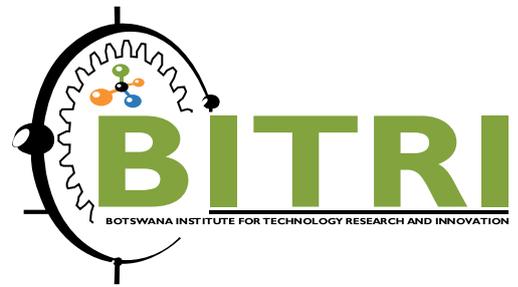


# NEWSLETTER

2017 | Issue 2



## BITRI Participates at the BIUST STEM Festival

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- > Climate Change Division facilitates Tlhareseleele Farm Walk
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# CEO's Foreword



Welcome back to yet another edition of the Botswana Institute for Technology Research and Innovation (BITRI) newsletter. In the last edition we mainly focused on consultation and interaction with different stakeholders to share with them, the BITRI Mandate, the technologies that the organisation is working on, as well as business opportunities that arise as a result of the technology uptake drive. These interactions took the form of full Council briefs, public seminars, science festivals, schools familiarization tours, workshops, and business seminars, to name but a few.

The responses from the stakeholders have majorly been positive, coupled with feedback on how BITRI could improve on specific deliverables and/ or processes. At BITRI, our work is driven by engaging with stakeholders to create and deliver innovative solutions, hence we take heart in discussions with them and always endeavor to go an extra mile to deliver on our Mandate, which is "...to identify, develop and/or adapt appropriate technology solutions that provide sustainable innovative solutions through co-creation and collaboration in line with national priorities and needs of Batswana."

Ever since the founding of BITRI in late 2013, the organization has been building resource capacity, including recruiting suitably-qualified personnel in the core

and support functions and also expending energy in assembling the requisite material resources to enable for the successful execution of activities that would lead to the fulfilment of the Mandate, and hence, the promise to Batswana and all relevant stakeholders. The BITRI Vision is "To be the leading technology solutions provider that transforms lives," a lofty, but achievable ideal. During the past quarter, BITRI held a Workshop with a goal to cascade its Organisational Values to staff across all the levels of management and operations.

In essence, the BITRI Organisational Values architecture consists of three core values, these being Teamwork, Excellence and Empathy. These Values are key elements of the ideal culture that will enable the organisation to become the leading institution it aspires to be. In Teamwork, we expect delivery of results through teamwork while valuing contribution, accepting diversity, respecting each other, pro-active approach, collaboration and co-creation. With Excellence, staff is expected and encouraged to demonstrate unquestionable technical and operational excellence in planning, executing, monitoring and continuously improving the quality of our output. And, with Empathy, everyone in the organisation is to interact, operate and generate solutions which optimally balances the interest of all impacted parties including our colleagues, customers, the environment, as well as foster mutually-beneficial partnerships at all times.

With every staff member subscribing and being committed to these Values, it means everyone in the Organisation agrees to a certain way of doing things and our customers and stakeholders expect specific positive behaviours from all BITRI staff regardless of level of operation and/ or touch points, which may include corporate events or a visit to the BITRI offices seeking specific services.

With the mandate in mind, we believe recognition to be a powerful management instrument for reinforcing and/or changing those habits and behaviours of employees

internally, with the end being recognition by the public. If BITRI staff positively live, exude and champion BITRI values, the public or stakeholders will easily recognise the level as well as effort the Organisation puts in productively serving the customer. At present, BITRI is working on a number of technology solutions focused on impacting the lives of Batswana some of which are; the Foot-and-mouth Disease rapid test kit, the Kgalagadi Sand Building Block Technology, Seding solar light, Load Management Device, Morabaraba game application, Climate Smart Agriculture and the ICTAssociates@BITRI Program. Most of these projects are borne out of collaboration either through research and the relevant foot work, or take up. We are grateful to our partnerships for the fruitful relationships that have enabled us to deliver on the Mandate and some components of the strategic objectives, and we further commit to our promise to stakeholders. We are open to collaborations that fall within the BITRI Priority Thematic Research Areas and we assure all concerned that they will be dealing with an organization anchored on its critical values.

On another note, BITRI bids farewell to two of its departing members of the Board of Directors, former Chairperson Dr Martin Kebakile and Ms Nkah Monyatsi, who have served the Board with distinction over two terms. Dr Kebakile and Ms Monyatsi were part of the founding Board of Directors who took office in June 2013 under the then Ministry of Infrastructure Science and Technology. Under the guidance of their Board, BITRI has been able to source the best expertise as well as procure equipment and other resources that would enable it to achieve its Mandate. In equal measure, we are proud to welcome Professor Sesae Felicity Mpuchane and Dr Ronald Tshelametse to the BITRI Board. Professor Mpuchane takes the reigns as the BITRI Board Chairperson and Dr Tshelametse as a member with effect from 1st June 2017. We look forward to their leadership.

