mutual concern.

Internal Audit function

The Internal Audit Business Unit was established in November 2018. This function has conducted a number of audits and reports duly submitted to the Board of Directors. As the Internal Audit is an independent business unit, it is deemed as objective and therefore provides assurance services designed to add value, with an objective to improve the Institute's operations by bringing a systematic, disciplined approach to evaluate and improve the effectiveness and efficiency of risk management, internal controls, and governance processes.

CORPORATE GOVERNANCE (Continued)

Record of Meeting attendance of the Board and Committees

The Board convened five (5) Ordinary Board Meetings during the financial year 2019/20 to consider various strategic and policy issues and other issues having material effect on the Institute's affairs. During these meetings, the Board Members have declared their interests and are free from any business or other relationships which could reasonably be said to interfere with the exercise of their judgement.

During the year under review, Members of the Board and as part of the respective committees attended the following meetings.

NAME	POSITION	ORDINARY BOARD	SPECIAL BOARD CONSULTATIVE MEETINGS	FINANCE, AUDIT & RISK COMMITTEE	HUMAN RESOURCES COMMITTEE	TENDER COMMITTEE	TECHNICAL COMMITTEE
Prof. Motsoptse Phillip Modisi	Chairman	4/5	4/4	N/A	N/A	N/A	N/A
Prof. Elisha M. Shemang	Vice Chairman	4/5	1/1	N/A	5/6	N/A	5/5
Ms. Bogadi T. Mathangwane	Member	3/5	1/1	N/A	5/6	4/6	3/5
Ms. Tebogo Mmoshe	Member	2/5	1/1	7/9	N/A	N/A	2/5
Dr. Budzanani Tacheba	Member	3/5	1/1	6/9	N/A	5/6	3/5
Ms. Ontlametse Mokopakgosi	Member	4/5	0/1	5/9	6/6	4/6	N/A
Dr. Sebusi Odisitse	Member	5/5	1/1	8/9	N/A	N/A	5/5
Mr. Ogone O. M. Gaboutloeloe	Member	4/5	1/1	8/9	4/6	6/6	N/A
Mr. Tiyapo H. Ngwisanyi	CEO (Ex-Officio Member)	5/5	4/4	8/9	6/6	4/6	5/5

Table 2: *Record of Meeting attendance of the Board and Committees*

CORPORATE GOVERNANCE (Continued)

Remuneration of Members of the Board

Except for the Chief Executive Officer, members of the Board are not entitled to monthly or annual salaries. Instead, they are paid sitting allowance at Board and Committee meetings. Below is the detail of Board sitting allowance payments for the year under review.

NAME	POSITION	AMOUNT (BWP)
Professor Motsoptse P. Modisi	Chairperson	**12 600**
Professor Elisha M. Shemang	Vice Chairperson	**24 460**
Dr. Sebusi Odisitse	Member	**25 200**
Dr. Budzanani Tacheba	Member	**27 720**
Mr. Ogone O. M. Gaboutloeloe	Vice Chairperson (Acting)	**18 900**
Ms. Tebogo Mmoshe	Member	**18 900**
Ms. Ontlametse Mokopakgosi	Member	**22 680**
Ms. Bogadi Mathangwane	Member	**26 460**
Mr. Tiyapo H. Ngwisanyi	CEO (Ex-Officio Member)	**N/A**

Table 3: *Remuneration of Members of the Board*

External auditors

In terms of Section 30 of the BGI Act, the books of Accounts of the Institute in respect to each financial year, shall, within three months of the end of the financial year, be audited by an auditor appointed by the Board.

Mazars Partnership was on March 2020 appointed as Auditors for BGI for a period of three (3) years commencing 2019/ 2020. They have since prepared and audited the BGI financial statements for the year 2019/20.

Approval of Financial Statements

The Institute's Audited Financial Statements were reviewed by the Finance, Audit and Risk Committee, approved by the Board of Directors and were signed accordingly by the Chairman and the Chief Executive Officer.

Relationship with communities

The Board is ever conscious of the principles of good citizenship and the operational dimensions of the Institute's social programmes as designed from time to time by the BGI Health and Wellness Committee. The Institute ensures that resources permitting the needs of the society, are linked to the Institute's business and social objectives.

Botswana
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BUSINESS REVIEW

BUSINESS REVIEW

INTRODUCTION

The fundamental strength of Botswana Geoscience Institute is its ability to implement projects in collaboration with its partners. The execution of its varied project portfolio is aligned with Botswana Government's developmental priorities as stipulated in guiding documents and policies such as the National Vision 2036 and National Development Plans (NDPs).

Understanding the dynamic environment in which we operate, compels the Institute to collaborate with other research organisations such as Botswana Institute for Technology Research and Innovation (BITRI) and academic bodies such as University of Botswana (UB) and Botswana International University of Science and Technology (BIUST).

BGI advanced a number of projects some of which were commenced during the financial year 2018/2019. This report therefore details the status of these projects and shares fundamental results some of which are at the elementary stages.

REVISION OF STRATEGY PLAN

Botswana Geoscience Institute developed its first Corporate Strategy in the financial year 2017/18 and its implementation commenced in earnest during the financial year 2018/19.

The Corporate Strategy aims to address crucial socio-economic demands and challenges in Botswana. It seeks to address a growing need to find minerals and groundwater resources in Botswana and encourage investment in the mineral and energy sector. Such demands also include societal needs which require geoscience-based research. The implementation of this strategy had a fair share of challenges which ranged from ambitious aspirations which did not match the financial and human capital to natural impediments.

The Institute also decided to conduct a review of Strategic Plan in line with best practice where Corporate Strategies are periodically revised for purposes of continuous improvement. Such revisions are necessary to ensure alignment with other national development guidelines such as the National Development Plans.

The review also afforded the Board of Directors and Management an opportunity to establish the appropriate and achievable business expectations, reallocate resources and improve the Institute's competitive position, as well as aim to increase shareholder value. Below are some of the critical outcomes of this review;

- A shift from the six (6) priority focus areas to three (3) leverage areas of technology, human capital and research.
- A simplified plan with strategic objectives and initiatives all in line with the current operational environment.
- This strategic plan provides a guiding path that is flexible to cope with changing environments and it is innovative and agile.
- An understanding of implementation challenges and how to manage associated risks.

BGI EDITORIAL AND RESEARCH COMMITTEE

Achieving world-class quality publications strongly requires the direction of independent geoscience professionals. BGI Board of Directors therefore established an Editorial and Research Committee (BGI-ERC). The Committee is guided by reserach policies that give them the autonomy for quality control and assurance.

The Editorial and Research Committee (BGI-ERC) is a panel of eleven (11) local and international specialists, professional geoscientists, and academics. Eight (8) Members were already appointed as shown in the table below;

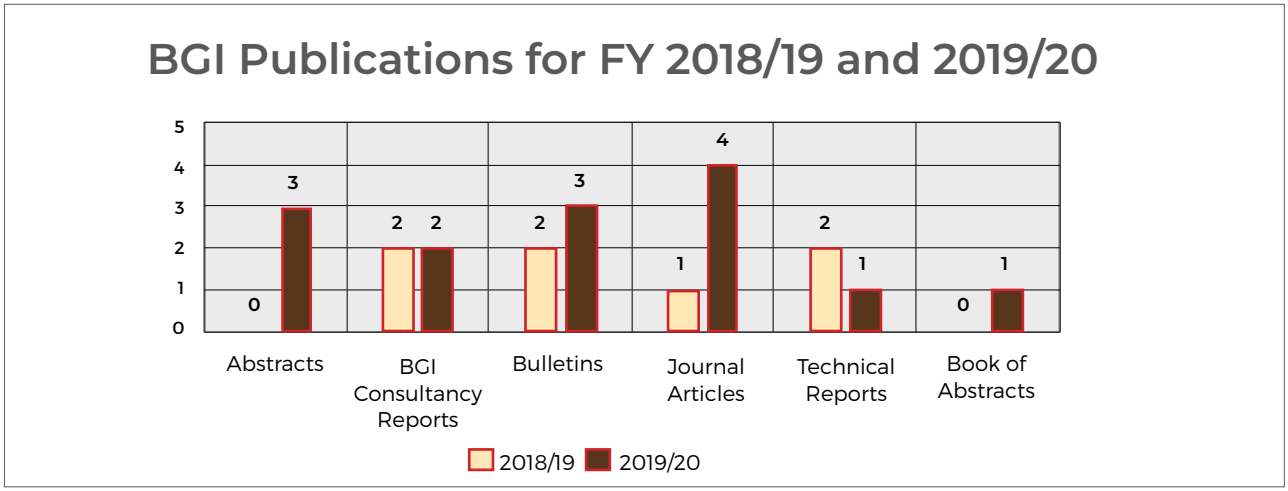
TITLE	NAME	SURNAME	EXPERTISE
Dr.	**Jerome Anabannye**	Yendow	Geotechnical Engineering
Dr.	**Thierry Bineli**	Betsi	Geochem & Mineral Exploration
Dr.	**James**	King	Seismology
Dr.	**Esau**	Masuku	Engineering
Dr.	**Gomotsang**	Tshoso	Geophysics
Mr.	**Koketso Gabriel**	Botepe	Mining Geology, Mineral Resources Management
Prof.	**Read Brown**	Mapeo	Regional Geology

Table 4: *BGI Editorial and Research Committee*

BUSINESS REVIEW (Continued)

GEOSCIENCE PUBLICATIONS AND BULLETINS

In line with the Government of Botswana's imperative of building a knowledge-based economy, the Institute has an obligation to routinely publish reports that promote exploration in the country and advise government policy. These reports are subjected to a rigorous process of quality assurance of BGI Editorial and Research Committee (BGI-ERC). The Institute has already produced twenty-one (21) publications, journal articles, bulletins and reports, abstracts, consultancy reports and technical notes) by end of Financial year 2019/20 since year 2018 as per tables below;



PARTNERSHIPS AND COLLABORATIONS

Partnerships and collaborations are important as they increase knowledge, expertise and resources available to deliver services and undertake projects of respective parties. Below are some of notable partnerships and progress.

Japan Oil, Gas and Metals National Corporation (JOGMEC)

The activities undertaken in the 2019/20 financial year were as follows:

(1) **Joint Cooperative Geological Survey:** The parties jointly reviewed research proposals on Ngamiland and Magondi Belt areas to determine expected benefits from the implementation of the respective proposal with regard to mineral potential, survey methods, costs and other factors. During the reporting period, JOGMEC provided Joint Cooperate Analysis training on PALSAR data analysis.

(2) **The annual JOGMEC remote sensing seminar:** This was successfully carried out with 13 SADC countries participating. The seminar was attended by 94 BGI scientists.

The seminar provides a platform where geoscientists from different countries can showcase their skills in remote sensing.

BUSINESS REVIEW (Continued)

(3) Training workshops: JOGMEC and BGI have been conducting training workshops on remote sensing data interpretation for SADC geological surveys over the years. The workshop focuses on remote sensing skills and application of remote sensing to environmental issues and illegal mining.

A total of 39 scientists participated and Botswana was represented by three geoscientists, two from BGI and one from the Department of Mines (DOM).

Botswana Institute for Technology Research and Innovation (BITRI)

BGI is implementing the NIGIS Project in conjuction with BITRI who are leading in the development of the system and provide hosting, support and maintenance services.

African Seismological Commission General Assembly

African Seismological Commission

BGI, is a member of the African Seismological Commission (AfSC). The Commission is a trans-African scientific organisation launched in 2014 by the International Association of Seismology and Physics of the Earth's Interior (IASPEI). AfSC, granted BGI to organise and host the 3rd African Seismological Commission (AfSC) General Assembly (GA) from the 28th June to 04th July 2020.

BGI formed a Local Organising Committee co-Chaired by Mr James B. Molosankwe, of BGI and Dr R.E Simon of University of Botswana. This General Assembly was affected by the COVID-19 pandemic and has been postponed to September 2021. The first GA was held in Luxor-Aswan, Egypt on 2-5 April 2016, while the second GA was held in Al-Hoceima, Morocco on 23-27 April 2018.

University of Botswana (UB)

BGI and UB signed a Memorandum of Understanding (MOU), that formalised their relationship to share resources to effectively deliver on the party's respective mandates. Areas identified for collaboration include joint research projects and the development of appropriate technologies for the improvement of the quality of life of Batswana. The two institutions agreed to build and strengthen capacity through staff and student exchange programmes, attachments and mentorship in order to enhance skills and knowledge.

The partnership with UB is logical since BGI as an Institute has committed to establish partnerships with organisations that shared similar goals. As for UB the collaboration will help them drive Vision 2036, whereby human capital development, research output products and services are vital in transforming Botswana's economy.

PICTUIRE: *University of Botswana Vice Chancellor Professor David Norris (L) and BGI CEO Mr Tiyapo H. Ngwisanyi (R).*

BUSINESS REVIEW (Continued)

FLAGSHIP PROJECTS

Investigation of Rare Earth Elements (Ree) and Battery Metals In Botswana

General

The demand for Rare Earth Elements (REE) and battery metals has increased due to world population increase and technology advances. REE are necessary components of most products, especially high-technology consumer products, such as cellular telephones, computers, electric and hybrid vehicles, flat-screen monitors and televisions. This growth in demand has resulted in an increased exploration for battery metals and REE.

Battery metals and REE deposits are usually associated with igneous rocks like mafic, granitic complexes and pegmatites. They occur naturally in a wide range of mineral types including halides, carbonates, oxides and phosphates. In Botswana very little exploration for REE and battery metals has been done despite the presence of potential rocks in the eastern part. Lusty et al. (2012) did a reconnaissance survey of granitic complexes in Botswana as shown in figure 1 and 2 and recommended a detailed investigation of REE. Some conclusions from the study are:

- A variation of concentration of REE with a possibility of enrichment.
- The Total Rare Earth Elements (TREE) values in Semarule Syenites are comparable or greater than those in some syenite intrusions associated with hydrothermal vein deposits containing economic levels of REE enrichment.

Exploration work within the Molopo Farms Complex confirmed the presence of carbonatites (Boreholes KW2/1, KS36/1 and KS12/1) around the Mabutsane area intersected carbonatites (Falconbridge Final report, PLs 32/78, 33/78, 7/78 18/78 and 25/79).

Analysis of the drill-hole sample by Icillion Pty Ltd, during exploration work on PL 123/2008, indicated anomalous values of REEs especially LREES and other sulphides. PL 123/2008 was issued for radioactive mineral exploration.

The objective of this project is to firstly follow-up the recommendation by Lusty et al. (2012) and assess the potential of other areas in Botswana. The project started in Semarule and will continue into other areas in the following years.

BUSINESS REVIEW (Continued)

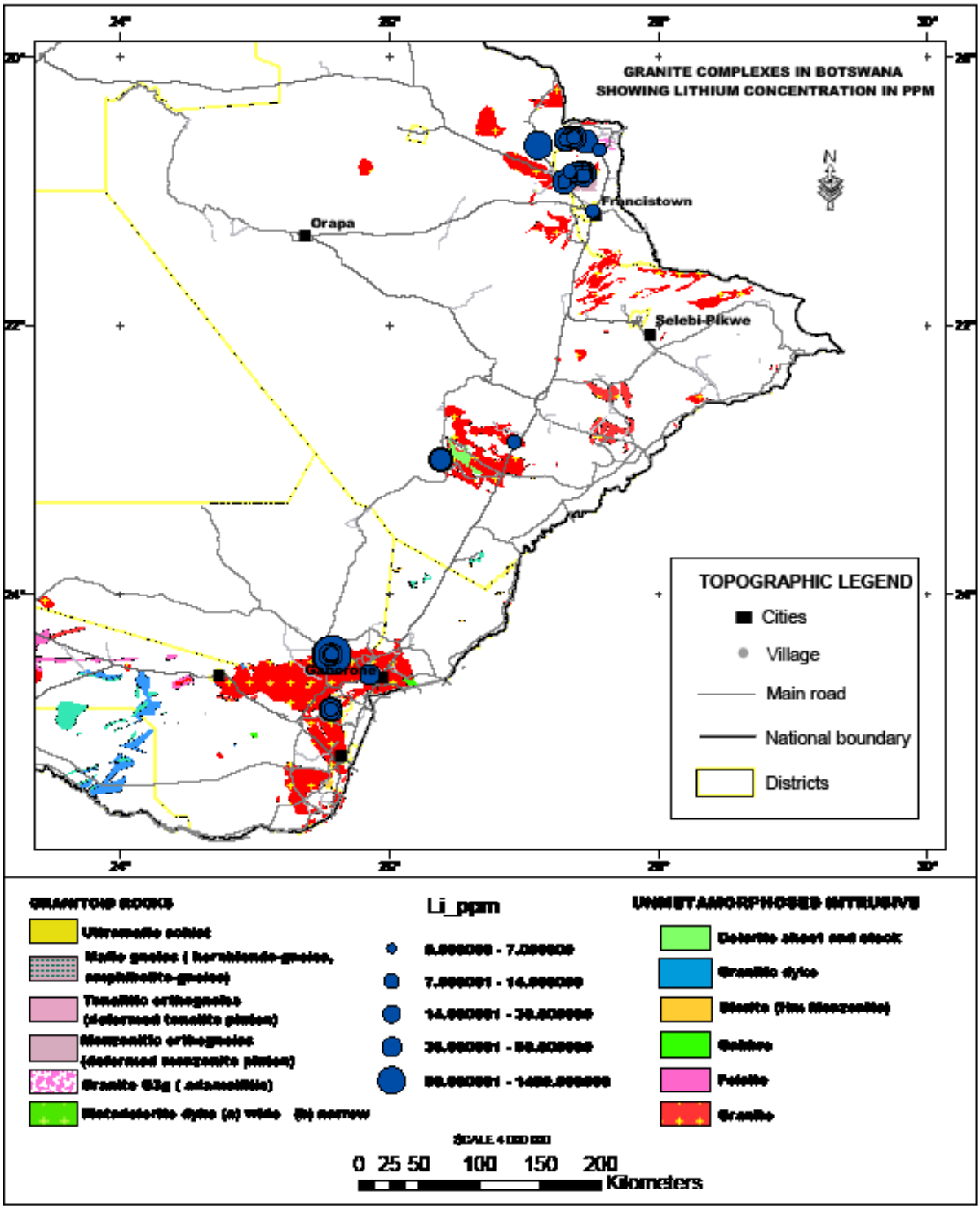


Figure 4: *Granite complex in Botswana showing Lithium concentration in PPM*

BUSINESS REVIEW (Continued)

Semarule Syenites

The Semarule syenites is about 3-5km in diameter and forms a crescent shaped series of well exposed low hills (Jones 1973) and intrudes the Gaborone granite. It is located 8km southeast of Molepolole. The outcrop is roughly pear shaped with its longer E-W axis about 5km in length.

