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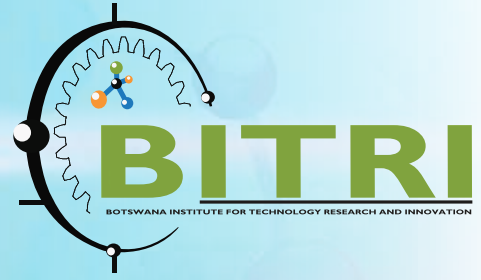
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MISSION

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

VISION

To be the leading technology solutions provider that transforms lives.

TECHNOLOGY SOLUTIONS

FROM YOU
TO US
FOR YOU

VALUES

Teamwork

We operate and innovate through teamwork, and although we expect individual expertise, the team performance takes priority. The value of innovation through teamwork includes behaviours such as valuing contribution, accepting diversity, pro-active approach, collaboration and co-creation.

Excellence

We expect and encourage unquestionable technical and operational excellence in planning, executing, monitoring and continuously improving everything we do.

Empathy

We interact, operate and generate solutions that optimally balance the interest of all stakeholders.

CEO's Foreword

Welcome to the last edition of the Botswana Institute for Technology Research and Innovation (BITRI) newsletter of year 2018. As the year ends, we reflect on our achievements, and also plot the journey ahead.

This year, we persevered with our modus operandi of talking to and involving stakeholders, especially end users, in the development of products meant for their benefit and use. We know that products that work and provide solutions for a specific individual and community, for instance, water filters that enable the consumption of safe drinking water in Gulubane and aversion of water-borne diseases, enable the thriving of a healthy community, and possibly, a luminary scientist who will provide an important solution to Botswana and the world in a decade or two.

We engaged in consultations and interactions 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.

Our work is driven by working with stakeholders to create and deliver innovative solutions, and on this front, we have established and formalized partnerships with more local and international organisations.

“By exploring synergies between ourselves and local institutions, we are able to build relations and trust in locally-designed solutions and optimize on the use of limited local resources to achieve solutions borne out of collaborations.”

We have also undergone a change on the level of our Board of Directors, and we take this opportunity to thank all the past members of our Board, some of whom were part of the inaugural Board of Directors, for their commitment to driving the strategic direction of the Organisation. We also, wish to welcome the new Board members and are looking forward to their leadership in steering the Organisation to deliver high standard technology solutions that maximise the beneficitation

of local resources, through both institutional and collaborative programmes, to effectively and affordably address current and anticipated needs for sustainable socio-economic development.

Our corporate values of Teamwork, Excellence and Empathy have enabled us to deliver results through teamwork while valuing contribution, accepting diversity, pro-active

approach, collaboration and co-creation, unquestionable technical and operational excellence and within an environment that fosters mutually-beneficial partnerships at all times. I wish to express my heartfelt gratitude to every staff member staff, regardless of level of operation and/ or touch points. If all at BITRI positively live, exude and champion BITRI values, the publics or stakeholders will easily recognise the effort the Organisation puts in productively serving the customer.

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 publics.

We are looking forward to the maturity of some of our projects in 2019 and are actively engaging stakeholders to deliver the best possible solutions. We are also 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 with a strong dedication to solving pertinent challenges.

I hope you enjoy this latest edition. As always, we invite you to contact us, should you have any comments you would like to share or solution you would like us to assist with.

Prof. Shedden Masupe
BITRI Chief Executive Officer



BITRI recently hosted its annual media brief at Maranyane House. BITRI Chief Executive Officer in addressing the gathering, expressed gratitude towards the media for honouring the invitation.

"It is always a pleasure to have our stakeholders, the media with us. This is the fifth year we update you on our progress. You have been our partner from the beginning. You have been supportive of our events. We also recognize you do not just cover BITRI, but also Research, Science, Technology and Innovation (RSTI). There is an increasing coverage of RSTI matters in newspapers and other forms of news broadcasting. For recognizing that the media is an important stakeholder, the Research and Partnerships Department has embarked on upscaling journalists that report on RSTI by developing a program that capacitates such journalists. This year, I have been informed that we will have one of you travel with us to Stellenbosch for a Science Communication Conference," said Prof Masupe.

Prof Masupe also expressed a desire for a situation in which RSTI gets even more coverage and prominence as one of the agenda items for media houses since resources are dedicated to the sector, and the socio-economic benefits derived from such impacts of facets of life.