I invite you to immerse yourself in this issue.

# BITRI Hosts Business Dinner and Exhibits at the 2017 BBNTF

The Mayor of Francistown Mrs Sylvia Muzila applauded and thanked BITRI for hosting its business dinner in Francistown. Speaking at the event in Francistown on Saturday May 27th the Mayor said “it is humbling when an organisation recognises that Francistown has a lot to offer in terms of partnerships and collaborations. I am happy that you are not only confining yourselves to Gaborone but you are making an effort to engage stakeholders around the country”. She further said BITRI as a research institution funded by the tax payer should remain mindful of its mandate and obligations to the nation by engaging stakeholders so that they know and understand the role they play.

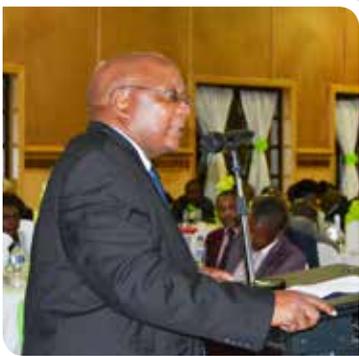


BITRI Technology Transfer Officer Mr Kesupemang Pitlagano explaining the functions of his office to customers

Mrs Muzila said BITRI went to Francistown at an opportune time because building a sound research landscape in Botswana is a national priority if the country is to compete in the highly competitive global,

social and economic environment. “It is critical that research play a more central role in nation building and economic development in Botswana. Even more important is the development of products

and services from our research that will be the critical economic engine for prosperity and growth in our country. I am glad that the Government of Botswana is strongly committed in this area and has



Former BITRI Board of Directors Chairperson, Dr Martin Kebakile delivering the Closing Remarks.



Part of the audience during the BITRI Business Dinner



The Mayor of Francistown Mrs Sylvia Muzila welcoming the business community and exhibitors to the City of Francistown during the official opening ceremony of the BBNTF. Likewise she echoed the same sentiments while delivering the welcome remarks during the BITRI Business Dinner



The BITRI Chief Executive Officer outlining the BITRI mandate and the business opportunities available



## MISSION

To conduct needs-based technology research that provides sustainable innovative solutions through co-creation and collaboration.

## VISION

To be the leading technology solutions provider that transforms lives.

## VALUES

- Empathy
- Excellence
- Team Work



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Pupils posing with Nanoverse comic book containing concepts they understand

already approved the National Innovation Fund that will provide seed and early stage funding for technology based start-ups and ventures and established companies with viable innovation concepts. It is expected to fund innovative companies in order to increase their chance of success and fuel innovation" she said.

The dinner was a technology uptake drive to reach out to captains of the industry, CEO'S of the parastatal, Senior Government Officials, local authorities, the youth as well as SMME'S to share with them the BITRI mandate, the technology solutions in progress and business opportunities. Still in Francistown BITRI addressed the City Council on its mandate and gave an update on research being conducted.

Meanwhile, BITRI exhibited its products and services at the Business Botswana Northern Trade Fair (BBNTF) which ran from 24th to 28th May. The theme of this year's fair was "Business Agility in Botswana: Optimising Business at 50 years & Beyond" and its aim was to provide exhibitors with an opportunity to actively promote their business and network with other exhibitors. In addition, the fair presented a significant opportunity for business branding, creation of new product visibility as well as to promote existing products. The fair also featured business seminars where exhibitors interacted, networked and shared ideas. BITRI participated at the fair and used the platform to promote awareness about BITRI mandate and a focus on some of its projects such as on Climate Change, Foot and Mouth Disease diagnostic test tool kit, Kalahari Sand Building Block Technology, Morabaraba, Seding solar street lights, as well as the Load Management Device.

# D'Kar Hosts World Intellectual Property Day



^ Children from the D'Kar and the surroundings in attendance.

**B**ITRI participated in the World Intellectual Property Day (WIPD) commemorations held in D'Kar on April 26. The event, celebrated under the theme “Innovation - Improving Lives,” challenged people to explore how innovation can make lives healthier, safer and more comfortable.



D'kar's Kgosi April Montshosi welcoming attendees at the WIPD. >

The deliberations and exhibitions on the day, explored how the intellectual property system supports innovation by attracting investment, rewarding creators, encouraging them to develop their ideas, and ensuring that their new knowledge is freely available so that tomorrow's innovators can build on today's new technology.

