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President of the Republic of Mauritius and Fellow of the African Academy of Sciences

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MESSAGE FROM THE AAS PRESIDENT

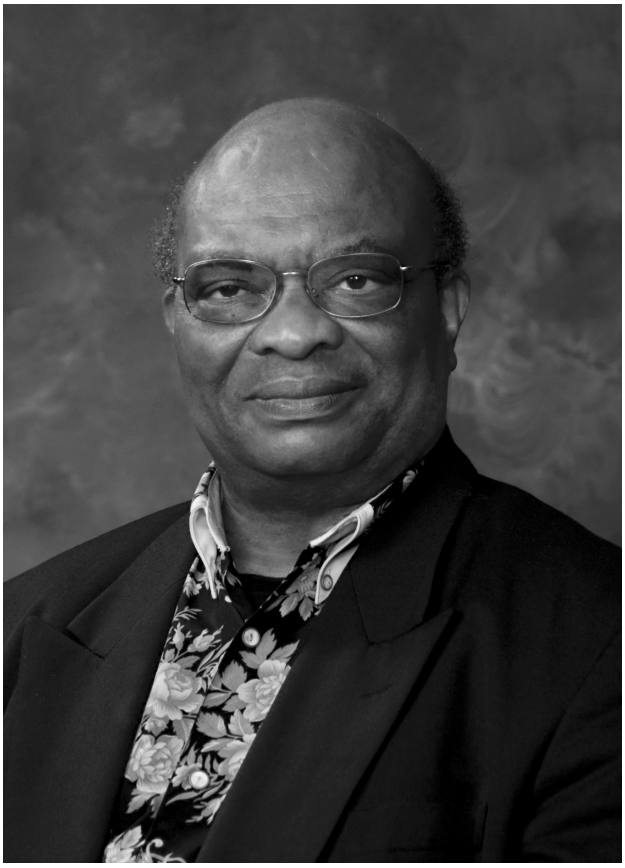
It is my great pleasure to write my message for the second edition of our newsletter for 2015. I am happy to say that we have a lot of success stories to report for the first half of this year.

Our capacity building efforts continue to make steady progress this year. As a follow-up to the Climate Impact Research Capacity and Leadership Enhancement (CIRCLE) Champion workshop held from February 2 - 4, and CIRCLE Visiting Fellows Induction workshop, February 5 - 7, there was a "Mentoring, Train-the-Trainer" workshop held in May from 16 - 17 in Johannesburg, South Africa, which was attended by 33 mentoring coordinators designated by CIRCLE participating institutions.

I commend to you the article "Benefits of the CIRCLE Programme: Enhancing Intra-African Collaboration building Research Leaders" by Dr Olawale Emmanuel Olayide, a CIRCLE visiting fellow who has discussed 12 benefits of the CIRCLE programme in this issue of the newsletter.

In terms of strengthening existing relationships, we are happy to report that the AESA platform is waxing from strength to strength and that the platform featured at the African Union Heads of State summit in Johannesburg, South Africa, in June.

The first AAS-KAST (Korean Academy of Science and Technology) symposium took place from July 6 - 7 at the AAS Secretariat in Nairobi . It was a very good meeting between our academy and the Korean Academy of Science and Technology. It is envisaged that this symposium will be a prelude to further collaboration and cooperation programmes between our two academies.



Prof Aderemi Kuku, AAS President

On increasing the visibility of AAS and popularisation of science in Africa, the planning of the first AAS Pan-African Science Olympiads is at an advanced stage. The Olympiads will be held in cooperation with the Nigerian Federal Ministry of Education and the National Mathematical Center in Abuja, Nigeria. The Nigerian Federal Ministry of Education has set up a Ministerial National Committee with several subcommittees that will facilitate the implementation of various aspects of the activities connected with the olympiads.

In the direction of activating sub-regional activities, the AAS Affiliates Programme is on track in the various sub-regions under the vice-presidents. The processes of actualising the Affiliates Programme, e.g. its scoring system, is currently going through some fine tuning between the secretariat and the vice presidents.

Our Governing Council has also been very concerned about the welfare of AAS staff.

The GC meeting in February 2015 approved pension and group life insurance schemes for AAS staff and bringing the salaries of AAS staff in line with other comparable organisations subject to availability of funds.

At this juncture, I like to welcome most heartily the new additions to AAS staff - namely, Hannah Ngugi, Anne Kimari, Alphonsus Neba, Josephine Karuri, Deborah-Fay Ndlovu, Susan Gichoga, Angelina Yalwala, Nidhee Jadeja, and Isabel Imbuye. I wish all of them every success in their various positions at AAS.

It is my great pleasure to congratulate AAS Fellows who have recently received awards -Professor Shem Wandiga of the University of Nairobi, Kenya, and Professor Tebello Nkoyong of Rhodes University, Grahamstown, South Africa, for being awarded the UNESCO Prize for Nanotechnology and Nanosciences.

I also heartily congratulate Professor Zeyaur Khan of the International Center for Insect Physiology and Ecology (*icipe*), Nairobi, Kenya, for receiving the Louis Malassis prize for outstanding career in Agricultural Development.

Furthermore, it is my singular pleasure and honour to congratulate Professor Ameenah Gurib-Fakim who was sworn in as Head of State for Mauritius on June 6, 2015. We are very proud of this spectacular achievement of a fellow of the AAS and we wish Her Excellency President Ameenah Gurib-Fakim a resoundingly successful tenure of office.

Finally I like to congratulate Professor Félix Toteu for his appointment as acting treasurer of the AAS to replace Dr Thomas Kariuki who is now director of AESA .

I wish Professor Toteu a very successful tenure of office.

Indigenous Knowledge Systems, Knowledge Development and Policy Reforms: Encouraging Innovations in Traditional Knowledge

By Catherine Odora Hoppers

Catherine Odora Hoppers, AAS fellow and DST/NRF SARCHI chair

Indigenous Knowledge Systems (IKS) are in medicine, astronomy, agriculture, conflict management, ecology, law, jurisprudence, social welfare, food systems, metallurgy, textile and education. At the heart of it, there are pragmatic clusters which combine both nature and livelihood, and aesthetics. When one looks for the gender perspective, one can see textile, pottery, food, technology, education, and crafts. When one turns to people and society you find conflict resolution, law and jurisprudence; and welfare. In health, one finds pharmacology, obstetrics and therapy systems. Tenets of cosmology and world view informing IKS comprise of relationship with nature, earth and spirituality, relationship with other human beings, Ubuntu, concept of personhood, and knowledge primarily as wisdom which is acquired or which is innate.

Recognition, development, promotion, protection and integration without duress

As it stands, it is an area which is not only under-articulated, but one to which mainstream practice across the board has trained its members to despise, and is thus, without an established theoretical, methodological antecedents. Therefore, there is need to develop a generic, inclusive well-articulated conceptual / analytical framework which is capable of tackling what could be termed the "dehydrated imagination" of knowledge workers and brokers, and around which the disparate scatterlings of IKS activities can hang.

One needs to identify scientists working beyond the confines of disciplines to buttress and service this work in order to secure its endorsement from a wide range of potential stakeholders through rigorous intellectual debate and dialogue within the African continent, and internationally.