Progress

In the last financial year the project focused on the detailed mapping and sampling of the Semarule area (Figure 5).

The basement unit in the area is the Gaborone granite complex which was later intruded by the Semarule igneous complex. Field mapping revealed that geology is complex as a result of multiple intrusions with varying magma composition.

The field relationships and lithological characteristics of syenites indicate three main magmatic events. These were later intruded by dolerites followed by mafic rich veins. King (1955) suggests that the Semarule Igneous Complex (SIC) was formed by alkali metasomatism and mobilization from Gaborone granite. However, Lusty et al. (2012) indicate that the first pulse corresponds to the medium-grained, equigranular syenite followed by the second phase of slower crystallizing magma, forming a very coarse-grained to pegmatitic syenite. The third pulse of magma emplacement involved the injection of medium-grained, equigranular syenite dykes.

Syenites dykes across the complex are compositionally varied, they are either potassic, sodic or hornblende rich. Minor mafic rich veins can be observed, on localized sections of the complex. Field mapping data suggests that the SIC probably developed from four pulses of magma emplacement instead of three as previously mentioned. The latter is further supported by Lusty et al. (2012) who indicate that dolerite emplacement post-dated the main period of syenitic magmatism, although field relationships suggest it may have been coeval with the late zoned veins.

The inner part of the intrusion is more complex consisting of massive porphyritic syenite, fine to medium-grained syenite, pegmatitic dyke like syenite, and compositionally contrasted zoned syenite dykes.

Figure 5: *Google Map showing Semarule hills location*

BUSINESS REVIEW (Continued)

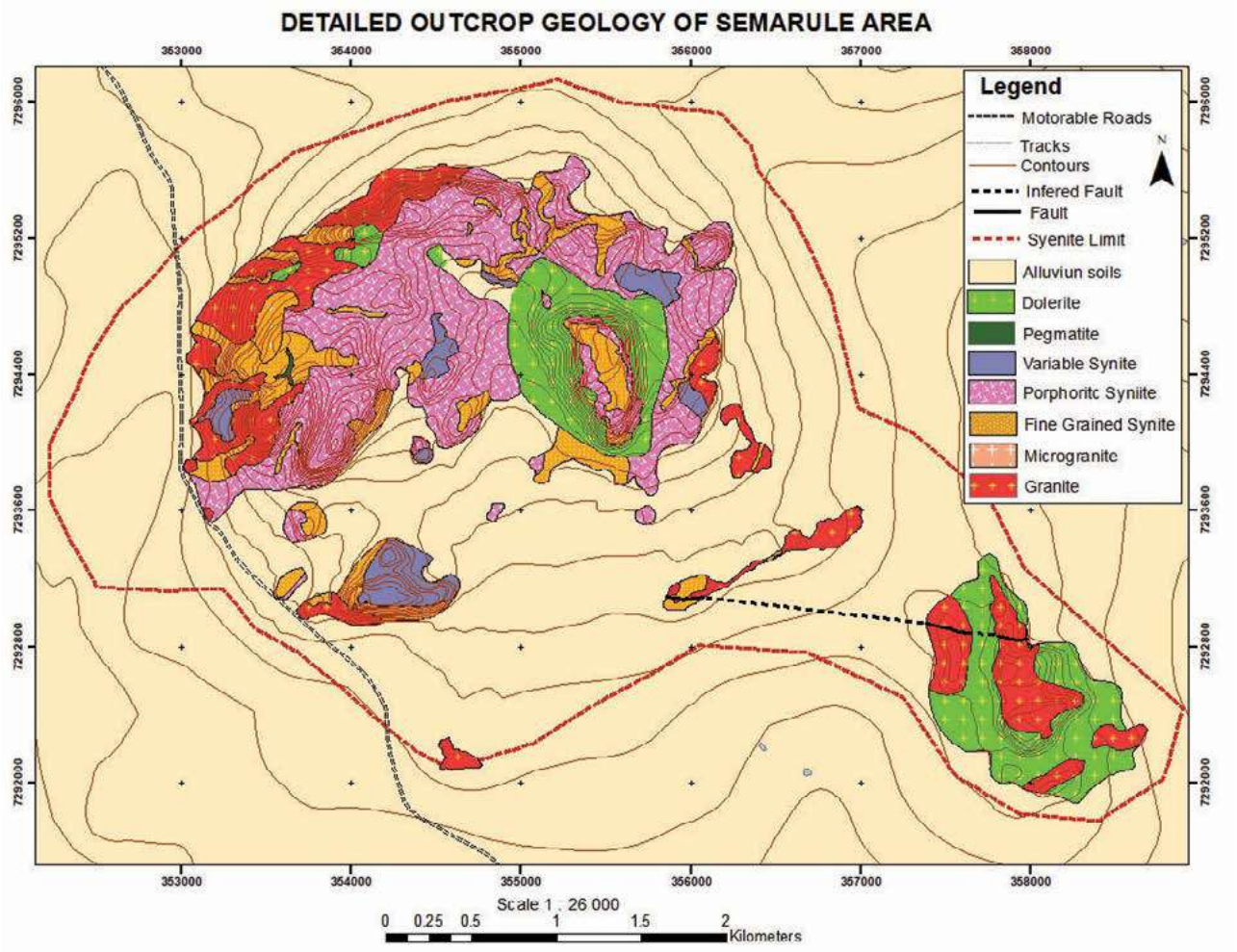


Figure 6: *Detailed outcrop Map of Semarule Igneous Complex*

Results

X-Ray Diffraction (XRD) was used in mineral identification for the rock samples, and the results correlated well with the literature. REE bearing minerals picked by XRD include Holmquistite, Arfvedsonite, Eudialyte, Cheralite, Apatite, Andradite, titanian, Euxenite, Zircon and Monazite.

Inductively Coupled Plasma Optical Emission Spectroscopy (ICPO-ES) for battery metal results are shown in spider diagrams normalized to McDonough and Sun (1995). The soil and rock samples show an enrichment in Cd, Li, Pd, V and Mn, whereas Co, Cu, Mg, Ni and Zn show a negative anomaly in the Semarule area (Fig 6 and 7).

BUSINESS REVIEW (Continued)

Metal	Crustal Abundance (ppm)
Cd	0.15
Co	25
Cu	60
Li	20
Mg	23300
Mn	950
Ni	84
Pb	14
V	120
Zn	70

This table shows the normal crustal concentration and was used to interpret the scatter plots shown below, any value above the metal crustal abundance was considered anomalous. Most metals were above crustal concentration except Nickel and Lithium.

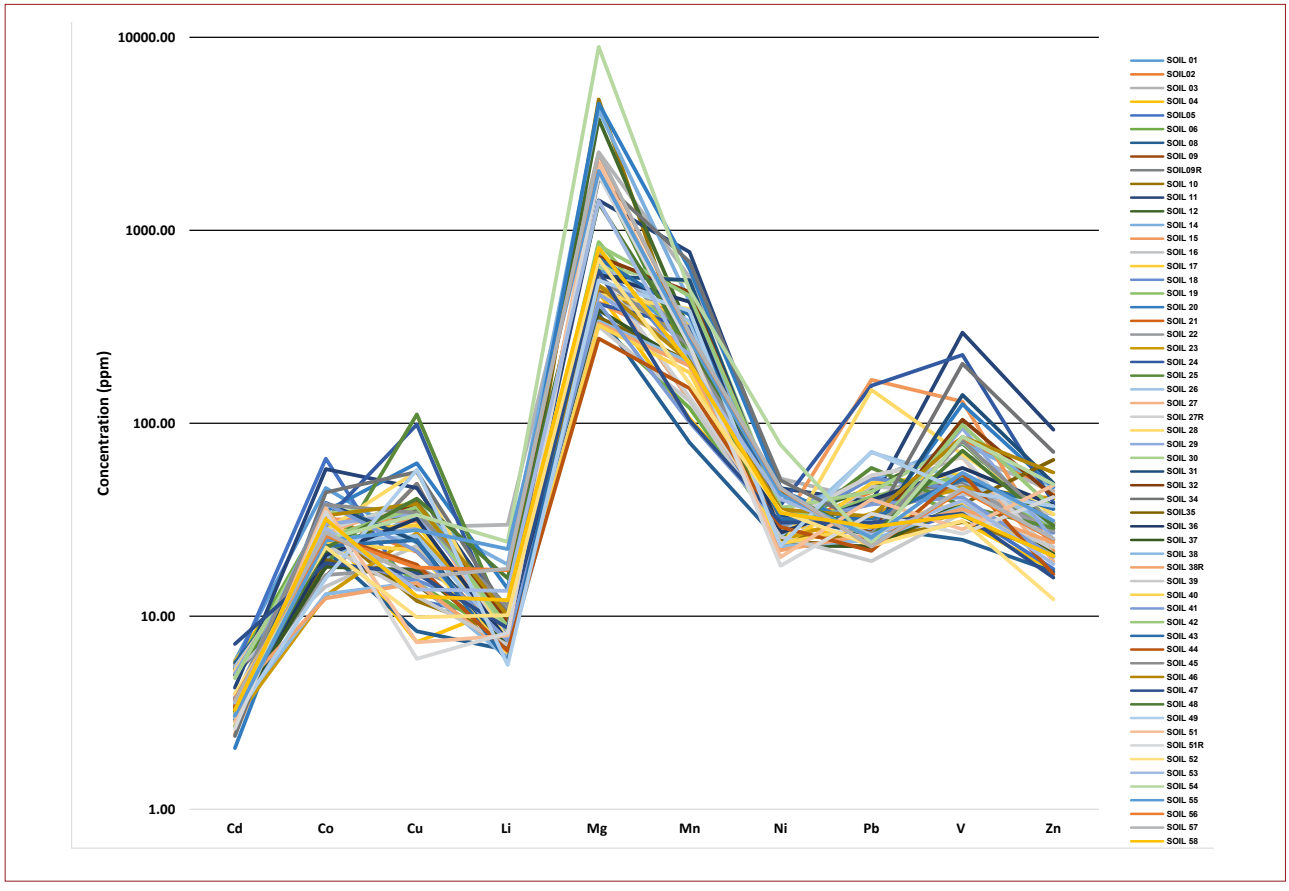


Figure 7: *The normal crustal concentration*

BUSINESS REVIEW (Continued)

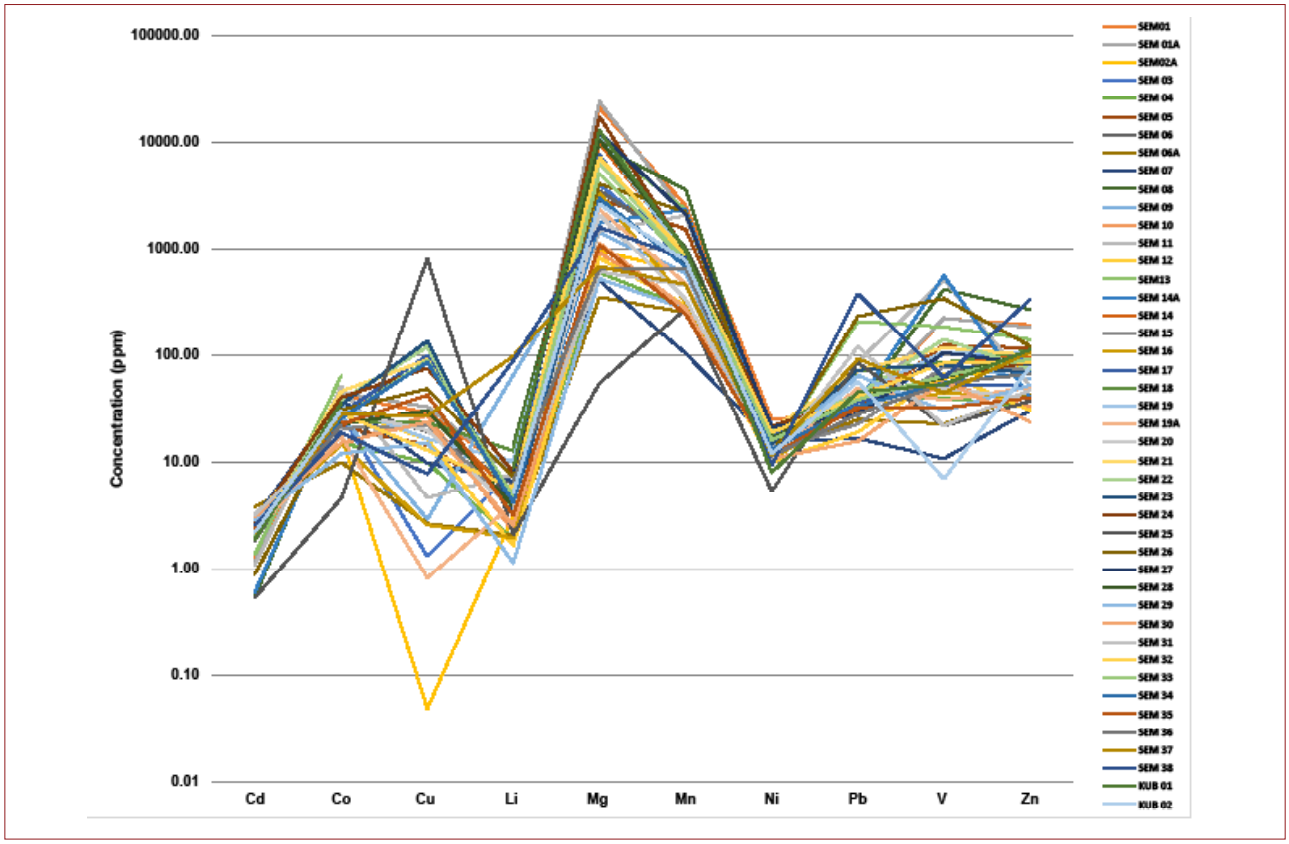


Figure 8: *The normal crustal concentration*

Conclusion

Interpretation of different data sets, such as remote sensing, cartographic data, geophysical data together with field data, enabled discrimination of several intrusive facies/ lithologies inside the complex emplacement sequence: fine-grained syenite (first pulse), porphyritic syenite (second pulse) emplacement of dykes (third pulse), and the final dolerite emplacement that post-date the main period of syenitic magmatism (fourth pulse). The preliminary interpretation indicate that;

Minerals identified by XRD indicated the presence of REE bearing minerals including Holmquistite, Arfvedsonite, Eudialyte, Cheralite, Apatite, Andradite, titanian, Euxenite, Zircon and Monazite.

COMPILATION OF INDUSTRIAL MINERALS

This project continued from the previous year and in this reporting period it focused mostly on construction aggregates.

It aims at closing the gap in aggregate information with an intent to produce a compilation or a database that can be used to inform the industry, aggregate exploration companies and development. It will also guide land use planning which could help avoid resource sterilization in the future.

The project will have two deliverables which are an updated Industrial Minerals Map of Botswana (Figure 8) and an Aggregate Occurrence Report.

BUSINESS REVIEW (Continued)

BGI has identified and assessed suitable aggregate occurrences in the country. All areas that were not assessed in the past like Kgalagadi District, Gantsi District, Ngamiland and Boteti area were sampled and tested. For this work, three standard aggregate physical tests were done (Table 5). These three Laboratory physical tests are regarded as the fundamental tests for potential source rocks of aggregates. Tests were conducted in accordance with TMH 1, 1979 procedures. Distribution of aggregate occurrences is described at regional level and each region reflects the type of available aggregate source rock (Figure 9).

Aggregate Test	Limits	Very good strength	Good strength
Aggregate impact value (AIV)	<= 30%	< 20%	20% - 30%
Los Angeles test (LA)	<= 30%	< 20%	20% - 30%
Aggregate crushing value (ACV)	<= 30%	< 20%	20% - 30%

Table 5: *The minimum physical laboratory tests which were taken into account and their limits. Three approved fundamental tests results of Aggregate impact value (AIV), Los Angeles test (LA) and Aggregate crushing value (ACV) were used to characterize potential aggregate source rocks.*

The minimum physical laboratory tests which were taken into account and their limits. Three approved fundamental tests results of Aggregate impact value (AIV), Los Angeles test (LA) and Aggregate crushing value (ACV) were used to characterize potential aggregate source rocks.

Crushed rock aggregate is produced from hard, strong rock formations including igneous (andesite, basalt, diorite, dolerite, gabbro, granite and rhyolite), metamorphic (hornfels, gneiss, quartzite, schist) and sedimentary (sandstone, limestone, arkose, subarkose and greywacke) rocks (Figure 9). Therefore, the significant way to locate/ assess suitable aggregate deposits is to understand the geologic setting and geologic processes that form these rocks. Three different rocks types, which are sedimentary, metamorphic and igneous rocks, were used to categorize the geology of aggregate resources.