In welcoming stakeholders to the event, D'kar's Kgosi April Montshosi thanked the organisers for identifying D'Kar as a suitable location for the commemoration, adding that the gathering will give state of the art D'kar Innovation Centre located in the village some exposure in addition to putting the village on the map.

Different presentations highlighted amongst others, the importance of protecting intellectual property to maximize commercial gains from innovations and inventions, and also

developing innovative solutions to problems that specific communities, the country and the world face. BITRI focused on how the organization has worked and is still working with stakeholders to come up with solutions that are relevant to the lives of the people. Visitors were taught on the importance of protecting IP related to their innovations and inventions and how they could benefit from the process and financial proceeds. Delegates amongst them, Member of Parliament for Gantsi North, Hon. Noah Salakae, Gantsi Council Vice Chairman, Hon. Greg Xuthye Losibe, Director at the Department of Research, Science and Technology, Ms. Lesego Thamaye, and Ghanzi Brigade Principal, Mr. Olefihle Mochotli were treated to demonstrations of exhibits by Ghanzi Brigade students and enrollees of the D'Kar Innovation Centre.

In the Closing Remarks, MP Salakae shone the spotlight on the D'kar Innovation Centre and the positive cooperation

between the centre and the community and he encouraged the stakeholders to recognize that innovation and intellectual property can be used for sustainable economic growth, poverty alleviation and employment creation. WIPD is celebrated annually on April 26, with a view to create awareness about the role that intellectual property rights (patents, trademarks, industrial designs, copyright) play in encouraging innovation and creativity. The World Intellectual Property Organisation (WIPO) provides a theme each year, and member states use the day for deliberating on how IP can be harnessed for economic diversification.

Exhibitors at the event included Companies and Intellectual Property Authority (CIPA), Copyright Society of Botswana (COSBOTS), Botswana Innovation Hub (BIH), Department of Research Science and Technology (DRST), and Local Enterprise Authority (LEA).



Director at the Department of Research, Science and Technology, Ms. Lesego Thamaye awarding certificates to the students amongst some of the best innovations exhibited at the 2017 WIPD.



Delegates trying out models exhibited by enrollees of These Hands programme



Keemenao Matale, third from left explaining his innovation, a the modified wheel chair that suited to being on sandy terrain.



◀ A student from Ghanzi Brigade explaining his exhibit. The model mimics an eagle that would prey on birds that would eat sorghum grains off a the sorghum head. The 'eagle', as opposed to the stationary scare crows, flies around like a real bird would, therefore, scaring the quelea birds and the like, off the crops

▶ Social entrepreneur and co-founder of These Hands Thabiso Mashaba demonstrating some of the innovations his organisation is working on with the community.





 BITRI's Mabedi Motimedi (in a BITRI shirt) playing Mhele game with a pupil, while the other pupil plays as a single player. The game, together with Morabaraba is being developed by BITRI under the indigenous games portal.

## BITRI participates at the BIUST STEM Festival

**B**ITRI participated in the Botswana International University of Science & Technology (BIUST) annual Science, Technology, Engineering and Mathematics (STEM) Festival from 10 – 13 April 2017. The event was held in Francistown at the Francistown College of Technical and Vocational Education and was visited by STEM enthusiasts, most of them primary and secondary school pupils. The event held under the theme “STEM for Development: Creating a Sustainable Future for Botswana” attracted participation from institutions and businesses with a focus on STEM as well as primary and secondary schools, primarily from Francistown and environs.

During the Welcome Remarks of the official opening, the Mayor of the City of Francistown, Her Worship Sylvia Muzila said that young people have great ideas that can transform Botswana’s economy and put an end to youth unemployment.

“We need more of these fairs and information dissemination platforms for our young learners. This help make them realize and appreciate that they have talent that they can use to invent new instruments and models that can be used to create employment for themselves and also for the broader economy,” she said.

The Permanent Secretary in the Ministry of Tertiary Education, Research, Science and Technology, Dr Theophilus Mooko emphasized the Mayor’s assertions and he added that the festival should bear tangible outcomes. Dr Mooko also said that his Ministry will play an important role in transforming Botswana from a resource-based to a knowledge-based economy and link different stakeholders whose contributions are vital to this pursuit.

“This is an enormous responsibility which calls upon all of us to work together in

order to transform our promise into tangible results. There is a need to have a common understanding of the value of STEM and how it relates to their day-to-day lives. I have no doubt that STEM festival will go a long way towards assisting us to accomplish this goal,” he said.

BITRI exhibited the load management device, with Researcher Dumisani Benard and Ronnie demonstrating its usage to customers. KSB Technology, Morabaraba and Mhele were shown on television screens, with the former attracting the more mature audience in the form of potential investors and end users who would like to use the product for construction, mainly of residential houses. The Morabaraba and Mhele games attracted a mix of young and old, but pupils mainly enjoyed the games.

