BOTSWANA GEOSCIENCE INSTITUTE

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BOTSWANA GEOSCIENCE INSTITUTE

2018 ANNUAL REPORT

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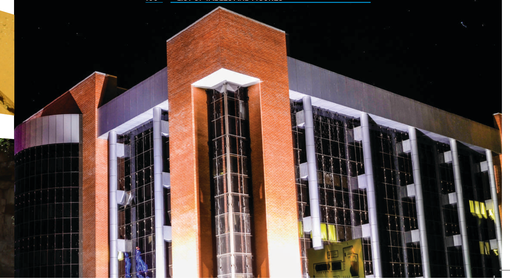


OPERATIONS HIGHLIGHTS

Botswana Geoscience Institute (BGI) has maintained focus on the mandate and functions as stipulated in the Botswana Geoscience Institute Act, of 2014. The Institute also completed its strategic plan focused towards 2023.

A number of initiatives continued to gain momentum in this second year of operation and these included, staffing, earthquakes and environment monitoring, improved access to data and information, collaborations and presentation of scientific papers. The highlights as follows;

Staffing/Recruitment

The Institute has made notable progress in recruitment of staff across all levels and cadres especially the scientists. This brought the necessary depth of experience and diversity to ensure that the right capabilities and experience are available to support the Institute's growth and sustainability ambitions. The table shows staff compliments and its distribution as at March 31, 2018.

	2018	2017
Total Number of Employees as at March 31, 2018	112	69
Women	32	18
Men	80	51
Scientists	41	23
Non-Scientists	71	46

Table 1: BGI Staff Compliment and Distribution

Strategic Priorities

A major milestone of the Institute is the completion of the development of its Strategic Plan tha t covers a period of five (5) years 2018-2023. This Strategy gives assurance and confidence that the establishment of BGI with a prime function to undertake research in the field of geoscience and compile national inventories of geological resources and information is a conceivable ambition. Below are the key Strategic Priorities.

- Undertake High quality Geoscience research for Mineral Exploration, promotion of sustainanle development and geoharzards management
- Provide Quality Geoscience Information
- Promote Awareness and Public Education
- Build a Sustainable Botswana Geoscience Institute
- Uphold Operational and Services excellence
- Promote Talent Management

Figure 1: BGI Strategic Priorities

PRACTICE OF GEOLOGICAL SURVEY IN BOTSWANA SOME NOTABLE MILESTONES

1943
The creation of BGI is the renaissance of geological survey practice in Botswana which began in 1943 as primarily the search for groundwater.

1948
A geological survey was established in Bechuanaland Protectorate operating from Lobatse. It's focus included mineral survey and mapping.

1950
The first phase of coal exploration started. Morupule, Kgaswe, Mmamabula deposits are a result of this geological survey work to produce coal for Railways.

1956
Hydrogeology section was included in the Survey to focus on water needs.

1967
Post protectorate era. The work of Botswana Geological survey leads to discoveries of diamonds and base metals.

1969
Mines Inspectorate in the Botswana Geological Survey was established.

1970
Geological survey in Botswana was formally known as the Department of Geological Survey and Mines under the Ministry of Commerce, Industry and Water Affairs.

1973
Botswana Government forms a new Ministry of Mineral Resources and Water Affairs and the Department of Mines was formed and moved to Gaborone.

1975
Regional Geology and Economic Geology divisions were formally constituted. Mineral resources, whether economic or not, were described in the various mineral resources Reports published in the post-Independence era.

1976
The Aeromagnetic survey and national Gravity survey was completed in western part of Botswana.

1984

The second edition of the 1.1,000,000 national geological map was published.

1998

Significant strides in geological mapping in the eastern part of Botswana and coloured 1:125,000 geological sheets with internal brief explanations and accompanying bulletins or memoirs were achieved.

2003

Aero Magnetic surveys of eastern and western Botswana were flown at 4km and 1km line and covered with high resolution magnetic data at 200-250mm line spacing.

2004

Molopo farms economic geology project with the aim to reassess the base and precious metals potential begins.

2009

Ministry of Minerals, Energy and Water Resources begins its restructuring process to improve efficiencies.

2012

Prospecting License function was transferred from Department of Geological Survey to Department of Mines

2014

Botswana Parliament enact Botswana Geoscience Institute Act

2015

Commencement of Botswana Geoscience Institute Act of 2014.

2017

Recruitment and staffing commences at Botswana Geoscience Institute.

2018

BGI Board of Directors approves and adopts a five-year Corporate Strategy 2018-2023 and a BGI Brand. The Strategy will guide BGI's future and the Brand will make BGI distinct and ensure consistency in all communication platforms.

OPERATIONS HIGHLIGHTS
continued..

Scientific papers presented and/or published.

1. Ms Portia Tshepiso Letlole, (Senior Engineering Geologist).

Presented Technical paper on "Correlations of soil index properties in Manyana village". The Association of Environmental and Engineering Geologists (AEG) conference in Colorado, USA, 2017

2. Mr Onkgopotse Ntibinyane (Senior Seismologist),

Presented two technical papers.

In June 2017, he presented a paper titled "Contribution of the IMS seismic stations and products in localisation of the 28th March 2016 Okavango tremor" Science and Technology Conference in Vienna, Austria.

In September 2017, presented a technical paper on "Investigating the possible causes of earth features in the Kgwakgwe wellfield using Electrical Resistivity Tomography". South African Geophysical Association (SAGA) Conference, Capetown, RSA.

3. Mr Motsamai T. Kwadiba (Senior Seismologist)

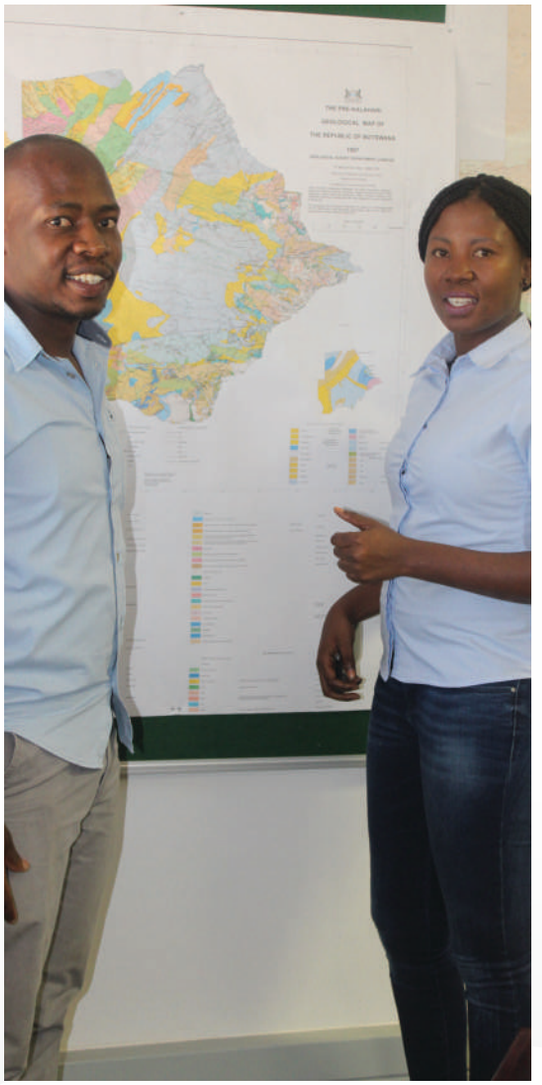
Contributed the following articles, which appeared in peer-reviewed international journals and books:

Kwadiba, M.T. R.J. Durrheim, D.E. James, L.S. Wagner, D. Zhao, J. Lei and O. Ntibinyane, 2017. Crust and uppermost mantle structure beneath southern Africa based on first P-wave travel times from seismograms generated by local, regional and mining-induced earthquakes. CTBT: Science and Technology 2017 Conference, Hofburg Palace, Vienna, Austria, Book of Abstracts. Page 14, T1.2-P10. Preparatory Commission for the Comprehensive Nuclear-Test-Ban-Treaty Organization, Vienna International Centre, Vienna 1400, Austria.

Fadel, I., M. van der Meijde, H. Paulssen, and T. Kwadiba, 2017. Extending the rift zone: evidence from central Botswana. AGU Fall Meeting, New Orleans, United States of America.

Paulssen, H., M. van der Meijde, I. Fadel, and T. Kwadiba, 2017. Source mechanism and aftershock study of the central Botswana M6.5 earthquake of April 3, 2017. AGU Fall Meeting, New Orleans, United States of America.

Vunganai Midzi, V., I. Saunders, B. Manzunzu, M.T. Kwadiba, V. Jele, R. Mantsha, K.T. Marimira, T.F. Mulabisana, O. Ntibinyane, T. Pule, G.W. Rathod, M. Sitali, L. Tabane, G. van Aswegen and B.S. Zulu, 2018. The 03 April 2017 Botswana M6.5 Earthquake: Preliminary Results. Journal of African Earth Sciences 143, 187-194.



Mr Onkgopotse Ntibinyane and Ms Portia Tshepiso Letlole

OPERATIONS HIGHLIGHTS
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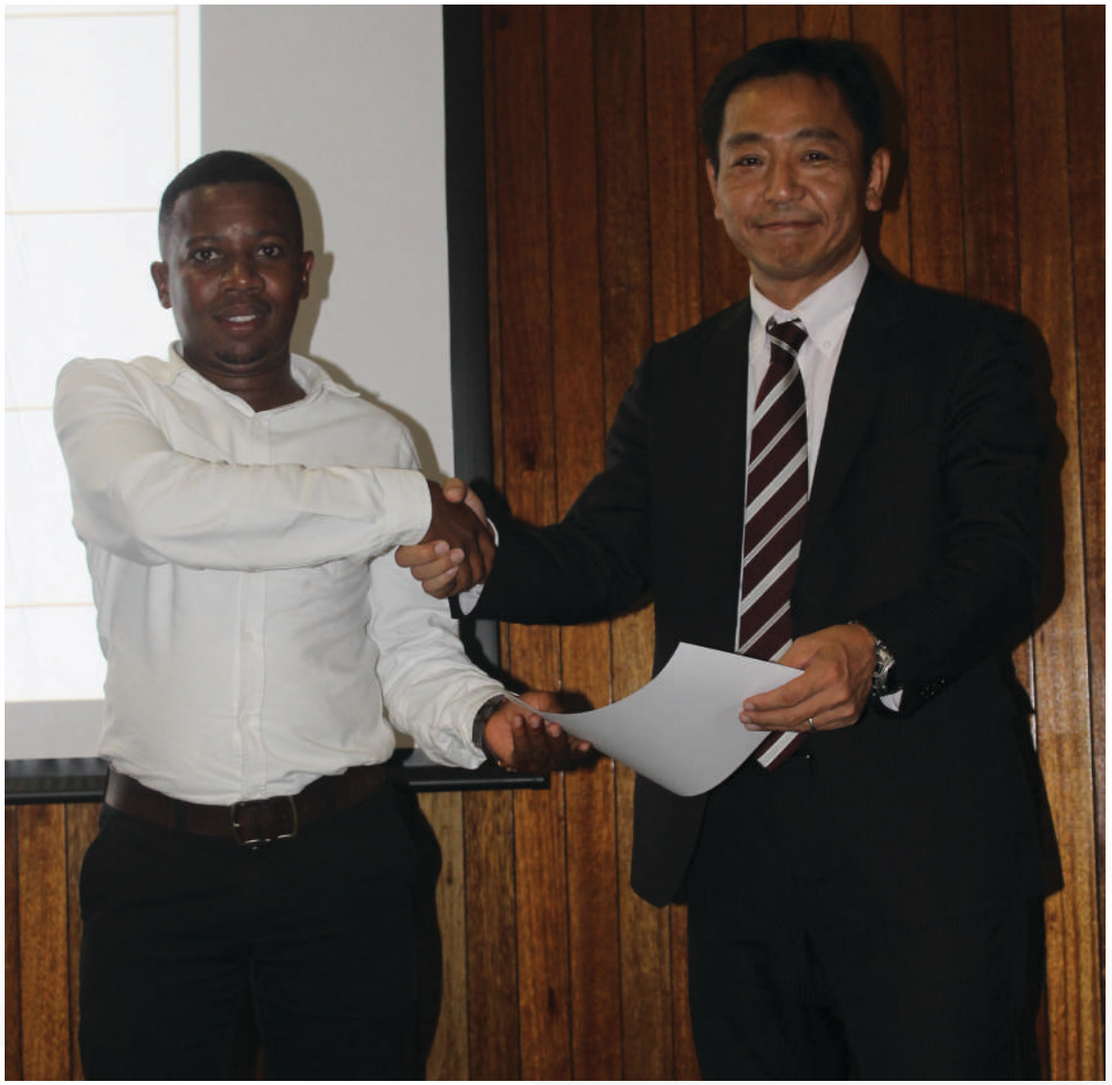

Mr Othugile Rulele, BGI Geologist (L) and Mr Susumu Nagae, General Manager, Botswana Geologic Remote Sensing Centre (R)

Remote Sensing Training

BGI and Japan Oil, Gas and Metals National Corporation (JOGMEC) and other participating Southern African Development Community (SADC) countries, celebrated the 10th Anniversary Remote Sensing partnership. In total, there are 1068 trained Geologists at various levels from participating African Countries.

Total 1068

Botswana – 159

Earthquakes Monitoring

The year 2017 registered a record number of seismic activities since the advent of modern instrumental seismological recordings. The 6.5 local magnitude earthquake on 3rd April 2017 was felt in the country and much of Southern Africa. Its epicenter was located on the South-Western part of the Central Kgalagadi Game Reserve (CKGR).

The Institute strengthened its ability to monitor seismicity and earthquake occurrences by completing the deployment of Network of Autonomously Recording Seismographs (NARS) acquired through collaboration with University of Twente and Utrecht University of the Netherlands.

Corporate Profile

The Institute, established through Botswana Geoscience Institute Act No. 29 of 2014 is mandated to undertake research in the field of geosciences, provide specialised geoscientific services and advice in all matters of geohazards.

Our History

Government of Botswana established Botswana Geoscience Institute (BGI) following the closure of the Department of Geologic Survey.

The Institute, established through Botswana Geoscience Institute Act No. 29 of 2014 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 data/information, which include non-confidential prospecting reports.

This decision was generally driven by the need to improve efficiencies in carrying out geoscience research, in line with the best practices expected of a geological survey organization (GSO). The decision was also based on the high desire of achieving Botswana Government's primary imperative of successfully implementing programmes and projects that transform the lives of Botswana's citizens for the better, within time and costs as required in the National Development Plan 10 and the subsequent National Development Plans. BGI now has a major task to position itself as a significant creator of wealth and improving the quality of life of Botswana's citizens.

The creation of Botswana Geoscience Institute, therefore can be defined as the renaissance of geological survey practice in Botswana, which began in 1943, during the Bechuanaland Protectorate era primarily as the search for groundwater.

CORPORATE PROFILE
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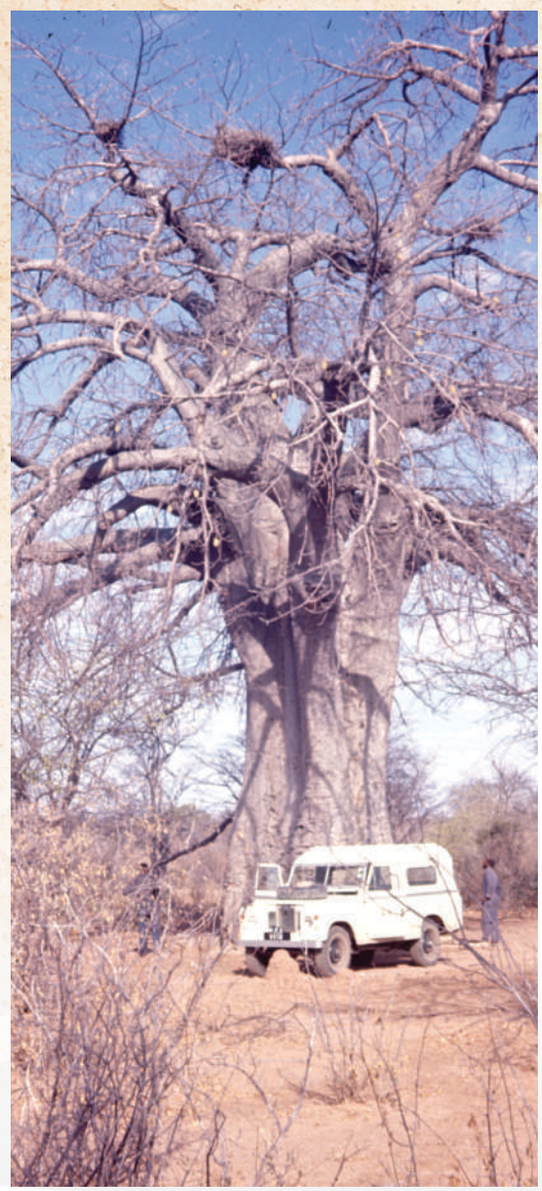

The practice of geological survey in Botswana started with the aim to address water needs, and later focused on coal and other minerals exploration. In 1944, the formation of a Geological Survey in Bechuanaland to serve the three High Commission Territories of Bechuanaland, Basutoland and Swaziland was mooted. This was supported on the condition that a central Geological Survey be in London to serve all the countries of the British Empire.

In 1946, a motion that a separate Geological Survey Department be established in the Bechuanaland Protectorate was passed. Funding for the Survey commenced in April 1948. The roles of the department were specified as mineral survey of the Bechuanaland Protectorate and mapping.

In the period before Botswana Independence, the Geological Survey was basically covering the ground in order to map the geology as well as find groundwater resources. The lack of initial geological knowledge was compounded by the unavailability of good air-photographs. However improved air-photography in the late 1950s led to the first proper topographic surveys which in turn enabled systematic geological mapping.

The first phase of the coal exploration by the Geological Survey ran from 1950 to 1963. The Morupule, Kgaswe and Mmamabula deposits are all a result of the Geological Survey work. The target was steam coal for the railways. The post-Independence era ushered in discoveries of base metals and diamonds, which put Botswana high on the list of priorities for several mining companies. Though the eastern part of the country was well mapped due to its exposure, the larger part of the country covered by Kalahari sands remained unmapped.

Botswana Geological Survey saw the establishment of a Mines Inspectorate Division within the Survey in 1969 as a result of the increasing contribution of the mineral industry to the economy of Botswana due to the discovery of copper-nickel in Selebi Phikwe and diamonds in Orapa.

In 1970 the Department of Geological Survey and Mines was formally established under the Ministry of Commerce, Industry and Water Affairs but a re-organisation of Government in 1973 constituted a new Ministry of Mineral Resources and Water Affairs and Department of Mines was formed and moved to Gaborone.

Until 2014 when BGI was formed, the practice of Geological Survey progressed and evolved with notable achievements such as; Geological mapping, Geophysics, Economic Geology, Hydrogeology, Environmental Geology, Laboratory and drilling facilities and National Geoscience Information Centre (NGIC).

BGI started operations in earnest in June 2017 and currently employs 112 staff members.

CORPORATE PROFILE
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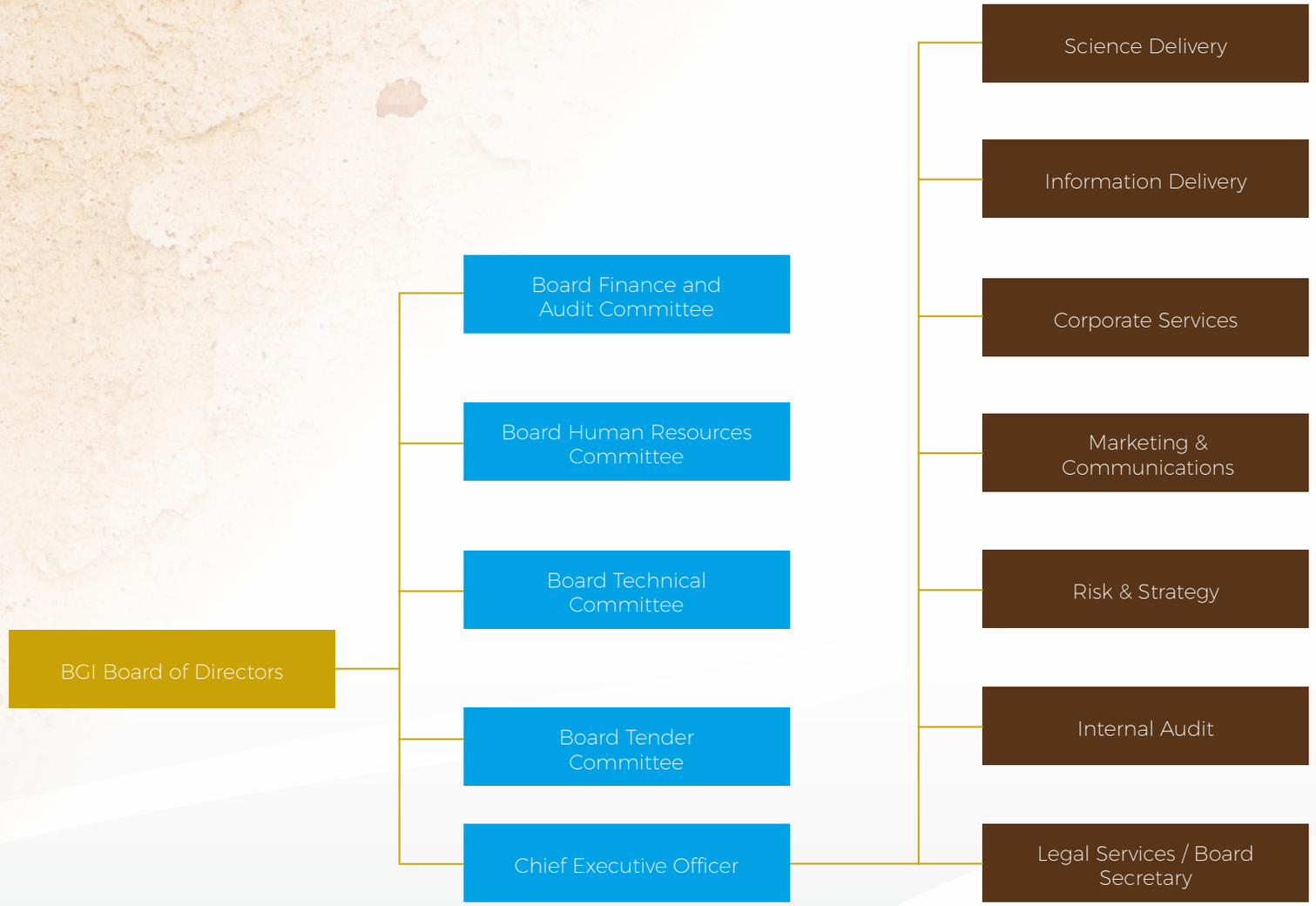
Our Corporate Structure



Our Core Ideology

Brand Promise
Excellence in Geoscience

Vision
To be a Renowned Geoscience Centre.