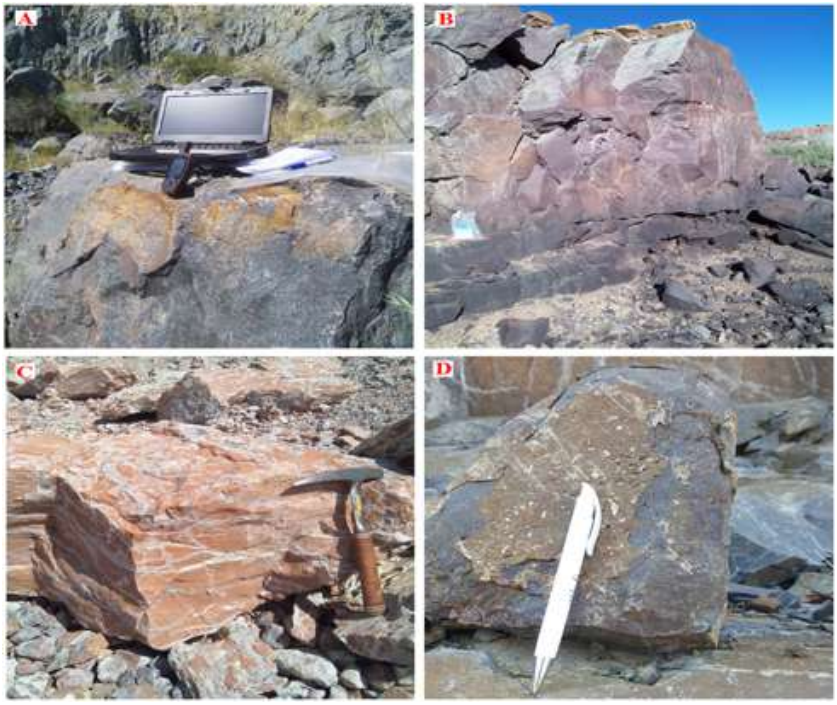


Figure 9: *A) Kgwebe metamorphosed rhyolites, comprising phenocrysts of quartz/calcite and feldspar minerals. The phenocrysts vary locally in size and spacing. B) Metamorphosed, purple-red arkosic sandstone, comprising vertical joints, which are filled with chloritized material, at an interval of about 1-2 meters. C) Orange, red sandstone, locally calcareous with reddish siltstone increasingly common downwards. The sandstone looks fibrous from multiple quartz veins, which are milky to white in colour. D) Basaltic rock, which is dark grey in color. The rock is fine grained because of rapid cooling when magma was exposed to the ground surface.*

BUSINESS REVIEW (Continued)

Industrial Minerals Map of Botswana

Industrial Minerals Occurrence Map of Botswana, was compiled from both historical and new data collected during the project life (figure 8). The main objective for this was to show the distribution throughout the country. This product will help to guide prospectors and the community on areas which can be considered for further exploration or mining.

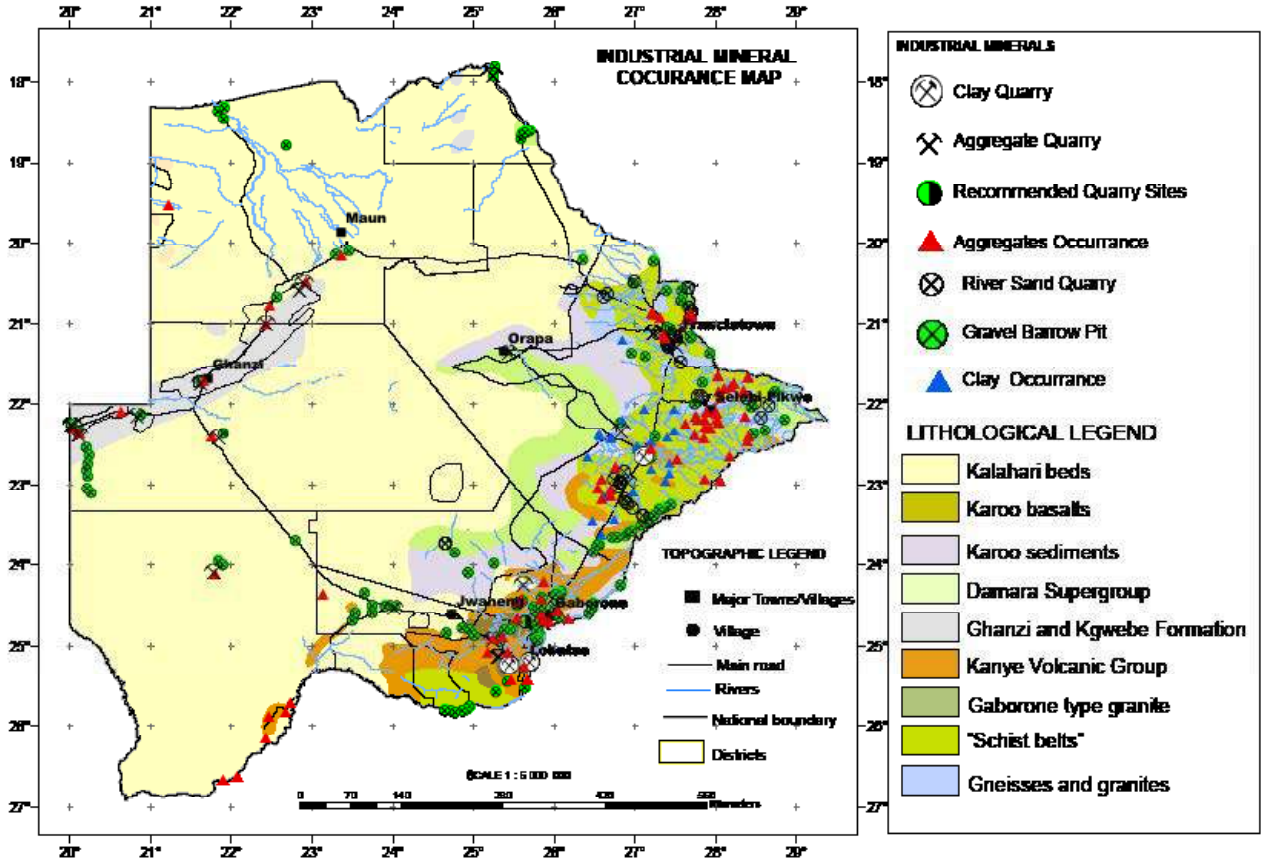


Figure 10: *Industrial Minerals Occurrence Map of Botswana, showing different mineral commodities which are categorized under Industrial minerals as per Mines and Minerals Act.*

Conclusion

Botswana has a wide distribution of industrial minerals as shown in figure 8. Even though aggregates seem to be deficient in some regions.

BUSINESS REVIEW (Continued)

IDENTIFICATION AND ASSESSMENT OF MAFIC, ULTRAMAFIC AND GRANITIC COMPLEXES

This project was reported in detail in the previous reports **(http://www.bgi.org.bw/annual-reports)** together with challenges it encountered. A consultancy tender was awarded in February 2020 to a consortium of companies comprising one foreign and two local companies. The companies are a Toronto based Canadian company (Paterson, Grant and Watson Limited); and Gaborone based companies (Water Resources Consultants (Pty) Limited and Sky Tract (Pty) Limited).

The Project execution plan was revised in line with COVID-19 pandemic and its protocols that limited movement within and outside the country. For instance, the lead contractor residing in Canada could not travel to Botswana at the time and had to come up with alternative ways to advance the project. Thus, as part of the solution they identified and appointed local experts to start and advance the project until such time that the travel restrictions are lifted as well as utilise the local partners to drive the first project milestones.

The initial project tasks such as data collation and preliminary interpretation was commenced amid COVID-19 restriction to ensure that the project does not suffer further delays. The project is scheduled to take 18 months to complete after mobilisation.

BUSINESS REVIEW (Continued)

GEOLOGICAL REVISION MAPPING OF SOUTH-EASTERN BOTSWANA

This is a collaborative project with JOGMEC who are providing funding for the project. Following the signing of MoU between BGI and JOGMEC in February 2020 at the Mining Indaba Conference, JOGMEC pledged funding for this project for the next 3 years.

For the reporting period, field reconnaissance mapping and preliminary data processing were executed. In addition to this, method development to test which remote sensing/geophysical processing techniques best assist in differentiating the lithologies and structure as well as address the inconsistencies across the adjacent QDS have advanced. Construction of the stratigraphy of the project area also is continued in parallel with the geological mapping.

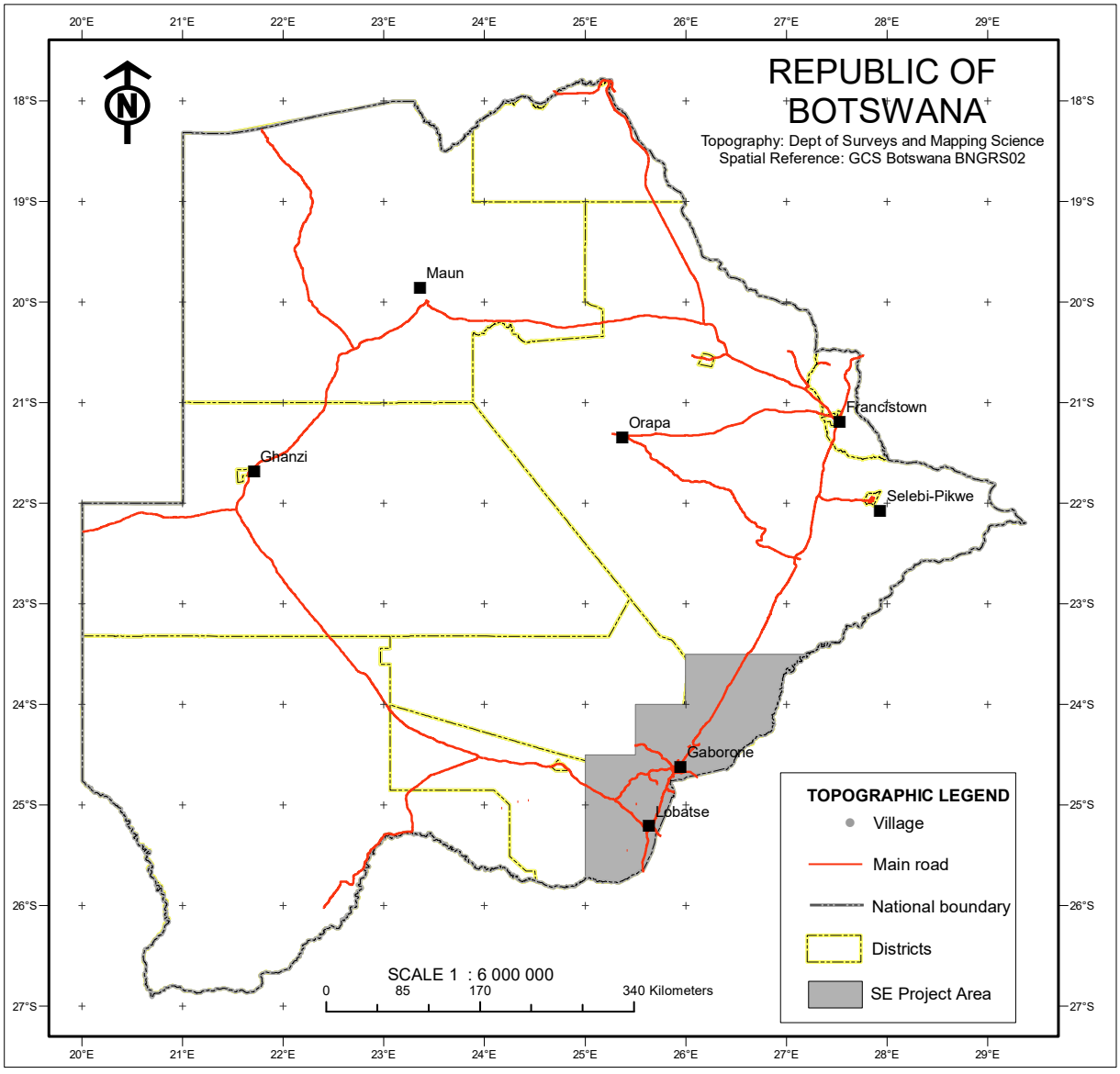


Figure 11: *Topography: Dept of Surveys and Mapping Science Spatial Reference: GCS Botswana BNGRS02*

BUSINESS REVIEW (Continued)

ACCESS TO INFORMATION AND DIGITAL INFRASTRUCTURE

BGI is the country's custodian of all geoscience data and information. This includes all geophysical data collected by government, private companies and institutions as well as individuals. BGI continues to enhance its digital infrustructure in order to facilitate both ease of storage and dissemination of data to clients who are primarily exploration companies, research institutions and individuals. However, the dissemination of data is still done manually and limited to physically coming to the Institution to collect the data. BGI is working on the means to change this so that the data could be accessed through the web.

BGI procured an off-the-shelf software - LIBWIN in order to provide the public with access to library information. This information can be accessed on URL **www.library.org.bw**. Customers can download internal and consultancy reports as they bear no charges.

A pilot project with Geosoft Incorporated on the Geosoft Portal that has been running since 12th April 2016 to date, populated with geoscience data from Ngamiland District continues to generate traffic in the web space and has had a positive impact on Botswana's mineral investment climate and rating on the Fraser Institute. The following shows downloads from the portal and the countries of such activity.

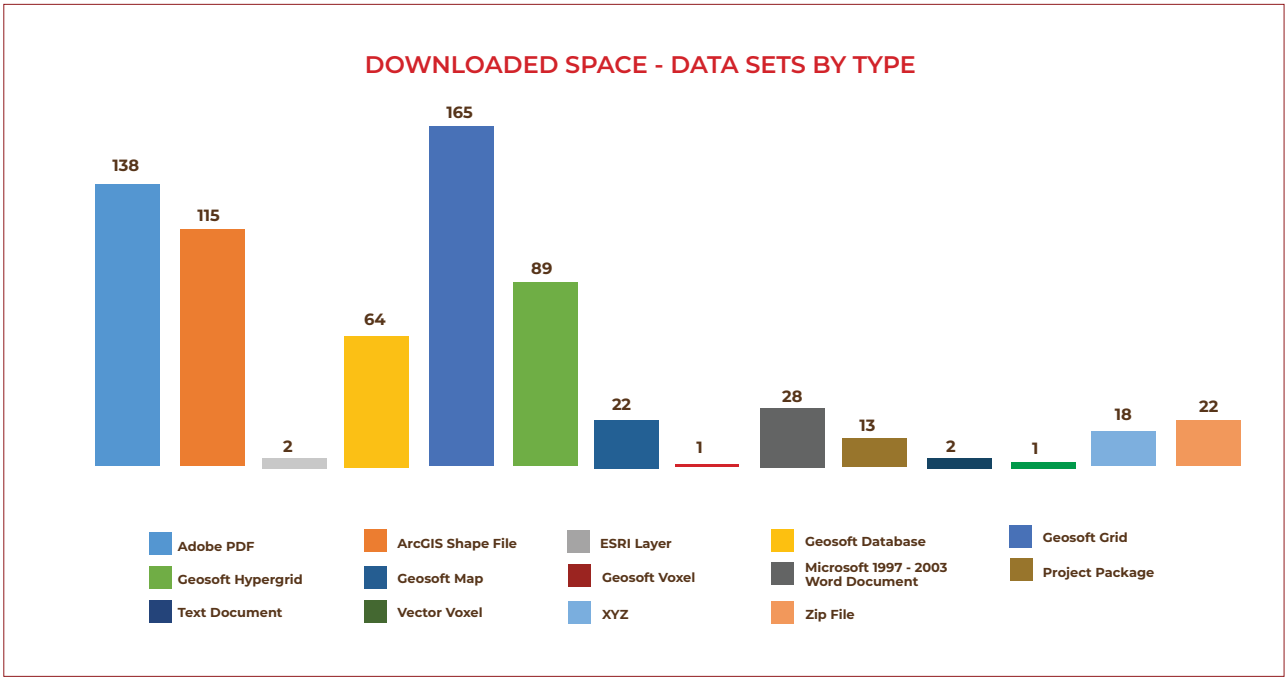


Figure 12: *Downloaded data sets by type*

BUSINESS REVIEW (Continued)

INFORMATION MANAGEMENT

The Institute intensified efforts for data management through implementing systems such as National Integrated Geoscience Information System (NIGIS), Library Information Management System (LIMS) and Laboratory Information Management System (LBWIN). A significant number of customers was realised through other information centres such as the Core sheds and National Geological Information Centre (NGIC) as shown in the table below;

Service	Internal customers	External customers	Total	New
Core-shed	16	24	40	11
Library & Publications Shop	679	481	1084	-
Prospecting License	82	14	96	5

Table 6: *Information accessed by customers*

Data and information collection

Geoscience collections include borehole records, research reports, drill core and borehole chips, geophysical data, maps and publications on the geology of different areas in Botswana.

Collections acquired by BGI included 366 open Prospecting License reports from the Department of Mines (DOM) and data on 3437 boreholes from the Department of Water Affairs. Drill core was received from DeBeers Prospecting(2448.9m), and Firestone (348m) while BGI's Limestone Project deposited core from; Letlhakeng (795 m); Toteng (87m): Serorome (87m); and Maun (144m).

These constitute millions of pula and resources spent on prospecting and drilling by the Botswana Government and prospecting companies. The data is a invaluable asset that BGI makes available for access to the public to inform various purposes, such as investment in mining, availability of water, civil engineering and research.

Financial year 2019/2020 BGI received a total of 1282 customers with 65 % (839) of utilisation by repeat customers and 35% (443) new customers who were mainly from tertiary institutions and prospecting companies.

Media Type	No. of items
Books	209
Internal Reports	953
PL Reports	495
Publications	66
Total	1723

Table 7: *Media types and quantities capture on on-line Library system*

The public can access BGI library portal online, represented by the URL which stands for Uniform Resource Locator; **www.library.bgi.org.bw**.

BUSINESS REVIEW (Continued)

Online Library System

In an effort to improve data and information management and access, BGI has established an Online Library system. The implementation of this System commenced in 2018/2019 with the aim to automate BGI geoscience library.

This automation offers efficient information management by cataloguing of books, physical and electronic resources. It has the ability to link multimedia files and accompanying electronic resources, a feature that is vital for presenting interrelated geoscience information.

Since it's inception, various books, reports, bulletins etc, have been captured as shown in Table 7.

National Integrated Geoscience Information System (NIGIS)

National Integrated Geoscience Information System (NIGIS) is a multifaceted nation-wide geoscience information management project that will become a panacea for the Republic of Botswana's Exploration and Mining undertaken under the aegis Botswana Geoscience Institute (BGI).

NIGIS is a multidisciplinary Geoscience data repository for managing Projects and Prospecting Licenses data and information, that is BGI field Projects, Water boreholes Prospecting licenses, Prospecting companies, Prospecting locations, Prospecting history (Companies & Individuals) and Prospecting Licenses reports named Botswana. In addition, NIGIS incorporates information on Trial Pits, Soil Tests, Bulletins, Samples and Economic geological research, data, information and publications.

BUSINESS REVIEW (Continued)

The Botswana Geoscience Institute System Database (BGISD)

The BGISD is an in-house developed geological database. It was tailor/custom-made as a solution to the existing data and information problems faced by BGI today. It was a result of precarious and tremendous observations, extensive interviews, experiences and understanding organisational challenges to come up with an IT solution after in-depth analysis of organisational norms like Organisational Culture, Mission, Vision, Perception, Philosophy, Technological Capabilities etc, to harmonise all these aspect into one Integrated Information System Database.