Rethinking knowledge

Knowledge is taken as a universal heritage and universal resource which should be protected, promoted, developed and (where appropriate) conserved. Knowledge is diverse and varied. Knowledge is a commodity, but knowledge is also wisdom. IKS refers to the systems of knowledge encompassing medicine, pharmacology, philosophy, jurisprudence, ethics, bio-diversity, food and nutrition, legal, and governance systems, most of which are currently excluded from the mainstream. These knowledges are marginalised, museumised (Visvanathan, 1997), or completely subjugated. They need to be excavated, critically evaluated, validated, recast in real time, and put at the service of present and succeeding generations. It is crucial to recognise that the world stands at cross-roads in search for new, human-centered visions of development. All the agencies of the United Nations are seeking to promote paradigms of sustainable human development and innovations that build on knowledge resources existing in communities. The World Trade Organization is attempting to establish new regimes of Intellectual Property Rights at a time when Third World countries are not at all prepared.

Africa is seeking its own renaissance, seeking to establish the terms of its development. UNESCO's call (Science Agenda 2000 for instance) is for a more inclusive, a more responsive, and a more dialogical science.

We live in a world in which relations of subjection, suffering, dispossession, and contempt for human dignity and the sanctity of life are at the centre of human existence. We live in a time when conflicts and wars are racking the continent of Africa. It is with urgency that indigenous resources for peace-building and human security be retrieved and brought into play. We are witnesses to the gross asymmetry in the rights and responsibility of those who produce knowledge particularly in the informal sector, and those who go about valorizing it in the formal sector. For a great majority of the population of Africa, the loss of cultural reference points have culminated in the fundamental breakdown of entire societies. Finally, that globalisation is threatening the appropriation of the collective knowledge of non-western societies into proprietary knowledge for the profit of a few.

The above caveats have implications for project level action strategy at the African Academy of Sciences (AAS).

The AAS should play a central part in developing conceptual grids and practical strategies by which existing policies can be improved and deep transformations can be envisaged in scientific and research institutions. It should develop, and facilitate the further development of the articulation of critical and constructivist perspectives that together will facilitate the gradual transformation of scientific ethos, ethics and practice, while developing a strong and committed system of protocols for promoting and protecting IKS, bio-diversity, and the intellectual property of local communities.

The AAS should facilitate the opening up of new moral and cognitive spaces within which constructive dialogue between people, and between knowledge systems can occur to help bring to light the issue of the ethics of extraction and responsibility, while exploring avenues by which protocols for benefit sharing and value addition to local innovations can be established.

The AAS should take the lead in challenging academic disciplines across the board to revisit their core perceptions of African society, to question their theoretical habits and images of thought, and especially the normative and conceptual backgrounds that shape the rules and define parameters for what is considered "real" knowledge in academic work.

In consonance with the principles of natural justice, the AAS should scrutinise, and work to transform the present intellectual property

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regime in such a way that it can truly protect the "knowledge-rich, but "economically poor" local communities. These communities should be assisted through specific interventions, to have a greater say in all matters regarding the study, extraction and/or commercialisation of biodiversity. I see the AAS as a people's academy and that the time is now to facilitate the purposive construction of the linkage and dialogue between IKS and the formal knowledge systems, and especially in devising interventions aimed at identifying, and scaling up local level innovations.

We need to coalesce, stimulate and provide a coordinating point for disparate individuals working on IKS in Africa and globally.

Implications for the disciplines in Africa

The first step is to take down Africa from the double cross within which it has been haplessly hung (i.e. the Hobbesian picture of pre-European Africa milling with brutal savages and the Rousseurean picture of perpetual infantile people). As Mudimbe and later Magubane has said for anthropology, some soul searching as to how the "savage" is to become an active knowing participant; for the social sciences, the questioning of the theoretical bases and goals of the social sciences in general. For history, a scrutiny of the semantic shift that turned the illiterate from one ignorant of the alphabet, to a complete ignorant and while for education, questions of values, value education, recognition of prior learning all form the core of what must be revisited. For development theory, a re-appraisal of the proliferation of "Africa study centres", "development studies institutes", and the meaning of sustainable development.

We have to recognise that the institutional crisis we are facing may not be merely one of finances or management procedures, but of the actual collapse of the paradigm of society around which is surrounding us. We cannot undertake applied research without clarifying "for what society?"

Development and innovation

At the heart of development is the need for innovation. Innovations in IKS can be encouraged in several ways. The first is through encouraging documentation and dissemination on IKS. Looking at China for instance, that the reason Chinese traditional medicines could acquire such an objective status was due partly to its actual effective formal application. The fact that it has been written down and preserved as a classic made it easier to develop validation procedures and cross-checking. It also made it easier to develop curriculum and systematised formal courses in universities. In Africa, the medium of communication has been oral. This places urgency on the formal institutions to develop careful and ethical documentation strategies that will not alienate the owners of the knowledge. Documentation will also enable us to recognise that the boundaries between the traditional and formal systems of knowledge may actually be false and that the informal may have formal rules wanting to be discovered. It is only by doing so that we begin to encourage discussions on the content and substance of IKS.

Dissemination should enable information about creative people to reach similar people in other parts of the continent, and trigger further imagination at community level. However, it should also reach the public domain so that people in positions of authority, politics etc. should become aware and demonstrate this concretely by showing appreciation and encouragement in a strategic manner.

Dissemination should be done in all official languages, and must mention people by name, so that individuals can relate directly to the event. This is a strategy which can be developed in our context through intensive utilisation of the PUSET (public understanding of science and technology), and making this work for previously marginalised communities.

The second way to encourage innovation is by developing strategies and concrete plans for adding value to local products that are generated or owned by individuals or families in the community. The issue here is that biodiversity is high in local communities in the first place due to the diversity in soil, climate, and other physical and social structures.

But poverty is high because value has not been put on these diversities in taste, shapes and qualities of natural products. Thus, despite their closeness with nature, and their expertise in specific utilisation of this knowledge, poverty may still force them to degrade the environment. The regions with high biodiversity also often have very poor public infrastructure.

Moreover, the low demand for the ecological and technological skills leads them to be labeled using the concept derived from industry: "unskilled" labour. Large numbers of local communities across the world have shared without hesitation, their knowledge about local biodiversity and its different uses with outsiders including researchers, corporations, gene collectors, and of course NGOs. However, in some cases, cultures that put restrictions on being materially compensated may in fact have mechanisms for compensation, but which favours nature or other non-human beings. In other cases, local communities have cultural and spiritual taboos against receiving compensation because of the high level of ethics of sharing that exists in the local traditions.

In order to add value through technology especially through partnerships with private sector in the continent, new protocols must be developed, which enable local communities to lay claim on some of the resources available in their settings in ways which are just and fair. Adding value will encourage local communities to co-exist with bio-diversity resources by reducing, controlling, or carefully monitoring primary extraction.

Thirdly, innovations can be encouraged through active recognition and validation. It is now recognised that one of the serious threats to the sustainability of natural resources is the erosion of people's knowledge, and the basic reason for this is the low value attached to it (Gupta, 1999). Indigenous communities who practice positive conservation methods should be rewarded for their contribution to mankind.

Recognition needs not be only monetary. It can be social – in that public statements are made to honour particular individuals in communities for specific categories of innovations or creativity, or outstanding contributions to development using IKS. Injunctions can also be made on academic researchers who obtain knowledge from local communities to specify the individuals by name so that those people can become recorded in scientific documents are living sources of knowledge.