Mission
We Create Economic Value through Advancing, Promoting and Disseminating Geoscientific knowledge for the benefit of Botswana and our Global Partners.

Values
Botswana Geoscience Institute has defined its core values that represent the attitudes, behaviours, and characters that will create an enabling environment, guide the Institute and shape the high-performance culture for the successful implementation of its Mandate and Corporate Strategy.

- **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.**


Estwing

Our Business Portfolios

Science Delivery

This business portfolio provides overall scientific leadership and implementation of BGI's science Strategy. The function provides Botswana with relevant geoscience products and services through the following four functional areas;

Applied Geoscience
Implements collaborative and thematic based projects and programmes in engineering geology, groundwater, geohazards and associated environmental geology projects.

Laboratory Services
Conducts mineral dressing, sample preparations, Geochem and water analysis, limited hydrocarbons, and geotechnical testing for the public.

Surveys
Is concerned with multidisciplinary geological, geochemical, geophysical and geotechnical surveys at all scales with accompanying lithological, geochronological and stratigraphic descriptions as required.

Mineral and Hydrocarbon Resources
Responsible for assessments of all mineral resource potential and prospectively, including minerals, hydrocarbons and industrial materials, based on stakeholder consultation and requirements.

Information Delivery

This portfolio is concerned with capture, maintenance, efficient and reliable delivery of geoscience information. This includes management of integrated geoscience information management system, document library and reports (prospecting, commercial, research, maps explanations, bulletins and memoirs), core library, museum and education centre and modern, fast and reliable information technology infrastructure.

An important responsibility is ensuring there is availability and accessibility of physical samples to the public through selecting representative core and core scanning, for example.

Corporate Services

This is the host of BGI business support functions. It is responsible for leadership and implementation of BGI corporate services such as development and implementation of policies, human resources management, financial management, reporting and monitoring and administration of site facilities and other assets.

Board of Directors

The Governing body of Botswana Geoscience Institute is the Board of Directors appointed by the Minister of Mineral Resources, Green Technology & Energy Security in accordance with section 6 of Botswana Geoscience Act of 2014

Board Of Directors
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1

Prof. Elisha M. Shemang
Vice-CHAIRMAN
Acting Chairman of the Board (Since July 2018)

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 previously worked at the University of Botswana as Professor, in the Department of Geology.

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, and has served and is still serving as 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 Center.

He is a member of several professional bodies amongst which are, Society of Exploration Geophysics (SEG), American Geophysical Union, European Association of Geoscientist and Engineers, International Association of Hydrogeologists, and Botswana Geoscientist Association.


2

Mr. John Leonard FARR
BOARD CHAIRMAN
(Resigned in July 2018)

Mr. Farr was the Board Chairman of Botswana Geoscience Institute and resigned in July 2018. He is the Managing Director of Wellfield Geosciences Group, a regional groundwater, environmental and engineering consulting group based in Gaborone.

He also worked at the British Geological Survey (BGS), UK as a Senior Scientific Officer, Hydrogeologist in Uganda, Ethiopia and Indonesia. He has over 45 years of experience in the geoscience field, particularly in groundwater exploration and resource evaluation, predominantly in Africa.

He has worked as a project director in numerous strategic water resources assessments, environmental studies, and groundwater development and geophysical interpretation programmes in Botswana and regionally.

Mr Farr holds MSc. in Hydrogeology obtained from University of Birmingham, United Kingdom.

He has authored and co-authored more than 20 published scientific journal papers and several book chapters on hydrogeology, geology and geophysics, as well as many large project reports.

He is a Chartered Geologist, a Fellow of the Geological Society of London (FGS), a Past President of the Groundwater Association of Botswana, and a Member of Botswana Geoscientists Association, the International Association of Hydrogeologists, and the National Groundwater Association (USA).


3

Ms. Tebogo Mmoshe
BOARD MEMBER

Ms. Tebogo Mmoshe is a Chartered Accountant (ACCA) and a Fellow member of the Botswana Institute of Chartered Accountants. She has 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 Capetown (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, Botswana Meat Commission as Internal auditor.

Board Of Directors
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Dr. Budzani Tacheba
BOARD MEMBER

Dr Tacheba currently works for Botswana Innovation Hub as Director – Cluster Development. 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. 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. Ontlametse Mokopakgosi
BOARD MEMBER

Ms. Mokopakgosi has MA in Health Policy, Planning and Management from University of Leeds, UK and a Bachelor of Commerce - BComm, from the University of Botswana.

In June 2016 she joined Human Resource Council as Manager, Human Resource Development Planning. She previously worked as Deputy Permanent Secretary at the Ministry of Minerals Resources Green Technology and Energy Security and the Ministry of Health responsible for Corporate Services.

She previously served as a member of National Vision Council, Public Service Training Advisory Committee, and SADC Human Resource Planning Sub-Committee.

Ms. Bogadi T. Mathangwane
BOARD MEMBER

Ms Mathangwane holds a BSc Honors in Applied and Analytical Chemistry from UK and a Master's Degree in Water Resources from Iowa State University in the United States of America.

She is currently working for Botswana Government in the Ministry of Land Management, Water and Sanitation Services in the Department of Water Affairs. She has extensive expertise in soil and water chemistry as well as transboundary water resources management.

She has directed and coordinated national and transboundary water projects such as; a United Nations Development/GEF sponsored Project on development of Integrated Water Resources Management/ Water Use Efficiency Plans and; Botswana Water Conservation and Water Demand project.

Board Of Directors
continued..

Dr. Sebusi Odisitse
BOARD MEMBER

Dr. Sebusi has a PhD in Chemistry obtained from University of Cape Town, South Africa. He joined Botswana 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 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 Southern 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.

Mr. Ogone O. M. Gaboutloeloe
Esq. Sr.
PCH BOARD MEMBER

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 in 2004, an MSc in Strategic Management and a Masters of Commerce in Trade Law and Policy obtained from the University of Cape Town.

He works for Air Botswana, the national airline, as General Counsel and Board Secretary having worked for Botswana Post for over half a decade in various roles including Government relations, Regulatory Affairs, International postal affairs, and Corporate Strategy. His professional experience has been across diverse sectors including medical insurance providers, a private hospital, the Botswana Unified Revenue Services, and the Public Procurement and Asset Disposal 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 &
Ex-Officio Member of the Board

Mr. Ngwisanyi is the founding Chief Executive Officer of BGI an Ex-Officio Member of the Board. He has MSc. in Exploration Geophysics obtained from International Institute for Aerospace Survey and Earth Sciences (ITC), Delft, Netherlands.

He has over 28 years of experience in geophysical surveys related to the search for minerals and groundwater, 19 years of which was from senior management level. He previously worked at Department of Geological Survey as the Director.

He has published 8 technical reports and has co-authored in 5 published scientific journals. He serves on Water Apportionment Board and has served on National Disaster Management Technical Committee. He is a Member of Botswana Geoscientists Association.

Chairman's Report

We come a long way as the Board and we are proud to present our second Annual Report of the Institute to the Shareholder, Government of Botswana and our other esteemed stakeholders.

Overview

I feel privileged to have been appointed Acting Chairman of the Board of Botswana Geoscience Institute at this time of significant change and opportunity. On behalf of the Board, I send sincere gratitude to my predecessor, Mr John Farr who resigned from the Board during the month of July. As a Board, we thank him for his strategic leadership as he leaves the Institute in a much stronger and focused position especially after defining the Strategic Plan that sets the tone for future success of the Institute.

We come a long way as the Board and we are proud to present our second Annual Report of the Institute to the Shareholder, Government of Botswana and our other esteemed stakeholders.

On behalf of the Board, I welcome new member of the BGI Board of Directors, Ms. Bogadi T. Mathangwane who has extensive expertise in soil and water chemistry as well as transboundary water resources management. She was appointed to the Board in November 2017. Regrettably, she could not participate in the Board activities until April 2018 due to other engagements at the Ministry of Land Management, Water and Sanitation Services, where she is employed.

The 2017/2018 financial year has been an exciting and effective one for the Institute. I am pleased that we are able to report solid progress in a number of areas such staff recruitment, BGI Strategic Plan 2018-2023 and a broad review of our business. This exciting progress is undoubtedly attributable to the commitment shown by Board members in their individual capacity and as a collective. I am proud of their dedication and resilience in whatever is required to ensure success at the Institute.

We have now completed two years in Office as a Board and we are heartened by a sound and visible advancement through all areas of the business, with many of the initiatives gaining momentum. We continue to focus on our customers and stakeholders by developing services and products that could otherwise be sourced elsewhere.

An example of this is our commitment to invest in the infrastructure of our physical and chemical testing laboratories including its accreditation by implementing ISO/IEC 17025 standard required in a pre-investment due-diligence process and quality assurance to our customers.

Our financial performance for the financial year under review is satisfactory. Staff expenses increased significantly and were higher than the previous period due to increased staff compliment and activities. We will continue to monitor this situation and ensure that there is a balance between projects expenses and staff costs.

While we note pleasing developments in most areas, the matter regarding transfer of ownership of property, plant and equipment has not been concluded. Efforts are under way to ensure that this matter is closed before March 2019.

Chairman's Report
continued..

However, there is a legal Vesting Order from the Government which mandates the ownership of the assets to the Institute on inception.

Governance

The Institute continued to show good governance and ethical behaviour in all of its undertakings and dealings. The Board ensured proper and effective control of the Institute's business and carried out periodic evaluation of the Institute's performance.

Through its Finance and Audit Committee, the Board ensured that Executive management created and maintained an effective control environment for BGI and that management encourages the necessary respect for internal controls among all employees.

The Board has fully complied with the BGI Act, Section 30 by ensuring that an auditor appointed by the Board audits the Accounts of the Institute. Mazars Certified Auditors, who are recognised by Botswana Accountancy Oversight Authority (BAOA), were engaged to conduct audit of BGI Accounts, express opinion on the financial statements and consider the controls that are in place.

With regards to Risk Management, the Institute has made significant progress during the year by implementing Enterprise-wide Risk Management (ERM). This was achieved by developing Risk Management Policy, Risk Management Framework, and Risk Management Strategy and other risk-oriented policies.

Corporate Strategy

As the Board, we celebrate the success of developing the Institute's long term Strategic Plan and we have pledged our commitment, to ensuring its effective implementation. We believe this strategic plan is focused on supporting a dynamic Geoscience organisation.

This Strategy gives us confidence that the establishment of BGI with a prime function of research in the field of geoscience and to compile national inventories of geological resources and information is in the right direction. We now express confidence that the ambition of reviving the practice of geological survey and position BGI as a significant creator of wealth and improve the life of Botswana citizens is on the correct path.

The BGI Long Term Strategic Plan, focused for the period 2018 to 2023, was developed through involvement of stakeholders including Management and Staff and a collection of external interested parties.

The Strategy sets out the Vision, and aspirations of the Institute to be a leader in geoscience research and a pacesetter in inventories of quality geoscience data and information.

The Strategy also defines key priority areas, key objectives and indicators of success, a forward look for new projects, improved services delivery through accreditation of Laboratories that are well equipped and leveraging new technologies to understand and predict the geological processes.

Chairman's Report
continued..

Our Strategy is aligned to the Ministry of Mineral Resources, Green Technology and Energy Security Strategy, Botswana National Vision 2036 and Sustainable Development Goals. This alignment is important as it enables greater performance by optimising the processes, contributions of those involved, to realise measurable objectives and thus, reducing waste and misdirection of efforts and resources.

It is our view that, the pursuit of these strategic priorities, will contribute immensely to the Ministry of Mineral Resources, Green Technology and Energy Security's strategic objective of making Botswana one of the top ten global investment destinations.

Human Resources

In order to drive our strategic imperatives, a high performance culture is an important ingredient. As a Board, we strive to ensure that the right capabilities and experience are available to support our growth ambitions. In the past year, we have seen notable headway in recruitment of senior management and science specialists in a number of areas. This brought the necessary depth of experience and diversity to the Institute.

Our challenge as a Board going forward is to ensure that our human capital are retained and remain motivated. We have committed to achieve this, through facilitating adequate and fair remuneration, and offer platforms for ongoing technical and leadership training. Parallel to this, we will ensure that there is a solid succession plan, especially concerning executive management team.

Though the Institute was only implementing phase 1 of recruitment, our staff turnover was satisfactory as it was only 0.81%. To ensure that this is maintained, effective people management strategies will be put in place.

The Future as we see it

The support from Government of Botswana, our Partners, our wide stakeholder network, commitment from the Board and employees, makes us uniquely positioned to ride the wave of future growth and sustainability. Necessary efforts will be pursued to deliver the ideals and priorities of our strategic plan.

As the Board, we will monitor vigorously all undertakings of the strategy, and ensure that the means by which we want to achieve our strategic ideals are available.

As a science driven organization, we have to continue investing in cutting-edge technology, to guarantee efficiencies, reputation, reliability in our research, and all other activities of the Institute.

As an organisation, we recognise that it is very important that the right employees are recruited and retained. We will therefore continue to create a conducive working environment that will atleast encourage retention of our employees.

Conclusion

My sincere appreciation goes to our Ministry and Ministry of Finance, Economic Development, stakeholders and partners for their continued support and commitment as we navigate this process of change for the long-term success of creating economic value for our country and global partners. Through this support, we are positioned to continue this momentum in to the future.

I thank fellow Board Members for placing their confidence in me as the Acting Board Chairman; our employees and executive management for the operational results achieved; and our customers. They make us the Institute that we are.

Professor Elisha M. Shemang
Acting Chairman
BGI Board OF Directors

Chief Executive Officer's Report

This period was undoubtedly a successful one in a number of fronts including but not limited to, resourcing the Institute according to the new corporate structure, strategic partnerships and implementation of projects.

The Financial year 2017/2018 marked the second year of operation of Botswana Geoscience Institute. I am encouraged by the substantial progress towards delivering a viable Geoscience institution. This period was undoubtedly a successful one in a number of fronts including but not limited to, resourcing the Institute according to the new corporate structure, strategic partnerships and implementation of projects. This progress was a result of combined effort and achieved with strategic guidance from our Board and commitment of our personnel.

As we will be implementing our new strategic plan, we aim to maintain focus to exceed our customers and stakeholders expectations. We assure them that we continue to strive to deliver best in class geoscience services and products.

Our people

By all means the paramount asset of any organisation is its human capital. Our expedition in 2017 began with the implementation of phase one of organisational structure. This phase saw the organisation grow from 69 to 112 staff members against the ceiling of 225. We believe that we have turned the corner against limitations such as market unpredictability that prevented the Institute to acquire other necessary resources.

Our employees are passionate about working for the Institute. This has been shown by their individual and collective dedication to their work. BGI Employees continued to demonstrate a shared ambition to be the best geoscience services provider in Botswana.

As an Institute, we firmly believe in the development and training of employees. We strive to understand individuals' needs, and develop them accordingly in alignment to BGI objectives. This improves retention of employees, and encourages their passion for being part of a bigger business success story. However, during the period under review, the Institute did not have a deliberate plan of staff development but responded to needs of development and training as they arose.

Long term Seismicity monitoring

We are happy that we have strengthened our ability to monitor seismicity and earthquake occurrences by completing the deployment of Network of Autonomously Recording Seismographs (NARS) acquired through collaboration with University of Twente and Utrecht University of the Netherlands.

The completion of the deployment of NARS is an enormous step as BGI endeavours to listen to the heartbeat of the earth, and advise accordingly as it will provide near real time reporting of seismic events. Up until February 2018, NARS-Botswana seismic stations have been operating in 'stand-alone' mode, which meant data was collected manually only a few times in a year and thus not effective in providing immediate warning of unfolding seismic events as they happen in Botswana. Ten (10) out of the twenty-one (21) stations have been upgraded to send near real-time data to the server at the BGI.

The addition of NARS stations to the Botswana Seismological Network (BSN) is a major milestone towards best practice in earthquake monitoring and will elevate Botswana to be one of Africa's most densely seismic station networked country.

The purpose of Botswana Seismological Network (BSN) is to determine the Earth's structure beneath Botswana to obtain a better understanding of its complex tectonics (large-scale process that controls the structure and properties of the Earth's crust and its evolution over time).

Access to Data and information

We recognise that, access and availability to geoscientific data and information are central to all modern day geoscience organisations. Owing to our physical location and centralised service point, we understand the urgent need to make such data and information delivered over web-based services. A significant step in this direction was through a collaborative partnership with Geosoft (a Canadian based company) to establish a Portal, which provides free access to the multi-disciplinary geophysical data of the Ngamiland area in the North West district of Botswana.

Data available on this Portal includes airborne geophysics, ground geophysics and geochemistry. Future updates will provide access to borehole data, remote sensing, seismic surveys and information products including interpretations and 3D models.

Chief Executive Officer's Report
continued..

Strategic partnerships & collaborations

We continued with building a culture of collaboration and partnership that supports the Institute, its people and to rigorously position ourselves to deliver on our mandate. The Institute hosted events with major local, regional and international partners.

Notable collaborations and partnerships events are;

Groundwater pollution-monitoring seminar

A noteworthy local stakeholder activity was the groundwater pollution monitoring seminar organised and coordinated by BGI. This event purpose was to engage stakeholders on issues pertaining to groundwater pollution monitoring in the country. The seminar was attended by Departments of Environmental Affairs (DEA), Waste Management and Pollution Control (DWMPC), Water Affairs (DWA), Mines (DoM), Veterinary and Crop Production through Ministry of Agriculture (MOA).

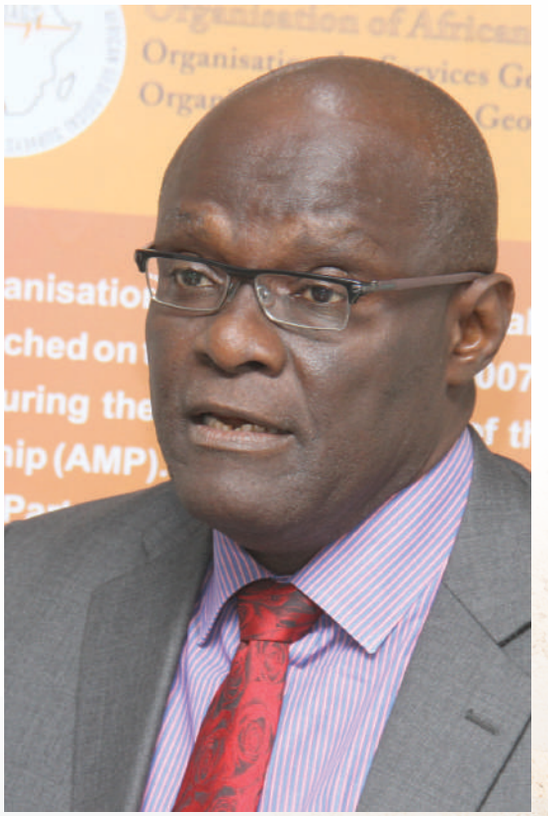
Critical areas discussed included the monitoring projects of Kuke Foot and Mouth Disease (FMD) Burial Site, Matsiloje Group of FMD Burial Sites, Tswana Pride Poultry (Notwane River), Acid Mine Drainage (AMD) in BCL Mine and its surroundings. The meeting was called to validate ownership of these projects and re-define accountabilities and responsibilities. A major outcome of this seminar was a decision that, BGI would hand over the groundwater pollution-monitoring projects to the Department of Waste Management and Pollution Control. This came in the light that BGI, now a parastatal organisation would no longer be able to carry out these projects unless done on a cost-recovery basis.