Prof Masupe further elaborated that "BITRI has been in existence for approximately four years. We have been established to do needs-based research that has an impact on the lives of Batswana. We are expected to deliver high quality products and we try to deliver exactly that. Our work is based on collaboration and co-creation, and these are very important operative words in the sense that in collaboration, you tend to leapfrog, instead of starting on things that have already been done. We link up with our research partners, within the country and internationally, to co-create. Whatever we do, we keep the end user in mind. We develop products working with people who will eventually use the products that we develop. That is the philosophy with which we run our organization."

The CEO also outlined the BITRI research focus areas, giving an example of the Climate Smart Agriculture project that was initially rolled out in the Barolong farms, but has since been upscaled to cover the Masunga cluster. CSA as a decision support tool, has been reported to help small scale farmers to deal with the risk factors, chief amongst them being erratic and low rainfall and high temperatures.

The CEO also expounded on the air filtration membranes developed under the Nanomaterials Division and in collaboration with a South African-based company, explaining that the membranes can be used under dust masks to not only filter out dust, but also microbes, including viruses. The same company is said to be selling around twenty thousand dust masks in Botswana, so in the scenario that BITRI manages to put the membranes inside the masks, the organization and Botswana would derive value and revenue from an already established market. The membrane can also be used in protective clothing.

"Still under the Natural Resources and Materials, we have developed water filters using coal, nanomaterials as well as ceramics. As I have said before, our mandate promotes the use of local natural resources. With the water filter made from coal, we have been able to remove odour. We are at a point at which we are testing water from different points in the country, including areas in which the problem is well-documented such as Mmanoko and Oodi. We are also, in the process of attaining accreditation for our Centre for Materials Science laboratories. Currently most of the testing jobs done by the mining, water distribution and built environment enterprises are done in South Africa. So, we are hopeful of benefiting from those transactions once our labs are accredited. We have the capabilities to do the tests, but, we still have to undergo accreditation, and are hopeful that we would have achieved that stage by end of this year," added Prof Masupe. On projects under the Technologies Department the CEO highlighted that "Under Energy, we have two major programs. One is under solar energy and the other in biomass. With respect to the biomass project, we have partnered with UNDP to build thirty prototyping bio-digesters. The project targets to build one thousand bio-digesters so that people in the Southern District can be able to produce their own gas and utilize it in their homes. In the solar space, there are two examples, being the Solar Thermal Testing Facilities located here at our main campus, and, you will have a chance to see the solar PV traffic system nearby. That specific one uses both grid electricity as well as .

We had earlier built a tutoring solution, which can now be incorporated into the School Management System.

We are piloting the system at Bakgatla CJSS in Mochudi. As I have emphasized that when we conceptualise our projects, we have to have the end user in mind. We have been through a stage in which we worked with officials at the Ministry of Basic Education conceptualizing the project, interrogating their statement of user requirements, and then finalising the documentation that would ensure the system can be an implantable solution and solve one of the key challenges for the country. The system is almost ready and is customizable.

"We have also developed a system called Motlhokomedi. Currently, it is being tested, but its intended use at the moment, is for Non-Communicable Diseases, such as Diabetes and Hypertension. It is also a fully-functional system. We have a relationship with Scottish Livingstone Hospital in Molepolole where we will pilot that particular system. We also a similar arrangement with a Non-Communicable Disease clinic in Block 6."

"Still under IST, we have the ICT Associates program in which we take ICT graduates. We enrolled sixty Associates under the first cohort. In the first year, the Associates work on BITRI research projects, and in the second year, they conceptualise and work on business ideas that they can commercialise. Some of them produced projects that are ready for commercialization. We have the SignCoach app that teaches Botswana Sign Language. The app has three levels and it is available on Google Play Store. We developed the app in collaboration with the Botswana Society for the Deaf. The app is ready for commercialization. We have also, through the ICTAssociates program, developed a Fleet Management System that we have tested here at BITRI. You can track, and do geo-fencing of vehicles, amongst others. It is a locally-developed solution, and we are in talks with Tlokweg Landboard to piloting the project with them."

The CEO also highlighted a variation of the collaboration approach, citing an instances in which companies approach BITRI for projects in a specific area. Prof Masupe elaborated on the partnership between BITRI and with Botswana GeoScience Institute where BITRI developed a solution for them under the IST Division. The CEO said BITRI is also working with BGI in another project that seeks to find the binding material or clinker derived from limestone. Once more, the CEO emphasized that the collaboration anchors back on the statement that BITRI will use local natural resources to develop solutions to ascertain that the country attain security and self-sufficiency.