At present scientific practice only considers information that is written down to be put in the references. This practice works specifically against non-literate societies. There should be nothing wrong with introducing new ethics of research practice that encourages mutual recognition of both the content of the knowledge and the individuals who have owned them. This should simply be the best thing to do.

Fourthly, innovations can also be encouraged by working to restore self-confidence and will of ordinary people (i.e. reaffirming their identity). As people begin to understand the causes of the underlying dysfunctional social behaviour, they are able to connect it to the disruption of their identity. They begin to understand that what began as the right of Europeans to "discover" them soon became the right of Europeans to "conquer" them. This was to become the right to "monopolise the parameters of interpretation" and the "construction of meaning" that our institutions abide by. Continue on page 5

Encouraging Innovations in Traditional Knowledge

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In many parts of Africa, the human spirit became overwhelmed by the physical and emotional abuse resulting from the various dimensions of the colonial and apartheid history. These stresses remain long after the oppressive forces are removed.

People remain in deep hurt whenever their identity is mentioned, because this identity has suffered so much stereotyping. Therefore versions of history naming the role played by local people must be written. Formal institutions that are entrusted with legitimising and validating knowledge therefore cannot remain indifferent to this situation. They have to recognise the role that their silence plays in perpetuating this state of affairs.

Finally, innovations at the local level can also be encouraged through the creation of protection mechanisms. When people know that what they create is being recognised, that it has value, and that it becomes part of a personal or collective legacy, their creativity may get challenged and they can strive to create more.

However, central to this should be the creation of people and community-friendly legislation that people can understand and utilise in their daily life, and which they know, protects their interests. Regulations requiring full disclosure by any corporation seeking patent protection on any plant based drug should contain a proviso requiring disclosure that the source material has been rightfully and lawfully acquired.

Rightful acquisition would involve moral as well as ethical issues in access to bio-diversity. For instance, if a local community has not asked for any price for sharing the material knowledge about it, corporations could still be bound by an ethical conduct to set up trust funds and other forms of reciprocity for local communities.

It would be incumbent upon it to ensure that the superior ethics of local communities and the fact that they remain poor while conserving valuable bio-diversity and the knowledge around it does not become a reason for perpetuating their poverty.

The lawful acquisition would imply that prior informed consent and approval and involvement of local communities and creative individuals have been ensured.

In conclusion, it is clear that there is a lot of work to be done, because unlike in China where the government undertook to recognise, validate and accredit IKS in the formal sector; we in Africa still have a long way to go. But we are getting there. What we need to do is to set higher standards both ethically and economically for any interaction with communities in terms of the content of local knowledges. It is only by doing this that we will affirm that knowledge is universal, that it is diverse, and that developing countries as a whole need the total knowledge resource existing in the countries in order to stand up and be counted.

Science and technology cannot be creatures without legs or trees without roots. If there is anything we have learnt from the many lessons that the world has taught us, is that a key aspect governing science, is the fact that science does have roots in culture, and that it is closely bound to it. When this is done, development becomes a natural process with far less trauma .

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About the Author

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1st KAST-AAS symposium

The African Academy of Sciences (AAS) and the Korean Academy of Science and Technology (KAST) held a Bilateral Symposium on 6 and 7 July 2015, on the theme "Recent advances in bio-sciences and bio-technology for socio-economic development".

The event was held at the secretariat of the AAS in Nairobi, Kenya. The symposium was the first of a series that the AAS and KAST will organise every year.

The symposium had five speakers each from AAS and KAST who spoke on transgenic plants with resilience to environmental stress; cell biology and regenerative medicine; industrially useful extractives from environmental sources and natural products.

Delegates at the 1st KAST-AAS bilateral symposium held under the theme: 'Recent advances in biosciences and biotechnology for socio-economic development.'

CIRCLE Mentoring Train-the-Trainer workshop

The Climate Impact Research Capacity and Leadership Enhancement (CIRCLE) programme organised a "Mentoring Train-the-Trainer Workshop" from 16 -17 May 2015 in Johannesburg, South Africa.

Participants at the CIRCLE Mentoring Train-the-Trainer workshop in South Africa

Institutionalising Mentorship in African Higher Education systems has been identified as a key strand of the Institutional Strengthening component of the CIRCLE programme.

The workshop was attended by 33 mentoring coordinators designated by CIRCLE participation institutions. The training was facilitated by Vitae's Director of Development, Alison Mitchell, and Katie Wheat, Training and Development Manager.

Dr Benji Gyampoh, programme officer of the African Academy of Sciences (AAS) who oversees the implementation of the CIRCLE programme, welcomed the participants to the training and gave an update of the CIRCLE for the one year of implementation.

Other highlights of the training included presentations of case studies of mentoring in some African universities which highlighted personal experiences and institutional climate for mentoring.

The participants discussed and developed a draft a job description of a mentor based on the competences of an effective mentor as well as a checklist for CIRCLE mentoring relationships which included CIRCLE mentoring charters for mentors, mentees and institutions.

Botswana to host AAS General Assembly, 2016

The African Academy of Sciences' 10th General Assembly will be held at Mowana Lodge in Kasane, Botswana, from 21 to 24 June 2016.

Delegates at the ninth General Assembly in Congo Brazzaville

New fellows selected in 2014 and 2015 will be inducted at the event, which will also include the launch of the Botswana Academy of Sciences. Nelson Torto, the chief executive officer of the Botswana Institute for Technology Research and Innovation (BITRI), announced the creation of the Botswana Academy of Sciences during his visit to the AAS.
He was at the AAS to present a talk titled 'Botswana embraces nanotechnology' on 4 May.
Torto told scientists at the seminar that the country's proposed science academy will help to organise the AAS General Assembly. BITRI has joined forces with the University of Botswana, and the Ministry of Infrastructure, Science and Technology to create the country's science academy.

Torto also said his organisation has introduced a number of initiatives to attract government funding (see opinion piece on page 7).

Among these are the ICTAssociate@BITRI, an entrepreneurship and mentoring programme that allows BITRI to provide work experience to young graduates. BITRI has recruited 60 fellows who are graduates from local, regional as well as international universities. Twenty of the fellows are based in the capital Gaborone while the remaining 40 will be located in the towns of Palapye and Kanye. The programme was recently launched by Nonofo Molefhi, the minister of Infrastructure, Science and Technology.

BITRI has also installed solar powered street lights in some villages in Botswana through the Seding™ Street Light initiative. The provision of solar powered lights has helped some villagers and will serve as a platform to access Wi-Fi in the near future.

The institution has also developed a mobile app for indigenous games, which can now be downloaded online.

Torto said that by implementing these projects, BITRI has been able to show the impact of research and enabled it to lobby for funding for bigger projects. One of the projects is the Kalahari sand building block, which will use sand to make bricks for building low cost houses.

AAS, EAS to hold proposal development workshop in Ethiopia

The African Academy of Sciences' Alliance for Accelerating Excellence in Science in Africa and the Ethiopian Academy of Sciences are organising a workshop to help early and mid-career scientists improve their skills for writing proposals. This workshop is fully funded by the Bill and Melinda Gates Foundation BMGF).

The Proposal Development Workshop will take place from 20 to 22 July 2015 at Elilly International hotel in Addis Ababa, Ethiopia. Over 30 researchers from across Africa have been selected to take part in the workshop, which will be held in two parts.