OAGS 10th Annual General meeting

BGI organised and hosted the Organisation of African Geological Surveys (OAGS) 10th Annual General meeting. This meeting, held on October 08-10, 2017 is a forum for information sharing through field excursions, technical presentations, deliberations and networking for members. This forum also opens avenues for bilateral collaborations in research and development and the overall sustainable development of the mineral sector. Above all, Directors and Chief Executives of the geological surveys of Africa, together with their counterparts from European Geological Surveys (EuroGeoSurveys) deliberate in more detail on how they better their organisations to achieve their individual mandates aligned to Africa Vision 2063 and African Mining Vision adopted at the Assembly of African Union Heads of States and Government in 2009.

PanAfGeo training

The launch and hosting of PanAfGeo training on Work Package 4 (Environmental Management of Mines), was another highly significant event in 2017. PanAfGeo is a cooperation programme on an unprecedented scale between Europe and Africa. Developed by Eurogeosurveys and OAGS, its purpose is to strengthen the scientific and technical competences of the organisations working on Africa's geology and to help them implement the legal, administrative and organisational tools required to ensure sustainable management of the mining sector, which is vital to Africa's economy. We are happy that some of BGI's own experts, Messrs Puso Akanyang and James B Molosankwe, presented papers on Mining, Legislation, Communities, and Mine Closures.



Mr Alex Ndubuisi Nwegbu President of Organisation of African Geological Surveys (OAGS)

Chief Executive Officer's Report
continue

JOGMEC partnership

BGI and Japan Oil, Gas and Metals National Corporation (JOGMEC) and other participating Southern African Development Community (SADC) countries, celebrated the 10th Anniversary Remote Sensing partnership established in cooperation with the Department of Geological Surveys, now BGI, in 2008. Remote Sensing is a data acquisition method complementary to the field observation method and it allows mapping of geological characteristics of regions without physical contact with the areas that are being mapped.

Through this partnership, JOGMEC provides opportunities for training programmes and technical transfer of remote sensing technologies. It also offers mutual benefits through joint mineral investigation projects, thus contributing to further economic and sustainable development of the mining sector.

SADC Region countries, who are partners with JOGMEC on the project, attended this Anniversary and each nation, including Botswana represented by BGI, gave feedback through presentations on the success and value addition of the Project.

The partnership has been renewed for the next five (5) years due to the mutual value derived by the partners. The partners outlined future plans which will include geological survey to collect data in the areas where partners share mutual interest, conduct trainings on fundamentals of equipment handling and data analysis, as well as training of trainers and cooperative satellite analysis and field survey.

Forward looking

We look forward to execute our new strategic plan and maintain focus on surpassing our stakeholders and customer expectations. BGI remains very optimistic about its future as it continues to leverage its unique services to Botswana with improved engagement with stakeholders.

Where necessary, the Institute will make significant investments in its infrastructure such as the laboratories accreditation to the standards required in a pre-investment due-diligence process, improved drilling services and people, to provide quality and reliable services to its customers, while creating economic value for the benefit of Botswana and our global partners.

Accreditation by implementing ISO/IEC 17025 standard, which is a general requirement for the competence of testing and calibration laboratories, has been prioritised. This is to ensure reliability of results and to offer fast turnaround time and cost competitiveness against commercial laboratories.

We are also reviving the implementation of Laboratory Information Management System (LIMS) to monitor the laboratory technical and management processes. The system is the key driver in enforcing the laboratory's Quality Control (QC) and Quality Assurance (QA) procedures, the functionality needed to satisfy accreditation requirements as per ISO 17025.

As we continue with our journey of building a sustainable geoscience institute, we aim to focus on offering technical and scientific support to public and local authorities. This is largely driven by being the custodian of geoscientific data, information and knowledge required in mining, agriculture, civil engineering and other related industries. We have planned to increase utilisation of our drilling services through partnerships and collaborations. Drilling is an important part of our business to explore mineral potential and geological makeup of Botswana.

Chief Executive Officer's Report
continued..

The table below summarises some planned strategic projects and those that BGI will execute in collaboration with partners.

PROJECT	COMMENTS
Assessment of Mafic and Granitic Complexes	The project is fully funded by Botswana Government under National Development Plan 11.
Limestone Investigations	This Project will be undertaken through a collaboration with Botswana Institute for Technology Research and Innovation (BITRI).
Urban Geotechnical Mapping	The Project is of Direct cost to BGI and will be over 5 years
Okavango Seismic survey Project	The project will be undertaken in partnership with University of Botswana.

Strengthening exchanges and public information sharing is important to ensure the relevance of our work, in particular our research trajectory and anticipate questions we will need to address.

This will also give us an opportunity to validate our route and meet the nations and our partners' needs and expectations.

We need to strengthen our engagement and work more closely with the public to ensure that there is high understanding of geoscience discipline in particular, that geoscience information is well acknowledged.

The financial challenges experienced by Government have and will continue to have an effect on the operations of BGI.

This is because currently BGI relies on Government subvention. In view of this, we will continuously search for means of improving our efficiencies given the limited resources.

Finally, we are committed to establish a Seismological Research Centre in Botswana to effectively monitor seismicity, as well as promote research in earthquakes and related phenomena.

Conclusion

As an Institute, we commit to continue to progress the transformation agenda of the practice of geoscience in Botswana.

We expect increased positive momentum across all BGI business lines to ensure success of our Strategic Plan in its first year of implementation (2018/2019).

I would like to thank our Board of Directors for their leadership, guidance, support and their continued confidence in me to take this Institute forward.

I thank all BGI Employees for their invaluable support during the year as we continue to make progress towards building a sustainable geoscience practice and deliver long-term value to our stakeholders.

In July, while in the process of writing this Annual Report, we bid farewell to Mr. John L. Farr, the Founding Board Chairman of the institute. We thank him for his strategic leadership and guidance. He leaves the Institute in a cruise-control mode after defining its Strategic Plan that underpins our future.

Tiyapo Hudson Ngwisanyi
Chief Executive Officer

Executive Committee

During the year under review, the roles of Director Coporate Services and Manager Internal Audit were yet to be filled, where as the role of Manager Strategy and Risk became vacant following the resignation of the incumbant.

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 other members of the EXCO are; Director- Science Delivery; Director- Corporate Services; Director- Information Delivery; Manager- Legal Services/Board Secretary; Manager- Marketing and Communications, Manager- Strategy and Risk and Internal Audit Manager.

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.

During the year under review, the roles of Director Coporate Services and Manager Internal Audit were yet to be filled, where as the role of Manager Strategy and Risk became, vacant following the resignation of the incumbent in July 2018.

Executive Committee
continued..

Tiyapo Hudson Ngwisanyi
Chief Executive Officer

Mr. Ngwisanyi is the Founding Chief Executive Officer of BGI. He has MSc. in Exploration Geophysics obtained from International Institute for Aerospace Survey and Earth Sciences (ITC), Delft, Netherlands.

He has over 28 years of experience in geophysical surveys related to the search for minerals and groundwater, 19 years of which was from senior management level. He previously worked at Department of Geological Survey as the Director.

He has published 8 technical reports and has co-authored in 5 published scientific journals. He serves on Water Apportionment Board and has served on National Disaster Management Technical Committee. He is a Member of Botswana Geoscientists Association.

Puso Akanayang
Director, Science Delivery

Mr Puso Akanyang is the Director for Science Delivery at Botswana Geoscience Institute and holds a Bsc Geology from University of Botswana (1992) and an MSc in Engineering Geology obtained from Leeds University in 1995.

He has over 25 Years' experience in regional geological mapping, geological research, and advanced Mineral exploration and Mining Geology and Mining Geotechnics. He has authored and co-authored three (3) regional geological maps, nine (9) papers in geology, economic geology and regional geology.

Areas of Mining Geotechnics specialization are Open pit slope designs and Underground Ground Control Management systems. Geological specialization in Botswana are Maitengwe Archean greenstone belt and sedimentary hosted copper deposits along the Ghanzi-Chobe Proterozoic belt.

Samuel Serero
Acting Director, Information Delivery (Until March 31, 2018)

Mr Serero joined Botswana Geoscience Institute as Manager, Information Technology in June 2017. He has BSc (Computer Science) obtained from University of Botswana and a Graduate Diploma in African Leadership Development in ICT and Knowledge Society obtained from Dublin City University, Ireland.

He previously worked for the Public Service as Deputy Director at the Department of Geological Survey under the Ministry of Mineral Resources, Green Technology and Energy Security. He has more than 21 years of experience in the geoscience environment with skills in ICT, strategy management, industrial relations skills, policy development to name a few.

He has project managed transformation of Department of Geological Survey which became a parastatal namely BGI. He is a Member of Botswana Geoscientist Association.

Executive Committee
continued..

Obolokile Cynthia Sekga
Manager, Legal Services and Board Secretary

Ms. Obolokile C. Sekga holds the position of Manager, Legal Services and Secretary to BGI Board. She is an admitted PPP Consultant, Tax Practitioner, Attorney, Conveyancer and Notary Public called to the bar in October 1995. She holds a Bachelor of Laws Degree (LLB) from the University of Botswana, and Master of Science (MSc) in Strategic Management from the University of Derby (UK), among other qualifications.

Ms. Sekga has undergone Executive Development Programme at the University of Witwatersrand. She has worked as part of Executive team in the following amongst others of Botswana Unified Revenue Service (BURS), Botswana Telecommunication Corporation, Debswana and the Botswana International University of Science and Technology (BIUST).

She has served as a non – Executive Board member for the Botswana Government at different times in Civil Aviation Authority of Botswana (CAAB), Citizen Entrepreneurial Agency (CEDA), Banyana (Pty) Ltd and Board of Adjudicators for the Ministry of Finance and Economic Development under the Income Tax Act. She has also served as Board Member and a Member of the Executive Committee in RAEIN Africa.

James Baleki Molosankwe
Manager, Marketing and Communications

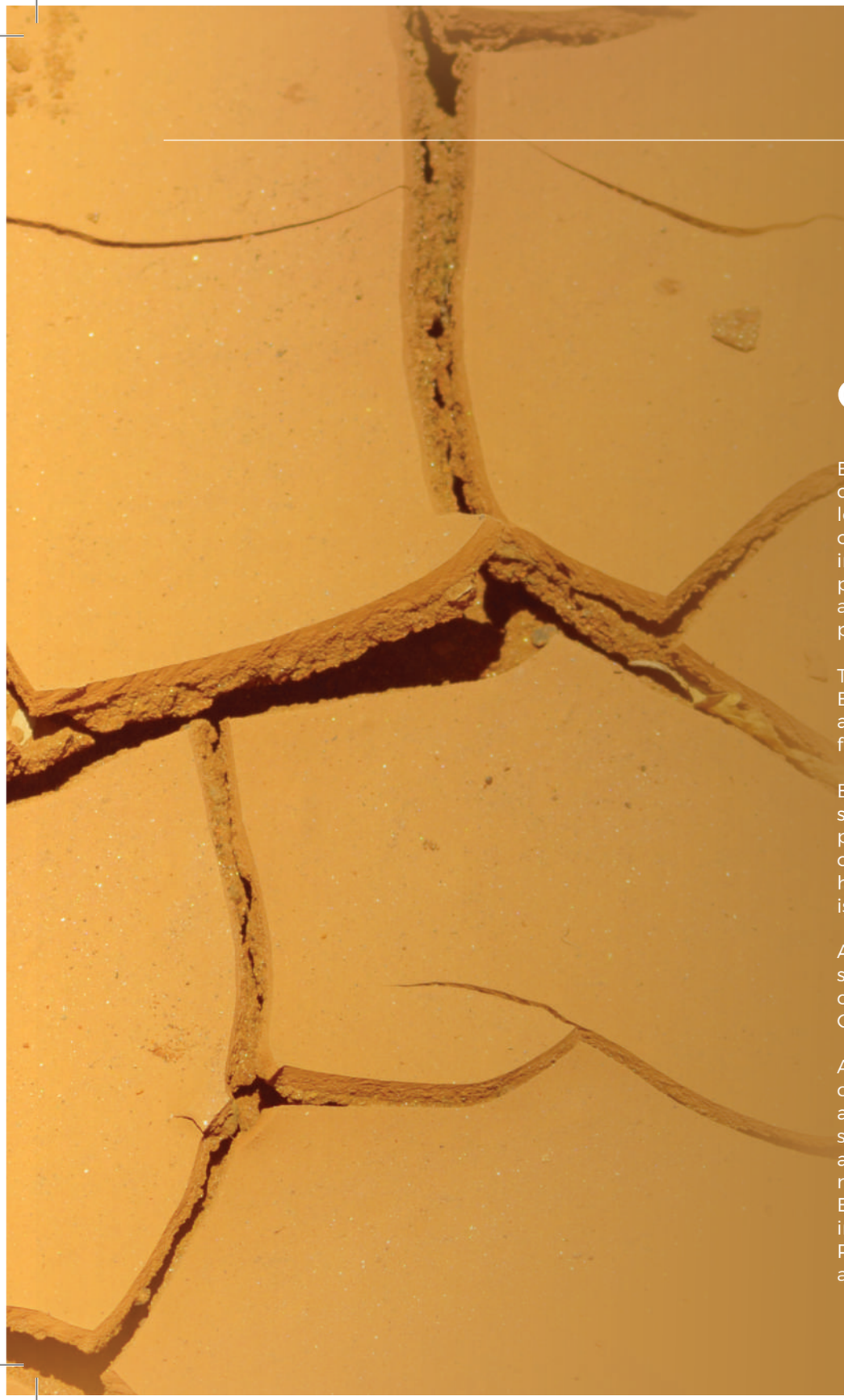
James joined Botswana Geoscience Institute in August 2016 as Manager, Marketing and Communications. He brings to the role vast experience in the field of Makerting, Branding and Communications that spans over 20 years' attained from several sectors such as, mining, telecommunications, property development, sport and broadcasting.

He holds a Master of Science (MSc) in Strategic Management from University of Derby, UK. He also has professional qualifications in Marketing, Advertising, Public Relations and International Business Communications, from Institute of Commercial Management, Bournemouth, UK, Managing Corporate Communications and Strategic Marketing Management from University Of Witswatersrand, RSA. James attended the United States Sports Academy and obtained a Certification in Sports Management (Marketing).

James has completed Management Development Programme – **(MDP),** at University of Stellenbosch, RSA and Senior Leadership Development Programme at **(SLPD)**, University of Johannesburg, RSA.

Corporate Governance

BGI is committed to the highest organisational standards and business integrity, ethical values and professionalism in all of its activities.



Corporate Governance

BGI is governed by a Board of Directors consisting of eight (8) Non-Executive Directors that brings leadership, commitment and rigour to the business of the Institute. The board also ensures governance in pursuance of 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 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.

BGI 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 support high standard of corporate governance and the Board is accountable to the shareholder in this regard.

According to Botswana Geoscience Act, 2014, the selection and appointment of members of BGI Board of Directors, lies with the Minister of Mineral Resources, Green Technology and Energy Security.

As per best practice, Board appointments are based on prescribed 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. Such disciplines include, Geological Engineering, Sciences, Law, Market Regulation, Finance and Accounting, Management and Business administration.

Corporate Governance
continued..

BGI Board of Directors 2017/18

NAME	PROFESSION/ QUALIFICATION	CURRENT OCCUPATION AND COMPANY	POSITION BOARD (e.g. Board Chairperson, Audit/HR Committee Chairperson or Ordinary Member)	DATE OF FIRST APPOINTMENT	DURATION
Mr. John Farr Resigned in July 2018	MSc in Hydrogeology	Managing Director - Wellfield Geosciences Group	Board Chairperson	16 July 2015	5 Years Resigned In July 2018.
Prof. Elisha M. Shemang	Professor, PhD in Applied Geophysics	Professor & Funding Head, Department of Earth and Environmental Science - Botswana International University of Science and Technology	Board Vice Chairperson Chair - Board Technical Committee Member of Board HR Committee	16 July 2015	5 Years
Ms. Tebogo Mmoshe	MBA, BSc (Hons) in Applied Accounting and ACCA	Director Internal Audit - Botswana Communications Regulatory Authority	Board Member Board Technical Committee Chair - Board Finance & Audit Committee	16 July 2015	5 Years
Dr. Budzanani Tacheba	PhD in Environmental Science, MSc in Remote Sensing	Director Cluster Development - Botswana Innovation Hub	Board Member Technical Board Committee	16 July 2015	5 Years
Ms. Bogadi T. Mathangwane	Master's Degree in Water Resources from Iowa State University, USA	Director, Department of Water Affairs, Ministry of Land Management, Water and Sanitation Services	Board Member	1 November 2017	5 Years
Ms. Ontlametse Mokopakgosi	Human Resource, MA in Health Policy, Planning and Management	Manager, Human Resource Development Planning - Human Resource Council	Board Member HR Board Committee	16 July 2015	4 Years
Dr. Sebusi Odisitse	Lecturer, PhD in Chemistry	Lecturer - Botswana International University of Science and Technology (BUIST)	Board Member Technical Board Committee Finance & Audit Board Committee	16 July 2015	4 Years
Mr. Ogone O. M. Gaboutloeloe	Law, Bachelor of Laws (LLB), Masters of Science in Strategic Management and Masters of Commerce in Management Practice specializing in Trade Law and Policy	General Counsel and Board Secretary at Air Botswana	Board Member Chair - HR Board Committee Finance & Audit Board Committee	16 July 2015	4 Years

Table 2: BGI Board of Directors 2017/18

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
- Approves 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
- Do such other things as provided by the BGI Act or as may be necessary to the proper implementation of the BGI Act

Relations with the Shareholder

The Board as a whole has 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 Secretary to the Board. The Chairman of the Board has sufficient access to the Minister responsible for the Institute to discuss any matters of mutual concern.

Board Committees

The Board is supported by standing specialist committees namely; Board Technical Committee, Board Finance and Audit Committee, Board Human Resource Committee.

Finance and Audit Committee

The Finance and Audit Committee is responsible for ensuring that Executive management creates and maintains an effective control environment for BGI and that management encourages the necessary respect for internal controls among all employees. The Committee reviews Financial Controls, Accounting Systems and reporting to the shareholder.

The responsibility of the committee is achieved through;

- Assessing the Policies and Procedures of the Institute to ensure 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 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 and Audit Committee are:

Ms. Tebogo Mmoshe
Chairperson

Dr Sebusi Odisitse
Member

Mr. Ogone O. M. Gaboutloeloe
Member

Ms. Ontlametse Mokopakgosi
Member

Dr Budzanani Tacheba
Member

Mr. Tiyapo H. Ngwisanyi
Member (CEO, Ex-Officio)

Technical Committee

This Committee of the Board provides oversight on technical management, project management and systems and technology acquisition. It 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.

Corporate Governance
continued..

The members of the Board Technical Committee are:

Prof. Elisha M. Shemang
Chairperson

Dr Sebusi Odisitse
Member

Ms. Tebogo Mmoshe
Member

Mr. Tiyapo H. Ngwisanyi
Member (CEO, Ex-Officio)

Human Resource Committee

The Committee was set up to regulate both substantive and procedural administration of staff and staff welfare issues, which include amongst others recruitment processes, industrial relations matters, remuneration and compensation.

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.

The Human Resource Committee consists of three (3) Non-Executive members and CEO as an ex-officio,

Members of the Human Resource Committee:

Mr Ogone O. M. Gaboutloeloe
Chairperson

Ms Ontlametse Mokopakgosi
Member

Prof. Elisha M. Shemang
Member

Mr. Tiyapo H. Ngwisanyi
Member (CEO, Ex-Officio)

Adhoc Committees

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

Approval of Financial Statements

The financial statements of the Institute were reviewed by the Finance and Audit Committee, approved by the Board and were signed accordingly on behalf of the Institute by the Acting Chairman and the Chief Executive Officer.

Delegation

The overall financial objectives of the Institute are agreed by the Board, and the board delegates day-to-day responsibility to Management. There is a clear organisational structure, detailing lines of authority and control responsibilities.

All major procurements are subject to a formal authorisation procedure, with a Board Tender Committee comprising the members of the Board overseeing the major awards.

Internal Audit Function

During the period under review, BGI was yet to appoint an independent internal audit function which administratively would report directly to the Chief Executive Officer, with a dual reporting responsibility to the Board Finance and Audit Committee.

It is intended that, this function will be established in the next financial year and would provide an assurance that significant risks are subject to periodic reviews and control processes are in place and weaknesses are identified and mitigated. The Internal Audit function will have an Internal Audit Charter setting out the independence of the function, and would be adopted by the Finance and Audit Committee and signed by the Chairperson of the committee.

External Auditors

In terms of the BGI Act, Section 30, the 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. This has been fulfilled and BGI Board, appointed MAZARS Certified Accountants for this purpose.

Compliance with 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 Secretary's office, strives to ensure that the businesses of the Institute comply with the laws and regulations of Botswana.

Corporate Governance
continued..

