

2017 #ScienceAfrica UnConference

# BIG IDEAS FOR AFRICA:

Celebrating the continent's science and technology pioneers

# **OUTCOMES REPORT**



# **OVERVIEW**

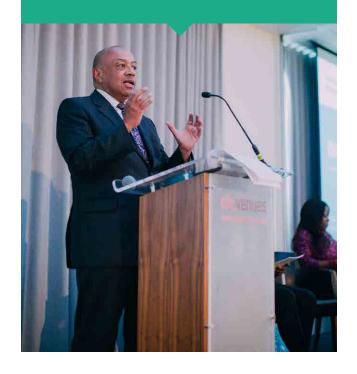
Our #ScienceAfrica UnConferences are a key element of our wider PEI Partners Forum, a consolidated programme of policy and advocacy events that brings together organisations committed to science, technology and innovation (STI) in Africa. As the largest, most open and interactive events of the year, our UnConferences are an important platform to share ideas and promote collaboration for all those interested in and passionate about Africa's scientific independence.

Held on 20th July, the 2017 UnConference was entitled 'Big Ideas for Africa: Celebrating the Continent's Science and Technology Pioneers'. It aimed to celebrate the individuals, research groups, academic institutions and commercial organisations making great scientific and technological advancements that are of benefit not just to Africa, but also to the world. These individuals and organisations prove that the continent can be a world-class contributor to global science, technology and innovation.

The PEI also called on attendees to celebrate and promote great scientific and technological innovation happening in and for Africa; showcase great ideas and new technologies; and galvanise support for current and future innovation. The event also saw the launch of the <u>PEI exChange</u>, the world's first online matching platform for individuals interested in Africa.

OUR UNCONFERENCES ARE ABOUT CREATING SAFE SPACES FOR IDEAS TO BE SHARED AND PARTNERSHIPS TO FORM. WE BRING MINDS TOGETHER FROM ACROSS CONTINENTS AND SECTORS TO LOOK AT THE ISSUES THAT MATTER TO US, NAMELY OF AFRICA'S SCIENTIFIC EMANCIPATION, TO WORK TOGETHER AND FIND WAYS FORWARD.

THE RT HON LORD PAUL BOATENG, PEI CHAIRMAN





Over 250 attendees from industry, academia, government, NGOs and the broader civil society, as well as many more who joined online, participated in interactive workshops, panel discussions and open O&A sessions.

We were honoured to have high-level speakers and attendees who are at the heart of Africa's development agenda. Hon. Min. Blade Nzimande, South Africa's Minister for Higher Education, Hon. Min. Ibrahim Mohammed Awal, Ghana's Minister for Business Development, Maya Kulycky, Program Director for Business Development and Strategy, IBM Research-Africa, Dr. Sipho Moyo, Director of Special Projects, African Development Bank AFDB, Professor Kelly Chibale, Principal Investigator and Professor at the University of Cape Town, South Africa, Simon Kay, Head of International Operations and Partnerships, Wellcome Trust, Professor Maggy Momba, Research Professor, Tshwane University of Technology, Noah Samara, Founder and CEO, Yazmi USA LLC and Dr. Joe DeVries, VP Programme Development & Innovation, Alliance for a Green Revolution in Africa (AGRA) all made valuable contributions.

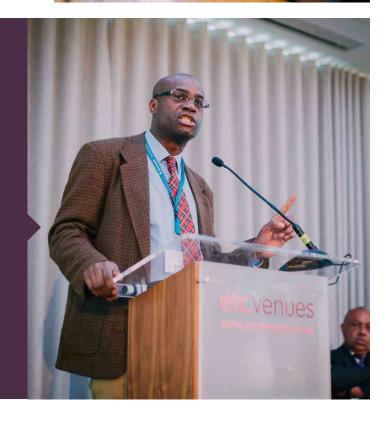
The PEI also produced a <u>video</u> about the UnConference, which provides further insight into the day's highlights.