"So, as an organization, within the next two or so years up until 2021, what are we going to be doing? As an organization with so much potential, and so many innovations, we want to go commercial. We want to afford all Batswana an opportunity to participate in those commercial entities. The case in point would be the licensing of the KSBB Technology that I spoke about earlier. We floated an Expression of Interest for local companies to produce the KSBB blend. A local company was awarded the contract and they will be using the fly ash from Morupule. Again, we had to ensure that we use the locally-available fly ash instead of importing the same. So, what we will be doing in the next



BITRI Chief Executive Officer, Professor Shedden fielding questions during one-on-one interviews with journalists.

We are also in talks with BUAN as they have a significant fleet," said Prof Masupe while detailing specifics of some of the projects under the ICT Associates program.

"We also have Nthusa Distress app which when you are in distress, by the click of a button on your mobile phone, it routes a distress call to the Fire Department, the police or an ambulance. We have held talks with Emergency Assist and others, and the Botswana Police Service have also expressed interest and we are looking at piloting the system with them. We also have an indigenous knowledge portal where we started with Morabaraba, and now Mhele. You can download these games and even play against others in different geographic locations because they are online."

We have products that are almost ready for commercialization. This bring us to the technology transfer stage. We have a policy that guides us on technology transfer. We have three modes: we can spin out or spin off with a subsidiary. We can license to a company that is existing or an individual who will set up a company, or we can assign or sell that technology. We are in the middle of drafting a licensing agreement for the KSBB Technology. We will look into all the three modes in assessing the best route for commercialization for specific products," added Prof Masupe.

few years is to ensure that we have proper business cases we start at BITRI such that by the time of commercialization, we already know the preferred mode of commercialization. We have set ourselves a target that by 2021, BITRI should be producing forty percent of its revenue," Prof Masupe concluded.

At the end of the media brief, Senior Researcher - Energy, Dr. Edward Rakgati led the media and a select number of members of the BITRI Management team for a demonstration of one of the proofs of concept for powering traffic lights with solar energy. At the testing site by the main junction near Maranyane House, Dr. Rakgati explained the technology at the site. He also explained that it is also used at the Maruapula junction, and that the latter is completely solar-powered, while the former principally uses solar energy, with grid electricity as back up. Dr Rakgati fielded questions on the functionalities of the systems, the 4-day autonomy window, and he also explained that the piloting stage would enable BITRI to identify the more optimal setup between the two.

Local print and broadcast media Houses covered the event. BITRI hosts the media brief in a bid to update the media on its projects, as well as facilitate the dissemination of the same to different publics.

BITRI Hands Over Solar Electrification Project

Botswana Institute for Technology Research and Innovation (BITRI) through its Corporate Social Responsibility Programme solar electrified a house in Mabele in the Chobe District to assist a Poverty Eradication Programme Beneficiary Mr Chiswaniso Motsamai. The project which was done at the request of the Chobe District Poverty Eradication Office was handed over on the 15th October. The project came about because the beneficiary and the Poverty Eradication Office could not afford to connect the house to the national grid as it was expensive and hence requested for assistance from BITRI. The house is connected to a 3 Kw solar system, with ten 260W solar panels and four 200Ah batteries for storing power. This project was done by BITRI expertise and resources.

When delivering the Keynote Address, Assistant Minister of Tertiary Education, Research, Science and Technology, Mr Fidelis Molao said the project would not only enhance Mr Motsamai's quality of life but was also a true reflection of Vision 2036. Mr Molao said through the gesture, BITRI was living the promise of Vision 2036 to ensure that the country pursued national aspirations in a way that enabled Botswana to meet the global and regional goals aligned with the global agenda for sustainable development and the principles of Africa Agenda 2063.

For his part the BITRI Chief Executive Officer Professor Shedden Masupe, when delivering remarks at the event said "I wish to express gratitude towards the Poverty Eradication Office for supporting BITRI, going back to the installation of the first batch of Seding® lights at Diphuduhudu. They have always been supportive of our work and projects, and we have been working with them in the solar electrification project for Mr. Motsamai and in other initiatives. Today, I can attest before Mr. Montshiwa Montshiwa as the Coordinator of the Poverty Eradication Programme, and everyone in attendance, that BITRI has about ten other projects that are ready for uptake by his office".

Prof Masupe told the audience that the mandate of BITRI is to undertake research and innovation with the aim of diversifying the economy. He said the solar electrification project was one of such projects. Prof Masupe added that, the principal

advantage of solar energy over grid energy, is that the former does not lead to the pollution and degradation of the environment. He advised people to consider solar energy as the components and systems are readily-available and are easy to assemble.



BITRI Board of Directors Chairperson, Professor Sesae Mpuchane officially handed over the project in the presence of the Minister Molao, Permanent Secretary, MOTE, Dr Theophilus Mooko, Chobe District Commissioner, Mr. Keabetswe Lesiela, Chobe Deputy Council Chairperson, Councillor Tengenyanane Tuelo, BITRI Board Members and Management, dignitaries from various institutions, Mabele villagers as well as other well-wishers.