Participants will learn principles, requirements and formats of various applications from facilitators from organisations including the Bill and Melinda Gates Foundation, AAS, the Centre for the AIDS Programme of Research in South Africa, Tanzania's Ifakara Health Institute, and the UK's Medical Research Council. It will also include a presentation on how to successfully apply for funding from the Gates Foundation's Grand Challenges initiative.

The second part includes a peer review exercise where participants will play the role of reviewers. They will evaluate each other's proposals and decide which to recommend for funding.

The workshop is part of a series that the AAS will organise in coming years as part of the Alliance for Accelerating Excellence in Science in Africa, a funding platform for developing science strategies and funding research in Africa.

AESA runs the workshops to support African scientists to develop their ideas and careers and to train and retain the continent's best talent.

Dr Tom Kariuki talks about AESA

In the last issue of this Newsletter, we carried news on the establishment of a new funding platform called Accelerating Excellence in Science in Africa (AESA); an initiative of the African Academy of Sciences (AAS) and the NEPAD Agency to develop science strategies and manage international and pan African grants.

In this issue, Dr Tom Kariuki, the director of AESA, speaks to SCIENCE*POLICY*AFRICA" about why AESA is important for Africa.

What is AESA ?

AESA is a funding platform created by the AAS and the NEPAD Planning and Coordinating Agency, a technical arm of the African Union, to provide grant support, set the agenda and research priorities for the continent and build a community of African and global partners to promote excellence in science in Africa.

AESA's initial focus is health research but it will encompass others areas of science to promote science-led development.

AESA is also currently partnering with the Wellcome Trust, the Bill and Melinda Gates Foundation and the UK's Department for International Development (DFID).

The team at the recently created Alliance for Accelerating Excellence in Science in Africa (AESA)

What activities will AESA undertake?

AESA will implement major research schemes on the continent on behalf of our global partners. We will also develop new initiatives of our own. AESA is a partner in the DELTAS programme, the Wellcome Trust-supported scheme for developing world-class research leaders in Africa and generating research to improve health.

AESA is also keen to implement a grant management certification tool in partnership with some global funders to rate the research support, professional and financial capacities of organisations that receive AESA partners' support. It will make

Dr Tom Kariuki, AESA Director

African organisations attract more funding and reduce the administrative burdens of having to undertake numerous separate annual audits demanded by a myriad of funders. The funding partners will, in turn, be assured that their funds are going to recipient organisations with certified capacities to manage the grants.

AESA will function as a think tank with our key activity in 2015-2016 being the development of an African Health Research Strategy to be incorporated in the AU African Health Sciences Strategy.

These activities will be monitored and evaluated to allow us to learn and offer key advice to our partners on their investments in Africa.

You have managed to win the trust of funders who will cede the control of their funding to AESA. How did you do this?

The AAS, under the leadership of its Governing Council, has been repositioning itself since the launch of its current strategy in 2013, which led to us partnering with NEPAD. At the same time, our global partners –the Wellcome Trust, the Gates Foundation and DFID – were independently reviewing their African programmes. They were looking for African partners to jointly implement their programmes with and gradually transfer the management of their initiatives once the necessary capacities were in place in the African organisation. The AAS has established a good track record of leadership that could be trusted, and its leadership worked hard to deliver the project.

What will be the benefits of managing the international grants in a central place on the continent?

There have been long running debates about whether the research agenda for Africa was being formulated and shaped inside or outside of the continent. So shifting the management of these large programmes to the continent is more than just symbolic. AESA will bring an Africa-centric focus to these programmes, providing a perspective that is in line with the vision and mission of the continent's blue print for science, the AU's Science Technology and Innovation Strategy for Africa (STISA 2024).

The AESA team also has a deep understanding of the continent's science needs, priorities and strategies and we will use this knowledge to help shape current and future science programmes. At the heart of our approach will be an emphasis on growth of scientific leadership that can deliver quality science and innovations.

You also want to attract funding. How will you do that?

AESA will use the support of global partners to leverage additional funding by seeking matching funds especially from African sources. Our key African partner, NEPAD, is committing $500,000 to support AESA. We are also developing a road map and strategies to engage various African and global partners to support our agenda.
We are in discussions with the private sector and philanthropists on the continent on the value for investing in science and technology.

What do you want to have achieved in three years?

We want to have helped some researchers to develop their careers, to build the capacity of institutions to conduct quality research and attract funding from African governments and have built the capacity to manage grants.

Mentoring and training in Cell Biology and Regenerative medicine

Prof Zeyaur Khan wins major prize

AAS Fellow and researcher at the International Centre for Insect Physiology and Ecology, *icipe*, Prof Zeyaur Khan, has won the prestigious Louis Malassis Prize for Outstanding Career in Agricultural Development. He received the prize on March 16, 2015 during a special session of the 3rd Global Science Conference on Climate-Smart Agriculture in Montpellier, France, organised by the Agropolis Foundation.

Prof Khan received this great recognition for his work on developing the 'push-pull' system to control pests and weeds, with his team at *icipe*, and colleagues at the Rothamsted Research in the United Kingdom.

Prof Khan expressed his joy at receiving the award after devoting his life to developing and adapting push-pull, and helping to bring food security to Africa. His aim is to reach at least 10 million people with the technology, while expanding the science behind push–pull to more cropping systems and different agroecosystems.

The push-pull system is simple, but powerful. Cereals such as maize, sorghum or rice are grown with two companion plants, *Desmodium* and Napier grass, which together tackle stem borers and the parasitic weed *Striga*. *Desmodium*, grown between the rows of maize, acts as a repellent plant, driving stem borers from the cereal crop (the 'push'). Napier grass, planted as a border to the plot, acts as a trap plant, attracting stemborers (the 'pull').

Push-pull is a perfect example of a practical, affordable, low-input production system and with significant impact on the livelihoods of the poorest African farmers.

AAS Executive Director chairs UNESCO Basic Sciences board

The African Academy of Sciences' executive director Berhanu Abegaz has been elected chair of the UNESCO International Basic Sciences Programme (IBSP) scientific board.

The United Nations Educational, Scientific and Cultural Organization established the multidisciplinary programme to strengthen national capacities in the basic sciences and science education. Its scientific board advices UNESCO's leadership on basic science matters.

Abegaz, who was previously vice-chair of the board, was elected at the ninth meeting of the IBSP scientific board held in Paris, France, in May.

He will be deputised by Marina Bentivoglio, a professor of histology at the University of Verona in Italy and Glacius Oliva, a professor of structural biology at the University of São Paulo in Brazil.

Other members of the scientific board include Abdelmalek Thalal, a professor of crystallography at the University of Cadi Ayyad in Morocco.

AAS fellows awarded UNESCO prize for nanoscience

UNESCO Director-General Irina Bokova presented the UNESCO Medal "For the Development of Nanoscience and Nanotechnologies" to eight laureates during a ceremony organized at UNESCO Headquarters on 10 April 2015.

Two fellows of the African Academy of Sciences were among the eight recipients of the medal. Prof Shem Wandiga, a professor of chemistry at Kenya's University of Nairobi and Prof Tebello Nyokong from South Africa's Rhodes University received their medals at a ceremony held in France. The other six medallists are from the United States and Russia.