Attendance and meetings of the Board and Committees

The Board met on ten (10) occasions during the financial year 2017/18 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	BOARD	FINANCE & AUDIT COMMITTEE	HUMAN RESOURCES COMMITTEE	TECHNICAL COMMITTEE
Mr. John Farr	Chairman (Resigned in July 2018)	9/10	N/A	N/A	2/2
Prof. Elisha M. Shemang	Vice Chairman	8/10	N/A	N/A	2/2
Ms. Bogadi T. Mathangwane	Member	N/A	N/A	N/A	N/A
Ms. Tebogo Mmoshe	Member	7/10	3/3	3/4	2/2
Dr. Budzanani Tacheba	Member	8/10	3/3	3/4	1/2
Ms. Ontlametse Mokopakgosi	Member	7/10	3/3	3/4	1/2
Dr. Sebusi Odisitse	Member	9/10	3/3	4/4	2/2
Mr. Ogone O. M. Gaboutloeloe	Member	9/10	3/3	4/4	2/2
Mr. Tiyapo H. Ngwisanyi	CEO	9/10	3/3	4/4	2/2

Table 3: Attendance and meeting records of board members

Relationship with Botswana Government

The Institute, through the Chief Executive Officer's office, maintains an active dialogue with various Government Ministries and Departments. Concerns raised by the various Ministries, Departments and Offices are discussed, actioned and addressed appropriately.

Relationship with the Community

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

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)
Mr. John L. Farr	Chairman	18,900.00
Prof. Elisha M. Shemang	Vice Chairman	22,680.00
Ms. Tebogo Mmoshe	Member	18,900.00
Dr. Budzanani Tacheba	Member	23,100.00
Ms. Ontlametse Mokopakgosi	Member	16,380.00
Dr. Sebusi Odisitse	Member	16,380.00
Mr. Ogone O. M. Gaboutloeloe	Member	35,280.00
Mr. Tiyapo H. Ngwisanyi	CEO	Not applicable

Table 4: Remuneration of members of the Board

Risk Philosophy, Review And Control

BGI as an important player in geoscience field in Botswana, faces a multitude of risks. Risk management therefore has become an integral part of understanding and managing the risk as important part of BGI's successful operations.

In BGI, like in any other organisation, risk is inherent in all aspects of the Institute's operations, and thus the Board and Management of the Institute acknowledge the role of risk management as critical to the well-being of the Institute.

The Institute has done a thorough assessment of inherent risks that include reputation and image risks, which could also affect BGI's ability to execute its strategies or support the attainment of corporate objectives, protection of staff and business assets.

The Institute has made significant progress during the year to ensure that BGI implements Enterprise-wide Risk Management (ERM) by developing Risk Management Policy, Risk Management Framework, and Risk Management Strategy and other risk-oriented policies.

This is an organisation wide risk management programme, that endeavours to ensure that control systems, designed to safeguard the Institutions assets and maintain proper accounting records that facilitates the production and availability of reliable information, are in place and are functioning as planned.

Corporate Governance
continued..

Brand Management

At BGI, we understand that the power of a Brand resides in the minds of customers. The Institute therefore is poised to establish itself as a strong Brand in geoscience field by ensuring that its stakeholders and customers receive the right experiences with its products and services.

A major step in this direction is the successful development of BGI Long Term Strategic Plan supported by a Corporate Communications Plan detailing necessary programmes and activities.

BGI Strategic plan, for implementation from 2018 to 2023, sets out the Vision, and aspirations of the Institute to be a leader in geoscience research and a pacesetter in inventories of quality geoscience data and information.

The Strategy defines key priority areas and key objectives including indicators of success, provides a forward look for new projects, improved services delivery through accreditation of Laboratories, equipped with new technologies to understand and predict the geological processes.

By executing this strategy, the Institute will be able to achieve critical brand dimensions such as loyalty signified by frequent or repeat usage of BGI Services/products, active engagement shown by frequency of seeking information.

During the year under review, BGI has continued to focus on delivering consistent quality service, with the aim to launch itself as a reputable geoscience organisation. This brand superiority will be established through reliable and quality service across its value chain and rendering services as detailed below.

BGI SERVICES

GEOSCIENTIC SERVICES

- Geological Mapping
- Geochem Surveys
- Geophysics
- Geotechnical Investigations
- Groundwater Monitoring & Investigation
- Mineral Resources Evaluation
- Seismology

LABORATORY SERVICES

- Ceramics
- Geochemical Analysis
- Geotechnical testing
- Mineral Identification
- Water Analysis

GEOSCIENCE INFORMATION & COLLECTION MANAGEMENT

- Core Shed
- Geoscience Data & Publications Sales
- Library Services
- Museum and education center

Figure 2: BGI Services

Business Review

BGI, like other Geoscience Institutes worldwide, are national institutions mandated to provide geological data and information required by stakeholders primarily in mining, civil engineering, agriculture and the public.

Business Review

BGI operates in a dynamic environment that cuts across a number of industries.

BGI, like other Geoscience Institutes worldwide, are national institutions mandated to provide geological data and information required by stakeholders primarily in mining, civil engineering, agriculture and the public. It is therefore obvious that, this Institute affects every segment of human activity and development.

With this understanding, the Institute continued to pursue a number of activities and projects to harness and optimise national economic activity and development. The Institute is fully aware that, all of its activities, as indicated in its Mandate, Functions and the Corporate Strategy, are a blueprint for inclusive and sustainable development mainly concerning social and economic development.

In this chapter the Institute presents projects and activities persued to meet various stakeholder demands.


REPUBLIC OF BOTSWANA
MINISTRY OF MINERAL RESOURCES,
EN TECHNOLOGY AND ENERGY SECURITY
"The Ministry that makes a
real difference to Botswana"
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eal difference to Botswana"
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Identification and Assessment of Mafic, Ultramafic and Granitic Complexes

This project was approved for implementation in the National Development Plan 10 (NDP 10) and was deferred due to lack of funds. During the third quarter of 2017, partial funding was approved which called for a modified project scope. The initial project scope was first to fill up data gaps by flying high-resolution aeromagnetic survey in the western part of Botswana. Subsequently, to carry out the mineral potential assessment in the rest of the country as an incentive to private sector investment in mineral exploration.

Mafic, Ultramafic and Granitic complexes in Botswana have not been fully explored though known elsewhere to host base Metals and Platinum Group Metals (PGMs). The modified project scope was to interpret aeromagnetic data of northern Botswana together with available geoscience information to produce geological, geophysical, hydrogeological and mineral potential maps. In addition to increasing the extent of geological mapping it will also provide improved information availability and update the National Geological Map of Botswana which was last updated in 1988. The improved Geological information will stimulate mineral exploration activities in Botswana.

Funding for this Project has been approved and Invitation to Tender was floated and it is anticipated that the project will commence in the next financial year (2018/2019).

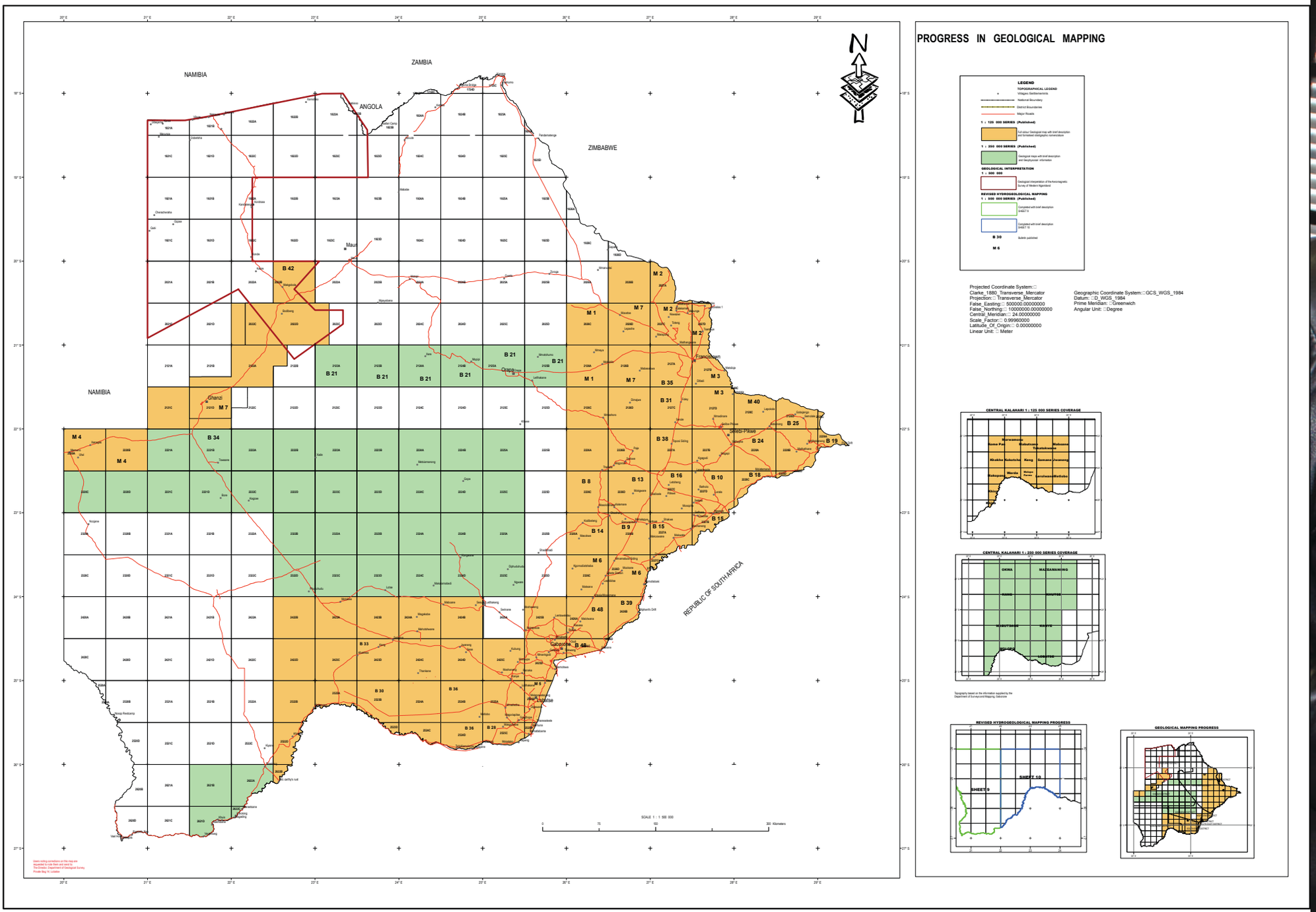

Figure 3: Map showing the extent of Geological Mapping as at March 2018 and the anticipated geological mapping project area

Mineral Accounts

Botswana is an implementing partner to the Wealth Accounting and Valuation of Ecosystem Services (WAVES) - a global partnership led by the World Bank that aims to promote sustainable development by mainstreaming natural capital in development planning and national economic accounting systems, based on the System of Environmental-Economic Accounting (SEEA). The WAVES global partnership brings together a broad coalition of governments, UN agencies, non-government organizations and academics for this purpose.

During the reporting period, BGI continued to undertake National Mineral Accounting under this global partnership, carried out by the Government of Botswana (GoB) and the World Bank.

Mineral Accounts provides information on five commodities being diamonds, coal, copper-nickel, soda ash and gold.

The information from the mineral accounts is of critical importance to Botswana's economy and the national balance sheet. Mining in Botswana, continues to be the largest contributor to Gross Domestic Product (GDP), generating the majority of export earnings, and making major contribution to government fiscal revenues.

Business Review
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Mineral accounts are intended to ensure that appropriate decisions are taken regarding the investment of mineral revenues to provide for future economic growth. The objectives of mineral accounting are;

- Quantifying the major physical trends in resource stocks for major minerals;
- Quantifying the major monetary trends in resource stocks for major minerals;
- Estimating the rent generated by each of the major minerals;
- Producing estimates of national mineral wealth;
- Producing estimates of mineral depletion;

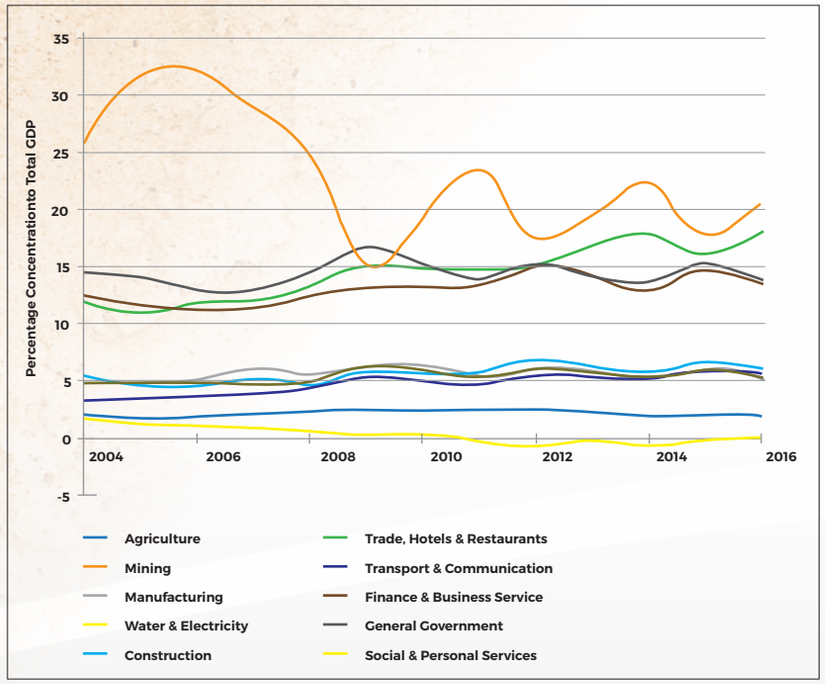


Figure 4: Contribution of Gross Value Added to GDP by kind of Economic Activity (Statistics Botswana 2017)

The mining sector has long been the dominant sector of Botswana's economy. It continues to be the largest contributor to GDP, government revenues and form majority of Botswana's export earnings. (See figure 4)

The mining sector has been the second best after the general government in creation of employment (See figure below), except in 2016 where it was surpassed by manufacturing, trade hotels & restaurants, banks, insurance and business services.

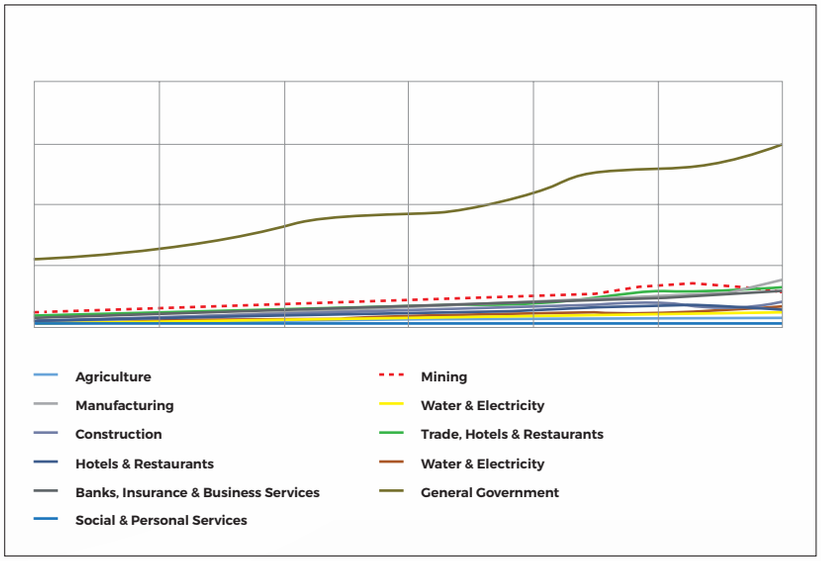


Figure 5: Compensation of Employees by Industry (Statistics Botswana (2017)

This observation can be attributed to BCL mine closure. It is therefore important to sustain the whole value chain of mining starting from exploration in order to help sustain employment.

Mineral accounts have emerged as a useful tool of measuring natural capital (Resource Value and Resource Rents). The mineral asset value is used to track its macroeconomic management to ensure long-term sustainability. Countries like Botswana, which are more contingent on mineral resources, should be on a sustainable path if the mineral

Business Review
continued..

asset value is converted to other forms such as produced, human and financial capital. Mineral accounts measures this value, addresses policy and computes the depletion component of rent that is used as an input for the calculation of the Adjusted Net National Savings (ANNS).

The depletion component of mineral consumption takes into account the lifetime of our mineral resources and the produced annual rents according to the following formula:

$$Depletion = \frac{RR}{(1+r)^n}$$

Where: RR = annual resource rent, r = chosen discount rate, and n = lifetime of mineral deposit (to exhaustion). The depletion component gets larger as the remaining lifetime of the deposit gets shorter. In aggregate, the lifespans of Botswana's mines (notably diamond mines) are relatively long, while the depletion component is relatively small see the figure 6.

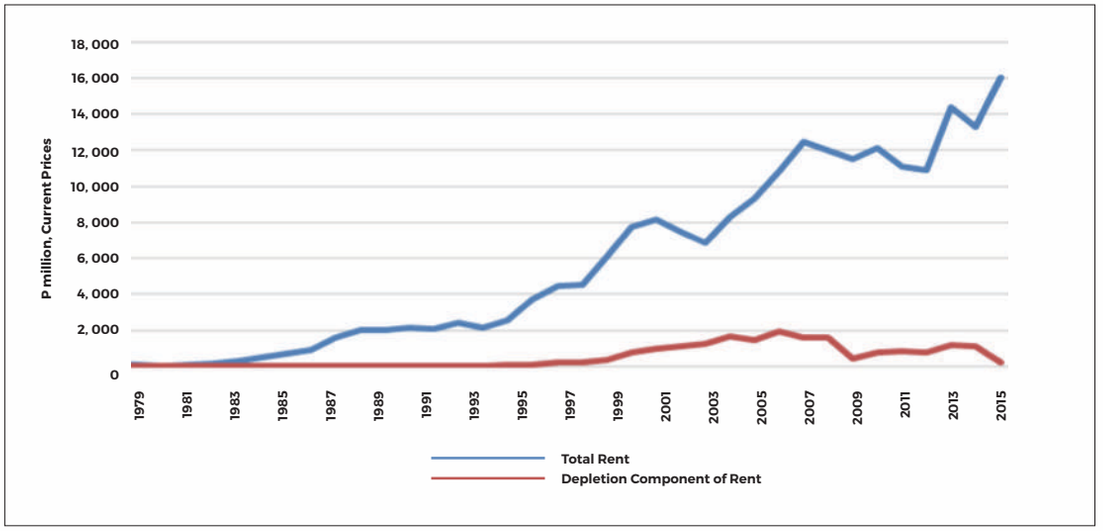
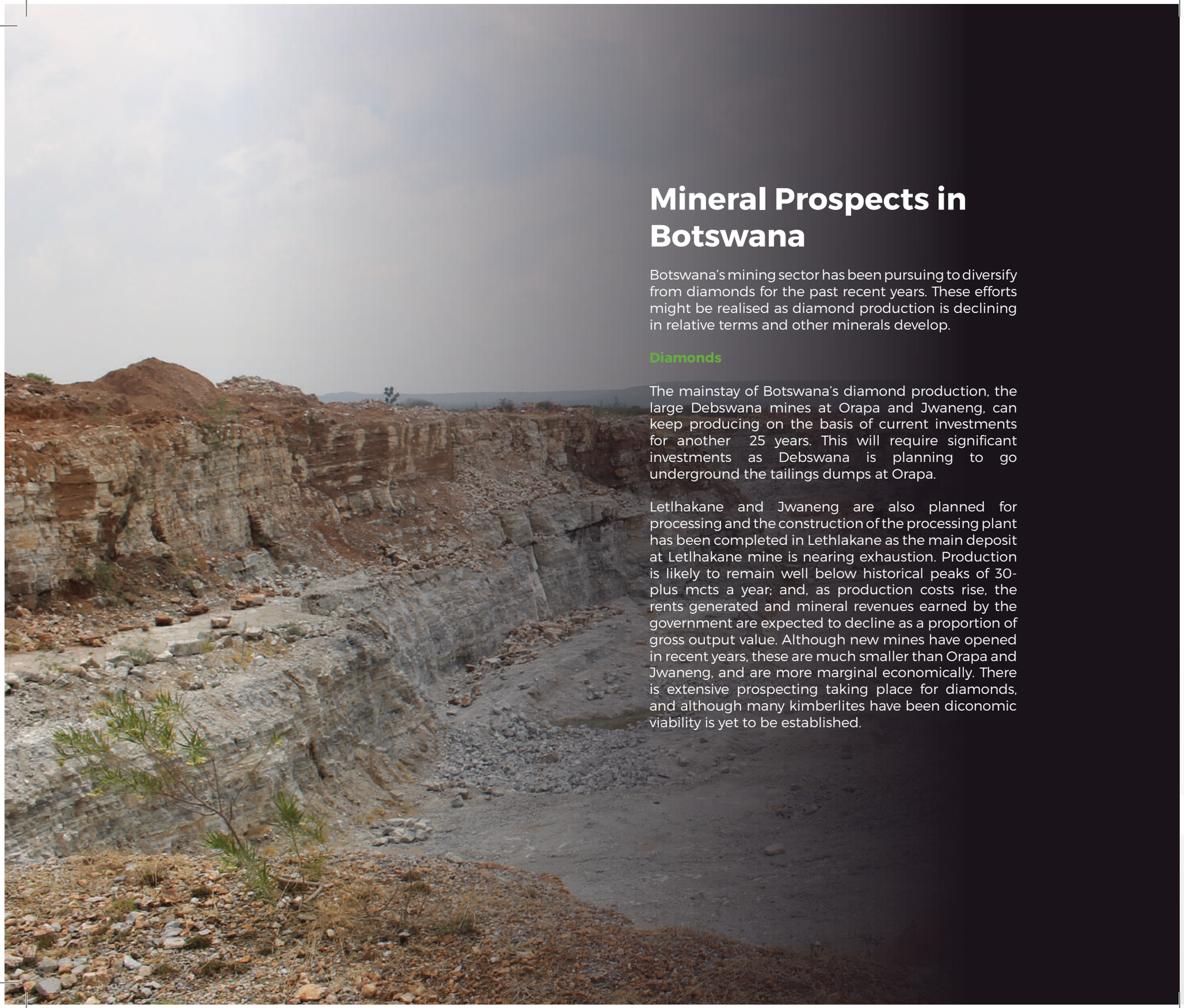


Figure 6: Depletion Components of rent (Economic Accounting of Mineral Resources 2016/17)

In line with the above mentioned, the policy recommendations for mineral resource sector development were as follows;

- A need to look beyond diamond mining alone in order to improve diversification.
- The mining sector to take advantage of growth potential in Coal and Copper - Nickel and monetize it for the government benefit.
- Maximize mining sector revenue from downstream activities.
- Research to unleash investment areas and appropriate decision making in mining.