TO PAGE 8



The Permanent Secretary in the Ministry of Tertiary Education, Research, Science and Technology, Dr Theophilus Mooko delivering the Keynote Address at the BIUST STEM Festival



The Mayor of the City of Francistown, Her Worship Sylvia Muzila, welcoming the business community and heads of Government functions at the BIUST STEM Festival in April 2017.



Associate Researcher - Mobile Applications, Mr Simisani Kelaotswe explaining the Mhele game to a customer.

The pupils were also given the NanoWorld and NanoVerse educational animation booklets to read and answer questions related to their contents. The booklets are aimed at teaching pupils about nanotechnology using storylines that would interest them. The Building Materials Science Division was represented by Mr Mothusi Mokgwa, while Information Systems and Technology was represented by Messers Mabedi Motimedi and Modise Kemelo.



Researcher in the Building Materials Science Division, Mr Mothusi Mokgwa explaining the KSBB Technology.

## Taung Primary School Visits the BITRI Centre for Materials Science



BITRI Researcher - Nanomaterials, Dr Lesego Mmualefe giving an overview of BITRI and its projects

Taung Primary School visited the BITRI Centre for Materials Science facilities with a goal of pupils to develop awareness on the interrelationship between Science and its application and relevance in their daily lives.

(Continues to Page 12...)

# Climate Change Division facilitates

## Tlhareseleele Farm Walk

The Climate Change division, on Tuesday 4 April, facilitated a farm walk in Tlhareseleele in the Borolong District. The goals of the farm walk demonstrations were to promote the importance of Climate Smart Agriculture practices that include soil moisture conservation, plant population, weed control, crop rotation and fertilization methods such as basal and top dressing.

In his Welcome Remarks, Kgosi Moswabudi Letsikhoana of Tlhareseleele extended gratitude towards BITRI and all the stakeholders and encouraged all to take the vocation of farming serious as a business and not merely as a hobby as it can contribute towards economic wellbeing of communities and food security for the nation.

The day culminated in a farm tour and the lead host farmer for the walk, Mr Sello Motseko took the delegation through a tour of his field.

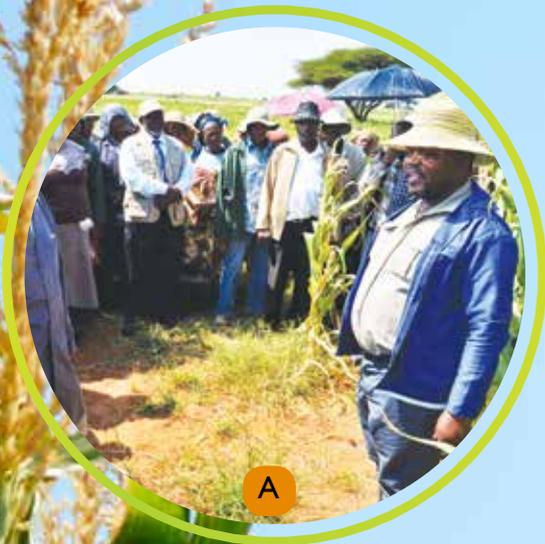
"Farming is a lucrative business, but, it requires patience and full-time management. You need to be onsite, every day in order to succeed at it. We need to encourage the youth to get into the business for continuity," said Mr Motseko. Mr Motseko also shared his experiences and knowhow on topics such as crop rotation and other essential specifics that would enhance farmers'

chances of success.

"As a farmer, you have to know when to plant, which crop to sow and all other important aspects. You also need to know when to weed and which chemicals to use as, for instance, weeding for maize and beans is done differently. Knowing the nutritional requirements of different crops is also paramount," elaborated Mr Motseko.

During BITRI slot within a series of presentations by key stakeholders, Associate Researcher – Climate Change & Society, Ms Kgomotsego Motlopi gave an overview of BITRI and the Climate Change division. Ms Motlopi further expounded on the rationale for initiating the "Climate Variability and Change Risk Assessment and Management: Development of Decision Support Systems for Dry Land Small Scale Farmers in Barolong and Kgalagadi South Sub-District" project.

The event was organized by BITRI in collaboration with the Department of Crop Production through the Goodhope satellite office, and was graced by dikgosi and councillors from neighbouring villages, representatives from Department of Crop Production - Kanye regional office, Department of Crop Production - Moshupa regional office, Ramogomana Farming, Haskins, and farmers in and around the village.



A



B



C



D

A > Mr Motseko addressing the delegation at his field.