Prof Wandiga (first from left.). Photo Credit: UNESCO

The UNESCO Medal "For contribution to the development of nanoscience and nanotechnologies" was estab-lished in 2010 at the initiative of the Thematic group on "Nanoscience and Nanotechnologies" of the Internation-al Commission on the Development of the Encyclopedia of Life Support Sys-tems (EOLSS) – one of the world's larg-est knowledge bases on sustainable development, evolving under the aegis of UNESCO. UNESCO – the United Nations Educational, Scientific and Cultural Organi-zation – gives the prize to researchers whose work has had a profound impact within the discipline.

Gurib-Fakim appointed president of Mauritius

Professor Ameenah Gurib-Fakim, a fellow of the African Academy of Sciences, was inaugurated as president of Mauritius on 6 June 2015.

Prof Gurib-Fakim, a chemistry researcher who focuses on medicinal plants, is the first female president of the island since it gained its independence in 1968. She was designated by the Mauritian government on 1 June after the resignation of Rajkeswur Purryag and her appointment confirmed five days later.

The chemist said of her appointment: "It is indeed a great honour and trust that has been bestowed onto me. I will have no choice but to rise to the expectations of my people with humility and pride."

Her Excellency Mrs Bibi Ameenah Firdaus Gurib-Fakim G.C.S.K., C.S.K., PhD; President of the Republic of Mauritius

She has committed to developing science on the island nation saying: "As new president, I strongly believe that science and technology are what distinguishes the South from the North. On science, technology and innovation depend the standards of living of a nation. The widening gap in economics and in influence between the nations of the South and the North is basically the science gap."

The new president was Managing Director of the Centre for Phytotherapy Research (CEPHYR), a private chemistry laboratory. Prior to that, she had served as the Dean of the science faculty and pro Vice-Chancellor for teaching and learning at the University of Mauritius between 2004 and 2010.

She has co-authored 20 books on the use of medicinal plants in Africa.

Prof Garib-Fakim was also a member of the AAS' Governing Council, the highest decision making body of the academy, the committees on Health and Wellbeing and on revitalising the journal, Discovery and Innovation until her appointment as president.

She was also the AAS' representative in the African Union committee for selecting the Pan African University (PAU) rectorate. The PAU is an African Union initiative that piggybacks on existing infrastructure to train postgraduates at five campuses across Africa.

Felix Toteu appointed AAS treasurer

Prof Felix S Toteu

The Governing Council of the African Academy of Sciences has appointed Sadrack Félix Toteu as the academy's acting treasurer. Toteu was appointed on 8 May 2015 and takes over from Thomas Kariuki who is now the director of the AAS's Alliance for Accelerating Excellence (AESA) in Science in Africa.

Toteu, who is currently working in the UNESCO Regional Office in Nairobi as an earth sciences specialist, joins the thirteen-member Governing Council, the highest decision body of the academy, and the four-member AAS Management Committee.

The Cameroon-born geologist will look after the financial interests of the academy, and will serve as an ex-officio member of the Board of Trustees for the AAS's Endowment Fund and the Audit and External Risk Committee.

Toteu is an experienced international scientist and an accomplished science diplomat who has made substantial contributions to knowledge of the chronostratigraphy of the Pan-African Belt, both within and beyond Cameroon and in ore deposits in Central Africa.

He has lectured at the University of Botswana and South Africa's University of Cape Town, and the Nelson Mandela Metropolitan University.

He is the deputy secretary general for Africa in the Commission of the Geological Map of the World and was a member of the board for the International Year of Planet Earth.

"Scientists must be proactive to attract government funding"

By Nelson Torto

African research is plagued by low uptake of its results due to reasons ranging from lack of confidence in national research and development, lack of entrepreneurial skills among researchers, gap between Research and Development (R&D) and societal needs and a shortage of funding to commercialise results.

Policymakers are often blamed for lacking commitment to fund research but scientists are equally culpable. Scientists need to be more proactive in encouraging their governments to fund their research. Doing this requires scientists to be innovative about how they approach their governments.

Scientists share a common purpose with their policymakers. Policy makers want to improve the lives of their people within their short political lifespan of normally five years but don't have the expertise to do so. Scientists also have the expertise to develop technologies to help governments achieve their goals but don't have the funding or infrastructure. Scientists need to exploit this by highlighting research that can achieve results within a short period that, if used, can allow politicians to show the impact they have made during their tenure. We all want to leave a legacy.

This is what we have done at the Botswana Institute for Technology Research and Innovation (BITRI). Through the Seding™ Street Light project we provided technology to harness solar power and improved the lives of people living in the rural areas of our country.

Some have also been able to access internet services because of the project. Rather than re-inventing the wheel, we have partnered with those that are already leading in the development and application of the technology to bring it into Botswana.

Collaboration or partnerships that exploit already existing technologies that have been proven to work help us to demonstrate their benefits and lobby for funding for our own research. Furthermore, there is a need to apply technology in areas where the ordinary people can easily identify with.

For example, BITRI has developed a mobile app based on an indigenous game, which can now be downloaded online. It has attracted attention because it conserves indigenous knowledge and transforms it so it appeals to both the young and the old and preserves the dignity of our nation. BITRI's strategy as a new research organisation has been to use the low hanging fruits to motivate for more funding for our long-term projects, which include using Kalahari sand to create bricks for low-cost housing.

It is also important to speak in a language that governments understand. Scientists present the science instead of the solutions it provides. Policymakers would be interested in the solution the science provides more than the technical aspects of it.

Catching governments' attention isn't enough. It's also important to prolong it. Scientists can do this by constantly producing results, which will indicate their productivity. Governments want to invest their money where it will be efficiently and effectively used.

Scientists working on various projects must also take care not to release their results all at once. Staggering the release will prolong the attention of policymakers

> ***"Highlighting research that yields short-term results will help scientists to attract funding for bigger projects from their governments,"***
>
> **- Nelson Torto.**

About the Author

Prof Nelson Torto is the chief executive officer of the Botswana Institute for Technology Research and Innovation (BITRI). He is also a fellow of the AAS.

Investing in peer review to strengthen science in Africa

By Muhammad Mehmood-Ul-Hassan and Jan De Leeuw, World Agroforestry Centre, Kenya

Capacity in science has two key dimensions: the competency to undertake credible research, and the skill to review and assess research for its scientific merit and authenticity.

The latter – peer review – is at the heart of the scientific enterprise because it can increase both the salience and legitimacy of research. But many scientists, and this is especially true in Africa, lack the capacity to conduct credible peer review. This is a critical skills gap that needs to be addressed.

It is easy to identify the roots of the problem: Students and scientists receive little, if any, formal training in peer review, and donors have paid no attention to the issue. This is in fact a global problem, but the situation is particularly acute in Africa. The continent's capacity in peer review resembles a typical developing country age pyramid, with many inexperienced researchers at the bottom and a few experienced scientists who are capable of reviewing at the top.

There is no single textbook aimed at guiding the novice on how to perform peer review, although some guidelines on how to deal with reviews do exist. A systematic review of peer review (Jefferson, *et al.*, 2002) concluded that "the [current] practice of peer review is based on faith in its effects, rather than on facts". Sense About Science (2009) found that 56% of the surveyed peer reviewers felt that there was a general lack of guidance on peer review, and 68% thought that formal training would help improve their reviewing skills.