THIS WAS SUCH A FANTASTIC AND WELL ORGANISED EVENT WITH A TREMENDOUS LINE UP OF SPEAKERS FROM DIVERSE BACKGROUNDS, WHICH PROVIDED FOR A RICH LEARNING ENVIRONMENT. IT PROVIDED ME WITH AN INCREDIBLE PLATFORM, THE BENEFITS OF WHICH ARE UNQUANTIFIABLE.

PROFESSOR KELLY CHIBALE, PROFESSOR AND PRINCIPAL INVESTIGATOR, UNIVERSITY OF CAPE TOWN



# THE PEI #SCIENCEAFRICA UNCONFERENCE

### PANEL SESSIONS

We had two panel sessions headed by government ministers, business leaders and prominent academics, outlining key challenges and opportunities to get participants thinking. Q and As, table working groups and feedback plenaries followed each session.

### **WORKSHOPS**

Nine structured interactive workshops took place simultaneously across the venue in both the morning and afternoon sessions. Hosted by the PEI's Partners, they covered a range of topics on science and tech in Africa with participants choosing which workshop they wanted to attend.

### THE PEI PARTNERS FAIR

Within the UnConference, there was space for the PEI's partners to promote their work and for attendees to learn more about their engagement in Africa. Sponsor organisations had a dedicated space for company branding and promotional materials.

# **PEI EXCHANGE**

The event saw the launch of the <u>PEI exChange</u>, the world's first online matching platform for all those passionate about African development.

## **TABLE GROUPS**

The PEI UnConference is all about sharing ideas, opinions and insights and this started with the table groups. Discussion-led group working formed the basis for feedback during the panel sessions and in creating our Key Outcomes Report.

### **OPEN NETWORKING**

We guaranteed that attendees would meet lots of interesting and likeminded people, all committed to building a movement for science and technology in Africa, and that is just what happened.











The UnConference's interactive workshops, panels and debates sparked passionate discussions about science, technology and innovation in Africa. We've picked the following areas as the main themes that emerged throughout the course of the day.

# 1. BIG IDEAS FOR AFRICA: HARNESSING THE POWER OF A GLOBAL COMMUNITY COMMITTED TO AFRICAN DEVELOPMENT

In designing and convening events like the #ScienceAfrica UnConference, we've seen time and again that remarkable things happen when you bring people together – people who might be separated by geography or by professional background, with different perspectives, opinions and experiences, but united by a common passion. Accordingly, a major theme of this year's event was the importance of harnessing a range of stakeholders to create real social impact in Africa.

This was exemplified in the launch of PEI exChange at the UnConference. As the first online matching platform for all those passionate about African development, the platform brings people together. We also want to revolutionise the way you do business and do good in Africa.

Our 2016 UnConference attendees provided the initial inspiration for a digital platform that could leverage the power of a global community working in and for Africa. At last year's event, we challenged our attendees to think about the skills and expertise they were bringing to the table and the people and organisations they needed to connect with to drive change on the ground in Africa. That enthusiasm and passion was an amazing thing to see, with so many different people eager to connect, share knowledge and turn big ideas for Africa into big change for the continent.





OUR 2016 UNCONFERENCE ATTENDEES PROVIDED THE INITIAL INSPIRATION FOR A DIGITAL PLATFORM THAT COULD LEVERAGE THE POWER OF A GLOBAL COMMUNITY WORKING IN AND FOR AFRICA.



At this year's UnConference, our speakers emphasised the critical role of science and technology in realising their own ambitious projects for African development. For example, Professor Maggie Momba, Full Professor at the Tshwane University of Technology, explained how her research team was using nanotechnology filters to give rural communities access to clean and safe drinking water. In addition, Simon Kay, Head of International Operations and Partnerships at the Wellcome Trust, presented the Coalition for African Research and Innovation (CARI), which mobilises public-private-philanthropic partnership to a build a coordinated, well-funded, African-led innovation enterprise. Maya Kulycky, Program Director, IBM Research-Africa, also gave a compelling presentation on the organisation's commendable work to address the continent's grand challenges. A great example is the development of cognitive learning approaches to transform health care including cancer reporting and prevention.