The BGISD houses massive historical record data of over thirty-two thousand, eight hundred and ninety-seven (32, 897) drillhole data, which stretches over seven hundred (700) locations around the country, and prospected by over one hundred and fifty (150) geologists from over one-hundred (100) prospecting companies world-wide. The datasets included in this database largely focuses on borehole data and will be migrated to the extended, Corporate-wide NIGIS system.

Provision of this system was to extend the notion of centralising borehole data either water or exploration borehole data as is linked to google map. The project is expected to expand in the future by granting the public access to the information, thus enhancing administration of the Institution.

EARTHQUAKES MONITORING AND RISK REDUCTION

Botswana Seismological Network (BSN)

Botswana Geoscience Institute (BGI) operates a network of twenty-one (21) digital and autonomously recording seismographic stations distributed throughout Botswana. These seismic stations constitute the Botswana Seismological Network (BSN), the aim of which is to detect and locate earthquakes in Botswana. Earthquake monitoring is required to improve public safety and awareness of earthquakes by providing a better understanding of the causes, distribution and variation of seismicity. This initiative provides for a scientific research into the level of seismic hazard and the potential for future damaging earthquakes.

The main output of BSN deployment is the publication of biennial Botswana Seismological Network Bulletin series containing locations, magnitudes and phase data for all earthquakes detected and located by the BSN stations during the reporting period.

April 2019–September 2019 (H1) and October 2019–March 2020 (H2), bulletins were produced. Figure 2 is a map of the seismicity of Botswana and the surrounding area for the period April 2019–March 2020.

The largest events recorded during the H1 period were two local magnitude (ML) 3.4 earthquakes located in the Gope area in the CKGR and near Artesia in the Kgatleng District. During the H2, the largest event recorded was the ML 4.0 earthquake that occurred on 10th February 2020 located 35 Km South-West of Maun in the source region straddled between the Kunyere and Thamalakane seismogenic faults. The second largest event reported by the BSN stations during the H2 period was the ML 3.3 earthquake that occurred on 2nd December 2019 about 20 km South-West of Kanye in the Ngwaketse District and it was felt as far as Lobatse and Moshupa areas.

BUSINESS REVIEW (Continued)

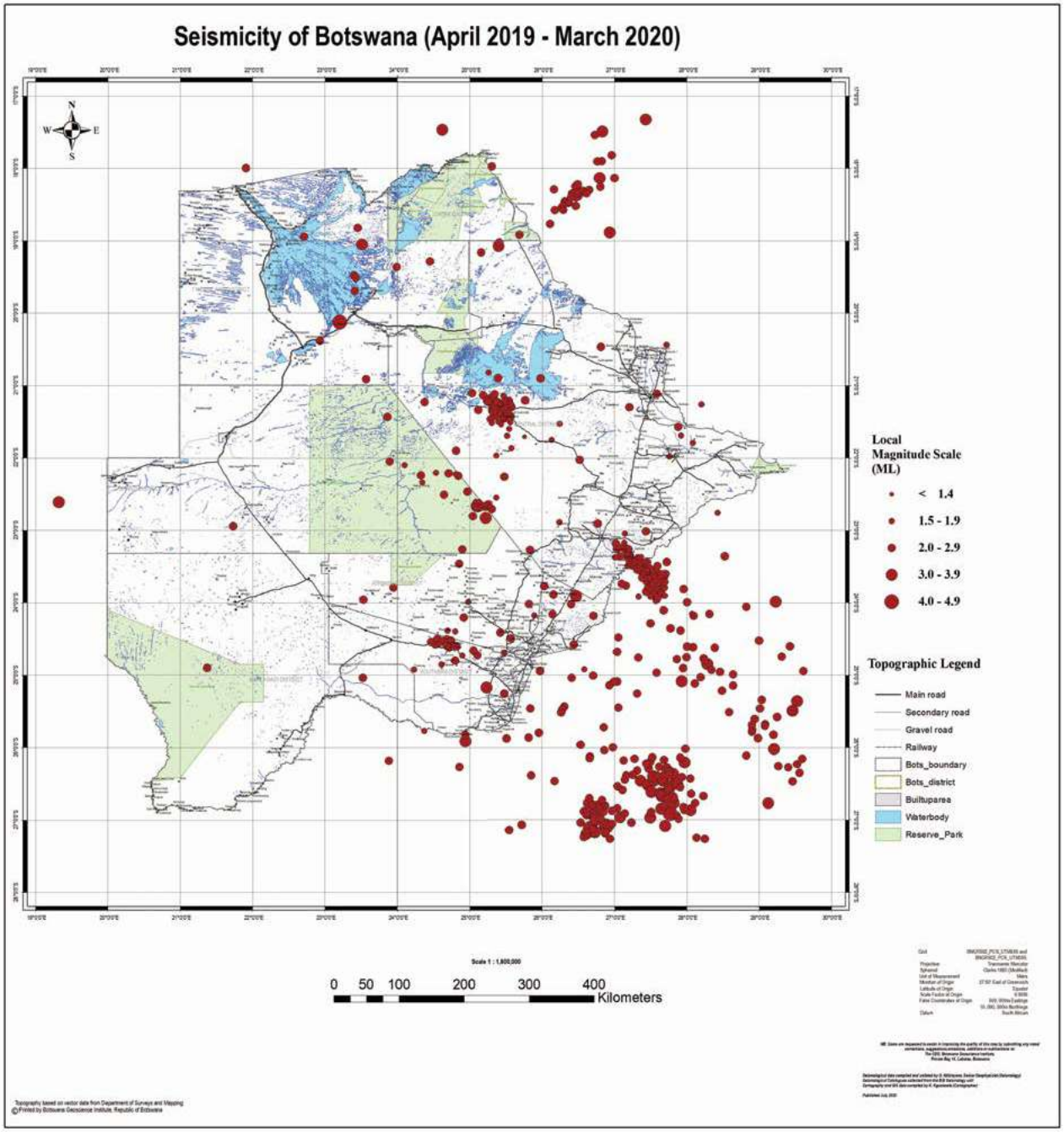


Figure 13: *Map from the H1and H2 bulletins showing the distribution of seismic events in Botswana and the surrounding area recorded by BSN stations during the period April 2019–March 2020.*

BUSINESS REVIEW (Continued)

Global Telemetered Seismograph Network (GTSN)

BGI operates and maintains an international seismological station hosted in Botswana, coded LBTB. This station is part of the Global Telemetered Seismographs Network (GTSN). The LBTB station is located near Lobatse (at Magotlhwane village) and it is one of the 120 auxiliary seismic stations of the International Monitoring System (IMS) deployed within the framework of the Comprehensive Nuclear-Test-Ban Treaty (CTBT).

In the year under review, the LBTB station relayed data to all the designated destinations without any interruptions. Financial support for the operation and maintenance of LBTB is provided by the Air Force Technical Applications Center (AFTAC), in Florida, USA, in collaboration with the Government of the Republic of Botswana through BGI. During the reporting year, the station continued to provide valuable seismic data that augmented the BSN stations in detecting events and in the production of bulletins.

Selebi-Phikwe Microseismic Monitoring

The central part of the Selebi-Phikwe area (SPA) has experienced low-magnitude-range spasms of micro-seismic activity initially reported by the Selebi-Phikwe residents in December 2018. Although the effects of the local micro-earthquakes have been limited to a relatively small part of the SPA region, the seismicity has caused general alarm among the SPA population and captured a countrywide socio-political attention.

In June 2019, BGI engaged Aqualogic and Open House Management Solutions (OHMS) to monitor the micro-seismicity through deployment of a network of seismic sensors in order to characterise the events in terms of distribution, time and frequency in the affected parts of SPA.

The highest vibration measured at a magnitude of 1.9 (Richter scale equivalent). By September 2019, the tremors had significantly reduced in both magnitude and frequency, which was attributed to the commencement of dewatering of the South East Extension Shaft. This steady state continued into 2020. Monitoring was terminated in May 2020, with a view to design a long-term monitoring solution.

BUSINESS REVIEW (Continued)

PALAPYE GEOTECHNICAL MAPPING

Geotechnical mapping was conducted in Palapye at a regional scale of **1:50 000** from 2018. This project continued into the reporting year to complete the study.

The objective of the project was to identify geotechnical, topographical and hydrological constraints as they have a direct impact on infrastructure development and land-use planning. The main project deliverable was a geotechnical mapping report and a development suitability map. By the end of the reporting year, the project had been completed and the final draft report submitted to the Editorial Committee for review.

The project focused on investigation of soil strata at shallow depths where soil properties are of significance to normal infrastructure development and land-use planning decisions.

GEOTECHNICAL CONSTRAINTS	SEVERITY	INTERPRETATION
Collapsible Soil	Intermediate	Palapye is mostly blanketed by collapsible sands of aeolian origin ranging between 1.5m to depths greater than 4.8m. This sand cover is mostly concentrated in the northern part of Lotsane river covering 71% of the study area. This material is classified as dry, poorly graded sands with low dry denstiies (<1600kg/m3). Because of susceptibility to collapse settlement, these are not suitable founding materials and require replacement or stabilisation with competent material for foundation purposes.
Seepage	Most favourable	No seepage was encountered in all the trial pits excavated. This suggests that the water table will not significantly affect structures founded at shallow depths of 1 - 2m. However seasonal perching of groundwater is likely to occur in low-lying areas where shallow calcretes and ferricretes were encountered within 1.5 m.
Soil Compressibility	Most favourable	**Soil compressibility is generally not a limiting constraint to development. Compressible soils are likely to be encountered in isolated portions in low lying areas where there are clayey sands with medium to high potential expansiveness.**
Soil Activity	Most Favourable	Soils with medium to high potential expansiveness based on their plasticity results cover a small portion of the study area (approximately 20 %). These are mostly alluvial clayey sands and residual shales concentrated along low-lying depressions and flood plains oriented in the E-W direction. Precautions recommended for this soil entails excavation and replacement with competent material and drainage improvements around structures. Palapye can therefore be described as favourable with respect to soil activity.
Excavatibility to 1.5m	Most favourable	At least 90% of the area in Palapye is excavatable with a TLB because of large sand coverage. Difficulty in excavation to depths of 1.5m can be expected in the southern parts of Lotsane river due to shallow fresh shales and slightly weathered sandstones.
Undermined Ground	Most favourable	Mining is not a constraint since Morupule coal mine is outside the study area. Besides, Morupule excavation.
Instability in areas of soluble rocks	Most favourable	The geology of the area suggests the absence of soluble rocks and hence low risk of collapse due to sinkhole formation.

BUSINESS REVIEW (Continued)

Conclusion

The project determined that 71% of the study area was of intermediate conditions, while 7.2% was most favourable. Development is feasible in these areas provided geotechnical constraints highlighted are taken into account at design and construction stages. Seventy-eight (78.2%) of the study area is therefore generally suitable for structural development with minimal or manageable constraints. Least favourable areas constitute 21.6 %, and these are located along flood plains and localised depressions (natural pans). The ground in these areas is characterised by clayey sands of medium to high expansive potential. This means in these conditions, compression under load due to volume change can be expected.

The geotechnical evaluation was carried out through a combination of historical data, field observations and laboratory tests. A hydrological study is required for completeness for the revision of the suitability map to incorporate flood data to delineate flood lines.

Most constraints for normal residential development can effectively be addressed by the removal of unsuitable in-situ material and importation of competent gravel fill of G5 or better whilst maintaining proper drainage control around structures. Possible foundation options depend on the type of structure proposed, subsurface material properties and drainage conditions of the area.

The study has recommended an engagement of a Structural Engineer to determine the best economical foundation option informed by a detailed site-specific investigation by a competent Geotechnical Engineer.

BUSINESS REVIEW (Continued)

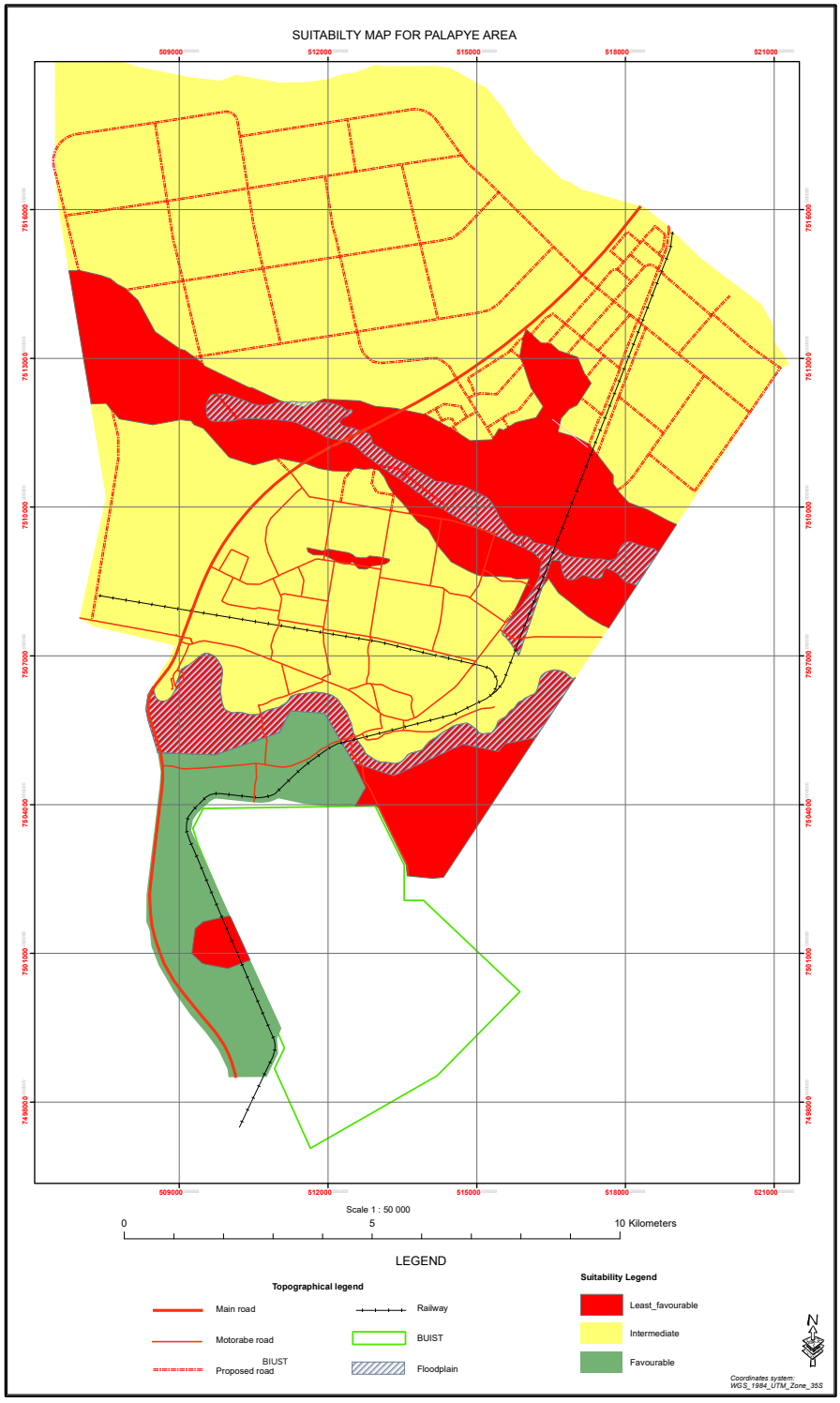


Figure 14: *suitability Map for Palapye area*

BUSINESS REVIEW (Continued)

HYDROGEOLOGY

The Gweta /Zoroga floods assessment work is undertaken by a multi-sectoral team set up by the National Disaster Management Office (NDMO) in 2018. This study carried on into the reporting year. In the previous year, reconnaissance work had revealed the following;

- Floods observed to be generally of a 10 year cyclic nature
- Floods were invading the villages from the north across the A3 highway
- The A3 road was obstructing the natural flow of water to the pans
- Floods exacerbated by the very flat nature of the terrain
- Preferred water-pathways / channels were identified
- No storm water drainage system within the villages
- Water ponding in places in the villages
- Shallow groundwater table
- Suspected seepage beneath the road

Picture: *Gweta Zoroga floods*

The multi-sectoral team sought to deal with the findings of the 2018/2019 study. BGI was tasked with leading the team in drawing up flood risk mitigation measures. Key deliverables for the year included:

- Production of a flood zonation map of the area
- Indication of storm-water drainage lines on topographic maps
- Development of storm-water drainage plans
- Production of geochemistry baseline map of the area
- Production of a multi-sectoral report

There were a number of challenges regarding the scope of the project, in particular, financial resources. Short-term solutions were designed and submitted to NDMO for appraisal. These included recommendations to design culverts and drainage channels in the area **(Figure 4)**.