A group of scientists at the World Agroforestry Center recently discussed the issue of how to address this lacuna in high-quality peer review in African climate sciences. The group concluded that capacity development in peer review deserves as much attention as skills training for conducting and reporting research. Short trainings have little impact on improving the quality of peer review, which is not surprising given the various competencies required to distinguish excellent from mediocre science.

Formal teaching, embedded in established curricula, is critical. One approach would be to design, test and adapt curricula that aim to develop competency in peer review for the staff and students of tertiary education institutions. Once successfully tested and adapted, these courses could be institutionalised in higher education curricula in the developing world, including Africa, through tertiary education networks. Ideally, education in peer review should become mandatory for doctoral and optional for master students. The African Academy of Sciences, and its funders, are best placed to develop and disseminate such educational programs to enhance peer review capacity on the continent.

> *"Strengthening African scientists' capacity to conduct credible peer review is just one small step to improving the quality of the continent's science and building the skills of the continent's scientists"*

A complementary approach would be to develop a global accreditation system that registers researchers who are skilled in peer review. Such a system could include facilities to (self) assess aspirants' reviewing capacities, advise on and make available training, and offer a certification test. National or supranational science organisations, such as the International Science Foundation, or national or regional academies of science, such as the African Academy of Sciences, are best placed to develop and house such an accreditation system. If accreditation were obligatory for those seeking a career in science, then it might be possible to run the system commercially.

Accreditation in peer review has many advantages. Researchers would benefit from developing their capacity and gaining recognition for their competency, with possible spin-offs for greater personal research efficiency. Employers in research would benefit from the assessment of a core competency among their staff and could consider using it in selection procedures and performance evaluations. Scientific journals would benefit from better peer review through certified peer reviewers; indeed, having a higher proportion of certified reviewers could also enhance a journal's reputation.

Strengthening African scientists' capacity to conduct credible peer review is just one small step to improving the quality of the continent's science and building the skills of the continent's scientists. But both of those things are key to helping the continent develop its own climate research agenda – and ultimately helping African farmers prepare to meet the many climate-related challenges that lie ahead

*This is based an **article** that was submitted to the Global Sustainable Development Report.*

About the authors
Muhammad Mehmood Ul-Hassan and Jan De Leeuw work with the World Agroforestry Centre (ICRAF) in Nairobi, Kenya.

Spirit of Bandung Conference 60 years ago offers solutions to 21st-century global ills

By Mammo Muchie

Just over 60 years ago, between April 18-24, 1955, 29 countries from Africa and Asia held the Bandung Conference in Indonesia with the objective of building inter-Asian-African cooperation and promoting complete decolonisation.

The Bandung Conference inspired the creation of the non-aligned movement and the Third World by deciding not to side with either the Western powers led by the United States or the Eastern bloc led by the former Soviet Union during the Cold War.

The conference also pledged not to rely on Western foreign aid but on building strong economic relations between Asia and Africa on the principles of mutual benefit and friendship. One of the key outcomes of the Bandung Conference was the Afro-Asian hope to open opportunities for the Global South — representing largely Asian, African, Latin American and Oceanic countries — to have a voice in world affairs.

The creation of a non-aligned space to seek freedom from joining either the USA or the Soviet Union camp was a clear objective.

Though in many ways the Bandung Conference was a turning point in attempting to construct a post-colonial international political order, we still live in a world where imperialism, colonialism, war, exploitation, injustice and unfairness complicate the political and economic space.

New global re-order

What was voiced at Bandung as the anti-colonial spirit and the aspiration for building a world order that appreciates rather than ignores the Global South still remain largely unfulfilled. We need a new and revitalised Bandung Conference spirit and a strong Global South to put on the agenda a total postcolonial reality to guide the architecture of a new global re-order.

The world is now a more unpredictable place. The Bandung Conference should be revisited to help efforts to promote and create a much-needed predictable, stable, secure, peaceful, fair, equitable and sustainable world re-order.

This would put first what was last in order to remove the cost to the disadvantaged and create the opportunity for an equal partnership on the principle of mutual benefit among all nations on earth.

Strong traditional values such as Ubuntu — the southern African concept of a universal bond of sharing that connects all humanity — should be promoted to create a new humane civilisation that can anchor world diplomacy on deep principles that recognise and appreciate that to hurt any people and nation is tantamount to hurting all in the world.

The organised hypocrisy of world diplomacy should be replaced with Ubuntu world diplomacy. A revitalised Bandung spirit is much needed. It would see all leading Global South members — such as China and India from Asia, Ethiopia, Egypt, South Africa and Nigeria from Africa and Cuba and Brazil from Latin America — and all others from all parts of the world, come together on equal terms to share and care. It can inspire the world to move in the most civilised and cultured trajectory ever, offering everyone something to gain.

There is no doubt that the Bandung Conference attempted to put an alternative to Western- or former-Soviet Union dominated world order or disorder, but without succeeding to create a new world order founded on new principles and humane civilisation.

But the Bandung spirit must live on and the challenge today is to construct a fully inclusive world order in which no one dominates, all are included; the weak supported, the strong restrained; and all participants have a voice.

Not end of history

There is a need to re-learn the significance of Bandung Conference in order to construct a new global architecture by creating a post-Western dominated world where all civilisations and identities converge. Reviving the Bandung spirit on its diamond jubilee will go a long way toward re-thinking and re-learning the ups and downs the world has been going through.

The world has not entered the end of history; it is in fact at the beginning of history. The world does not need to be and should not be a clash of civilizations. On the contrary it needs a new unified project to achieve a new world re-order.

Education that combines the Bandung spirit of 60 years ago with the African unity for renaissance project of more than 50 years is much needed to create a world re-order free from injustice.

We have had annual education conferences to remove the legacies of colonialism that dis-formed Africanness; to remove fragmentation and psychic dislocation by trying to promote the Pan-African unity for renaissance project identity.

The recent outbreak of Afrophobia is strange as support for the African unity for renaissance project from South Africa has been consistent and inspiring. We were very proud of raising funds entirely from South African partners. The output from the series of Africa unity for renaissance conferences should be shared so that awareness and education can reach all Africans who should not only work for a united and prosperous Africa, but also for a new world order inspired by the Bandung spirit and Africa's own rich values of Ubuntu.

May 25 is Africa Liberation Day. We encourage all African states to make it an African education day by combining the Bandung spirit with the objective of realising fully the African unity and renaissance project. A world re-order is needed to save the planet. Epistemological disobedience to the current domination and a new epistemology for creating a new Bandung spirit to create a new world re-order is urgent. We conclude with a poem from Chairman Mao Zedong:

"So many deeds cry out to be don; And always urgently; The World rolls on; Ten thousand years are too long; Seize the day, seize the hour; The four seas are rising, clouds and water raging; The five continents are rocking, wind and thunder roaring; Our force is irresistible; Away with all pests!"

About the Author

Prof Mammo Muchie holds a DPhil in Science, Technology, and Innovation for Development (STI4D) from the University of Sussex. He is currently a DST/ NRF Research Professor of Innovation Studies at the Institute of Economics Research on Innovation (IERI), at Tshwane University of Technology. He is also a NRF rated Research Professor. He is a fellow of the South African Academy of Sciences and the African Academy of Sciences.