Mineral Prospects in Botswana

Botswana's mining sector has been pursuing to diversify from diamonds for the past recent years. These efforts might be realised as diamond production is declining in relative terms and other minerals develop.

Diamonds

The mainstay of Botswana's diamond production, the large Debswana mines at Orapa and Jwaneng, can keep producing on the basis of current investments for another 25 years. This will require significant investments as Debswana is planning to go underground the tailings dumps at Orapa.

Letlhakane and Jwaneng are also planned for processing and the construction of the processing plant has been completed in Lethlakane as the main deposit at Letlhakane mine is nearing exhaustion. Production is likely to remain well below historical peaks of 30-plus mcts a year; and, as production costs rise, the rents generated and mineral revenues earned by the government are expected to decline as a proportion of gross output value. Although new mines have opened in recent years, these are much smaller than Orapa and Jwaneng, and are more marginal economically. There is extensive prospecting taking place for diamonds, and although many kimberlites have been diconomic viability is yet to be established.

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Base Metals

Botswana's base metals mine BCL has been adversely affected by low prices (especially for nickel), declining reserves and ore quality (especially at Tati Nickel), these led the government of Botswana to place the mine under provisional liquidation in 2016.

However, it has been established that there are substantial unexploited base metal deposits around Selebi-Phikwe and in northwest Botswana (the Ghanzi district and Ngamiland); the latter may contain an extension of the Zambian copperbelt. Khoemacau Copper Mining (Pty) Ltd (formerly known as Hana Mining) is currently at development stage and has also acquired some prospecting licenses from Discovery Metals. MOD Resources and Tshukudu Metals (Pty) Ltd), are new copper/silver mineralization which were discovered in March 2016. Gcwihaba Resources (Pty) Ltd (Tsodilo Resources) announced some discovery of iron ore deposits (Magnetite Banded Iron Formation). Despite the economic downturn, exploration still continues though at a slow rate. Rio Tinto Mining & Exploration is prospecting for Cu(copper) in the North West. Mount Burgess (MTB) was re-granted the area it previously held and continues to prospect for zinc, lead and silver in North West at its Kihabe prospect.

Uranium

A-Cap Resources (Pty) Ltd have a substantial uranium deposit exists in northeast Botswana, and unlike some of the known base metal deposits is well served by existing infrastructure. The pre-construction is envisaged to commence in October 2019.

Coal and Coal-Bed Methane (CBM)

Coal has been mined from the Morupule mine since 1971 and Mmamabula and Sese coal projects have issued mining licenses in 2014 and 2017 respectively. Probably the main potential for large-scale development of mining development in Botswana lies with coal. A significant production requires an export market, whether for coal itself or for products derived from coal, such as electricity or chemicals. There are also substantial deposits of CBM (similar to shale gas), which could be exploited as an energy source (liquid petroleum gas), a fuel for power generation, or a chemical feedstock. The viability of exploiting CBM deposits is under investigation.

Mineral Target Projects

The Institute, in collaboration with the Ministry of Mineral Resources, Green Technology and Energy Security has developed Project Proposals for Mineral targets funded under National Development Plan 11 (NDP11). These proposals are waiting funding. Other various key geological targets/projects were identified in the year under review and included; Maitengwe Greenstone, Lesoma and Etsha Mogondi belt, areas. The proposals and literature review were completed and presented for further action. These geological projects are discussed below;

Maitengwe Greenstone Belt

The main objective of this literature review was to combine data sets in the area and reinterpret in order to check if the area has mineral prospective targets to be considered for drilling.

Regional Geology

The geology of the area is covered by the Archaean Zimbabwe Craton which can be subdivided into Francistown Granite- Greenstone Complex, Mosetse Complex and Motloutse Complex. The Francistown Granite- Greenstone Complex is made up of the Greenstone belts Maitengwe, Vumba, Matsitama and Tati) which are mainly made of volcanic rocks metamorphosed in the greenschist and lower amphibolite facies. These greenstone belts are intruded by voluminous tonalites, followed by late- tectonic granodiorites, monzonites and granites.

The Maitengwe Greenstone Belt is found in the North-Eastern part of Botswana near Maitengwe village. The area is relatively flat with no or limited outcrops. It covers an area of approximately 484 Sq. Km. The proposed area can be accessed from Francistown through a tarred road via Tutume and Nkange village. There are also other motorable tracks.

The Mosetse Complex Consists of sediment-dominated supracrustral sequences which experienced higher grades metamorphism and gneissosity. Granitoids including tonalites, granodiorites and granites which are thought to be syn-tectonic.

Amphibolite sheets were observed within granitoid gneisses. Motloutse Complex consists of meta-sedimentary and para-gneissic rocks of the same protolith types to those in the Mosetse Complex. The rock units are of granitic composition and composed of migmatitic and megacrystic varieties (Carney, 1994) see figure 7.

Local Geology

Three sequences of meta-sedimentary and meta-volcanic rocks are present in the area namely:

The Mpapho Banded Ironstone Formation

This formation consist of units of quartzo-feldspathic rocks, serpentinite and amphibolite which are intercalated with banded ironstones. Banded ironstones are generally finely laminated to bedded silica bands with varying amount of iron oxides.

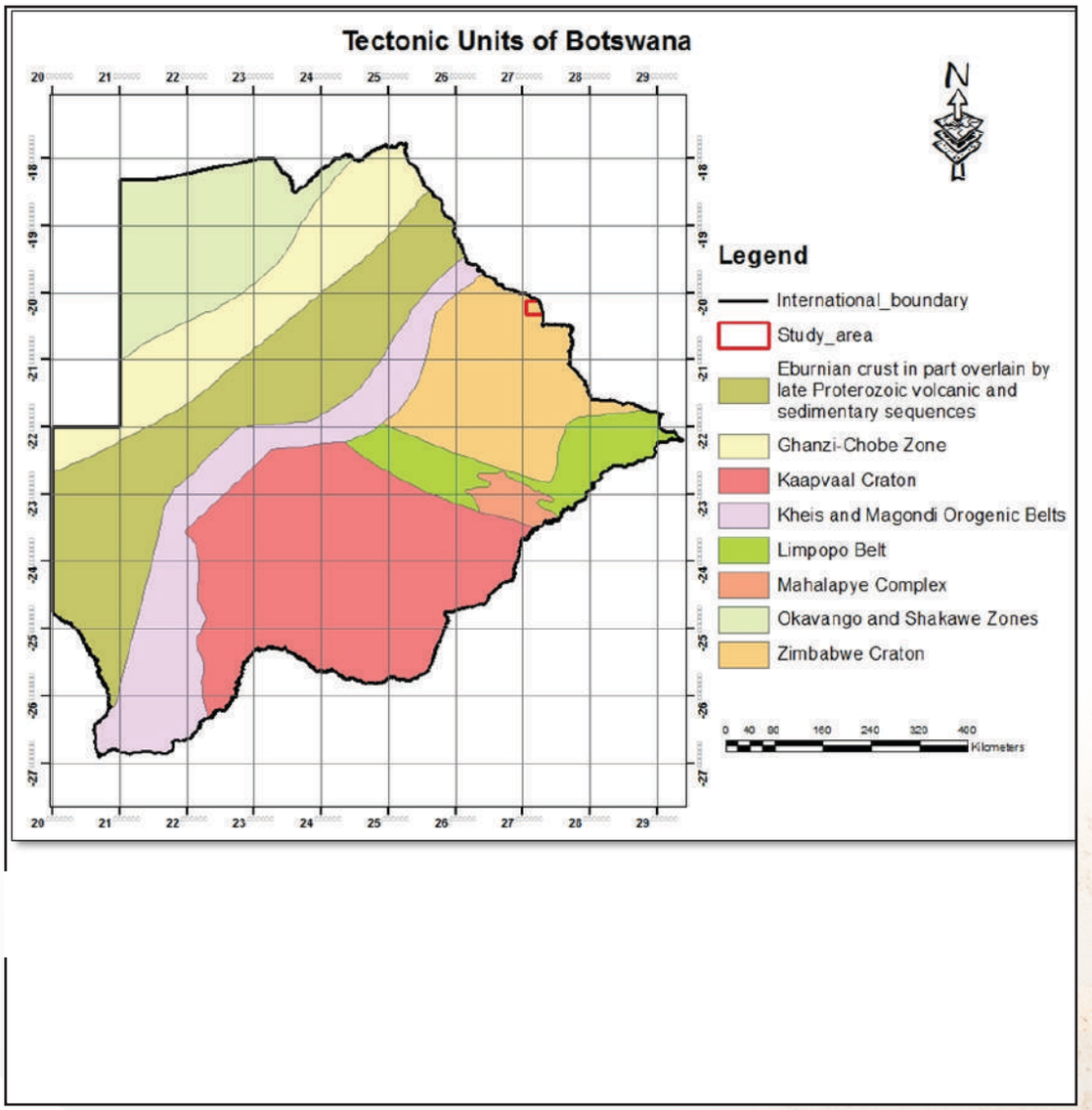

Figure 7: Regional Geology and major tectonic units of Botswana in relation to Maitengwe Study Area

Business Review
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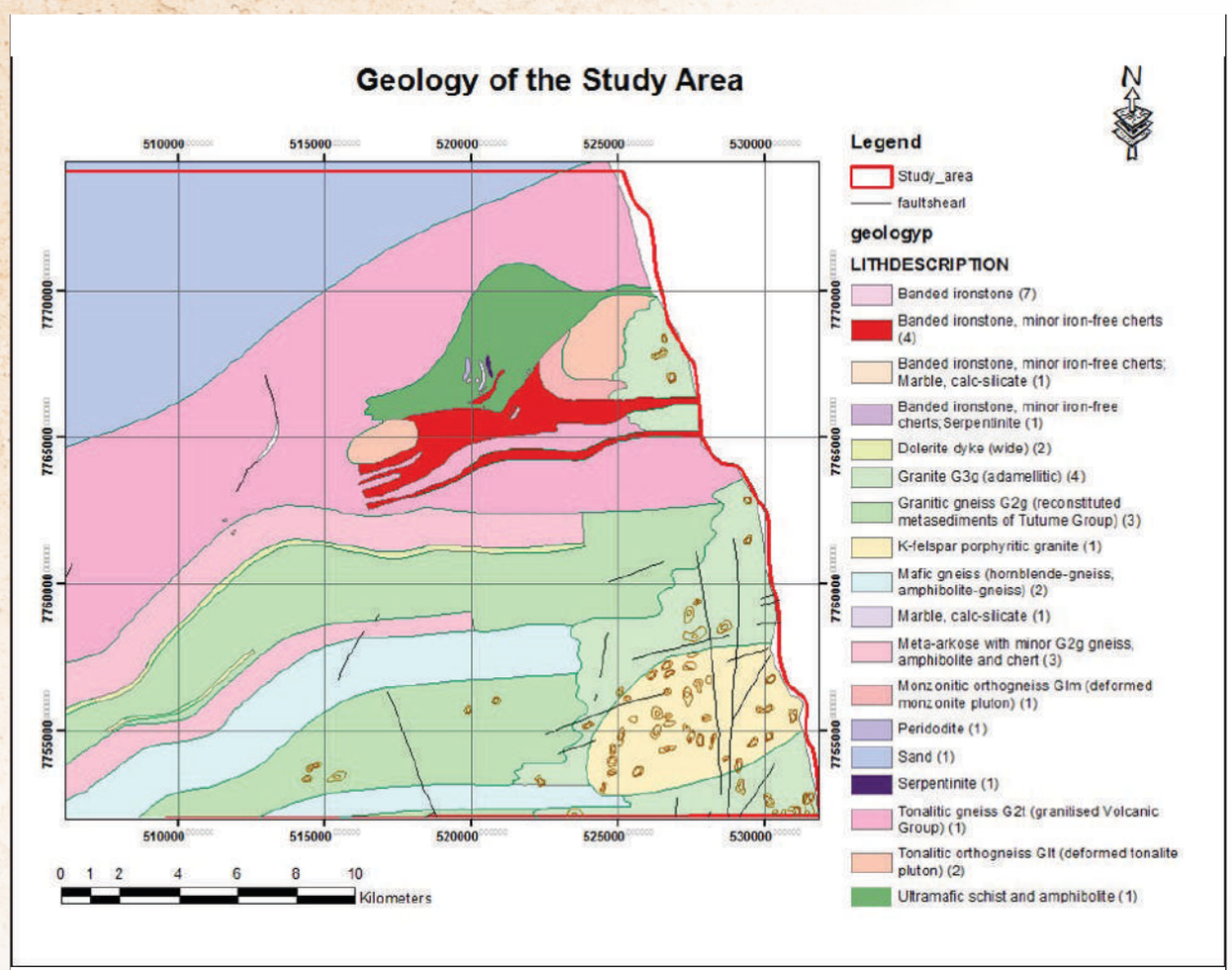

Figure 8: Local Geology around the Maitengwe Study Area

The Mazuwe Amphibolite

There are three types of amphibolites; the grey to black, granular amphib olite weakly foliated with some sparse felsic mineral probably feldspars; the gray to grayish green medium to coarse grained massive variety with quartz/ carbonate alteration; and the extensively foliated tremolite/ actinolite (ultramafic) schist.

The Sokwane Quartz - Sericite Schist

Band Ironstone outcrops show Interbanded quartzite with siliceous banded ironstone. The outcrop exhibits numerous fractures infilled by quartz veinlets and enriched iron oxides (hematite and magnetite). nDrill hole intersected quartz sericite schist dipping to the north at a very high angles (Chatupa, 2000) see the figure 8.

Business Review
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A number of studies have been done and the results show that previous work was not detailed as only few boreholes were drilled to the maximum depth of 200m. The boreholes were terminated within the hydrothermally altered lithological units showing both proximal and distal alteration mineral assemblages. The geochemistry survey line spacing was very large as it was 500m apart.

The results from geochemical analysis indicate that only a few trace elements were analyzed, therefore it became more important to analyze more trace element as their association can be used as pathfinders. Previous geochemistry analysis show presence of both gold and copper mineralization (Chatupa, 2000 figure). The mineralization is controlled by structures like shear zones, faults and lithological contacts but from the previous work there was no structural interpretation conducted in this area.

From the work done in this area, it has been established that, the Arhean Greenstone Belts mostly consisting of felsic intrusions (quartz feldspar porphyry) are possible gold bearing rocks the main source being hydrothermal fluids. Further investigations should focus on:

- High strain deformation zones; generally major breaks of 100 km's in length and several km's in width, simple shear zones which are conduits for Au-bearing fluids.
- Smaller scale splay faults; generally oblique (low angle), dilational zones of enhanced permeability which occur within and outside major deformation zones.
- Lithological contacts which are conduits for gold bearing fluids.

Economic Potential of Magondi Orogenic Belt in Botswana

The Magondi Supergroup is mainly metasedimentary succession with minor mafic and intermediate to felsic metavolcanics which is found in the early Proterozoic Magondi Mobile Belt of Western Zimbabwe, extending south west into Botswana. It is subdivided into the Dewaras, Lomagondi and Priwiri groups, which were deposited between 2.102.0 Ga.

In addition to the above, lithologies of the Dete-Kamativi Inliers of North West Zimbabwe are aslo part of the Magondi super group. The Magondi Supergroup was deformed into a thin and thick-skinned fold thrust belt and metarmophosed from greenschist to granulite facies during the C2.0-1.8 Ga, Magondi Orogeny, and was also affected by the irumide and Pan African Zambezi orogenisis. The Deweras group unconformably overlies the granite green-greenstone terrane of the archaen Zimbabwean craton. The Deweras group is inturn unconformably overlain by the Lomagondi group.

The Magondi Belt has proved to be highly economically important in Zimbabwe. There is evidence that it extends southwards into Botswana, where it is believed to be covered by karoo sediments. Therefore there is a need to know the extent of this belt in Botswana and determine its economic importance if there is any.

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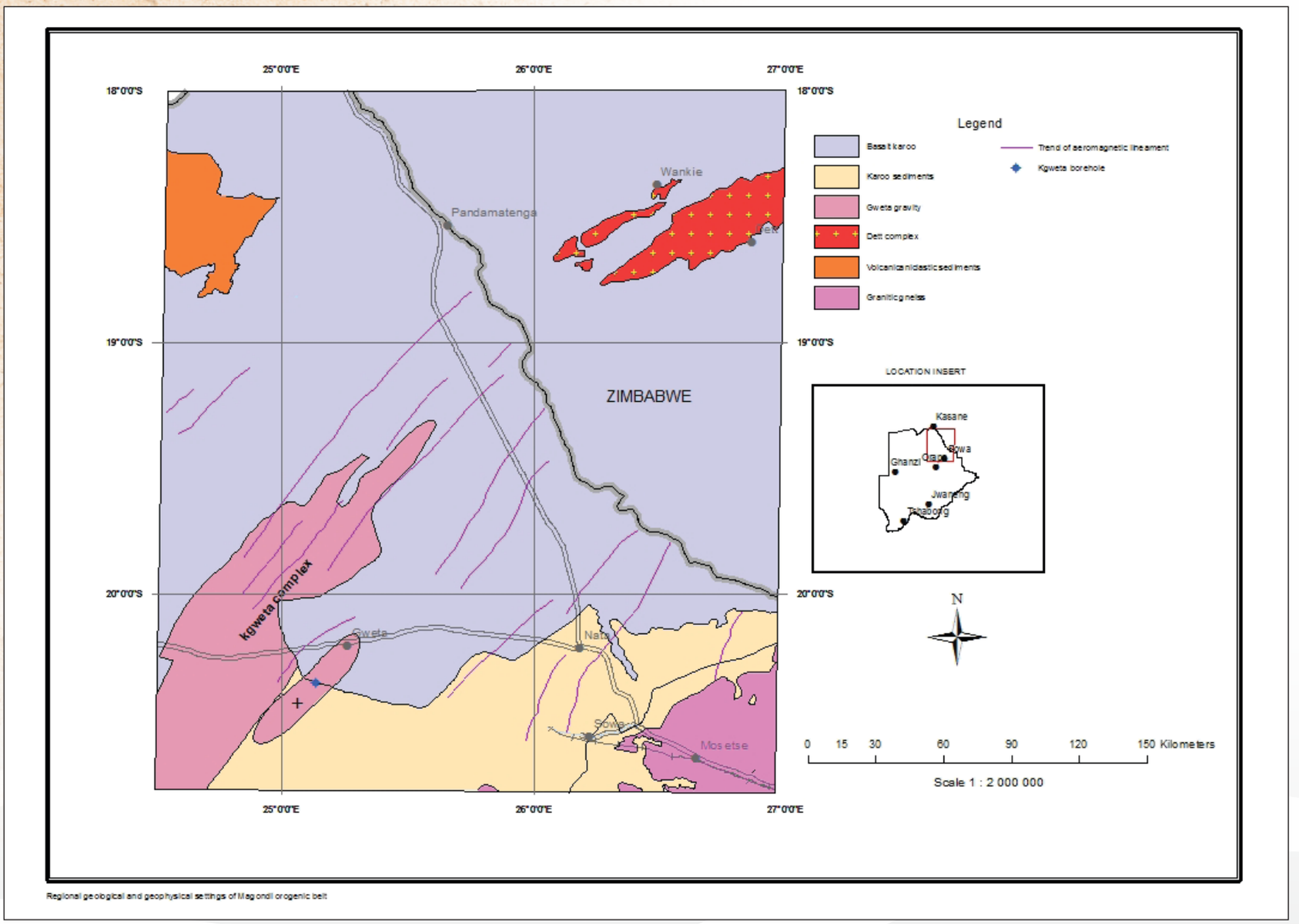