BUSINESS REVIEW (Continued)

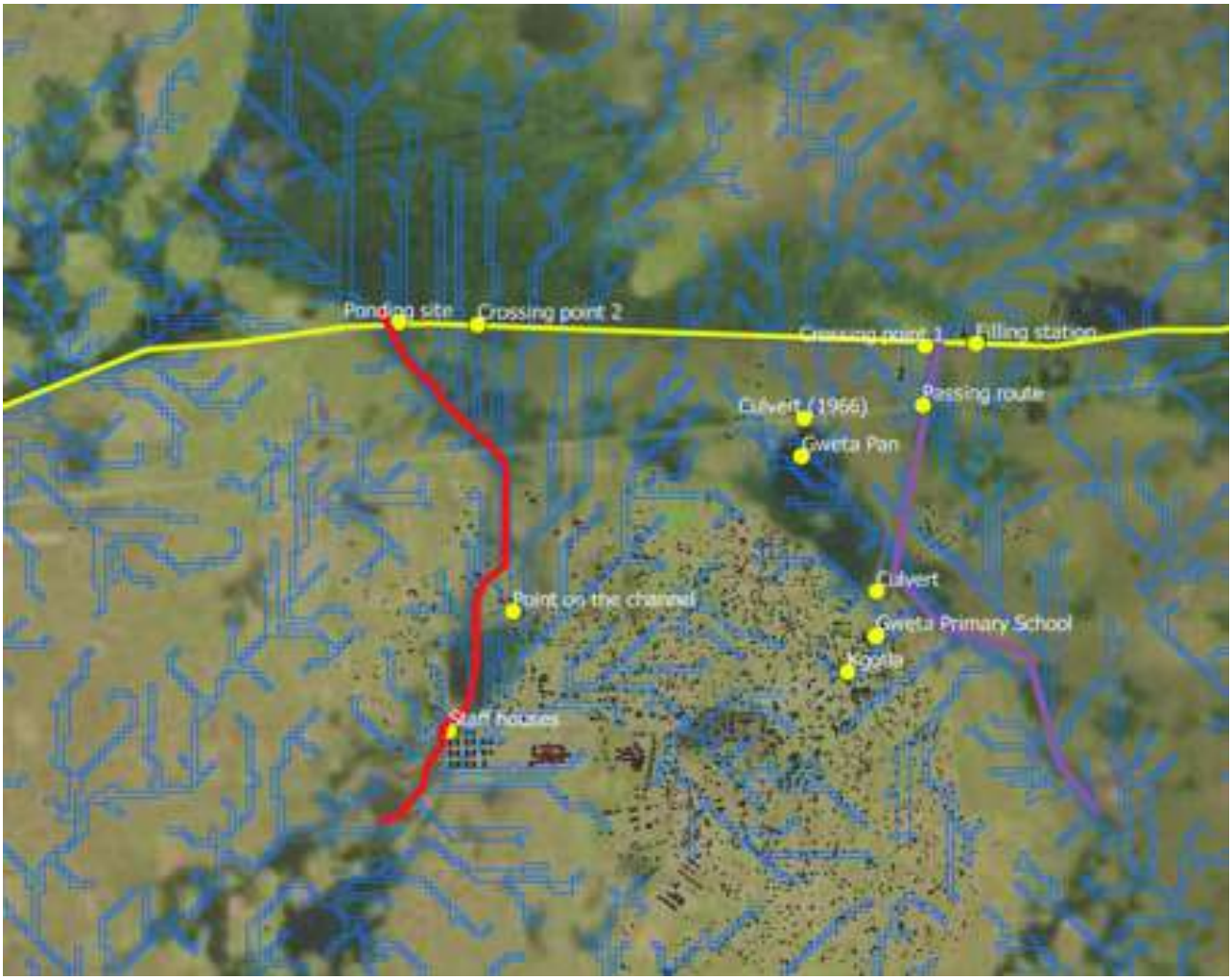


Figure 15: *Proposed short-term solutions for Gweta (red and violet polyline) using storm water drainage to carry flooding water from A3 road. The blue lines are the natural drainage network delineated from DEM*

Short-term solutions for Zoroga proved to be a challenge due to its unfavourable topography. It was decided to focus on Gweta as a pilot project. Challenges encountered in implementing the Gweta short-term solution included lack of up-to-date hydrological monitoring data, budgetary constraints, and delays in the tendering process.

BUSINESS REVIEW (Continued)

LABORATORY AND EXPERIMENTATION

BGI Laboratory Testing Services provides testing services to both internal and external customers in the Exploration field, Government, General Public and other private entities. The testing undertaken consists of physical and chemical tests on geological raw materials such as soil, rocks, ores and water.

The laboratory has competent personnel and a wide range of modern instrumentation that enables it to produce quality and timely analytical results.

The Laboratory strives for operational and service excellence through implementation of a Quality Management System as per ISO 17025.

In the year 2019/20 the laboratories provided services for various organizational projects. Additionally, the laboratory also provided services to external customers and collected revenue for cost recovery. The laboratory participated in Letlhakeng limestone identification project, Palapye geotechnical project, mineral identification, battery metals and industrial minerals projects. Physical, mineral and chemical tests were conducted as indicated in figure 1.

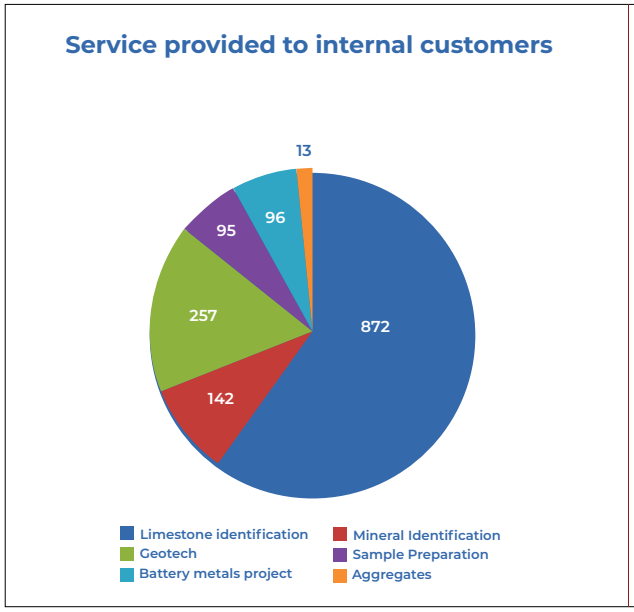


Figure 16: *Services provided to internal customers 2019/20*

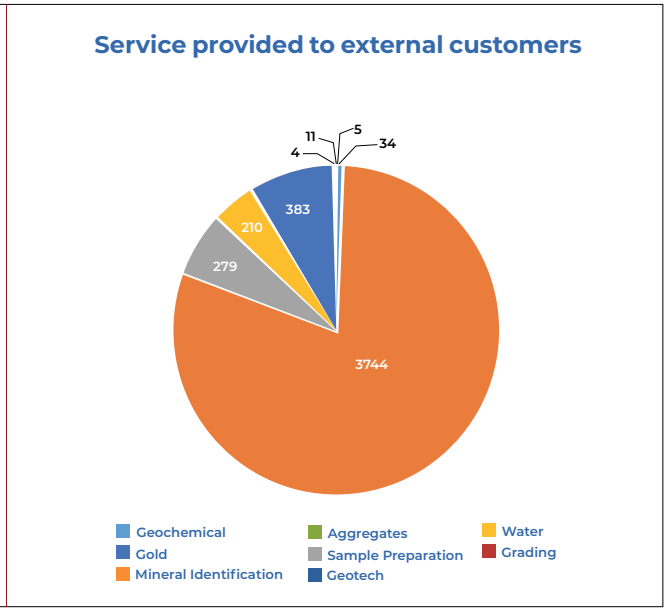


Figure 17: *Services provided to external customers 2019/20*

Various analysis undertaken for external customers included identification of suspected gold and diamonds, geochemical analysis, construction aggregates, geotechnical analysis and grading as indicated in figure 2.

BUSINESS REVIEW (Continued)

Cost recovery

Revenue generated from services offered to external customers stood at P181 565.00 against a target of P50, 000.00 in the year 2019/20 as shown below.

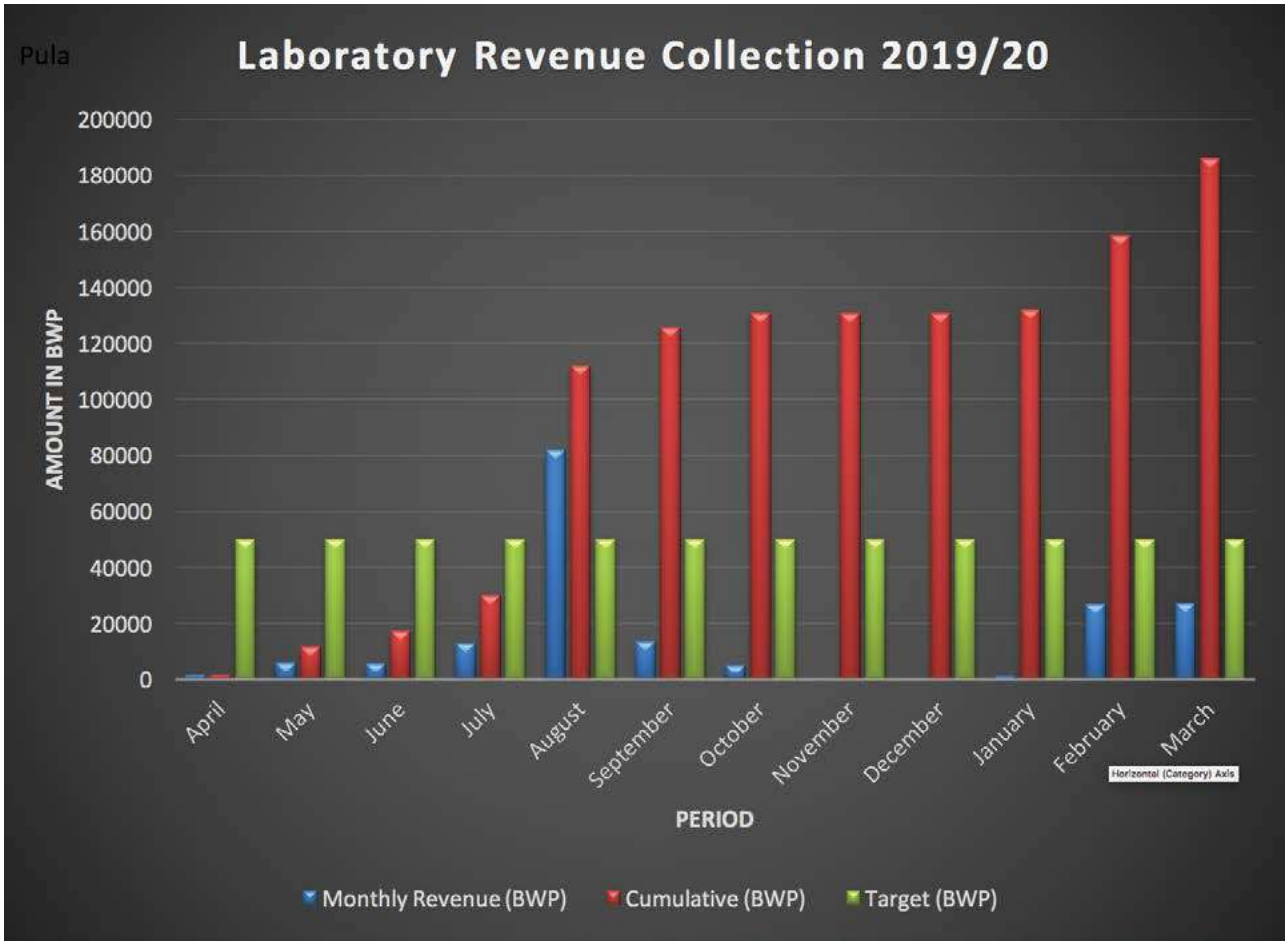


Figure 18: *Cost recovery for sample analysis for external customers*

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HUMAN RESOURCE & ADMINISTRATION

HUMAN RESOURCES AND ADMINISTRATION

Botswana Geoscience Institute's employees are critical for the organisation to achieve its Mandate and Strategic imperatives. To this effect, the Institute implements a number of programmes for the well-being of employees and thereby contributing towards increased productivity and performance.

Staffing and Talent Acquisition

During 2019/2020 the Institute maintained budgeted positions of 127. At the closure of the financial year, 116 positions were filled. Compared to 2018/2019, the period under review experienced a reduction of 4% in the number of employees.

In addition to the funded positions, the Institute continued to host Tirelo Sechaba Participants (TSP's), and Interns in order not only to empower them but to also aid them to realistically assess and fulfil their future career decisions. The table below shows distribution of employees across business units.

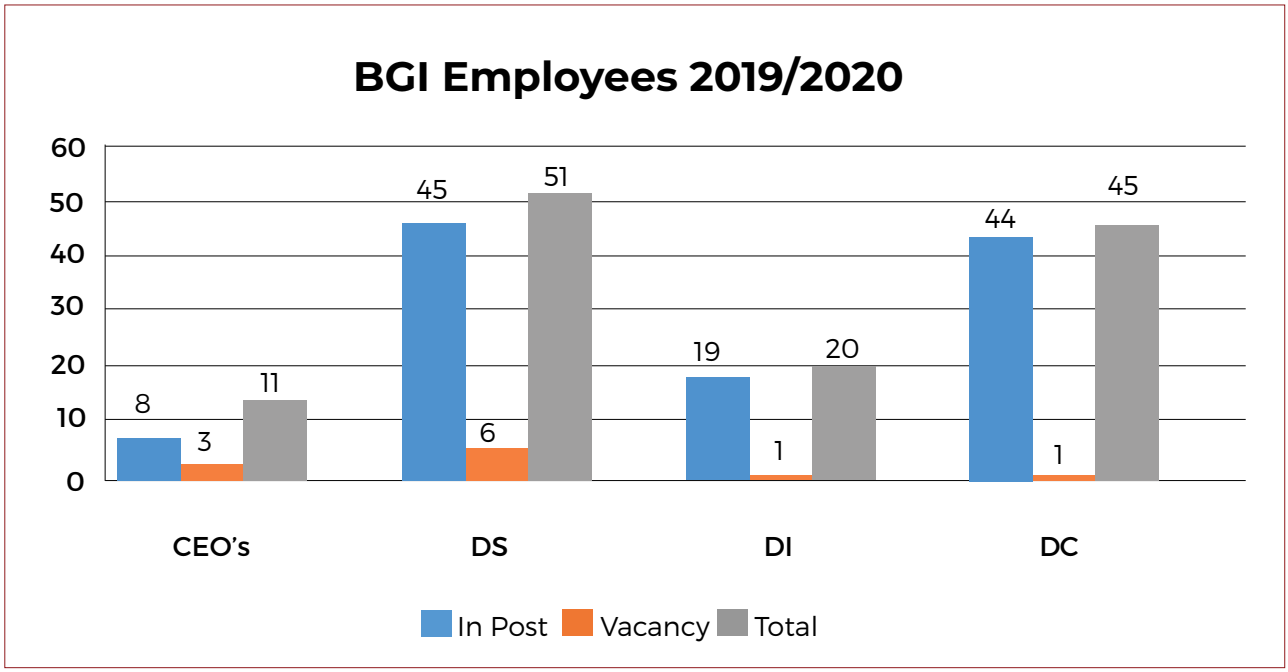

Figure 19: *Services provided to internal customers 2019/20*

HR Snapshot (2019/2020)

Establishment(116)	Interns (11)	Pensionable Staff (99)	Fixed Term Contract (17)	Geoscientists (51)	Non Scientists (65)
♀(Females) = 33 ♂(Males) = 83	♀ = 3 ♂ = 9	♀ = 73 ♂ = 26	♀ = 07 ♂ = 10	♀ = 08 ♂ = 43	♀ = 25 ♂ = 40

HUMAN RESOURCES AND ADMINISTRATION (Continued)

Employee relations

BGI is committed to upholding essential principles and rights at work including but not limited to freedom of association, the right to organise and collective bargaining.

The Botswana Public Officers Union (BOPEU) has been given recognition as a collective bargaining agent for employees in accordance with the relevant governing instruments. Cordial relations have been established and maintained between the Institute and the Union which commenced with the signing of the Collective Labour Agreement in May 2019. This is a positive development that facilitates smooth resolution of employee issues. One of the outcomes of this relationship was the Salary negotiations which were concluded amicably and implemented within agreed parameters despite negotiations being as consensus wasn't reached expeditiously.

Review of the Organisational structure

As reported in the previous year, a review of the Institute's organisational structure was undertaken internally across all business functions and roles. This also was done with a view to recommend a fit for purpose structure that will support the BGI broad Mandate and its Strategy.

The Structure/Organisational Review Team report with recommendations was received and reviewed by Management. However, some areas needed further attention, expertise and resources.

HUMAN RESOURCES AND ADMINISTRATION (Continued)

Divisions	Total Programmes	Total Slots	Total Budget- BWP	Slots Implementation	Total Expenditure
Chief Executive Office	4	19	192,440.00	2	23,560.00
Science Delivery	7	43	240,240.22	31	83,670.19
Information Delivery	12	24	146,959.00	24	106,570.19
Corporate Service	11	42	215,000.00	39	210,259.44
TOTAL	**34**	**128**	**794,639.31**	96	424,059.79

Training and Development

BGI Management notes that the modern workforce looks towards the employer to provide guidance on how to develop their skills and to plot their career paths. During 2019/2020, the Institute approved a number of training programmes aimed at building employee capacity to deliver services and to meet strategic needs In the year under review, P750, 000.00 was approved for training and development purposes. However the budget was increased to P794,639.31 in order to accommodate critical training programmes that were not initially budgeted for (Research and report writing skills) but critical for service delivery. The initial training and development priorities stood at thirty (30) training programmes that translated to ninety (90) training slots. However, a re- prioritisation exercise was done to accommodate critical training programmes. The exercise resulted in an increase in both programmes (34) and slots (128). At the end of the financial year, 96 slots had been used while most of the remaining programmes were moved by the providers due to the COVID-19 outbreak.

Performance Management

Management continues to monitor performance closely to ensure both service delivery and strategy implementation. At the closure of the financial year notable progress in managing performance was evident, this included advanced efforts made towards the automation of the function. The implementation will be in the next financial year (2020/2021).

Retirement Annuity Fund and Gratuity Management

The Institute continues to make 15% contributions towards the staff annuity fund currently managed by Botswana Life Insurance Company. A new fund manager is currently being sought to move the fund from a retirement annuity to a direct pension fund. For the period under review the Institute made a total contribution of P3, 171,432.47 for 99 employees.

As at March 2020 the fund has accumulated P9, 940,380.00. There is a positive increase of 45.26% noted from the previous financial year (March 2019) which stood at P6, 843,136.00. To date there are 15 employees on contract employments whose gratuity has been set aside on Botswana Savings Bank savings account while awaiting a fund manager appointment. The gratuity account currently holds P5, 336,465.55.

Government Internship Programme

The Institute had pleasure to host and work with interns and Tirelo Sechaba Participants under Government Internship Programme. Both interns and Tirelo Sechaba Participants have been deployed to different Business Units, which not only empower them, but also aid them to realistically assess their future career decisions. At the closure of the financial year, there were 11 interns and 5 Tirelo Sechaba Participants engaged. These were released during the month of March in response to the National COVID-19 response.

HUMAN RESOURCES AND ADMINISTRATION (Continued)

Safety, Health Wellness and Environment

BGI is committed to the promotion and maintenance of the highest degree of physical, mental, social well-being of employees, prevention of occupational diseases/illnesses, protection of assets and environment from hazards. In fulfilment of the above, a baseline hazard identification and risk assessment was carried out in order to identify possible hazards and risks to staff, assets, environment and any person who is affected by the institution's daily operation.