B > Kgosi Moswabudi Letsikhoana of Tlhareselele delivering the Welcome Remarks. Kgosi thanked BITRI and all the stakeholders and encouraged his community to venture into agriculture.

C > Part of the community during proceedings of the day.

D > Associate Researcher – Climate Change & Society, Ms Kgomotsego Motlopi giving an overview of BITRI and the Climate Change division.



# Stakeholder Engagement

## BITRI Addresses Ghanzi Full District Council

The Research and Partnerships team consisting of Communications and Partnerships Manager, Lesego Moribame and Technology Transfer Officer, Kesupemang Pitlagano as well as Researchers Thuto Geoffrey and Karabo Hamu addressed the Ghanzi Full District Council on 29 March 2017. The goal of the address was to sensitise the council on the BITRI mandate and vision, BITRI invented technologies ready for adoption as well as those in the pipeline.

The team went through Bere settlement to touch base on the performance of the Seding® solar lights. The users gave the team positive feedback on the lights. Moreover, the Councilors were impressed and appreciated BITRI's efforts

in educating, informing and sensitising them about its mandate and technologies as this offered them an opportunity to figure out how best they can partner with BITRI or adopt and use its technologies to improve the living standards of their constituents. Of particular interest to the audience, was the mobile tutoring system presented by Ms Hamu. Schools in the district, across all levels, achieve poor examination results and their sentiments were that the system has the potential to help the situation.

Responding to the presentation, the councilors recommended kgotla meetings as one of the platforms BITRI can use to promote adoption of its technologies. Building KSBB demo houses for destitute

and adoption of a school in Ghanzi were suggested as some of the ways BITRI can establish its presence and relevance in Ghanzi for the smooth adoption of its technologies.

Regarding the roll out of the KSBB technology, Councilors hinted that the sand may be abundant but most of the land on which it can be mined is private property, a factor that would call for BITRI to closely work with sister departments and relevant ministries to ensure smooth rollout of the technology.

The Councilors also requested BITRI to consider undertaking research and development to produce energy from abundant cow dung found in feedlots and waste piling up in the Ghanzi landfill.

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## BITRI Addresses the Palapye Sub-District Extension Team

The Research and Partnerships team consisting of Lesego Moribame; Communications and Partnerships Manager and Kesupemang Pitlagano; Technology Transfer Officer addressed the Palapye Sub-District Extension Team on Monday 18th April. The aim of the address was to create awareness about BITRI as an organization as well as sensitize the local authority on invented technologies ready for adoption as well as those in the pipe line.

The Team was impressed and appreciated BITRI's efforts in educating, informing and sensitizing them about its mandate and technologies as this offered them an opportunity to figure out how best they can partner with BITRI or adopt and use its technologies to improve the living standards of their people. The Seding light and mobile tutoring app caught

the attention of many of them as they are eager to transform the village street lighting to solar. In his remarks the Deputy District Commissioner Mr Ernest Phiri said BITRI came at an opportune time when the Special Economic Zone Authority also came to brief them that Palapye has been zoned to focus on coal beneficiation. He was delighted that BITRI's Specialty Chemicals Unit is doing research on coal beneficiation. He said it is an opportunity to work with BITRI in this regards. Mr Phiri also commended BITRI for focusing their research based on the needs of Batswana. He further said Technology is the way to go if Botswana is to diversify the economy and move to the next level.

For his part when giving the vote of thanks the CEDA Branch Manager Mr Khumiso said he was particularly impressed with the BITRI philosophy "Technology Solutions,

From you, To us, For you" saying it shows BITRI's commitment to stay relevant by addressing real issues faced by people, from the people. He also commended the ICT Associates programme saying that the youths need to be mentored so that they create their own employment and for their peers.

The address is part of the Research and Partnerships stakeholder engagement plan to create awareness about BITRI and its projects.

The District Extension Team is the local authority of the District made up of all heads of government departments and parastatals with offices in the District. They are responsible for all District development matters, hence the perfect customers for BITRI products and services.

## ...From Page 8

The familiarization tour entourage, comprising over one hundred Standard 7 pupils and their teachers, learnt about the Mandate of BITRI as well as nanotechnology and its use to making the products that pupils encounter and use daily, but not aware of the technology behind their production and functionality.

To explain nanotechnology, Dr Segomotso Bagwasi used an image of a strand of hair juxtaposed with nanofibers to demonstrate the variance in size.

"In the metric system of measurement, nano denotes a factor of  $10^{-9}$ , therefore, the material we are talking about at a microscopic level and cannot be seen with a naked eye. Nanomaterials deals with elements and compounds and polymers, on a very small scale. The advantage of the technology is that materials exhibit unique characteristics compared to the same material that are not at nanoscale, and as such, enhances characteristics such as strength, chemical reactivity and conductivity," explained Dr Bagwasi.