Our delegates also relished the opportunity to share big ideas for African development, as well as think critically about the skills and expertise they needed to make these a reality. From developing children's understanding of computer science to harnessing crowd finance for development projects to channelling unused flood water in African cities into crop irrigation, attendees' ideas were both practical as well as ambitious. Dr. Joe DeVries, VP for Programme Development and Innovation at AGRA, commented that he felt humbled and inspired on learning of some of the work people were doing in the fields of African medical research and water purification.

Ultimately, 'Big Ideas for Africa' are at the heart of the PEI exChange. They are the catalysts around which users connect with people and projects – they can be large or small, simple or complex, country-specific or pan-Africa. In short, 'Big Ideas for Africa' are anything you're passionate about and are making happen, or want to make happen, to drive change for the continent.

The incredible power and potential of the PEI exChange is its ability to massively scale up such opportunities and collaborations, connecting a global community of people passionate about African development. We believe it's the people working in and for Africa who are the continent's greatest asset. Whether you are a student, doctor, entrepreneur, academic, architect, engineer, policy maker, journalist or corporate

manager – based on user-identified criteria, the PEI exChange provides personalised matches to help make your 'Big Idea for Africa' a reality. As we saw at the UnConference, it could be a charitable project, an academic collaboration, a new technology, a business plan, or more. It's a big idea because it's yours, and we want to help make it happen.

The PEI exChange is going to become an increasingly important area of the PEI's work, so join us on the journey. Sign up today promote your own work or support others, connect with the latest challenges and opportunities defining Africa today, and stay up to date with the projects, initiatives, technologies and businesses that will shape the continent tomorrow.



'BIG IDEAS FOR AFRICA'
ARE ANYTHING YOU'RE
PASSIONATE ABOUT AND
ARE MAKING HAPPEN, OR
WANT TO MAKE HAPPEN,
TO DRIVE CHANGE FOR THE
CONTINENT.



# 2. ACHIEVING 'SCIENTIFIC ENTREPRENEURIAL ACTIVISM': SCIENCE MUST EMPOWER PEOPLE

Throughout the day, our delegates emphasised the importance of fostering 'scientific entrepreneurial activism', or empowering people to harness science and technology to tackle the continent's greatest developmental challenges.

The UnConference's table working groups aimed to inspire our delegates to move beyond hackneyed rhetoric, and instead drive towards science and techled solutions. In the afternoon, our facilitator, Alison Coward, invited our delegates to fill out a 'Big Ideas for Africa' card, which asked them to think critically about their aspirations for African development, present their relevant professional and personal experience, and identify the skills and expertise needed to realise their ambitions. In this way, the activity mirrored the work of the PEI exChange, which aims to convene the full range of individuals passionate about Africa, and accelerate people-powered development.

Our attendees also argued that the growing availability of cutting-edge technologies has given a wider cross-section of people the means to innovate. In her presentation, Dr. Sipho Moyo, Director of Special Projects at the African Development Bank noted that we are living on the cusp of the Fourth Industrial Revolution, which is fundamentally different from the preceding industrial revolutions. It is characterised by a new range of technologies such as artificial intelligence, nanotechnology and robotics, which are impacting all economies and industries. Furthermore, she noted that these technologies allow 'almost anyone to invent', which has the potential to democratise development on the continent.



THE UNCONFERENCE WAS AN EXCELLENT GATHERING OF SUPPORTERS OF SCIENCE AND TECHNOLOGY ON THE AFRICAN CONTINENT. IT WAS AN EVENT WITH BOTH VISION AND PRACTICALITY, ENERGISING PARTICIPANTS.

MAYA KULYCKY,
PROGRAM DIRECTOR,
BUSINESS DEVELOPMENT
AND STRATEGY,
IBM RESEARCH-AFRICA





However, if African countries are to reap the full social impact of these transformative technologies, they need to work fast to equip citizens with high-level scientific and technical competences.