This was also carried out so that controls can be put in place to minimise if not eliminate possible hazards & risks. Building a high performance organisation incorporates appropriate strategies, policies and procedures to manage human capital and build capability. A significant progress in initiating these instruments was realised and are pending approval by the Board. At the commencement of the year the Health and Wellness Committee developed a plan of activities. Due to budgetary constraints, the plan had seven (7) main activities, with focus on financial, physical and mental wellbeing of the employees.

BGI Assets

In terms of the BGI Act of 2014, all former assets and property of the Department of Geological Survey would be transferred to BGI. A vesting order has been granted in the case of BGI Headquarters in Lobatse. BGI is waiting for a title deed from the Ministry of Land Management, Water and Sanitation Services to complete the process of transfer. There are other eight (8) plots/properties (mostly seismic stations) located in different parts of the country that still need to be transferred to BGI. To effect the transfer of these assets to BGI, the process of preparing a vesting order for the approval by the Minister of Land Management, water and Sanitation Services was started.

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CORPORATE SOCIAL **RESPONSIBILITY**

CORPORATE SOCIAL RESPONSIBILITY

INTRODUCTION

Botswana Geoscience Institute expresses corporate social responsibility in all of its day to day work. The institute continued to promote awareness of its operations to build confidence among its stakeholders and communities. BGI believes in stakeholder engagement first before commencement of projects and this helps in building a special relationship with communities where it conducts its work.

Our commitment

As indicated in the section about "Our Context", the Institute's role is to encourage minerals exploration, availing geological information and data and ensure safer environment.

Public education on Botswana geoscience is conducted in all areas of it's operations. BGI is aware of the expectations raised by such public education especially with regards to managing geohazards and encouraging mineral investment in Botswana and therefore strives to meet such expectations by implementing a robust strategic plan.

BGI corporate social responsibility therefore starts with running a successful geoscience business, producing the right solutions the customers need, creating jobs for the citizens and thereby contributing to nation economic building.

Participation in Local Communities activities

The Institute participated in a number of activities organised in communities to share knowledge about its operations and services. One such important activity is Book Donations and career Guidance organised by Ministry of Mineral Resources, Green Technology and Energy Security organised as part of its Community Service Programme. The Ministry invited its parastatals and departments to collaborate in this exercise and BGI made a commitment to donate books.

The books were handed over at an event held at Kgomodiatshaba Village and the Chief Executive Officer of Botswana Energy Regulatory Authority, Ms Rose Seretse led the team of the Ministry in this Mission, on August 02, 2019. BGI participated and exhibited at the Annual Science week organised by one of its collaborative partners, BIUST in conjunction with the Ministry of Tertiary Education, Research, Science and Technology in August 13-23, 2019.

CORPORATE SOCIAL RESPONSIBILITY (Continued)

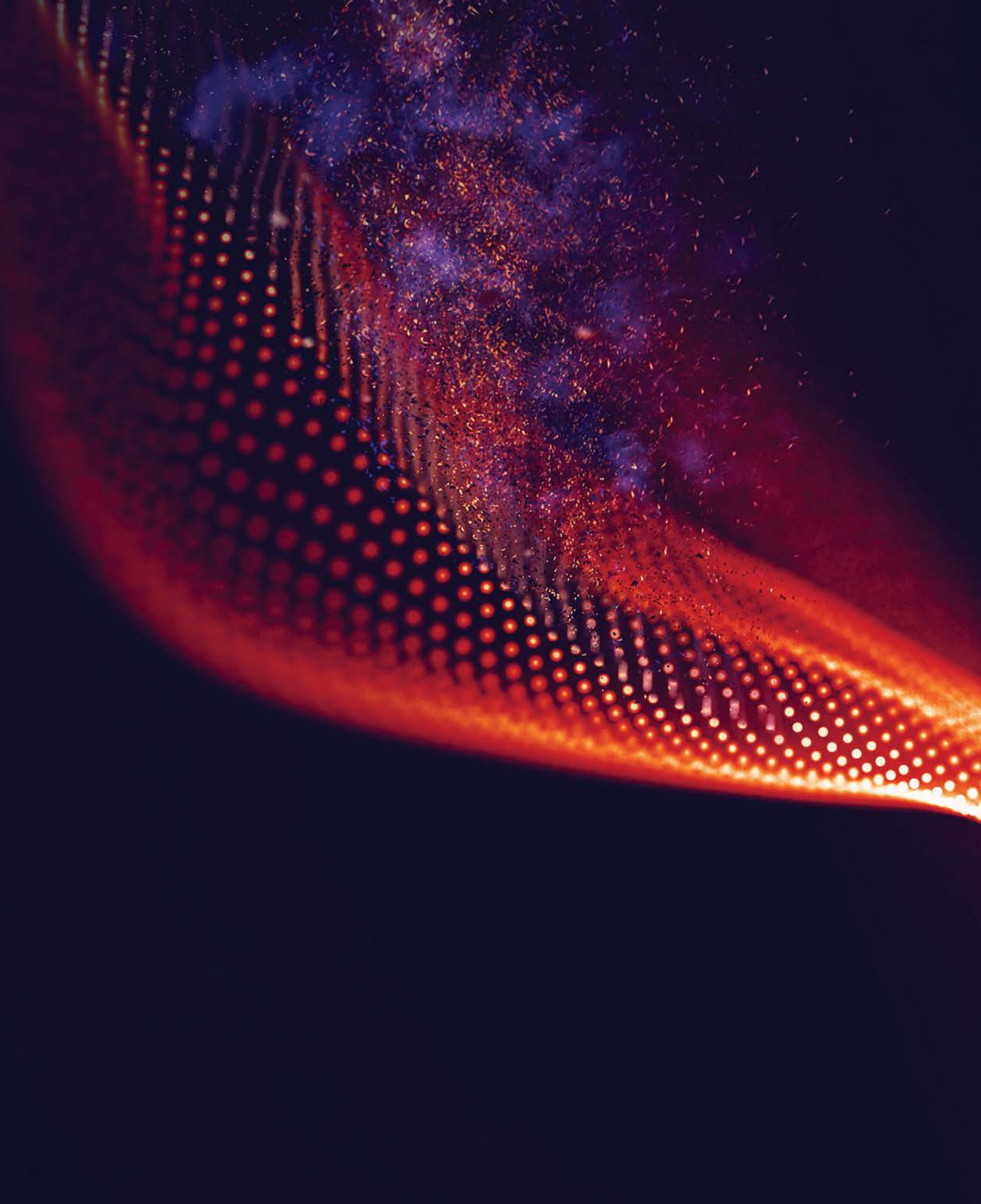
This was a must attend event for BGI as a science, technology and innovation driven organisation. BGI therefore took advantage of this forum to encourage learning in the field of science. Botswana as a developing nation needs to consistently drive awareness and capacity building initiatives to allow herself to be competitive in this era of rapid technology evolutions. Harnessing the power of science technology and innovation for sustainable development is key to Botswana's progress in achieving ideals of Vision 2036 which was derived from the African Union Agenda 2036.

Procurement services

BGI recognises procurement opportunities that arise from its business activities as effective economic impact multipliers through which citizen economic empowerment aspirations could be realised. In doing this the Institute strives to observe the Government of Botswana policies on local economic empowerment such as , Economic Diversitification Drive (EDD), supporting marginalised groups such as people living with disabilities, women, youth and those in rural settlements. In this way, BGI gives them an opportunity to play an active role in its supply chain. Advertisements on local newspapers for invitation to tenders are made explicit to invite companies that meet the above criteria to participate.

BGI Employees and CSR

Corporate Social Responsibility at BGI is driven by its employees, whether it relates to the Institute's core business or other social activities designed as an intervention in some community needs. It is therefore everybody's concern and every one of BGI employees contributes immensely. An example of this is the employees contributed new and preowned clothes to the Lobatse community in liaison with Lobatse Town Council.



BOTSWANA GEOSCIENCE INSTITUTE

FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2020

FINANCIAL STATEMENTS

Botswana Geoscience Institute
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BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

General Information

COUNTRY OF INCORPORATION AND DOMICILE	Botswana
NATURE OF BUSINESS AND PRINCIPAL ACTIVITIES	Responsible for research in the field of geosciences, providing specialised geoscientific services and promoting the search for, and exploration of any minerals in Botswana.
DIRECTORS	Prof. Motsoptse P. Modisi - Chairman of the Board Prof. Elisha M.Shemang - Deputy Chairperson of the Board Ms. Tebogo Mmoshe - Member Ms. Ontlametse Mokopakgosi - Member Dr. Sebusi Odisitse - Member Dr. Budzanani Tacheba - Member Ms. Bogadi Mathangwane - Member Mr. Ogone M. Gaboutloeloe - Member Mr. Tiyapo H. Ngwisanyi - Chief Executive Officer - (ex-officio) member
BOARD SECRETARY	Obolokile C. Sekga
REGISTERED OFFICE	Plot 11566 Khama 1 Avenue Lobatse
POSTAL ADDRESS	Private Bag 14 Lobatse
BANKERS	First National Bank Botswana Limited
CERTIFIED AUDITORS	Mazars Partnership

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Members of Board Responsibilities and Approval

The Members of Board are required in terms of the Botswana Geoscience Institute Act, 2014 to maintain adequate accounting records and are responsible for the content and integrity of the annual financial statements and related financial information included in this report. It is their responsibility to ensure that the annual financial statements fairly present the state of affairs of the Institute as at the end of the financial year and the results of its operations and cash flows for the period then ended, in conformity with International Financial Reporting Standards. The external auditors are engaged to express an independent opinion on the annual financial statements.

The annual financial statements are prepared in accordance with International Financial Reporting Standards and are based upon appropriate accounting policies consistently applied and supported by reasonable and prudent judgements and estimates.

The Members of the Board acknowledge that they are ultimately responsible for the system of internal financial control established by the Institute and place considerable importance on maintaining a strong control environment. To enable the Members of the Board to meet these responsibilities, the board sets standards for internal control aimed at reducing the risk of error or loss in a cost effective manner. The standards include the proper delegation of responsibilities within a clearly defined framework, effective accounting procedures and adequate segregation of duties to ensure an acceptable level of risk. These controls are monitored throughout the Institute and all employees are required to maintain the highest ethical standards in ensuring the Institute's business is conducted in a manner that in all reasonable circumstances is above reproach. The focus of risk management in the Institute is on identifying, assessing, managing and monitoring all known forms of risk across the Institute. While operating risk cannot be fully eliminated, the Institute endeavours to minimise it by ensuring that appropriate infrastructure, controls, systems and ethical behaviour are applied and managed within predetermined procedures and constraints.

The Members of the Board are of the opinion, based on the information and explanations given by management, that the system of internal control provides reasonable assurance that the financial records may be relied on for the preparation of the annual financial statements. However, any system of internal financial control can provide only reasonable, and not absolute, assurance against material misstatement or loss.

The Members of the Board have reviewed the Institute's cash flow forecast for the year to 31 March 2021 and, in light of this review and the current financial position, they are satisfied that the Institute has or had access to adequate resources to continue in operational existence for the foreseeable future.

The external auditors are responsible for independently auditing and reporting on the Institute's's annual financial statements. The annual financial statements have been examined by the Institute's external auditors and their report is presented on pages 74 to 77.

The annual financial statements set out on pages 78 to 102, which have been prepared on the going concern basis, were approved by the Board on the 10th October 2020 and were signed on their behalf by:

Prof. Motsoptse P. Modisi
Chairperson of the Board

Mr. Tiyapo H. Ngwisanyi
Chief Executive Officer

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Independent Auditor's Report

To the members of Botswana Geoscience Institute

Opinion

We have audited the annual financial statements of Botswana Geoscience Institute set out on pages 8 to 29, which comprise the statement of financial position as at 31 March 2020, and the statement of profit or loss and other comprehensive income, statement of changes in accumulated fund and statement of cash flows for the year then ended, and notes to the annual financial statements, including a summary of significant accounting policies.

In our opinion, the annual financial statements present fairly, in all material respects, the financial position of Botswana Geoscience Institute as at 31 March 2020, and its financial performance and cash flows for the year then ended in accordance with International Financial Reporting Standards and Botswana Geoscience Institute Act 2014.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the annual financial statements section of our report. We are independent of the institute in accordance with the International Ethics Standards Board for Accountants' International Code of Ethics for Professional Accountants (including International Independence Standards) (Parts 1 and 3) (IESBA Code) and other independence requirements applicable to performing audits of annual financial statements in Botswana. We have fulfilled our other ethical responsibilities in accordance with the IESBA Code and in accordance with other ethical requirements applicable to performing audits in Botswana. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of matter

We draw attention to Note 20 to the annual financial statements which indicates that the previously issued annual financial statements for the years ended 31 March 2017, 31 March 2018 and 31 March 2019 have been restated. As explained in Note 20, this is to reflect the effects of the change from repalcement cost to market value in the valuation of Land and buildings. Our opinion is not modified in respect of this matter.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the annual financial statements of the current period. These matters were addressed in the context of our audit of the annual financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter	How our audit addressed the key audit matter
Valuation of Land and Buildings	
Land and buildings are accounted for at cost less accumulated depreciation. The Land and buildings were transferred from the Department of Geological Survey to Botswana Geoscience Institute during the	We read the valuation report for the property valued externally and confirmed the valuation approach was in accordance with International Financial Reporting Standards and suitable for use in determining the cost value of the Land and buildings.

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Independent Auditor's Report

Key audit matter	How our audit addressed the key audit matter
Valuation of Land and Buildings year ended 31 March 2017. The Institute recognised the cost value of the land and building initially based on a valuation report as at 31 March 2017. During the current year, The Institute decided to change the initially recognised cost value of Lobatse Headquarters Plot 11566 from insurance replacement cost as per the valuation report to Open market value as per the updated valuation report. The Institute is of the view that this will result in better presentation of the financial statements and to be consistent with the values of properties under land and buildings. The change in initial recognition of cost from insurance replacement cost to market values resulted in adjustments in current year as well as prior periods in these financial statements. The financial statements are restated to this effect. The change from replacement cost to market value for Headquarters land and buildings was considered to be a matter of most significance to the current period audit due to: - The significance of the estimates and the level of judgement involved. - The Institute applied the change from current replacement cost to market value and additional disclosures were made in the financial statements as set out on Note 20 (Restated Balances).	We assessed the valuators' qualifications and expertise and read their terms of engagement with the Institute to determine whether there were any matters that may have affected their objectivity or may have imposed scope limitations upon their work. We found no evidence to suggest that the objectivity of the valuators in their performance of the valuations was compromised. We tested the data inputs in the valuation prepared by the valuers. We focused on the data inputs underpinning the property valuation, including rental income and property-related operating expenditure, to assess the reliability and reasonability of the capitalized net operating income. We further reviewed the appropriateness of the disclosures in the financial statements concerning the key assumptions to which the valuations are most sensitive, and the inter-relationship between the assumptions and the valuation amounts. Based on the procedures performed, we obtained evidence that the assumptions used in the valuations supported the cost of Land and buildings adopted is reasonable in light of available and comparable market evidence. We reviewed the financial statements (Refer to Note 20) to ensure that the entity had disclosed the following: - The details of the change in carrying amount of Land and buildings. - The amount of adjustment related to the current year and prior periods due to the change from replacement cost to market value. Based on the procedures performed we obtained reasonable assurance that the financial statements are not materially misstated in respect of the restatement of Land and Buildings.

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Independent Auditor's Report

Key audit matter	How our audit addressed the key audit matter
Valuation of Land and Buildings **Impact of COVID-19 on financial statements of the Institute** Since the balance sheet date there has been a global pandemic from the outbreak of COVID-19. The potential impact of COVID-19 is causing widespread disruption to normal patterns of business activity across the world, including Botswana. The disclosure associated with COVID-19 is set out in the financial statements on the following note; Note 18 Events after reporting period: Due to the impact of COVID-19 and the uncertainty surrounding the final impact of COVID-19 on the Institute, it was judged to be a key audit matter.	We assessed management's conclusion that the matter be treated as a non-adjusting post balance sheet event and that the impact of the outbreak of COVID-19 would not affect the preparation of the financial statements on the going concern basis. We considered: The timing of the development of the outbreak across the world and in Botswana; and How the financial statements and operations of the Institute might be impacted by the disruption. We received an assessment performed by management, which included, inter alia the following: We reviewed management's going concern assessment incorporating the impact of COVID-19 implications. We made enquiries of management to understand the period of assessment considered by them; We evaluated the key assumptions in the assessment prepared by management and assessed the reasonableness of assumptions used given the information existing at the date of the audit procedures.

Other information

The Members of Board are responsible for the other information. The other information comprises detailed income statement. The other information does not include the annual financial statements and our auditor's report thereon.

Our opinion on the annual financial statements does not cover the other information and we do not express an audit opinion or any form of assurance conclusion thereon.

In connection with our audit of the annual financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the annual financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the directors for the Annual Financial statements

The Members of Board are responsible for the preparation and fair presentation of the annual financial statements in accordance with International Financial Reporting Standards and the requirements of the Botswana Geoscience

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Independent Auditor's Report

Institute Act 2014, and for such internal control as the directors determine is necessary to enable the preparation of annual financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the annual financial statements, the Members of Board are responsible for assessing the institute's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Members of Board either intend to liquidate the institute or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the Annual Financial Statements

Our objectives are to obtain reasonable assurance about whether the annual financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with International Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual financial statements.