Prof Masupe also highlighted other BITRI research areas such as IST, Building Materials Science, Nanomaterials, Climate Change and Electronics and Communications. Prof Masupe implored for believe and trust in locally-produced products, advising Mr. Motsamai to source leather from local farmers to produce high quality products that can be sold in curio shops and fashion retail stores. Prof Masupe implored the audience to prioritise local beneficiation, citing products such as coal, leather and the free sunshine as some of the resources Botswana could use to create a sustainable supply chain and industry.

Mabele Deputy Chief, Kgosi Kenneth Muyakwavo, thanked BITRI and government for the initiative, singling out the latter for the various programmes aimed at improving the lives of Batswana.

District Poverty Eradication Coordinator, Ms Bontle Mmokele thanked BITRI, in the context of the insurmountable expenditure that grid connection required, and also extended gratitude towards the Mabele tribal leadership for their unwavering support.

For his part, Mr Motsamai thanked BITRI and the Poverty Eradication Office for their gesture towards him, and he requested for the gesture to be extended to other deserving Batswana.



Mr Chiswaniso Motsamai (extreme left) talking about his leather works project to an audience comprised of Minister Molao (in a blue suit), Chobe Deputy Council Chairperson, Councillor Tengenyanane Tuelo and Permanent Secretary, MOTE, Dr Theophilus Mooko (in a BITRI shirt).



BITRI and BOU

to unlock potential

BITRI and the Botswana Open University (BOU) confirmed mutual acknowledgement of the need to collaborate and co-create by signing Memorandum of Understanding (MoU) on 10th October 2018 for the mutual benefit of both organizations and effective transformation of Botswana into a knowledge-based economy.

BITRI Chief Executive Officer, Professor Shedden Masupe and Vice Chancellor of BOU Dr Daniel Tau encouraged officers from both institutions to optimally exploit the MoU by identifying and carrying out initiatives and research projects that are of mutual benefit to both parties. The leaders reiterated that opportunities and potential areas of collaboration exist in abundance as the challenges faced by BOU may present opportunities for BITRI to research, develop and provide appropriate technology solutions as mandated by both the Government of Botswana and the public.

Dr Tau highlighted that data processing and analytics, co-supervision of BOU students and development of software and systems were some of the potential areas of collaboration and co-creation. He also said they holds loads of data that requires both processing and analytics for informed decision-making. Provision of

distance learning is one area that potentially offers lots of collaboration opportunities.

"Distance learning is highly dependent on technology. All the software we use are imported from abroad. This is unfortunate. There is no how we could be talking knowledge-based economy and continue importing basic software and systems from abroad," Dr Tau lamented. "We should start promoting the adoption of home grown technologies. The time to do so it is now" he concluded.

Assuring BITRI' s unwavering commitment to the MoU and subsequent collaboration and co-creation agreements, Professor Masupe said BITRI strongly believes in research and partnerships. "Collaboration and co-creation are very key to us and our priority is to provide suitable technology solutions for the local end users", he said. The School Management System was pointed out as one of the many systems undergoing piloting that BOU can adopt to revamp its processes and efficiency.

BITRI and BOU intend to collaborate in a wide range of research projects and initiatives, graduate student co-supervision, staff exchanges and sharing of resources.

E-Health

BITRI Co-hosts 2nd E-health Workshop

Botswana Institute for Technology Research and Innovation (BITRI) in collaboration with the University of Botswana eHealth Research Unit, Ministry of Health and Wellness, as well as the Ministry of Transport and Communications hosted the 2nd e-Health Workshop from the 30th to 31st October 2018 at the University of Botswana Faculty of Medicine Auditorium. The Theme for the workshop was “The Promise of Open Source Technology to Sustainable e-Health Solutions”. The workshop explored alternative solutions towards provision of customized e-Health services, reduction of expenditure on healthcare technologies, as well as building local capacity to support local e-Health platforms.

The workshop was motivated by the general concern that despite considerable spending on healthcare provision by the Government of Botswana (GoB), the outcomes do not always reflect such a level of investment. The Botswana Ministry of Health and Wellness (MoHW) therefore made a commitment to explore Electronic Health (e-Health) as a sustainable way to deliver cost savings, better patient outcomes, and greater accessibility to healthcare for all. The objective is in line with the World Health Organisation (WHO) policy on Universal Health Coverage, which ensures that everyone, everywhere can access essential quality health services, as well Botswana's Vision 2036, which reads “Botswana will be a moral, tolerant and inclusive society that provides opportunities for all”.