Perceptions, production and consumption of wild leafy vegetables

By Amon Taruvinga

Introduction

African indigenous leaf vegetables (AILVs) sometimes referred to as "indigenous/wild leafy vegetables" have been reported to contain several macro and micronutrients (Mavengahama, 2013). Sadly, rural Africa still faces high prevalence of malnutrition in areas rich with biodiversity including wild and indigenous vegetables (Reinten and Coetzee, 2002). From a production point of view, the South Africa Department of Agriculture, Forestry and Fisheries (DAFF), (2013) noted that, despite AILVs` nutritional and economic value, the crops and their products were never commercialised, current production is on small-scale and surplus of the produce are only traded informally within communities for subsistence purposes. There is also a huge deficiency in the institutional support given to AILVs, where credit and extension services currently promote conventional cash and exotic crops (Shackleton, 2003). Extension and research has also labelled AILVs as "weeds" that must be removed from farmers` fields seriously affecting production (Vorster *et al*., 2007). Against this backdrop, this article explores literature presented on famer`s perceptions, production and consumption patterns of AILVs.

Consumers' perceptions of African indigenous leafy vegetables

Communities share different perceptions of AILVs. Some of the reported positive perceptions include; nutritious vegetables that are easy to prepare (Mavengahama, 2013; Taruvinga and Nengovhela, 2015), tastier than conventional exotic vegetables (Vorster *et al*., 2007) and healthy vegetables that boost human immune system (Faber *et al*., 2010) and nutraceutical healing power (Johns, 2004). Literature also acknowledge several negative perceptions to include the following label tags; food for the poor, food for backward people, food for old people, food for rural people and weeds worth removing from farmers` fields (Vorster *et al*., 2007). Positive perceptions seem to be more popular with older and rural consumers whereas negative perceptions are more common with younger and urban consumers (Vorster *et al*., 2007).

Production trends of African leafy vegetables

Despite claimed several benefits, production of AILVs is still characterised by low volumes (Abugre, 2011) and currently declining (DAFF, 2013). Their production is more common in rural areas on small scale mainly for subsistence purposes with minor informal trade record (DAFF, 2013). With reference to determinants of production the following factors are suggested in literature; gender (Vorster *et al*., 2007), education (Modi *et al.,* 2006), access to extension (Vorster *et al*., 2007), access to markets (Mwangi and Mumbi, 2006), cultural beliefs and shared perceptions (Mavengahama, 2013).

Consumption dynamics of African leafy vegetables

Consumption of AILVs is reported to be very low, variable (Vorster *et al*., 2007) and declining (DAFF, 2013). Lack of awareness, westernisation, negative attitudes and poor taste are some of the reasons that negatively condition consumption (Vorster *et al*., 2007). From a socio-economic and institutional point of view, the following factors are suggested to condition consumption: age (Faber *et al*., 2010), education (Mayekiso, 2013), gender (Vorster *et al*., 2007; Abugre, 2011; Mayekiso, 2013) markets and extension (Taruvinga and Nengovhela, 2015). Interestingly, with reference to awareness, literature highlights that AILVs are very popular and a common dish in most rural areas (Taruvinga and Nengovhela, 2015) used since ancient times to supplement local diets (Husselman and Sizana, 2006).

Key issues to note

Several messages emerge from literature as follows; firstly, there is consensus on the nutritional and health benefits of AILVs. Secondly, communities share both positive and negative perceptions with regards to AILVs. Production is currently dominated in rural areas under subsistence levels conditioned by several socio-economic, institutional and perception related factors. Thirdly, consumption is also still low more pronounced in rural areas highly affected by several socio-economic and institutional attributes of consumers.

Conclusion

This article concludes that AILVs are very popular in rural Africa although production still remains on a subsistence level. Both positive and negative perceptions exists significantly affecting consumption and production. Several socio-economic and institutional factors also condition production and consumption of AILVs. Given AILVs` popularity in rural areas and claimed nutritional value, their promotion may complement rural household food security worth considering

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CIRCLE enhances intra-African collaboration

By Olawale Emmanuel Olayide

Introduction

"It is the child who has never been to another person's father's farm before that argues that there is no other farm in the world, as big as his father's" - Nigerian Proverb.

This proverb encapsulates my experience as one of the first beneficiaries of the Climate Impact Research and Leadership Enhancement (CIRCLE) programme. I like to share what I consider "Benefits of an intra-African collaboration among early career scientists". I have identified 12 benefits of the CIRCLE Fellowship programme which I want to share.

1. Travels: The Nigerian proverb I started with presupposes that if you do not move to other places, you would almost have the illusion of your self-worth, and therefore, think you are perfect for your condition or environment. One of the cardinal benefits of the CIRCLE Fellowship programme is the opportunity to travel to other institutions to carry out your research. This enables the Research Fellow to meet other researchers and share research ideas and boost collaboration. Essentially, we are called CIRCLE Visiting Fellow (CVF) because we are researchers visiting and undertaking approved research and fully-funded projects in another institution/country. The CVF learns to adjust to the culture of the host institution and country.

2. Research funding: The average early career researcher in Africa is confronted with the problem of research funding. Most researchers have had to pay from their paltry salaries to fund their own research. This situation often makes it practically impossible to rise and compete globally. With CIRCLE funding, however, this problem is overcome, at least for the year of the fellowship. The CIRCLE Fellowship provides dedicated budget for funding the CVF's approved research proposal.

3. Research networks: Under CIRCLE, opportunities for burgeoning of research network is unlimited. In my own case, I found the need to incorporate geographical information systems in my field of applied research. Seeing the availability of the opportunity to enhance my research capability at my host institution, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, I gladly enrolled in a semester course on applied geographic information system (GIS) at the Department of Geomatic Engineering. I am now a more competent, skillful and versatile researcher.

4. Visibility: Participation in CIRCLE automatically puts one in the spotlight. The details of all CVFs are visible on the website (https://www.acu.ac.uk/focus-areas/early-careers/circle/cohort-1-CVF). CVFs are also expected to participate and make presentation of our research outputs at conferences and workshops during the fellowship year. Updates and news about conferences and meeting are sent via emails and CVFs interact freely via a dedicated CIRCLE online forum.

5. Publication in high impact journal: CIRCLE makes budgetary provision for and encourages publication in high impact peer-review journals. So, CVFs need not worry about sponsorship of publication from own meager salary.

6. Training and capacity development: Capacity development is the fulcrum of the CIRCLE fellowship programme. At the inaugural meeting for first cohort of CVFs, we were trained on using the Researcher Development Framework (RDF) and Mendeley referencing tools as well as an elaborate authorship seminar by Elsevier.

7. Effective communication: Communication is broadened and enhanced through the CIRCLE fellowship programme. As a CVF, I am constantly communicating; either with my supervisor, mentor, specialist advisor or the CIRCLE Management Team. Feedbacks are provided and there is a sense of ownership and responsibility by all stakeholders.

8. Financial Management: Financial management and accountability is intricately linked to research funds and grant execution. The CVF learns systematic (quarterly) reporting on use of research funds using an approved template. All other funding extended to the CVF under the CIRCLE programme must be correctly accounted for.

9. Opportunity to explore (door-to-door): CIRCLE encourages CVFs to apply for additional joint and collaborative research grants to compliment and scale-up their research frontiers. This encourages intra-Africa collaboration and south-south co-operation in research as well as breaking new grounds in the area of trans-disciplinary research in multi-cultural settings.