"Examples of products that make use of nanotechnology are diapers, synthetic fabrics such as nylon, filter masks and water filters used to make our water safer to drink," elaborated Dr Lesego Mmualefe. She, then, showed the pupils face masks and water filters that were made using nanotechnology.

The pupils went through the different labs, and were shown granules of polymers, how they are converted to liquid state

and ultimately nanofibers for different applications, depending of the goal of the research project. The pupils, were also shown the use of clay, a local material they are familiar with, in water filtration.

Ms Phatsimo Matshediso, for ease of reference when addressing the pupils in the material analysis stage, used the process to purify water to make it potable.

"In this section, we check for the concentration of substances that we are working on. For instance, we can check the quality of the water that we drink using the equipment that you see in this lab. You probably are familiar with the concept of 'hard water' which contains a high concentration of salts such as magnesium, calcium and iron and does not easily form a soap lather. With these salts, there are acceptable levels permissible for human consumption, but some levels are not safe, therefore, the equipment helps us determine the quantities of such substances. We can then reduce, in some cases, remove some harmful types as they are a hazard to human and animal health" elaborated Ms Phatsimo. Dr Lesego Mmualefe took pupils through the work done in the synthesis and the microbiology laboratories.

"The equipment in the microbiology laboratory helps us with diagnostic and environmental testing on various types of human and environmental specimens submitted for laboratory diagnosis. The team that works in this lab, would for example, work on removing microorganism that can make us sick if

we drink water contaminated with such. Other applications of the microbiology laboratory function is the sterilization of water as well as equipment before and during surgery," explained Dr Mmualefe.

For applicability, Mr Bakang Modukanele concerned himself with the X-ray diffractometer (XRD) and the X-ray Fluorescence Analyzer (XRF) and their application in elemental analysis in various in mining, construction and agriculture.

"You know that X-Ray is used in hospitals to see things, such as bones that you cannot see without the aid of a microscope. You can for instance, analyse the mineral composition of soil of the land you wish to plough on. In the mining industry, as you can see the pictures you can analyse a diamond or coal, minerals that we are in abundance in Botswana to check their quality and other elements that we may be able to extract as well as a finished product of high value. From coal, we can extract diesel as well as tar used as an input in the construction of roads" explained Mr Modukanele.

The tour forms part of an effort of BITRI to sensitise stakeholders about the work the organization does as well as to enhance interest in science under the BITRI programme called Next Generation Scientists. The programme aims to stimulate interest in science and build a pool of future scientists.. Furthermore, BITRI has adopted Taung Primary School together with Kagiso Senior Secondary School and assists both schools with ICT equipment and supplies as well as mentoring.



BITRI Associate Researcher, Bakang Modukanele explaining how the XRD and XRF work to the pupils



BITRI Researcher - Nanomaterials, Dr Segomotso Bagwasi explaining nanomaterials to the pupils.



Dr Kebakile taking the audience through his journey as a member of the founding BITRI Board of Directors

# BITRI Hosts Farewell Party for Former Board Members

On Friday 23 June, Botswana Institute for Technology Research and Innovation held a farewell party for two of its departing members of the Board of Directors. Former Chairperson Dr Martin Kebakile and Ms Nkah Monyatsi bade the organization farewell after two terms serving on the Board. The 2013/14 period represents the organisation's first year of operation in which the major activities such as the recruitment of key staff to establish the organisation, appointment of the Board of Directors, identification and finalisation of the research focus areas of BITRI, as well as aligning organisational goals were undertaken. Dr Kebakile and Ms Monyatsi were part of the founding Board of Directors that took office in June 2013 under the then Ministry of Infrastructure Science and Technology.

The BITRI Chief Executive Officer, Professor Nelson Torto showered both Dr Kebakile and Ms Monyatsi with praises, lamenting on the skills sets and insight they brought into deliberations and operations of the BITRI Board of Directors.

"When the Board was established, I had high expectations of what it will be able to achieve, and indeed, it helped the organization to achieve beyond my expectations. Under the guidance

of your Board, BITRI has been able to source the best expertise in the form of personnel as well as procure equipment and other resources that would enable it to achieve its Mandate. Dr Kebakile and Ms Monyatsi brought different expertise to the Board, but, I always trusted their input to be well-thought of and incisive, especially Ms Monyatsi, who had a knack for asking the most important questions that added value to deliberations," Prof Torto explained.

"Dr Kebakile brought some level-headedness to debates both as an ordinary Board member and as the Board Chair in the 2016/17 operational year. He would at times, prompt Ms Monyatsi to ask her ever-intelligent questions when deliberations reach a deadlock and you would trust Ms Monyatsi to oblige," added Prof Torto.