Similarly, our participants argued that there is an urgent need to provide greater opportunities and skills development for Africa's science and technology entrepreneurs. One group proposed the establishment of science and technology incubators and accelerators across all African countries. In addition, Gboyega Awokoya of the Lagos Business Academy ran a workshop, which examined creating a UK tech growth hub for African diaspora start-ups. He noted that such an initiative would help these entrepreneurs to scale up in the UK and provide market entry support to sell products to Africa. In this way, capacity building programmes of this nature will help entrepreneurs connect with advisors and peers who can help them avoid obstacles that make others fail, and provide counsel on building a viable business. The PEI exChange also provides a safe space for African startups to share resources and expertise, as well as look for collaborators.

Moving forward, the PEI's events and activities, particularly the PEI exChange, will foreground people-powered scientific and technological development for Africa.







THE #SCIENCEAFRICA
UNCONFERENCE BROUGHT
TOGETHER A GREAT GROUP
OF SPEAKERS, DELEGATES
AND DISRUPTORS AND
DEMONSTRATED THAT THE
PEI IS AN IMPORTANT PLAYER
IN THE DEVELOPMENT OF
THE AFRICAN RESEARCH
ECOSYSTEM.

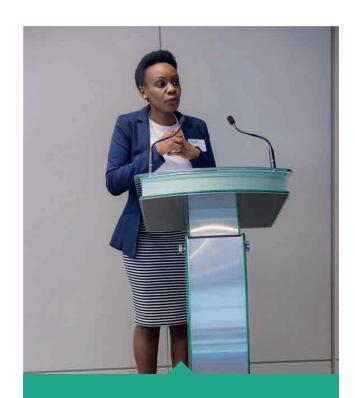
SIMON KAY, HEAD OF INTERNATIONAL OPERATIONS AND PARTNERSHIPS, THE WELLCOME TRUST.

# 3. FUNDING FOR SCIENCE MUST FOLLOW FUNDING FOR INFRASTRUCTURE

UnConference attendees noted that greater investment in hard and soft infrastructure was essential to enhancing Africa's scientific and technological output. They also pressed for new avenues for funding scientific research.

In his presentation, Professor Kelly Chibale, Principal Investigator and Professor at the University of Cape Town, argued that there is a need to "fund talented African scientists based on the continent to succeed, rather than survive" by providing world-class infrastructure. He referred to the success of H3D. Africa's first drug discovery and development centre. which opened in 2011 and includes a top-line medicinal chemistry lab launched in 2015, as well as a new stateof-the-art drug metabolism and pharmokinetics (DMPK) lab, developed last year. This high-quality physical infrastructure has fostered growth and empowered H3D to work more effectively on research, including on a single-dose cure for malaria, which kills more than 1 200 people a day. Similarly, Hon. Min. Ibrahim Mohammed Awal, Ghana's Minister for Business Development, argued that African governments have a crucial role to play in providing the right infrastructure to harness the power of science and technology. Such investments will help counter the brain drain that is stripping African countries of their best and brightest scientists and researchers, and ensure greater competitiveness in the region.





AFRICA'S BIGGEST UNTAPPED **RESOURCE IS ITS HUMAN** CAPITAL. SCIENCE & TECHNOLOGY SKILLS ARE KEY TO UNLOCKING THIS POTENTIAL AND **#SCIENCEAFRICA IS** PROVIDING AN IMPORTANT PLATFORM TO GALVANISE **ACTION IN THIS AREA.** WE WERE DELIGHTED TO PARTICIPATE IN THIS YEAR'S EDITION & LEAD A DISCUSSION AROUND **PUTTING WOMEN AT THE FOREFRONT OF INNOVATION** ON THE CONTINENT.