Regional geological and geophysical settings of Magondi orogenic belt

Figure 9: Regional Geology and Geophysical Setting of Magondi Oregenic belt

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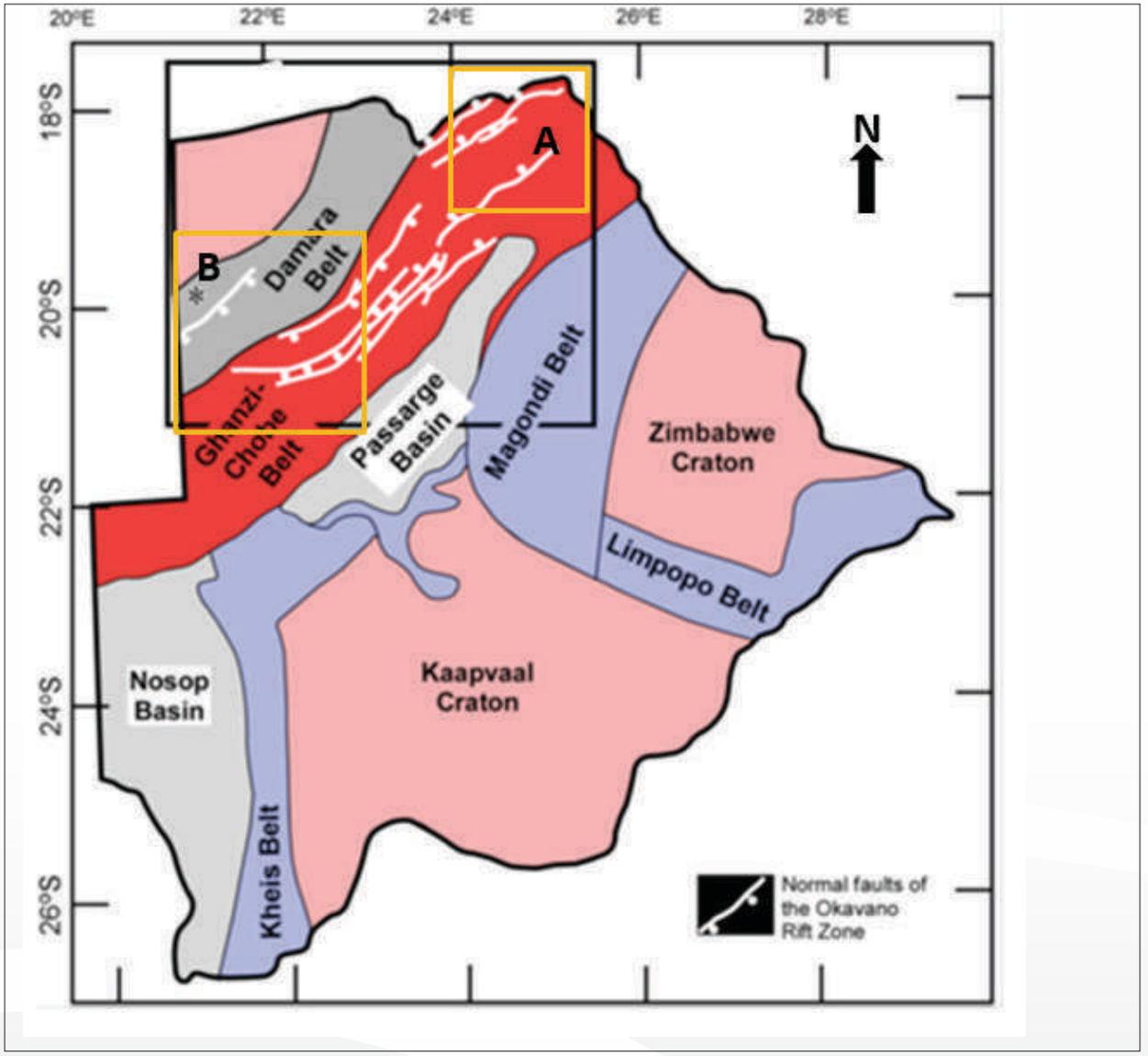

Figure 10: The spatial extent of Archean cratons and Proterozoic orogenic belt. White line represent the fault system of the Okavango Rift Zone. Modified after Singletary et al. (2003) and Begg et al. (2009)

Assessment of mineral potential of the Lesoma (ne) and Etsha-West (NW) areas.

Areas of interest in this study, fall within the Damara tectonic belt (Figure 10). The Damara tectonic belt is a complex domain of Proterozoic rocks that were deformed and metamorphosed during the Pan-African orogeny, occurring in Latest Proterozoic and earliest Phanerozoic time, between about 630 and 500 Ma (e.g. Miller 1983a).

The orogeny is interpreted by many workers as the closure of a rift, or series of rifts, which had accumulated sedimentary and volcanic rocks of the Damara Sequence (SACS 1980). Derivation of this Damara infill is primarily from an Eburnian (2000 Ma) source (Hawkesworth and others 1986).

Other components of the orogenic belt include syn- to post- Pan-African granites, and basement inliers of diverse lithology with ages ranging between 1730 and 1060 Ma (Cahen and others 1984).

The extension of the Damara Belt in Botswana contains a succession of volcanic and sedimentary rocks, metamorphites and granitoids with at least some components of the latter two consisting of Kibaran-age basement reworked during the Pan-African orogeny (Figure 10).

Coal Classification

Botswana coal resources have been estimated to be 212 Billion tonnes in the previous reports. This tonnage included demonstrated (measured and indicated), inferred, hypothetical and speculative coal resources. BGI has embarked on a study to find the better estimates or tonnage of the demonstrated coal resources and classify the coal resource. Coal Exploration reports from previous and current exploration licenses were used as sources of information.

Calculation of coal resource tonnage will be based on the average coal seam thickness from strati-graphical logs, areal extent and coal Average relative density. Where an exploration company had undertaken extensive drilling and evaluated the tonnage of an area the results will be verified by re-calculating them. The project is ongoing and coal resources calculated from eight (8) blocks covering an area of 1346.21 Square Kilometres and so far 8.68 billion tonnes have been verified.

Coalfields	Reports from different Authors											
	Catupa Report, (1991)					BIDPA Report, (2012)			BGI Report			
	Identified (Mt)			Undiscovered (Mt)		Identified (Mt)			Identified (Mt)			
	Demonstrated		Inferred	Hypothetical	Speculative	Demonstrated		Inferred	Demonstrated		Inferred	
	Measured	Indicated				Measured	Indicated		Measured	Indicated		
Mmamabula East		17,703.00							2,589.90	24.20	33.90	
Mmamabula East_2										243.00	2,119.00	
Mmamabula						2,313.00	2.00	31.00				
Mmamabula West			397.00				573.00	4,791.00		330.00	2,672.00	
Mmamabula South		2,512.00				553.00	57.00	7.00	2,421.27			
Mmamabula Central	494.00		2,107.00					408.00	549.50			
Dukwi		32.00	1,572.00				508.00	414.00		508.00	414.00	
Foley/ Sese				6,860.00		500.00	2,200.00	109.00				
Serule					285.00			968.00				
Tshimoyapula			733.00	1,481.00	1,991.00		1,174.00				1,175.00	
Lechana		307.00	608.00	285.00	3,994.00		103.00	727.00		103.00	727.00	
Morupule	2,846.00	2,706.00	4,272.00	4,851.00	3,397.00	425.00		2,483.00				
Morupule South							1,916.00	414.00	2,026.08			
Moiyabana			2,406.00		648.00			1,500.00				
Letlhakane			7,213.00	23,340.00	39,800.00	895.00	405.00					
Mmamantswe			598.00									
Ncojane				2,025.00	2,700.00							
Bobonong					179.00							
Masama												
Dutlwe/ Takatokwane			2,070.00	60,875.00	8,795.00			4,230.00		424.50	2,654.00	
Sub-Total	**3,340.00**	**23,260.00**	**21,976.00**	**99,717.00**	**61,789.00**	**4,686.00**	**6,938.00**	**16,082.00**	**7,586.75**	**1,632.70**	**9,794.90**	
Total		**26,600.00**	**21,976.00**		**161,506.00**		**11,624.00**	**16,082.00**		**9,219.45**	**9,794.90**	
Grand total			**48,576.00**		**161,506.00**			**27,706.00**			**19,014.35**	

Table 5: Coal Classification: Historical vs Current Resources

Earthquake Monitoring

The year 2017 registered a number of seismic activities. The 6.5 local magnitude earthquake on the 3rd of April 2017 was the major event felt in the country and much of Southern Africa, with its epicentre located on the south-western part of the Central Kgalagardi Game Reserve (CKGR).

The aftershock events associated with this earthquake continued to be recorded for most of the year and were clusters around the main event's epicenter.

BGI in collaboration with the South African Council for Geoscience (CGS) deployed temporary aftershocks monitoring seismic stations in the epicentral region for the period of three (3) months. The results from the aftershocks monitoring were published on the Journal of African Earth Science (Midzi et. al., 2018). See Map.

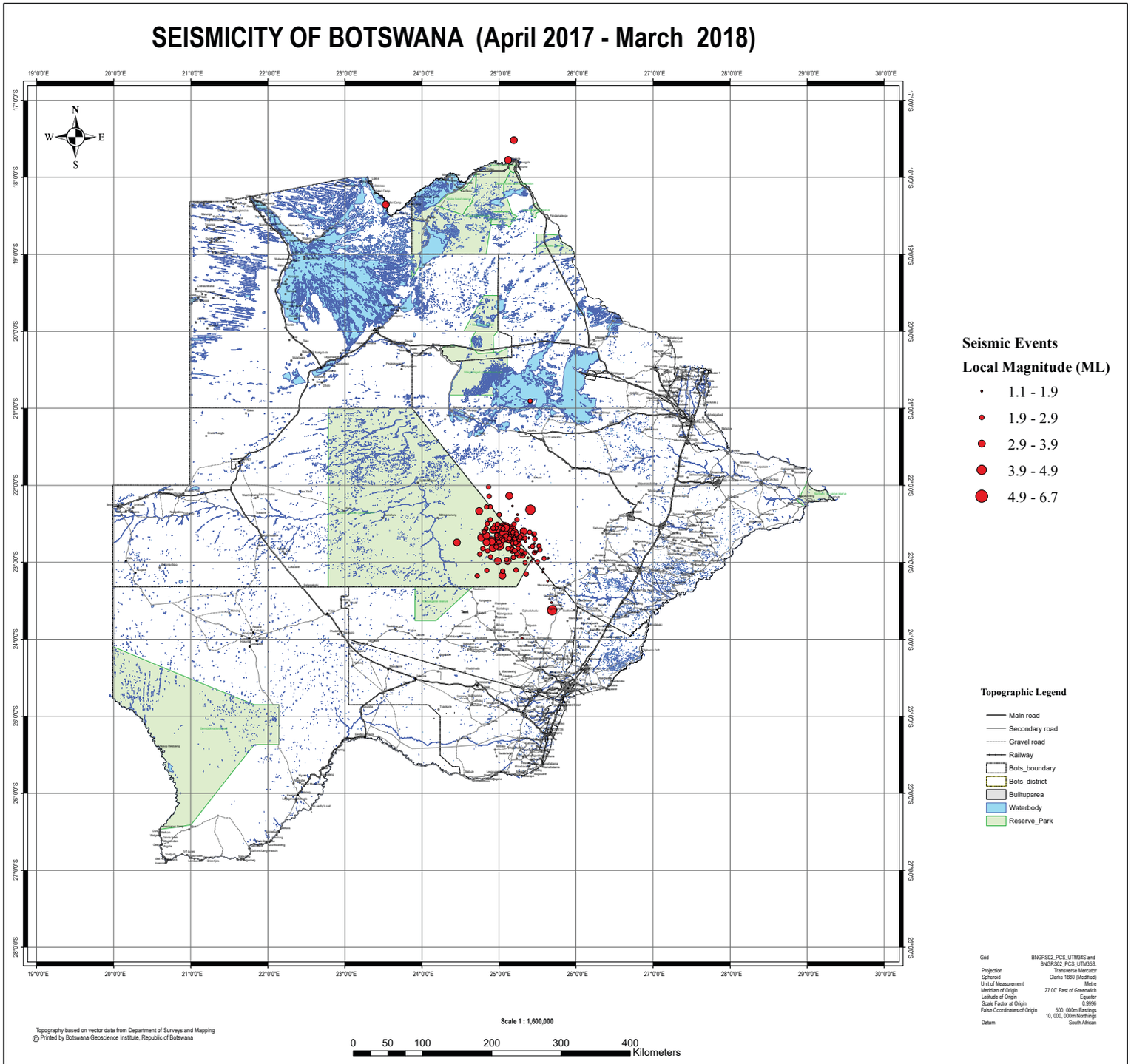

Figure 11: Seismicity of Botswana (April 2017 - March 2018)

Business Review
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Other recorded events include the two seismic events within ten days from each other which were felt in the Kasane-Kazungula area. The events had local magnitudes 3.1 and 3.6 and the epicenters locations were consistent with reports from residents who felt the tremors. The events were recorded by the Botswana Seismological Network (BSN) stations and stations in Zambia, Zimbabwe, Namibia and South Africa. BGI operates a countrywide network of 21 seismic stations constituting the Botswana Seismological Network (BSN).

The stations were initially installed within the framework of a research project termed "Network of Autonomously Recording Stations" (NARS-Botswana). The project was a collaboration between the Department of Geological Survey (DGS) and the Netherlands' universities of Twente and Utrecht. The network was officially handed over to the BGI in March 2018.

Seismic Station in Mmakgori, Southern part of Botswana

Business Review
continued..

The prime objective of this network is to establish long-term monitoring of seismicity of Botswana and its surrounding areas to establish a complete database of local and regional earthquakes. Another station belonging to the Global Telemetered Seismograph Network (GTSN) located in Magotlhwane, (coded –LBTB), continued to transmit data to both United States Geological Survey (USGS) and the International Data Center (IDC) in Vienna, Austria. Maintenance of this station is a partnership between BGI and Air Force Technical Application Centre (AFTAC) in Florida, USA.

The Maun-based station (MAUA) that belongs to the continental seismic network of the Africa Array operated well and data shared with BGI.

Seismological processing identify and located seismic events using local and regional networks leading to the production of the updated seismicity Map of Botswana for the period of 1950 to 2017. BGI seismologists continued to benefit from capacity building training and workshops organized by the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO). In 2017, two officers participated in Waveform Analysis course in Vienna, Austria.

Environmental Monitoring

Water is a precious resource without which life, as we know it would not exist. Generally, Botswana's climate is characterized by low rainfall and high evapotranspiration rates, making reliance on surface water difficult. For that reason, the importance of our groundwater resources cannot be overemphasized.

Groundwater is abstracted for use in supplying both rural and urban centres, industries including mines, energy sectors such as power plants and the agriculture sector in which most Batswana are dependent on.

Botswana Geoscience Institute, with expertise in geoscientific research and as advisors with respect to geohazards, promotes sustainable development and management of Botswana's precious groundwater resources by carrying out research to encourage aquifer protection and safe disposal of hazardous water waste. Being the custodian of all geoscience data, BGI is better placed to give advice with regard to groundwater potential and groundwater vulnerability of aquifer units in Botswana, thereby making the institute a one-stop centre for all groundwater-related matters.

During the period under review, the Institute carried out various groundwater monitoring projects to monitor contamination from source and implement mitigation measures to prevent pollution. It also informs on geohazards that may cause contamination of groundwater such as floods and earthquakes.

Business Review
continued..

Figure 12: Groundwater Extraction for analysis and assessment

Business Review
continued..

Kuke Foot and Mouth Disease (FMD) Burial Site

This project was initiated to monitor groundwater quality around in the Kuke FMD Burial site (Figure 12). The project aimed at assessing the possibility and extent of groundwater pollution as a result of leachate from the burial site. Groundwater sampling from ten (10) boreholes was conducted. All samples from the monitoring regimes were analysed for chemistry and microbiology. Results from two boreholes on the microbiology showed elevated figures above the permissible limit.

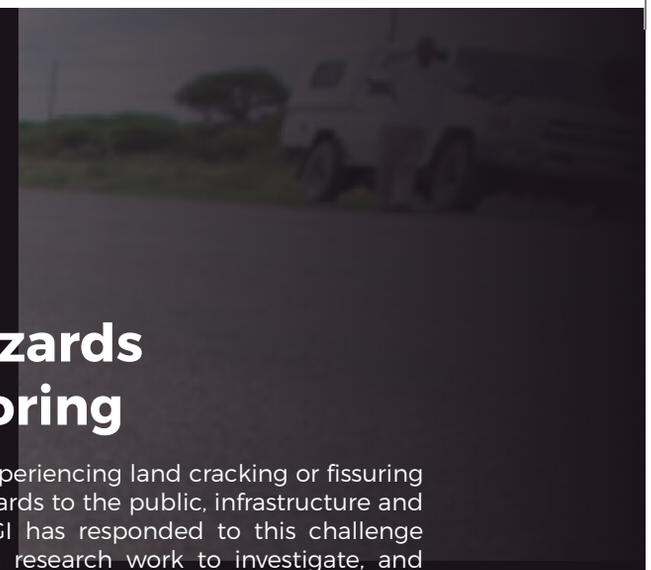
Notwane Tswana Pride Poultry (Mmasedikwe)

This project was part of the Environmental Protection programme against possible pollution in the Gaborone Dam catchment area. Boreholes were drilled around the poultry farm to monitor possible leachate. Groundwater samples from the boreholes were analysed for hydrochemistry and microbiology. Most of the samples indicated higher than normal levels of nitrates.

Acid Mine Drainage (AMD) at BCL Mine and its surroundings

The project was aimed at assessing the impacts of BCL's mining operations at Selebi Phikwe groundwater quality with respect to Acid Mine Drainage (AMD). AMD is caused by water flowing over or through sulphur-bearing materials to form solutions of net acidity which are then harmful to the environment. Seventeen (17) new boreholes were drilled and seven older boreholes rehabilitated for this project. Site selection for the boreholes was based on proximity to areas such as the town sewerage ponds, slag stockpile and tailings pond, BCL treatment plants and along the Motloutse River.

Groundwater sampling was conducted biannually and samples tested for chemistry including the presence of heavy metals. Results indicated an increase in TDS and SO4, with the majority of boreholes sampled above the BoBS drinking water standards. Water treatment and bioremediation were suggested as measures to mitigate against AMD.



Geohazards Monitoring

Botswana is experiencing land cracking or fissuring that poses hazards to the public, infrastructure and animal life. BGI has responded to this challenge by conducting research work to investigate, and establish the causes and trigger mechanisms of land cracking and possible subsidence.

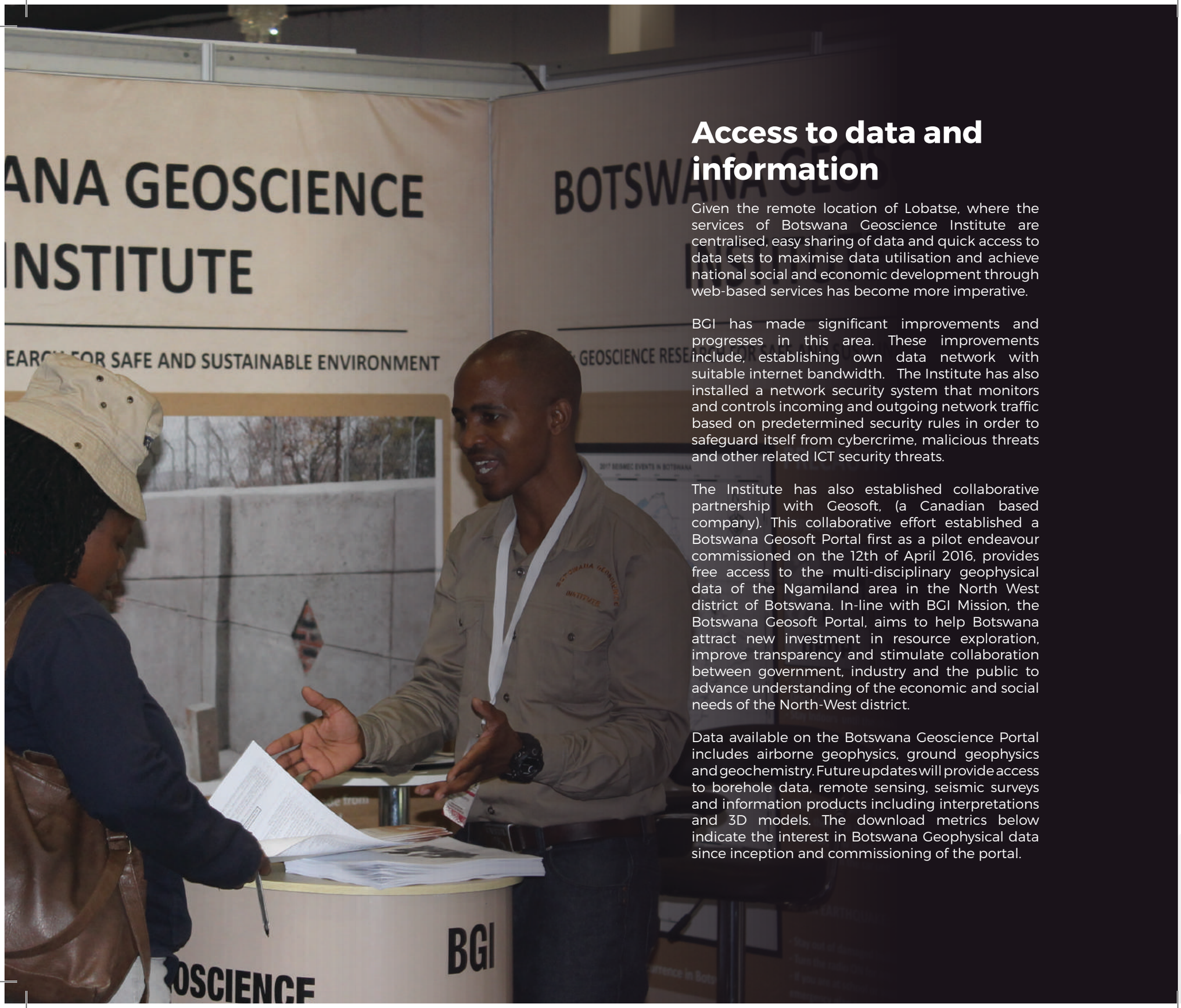
The affected areas included Kgwakgwe wellfields and Makapane lands (Ngwaketse District) and Ditshukudu and Hatsalatladi areas (Kweneng District). BGI has embarked on a research that will inform the stakeholders on possible causes, and provide technical advice on precautionary measures and mitigations. This will also provide the basis for long term monitoring and remedial measures whilst promoting public awareness.