As part of an audit in accordance with International Standards on Auditing, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the annual financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the Members of Board use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the annual financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the annual financial statements, including the disclosures, and whether the annual financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

mazars
Mazars
Partnership
Practicing Member: Shashikumar Velambath
Practicing number - 19980076

Date: 12th October 2020
Gaborone

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Statement of Financial Position as at 31 March, 2020

Figures in Pula	Note(s)	2020	2019 Restated*	2018 Restated *
Assets				
Non-Current Assets				
Property, plant and equipment	3	197,110,884	203,757,418	206,511,797
Current Assets				
Inventories	4	239,193	399,910	-
Trade and other receivables	5	402,043	1,000,181	456,962
Cash and cash equivalents	6	22,160,572	7,802,730	6,546,998
		22,801,808	**9,202,821**	**7,003,960**
Non-current assets held for sale	7	118,300	-	-
Total Assets		**220,030,992**	**212,960,239**	**213,515,757**
Funds and Liabilities				
Funds				
Capital grant	8	197,229,183	203,757,813	206,511,794
Accumulated surplus		5,054,416	902,696	859,941
		202,283,599	**204,660,508**	**207,371,737**
Liabilities				
Current Liabilities				
Trade and other payables	9	8,577,831	7,768,816	3,974,909
Deferred income	10	9,169,562	530,915	2,169,111
		17,747,393	**8,299,731**	**6,144,020**
Total Funds and Liabilities		**220,030,992**	**212,960,239**	**213,515,757**

* Note 20 Restated balances

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Statement of Profit or Loss and Other Comprehensive Income

Figures in Pula	Note(s)	2020	2019 Restated*	2018 Restated *
Grant Income	11	65,039,196	63,667,688	42,181,632
Other operating income	12	9,556,028	7,976,217	6,281,363
Other operating gains (losses)		828,514	40,499	-
Other operating expenses		(71,391,321)	(71,643,909)	(47,747,923)
Operating surplus	13	4,032,417	40,495	715,072
Investment income	14	119,300	2,257	28,986
Surplus for the year		**4,151,717**	**42,752**	**744,058**

* Note 20 Restated balances

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Statement of Changes in Funds

Figures in Pula	Capital Grant	Accumulated Surplus	Total Funds
Opening balance as previously reported	253,819,789	859,943	254,679,732
Adjustments			
Prior year adjustments	(47,307,992)	-	(47,307,992)
Restated* Balance at 01 April 2018 as restated	**206,511,797**	**859,943**	**207,371,740**
Surplus for the year	**-**	**42,752**	**42,752**
Assets capitalised	3,271,497	-	3,271,497
Amortisation of capital grant	(6,025,479)	-	(6,025,479)
	(2,753,982)	**-**	**(2,753,982)**
Opening balance as previously reported	249,770,568	902,699	250,673,267
Adjustments			
Prior year adjustments	(46,012,753)	-	(46,012,753)
Balance at 01 April 2019 as restated	**203,757,815**	**902,699**	**204,660,514**
Surplus for the year	**-**	**4,151,717**	**4,151,717**
Assets capitalised	1,521,315	-	1,521,315
Armotisation of capital grant	(6,110,265)	-	(6,110,265)
Capital assets disposed	(1,939,684)	-	(1,939,684)
	(6,528,634)	**-**	**(6,528,634)**
Balance at 31 March 2020	**197,229,181**	**5,054,416**	**202,283,597**
Note(s)	8		

* Note 20 Restated balances

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Statement of Cash Flows

Figures in Pula	Note(s)	2020	2019 Restated*	2018 Restated *
Cash flows from operating activities				
Surplus for the year		4,151,717	42,752	744,058
Adjustments for:				
Depreciation and amortisation		6,218,080	6,025,479	5,597,039
Gains on disposals, scrappings and settlements of assets and liabilities		(828,514)	(40,499)	-
Interest received		(119,300)	(2,257)	(28,986)
Changes in working capital:				
Inventories		160,717	(399,910)	-
Trade and other receivables		598,138	(543,219)	(181,715)
Trade and other payables		809,020	3,793,908	2,214,942
Deferred income		8,638,647	(1,638,196)	(18,103,983)
Cash (used in) generated from operations		**19,628,505**	**7,238,058**	**(9,758,645)**
Cash flows from investing activities				
Purchase of property, plant and equipment	3	(1,521,315)	(3,271,498)	(7,061,971)
Sale of property, plant and equipment	3	2,659,983	40,897	-
Interest Income		119,300	2,257	28,986
Net cash from investing activities		**1,257,968**	**(3,228,344)**	**(7,032,985)**
Cash flows from financing activities				
Armotisation of capital grant	8	(6,218,080)	(6,025,479)	(5,597,039)
Capitalised assets	8	(310,551)	3,271,497	7,061,971
Net cash from financing activities		**(6,528,631)**	**(2,753,982)**	**1,464,932**
Total cash movement for the year		**14,357,842**	**1,255,732**	**(15,326,698)**
Cash at the beginning of the year		7,802,730	6,546,998	21,873,696
Total cash at end of the year	**6**	**22,160,572**	**7,802,730**	**6,546,998**

* Note 20 Restated balances

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Accounting Policies

1. Significant accounting policies

The principal accounting policies applied in the preparation of these annual financial statements are set out below.

1.1 Basis of preparation

The annual financial statements have been prepared on the going concern basis in accordance with, and in compliance with, International Financial Reporting Standards ("IFRS") and International Financial Reporting Interpretations Committee ("IFRIC") interpretations issued and effective at the time of preparing these annual financial statements and the Botswana Geoscience Institute Act, 2014.

The annual financial statements have been prepared on the historic cost convention, unless otherwise stated in the accounting policies which follow and incorporate the principal accounting policies set out below. They are presented in Pulas, which is the Institute's functional currency.

These accounting policies are consistent with the previous period,

1.2 Significant judgements and sources of estimation uncertainty

The preparation of annual financial statements in conformity with IFRS requires management, from time to time, to make judgements, estimates and assumptions that affect the application of policies and reported amounts of assets, liabilities, income and expenses. These estimates and associated assumptions are based on experience and various other factors that are believed to be reasonable under the circumstances. Actual results may differ from these estimates. The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates are revised and in any future periods affected.

Key sources of estimation uncertainty

The annual financial statements do not include assets or liabilities whose carrying amounts were determined based on estimations for which there is a significant risk of material adjustments in the following financial year as a result of the key estimation assumptions.

1.3 Property, plant and equipment

Property, plant and equipment are tangible assets which the institue holds for its own use or for rental to others and which are expected to be used for more than one year.

An item of property, plant and equipment is recognised as an asset when it is probable that future economic benefits associated with the item will flow to the institute, and the cost of the item can be measured reliably.

Property, plant and equipment is initially measured at cost. Cost includes all of the expenditure which is directly attributable to the acquisition or construction of the asset.

Expenditure incurred subsequently for major services, additions to or replacements of parts of property, plant and equipment are capitalised if it is probable that future economic benefits associated with the expenditure will flow to the institute and the cost can be measured reliably. Day to day servicing costs are included in profit or loss in the year in which they are incurred.

Property, plant and equipment is subsequently stated at cost less accumulated depreciation and any accumulated impairment losses.

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Accounting Policies

1.3 Property, plant and equipment (continued)

Depreciation of an asset commences when the asset is available for use as intended by management. Depreciation is charged to write-off the asset's carrying amount over its estimated useful life to its estimated residual value, using a method that best reflects the pattern in which the asset's economic benefits are consumed by the institute. Leased assets are depreciated in a consistent manner over the shorter of their expected useful lives and the lease term. Depreciation is not charged to an asset if its estimated residual value exceeds or is equal to its carrying amount. Depreciation of an asset ceases at the earlier of the date that the asset is classified as held for sale or derecognised.

The useful lives of items of property, plant and equipment have been assessed as follows:

Item	Depreciation method	Average useful life
Buildings	Straight line	50 years
Plant and machinery	Straight line	6-7 years
Furniture and fixtures	Straight line	10 years
Motor vehicles	Straight line	5 years
Office equipment	Straight line	4 to 20 years
Laboratory equipment and instruments	Straight line	15 years

Land is not depreciated.

The residual value, useful life and depreciation method of each asset are reviewed at the end of each reporting year. If the expectations differ from previous estimates, the change is accounted for prospectively as a change in accounting estimate.

Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item is depreciated separately.

The depreciation charge for each year is recognised in profit or loss unless it is included in the carrying amount of another asset.

Impairment tests are performed on property, plant and equipment when there is an indicator that they may be impaired. When the carrying amount of an item of property, plant and equipment is assessed to be higher than the estimated recoverable amount, an impairment loss is recognised immediately in profit or loss to bring the carrying amount in line with the recoverable amount.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its continued use or disposal. Any gain or loss arising from the derecognition of an item of property, plant and equipment, determined as the difference between the net disposal proceeds, if any, and the carrying amount of the item, is included in profit or loss when the item is derecognised.

1.4 Financial instruments

Financial instruments held by the Institute are classified in accordance with the provisions of IFRS 9 Financial Instruments.

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Accounting Policies

1.4 Financial instruments (continued)

Broadly, the classification possibilities, which are adopted by the Institute as applicable, are as follows:

Financial assets which are equity instruments:

- Mandatorily at fair value through profit or loss; or

Financial assets which are debt instruments:

- Amortised cost. (This category applies only when the contractual terms of the instrument give rise, on specified dates, to cash flows that are solely payments of principal and interest on principal, and where the instrument is held under a business model whose objective is met by holding the instrument to collect contractual cash flows); or

Financial liabilities:

- Amortised cost; or

Note 17 Financial instruments and risk management presents the financial instruments held by the Institute based on their specific classifications.

All regular way purchases or sales of financial assets are recognised and derecognised on a trade date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

The specific accounting policies for the classification, recognition and measurement of each type of financial instrument held by the Institute are presented below:

Trade and other receivables

Classification

Trade and other receivables, excluding, when applicable, VAT and prepayments, are classified as financial assets subsequently measured at amortised cost (note 5).

They have been classified in this manner because their contractual terms give rise, on specified dates to cash flows that are solely payments of principal and interest on the principal outstanding, and the Institute's business model is to collect the contractual cash flows on trade and other receivables.

Recognition and measurement

Trade and other receivables are recognised when the Institute becomes a party to the contractual provisions of the receivables. They are measured, at initial recognition, at fair value plus transaction costs, if any.

They are subsequently measured at amortised cost.

The amortised cost is the amount recognised on the receivable initially, minus principal repayments, plus cumulative amortisation (interest) using the effective interest method of any difference between the initial amount and the maturity amount, adjusted for any loss allowance.

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Accounting Policies

1.4 Financial instruments (continued)

Impairment

The Institute does not recognises a loss allowance for expected credit losses on trade and other receivables, as receivables are insignificant compared to income.

Write-off policy

The Institute writes off a receivable when there is information indicating that the counterparty is in severe financial difficulty and there is no realistic prospect of recovery, e.g. when the counterparty has been placed under liquidation or has entered into bankruptcy proceedings. Receivables written off may still be subject to enforcement activities under the institute recovery procedures, taking into account legal advice where appropriate. Any recoveries made are recognised in profit or loss.

Trade and other payables

Classification

Trade and other payables (note 9), excluding VAT and amounts received in advance, are classified as financial liabilities subsequently measured at amortised cost.

Recognition and measurement

They are recognised when the Institute becomes a party to the contractual provisions, and are measured, at initial recognition, at fair value plus transaction costs, if any.

They are subsequently measured at amortised cost using the effective interest method.

The effective interest method is a method of calculating the amortised cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial liability, or (where appropriate) a shorter period, to the amortised cost of a financial liability.

If trade and other payables contain a financing component, and the effective interest method results in the recognition of interest expense, then it is included in profit or loss in finance costs (note).
Trade and other payables expose the Institute to liquidity risk and possibly to interest rate risk. Refer to note 17 for details of risk exposure and management thereof.

Derecognition

Refer to the "derecognition" section of the accounting policy for the policies and processes related to derecognition.

Cash and cash equivalents

Cash and cash equivalents are stated at carrying value which is deemed to be fair value.

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Accounting Policies

1.4 Financial instruments (continued)

Derecognition

Financial assets

The institute derecognises a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party. If the institute neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the institute recognises its retained interest in the asset and an associated liability for amounts it may have to pay. If the institute retains substantially all the risks and rewards of ownership of a transferred financial asset, the institute continues to recognise the financial asset and also recognises a collateralised borrowing for the proceeds received.

Financial liabilities

The institute derecognises financial liabilities when, and only when, the institute obligations are discharged, cancelled or they expire. The difference between the carrying amount of the financial liability derecognised and the consideration paid and payable, including any non-cash assets transferred or liabilities assumed, is recognised in profit or loss.

1.5 Non-current assets held for sale

Non-current assets and disposal groups are classified as held for sale if their carrying amount will be recovered through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable and the asset (or disposal group) is available for immediate sale in its present condition. Management must be committed to the sale, which should be expected to qualify for recognition as a completed sale within one year from the date of classification.

Non-current assets (or disposal groups) held for sale (distribution to owners) are measured at the lower of their carrying amount and fair value less costs to sell (distribute).

A non-current asset is not depreciated (or amortised) while it is classified as held for sale (held for distribution to owners), or while it is part of a disposal group classified as such.

1.6 Impairment of assets

The institute assesses at each end of the reporting period whether there is any indication that an asset may be impaired. If any such indication exists, the institute estimates the recoverable amount of the asset.

If there is any indication that an asset may be impaired, the recoverable amount is estimated for the individual asset. If it is not possible to estimate the recoverable amount of the individual asset, the recoverable amount of the cash-generating unit to which the asset belongs is determined.

The recoverable amount of an asset or a cash-generating unit is the higher of its fair value less costs of disposal and its value in use.

If the recoverable amount of an asset is less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. That reduction is an impairment loss.

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Accounting Policies

1.6 Impairment of assets (continued)

An impairment loss of assets carried at cost less any accumulated depreciation or amortisation is recognised immediately in profit or loss. Any impairment loss of a revalued asset is treated as a revaluation decrease.

A reversal of an impairment loss of assets carried at cost less accumulated depreciation or amortisation other than goodwill is recognised immediately in profit or loss.

1.7 Employee benefits

Short-term employee benefits

The cost of short-term employee benefits, (those expected to be settled wholly before 12 months after the service is rendered, such as paid vacation leave and sick leave, bonuses, and non-monetary benefits such as medical care), are recognised in the period in which the service is rendered and are not discounted.

The expected cost of compensated absences is recognised as an expense as the employees render services that increase their entitlement or, in the case of non-accumulating absences, when the absence occurs.

The expected cost of profit sharing and bonus payments is recognised as an expense when there is a legal or constructive obligation to make such payments as a result of past performance.

1.8 Government grants

Government grants are recognised when there is reasonable assurance that:

- the institute will comply with the conditions attaching to them; and
- the grants will be received.

Government grants are recognised as income over the periods necessary to match them with the related costs that they are intended to compensate.

A government grant that becomes receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the entity with no future related costs is recognised as income of the period in which it becomes receivable.

Government grants related to assets, including non-monetary grants at fair value, are presented in the statement of financial position by setting up the grant as deferred income or by deducting the grant in arriving at the carrying amount of the asset.

Grants related to income are presented as a credit in the profit or loss in the statement of comprehensive income presented as a credit in the profit or loss (separately).

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Notes to the Annual Financial Statements

2. New Standards and Interpretations

2.1 Standards and interpretations effective and adopted in the current year

In the current year, the Institute has adopted the following standards and interpretations that are effective for the current financial year and that are relevant to its operations:

Standard/ Interpretation:	Effective date: Years beginning on or after	Expected impact:
• IFRS 17 Insurance Contracts	1 January, 2021	Unlikely there will be a material impact
• Plan Amendment, Curtailment or Settlement - Amendments to IAS 19	1 January, 2019	Unlikely there will be a material impact
• Long-term Interests in Joint Ventures and Associates - Amendments to IAS 28	1 January, 2019	Unlikely there will be a material impact
• Prepayment Features with Negative Compensation - Amendment to IFRS 9	1 January, 2019	Unlikely there will be a material impact
• Amendments to IFRS 3 Business Combinations: Annual Improvements to IFRS 2015 - 2017 cycle	1 January, 2019	Unlikely there will be a material impact
• Amendments to IFRS 11 Joint Arrangements: Annual Improvements to IFRS 2015 - 2017 cycle	1 January, 2019	Unlikely there will be a material impact
• Amendments to IAS 12 Income Taxes: Annual Improvements to IFRS 2015 - 2017 cycle	1 January, 2019	The impact of the amendments is not material impact
• Amendments to IAS 23 Borrowing Costs: Annual Improvements to IFRS 2015 - 2017 cycle	1 January, 2019	Unlikely there will be a material impact
• IFRS 16 Leases	1 January, 2019	The impact of the amendments is not material.

BOTSWANA GEOSCIENCE INSTITUTE

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Notes to the Annual Financial Statements

Figures in Pula	2020			2019		

3. Property, plant and equipment

	Cost or revaluation	Accumulated depreciation	Carrying Value	Cost or revaluation	Accumulated depreciation	Carrying Value
Land	9,831,985	-	9,831,985	9,831,985	-	9,831,985
Buildings	165,528,015	(9,931,681)	155,596,334	165,528,015	(6,621,121)	158,906,894
Plant and machinery	7,309,000	(1,204,774)	6,104,226	7,309,000	(808,301)	6,500,699
Motor vehicles	5,893,099	(2,342,120)	3,550,979	6,561,799	(1,619,643)	4,942,156
Office equipment	6,631,180	(2,231,170)	4,400,010	6,500,101	(1,267,031)	5,233,070
Laboratory plant and instruments	19,649,991	(2,022,641)	17,627,350	19,649,038	(1,306,424)	18,342,614
Total	**214,843,270**	**(17,732,386)**	**197,110,884**	**215,379,938**	**(11,622,520)**	**203,757,418**

	2018		
	Cost or revaluation	Accumulated depreciation	Carrying Value
Land	9,831,985	-	9,831,985
Buildings	165,528,015	(3,310,560)	162,217,455
Plant and machinery	7,309,000	(411,827)	6,897,173
Motor vehicles	6,561,799	(790,130)	5,771,669
Office equipment	4,365,264	(482,681)	3,882,583
Laboratory plant and instruments	18,512,775	(601,843)	17,910,932
Total	**212,108,838**	**(5,597,041)**	**206,511,797**

Reconciliation of property, plant and equipment - 2020

	Opening balance	Additions	Disposals	Classified as held for sale	Depreciation	Total
Land	9,831,985	-	-	-	-	9,831,985
Buildings	158,906,894	-	-	-	(3,310,560)	155,596,334
Plant and machinery	6,500,699	-	-	-	(396,473)	6,104,226
Motor vehicles	4,942,156	1,366,783	(1,818,845)	(118,300)	(820,815)	3,550,979
Office equipment	5,233,070	153,579	(12,624)	-	(974,015)	4,400,010
Laboratory plant and instruments	18,342,614	953	-	-	(716,217)	17,627,350
	203,757,418	**1,521,315**	**(1,831,469)**	**(118,300)**	**(6,218,080)**	**197,110,884**

BOTSWANA GEOSCIENCE INSTITUTE

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Notes to the Annual Financial Statements

Figures in Pula	Note(s)	2020	2019	2018

3. Property, plant and equipment (continued)

Reconciliation of property, plant and equipment - 2019

	Opening balance	Additions	Disposals	Depreciation	Total
Land	9,831,985	-	-	-	9,831,985
Buildings	162,217,455	-	-	(3,310,561)	158,906,894
Plant and machinery	6,897,173	-	-	(396,474)	6,500,699
Motor vehicles	5,771,669	-	-	(829,513)	4,942,156
Office equipment	3,882,583	2,135,236	(398)	(784,351)	5,233,070
Laboratory plant and instruments	17,910,932	1,136,262	-	(704,580)	18,342,614
	206,511,797	**3,271,498**	**(398)**	**(6,025,479)**	**203,757,418**

Reconciliation of property, plant and equipment - 2018

	Opening	Additions balance	Depreciation	Total
Land	9,831,985	-	-	9,831,985
Buildings	165,528,015	-	(3,310,560)	162,217,455
Plant and machinery	7,309,000	-	(411,827)	6,897,173
Motor vehicles	6,187,900	373,899	(790,130)	5,771,669
Office equipment	2,841,629	1,523,634	(482,680)	3,882,583
Laboratory plant and instruments	13,348,336	5,164,438	(601,842)	17,910,932
	205,046,865	**7,061,971**	**(5,597,039)**	**206,511,797**

Changes from replacement cost to market value on the initial recognition of cost

During the current year Institute decided to change the initially recognised cost value of Lobatse Headquarters Plot 11566 from insurance replacement cost as per the valuation report to Open market value as per the updated valuation report. The Institute is of the view that this will result in better presentation of the financial statements and to be consistent with the values of properties under land and buildings. The change in initial recognition of cost from insurance replacement cost to market values resulted in adjustments in current year as well as prior periods in these financial statements. The financial statements are restated to this effect. Refer to Note 20.