The Vice Chancellor of the University of Botswana (UB), Professor David Norris welcomed the stakeholders and workshop participants. Professor Norris said, based on the Vision of UB being “a leading centre of academic excellence in Africa and the world”, the institution sought to promote learning and teaching, create a

vision positioning the University as a research-intensive institution, upholding internationalization, interdisciplinary education and research. Professor Norris further highlighted that, the institution continuously works to develop into a premier research center, increase its internal and external funding opportunities, develop a research niche area for excellence, and that e-Health is one of the fortes the University intends to leverage on.

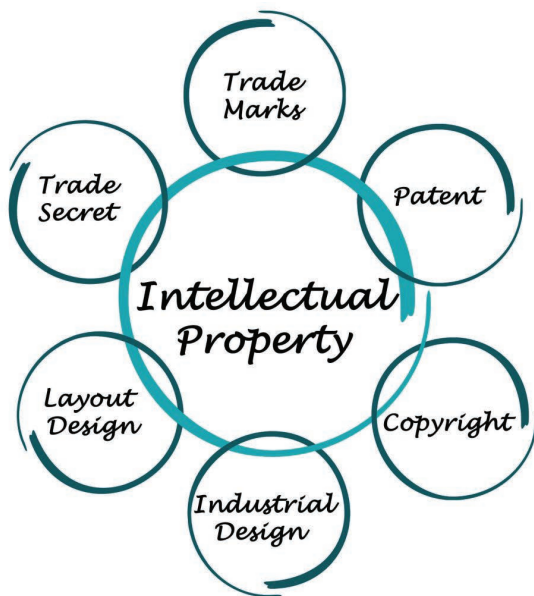
Professor Norris gave an overview of the workshop goals which included to stimulate discussion around Open Source technologies for health; document recommendations for consideration by the Botswana government; identify Open Source solutions for the Government, the private sector and University of Botswana to leverage on for their e-Health initiatives; strengthening partnerships with the public and private sector around e-Health and identify means for e-Health data sharing across public-private entities.

The Executive Director, Technologies at the BITRI, Dr Sebusang Sebusang, was the Keynote Speaker. In his speech, Dr Sebusang described BITRI's mandate and explained the institution's relevance as a research and development arm of the Government of Botswana. Dr Sebusang shared with the audience that BITRI had been supporting research in e-Health and capacity building for over four years, and has identified challenges in the healthcare system that include shortage of qualified specialist nurses and doctors. He cited the acute shortage of radiographers as an example. As a result of this shortage, those on the ground have to examine many X-ray, CT and fMRI scans for diagnosis, a situation that may lead to misdiagnosis. Other pertinent issues



Intellectual Property: A new diamond mine for Botswana

His Excellency the President Dr Mokgweetsi E. K. Masisi has underscored the importance and relevance of the intellectual property system in transforming Botswana into a knowledge-based economy.



He was speaking at a meeting with the World Intellectual Property Organization (WIPO) Director General Mr Francis Gurry in Geneva, Switzerland on October 24, 2018. "Intellectual property development is like opening a new diamond mine. It is the transitioning of an idea into a service or product that is definable, protectable, sellable and grow-able," said Dr. Masisi.

The meeting was meant to reinforce and forge closer links with WIPO as there are many areas in which Botswana and WIPO can cooperate such as building capacity at various levels. Mr Gurry, assured Botswana of WIPO's willingness to assist in transforming Botswana into a knowledge driven economy as intellectual property and

technology are very important issues that pervade the whole economy. "The human intelligence and human ingenuity is a source of all innovation and therefore the greatest contributor to economic growth", said Mr Gurry, emphasizing the importance of intellectual property. Botswana has been a member of WIPO since 1998. Technical assistance received so far include the enactment of the national intellectual property laws and the automation of the Industrial Property system.

At organizational level, BITRI is benefiting from WIPO assistance programs. So far twenty-two (22) BITRI employees completed the introductory course to intellectual property with the WIPO Academy.

Out of these, three (3) have completed advanced courses relevant to their areas of specialization in science and technology. Two Researchers are undergoing training in Patent Drafting to acquire requisite skills for the protection of BITRI technologies. BITRI and other local research technology organizations are working with WIPO to establish Technology and Innovation Support Centres (TISCS). TISCS facilitate low cost access to current patent and non-patent scientific literature for researchers, innovators, and inventors to develop and/or identify and adapt existing technologies to meet local needs as well as keeping abreast with new technological developments in their respective areas of specialization.