The final draft report on Kgwakgwe was completed during the year. Recommendations will be shared with stakeholders upon completion of the final edited report following a technical review by the Institutional editorial team. In the Makapane area, geotechnical assessments were carried out that included mapping of identified cracks, geophysical survey using Ground Penetrating Radar (GPR) system, soil sampling, laboratory analyses, which were followed by interpretations. Future work required will involve stratigraphic drilling of holes before the stakeholders can be engaged on the results and recommendations.

Business Review
continued..

Ground Cracking at Kgwakgwe (L) and Makapane (R)

Fissures at Ditshukudu



Access to data and information

Given the remote location of Lobatse, where the services of Botswana Geoscience Institute are centralised, easy sharing of data and quick access to data sets to maximise data utilisation and achieve national social and economic development through web-based services has become more imperative.

BGI has made significant improvements and progresses in this area. These improvements include, establishing own data network with suitable internet bandwidth. The Institute has also installed a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules in order to safeguard itself from cybercrime, malicious threats and other related ICT security threats.

The Institute has also established collaborative partnership with Geosoft, (a Canadian based company). This collaborative effort established a Botswana Geosoft Portal first as a pilot endeavour commissioned on the 12th of April 2016, provides free access to the multi-disciplinary geophysical data of the Ngamiland area in the North West district of Botswana. In-line with BGI Mission, the Botswana Geosoft Portal, aims to help Botswana attract new investment in resource exploration, improve transparency and stimulate collaboration between government, industry and the public to advance understanding of the economic and social needs of the North-West district.

Data available on the Botswana Geoscience Portal includes airborne geophysics, ground geophysics and geochemistry. Future updates will provide access to borehole data, remote sensing, seismic surveys and information products including interpretations and 3D models. The download metrics below indicate the interest in Botswana Geophysical data since inception and commissioning of the portal.

Business Review
continued..

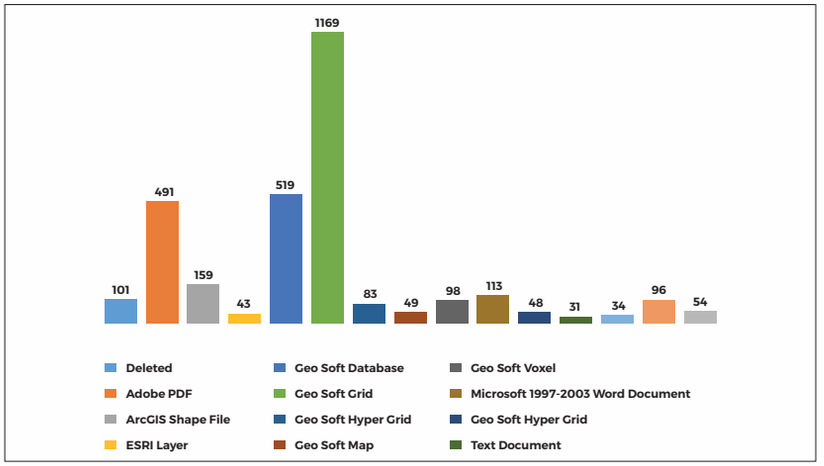


Figure 13: Data Extracted through Geosoft Portal

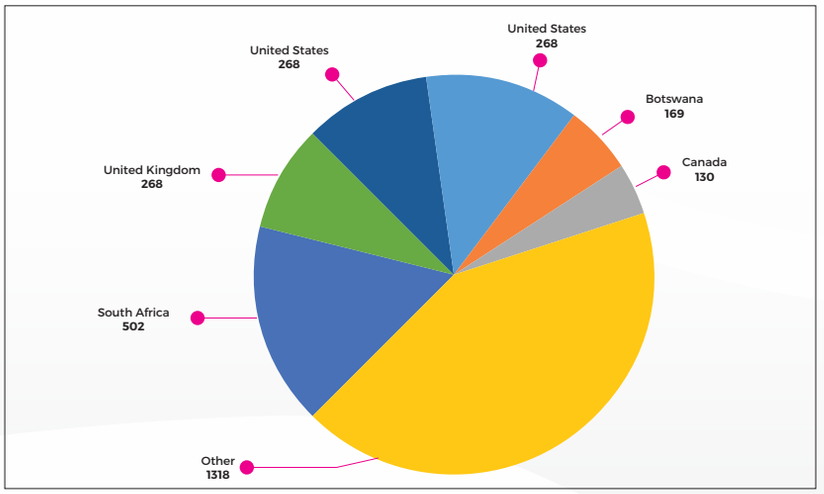


Figure 14: Data Sets downloaded by type though Geosoft

Other Countries include: France, Moroccao, Mozambique, Peru, India, Denmark, Brazil, Ethiopia, Zimbabwe, Netherlands, Nigeria, Norway, Romania, Malaysia, Egypt, Namibia, Mexico, Russia, Sierra Leone, Taiwan, New Zealand, Pakistan, Mali, Mongolia, Angola, Algeria, Indonesia, Kazakhstan, Laos, Libya, Uruguay, Zambia, etc.

Document and Core Library

BGI operates a document and Core Library as one of the channels to deliver data and other information to the public. The requests from our customers were mainly on exploration datasets and information especially in the field of hydrocarbons. In the period under review, the Institute acquired 352 open prospecting license reports from the Department of Mines.

The Institute is in the process of acquiring a library management system to enable processing, querying, retrieval and inventorying of documents. In support for Geoscience research, a contract was signed between the BGI and Elsevier for provision of Geofacets Database.

The institute realised a significant number of customer access to information through various means, in particular through its core sheds around the country and the BGI Geosoft portal.

Row Labels	No. of Boreholes	No. of Trays
Kang core shed	62	1838
Lobatse Core shed	7	148
Mmamabula	8	89
Molapowabojang Core shed	2	50
Grand Total	79	2125

Table 6: Core and Chip samples examined at core sheds

Business Review
continued..

Human Resource Review

By all means the paramount asset of any organisation is its Human Capital.

Human Resources Review
continued..

We are pleased to report on our substantial accomplishments and the ongoing commitment to build a robust Geoscience organization. Our journey in 2017 began with the understanding that the renaissance of geological survey practice in Botswana requires commitment and collaboration from our stakeholders. The continuing journey is to be a "go- to" employer in the industry that we operate in.

In the opinion of many, the inability to attract and retain high quality scientific and technical staff, will lead to little or no success of any geoscience institute.

With this observation, BGI has turned the corner by defining its corporate structure implemented effectively in the previous financial year (2017/2018). However, there are limitations such as market unpredictability that prevented the Institute to acquire other necessary capabilities.

Staff Recruitment

During the year under review, BGI was in Phase one of implementing the organisational structure. This phase saw the organisation grow from 69 to 112 staff members against the ceiling of 225.

Year Ended March 31, 2018

	2018	2017
Total Number of Employees as at March 31, 2018	112	69
Women	32	18
Men	80	51
Scientists	40	23
Non-Scientists	71	46

Performance Management

The Performance Management System remains a critical tool in ensuring objective performance measurement, monitoring and improvement for all staff members.

The past year evidenced minimal activities on performance management. This was largely due to the transition being at an infancy stage. Going forward, this would be an important exercise to assist employees to understand how their roles are linked to Institute's mandate.

Industrial Relations

Maintaining a strong employer/employee relations is key to the success of any organization. BGI notes that it is inevitable for the Institute to maintain a healthy relationship with the employees hence the Institute's efforts to have in place guidelines to manage the relations. Specifically, the Institute continues to manage employee grievances through an established manner. However, processes are yet to be concluded to build a sustainable partnership with a Union that employees will subscribe. This will go a long way in forging reciprocal working relationships and align the Institute's structures to suit current operations models.

Training and Development

Training and development of staff is still regarded as core in achieving the Institute mandate. During the period under review (2017/2018), there was no formalised Training Plan as the institute was transitioning. There were however, some conferences, benchmarking exercises, seminars and workshops that the Institute engaged in for purposes of capacity building. In total, seventy-six (76) employees attended workshops, seminars and conferences. Seventy-three (73) officers were from core business units while three (3) were from support units. The total cost of these activities was at the tune of BWP420 492.31.

Health and Safety

Safety, in the work place establishing procedures, safety equipment and safety training, form a major focus within the Institute. To ensure promotion and maintenance of the highest degree of physical, mental, social well-being of employees and environmental protection, the Institute has made progress in this area by establishing a SHE Policy; Camping guidelines; Emergency response instructions; Servicing and procurement of firefighting equipment; Pre-task assessment books and Safe operation procedure for drilling.

Human Resources Review
continued..

Employee Engagement, Welfare and Wellness

BGI recognises the need for sound employer/employee relations and has committed to promote and support a healthy lifestyle for its employees. The Institute has established a Wellness Committee comprising BGI Employees. This committee is mandated to create customised activities aimed at promoting a work-life balance for employees.

During the year under review, the Committee organised events led by specialist on motivation, health education and counselling sessions that covered topics such as family matters and investing for the future.

Pension

BGI has established a contributory pension fund for permanent staff administered by Botswana Life where the employer contributes 15% and employees 5%. BGI does not incur any administrative costs in the management of the Fund.

At the closure of the financial year (March 2018) BGI fund had accumulated an amount of BWP 2, 237, 620. 76 for 94 permanent and pensionable staff.

Staff Remuneration

The HR Budget includes staff costs such as salaries, allowances, medical examination, refunds, training & development programs, per diems, insurances and other costs associated with Staff. The HR Budget for 2017/2018 was BWP 33, 457,802.14 however a total of BWP 37,715,414.48 (Thirty-Seven Million Seven Hundred and Fifteen Thousand Four Hundred and Fourteen Pula and Forty-Eight Thebe) has been incurred from June 2017 until March 2018.

Staff Turnover

Only one (1) employee exited the Institute during the year under review. This represents 0.89% turnover rate which is comparable to industry norms.

Financial Statements

CONTENTS

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

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended March 31st 2018

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.
Members of the Board	Mr. John L. Farr - Chairperson of the Board (resigned 2018) Prof. Elisha M. Shemang - Vice Chairperson Mr. Ogone O.M. Gaboutloeloe - Member Ms. Tebogo Mmoshe - Member Ms. Ontlametse Mokopakgosi - Member Dr. Sebusi Odisitse - Member Ms. Bogadi T. Mathangwane - Member Dr. Budzanani Tacheba - Member Mr. Tiyapo H. Ngwisanyi - Chief Executive Officer (ex-officio) Board member
Registered Office	Plot 1734 Khama 1 Avenue Lobatse, Botswana
Postal Address	Private Bag 14 Lobatse, Botswana
Bankers	First National Bank Botswana Limited
Auditors	Mazars Certified Auditors
Board Secretary	Obolokile Sekga

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended March 31, 2018

Members of the board Responsibilities and Approval

The Members of the board are required in terms of the Botswana Geoscience 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 March 31, 2019 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 annual financial statements. The annual financial statements have been examined by the institute's external auditors and their report is presented on pages 78 to 81.

The annual financial statements set out on pages **77 to 105**, which have been prepared on the going concern basis, were approved by the board on **17 August 2018** and were signed on their behalf by:

Prof. Elisha M. Shemang
Board Chairperson(Acting)

Puso Akanyang
Chief Exeexecutive Officer (Acting)

INDEPENDENT AUDITOR'S REPORT

To the Members of the board

Opinion

We have audited the annual financial statements of Botswana Geoscience Institute set out on pages 82 to 103, which comprise the statement of financial position as at March 31, 2018, 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 March 31, 2018, and its financial performance and cash flows for the year then ended in accordance with International Financial Reporting Standards.

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 Code of Ethics for Professional Accountants (Parts A and B) (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.

INDEPENDENT AUDITOR'S REPORT

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 And Existence Of Property, Plant And Equipment.	
The institute accounts for Property, plant and equipment at cost less accumulated depreciation and any accumulated impairment losses. The carrying amount of Property, plant and equipment as at 31st March 2018 is P 253, 819, 787. These assets were transferred from Department of Geological Institute.	We reviewed the Property, plant and equipment report and schedule for the current year and confirmed that the accounting was in accordance with IFRS.
As at 31 March 2018, the valuation of the Property, plant and equipment was based on the valuation performed in the previous year by independent valuers. Current year additions were accounted for at cost in the asset register and depreciated at the specific rates for the asset in question.	We agreed comparative amounts/opening balances to the valuation reports. Extensive procedures were performed on physical verification of the Property, plant and equipment with tests for impairment on the assets. We reperformed recalculation of the depreciation expense for the year. We tested for authenticity on a sample of additions that were made during the year.
The valuation and existence of Property, plant and equipment was considered to be a matter of most significance to the current period audit due to the high value of Property, plant and equipment with over 95% of the total asset base.	
Completeness And Accuracy Of Payroll Related Costs.	
Employee cost is the Institutes most significant expense.	Our procedures included among others;
During the year, the Institutes staff complement rose sharply causing the payroll cost to rise significantly.	We tested the controls over the appointments, resignations and payment of the payroll expenses.
The payroll costs included basic salaries and other allowances that are provided by the Institute to its employees. Related statutory obligations in terms of Withholding tax payable would require to be accounted for correctly.	We vouched payroll expenses to confirm their validity and accuracy and performed analytical procedures to confirm the payroll expense to the staff compliment.
Given the significance of the Payroll costs, we considered the completeness and accuracy of Payroll costs to be a key audit matter in the audit of the financial statements of the Institute	We physically verified employees for existence together with their identity proofs and indiviudal contracts.

INDEPENDENT AUDITOR'S REPORT

Other information

The Members of the board are responsible for the other information. The other information comprises the Detailed Income Statement set out on **page 104**. 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 Members of the board for the Annual Financial Statements

The Members of the 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 Institute Act, 2014, and for such internal control as the Members of the board 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 the 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 the 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 institute's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Members of the board.

- Conclude on the appropriateness of the Members of the 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 institue'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 institute 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 Members of the board 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
Certified Auditors
Practicing Member: Shashikumar Velambath
Practicing number - 19980076

Date:.17 /8/2018
Gaborone

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended March 31st 2018

Statement of Financial Position as at March 31st 2018

Figures in Pula	Notes	2018 P	2017 P
Assets			
Non-Current Assets			
Property, plant and equipment	3	253,819,787	253,650,095
Current Assets			
Receivables	4	456,962	275,247
Cash and cash equivalents	5	6,546,998	21,873,696
		7,003,960	**22,148,943**
Total Assets		**260,823,747**	**275,799,038**
Accumulated fund and Liabilities			
Accumulated fund			
Capital grant	6	253,819,786	253,650,095
Accumulated surplus		859,943	115,884
		254,679,729	**253,765,979**
Liabilities			
Current Liabilities			
Payables	7	3,974,907	1,759,965
Deferred income	8	2,169,111	20,273,094
		6,144,018	**22,033,059**
Total Accumulated fund and Liabilities		**260,823,747**	**275,799,038**

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended March 31st 2018

Statement of Profit or Loss and Other Comprehensive Income

Figures in Pula	Notes	2018 P	2017 P
Income	9	29,803,811	10,895,301
Other operating income	10	19,954,424	6,373,925
Other operating expenses		(49,043,162)	(17,269,226)
Operating surplus	**11**	**715,073**	-
Investment income	12	28,986	115,884
Surplus for the year		**744,059**	**115,884**

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended March 31st 2018

Statement of Changes in Accumulated fund

Figures in Pula	Capital Grant	Accumulated Surplus	Total Accumulated Funds
Surplus for the year	**-**	**115,884**	**115,884**
Capital grant	259,976,866	-	259,976,866
Amortisation of capital grant	(6,326,772)	-	(6,326,772)
Total	**253,650,094**	**-**	**253,650,094**
Balance at April 1, 2017	**253,650,094**	**115,884**	**253,765,978**
Surplus for the year	**-**	**744,059**	**744,059**
Assets capitalised	7,061,971	-	7,061,971
Amortisation of capital grant	(6,892,279)	-	(6,892,279)
Total	**169,692**	**-**	**169,692**
Balance at March 31, 2018	**253,819,786**	**859,943**	**254,679,729**
Note(s)	6		

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended March 31st 2018

Statement of Cash Flows

Figures in Pula	Notes	2018 P	2017 P
Cash flows from operating activities			
Profit before taxation		744,059	115,884
Adjustments for:			
Depreciation and amortisation		6,892,279	6,326,772
Interest received		(28,986)	(115,884)
Changes in working capital:			
Receivables		(181,715)	(275,247)
Payables		2,214,941	1,759,966
Deferred income		(18,103,983)	20,273,094
Cash used in operations		**(8,463,405)**	**28,084,585**
Cash flows from investing activities			
Purchase of property, plant and equipment	3	(7,061,971)	(259,976,867)
Interest Income		28,986	115,884
Net cash from investing activities		**(7,032,985)**	**(259,860,983)**
Cash flows from financing activities			
Grant disbursement	6	-	259,976,866
Amortisation of capital grant	6	(6,892,279)	(6,326,772)
Capitalised assets from deferred income	6	7,061,971	-
Net cash from financing activities		**169,692**	**253,650,094**
Total cash movement for the year		**(15,326,698)**	**21,873,696**
Cash at the beginning of the year		21,873,696	
Total cash at end of the year	**5**	**6,546,998**	**21,873,696**

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 the Botswana Geoscience Act, 2014. The financial statements have been prepared on the historical cost basis, expect for the measurement of certain financial instruments at fair value, and incorporate the principal accounting policies set out below.They are presented in Botswana Pula. 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 institute 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.

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. 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
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

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

Classification

The institute classifies financial assets and financial liabilities into the following categories:

- Loans and receivables
- Financial liabilities measured at amortised cost

Classification depends on the purpose for which the financial instruments were obtained / incurred and takes place at initial recognition. Classification is re-assessed on an annual basis.

Initial recognition and measurement

Financial instruments are recognised initially when the institute becomes a party to the contractual provisions of the instruments.

The institute classifies financial instruments, or their component parts, on initial recognition as a financial asset, a financial liability or an equity instrument in accordance with the substance of the contractual arrangement. Financial instruments are measured initially at fair value.

Subsequent measurement

Loans and receivables are subsequently measured at amortised cost, using the effective interest method, less accumulated impairment losses.

Financial liabilities at amortised cost are subsequently measured at amortised cost, using the effective interest method.

Impairment of financial assets

At each reporting date the institute assesses all financial assets, other than those at fair value through profit or loss, to determine whether there is objective evidence that a financial asset or group of financial assets has been impaired.

For amounts due to the Institute, significant financial difficulties of the debtor, probability that the debtor will enter bankruptcy and default of payments are all considered indicators of impairment.

Impairment losses are recognised in profit or loss.

Impairment losses are reversed when an increase in the financial asset's recoverable amount can be related objectively to an event occurring after the impairment was recognised, subject to the restriction that the carrying amount of the financial asset at the date that the impairment is reversed shall not exceed what the carrying amount would have been had the impairment not been recognised.

Where financial assets are impaired through use of an allowance account, the amount of the loss is recognised in profit or loss within operating expenses. When such assets are written off, the write off is made against the relevant

allowance account. Subsequent recoveries of amounts previously written off are credited against operating expenses.

Trade and other receivables

Trade receivables are measured at initial recognition at fair value, and are subsequently measured at amortised cost using the effective interest rate method. Significant financial difficulties of the debtor, probability that the debtor will enter bankruptcy or financial reorganisation, and default or delinquency in payments are considered indicators that the trade receivable is impaired. The allowance recognised is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the effective interest rate computed at initial recognition.

The carrying amount of the asset is reduced through the use of an allowance account, and the amount of the loss is recognised in profit or loss within operating expenses. When a trade receivable is uncollectable, it is written off against the allowance account for trade receivables. Subsequent recoveries of amounts previously written off are credited against operating expenses in profit or loss.

Trade and other receivables are classified as loans and receivables.

Trade and other payables

Trade payables are initially measured at fair value, and are subsequently measured at amortised cost, using the effective interest rate method.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand and demand deposits, and other short-term highly liquid investments that are readily convertible to a known amount of cash and are subject to an insignificant risk of changes in value. These are initially and subsequently recorded at fair value.