EUNICE BAGUMA BALL FOUNDER & EXECUTIVE DIRECTOR – AFRICA TECHNOLOGY BUSINESS NETWORK

Furthermore, delegates called for greater capacity building in higher education systems on the continent. Hon. Min. Blade Nzimande, South Africa's Minister for Higher Education and Training, argued that Africa's higher education institutions needed to enhance the professional development of their staff. This would help ensure that university lecturers have the skills and expertise to deliver high quality and vocationally relevant training for their students. We also hope that the PEI exChange will help facilitate skills development for university lecturers and researchers on the continent by providing a rich assortment of resources and contacts.



THE #SCIENCEAFRICA
UNCONFERENCE IS A UNIQUE
EVENT TO CONNECT LIKEMINDED INDIVIDUALS AND I
AM PLEASED TO HAVE BEEN
PART OF THIS YEAR'S EVENT.

RICHARD LEIGH, ENGAGEMENT & CAPACITY BUILDING MANAGER, AFFORD



Apart from increased government investment in R&D, the continent requires new sources of funding that addresses infrastructure needs and supports local researchers. In the Cambridge Africa Programme's workshop, 'Enabling/Supporting Scientific Research Excellence in African Institutions - What Role Can We All Play', participants called for more local funding for scientists and researchers whose work tackles key continental developmental problems. Richard Leigh of the African Foundation for Development also argued that members of the African diaspora could be a valuable source of funding for science and tech in Africa, especially given that they save an estimated \$53 billion per year. The PEI exChange can also play a valuable role in this regard by connecting scientists and researchers with funding opportunities on the continent.

Going forward, the PEI will emphasise greater investment in infrastructure and new sources of funding, as part of its campaign to increase scientific capacity on the continent.





# 4. TO INCREASE GENDER EQUALITY, WE MUST LISTEN TO THE NEEDS OF GIRLS - THEN GET OUT OF THEIR WAY!

Throughout the day, UnConference attendees emphasised the central place of girls and women in the continent's scientific and technological advancement.

Attendees argued that high quality, engaging and industry-relevant scientific education would help inspire more girls to pursue scientific careers. During the Africa Educational Trust's workshop entitled 'Brite Futures – Big Ideas for Low Resource Environments', participants argued that focusing on the early years is one of the most important ways to build the pipeline of talented girls who go on to study STEM subjects at a higher level. As a result, learning institutions must work to improve science education in the early years. They must also equip girls with the 21st century skills needed to transition to higher education, employment or entrepreneurship. This would also help ensure that women have the scientific and technological competences required to excel in an increasingly globalised economy.

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During the table working groups, attendees also called for more support for female scientists and researchers at all level. The PEI exChange has a particularly valuable role to play in this regard. Whether it be facilitating academic collaboration, sharing new innovations, promoting research and development projects, or uncovering funding opportunities, the platform can provide girls and women with the resources and support they need to pursue meaningful scientific careers on the continent.

During the interactive workshops, participants also stressed the need for scientific and technological innovations that better reflect the requirements of girls and women. The African Technology Business Network's workshop 'Gender Lens Innovation' argued that all innovation processes should be examined in terms of gender. By using a 'gender lens' approach, businesses and organisations can ensure that they foreground women's needs and concerns in innovation processes, rather than as an afterthought. Such thinking will also help scientists, researchers and companies to create development solutions that enable women to participate equally in African societies and economies.

Ultimately, gender equality is both a developmental and business imperative for the continent. Going forward, the PEI will stress the needs of girls and women throughout its work.



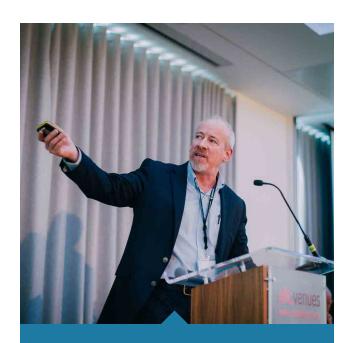
# 5. AFRICA NEEDS A GREEN REVOLUTION BUT NOT A ONE SIZE FITS ALL GREEN REVOLUTION

UnConference attendees stressed the central role that science and technology can play in enhancing agricultural development in Africa. There is a need for locally delivered skills development to reap the full effects of these innovations.