BITRI Participates in the Global Expo Botswana 2018

BITRI participated in the annual Global Expo Botswana held at Ditshupo Hall, Gaborone. The Expo held under the theme "Seizing Opportunities Through Networking with Global Business Leaders" ran from 30th October to 2nd November.

BITRI used the platform to create awareness on potential collaboration opportunities by targeting and hosting business meetings with prospective partners. The organisation pitches its messages to inventors and representatives from pertinent industries on how they can collaborate with BITRI to conduct research with an objective of developing commercially-exploitable outcomes.

The secondary goal of participating in the Expo is to share information on the Mandate of the organisation, research focus areas, and projects which are at an advance stage on business opportunities that exist within the supply chains of the respective products.

The Global Expo Botswana is held annually in Gaborone with an overarching objective of offering exhibitors and visitors an opportunity to actively promote their businesses and to stimulate investment in the domestic economy as well as cultivate other avenues for trade. The event is organised by Botswana Investment and Trade Centre and is endorsed by the Government of the Republic of Botswana through the Ministry of Investment, Trade and Industry.



BITRI Director Research and Partnerships, Dr. Bathsheba Mbongwe presenting on collaboration opportunities to a delegation from Sweden, representing amongst others, SAAB Technology



BITRI and UNDP hosted a one-day Biogas Financing Workshop titled "Harnessing Opportunities for Financing Renewable Energy Technology" on 13th November 2018. The workshop addressed the lack of financing for biogas production in the country. The aim of the workshop was therefore, to sensitise financing institutions to consider developing products/or portfolios for financing clean energy/biogas projects. The other area that was discussed was lack of uptake by potential beneficiaries as there is currently no funding available as well as the role the financing institutions would play in the success of the project. The financing institutions discussed how they could finance renewable energy projects, the challenges they face including risks associated with renewable energy projects, and the assistance the Biogas Project can offer moving forward. Some of the institutions indicated that they currently do not have products that are focused on clean energy and are willing to learn and develop products focused on clean energy.

The target audience were financing institutions, including but not limited to National Development Bank, Botswana Development Corporation, Barclays Bank, Standard Chartered Bank, CEDA, Stanbic, First National Bank, Letshego, Norsad, and African Emerging ventures. The potential beneficiaries of renewable energy and the Biogas digester project such as Botswana Meat Commission, Water Utilities Corporation, Kgalagadi Breweries Limited, and associations in the agriculture sector were also represented.

The workshop was also graced by high level delegates such as Her Excellency the UNDP Resident Representative, Ms Jacinta Barrins, the BITRI Chief Executive Officer, Prof Shedden Masupe, as well as BITRI Executive Director Technologies, Dr Sebusang Sebusang.



BITRI takes part in the World



President Dr. Mokgweetsi E. K. Masisi delivering the Keynote Address on the occasion of 2018 World AIDS Day Commemorations in Mochudi.

The President of the Republic of Botswana, Dr. Mokgweetsi E. K. Masisi has underscored the Government's political will to fight HIV/AIDS and implored all to be part of the fight and help in the elimination of new infections. Giving the Keynote Address on the occasion of the World AIDS Day commemorations in Mochudi on 1st December, he said "Today marks 30 years since the global community started commemorating the World AIDS Day. This is a Day that provides an opportunity for people across the world to unite in the fight against HIV, to show support for people living with HIV, to mobilize communities to access HIV services and to remember those who have passed on from AIDS-related diseases. As we commemorate this day, let us remember that our 33-year-olds in Botswana have not known a life without HIV and AIDS as our first case was diagnosed in 1985. As such, we must also use this day to thank God the Almighty for our

successes in translating what many thought was a death sentence to what today has enabled many people to live normal lives and pursue their dreams".

The theme for the commemoration, "Know Your Status," aimed to encourage people to get tested and know not only their HIV status, but other conditions related Non-Communicable Disease and other health indicators. "With the national HIV prevalence rate of 18.5 percent, Botswana is ranked the third highest country globally. These figures are not ordinary for a small population of just over 2 million people. The situation is compounded by recent indications of a surge in new HIV infections, especially among the youth. This challenges us as a collective, to reflect and interrogate that which we are not doing right. Furthermore, with a national HIV incidence rate of 1.35 percent and new HIV infections estimated to be

fluctuating between ten thousand and fourteen thousand per year, the only indicator that would show that we are heading in the right direction would be the time when we start recording zero new infections. To this end, I urge you to take time as individuals to introspect and be part of this fight so that our beautiful Botswana can be restored to an HIV free country. We can re-write this history and leave an HIV free legacy for future generations," President Masisi elaborated.