1.5 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 to sell 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.

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.

1.6 Employee benefits

Short-term employee benefits

The cost of short-term employee benefits, (those payable within 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.

Post employment benefits

Contract staff members of the Institute are entitled to gratuities at the end of their contracts in accordance with the terms specified in their contracts of employment.

Gratuity benefits are recognised at the end of each financial year as they are accrued and a provision is made equal to the liability estimated as the employee renders services to the Institute up to the year end date.

1.7 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.

1.8 Income

Interest is recognised, In the statement of comprehensive income, using the effective interest rate method.

1.9 Comparative figures

Certain comparative figures have been reclassified in the Detailed Income Statement.

2. New Standards and Interpretations

2.1 Standards and interpretations not yet effective

The institute has chosen not to early adopt the following standards and interpretations, which have been published and are mandatory for the institute's accounting periods beginning on or after April 1, 2018 or later periods:

IFRS 16 Leases

IFRS 16 Leases is a new standard which replaces IAS 17 Leases, and introduces a single lessee accounting model.

The main changes arising from the issue of IFRS 16 which are likely to impact the institute are as follows:

Institute as lessee:

- Lessees are required to recognise a right-of-use asset and a lease liability for all leases, except short term leases or leases where the underlying asset has a low value, which are expensed on a straight line or other systematic basis.
- The cost of the right-of-use asset includes, where appropriate, the initial amount of the lease liability; lease payments made prior to commencement of the lease less incentives received; initial direct costs of the lessee; and an estimate for any provision for dismantling, restoration and removal related to the underlying asset.
- The lease liability takes into consideration, where appropriate, fixed and variable lease payments; residual value guarantees to be made by the lessee; exercise price of purchase options; and payments of penalties for terminating the lease.
- The right-of-use asset is subsequently measured on the cost model at cost less accumulated depreciation and impairment and adjusted for any re-measurement of the lease liability. However, right-of-use assets are measured at fair value when they meet the definition of investment property and all other investment property is accounted for on the fair value model. If a right-of-use asset relates to a class of property, plant and equipment which is measured on the revaluation model, then that right-of-use asset may be measured on the revaluation model.
- The lease liability is subsequently increased by interest, reduced by lease payments and re-measured for reassessments or modifications.
- Re-measurements of lease liabilities are affected against right-of-use assets, unless the assets have been reduced to nil, in which case further adjustments are recognised in profit or loss.
- The lease liability is re-measured by discounting revised payments at a revised rate when there is a change in the lease term or a change in the assessment of an option to purchase the underlying asset.
- The lease liability is re-measured by discounting revised lease payments at the original discount rate when there is a change in the amounts expected to be paid in a residual value guarantee or when there is a change in future payments because of a change in index or rate used to determine those payments.
- Certain lease modifications are accounted for as separate leases. When lease modifications which decrease the scope of the

2. New Standards and Interpretations (continued)

lease are not required to be accounted for as separate leases, then the lessee re-measures the lease liability by decreasing the carrying amount of the right of lease asset to reflect the full or partial termination of the lease. Any gain or loss relating to the full or partial termination of the lease is recognised in profit or loss. For all other lease modifications which are not required to be accounted for as separate leases, the lessee re-measures the lease liability by making a corresponding adjustment to the right-of-use asset.

- Right-of-use assets and lease liabilities should be presented separately from other assets and liabilities. If not, then the line item in which they are included must be disclosed. This does not apply to right-of-use assets meeting the definition of investment property which must be presented within investment property. IFRS 16 contains different disclosure requirements compared to IAS 17 leases.

Institute as lessor:

- Accounting for leases by lessors remains similar to the provisions of IAS 17 in that leases are classified as either finance leases or operating leases. Lease classification is reassessed only if there has been a modification.
- A modification is required to be accounted for as a separate lease if it both increases the scope of the lease by adding the right to use one or more underlying assets; and the increase in consideration is commensurate to the stand alone price of the increase in scope.
- If a finance lease is modified, and the modification would not qualify as a separate lease, but the lease would have been an operating lease if the modification was in effect from inception, then the modification is accounted for as a separate lease. In addition, the carrying amount of the underlying asset shall be measured as the net investment in the lease immediately before the effective date of the modification.
  IFRS 9 is applied to all other modifications not required to be treated as a separate lease.
- Modifications to operating leases are required to be accounted for as new leases from the effective date of the modification. Changes have also been made to the disclosure requirements of leases in the lessor's financial statements.

Sale and leaseback transactions:

- In the event of a sale and leaseback transaction, the requirements of IFRS 15 are applied to consider whether a performance obligation is satisfied to determine whether the transfer of the asset is accounted for as the sale of an asset.
- If the transfer meets the requirements to be recognised as a sale, the seller-lessee must measure the new right-of-use asset at the proportion of the previous carrying amount of the asset that relates to the right-ofuse retained. The buyer-lessor accounts for the purchase by applying applicable standards and for the lease by applying IFRS 16
- If the fair value of consideration for the sale is not equal to the fair value of the asset, then IFRS 16 requires adjustments to be made to the sale proceeds. When the transfer of the asset is not a sale, then the seller-lessee continues to recognise the transferred asset and recognises a financial liability equal to the transfer proceeds. The buyer-lessor recognises a financial asset equal to the transfer proceeds.

2. New Standards and Interpretations (continued)

The effective date of the standard is for years beginning on or after January 1, 2019.
The institute expects to adopt the standard for the first time in the 2020 annual financial statements.
It is unlikely that the standard will have a material impact on the institute's annual financial statements.

Amendments to IFRS 15: Clarifications to IFRS 15 Revenue from Contracts with Customers

The amendment provides clarification and further guidance regarding certain issues in IFRS 15. These items include guidance in assessing whether promises to transfer goods or services are separately identifiable; guidance regarding agent versus principal considerations; and guidance regarding licenses and royalties.

The effective date of the amendment is for years beginning on or after January 1, 2018.

The institute expects to adopt the amendment for the first time in the 2019 annual financial statements.

It is unlikely that the amendment will have a material impact on the institute's annual financial statements.

IFRS 9 Financial Instruments

IFRS 9 issued in November 2009 introduced new requirements for the classification and measurements of financial assets. IFRS 9 was subsequently amended in October 2010 to include requirements for the classification and measurement of financial liabilities and for derecognition, and in November 2013 to include the new requirements for general hedge accounting. Another revised version of IFRS 9 was issued in July 2014 mainly to include a) impairment requirements for financial assets and b) limited amendments to the classification and measurement requirements by introducing a "fair value through other comprehensive income" (FVTOCI) measurement category for certain simple debt instruments.

Key requirements of IFRS 9:

- All recognised financial assets that are within the scope of IAS 39 Financial Instruments: Recognition and Measurement are required to be subsequently measured at amortised cost or fair value. Specifically, debt investments that are held within a business model whose objective is to collect the contractual cash flows, and that have contractual cash flows that are solely payments of principal and interest on the outstanding principal are generally measured at amortised cost at the end of subsequent reporting periods. Debt instruments that are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets, and that have contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on outstanding principal, are measured at FVTOCI. All other debt and equity investments are measured at fair value at the end of subsequent reporting periods. In addition, under IFRS 9, entities may make an irrevocable election to present subsequent changes in the fair value of an equity investment (that is not held for trading) in other comprehensive income with only dividend income generally recognised in profit or loss.

- With regard to the measurement of financial liabilities designated as at fair value through profit or loss, IFRS 9 requires that the amount of change in the fair value of the financial liability that is attributable to changes in the credit risk of the liability is presented in other comprehensive income, unless the recognition of the effect of the changes of the liability's credit risk in other comprehensive income would create or enlarge an accounting mismatch in profit or loss. Under IAS 39, the entire amount of the change in fair value of a financial liability designated as at fair value through profit or loss is presented in profit or loss.

2. New Standards and Interpretations (continued)

- In relation to the impairment of financial assets, IFRS 9 requires an expected credit loss model, as opposed to an incurred credit loss model under IAS 39. The expected credit loss model requires an entity to account for expected credit losses and changes in those expected credit losses at each reporting date to reflect changes in credit risk since initial recognition. It is therefore no longer necessary for a credit event to have occurred before credit losses are recognised.

- The new general hedge accounting requirements retain the three types of hedge accounting mechanisms currently available in IAS 39. Under IFRS 9, greater flexibility has been introduced to the types of transactions eligible for hedge accounting, specifically broadening the types of instruments that qualify for hedging instruments and the types of risk components of non-financial items that are eligible for hedge accounting. In addition, the effectiveness test has been replaced with the principal of an "economic relationship". Retrospective assessment of hedge effectiveness is also no longer required. Enhanced disclosure requirements about an entity's risk management activities have also been introduced.

The effective date of the standard is for years beginning on or after January 1, 2018.

The institute expects to adopt the standard for the first time in the 2019 annual financial statements.

It is unlikely that the standard will have a material impact on the institute's annual financial statements.

IFRS 15 Revenue from Contracts with Customers

IFRS 15 supersedes IAS 11 Construction contracts; IAS 18 Revenue; IFRIC 13 Customer Loyalty Programmes; IFRIC 15 Agreements for the construction of Real Estate; IFRIC 18 Transfers of Assets from Customers and SIC 31 Revenue - Barter Transactions Involving Advertising Services.

The core principle of IFRS 15 is that an entity recognises revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. An entity recognises revenue in accordance with that core principle by applying the following steps:

- Identify the contract(s) with a customer
- Identify the performance obligations in the contract
- Determine the transaction price
- Allocate the transaction price to the performance obligations in the contract
- Recognise revenue when (or as) the entity satisfies a performance obligation.

IFRS 15 also includes extensive new disclosure requirements.

The effective date of the standard is for years beginning on or after January 1, 2018.

The institute expects to adopt the standard for the first time in the 2019 annual financial statements.

It is unlikely that the standard will have a material impact on the institute's annual financial statements.

Notes to the Annual Financial Statements

3. Property, plant and equipment

			2018 P			2017 P
	Cost or Revaluation	Accumulated Depreciation	Carrying Value	Cost or revaluation	Accumulated Depreciation	Carrying Value
Buildings	230,290,000	(9,211,600)	221,078,400	230,290,000	(4,605,800)	225,684,200
Plant and machinery	7,309,000	(207,580)	7,101,420	7,309,000	(100,933)	7,208,067
Motor vehicles	6,561,799	(1,544,995)	5,016,804	6,187,900	(754,865)	5,433,035
Office equipment	4,365,264	(799,474)	3,565,790	2,841,630	(316,794)	2,524,836
Laboratory equipment and Instruments	18,512,775	(1,455,402)	17,057,373	13,348,336	(548,379)	12,799,957
TOTAL	**267,038,838**	**(13,219,051)**	**253,819,787**	**259,976,866**	**(6,326,771)**	**253,650,095**

Reconciliation of property, plant and equipment - 2018

	Opening balance	Additions	Depreciation	Total
Buildings	225,684,200	-	(4,605,800)	221,078,400
Plant and machinery	7,208,067	-	(106,647)	7,101,420
Motor vehicles	5,433,035	373,899	(790,130)	5,016,804
Office equipment	2,524,836	1,523,634	(482,680)	3,565,790
Laboratory equipment and Instruments	12,799,957	5,164,438	(907,022)	17,057,373
TOTAL	**253,650,095**	**7,061,971**	**(6,892,279)**	**253,819,787**

Reconciliation of property, plant and equipment - 2017

	Opening balance	Additions	Depreciation	Total
Buildings	-	230,290,000	(4,605,800)	225,684,200
Plant and machinery	-	7,309,000	(100,933)	7,208,067
Motor vehicles	-	6,187,900	(754,865)	5,433,035
Office equipment	-	2,841,630	(316,794)	2,524,836
Laboratory equipment and Instruments	-	13,348,337	(548,380)	12,799,957
TOTAL	**-**	**259,976,867**	**(6,326,772)**	**253,650,095**

4. Receivables

Receivables	34,888	39,476
Employee costs in advance	2,267	8,425
Withholding tax interest and other receivables	419,807	227,346
TOTAL	**456,962**	**275,247**

5. Cash and cash equivalents

Cash and cash equivalents consist of:		
Cash on hand	847	
Current accounts	(433)	(16,531)
Call accounts	6,546,584	5,433,035
TOTAL	**6,546,998**	**21,873,695**

6. Capital grant

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

Opening balance	253,650,095	-
Capital assets purchased	7,061,971	259,976,867
Armotisation	(6,892,280)	(6,326,772)
TOTAL	**253,819,786**	**253,650,095**

7. Payables

Payables	224,713	199,651
Payroll liabilities	2,272,743	1,560,314
Accrued expenses	1,477,451	-
TOTAL	**3,974,907**	**1,759,965**

8. 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	20,273,094	-
Grant income	-	42,157,065
Revenue expenditure	(11,042,012)	(10,895,300)
Capital expenditure	(7,061,971)	(10,988,671)
TOTAL	**2,169,111**	**20,273,094**

9. Income

Government grants	29,803,811	10,895,301

10. Other operating income

Rental income	536,250	-
Deferred income utilised	12,377,821	-
Other income	148,074	47,154
Armotisation of capital grant	6,892,279	6,326,771
TOTAL	**19,954,424**	**6,373,925**

11. Operating profit (loss)

Operating surplus for the year is stated after charging (crediting) the following, amongst others:
Remuneration, other than to employees

Consulting and professional services	1,465,970	1,339,415

Employee costs

Salaries, wages, bonuses and other benefits	23,379,881	1,335,808
Gratuity expenses	1,261,404	224,506
Pension	1,678,688	47,154
TOTAL EMPLOYEE COSTS	**26,319,973**	**1,560,314**

Depreciation and amortisation

Depreciation of property, plant and equipment	6,892,279	6,326,772

12. Investment income

Interest income
From investments in financial assets:

Bank and other cash	28,986	115,884

13. Taxation

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

14. Members of the Board fees

Non-Executive
2018

	Sitting Allowances	Total
Mr. John L. Farr - Chairperson of the board	18,900	18,900
Prof. Elisha M. Shemang - Vice chairperson of the board	22,680	22,680
Mr. Ogone O.M. Gaboutloeloe - Member	35,280	35,280
Ms. Tebogo Mmoshe - Member	18,900	18,900
Ms. Ontlametse Mokopakgosi - Member	16,380	16,380
Dr. Sebusi Odisitse - Member	16,380	16,380
Dr. Budzanani Tacheba - Member	23,100	23,100
TOTAL	**151,620**	**151,620**

2017

	Sitting Allowances	Total
Mr. John L. Farr - Chairperson of the board	18,900	18,900
Prof. Elisha M. Shemang - Vice chairperson of the board	11,760	11,760
Mr. Ogone O.M. Gaboutloeloe - Member	12,600	12,600
Ms. Tebogo Mmoshe - Member	10,080	10,080
Ms. Ontlametse Mokopakgosi - Member	11,760	11,760
Dr. Sebusi Odisitse - Member	12,600	12,600
Dr. Budzanani Tacheba - Member	10,920	10,920
Dr. Vincent Mothupi (Resigned)	9,240	9,240
TOTAL	**97,860**	**97,860**

15. Categories of financial instruments

	Note(s)	Debt Instruments at Amortised Cost	Financial liabilities at Amortised Cost	Equity and Non Financial Assets and Liabilities	Total
Categories of financial instruments - 2018					
Assets					
Non-Current Assets					
Property, plant and equipment	3	-	-	253,819,787	253,819,787
Current Assets					
Trade and other receivables	4	454,695	-	2,267	456,962
Cash and cash equivalents	5	6,546,998	-	-	6,546,998
		7,001,693	-	**2,267**	**7,003,960**
Total Assets		**7,001,693**	**-**	**253,822,054**	**260,823,747**
Accumulated fund and Liabilities					
Accumulated fund					
Equity Attributable to Equity Holders of Parent:					
Capital grant	6	-	-	253,819,786	253,650,094
Accumulated surplus	6	-	-	859,943	859,943
		-	-	**254,679,729**	**254,679,729**
Total Accumulated fund		**-**	**-**	**254,679,729**	**254,679,729**
Liabilities					
Current Liabilities					
Trade and other payables	7	-	3,974,909	-	3,974,909
Deferred income	8	-	-	2,169,111	2,169,111

15. Categories of financial instruments (continued)

	Note(s)	Debt Instruments at Amortised Cost	Financial liabilities at Amortised Cost	Equity and Non Financial Assets and Liabilities	Total
Categories of financial instruments - 2017					
		-	**3,974,909**	**2,169,111**	**6,144,020**
Total Liabilities		-	**3,974,909**	**2,169,111**	**6,144,020**
Total Accumulated fund and Liabilities		-	**3,974,909**	**256,848,840**	**260,823,749**
Non-Current Assets					
Property, plant and equipment	3	-	-	253,650,095	253,650,095
Current Assets					
Trade and other Receivables	4	266,822	-	8,425	275,247
Cash and cash equivalents	5	21,873,696	-	-	21,873,696
		22,140,518	**-**	**8,425**	**22,148,943**
Total Assets		**22,140,518**	**-**	**253,658,520**	**275,799,038**
Accumulated fund and Liabilities					
Accumulated fund					
Equity Attributable to Equity Holders of Parent:	6	-	-	253,650,094	253,650,094
Capital grant	6	-	-	115,884	115,884
Accumulated surplus		-	-	**253,765,978**	**253,765,978**
Total Accumulated fund		-	-	**253,765,978**	**253,765,978**

15. Categories of financial instruments

	Note(s)	Debt Instruments at Amortised Cost	Financial liabilities at Amortised Cost	Equity and Non Financial Assets and Liabilities	Total
Categories of financial instruments - 2017					
Liabilities					
Current Assets					
Trade and other receivables	7	-	1,759,965	-	1,759,965
Deferred income	8	-	-	20,273,094	20,273,094
		-	**1,759,965**	**20,273,094**	**22,033,059**
Total Liabilities		-	**1,759,965**	**20,273,094**	**22,033,059**
Total Accumulated fund and Liabilities		**-**	**1,759,965**	**274,039,072**	**275,799,037**

16. Risk management

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.

Financial risk management

The institute's activities expose it to a variety of financial risks: market risk (including currency risk, fair value interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk.

The institute's overall risk management program focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the institute's financial performance.

Liquidity risk

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

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.

17. Commitments

Authorised expenditure

Figures in Pula	2018 P	2017 P
Not yet contracted or accrued for but authorised by management	1,244,460	-

This committed expenditure relates to revenue and capital expenditure and will be financed by available Grant income.

18. Related parties

Relationships
Members of the board
Members of key management

Figures in Pula	2018 P	2017 P
Related party transactions		
Income		
Government of Botswana - Grant received	29,803,810	10,895,301
Employee costs		
Senior management salaries	4,062,950	1,560,314
Board expenses		
Board Fees Allowances	151,620	97,860
Board Travel	42,172	64,848
Board Accomodation	48,671	78,027
Board Meetings	71,543	1,047,819
Board cell phone allowances	42,500	95,923
Benchmarking and corporate governance training	46,769	-
Board internet bundles and other cellphone expense	62,199	44,174
	465,474	**1,428,651**

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended March 31st 2018

Detailed Income Statement

Figures in Pula	Note(s)	2018 P	2017 P
Income			
Government grants		29,803,811	10,895,301
Other operating income			
Rental income		536,250	-
Deferred income utilised		12,377,821	-
Other income		148,074	47,154
Amortisation of capital grant		6,892,279	6,326,771
	10	**19,954,424**	**6,373,925**
Other operating expenses			
Administration expenses		745,190	144,926
Advertising		330,688	101,795
Bank charges		28,030	15,558
Board expenses		465,474	1,428,651
Cleaning		372,689	313,183
Computer expenses		432,511	399,262
Consulting and professional fees		1,465,970	1,339,415
Corporate strategy		403,898	-
Data management expenses		1,086,290	-
Depreciation		6,892,279	6,326,772
Drilling services		92,915	3,858
Employee costs		26,319,973	1,560,314
General Consumables		996,774	308,375
Insurance		372,074	33,179
Laboratory services		368,933	121,009
Motor vehicle expenses		1,238,265	24,495
Postage		426,071	97,535
Printing and stationery		116,531	59,810
Promotions		816,616	303,696
Recruitment expenses		864,654	37,156
Repairs and maintenance		935,663	912,214
Security		852,894	433,487
Staff development and training expenses		377,749	445,653
Staff welfare		199,715	214,281
Subscriptions		55,314	371,313
Travel - local		621,693	971,819
Travel - external		591,747	421,466
Utilities		1,572,562	880,004
		49,043,162	**17,269,226**
Operating surplus	**11**	**715,073**	**-**
Investment income	12	28,986	115,884
Surplus for the year		**744,059**	**115,884**

BOTSWANA GEOSCIENCE INSTITUTE

Annual Financial Statements for the year ended March 31st 2018

Detailed Income Statement

The Institute had one employee during the year ended 31st March 2017. The average staff compliment for the year ended 31st March 2018 was 112. This movement caused higher operational expenses reported for the current year.

A significant increase in the operational expense line items like motor vehicle expenses and utilities were due to the expenses being fully met by the Institute in the current year. During the previous period, these expenses were paid for by the Department of Geological Survey.

List of Tables and Figures

Notes

Notes