First, Dr. Joe DeVries argued that scientific research can provide improved seed varieties needed to boost agricultural productivity, enhance food security, and alleviate poverty. Given Sub-Saharan Africa's immense diversity, he argued African countries must increase local production of improved seed varieties, which are tailored for specific ecological conditions and resistant to prevailing pests and diseases. Using these technologies and new strategies, Africa could feed the world's population, which is set to reach 9 billion by 2030. To achieve this potential, Dr. DeVries stressed that local governments need to provide funding for plant breeding and invest in their public scientists.

If agriculture is to play its true role as a crucial agent in Africa's socio-economic transformation, attendees also argued that the sector must be approached as a business, rather than a way of life. To achieve this, appropriate and localised training is vital. Dr. Joe DeVries encouraged local agribusinesses to train their managers and technicians in the technologies that make their companies effective. Dr. Sipho Moyo also argued that African countries need to incentivise and support young people to become 'agri-preneurs'. She referred to the African Development Bank's initiative, ENABLE Youth (Empowering Noble Agribusiness-Led Employment, which will facilitate the development of an enabling policy and business environment that incentivises young people to start agribusinesses. The initiative will also provide business development and skills training that helps young agripreneurs to improve production and lead self-sustaining businesses. In addition, the PEI exChange can also help agri-preneurs to exchange skills and expertise, as well as find the resources and contacts they need to grow their businesses.

Considering its central place in accelerating sustainable and inclusive development in Africa, the PEI will emphasise agriculture in its ongoing events and activities.



THIS WAS A VERY **INTERESTING AND USEFUL EVENT. THE MIX OF PEOPLE** AT THE PEI UNCONFERENCE IS DIFFERENT - AND MORE **VIBRANT - THAN THE USUAL** CROWD. THE THEME -SCIENTIFIC INDEPENDENCE **FOR AFRICA - RESONATED** WITH ME AS A PLANT **BREEDER WHO HAS SEEN UP CLOSE HOW DIVERSE** THE CROP PRODUCTION **CONDITIONS ARE IN** AFRICA AND HOW BADLY SCIENTIFIC KNOWLEDGE AND INDEPENDENCE **ARE TO MEETING THOSE** CHALLENGES. I WOULD ATTEND AGAIN - AND BRING A FEW COLLEAGUES!

DR JOE DEVRIES, VP PROGRAMME DEVELOPMENT AND INNOVATION, AGRA

# **UNCONFERENCE STATS AND FACTS**

IT'S REFRESHING TO SEE A
RICH MIX OF DELEGATES
ACROSS VARIOUS INDUSTRIES
WHO ARE INTERESTED AND
COMMITTED TO AFRICA'S
SCIENTIFIC INDEPENDENCE.
THE PEI UNCONFERENCE WILL
NO DOUBT FACILITATE POSITIVE
PARTNERSHIPS TOWARDS THE
FUTURE OF SCIENCE IN AFRICA.

HEPHZI ANGELA TAGOE, CO-FOUNDER, GHSCIENTIFIC



# SENIORITY We create networking opportunities for people across the professional spectrum. ENTRY/ OTHER 37% WANAGER 15% VIP 18%



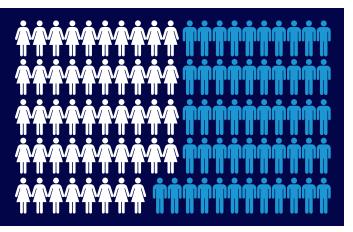


# **UNCONFERENCE STATS AND FACTS**

# **GENDER**

We believe female equality and getting girls and women into science is essential, and this is reflected in the divide of our attendees.