President Masisi highlighted some of the areas in which the country had made significant progress, such as the elimination of mother to child transmission that is now below 1.4 percent, the anti-retroviral programme that has an uptake of up to 84 percent and voluntary medical male circumcision whose revised coverage has increased from 44 percent in 2015 to 69 percent by March 2018.

AIDS Day Commemorations



There are global efforts to end AIDS by 2030 by ensuring that those who tested positive are enrolled on treatment and those on treatment are supported to have a suppressed viral load through the 90-90-90 Fast Track Targets. President Masisi also reported that according to a recent UNAIDS Global AIDS Update report, Botswana is among six countries on track to attain these targets. Furthermore, at the centre of the country's HIV national response, the country is on the verge of ensuring an HIV-free future as envisaged in Vision 2036.

Towards the closing of his remarks, the President reminded all to stay vigilant and reiterated Government's commitment to fighting the HIV/AIDS epidemic.

"Let me express my profound gratitude to all those who have been in the forefront of the national HIV response, including those who suffered for a good cause during the early days of the scourge. Government has recently taken a decision to relocate the National AIDS Coordinating Agency (NACA) from the Ministry of Health and Wellness to the Ministry of Presidential Affairs, Governance and Public Administration with an extended mandate to oversee the multi-sectoral prevention and health promotion function for **non-communicable diseases**. This integration should go a long way in improving both HIV-related and non-HIV-related health outcomes," President Masisi concluded.

In his Closing Remarks, Member of Parliament for Mochudi East, Honourable Moagi Molebatsi urged people to end stigma and discrimination against people living with HIV/AIDS. Mr. Molebatsi said that stigmatization and discrimination against those living with the condition may drive some to have a nihilistic approach, in the process reversing gains on prevention efforts, while some may choose to conceal their status.

Earlier on, the Resident Representative of the United Nations Development Programme (UNDP) Botswana,

Ms. Jacinta Barrins, had expressed similar sentiments, saying that, based on the robust programs that the country had put in place to fight HIV/AIDS, she had expected more open discussions about the disease. Ms. Barrins said that there was little public discourse and openness about HIV/AIDS, and that factor may deter achievement of specific milestones related to prevention and treatment, despite the great strides made and the political will to fight the disease.

BITRI exhibited the SignCoach project. SignCoach is an application that teaches Botswana sign language to both the hearing-impaired and those who are not, with the aim of enabling the flow of communication between the two groups. Mainstream communications on HIV/AIDS and other diseases do not normally cater for the hearing-impaired, therefore, SignCoach has filled the gap by including a component that shares information on HIV/AIDS. The application was developed by Ms. Lucia

Otsetswe, one of cohorts of the first batch of the ICTAssociates program. The program targeted towards ICT graduates, immerses the graduates in BITRI research projects in the first year, and in the second year, they conceptualise and work on business ideas that they can commercialise. Some of the Associates have produced projects that are ready for commercialization, with SignCoach being one of them.

The application, developed in collaboration with the Botswana Society for the Deaf (BSD), has three levels, and it is available on Google Play Store. The partners have also developed a dedicated SignCoach tablet that is available for sale from BITRI and BSD. The application can be used by individuals to learn Botswana sign language, and companies and other types of institutions can buy the tablet for their staff to be able to communicate with their hearing-impaired colleagues, customers and partners in the supply chain.



Customers sampling the SignCoach tablet

BITRI hosts Bill & Melinda Gates Foundation



Bill & Melinda Gates Foundation's Dr. Farhad Imam during his presentation. Looking on is BITRI CEO, Prof Shedden Masupe and BITRI Executive Director, Technologies, Dr. Sebusang Sebusang.

BITRI this week, hosted representatives from the Bill & Melinda Gates Foundation with a goal to discuss possible areas of collaboration between the two organization.

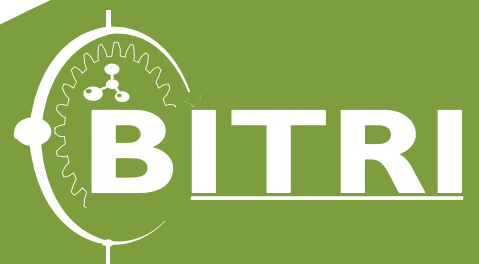
The Bill & Melinda Gates Foundation focus and invest in solutions health care and education to help people find ways to transition out of poverty, with the overall objective of reducing global socio-economic inequalities. The presentation by the Foundation's Dr. Farhad Imam, consequently, was principally based on opportunities in these two areas.

The BITRI Chief Executive Officer, Prof Shedden Masupe gave an overview of the organization as well as relevant BITRI projects. The respective Executive Directors of Technologies and Natural Resources and Materials, Dr. Sebusang Sebusang and Prof Asare Nkansah complimented by Lead Researchers and Senior Researchers, provided further technical details on the projects and areas of specialty.