"It has been an honour to serve as Chief Executive Officer under a capable Board that BITRI has had since its inception, and I trust, we still will be able to reach to both of you for advice when the need arises," concluded Prof Torto.

Dr Kebakile in his statement of gratitude, recapped on his journey to be appointed to the inaugural BITRI Board of Directors

and his embracing of the opportunity.

"I was fortunate and privileged to have been appointed to the BITRI Board, amidst a pool of equally-capable professionals who could occupy the same role. I know Prof Torto as a contemporary and as a professional and I, in an equal measure, applaud the sacrifice and leadership he has provided to the organization," said Dr Kebakile.

Ms Monyatsi also expressed gratitude for her tenure as a BITRI Board member.

"I have long admired Prof Torto as a professional and his aptitude for meticulous attention to detail. As a more of a perfectionist myself, I relished the opportunity to work with him and the BITRI Board. I have thoroughly appreciated my time serving in the Board, and my country by extension, and as an Intellectual Property professional, I would like to advise BITRI to seriously consider issues around IP as the likes of trademarks and patents would enable the organization to generate revenue and also produce products that will be as good, if not better than those that already exist in the market," said Ms Monyatsi.

Executive Director – Technologies Prof Shedden Masupe and Executive Director



Prof Torto presenting Seding light to Dr Kebakile



Prof Torto presenting a certificate of appreciation to Ms Monyatsi

– Natural Resources and Materials Prof Asare Nkansah, on behalf of BITRI Management and staff, also took turns to thank both former Board of Directors for the stewardship and leadership in steering the organisation's strategic direction.

Towards the end of the ceremony, Prof Torto presented the former Board members with tokens of appreciation in the form of Seding lights and certificates attesting to their service, with Dr Kebakile receiving another certificate for his time as the Board Chairperson.

Dr Kebakile is the Chief Research Scientist and Acting Managing Director of the National Food Technology Research Centre in Kanye. He holds a BSc in Chemistry and Biology from the University of Botswana, Master of Technology from Massey University in New Zealand and a PhD in Food Science from the University of Pretoria in South Africa. He attained a Certificate from a Senior Management Programme on Managing Research Technological Organisations of

SIRIM Berhad, Malaysia. He completed EMPRETEC (entrepreneurship) training under the United Nations Conference on Trade and Development (UNCTAD), and recently graduated from a strategic programme on agribusiness and post-harvest management at the Galilee International Management Institute in Israel.

Dr Kebakile is an active advocate for use of technology to advance entrepreneurship for poverty eradication and economic diversification. He has served in various national committees that include the Poverty Eradication Task Team in the Office of the President, and the Economic Diversification Task Team in the Office of the President, and the Economic Diversification Drive, where he served as Chairperson of the Technology Development Innovation and Transfer Thematic Committee.

Ms Keitseng Nkah Monyatsi is currently the Copyright Administrator at

Companies and Intellectual Property Authority (CIPA). She has previously served as a Copyright Officer at the African Intellectual Property Organisation (ARIPO) in Harare, Zimbabwe. She holds a Master's degree in Intellectual Property from the University of New Hampshire School of Law in the USA and a Bachelor of Commerce in Management from the University of Botswana. Her expertise include Intellectual Property Law, Trademarks, Copyright Law, Patents, Licensing, Trademark Infringement, Policy Analysis, International Law and Corporate Governance. Her previous responsibilities have been at the Department of Research, Science and Technology under the then Ministry of Infrastructure, Science and Technology, where was responsible for promoting IP as a tool to cultivate inventiveness and innovation. She has also worked at the then Ministry of Trade and Industry as the Commercial Officer as well as at Armstrongs Attorneys as the Intellectual Property Consultant.



## NEW APPOINTMENTS FOR BITRI BOARD OF DIRECTORS

The Botswana Institute for Technology Research and Innovation (BITRI) is a parastatal under the Ministry of Tertiary Education, Research Science and Technology, established in 2012 with the mandate to identify, develop and/or adapt appropriate technology solutions in line with national priorities and needs of Botswana.

The technologies will as much as possible maximize the use of local materials to ensure efficiency and affordability. BITRI will harness its institutional capacity as well as collaborate with other organizations and institutions.

BITRI is situated at Maranyane House in Gaborone, Botswana. It has other campuses in Gaborone, Kanye and Palapye. Palapye.

BITRI wishes to welcome the new members of the Board of Directors.

**Professor Sesae Felicity Mpuchane** has been appointed Chairperson of the BITRI Board of Directors with effect from 1st June 2017.