10. Mentoring: CVFs do not only benefit from mentoring by academic champions from their home institutions, they are encouraged to help their colleagues and to mentor others, especially their students when they return to their home institutions. The CVFs are the best advocates and embodiments of the ideals of intra-African collaboration among early career scientists.

11. Research leadership enhancement: The CIRCLE programme is not just about research but also incorporates research leadership enhancement. For Africa, this is a major gap and drawback of many nations and institutions. Under CIRCLE, CVFs are the principal investigators of the research projects. They determine the *what, how* and *when* of their research activities. From proposal development to publication in peer -review journal, the CVFs take the lead while working in harmony with on-sight supervisor, mentor and other stakeholders.

12. Creating a niche and making impact: CIRCLE makes it possible for the earlier career scientists in Africa to create a research niche and make impact in the area of climate change research. The CVFs contribute to growing literature and learning resources in the area of climate change research through publications, including the documentation of data and reports.

Conclusion

The CIRCLE programme for earlier career scientists in Africa is timely, and it is enhancing intra-African collaboration among young African scientists. There are also significant benefits that are accruable to all participating stakeholders. It is helping Africans to appreciate the inherent mutual benefits that can be achieve through intra-African research collaborations and cohabitation, while appreciating their respective intrinsic cultures and business environment.

About the Author

Dr Olawale Emmanuel Olayide is a post -doctoral CIRCLE Visiting Fellow at the Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. He is from the University of Ibadan, Nigeria, where he is a Research Fellow and Coordinator for the Environmental Protection and Natural Resources Programme at the Centre for Sustaina-ble Development.

AAS recruits new staff

Hannah Ngugi is the African Academy of Sciences' Finance and Administration Manager. Hannah holds a BSc in finance and a CPA (K). She joined in November 2014. Hannah has over 14 years' experience in finance and administration and last worked with the Alliance for Agricultural Research in Africa (AGRA). She will help AAS to develop and maintain timely and accurate financial records and administrative procedures.

Thomas Maina Kariuki, an immunologist, has been appointed Director of the Alliance for Accelerating Excellence in Science in Africa (AESA). Kariuki, a fellow of the academy, is an award-winning scientist who worked at the institute of Primate Research/National Museums of Kenya in Nairobi, until his appointment at AESA. He has also served as president and board member of a number of Africa-wide professional networks, including the Federation of African Immunological Societies, for which he is the immediate past president.

Anne Kimari joins AAS as Chief Operating Officer. Anne holds a masters in business administration. She has held various roles in finance and management in the financial sector, and was a Management Consultant at Finebridge Associates Ltd before joining the academy. She is a fellow of the Chartered Association of Certified Accountants, UK and a member of the Certified Public Accountants of Kenya. Anne will oversee human resources, finance, ICT and public relations of the AAS.

Alphonsus Neba joins AAS as Programme Manager responsible for the implementation of the Wellcome Trust-supported, Developing Excellence in Leadership, Training and Science (DELTAS). He holds a PhD in biotechnology and has 10 years' experience in research management, grants and contracts administration, research commercialisation, technology transfer and intellectual property management.

Josephine Karuri is the Monitoring and Evaluation (M&E) manager. She brings 15 years' experience having worked as a private consultant in health informatics and M&E and in a number of organisations. Josephine, who is awaiting to graduate with a PhD in information systems from the University of Nairobi, is responsible for assessing the impact of AESA supported-programmes.

Deborah-Fay Ndlovu is AAS' Communication Manager. She is a journalist with 10 years experience. Prior to joining AAS, she was a senior journalist at *Research Africa*, based in Cape Town, South Africa. She is responsible for promoting the visibility of the AAS within Africa and across the globe.

Susan Gichoga joined the AAS in April as a grants officer. Gichoga, who has over 10-years' experience in grants management and fundraising, is responsible for applications and grant management processes for AESA schemes.

Angeline Yalwala is the programme assistant for AESA. The graduate from Kenya Methodist University is responsible for providing efficient and effective administrative support to the AESA director and senior advisor.

Nidhee Jadeja is on secondment to AAS from the Wellcome Trust (WT) as Change Manager. She is supporting the strategic development of AESA and a liaison between AAS and WT. She has been with WT for 5 years as Science Portfolio Adviser contributing to the Trust's portfolio in public health research and population studies.

Isabel Imbuye joins AAS as Grants Accountant. She last worked at the International Livestock Research Institute as a project accountant for two years. Isabel is a certified public accountant with a masters in business administration from the University of Nairobi in Kenya. She has also worked with Aga Khan University; Lake Victoria South Water Services Board, and World Vision International (Kenya).

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OPPORTUNITIES

Submit abstract for climate change conference

The ClimDev-Africa Programme will hold the Fifth Conference on Climate Change and Development in Africa in Victoria Falls, Zimbabwe, from 28-30 October, 2015. ClimDev is an initiative of the African Union, the African Development Bank and the United Economic Commission for Africa.

The event will be themed: 'Africa, sustainable development and climate change: prospects of Paris and beyond.' Delegates will discuss climate trends and the role of climate data . The outcomes of the discussions will contribute to the development of a common African position for the post Kyoto global climate governance. Clim-Dev is inviting interested participants to submit abstracts by 14 August. Applicants who require travel grants must indicate in their application.

South Africa to host a conference for women engineers

The 8th Annual Women in Engineering conference will be held on 30 and 31 July 2015 in Johannesburg, South Africa.

The event will take place under the theme: 'Transforming the workplace: capitalizing on diversity.' Delegates will discuss topics that include how to improve mathematics and science in schools and how to develop effective graduate mentorship programmes. Discussions will also focus on the role of women in mining.

Interested participants are invited to register. Email chomba@amabhubesi for more details.

ANDI issues second call for centres of excellence initiative

The African Network for Drugs and Diagnostics Innovation (ANDI) is now accepting applications for the second phase of a programme to designate African health research institutions as centres of excellence. Thirty-eight institutions were given the centres of excellence status in the first phase announced in 2011.

Institutions are selected for the Centres of Excellence in Health Innovation in Africa in recognition of their capacity and expertise in health research and development, which in turn raises their profile across the globe.

The second call will identify institutions with promising products or technologies, create a network of centres for training and technology transfer and promote inter-African collaboration. ANDI will be receiving proposals for the programme until 31 July.

Poster presentations for World Health Summit sought

The New Voices in Global Health Initiative is inviting young health researchers to submit abstracts for the World Health Summit in October.

The summit will take place in Berlin, Germany, from 11 –13 October 2015 under the theme: 'Science-innovation-policies.' Topics to be discussed include climate change and health, medical education, health aging and population, digital health and translational science, among others.

Selected candidates will present their work in a poster exhibition and will be given free registration. They will also be able to apply for a partial travel scholarship to attend the summit.

Interested candidates are invited to submit their applications by 31 July. Enquires and applications must be email to science@worldhealthsummit.org.

UNESCO invites nominations for microbiology prize

The United Nations Educational, Cultural and Scientific Organization seeks nominations for the Carlos J. Finley UNESCO Prize for Microbiology.

The prize carries a cash prize of US$10,000 and is given to individuals, institution or non-governmental organisations that have contributed to the development of the field. Nominations close on 30 July 2015.