4. Inventories

Consumables	239,193	399,910	-

BOTSWANA GEOSCIENCE INSTITUTE

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Notes to the Annual Financial Statements

Figures in Pula	Note(s)	2020	2019	2018
5. Trade and other receivables				
Financial instruments:				
Receivables		40,741	101,691	34,888
Trade receivables: Limestone Investigation- Clinker Project		-	337,443	-
Other receivables		-	134,045	-
Trade receivables at amortised cost		40,741	573,179	34,888
Withholding tax interest and other receivables		99,729	84,695	419,807
Board and manager recoveries		61,955	77,900	-
Imprest		199,618	264,407	-
Non-financial instruments:				
Employee costs in advance		-	-	2,267
Total trade and other receivables		**402,043**	**1,000,181**	**456,962**

Financial instrument and non-financial instrument components of trade and other receivables

At amortised cost	402,043	1,000,181	454,695
Non-financial instruments	-	-	2,267
	402,043	**1,000,181**	**456,962**

Exposure to credit risk

Trade receivables inherently expose the company to credit risk, being the risk that the company will incur financial loss if customers fail to make payments as they fall due.

In order to mitigate the risk of financial loss from defaults, the Institute only deals with reputable customers with consistent payment histories.

There have been no significant changes in the credit risk management policies and processes since the prior reporting period.

The average credit period on trade receivables is 30 days (2019: 30 days; 2018: 30 days). No interest is charged on outstanding trade receivables.

A loss allowance has not been recognised for all trade receivables, in accordance with IFRS 9 Financial Instruments, as it is not material at the end of the reporting period.

There has been no change in the estimation techniques or significant assumptions made during the current reporting period.

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Notes to the Annual Financial Statements

6. Cash and cash equivalents

Cash and cash equivalents consist of:

Cash on hand	2,044	2,257	847
Bank balances	22,158,528	7,800,473	6,546,151
	22,160,572	**7,802,730**	**6,546,998**

7. Non-current assets held for sale

Botswana Geoscience Institute, were using vehicles which were still registered as Government vehicles from the ministry of minerals resources, green technology and energy. The ministry, then transferred these vehicles to Botswana Geoscience Institute officially on 31 October 2019. These vehicles, were then put up for auction and eventually sold in the month of November 2019.

The balance of below represents the vehicles not sold at year end as at 31 March 2020.

Assets and liabilities

Non-current assets held for sale

Property, plant and equipment	118,300	-	-

8. Capital Grant

Capital grant relates to grant received for the purpose of capital expenditure. The grant is amortised on an annual basis. The annual amortisation is equivalent to the depreciation on the assets that were financed from the grants.

Opening balance	203,757,813	206,511,794	205,046,862
Capital assets purchased	1,521,315	3,271,498	7,061,971
Amortisation	(6,218,080)	(6,025,479)	(5,597,039)
Capital assets purchased	(1,831,865)	-	-
Closing balance	**197,229,183**	**203,757,813**	**206,511,794**

9. Trade and other payables

Financial instruments:

Payables	179,070	2,376,144	1,702,166
Payroll liabilities	8,398,761	5,392,672	2,272,74
	8,577,831	**7,768,816**	**3,974,909**

BOTSWANA GEOSCIENCE INSTITUTE

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Notes to the Annual Financial Statements

Figures in Pula	2020	2019	2018

10. Deferred income

Deferred income represents grants received from the government that have not been utilised yet.These amounts will be recognised when they are applied for the purposes as defined under the grant convention.

Opening Balance	530,916	2,169,111	20,273,094
Grant Income	73,832,374	65,030,965	-
Revenue expenditure	(65,039,196)	(63,397,662)	(11,042,012)
Capital expenditure	(154,531)	(3,271,498)	(7,061,971)
	9,169,563	**530,916**	**2,169,111**

11. Grant Income

Government grants	61,542,114	61,997,613	29,550,000
Other project grants	12,290,260	1,462,515	253,811
Deferred income utilised during the period	(8,793,178)	207,560	12,377,821
	65,039,196	**63,667,688**	**42,181,632**

12. Other operating income

Commissions received	114,348	-	-
Rental income	599,064	1,172,551	536,250
Amortisation of capital grant	6,218,080	6,025,479	5,597,039
Other income	699,852	306,699	148,074
Limestone Investigation- Clinker project Income	-	337,443	-
Limestone Investigation- Other income	-	134,045	-
Deferred income utilised	1,924,684	-	-
	9,556,028	**7,976,217**	**6,281,363**

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended 31 March, 2020

Notes to the Annual Financial Statements

Figures in Pula	2020	2019	2018
13. Operating profit (loss)			
Operating surplus for the year is stated after charging (crediting) the following, amongst others:			
Auditor's remuneration - external			
Audit fees	125,540	191,218	-
Remuneration, other than to employees			
Consulting and professional services	357,148	413,274	1,465,970
Employee costs			
Salaries, wages, bonuses and other benefits	40,058,066	37,114,833	23,379,881
Gratuity expenses	2,484,505	2,237,754	1,261,404
Retirement benefit plans: defined contribution expense	3,168,872	2,958,341	1,678,688
Total employee costs	**45,711,443**	**42,310,928**	**26,319,973**
Depreciation and amortisation			
Depreciation of property, plant and equipment	6,218,080	6,025,479	5,597,039
14. Investment income			
Interest income			
Bank	119,300	2,257	28,986

15. Taxation

No provision has been made for tax as the Institute is exempt from tax.

16. Related parties

Relationships	
Member of Board	Refer to page 1 (General Information)
Members of key management	Senior management
Stakeholder	Government of Botswana

Related party transactions			
Income			
Government of Botswana-Grant received	61,702,374	62,174,080	29,803,810

BOTSWANA GEOSCIENCE INSTITUTE

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Notes to the Annual Financial Statements

Figures in Pula	2020	2019	2018
Employee cost			
Senior Management Salaries	7,612,707	6,866,882	4,062,950
Board Expenses			
Board fees allowances	178,920	194,583	194,120
Board meetings	350,420	208,898	162,386
Benchmarking and corporate governance training	-	-	46,769
Board communication expenses	-	-	62,199
Total employee costs	**529,340**	**403,481**	**465,474**
Amount included in trade receivables related parties			
Board and Manager Recoveries	61,955	77,900	-

17. Financial instruments and risk management

Categories of financial instruments

Categories of financial assets

2020	**Note(s)**	**Amortised cost**	**Total**	**Fair value**
Trade and other receivables	5	402,043	402,043	402,043
Cash and cash equivalents	6	22,160,571	22,160,571	22,160,571
		22,562,614	**22,562,614**	**22,562,614**

2019		**Amortised cost**	**Total**	**Fair value**
Trade and other receivables	5	1,000,181	1,000,181	1,000,181
Cash and cash equivalents	6	7,802,730	7,802,730	7,802,730
		8,802,911	**8,802,911**	**8,802,911**

2018		**Amortised cost**	**Total**	**Fair value**
Trade and other receivables	5	454,695	454,695	454,695
Cash and cash equivalents	6	6,546,998	6,546,998	6,546,998
		7,001,693	**7,001,693**	**7,001,693**

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Figures in Pula	Note(s)	2020	2019	2018

17. Financial instruments and risk management (continued)

Categories of financial liabilities

2020

		Amortised cost	Total	Fair value
Trade and other payables	9	8,577,831	8,577,831	-

2019

		Amortised cost	Total	Fair value
Trade and other payables	9	7,768,814	7,768,814	-

2018

		Amortised cost	Total	Fair value
Trade and other payables	9	3,974,909	3,974,909	-

Figures in Pula	Note(s)	2020	2019	2018

Capital risk management

The institutes's objectives when managing capital are to safeguard the institutes's ability to continue as a going concern in order to provide returns for stakeholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

The Institute is funded by the Government.Consistent with this objective, the Institute does not monitor capital on the basis of the gearing ratio.

Trade and other payables	9	8,577,831	7,768,813	3,974,909

Financial risk management

Overview

The institute is exposed to the following risks from its use of financial instruments:

- Credit risk;
- Liquidity risk; and

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17. Financial instruments and risk management (continued)

The board has overall responsibility for the establishment and oversight of the Institute's risk management framework. The board has established the risk committee, which is responsible for developing and monitoring the Institute's risk management policies. The committee reports quarterly to the board on its activities.

Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash, the availability of funding through an adequate amount of committed credit facilities.

2020

		Carrying amount
Current liabilities		
Trade and other payables		8,577,831

2019

		Carrying amount
Current liabilities		
Trade and other payables	9	7,768,814

2018

		Carrying amount
Current liabilities		
Trade and other payables	9	3,974,909

Interest rate risk

As the institute has no significant interest-bearing assets, the institute's income and operating cash flows are substantially independent of changes in market interest rates.

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18. Events after the reporting period

The directors are not aware of any material events occurring between the year-end date and the date of approval of the financial statements, which require disclosure,except for the affect of COVID 19 as disclosed below.

Subsequent events-Coronavirus Pandemic (COVID 19)

In December 2019, a novel strain of coronavirus (COVID 19) was reported in Wuhan, China. The World Health Organization has declared the outbreak to constitute a "Public Health Emergency of International Concern." This Coronavirus was also first reported in Botswana in March 2020, and has spread to more than 212 countries worldwide covering Europe, the United States, Russia and even our neighbouring countries, South Africa, Zimbabwe and Zambia.

On 31 March 2020 the President of Botswana declared a "State of Emergency" in Botswana and from the second of April 2020 up to now all non-essential businesses have been closed down to curb the spread of COVID 19. As a result of this numerous sectors of the economy in Botswana are suffering damage and the long-term economic and business consequences remain unknown. Impacts such as sales and production disruptions, supply-chain interruptions, negative impacts on customers, volatility in the equity and debt markets, reduced revenue and cash flows, cash out flow through donations to the State COVID 19 fund and other economic consequences have been observed.

In light of IFRS requirements to account for adjusting and non-adjusting events occurring after year end, management performed this assessment following IAS10 guidelines and definitions. It became apparent that as at year end, 31, March 2020, there were no events or conditions in Botswana, or our within the operations of the Institute that were brought about by COVID 19 also known as Coronavirus. However after year end some measures taken by the Government of Botswana, as explained above, have impacted the operations of the Institute. From this assessment, management has concluded that any effects, or financial conditions COVID 19 may bring after year end, are all non adjusting events, except if these events affect the going concern assumption. Due to the effects of the pandemic, there has been a 5% cut in the subvention from the government.

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19. Members of the Board fees

Non-Executive

2020

	Sitting allowance	Total
Prof. Motsoptse Modisi - Chairperson of the Board	12,600	12,600
Prof. Elisha M.Shemang - Deputy Chairperson of the Board	26,460	26,460
Ms.Tebogo Mmoshe - Member	18,900	18,900
Ms.Ontlametse Mokopakgosi -Member	22,680	22,680
Dr.Sebusi Odisitse - Member	25,200	25,200
Dr.Budzanani Tacheba - Member	27,720	27,720
Ms. Bogadi Mathangwane- Member	26,460	26,460
Mr.Ogone M.Gaboutloeloe - Member	18,900	18,900
	178,920	**178,920**

2019

	Sitting allowances	Total
Prof.Elisha M.Shemang - Acting chairperson of the board	20,790	20,790
Ms.Tebogo Mmoshe - Member	21,420	21,420
Ms.Ontlametse Mokopakgosi -Member	17,640	17,640
Dr.Sebusi Odisitse - Member	21,420	21,420
Mr.John L.Farr - (Resigned)	3,150	3,150
Ms. Bogadi Mathangwane- Member	7,560	7,560
Mr.Ogone M.Gaboutloeloe - Member	26,460	26,460
Dr. Budzanani Tacheba- Member	17,640	17,640
	136,080	**136,080**

20. Restated balances

Property,plant and equipment included Headquarters building (Lobatse) Plot 11566 which was carried at insurance replacement cost at initial recognition in 2017. During the year 2020, the Institute decided to change the take on value of the above mentioned property from insurance replacement cost to market value to be consistent with the rest of the properties. In addition, the initial valuation report had errors and was later adjusted by the valuers in 2020 to reflect the correct values of land and buildings with particular reference to Kang and Molapowabojang properties. This resulted in a restatement of the prior year, financial statements in the areas disclosed below;

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Figures in Pula	2020	2019	2018
Statement of Financial Position			
Capital Grant			
Previously stated	-	249,770,566	253,819,786
Adjustment	-	(46,012,753)	(47,307,992)
Restated balance	**-**	**203,757,813**	**206,511,794**
Property, plant and equipment			
Previously stated	-	249,770,566	253,819,786
Adjustment	-	(46,012,753)	(47,307,992)
Restated balance	**-**	**203,757,813**	**206,511,794**
Profit or Loss			
Depreciation expense			
Previously stated	-	7,320,718	6,892,279
Adjustment	-	(1,295,239)	(1,295,239)
Restated balance	**-**	**6,025,479**	**5,597,040**
Armotisation of capital grant			
Previously stated	-	7,320,718	6,892,279
Adjustment	-	(1,295,239)	(1,295,239)
Restated balance	**-**	**6,025,479**	**5,597,040**

There has been no change on the operating surplus for the restated periods as a result of the change from replacement cost to market value.

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Detailed Income Statement

Figures in Pula	Note(s)	2020	2019 Restated*	2018 Restated *
Revenue				
Government grants		61,542,114	61,997,613	29,550,000
Other project grants		12,290,260	1,462,515	253,811
Deferred income utilised during the period		(8,793,178)	207,560	12,377,821
	11	**65,039,196**	**63,667,688**	**42,181,632**
Other operating income				
Commissions received		114,348	-	-
Rental income		599,064	1,172,551	536,250
Amortisation of capital grant		6,218,080	6,025,479	5,597,039
Other Income		699,852	306,699	148,074
Limestone Investigation- Clinker project Income		-	337,443	-
Limestone Investigation- Other income		-	134,045	-
Profit on sale of assets purchases using capital grant		1,924,684	-	-
	12	**9,556,028**	**7,976,217**	**6,281,363**
Other operating gains (losses)				
Gains on disposal of assets or settlement of liabilities		828,514	40,499	-
Expenses (Refer to page 31)		**(71,391,321)**	**(71,643,909)**	**(47,747,923)**
Operating profit	13	**4,032,417**	**40,495**	**715,072**
Investment income	14	119,300	2,257	28,986
Surplus for the year		**4,151,717**	**42,752**	**744,058**

* See Note 20

The supplementary information presented does not form part of the annual financial statements and is unaudited

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Detailed Income Statement

Figures in Pula	Note(s)	2020	2019 Restated*	2018 Restated *
Other operating expenses				
Administration expenses		26,940	582,179	576,415
Advertising and Marketing		918,603	1,792,178	1,147,304
Auditors remuneration - external auditors	13	125,540	191,218	-
Bank charges		34,993	34,993	28,030
Board expenses		529,340	403,482	465,474
Cleaning		680,075	721,653	372,689
Computer expenses		72,000	222,710	432,511
Consulting and professional fees		357,148	413,274	1,465,970
Consumables- Lab services		293,371	764,117	-
Consumables- other		430,716	710,508	996,774
Cooperate & Stratergy		118,716	182,593	403,898
Data management expenses		1,831,357	1,722,171	1,086,290
Depreciation		6,218,080	6,025,479	5,597,039
Drilling services		-	3,470	92,915
Employee costs		43,711,443	42,310,928	26,319,973
General expenses		769,915	688,729	-
Insurance		1,010,118	888,008	372,074
Laboratory expenses		-	371,539	368,933
Limestone Investigation- Clinker project expenses		-	337,443	-
Limestone Investigation- Other expenses		134,044	134,045	-
Motor vehicle expenses		770,762	1,830,100	1,238,265
Postage		423,776	265,008	426,071
Printing & Stationery		543,281	208,791	116,531
Protective clothing		1,000	448,699	168,776
Recruitment expenses		19,336	210,947	864,654
Repairs and maintenance		1,291,824	1,707,957	935,663
Research and development costs		4,965,494	1,037,524	-
Security		830,862	1,057,482	852,894
Staff development and training expenses		322,809	1,232,142	377,749
Staff welfare		135,820	6,475	199,715
Subscriptions		107,496	60,596	55,314
Travel - external		564,928	1,172,423	591,747
Travel - local		1,458,013	869,034	621,693
Utilities		693,923	3,036,014	1,572,562
		71,391,321	**71,643,909**	**47,747,923**

* See Note 20

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Botswana Geoscience Institute

Excellence in Geoscience

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