Prof Mpuchane is a retired Professor of Microbiology with a career spanning over thirty-five years in the Biological Sciences Department at the University of Botswana (UB) – which she joined in 1974 as a lecturer and worked her way up to Full Professorship at UB.

At the time she joined, it was called the University of Botswana, Lesotho and Swaziland. Prof Mpuchane has a BA in Biology from Barnard College (Columbia University), a Master's Degree in Microbiology from Ohio University and a PhD in Microbiology from the University of Surrey in the United Kingdom. Prof Mpuchane is an accomplished scientist with over forty refereed journal articles and over sixty conference papers/ proceedings. Her team at UB produced numerous booklets on food safety of some food commodities in English, Setswana and Kalanga languages. The Women in Science Committee she chaired produced seven booklets encouraging girls to study STEM courses. She has also presented

papers in many fora on the same topic.

Amongst her many achievements, Prof Mpuchane has been part of a committee that developed the infrastructure for the Science Faculty at UB; being part of a team that established a Regional MSc and PhD programme in Applied Food and Environmental Microbiology; coordinator of the UB-Women in Science project which was aimed at encouraging school girls to pursue careers in Science, Technology, Engineering and Mathematics (STEM); chaired the Task Force that resulted in the establishment of the Botswana International University of Science & Technology (BIUST); and later served as BIUST Founding Executive Chairperson for the first two years of its development.

Prof Mpuchane has also served in other capacities, amongst others, as the founding Chairperson of the Botswana Bureau of Standards (BOBS) as well as Board of Directors of other key organisations in Botswana. She currently serves as the Chairperson of the Associated Fund Administrators (AFA).



**BITRI Board of Directors (Chairperson)  
Professor Sesae Felicity Mpuchane**



**BITRI Board of Directors (Member)  
Dr Ronald Tshelametse**

**Dr Ronald Tshelametse** is a Senior Lecturer, Faculty of Science in the Department of Mathematics at the University of Botswana. He holds an MBA from the University of Botswana, a Ph.D. in Numerical Analysis and Computing from the University of Manchester, MSc in Numerical Analysis and Computing from the University of Manchester and a BSc in Physics and Mathematics from the University of Botswana obtained in 1992.

Dr Tshelametse has vast experience emanating from his roles in different directorship positions in the tourism and agriculture sectors. He is the current Coordinator and Chair of MSc in Mathematics Program Development Committee. He has previously served in the Botswana Journal of Technology Review Team, Journal of Optimal Control, Applications and Methods and Pula Journal. Dr Tshelametse is also a founding member of Botswana Swimming Sport Association. An avid supporter of the community through

Business Mini Symposiums and always emphasizes the importance of numeracy and algorithmic approach in sustaining a business and accumulation of wealth.

Dr Tshelametse's research activity and interests also include his role as Chair of the Departmental Industry Outreach Committee, a structure that is actively engaged on how to make mathematics and science research relevant to industry and national needs. Dr Tshelametse has published over twelve peer reviewed publications in the field of numeracy. His other interests lie in Air Water research and alternative water management practices as well as Science Entrepreneurship.

**For a full complement of the Board of Directors, visit:**

<http://www.bitri.co.bw/governance-structure/>

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# DIACORE GABORONE MARATHON

## BITRI Fields a 60+ Strong Team in the 2017 Diacore Gaborone Marathon



Some of the 60+ completers of the marathon.

On May 7th, a team of over sixty BITRI cadres, ranging from Executive Management to staff across different functions, joined a field of amateur and professional runners from Botswana and the international community in the Diacore Gaborone Marathon. The course for the race, considered to be the flattest and fastest in the region, has the 10km, 21.1 and 42.2 km legs which traverse through Gaborone whilst the 4 km fun race is run around the GICC. The race is also International Association of Athletics Federations (IAAF) certified and a qualifier for the Comrades Marathon, Two Oceans, Olympics and Commonwealth Games, and thus, attracts international professional runners. BITRI participated in the 2017

Diacore Gaborone Marathon with goals of advancing efforts to enhance camaraderie amongst staff, boosting staff morale and wellness as well as generate positive associations between the public and the organisation. Over thirty staff members took part in the 10 km race, fourteen participated in the 21.1 km, two in the 42.2 km whilst three ran in the 4 km fun race.

The Human Capital and Administration as well as the Research and Partnerships Departments collaborated in facilitation of the organization taking part in the event, and amongst others organising training sessions, paying for registration fees, race packs, refreshments and support during the event.



Frank Rakgomo and Kabelo Ntereke after completing the 21 km half marathon



Karabo Hamu completing the 21 km half marathon



Kgomotso Radijeng after her completion of the race.



Moranodi Esi and Koketso Ramoonwa after their respective races