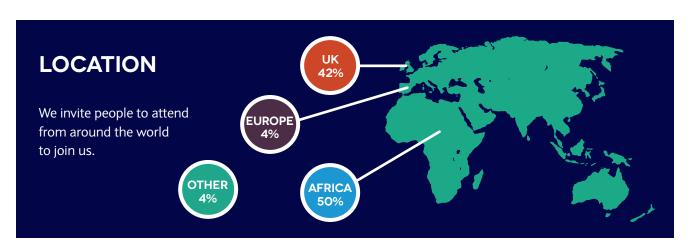
OUR WORKSHOP PROVIDED
MYSELF, PARTICIPANTS
AND COLLEAGUES WITH AN
OPPORTUNITY TO USE MEDIA
PROTOTYPES TO QUESTION HOW
PRIMARY SCHOOL EDUCATORS
INTERPRET KIDS PERCEPTION OF
VISUALLY-DRIVEN NARRATIVES.
PRODUCTIVE FEEDBACK FROM
WORKSHOP PARTICIPANTS
ALLOWED ME TO QUESTION
SOME OF MY ASSUMPTIONS, IT
IS AS INSTRUCTIVE AS IT WAS A
DIRECTIONAL EXPERIENCE.

AYODEJI ALAKA, DESIGN STRATEGIST, OSANNIMU





# **UNCONFERENCE STATS AND FACTS**







DR. PAULINE ESSAH, PROGRAMME MANAGER, CAMBRIDGE-AFRICA PROGRAMME







# THE PEI PARTNERS FORUM

The PEI #ScienceAfrica UnConference is part of the PEI Partners Forum – a membership platform through which the PEI provides businesses and other organisations with an engaging and valuable platform to collaborate, promote their work and explore key issues related to scientific, technological and commercial development on the continent.

As a charity, we are committed to finding new ways to better connect the many great organisations out there and that is what the PEI Partners Forum does through our events in the UK, Africa and around the world. These events range from private high-level breakfasts to all-day conferences, and all address the most pressing challenges, incorporate the most cutting-edge science and technology and are all designed to engage a wide variety of stakeholders, including business leaders, academics and policy makers.

Members of the Partners Forum are able to participate in all activities and become an integral part of the expanding PEI networks in Africa and beyond, taking the lead in shaping a number of sessions through the year focussed on their priority areas. Not only does this give us a growing group of organisations committed to building a movement for science in Africa, but the Partners Forum also provides a fantastic platform for outreach, promotion and engagement.

# **OUR PARTNERS**

This event and the work of the Planet Earth Institute is made possible due to the generous support we receive from a diverse range of partners and supporters. If you would like to find out more about the PEI Partners Forum, please contact Nick Staite (Chief Operations Officer): nick@planetearthinstitute.org.uk.



































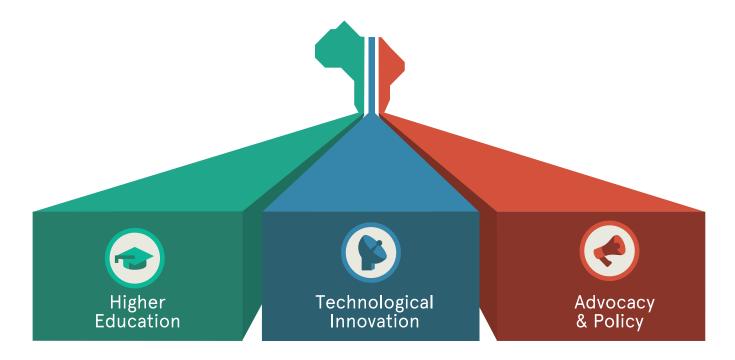






# THE PLANET EARTH INSTITUTE (PEI)

The Planet Earth Institute (PEI) is an international NGO and charity working for the scientific independence of Africa. While other emerging regions have invested heavily in science and technology, Africa is falling behind in the race for scientific development. And we want to change that, fast. All of our work is built around the three pathways we believe will help lead Africa to scientific independence: High Education, Technological Innovation and Policy and Advocacy. We want to support and strengthen higher education institutions, help incubate technologies able to drive scientific advancement and campaign for a science-led development agenda for Africa. Scientific independence does not mean scientific isolation. It means working to create the conditions where African countries have the right policy environment, the right infrastructure and, crucially, the right human capital to address the many challenges and opportunities the continent faces.



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