Dr. Flora Pule-Meulenberg from Botswana University of Agriculture and Natural Resources (BUAN) also gave an overview of her institution and took part in discussions.



BITRI's Bakang Modukanele attending to Dr. Imam and Dr. Flora Pule-Meulenberg of BUAN, during a tour of the Centre for Material Science at Maranyane House.



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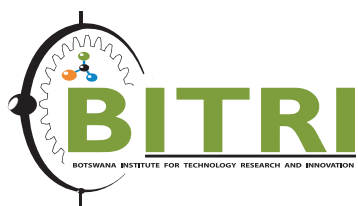
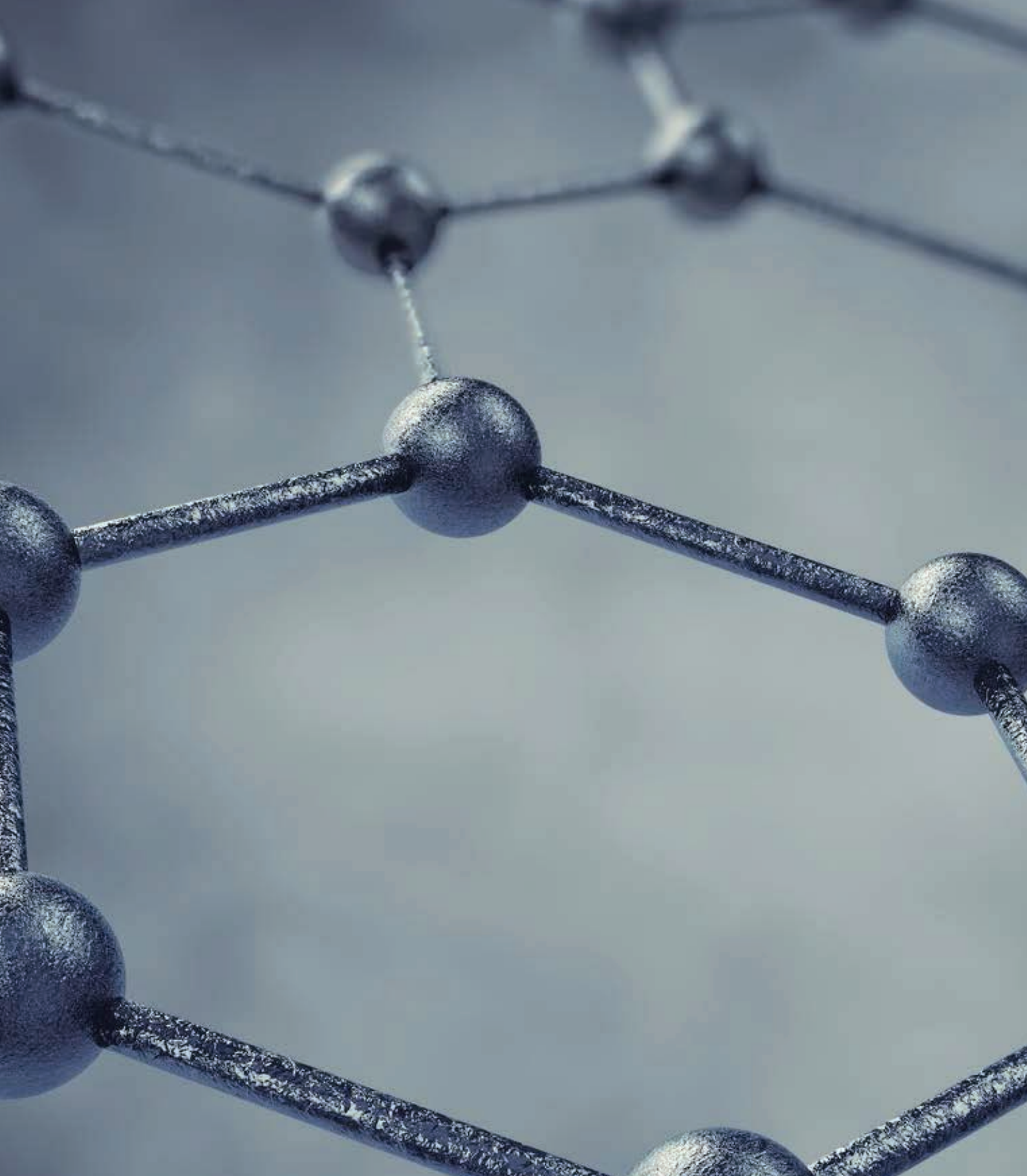
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